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تعميم

رقم (١٥٣)

السادة أعضاء شركة بورصة عمان المحترمين،

تحية طيبة وبعد،

لاحقاً لتعميمنا رقم (136) تاريخ 2019/11/10، بخصوص طلب إبداء الرأي في مسودة وثيقة المتطلبات الإدارية والفنية الواجب توفرها لدى أعضاء البورصة، فإني أرجو إعلامكم بما يلي:-

1- أقر مجلس إدارة البورصة الوثيقة المشار إليها أعلاه بتاريخ 2019/12/26، وطلب ادخال التعديلات اللازمة عليها بما ينسجم مع التعديلات المقررة على نظام العضوية.

2- أقرت هيئة الأوراق المالية نظام العضوية في البورصة بتاريخ 2020/6/7.

3- أدخلت البورصة التعديلات اللازمة وفقاً لنظام العضوية على الوثيقة المذكورة وبما ينسجم مع قرار مجلس الإدارة المشار إليه أعلاه.

وفي ضوء ما تقدم، أرفق النسخة النهائية من وثيقة المتطلبات الإدارية والفنية، راجياً التكرم بالاطلاع عليها والإلتزام بالعمل بمضمونها. مؤكداً على ضرورة تلبية متطلباتها الفنية وفقاً للأطر الزمنية المحددة فيها ومتطلباتها الإدارية قبل تاريخ 2021/2/28 انسجاماً مع ما جاء في تعميم البورصة رقم (94) تاريخ 2020/9/8.

وتفضلوا بقبول فائق الاحترام...

مازن نجيب الوظائفني
المدير التنفيذي

مرفق: وثيقة المتطلبات الادارية والفنية وملحقاتها

تعميم رقم (94) تاريخ 2020/9/8



المتطلبات الإدارية والفنية الأساسية الواجب توفرها في شركة الوساطة

التاريخ

27-9-2020

بورصة عمان

نسخة الإصدار

1.0

عدد الصفحات

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استناداً لأحكام نظام العضوية في شركة بورصة عمان لسنة 2018، والذي ألزم شركات الوساطة بأن تتوفر لديها مجموعة من المتطلبات الإدارية بالإضافة إلى البنية التقنية والأجهزة اللازمة لممارسة جميع أعمالها بشكل سليم وملائم ودون انقطاع وفقاً للمواصفات التي تحددها البورصة، فقد قامت البورصة بإصدار هذا الدليل المتضمن المتطلبات الإدارية والفنية بهدف تحديد الحد الأدنى من المتطلبات والمواصفات الفنية الأساسية الواجب توفرها لدى شركات الوساطة لكي تكون قادرة على العمل في شركة بورصة عمان، علماً بأن للبورصة الحق في تعديل أو تغيير هذه المتطلبات أو اعتماد متطلبات إضافية جديدة كلما دعت الحاجة إلى ذلك.

الرؤية

- توفير الأمان لمعاملتي الأوراق المالية بغض النظر عن أماكن تواجدهم لدى التعامل في سوق رأس المال الأردني.
- الوصول إلى سوق مالي متقدم تكنولوجياً قادر على اجتذاب الاستثمارات الإقليمية والدولية.
- رفع مستوى البنية التقنية والفنية لدى شركات الوساطة العاملة بحيث تتماشى مع أفضل الممارسات العالمية بهذا المجال.
- توفير المرونة لشركات الوساطة لاختيار البنية التقنية التي تناسبها والمتوافقة مع المتطلبات الفنية للبورصة.

آلية التطبيق

ستقوم البورصة باعتماد آلية التطبيق التدريجي لتطبيق بعض المتطلبات الفنية خلال فترة زمنية تصل إلى سنتين، وبعض المتطلبات اختيارية، حيث سيتم تطبيق هذه المتطلبات على النحو التالي:

- متطلبات فنية سيتم تطبيقها خلال فترة سنة ونصف وفقاً لأولوية تطبيقها.
- متطلبات فنية سيتم تطبيقها خلال سنتين ونصف وفقاً لأولوية تطبيقها.
- متطلبات فنية استراتيجية اختيارية سيتم تطبيقها وفقاً لرغبة العضو وبما تطلبها التغييرات المستقبلية.

الجهات المستهدفة بالوثيقة

- شركات الوساطة الأعضاء في بورصة عمان.
- شركات الوساطة الراغبة في الانضمام لعضوية بورصة عمان

المتطلبات الإدارية

يجب على الوسيط أن يحقق الشروط التالية بصورة مستمرة :

1. أن يحمل رخصة سارية المفعول من الهيئة.
2. أن تتوفر لدى إدارته وموظفيه المؤهلات العلمية والمعرفة والخبرة الكافية لممارسة العمل.
3. أن يعين مديراً عاماً متفرغاً ويجوز له ممارسة أعمال الوساطة المالية إذا كان حاصلاً على الإعتماد اللازم من الهيئة شريطة عدم الإخلال بالشروط الواردة في البند الخامس.
4. أن يعين مديراً مالياً متفرغاً ويجوز له القيام بأعمال المحاسبة في حال عدم تعيين محاسب متفرغ.
5. أن يعمل لديه وسيطان معتمدان متفرغان على الأقل وبشروط في الوسيط المعتمد اجتياز الاختبار المقرر من قبل البورصة.
6. أن يتوفر لديه مقر لممارسة أعماله يكون مستوفياً للشروط التي تحددها البورصة.
7. على العضو تنظيم أعماله بشكل مسؤول وأن يوفر الموارد البشرية والفنية والمالية الكافية لتنفيذ أعماله بما يتفق مع التشريعات الصادرة عن البورصة .
8. أن يقوم العضو بوضع اجراءات العمل الخطية الملزمة لممارسة أعماله والتي تضمن توفير بيئة رقابية داخلية ملائمة على ان تتضمن بحد ادنى ما يلي.
 - هيكل تنظيمي للشركة.
 - مهام تفصيلية لكل مكون من مكونات الهيكل التنظيمي.
 - المفوضين بالتوقيع نهاية عن الشركة.
 - مراعاة فصل المهام بين الاشخاص المرتبطين به.
9. في حال تكليف اي شخص مرتبط بالوسيط بأي مهام اخرى بالاضافة لوظيفته ,يتوجب على الشركة توثيق ذلك شريطة ان يكون ذلك التكليف لا يؤدي الى تداخل بالصلاحيات او تعارض للمصالح.
10. وضع الضوابط التي تضمن السرية ما بين الوسيط وشركات انظمة المعلومات و توقيع اتفاقيات خطية بهذا الخصوص.
11. تسمية احد موظفيه ضابطاً للارتباط مع البورصة, وله أن يسمي ضابط الامتثال ضابطاً للارتباط مع البورصة.

1. البنية التحتية للشبكة الداخلية

يعتبر بناء وتركيب وتهيئة وصيانة الشبكة الداخلية (Local Area Network - LAN) من مسؤوليات شركة الوساطة العضو تحت إشراف البورصة، بحيث يجب على شركات الوساطة الاعضاء الالتزام بالبنود التالية:

1.1 تأمين بناء وتركيب الشبكة الداخلية ليتم ربطها مع شبكة بورصة عمان، بحيث تشمل وكحد أدنى المواصفات التالية:

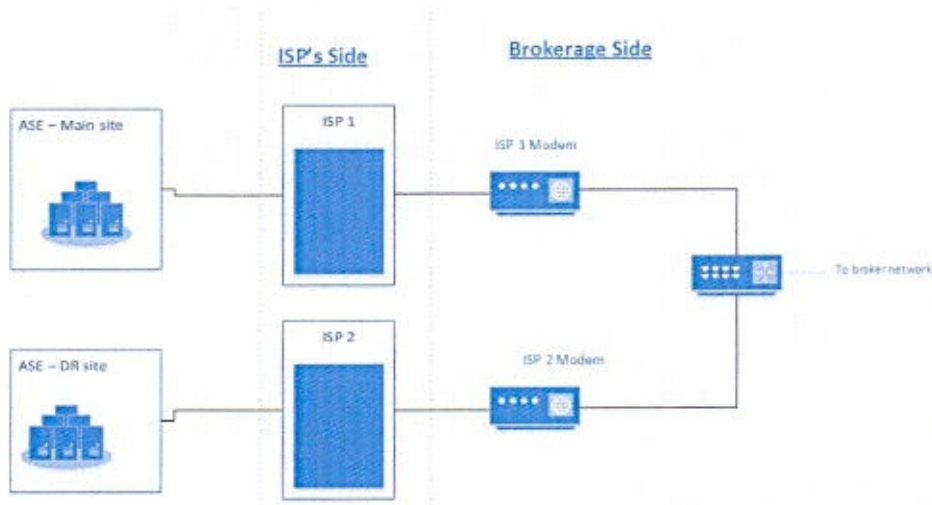
1.1.1 تأمين خطين مستأجرين (Leased lines layer 2 P2P) بسرعة (2Mbps) كحد أدنى، بحيث يتم تشغيل الخطين

بوضعية نشط/استعداد (Active/Standby)، كما ويجدر بهذه الخطوط أن تكون مشفرة (IPSec tunnel).

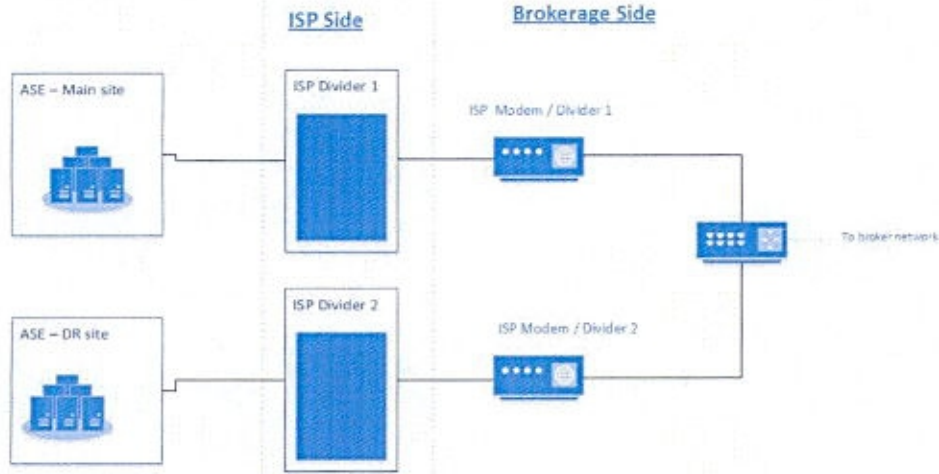
1.1.2 توفير خطوط اتصال مؤجرة (Leased-Lines) من مزودين مختلفين (وهو الخيار الأفضل) حسب الرسم التوضيحي

(1)، وفي حال رغبتها بالحصول على الخطوط من نفس المزود يجب عليها الالتزام باستخدام خطوط تعمل من

مقاسم اتصال مختلفة تابعة لنفس المزود بحيث تضمن اختلاف مسارات الاتصال حسب الرسم التوضيحي (2).



رسم توضيحي (1): خطوط مؤجرة (Leased-Lines) من مزودين مختلفين



رسم توضيحي (2): خطوط مؤجرة (Leased-Lines) من نفس المزود لكن من مقسمين مختلفين

1.1.3 التأكد من أن مزود الخطوط المؤجرة متصل مع مقر البنية التحتية الرئيسي لشركة بورصة عمان، ومقر البنية

التحتية البديل للبورصة، مع ضرورة توفير كتاب التعهد رقم (1) حسب الأطر المعتمدة.

1.1.4 تأمين جهاز/أجهزة موجهة خاص/خاصة للشبكة الداخلية المتصلة مع بورصة عمان، بحيث تشمل وكحد أدنى

على المواصفات التالية:

- 3 مداخل على الأقل من نوع (Ethernet).
- أن يدعم بروتوكول (SLA) لضمان تشغيل الخطتين بوضعية (Active/Standby).
- أن يدعم تقنية (Multicast).
- أن يدعم خاصية تشفير خط الاتصال (IPSec tunnel, IKEV1 and IKEV2).
- يفضل فترة الضمان من الشركة الأم لمدة عام على الأقل على المعدات والبرمجيات.

1.2 يستثنى من المتطلبات المذكورة في البنود (3.1.1، 3.1.2، 3.1.3 و 3.1.4) الاعضاء المتواجدون في مجمع بنك الإسكان،

والذين يقومون بالربط على الموزع الرئيسي التابع لبورصة عمان والموجود في ذات الموقع، بحيث يلتزم هؤلاء الاعضاء

بتوفير موزع/موزعين (Switch) اثنين لضمان استمرارية الربط مع نقطتي الاتصال اللتين ستوفرهما البورصة لهم.

1.3 تركيب لوحة وصلات (Patch-Panel) منفصلة للشبكة المرتبطة مع البورصة بحيث تكون مرقمة بصورة سليمة وواضحة،

لسهولة الوصول إليها.

1.4 تأمين جهاز موزع (Switch) خاص للشبكة الداخلية المتصلة مع بورصة عمان، بحيث يشمل وكحد أدنى على المواصفات

التالية:

ports: minimum 16 (10/100/1000 Mbps) ✓

VLAN (Number Supported): minimum 128 ✓

Support Multicast ✓

Managed Switch ✓

1.5 الالتزام بتزويد البورصة باسم مستخدم وكلمة المرور الخاصة بجهاز الموجه (Router)، وجهاز الموزع (Switch) للتأكد من

سلامة البيئة والتدقيق على الأجهزة بأي وقت تراه البورصة مناسباً

2. البنية التحتية لأمن الشبكة

على شركات الوساطة الأعضاء تأمين وتركيب جدار ناري (Firewall)، وذلك لضمان أمان الشركة من الناحية التقنية بما يتوافق مع متطلبات البورصة وحاجة الشركة.

كما ويعتبر بناء وتركيب وتهيئة وصيانة الجدار الناري (Firewall) من مسؤوليات شركة الوساطة العضو تحت إشراف البورصة. وعليه، بحيث يجب أن يدعم الجدار الناري (Firewall) ويعد أدنى البنود التالية:

2.1 عزل الشبكات المختلفة الموجودة في شركة الوساطة والسماح بتناقل المعلومات بين الشبكات عبر مجموعة من القواعد (Policy Rules).

2.2 دعم الشبكات الخاصة (DMZ) بما يتوافق مع متطلبات وحاجة شركة الوساطة، بحيث يحتوي على الأقل على 6 شبكات خاصة (DMZ).

2.3 أن يدعم (Dual Wan port).

2.4 دعم تقنية البث المتعدد (Multicast).

2.5 يفضل فترة الضمان من الشركة الأم لمدة عام على الأقل على المعدات والبرمجيات.

2.6 يفضل ان يدعم خصائص (Advance filtering, IPS, Anti-Malware).

2.7 تلتزم شركة الوساطة بتزويد البورصة باسم المستخدم وكلمة المرور للجدار الناري (Firewall) للتأكد من سلامة البيئة والتدقيق على الجهاز بأي وقت تراه البورصة مناسباً.

3. متطلبات أجهزة الحاسوب (PC's) لتشغيل برامج التداول

تقوم بورصة عمان بتحديد الحد الأدنى من خصائص أجهزة الحاسوب لتشغيل برامج التداول التي تعمل عند شركة الوساطة العضو، بحيث تضمن هذه الخصائص أن تكون الأجهزة جاهزة دائماً لتشغيل الأنظمة وبرامج التداول في الوضع المثالي بشكل عام وبحسب المرفق رقم (7)، بحيث تضمن القدرة على العمل بشكل مستمر ودون انقطاع.

حيث سيتم ربط هذه الأجهزة على الشبكة الداخلية (LAN) التابعة للبورصة. علماً بأن هذه المواصفات قد تتغير وفقاً لإحتياجات البورصة ومتطلباتها.

4. متطلبات غرفة الأجهزة الخادمة (Server Room)

يجب على شركات الوساطة الأعضاء تأمين غرفة أجهزة خادمة (Server Room) بما يتوافق مع متطلبات البورصة، وهي على النحو التالي:

- 4.1 تأمين مكان فعلي محمي (Physical Isolation)، بحيث يقتصر الوصول إليه ليكون فقط للمسؤولين والأشخاص المخولين، أو الزائرين الخارجيين الخاضعين للإشراف بشكل كامل من قبل المسؤولين المصرح لهم بالدخول.
- 4.2 توفير جهاز تكييف يعمل على تبريد الغرفة، وأن يكون قادر أ على العمل بشكل متواصل، بحيث يحتوي على (Low Ambient kit).
- 4.3 توفير (Cabinets) ليتم توزيع أجهزة الشبكة (Router, Switch Firewall, etc.) والأجهزة الخادمة بشكل منظم من أجل تسهيل عمليات الحركة والصيانة والتحديث والوصول السريع لجميع الأجهزة الخادمة وأجهزة الشبكة.
- 4.4 حماية جميع الأجهزة والمعدات المشاركة في البنية التحتية بواسطة جهاز حفظ الطاقة (UPS) طوال فترة التداول (3 ساعات على الأقل) في حال حدوث انقطاع التيار كهربائي، علماً بأنه يفضل وجود مولد تيار كهربائي (Generator) يخدم شركة الوساطة في حالة الانقطاع المستمر للكهرباء لمدة أطول من الوقت الذي يوفره جهاز حفظ الطاقة (UPS) لضمان استمرارية عمل الأجهزة بصورة سليمة ودون انقطاع.
- 4.5 توفير لوحة كهرباء خاصة لتوزيع الكهرباء على الأجهزة المشاركة في البنية التحتية (UPS DB).

5. متطلبات البنية التحتية لتشغيل نظام إدارة الأوامر (OMS)

5.1 تشغيل نظام إدارة الأوامر (OMS) في موقع شركة الوساطة العضو

يلتزم العضو بتجهيز البنية التحتية في موقعه (physical hosting) لاستقبال استضافة تشغيل نظام إدارة الأوامر (OMS) على النحو التالي:

5.1.1 تأمين أجهزة خادمة (Servers) سواء كانت تعمل بشكل منفصل (Physical) أو تعمل باستخدام البيئة الافتراضية (Virtualization).

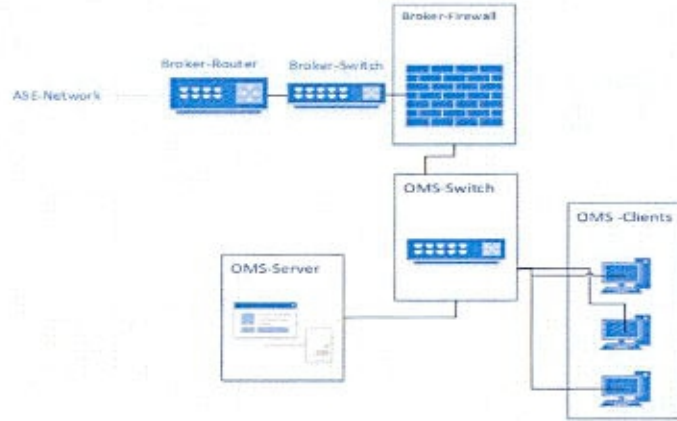
5.1.2 فصل الشبكة الداخلية (DMZ) الخاصة بجهاز الخادم وأجهزة الحاسوب (PC's) الخاصة بنظام إدارة الأوامر (OMS) باستخدام الجدار الناري (Firewall)، حيث يقوم العضو ببناء مجموعة من القواعد (Rules) تسمح لموظفي البورصة للوصول إلى الشبكة الداخلية الخاصة بنظام إدارة الأوامر (OMS).

5.1.3 ربط الشبكة الداخلية (DMZ) لنظام إدارة الأوامر (OMS) على شبكة البورصة وفقاً للمتطلبات الفنية التي تحددها البورصة.

5.1.4 الالتزام بالوثائق الفنية المرفقة بالملاحق التالية:

- ملحق (1)
- ملحق (2)
- ملحق (5)
- ملحق (6)
- ملحق (7)

5.1.5 الالتزام باستخدام الشبكة الداخلية (DMZ) لنظام إدارة الأوامر (OMS) لربط جهاز الخادم وأجهزة الحاسوب المشغلة بنظام إدارة الأوامر، حسب الرسم التوضيحي رقم (3).



رسم توضيحي (3): ربط الجهاز الخادم وأجهزة الحاسوب المشغلة لنظام إدارة الأوامر (OMS) على نفس الشبكة

الداخلية (DMZ) التابعة للبورصة.

5.2 تشغيل نظام إدارة الأوامر (OMS) خارج شركة الوساطة

5.2.1 شركات الوساطة الاعضاء التابعة لبنك أو فرع بنك مرخص للعمل في الأردن

إذا رغبت شركة الوساطة بالاستفادة من البنية التحتية التابعة للبنك من غرف الأجهزة الخادمة، والأجهزة الخادمة ذاتها الرئيسية بالإضافة إلى أجهزة الشبكات، وذلك لغايات تشغيل نظام إدارة الأوامر (OMS)، فيجب على العضو الإلتزام بما يلي:

5.2.1.1 تقديم التعهد رقم (2).

5.2.1.2 توفير جهاز جدار ناري (Firewall) يفصل شبكة العضو عن شبكة البنك.

5.2.1.3 تزويد البورصة باسم المستخدم وكلمة المرور للجدار الناري (Firewall) للتأكد من سلامة البيئة والتدقيق على الجهاز بأي وقت تراه البورصة مناسباً.

5.2.1.4 يقوم العضو ببناء مجموعة من القواعد (Rules) تسمح لموظفي البورصة للوصول الى الشبكة الداخلية الخاصة بنظام إدارة الأوامر (OMS).

5.2.1.5 تأمين خط مؤجر (Leased-Line) بين شركة الوساطة العضو ومكان استضافة نظام إدارة الأوامر (OMS) مع ضرورة أن يكون هذا الخط مشفراً (IPSec tunnel) وفعالاً (Up and Running).

5.2.1.6 عزل جميع أجهزة الشبكة والأجهزة الخادمة التابعة للعضو عن أجهزة الشبكة والأجهزة الخادمة التابعة للبنك.

5.2.1.7 الإلتزام بتشغيل شاشات التداول الخاصة بنظام إدارة الأوامر (OMS) من داخل مكتب العضو.

5.2.1.8 الالتزام بالسماح لموظفي البورصة بالدخول الى جميع أجهزة الشبكة والأجهزة الخادمة التابعة لشركة الوساطة عند البنك.

5.2.1.9 الالتزام بالوثائق الفنية التالية:

- ملحق (1)
- ملحق (2)
- ملحق (5)
- ملحق (6)
- ملحق (7)

5.2.1.10 الالتزام بتزويد البورصة بتقارير تخص أي مشاكل تحدث.

5.2.2 شركات الوساطة الأردنية التابعة لبنك أو لشركات وساطة إقليمية أو دولية

إذا رغبت شركة الوساطة بالاستفادة من البنية التحتية التابعة لبنك أو لشركات وساطة إقليمية أو دولية من غرف الأجهزة الخادمة، والأجهزة الخادمة ذاتها الرئيسية بالإضافة إلى أجهزة الشبكات التابعة لها لغايات تفعيل خدمة إدارة الأوامر (OMS)، فيجب على العضو الالتزام بما يلي:

5.2.2.1 تقديم التعهد رقم (3).

5.2.2.2 توفير جهاز جدار ناري (Firewall) يفصل شبكة العضو عن شبكة الشركة الأم أو أي شركة تابعة لها.

5.2.2.3 تزويد البورصة باسم المستخدم وكلمة المرور للجدار الناري (Firewall) للتأكد من سلامة البيئة والتدقيق على الجهاز بأي وقت تراه البورصة مناسباً.

5.2.2.4 يقوم العضو ببناء مجموعة من القواعد (Rules) تسمح لموظفي البورصة للوصول الى الشبكة الداخلية الخاصة بنظام إدارة الأوامر (OMS).

5.2.2.5 تأمين خط مؤجر (Leased-Line) بين شركة الوساطة العضو ومكان استضافة نظام إدارة الأوامر (OMS) مع ضرورة أن يكون هذا الخط مشفراً (IPSec tunnel) وفعالاً (Up and Running).

5.2.2.6 عزل جميع أجهزة الشبكة والأجهزة الخادمة التابعة للعضو عن أجهزة الشبكة والأجهزة الخادمة التابعة لشركة الأم أو أي شركة تابعة لها.

5.2.2.7 الالتزام بتشغيل شاشات التداول الخاصة بنظام إدارة الأوامر (OMS) من داخل مكتب العضو.

5.2.2.8 الالتزام بالسماح لموظفي البورصة بالدخول الى جميع أجهزة الشبكة والأجهزة الخادمة التابعة لشركة الوساطة عند البنك أو الشركة الأم أو أي شركة تابعة لها، على أن تتحمل شركة الوساطة العضو كافة تكاليف السفر لموظفين اثنين

للقيام بعملية الكشف كلما دعت الحاجة.

5.2.2.9 الالتزام بالوثائق الفنية التالية:

- ملحق (1)
- ملحق (2)
- ملحق (5)
- ملحق (6)
- ملحق (7)

5.2.2.10 الالتزام بتزويد البورصة بتقارير تخص أي مشاكل تحدث.

5.2.3 شركات الوساطة المستخدمة لتقنية الحوسبة السحابية (Cloud Computing)

إذا رغبت الشركة باستخدام الحوسبة السحابية التي تتضمن استئجار أجهزة خادمة والبنية التحتية حسب الحاجة لدى شركة مختصة توفر هذه الخدمة، بحيث يتم تنزيل الأنظمة المشغلة لنظام إدارة الأوامر (OMS) على هذه الأجهزة، فعلى العضو الإلتزام بما يلي:

5.2.3.1 أن تكون الحوسبة السحابية المستخدمة محلية (Local Cloud).

5.2.3.2 تقديم شهادة تضمن استخدام حوسبة سحابية مطابقة للمعايير العالمية في هذا المجال، مثل:

- ✓ الحفاظ على أمن وسرية المعلومات
- ✓ الفصل في تقديم الخدمة واستخدام خاصية (Virtual Private Cloud)
- ✓ القدرة على توفير الموثوقية والثبات (Reliability and Availability)
- ✓ توفير خطوط اتصالات آمنة وتوفير بدائل لها
- ✓ PCI DSS Certificate
- ✓ Cloud Security Alliance (CSA)
- ✓ ISO/IEC 27000 Standards

5.2.3.3 تأمين خط مؤجر (Leased-Line) بين شركة الوساطة ومكان استضافة نظام إدارة الأوامر (OMS) مع ضرورة أن يكون هذا الخط مشفراً (IPSec tunnel).

5.2.3.4 الالتزام باستخدام الشبكة الداخلية (DMZ) لنظام إدارة الأوامر (OMS) لربط جهاز الخادم وأجهزة الحاسوب المشغلة بنظام إدارة الأوامر.

5.2.3.5 الالتزام بتشغيل شاشات التداول الخاصة بنظام إدارة الأوامر (OMS) من داخل مكتب العضو.

5.2.3.6 توفير جهاز جدار ناري (Firewall) يفصل شبكة العضو عن شبكة الشركة المقدمة لخدمة الحوسبة السحابية المحلية.

5.2.3.7 تزويد البورصة باسم المستخدم وكلمة المرور للجدار الناري (Firewall) للتأكد من سلامة البيئة والتدقيق على الجهاز بأي

وقت تراه البورصة مناسباً.

5.2.3.8 يقوم العضو ببناء مجموعة من القواعد (Rules) تسمح لموظفي البورصة للوصول الى الشبكة الداخلية الخاصة بنظام إدارة الأوامر (OMS).

5.2.3.9 الالتزام بالسماح لموظفي البورصة بالدخول الى جميع أجهزة الشبكة والأجهزة الخادمة التابعة لشركة الوساطة العضو عند الحوسبة السحابية المحلية.

5.2.3.10 يجب على شركة الوساطة الالتزام بالوثائق الفنية التالية:

- ملحق (1)
- ملحق (2)
- ملحق (5)
- ملحق (6)
- ملحق (7)

5.2.3.11 الالتزام بتزويد البورصة بتقارير تخص أي مشاكل تحدث.

6. متطلبات البنية التحتية لتشغيل خدمة التداول عبر الإنترنت

6.1 استضافة خدمة التداول عبر الإنترنت في موقع شركة الوساطة

يجب على شركة الوساطة العضو تجهيز البنية التحتية في موقعها لاستقبال استضافة خدمة التداول عبر الانترنت (physical hosting)، على النحو التالي:

6.1.1 تأمين أجهزة خادمة (Servers) سواء كانت تعمل بشكل منفصل (Physical) أو يعمل باستخدام البيئة الافتراضية (Virtualization).

6.1.2 فصل الشبكة الداخلية الخاصة بجهاز الخادم (DMZ) المشغل لخدمة التداول عبر الإنترنت باستخدام الجدار الناري (Firewall)، حيث يقوم العضو ببناء مجموعة من القواعد (Rules) تسمح لموظفي البورصة للوصول الى الشبكة الداخلية الخاصة لخدمة التداول عبر الإنترنت.

6.1.3 توفير شهادة (SSL) لاستخدامها على جهاز الخادم الخاص بالاستضافة.

6.1.4 توفير جهاز جدار ناري لخدمات الإنترنت (WAF).

6.1.5 الالتزام بالمتطلبات الفنية التي تحددها البورصة فيما يتعلق بتصميم الشبكة (Network Design).

6.1.6 الالتزام بالوثائق الفنية التالية:

- ملحق (1)
- ملحق (2)
- ملحق (3)
- ملحق (4)
- ملحق (5)
- ملحق (6)

6.2 استضافة خدمة التداول عبر الإنترنت خارج موقع شركة الوساطة العضو

6.2.1 شركات الوساطة التابعة لبنك أو فرع بنك مرخص للعمل في الأردن

إذا رغبت شركة الوساطة بالاستفادة من البنية التحتية التابعة للبنك من غرف الأجهزة الخادمة، والأجهزة الخادمة ذاتها الرئيسية بالإضافة إلى أجهزة الشبكات، وذلك لغايات تشغيل خدمة التداول عبر الإنترنت، فعلى العضو الالتزام بما يلي:

6.2.1.1 تقديم تعهد رقم (2)

6.2.1.2 توفير جهاز جدار ناري (Firewall) يفصل شبكة العضو عن شبكة البنك.

6.2.1.3 توفير شهادة (SSL) لاستخدامها على جهاز الخادم الخاص بالاستضافة.

6.2.1.4 توفير جهاز جدار ناري لخدمات الإنترنت (WAF).

6.2.1.5 تزويد البورصة باسم المستخدم وكلمة المرور للجدار الناري (Firewall) للتأكد من سلامة البيئة و التدقيق على الجهاز بأي وقت تراه البورصة مناسباً.

6.2.1.6 يقوم العضو ببناء مجموعة من القواعد (Rules) تسمح لموظفي البورصة للوصول الى الشبكة الداخلية الخاصة بنظام خدمة التداول عبر الانترنت.

6.2.1.7 عزل جميع أجهزة الشبكة والأجهزة الخادمة التابعة للعضو عن أجهزة الشبكة والأجهزة الخادمة التابعة للبنك.

6.2.1.8 الالتزام بالسماح لموظفي البورصة بالدخول الى جميع أجهزة الشبكة والأجهزة الخادمة التابعة لشركة الوساطة عند البنك.

6.2.1.9 الالتزام بالوثائق الفنية التالية:

- ملحق (1)
- ملحق (2)
- ملحق (3)
- ملحق (4)

- ملحق (5)
- ملحق (6)
- ملحق (7)

6.2.2 شركات الوساطة الأردنية العضو التابعة لبنك أو لشركات وساطة إقليمية أو دولية.

إذا رغبت شركة الوساطة المحلية بالاستفادة من البنية التحتية من غرف الأجهزة الخادمة، والأجهزة الخادمة ذاتها الرئيسية بالإضافة إلى أجهزة الشبكات للشركة الأم أو أية شركة تابعة لها لغايات تفعيل خدمة التداول عبر الإنترنت، فيجب على العضو الالتزام بما يلي:

6.2.2.1 تقديم تعهد رقم (3).

6.2.2.1 توفير شهادة (SSL) لاستخدامها على جهاز الخادم الخاص بالاستضافة.

6.2.2.2 توفير جهاز جدار ناري (Firewall) يفصل شبكة العضو عن شبكة الشركة الأم أو أي شركة تابعة لها.

6.2.2.3 تزويد البورصة باسم المستخدم وكلمة المرور للجدار الناري (Firewall) للتأكد من سلامة البيئة والتدقيق على الجهاز بأي وقت تراه البورصة مناسباً.

6.2.2.4 يقوم العضو ببناء مجموعة من القواعد (Rules) تسمح لموظفي البورصة للوصول إلى الشبكة الداخلية الخاصة بنظام خدمة التداول عبر الإنترنت.

6.2.2.5 عزل جميع أجهزة الشبكة والأجهزة الخادمة التابعة للعضو عن أجهزة الشبكة والأجهزة الخادمة التابعة للشركة الأم أو أي شركة تابعة لها.

6.2.2.6 الالتزام بالسماح لموظفي البورصة بالدخول إلى جميع أجهزة الشبكة والأجهزة الخادمة التابعة لشركة الوساطة عند البنك أو الشركة الأم أو أي شركة تابعة لها، على أن تتحمل شركة الوساطة العضو كافة تكاليف السفر لموظفين اثنين للقيام بعملية الكشف كلما دعت الحاجة.

6.2.2.7 توفير جهاز جدار ناري لخدمات الإنترنت (WAF).

6.2.2.8 الالتزام بالوثائق الفنية التالية:

- ملحق (1)
- ملحق (2)
- ملحق (3)
- ملحق (4)

- ملحق (5)

- ملحق (6)

- ملحق (7)

6.2.3 شركات الوساطة المستخدمة لتقنية الحوسبة السحابية (Cloud Computing).

إذا رغبت شركة الوساطة باستخدام تقنية الحوسبة السحابية التي تتضمن استئجار أجهزة خادمة حسب الحاجة لدى شركة مختصة توفر هذه الخدمة، بحيث يتم تنزيل الأنظمة المشغلة للخدمة التداول عبر الإنترنت على هذه الأجهزة، واستخدامها من خلال الإنترنت بدلا من تجهيز بنية تحتية كاملة في مقر شركة الوساطة، فيجب على العضو الإلتزام بما يلي :

6.2.3.1 أن تكون الحوسبة السحابية المستخدمة محلية (Local Cloud).

6.2.3.2 توفير شهادة (SSL) لاستخدامها على جهاز الخادم الخاص بالاستضافة.

6.2.3.3 توفير جهاز جدار ناري (Firewall) يفصل شبكة العضو عن شبكة الشركة المقدمة لخدمة الحوسبة السحابية المحلية.

6.2.3.4 تزويد البورصة باسم المستخدم وكلمة المرور للجدار الناري (Firewall) للتأكد من سلامة البيئة والتدقيق على الجهاز بأي وقت تراه البورصة مناسباً.

6.2.3.5 يقوم العضو ببناء مجموعة من القواعد (Rules) تسمح لموظفي البورصة للوصول الى الشبكة الداخلية الخاصة بنظام خدمة التداول عبر الأنترنت.

6.2.3.6 الإلتزام بالسماح لموظفي البورصة بالدخول الى جميع أجهزة الشبكة والأجهزة الخادمة التابعة لشركة الوساطة العضو عند الحوسبة السحابية المحلية.

6.2.3.7 توفير جهاز جدار ناري لخدمات الإنترنت (WAF).

6.2.3.8 تقديم شهادة تضمن استخدام حوسبة سحابية مطابقة للمعايير العالمية في هذا المجال، مثل:

✓ الحفاظ على أمن وسرية المعلومات

✓ الفصل في تقديم الخدمة واستخدام خاصية (Virtual Private Cloud)

✓ القدرة على توفير الموثوقية والثبات (Reliability and Availability)

✓ توفير خطوط اتصالات آمنة وتوفير بدائل لها

✓ PCI DSS Certificate

✓ Cloud Security Alliance (CSA)

✓ ISO/IEC 27000 Standards

✓ الكشف على الموقع المزود بخدمة (Cloud)

6.2.3.9 الإلتزام بالوثائق الفنية التالية:

• ملحق (1)

الرجوع

- ملحق (2)
- ملحق (3)
- ملحق (4)
- ملحق (5)
- ملحق (6)
- ملحق (7)

7. متطلبات البنية التحتية للموقع البديل (Disaster Recovery)

على شركات الوساطة الأعضاء تأمين موقع بديل (Disaster Recovery) للتعافي من الكوارث والأزمات حسب المواصفات التالية:

- 7.1 تأمين خط مؤجر (Leased-Line) بين الموقع البديل لشركة الوساطة والبورصة وفقاً لمتطلبات البورصة في البنية التحتية للشبكة الداخلية.
- 7.2 تأمين الحد الأدنى من أجهزة الحاسوب ومختلف الأنظمة بما يضمن عمل شركة الوساطة العضو بشكل ملائم.
- 7.3 يلتزم العضو بنقل كافة أنواع المعلومات اللازمة لعمل مختلف أنظمة العضو من الموقع الرئيسي لشركة الوساطة العضو إلى الموقع البديل بشكل يومي.
- 7.4 لا يعمل الموقع البديل لشركة الوساطة العضو إلا في حالة ابلاغ البورصة بحدوث مشكلة في الموقع الرئيسي والحصول على موافقتها.
- 7.5 يقوم العضو بمخاطبة البورصة لتحديد المشكلة في الموقع الرئيسي والزمن اللازم لإصلاح هذه المشكلة.

8. تعليمات عامة

- الالتزام بالسماح لموظفي البورصة المعنيين بالدخول إلى أجهزة ومعدات البنية التحتية الخاصة بشركة الوساطة العضو في أي وقت تراه البورصة مناسباً إما عن بعد (Remotely) من خلال الدخول إلى الواجهات الخاصة بهذه الأجهزة باستخدام (اسم مستخدم / كلمة مرور) مخصصة للبورصة لهذه الغاية، أو عن طريق الزيارات الميدانية لمواقع استضافة هذه المعدات والأجهزة بغض النظر عن موقع تواجدها (Physically).
- تقديم تعهد رقم (4)
- الالتزام باستخدام الموجه (Router) في الغرض المخصص له فقط للربط بالبورصة ولا يستخدم للربط مع أي جهات أخرى أو للربط مع الإنترنت.
- الالتزام بحماية أجهزة الحاسوب المشغلة لأنظمة التداول المختلفة من أية مخاطر واختراقات.
- الالتزام بعدم اتصال أجهزة الحاسوب المشغلة لأنظمة التداول المختلفة بالإنترنت.

- الالتزام بالسماح لموظفي البورصة بالدخول الى جميع أجهزة الشبكة والأجهزة الخادمة التابعة لشركة الوساطة عند البنك أو الشركة الأم أو أي شركة التابعة لها، على أن تتحمل شركة الوساطة العضو كافة تكاليف السفر لموظفين اثنين للقيام بعملية الكشف كلما دعت الحاجة.

9. قائمة المصطلحات (Glossary)

- الضوابط المعلوماتية المتعلقة ببورصة عمان (ASE IT Controls)
- مواصفات الفنية لبوابة تبادل المعلومات (Fix Gateway Specifications)
- معلومات بوابة تبادل المعلومات (Fix Gateway information)
- مواصفات الفنية للبرامج المزودة لمعلومات السوق (MDF Specifications)
- نشط/استعداد (Active/Standby)
- خطوط اتصالات مؤجرة (Leased lines layer 2 P2P)
- خط اتصال مشفروامن (IPSec tunnel).
- لوحة وصلات (Patch-Panel)
- مدخل شبكة (Ethernet)
- بروتوكول يستخدم في إعادة التوجيه الثنائي لخط سير المعلومات (IP-SLA)
- بروتوكول يستخدم في توزيع المعلومات من مصدر واحد الى جميع العناصر التي تستمع لهذا المصدر (Multicast)
- خاصية تشفير خط الإتصال (IPSec tunnel).
- جهاز موزع (Switch)
- جهاز الموجه (Router)
- جدار ناري (Firewall)
- قواعد تسيير المعلومات (Policy Rules)
- الشبكات الخاصة (DMZ)
- الشبكة الداخلية (LAN)
- نظام تشغيل (Supported Windows Operating System)
- نظام إدارة الأوامر (OMS)
- الحوسبة السحابية (Cloud Computing)
- مكان فعلي محمي (Physical Isolation)
- الحوسبة السحابية المحلية (Local Cloud)
- الحوسبة السحابية الوهمية (Virtual Private Cloud)
- موقع بديل (Disaster Recovery)

10. ملحقات ووثائق مرتبطة

- 10.1 ملحق (1) نموذج طلب العضوية
- 10.2 ملحق (2) المتطلبات الفنية لتشغيل واستخدام أنظمة إدارة الأوامر (OMS)
- 10.3 ملحق (3) الضوابط المعلوماتية المتعلقة ببورصة عمان (ASE IT Controls)
- 10.4 ملحق (4) خطة الطوارئ لشركة الوساطة العضو في حال حدوث خلل في خدمة التداول عبر الإنترنت
- 10.5 ملحق (5) المواصفات الفنية لبوابة تبادل المعلومات (Fix Gateway Specifications)
- 10.6 ملحق (6) معلومات بوابة تبادل المعلومات (Fix Gateway information)
- 10.7 ملحق (7) المواصفات الفنية للبرامج المزودة لمعلومات السوق (MDF Specifications)

10.8 ملحق (8) مواصفات أجهزة الحاسوب اللازمة لتشغيل برامج التداول

على جميع الأعضاء الالتزام بتوفير أجهزة حاسوب تمكن وبحد أدنى تنزيل نظام تشغيل ويندوز (Win 7)، حيث تمثل البنود التالية الحد الأدنى من المواصفات الواجب توافرها في هذه الأجهزة:

Processor Specifications	
Processor Speed	Minimum 2.30 GHz
Memory	
RAM Capacity	Minimum 3GB
Storage	
Storage Capacity	Minimum 512 GB
Storage Type	HDD OR SSD
Display Specifications	
Display Size	Minimum 15.6"
Connectivity	
Networking	Integrated 10/100/1000 BASE-T Ethernet LAN
Operation System	
Operating System	Minimum Win 8

- 1 تعهد من شركات مزودي خطوط نقل البيانات (Leased-Lines).
- 2 تعهد صادر عن البنك بالحفاظ على أمن وسرية المعلومات وضمان استمرارية تقديم الخدمة.
- 3 تعهد صادر عن الشركة الأم أو أي شركة تابعة لها بالحفاظ على أمن وسرية المعلومات وضمان استمرارية تقديم الخدمة.
- 4 تعهد رسمي بتطبيق كافة البنود المرفقة في هذه الوثيقة.

جدول أولويات المتطلبات الفنية الأساسية الواجب توفرها في شركات الوساطة

رقم البند	البند	الأولوية			
1.1.4	تأمين جهاز/أجهزة موجهة خاص/خاصة للشبكة الداخلية الموصولة مع بورصة عمان بالمواصفات التالية:				
*	3- مداخل على الأقل من نوع (Ethernet).	1			
*	أن يدعم بروتوكول (SLA) لضمان تشغيل الخطين بوضعية (Active/Standby).	1			
*	أن يدعم تقنية (Multicast).	1			
*	أن يدعم خاصية تشفير خط الاتصال (IPSec tunnel/IKEV1 and IKEV2).	1			
*	يفضل فترة الضمان من الشركة الأم لمدة عام على الأقل على المعدات والبرمجيات.	1			
1.3	تركيب لوحة وصلات (Patch-Panel) منفصلة للشبكة المرتبطة مع البورصة بحيث تكون مرقمة بصورة سليمة وواضحة. لسهولة الوصول اليها.	1			
1.5	الالتزام بتزويد البورصة باسم مستخدم وكلمة المرور الخاصة بجهاز الموجه (Router). وجهاز الموزع (Switch) للتأكد من سلامة البيئة والتدقيق على الأجهزة بأي وقت تراه البورصة مناسبة.	1			
2	على شركات الوساطة الأعضاء تأمين وتركيب جدار ناري (Firewall). حسب المواصفات التالية: - دعم الشبكات الخاصة (DMZ) بما يتوافق مع متطلبات وحاجة شركة الوساطة. بحيث يحتوي على الأقل على 6 شبكات خاصة (DMZ). - أن يدعم (Dual Wan port). - دعم تقنية البث المتعدد (Multicast). - يفضل فترة الضمان من الشركة الأم لمدة عام على الأقل على المعدات والبرمجيات. - يفضل أن يدعم خصائص (Advance filtering, IPS, Anti-Malware).	1			
5.1	تشغيل نظام إدارة الأوامر (OMS) في موقع شركة الوساطة العضو	1			
1.1.1	تأمين خطين مستأجرين (Leased lines layer 2 P2P) بسرعة (2Mbits) كحد أدنى. بحيث يتم تشغيل الخطين بوضعية نشط/استعداد (Active/Standby). كما ويجدر بهذه الخطوط أن تكون مشفرة (IPSec tunnel).	2			
1.1.2	توفير خطوط اتصال موجهة (Leased-Lines) من مزودين مختلفين (وهو الخيار الأفضل). وفي حال رغبتها بالحصول على الخطوط من نفس المزود يجب عليها الالتزام باستخدام خطوط تعمل من مقاسم اتصال مختلفة تابعة لنفس المزود بحيث تضمن اختلاف مسارات الاتصال	2			

جدول أولويات المتطلبات الفنية الأساسية الواجب توفرها في شركات الوساطة

رقم البند	البند	الأولوية
1.4	تأمين جهاز موزع (Switch) خاص للشبكة الداخلية المتصلة مع بورصة عمان (Mbps 10/100/1000) ports: minimum 16 VLAN (Number Supported): minimum 128 Support Multicast Managed Switch	2
3	متطلبات أجهزة الحاسوب (PC's) لتشغيل برامج التداول	2
4	متطلبات غرفة الأجهزة الخادمة (Server Room)	2
6.1	استضافة خدمة التداول عبر الإنترنت في موقع شركة الوساطة	2
5.2.1	تشغيل نظام إدارة الأوامر (OMS) خارج شركة الوساطة	3
	1- شركات الوساطة الأعضاء التابعة لبنك أو فرع بنك مرخص للعمل في الأردن	
5.2.2	تشغيل نظام إدارة الأوامر (OMS) خارج شركة الوساطة	3
	2- شركات الوساطة الأردنية التابعة لبنك أو لشركات وساطة إقليمية أو دولية	
5.2.3	تشغيل نظام إدارة الأوامر (OMS) خارج شركة الوساطة	3
	3- شركات الوساطة المستخدمة لتقنية الحوسبة السحابية (Cloud Computing)	
6.2.1	استضافة خدمة التداول عبر الإنترنت خارج موقع شركة الوساطة العضو	3
	1- شركات الوساطة التابعة لبنك أو فرع بنك مرخص للعمل في الأردن	
6.2.2	استضافة خدمة التداول عبر الإنترنت خارج موقع شركة الوساطة العضو	3
	2- شركات الوساطة الأردنية التابعة لبنك أو لشركات وساطة إقليمية أو دولية	
6.2.3	استضافة خدمة التداول عبر الإنترنت خارج موقع شركة الوساطة العضو	3
	3- شركات الوساطة المستخدمة لتقنية الحوسبة السحابية (Cloud Computing)	
7	متطلبات البنية التحتية للموقع البديل (Disaster Recovery)	3

*** يطبق جدول الأولويات على البنود المطبقة عند شركات الوساطة العاملة حالياً.

الفترة

سنة ونصف

سنتين ونصف

اختياري

رقم الأولوية

1

2

3

الرجوع

تعميم
رقم (136)

السادة أعضاء شركة بورصة عمان المحترمين

تحية طيبة وبعد،

في ضوء الملاحظات التي تقدم بها عدد من أعضاء البورصة حول بعض الأحكام الواردة في نظام العضوية في شركة بورصة عمان لسنة 2018، فإنني أرجو إعلامكم بأن مجلس إدارة البورصة قرر تعديل هذا النظام على نحو يراعى فيه ظروف السوق والأوضاع التي يمر بها الأعضاء.

كما أرجو إعلامكم بأن البورصة واستناداً لأحكام المادة (7/1/4) من نظام العضوية في شركة بورصة عمان لسنة 2018، قامت بإعداد وثيقة تتضمن المتطلبات الإدارية والفنية الواجب توفرها في أعضاء البورصة، وذلك بهدف توجيه شركات الوساطة العاملة حالياً والشركات الراغبة بالانضمام لعضوية البورصة مستقبلاً لممارسة أعمالها بشكل آمن وسليم ودون انقطاع وتوفير الحماية اللازمة للبنية التحتية وفقاً للمواصفات التي تحددها البورصة.

وانطلاقاً من مبدأ الشفافية وتعزيزاً لمبدأ المشاركة والتشاور مع أعضاء البورصة، فإن البورصة تعلن عن طرح مسودة تعديلات نظام العضوية في شركة بورصة عمان لسنة 2018، ومسودة وثيقة المتطلبات الإدارية والفنية عبر الموقع الإلكتروني الخاص بها، وذلك استكمالاً للجهود المبذولة في إعدادهما تمهيداً لإقرارهما حسب الأصول.

راجين التكرم بإبداء الرأي وتزويدنا بالملاحظات والمقترحات على المواضيع المشار إليها أعلاه بموجب كتاب رسمي أو عبر البريد الإلكتروني: feedbacklegal@ase.com.jo، وذلك خلال أسبوعين من تاريخ هذا الإعلان.

وتفضلوا بقبول فائق الاحترام...

مازن نجيب الوظائفي
المدير التنفيذي

الرقم: 673 / 1918

التاريخ: 2020/9/8

الموافق: 20 / محرم / 1442

تعميم

رقم (84)

السادة أعضاء شركة بورصة عمان المحترمين

تحية طيبة وبعد،

لاحقاً لتعميم البورصة رقم (12) تاريخ 2020/1/20 بخصوص تمديد مهلة توفيق الأوضاع لشركات الوساطة الأعضاء المنتهية في تاريخ 2020/8/30.

أرجو إعلامكم بأنه استناداً إلى أحكام المادة (24) من نظام العضوية في شركة بورصة عمان لسنة 2018، فقد قرر مجلس إدارة البورصة تمديد مهلة توفيق الأوضاع لشركات الوساطة الأعضاء حتى تاريخ 2021/2/28. راجياً من جميع أعضاء البورصة تصويب أوضاعهم وفقاً لنظام العضوية المذكور، وذلك تجنباً لفرض أية عقوبات سناً لأحكام تعليمات التحقيق والتدقيق والتفتيش في شركة بورصة عمان لسنة 2018.

وتفضلوا بقبول فائق الاحترام...



مازن نجيب الوظائفي

المدير التنفيذي

ملحق 1



طلب عضوية

دائرة الإدراج

طلب عضوية

بيانات عامة:-

1-	الاسم الكامل للشركة باللغة العربية:	
2-	الاسم الكامل للشركة باللغة الإنجليزية:	
3-	الاسم المختصر للشركة باللغة العربية:	
4-	الاسم المختصر للشركة باللغة الإنجليزية:	
5-	تاريخ تسجيل الشركة لدى وزارة الصناعة والتجارة:	
6-	تاريخ الموافقة على الترخيص من قبل هيئة الأوراق المالية:	
7-	الصفة القانونية للشركة:	
8-	رأس المال المصرح به/دينار:	
9-	رأس المال المكتتب به والمدفوع/دينار:	
10-	صندوق البريد والرمز البريدي:	
11-	البريد الإلكتروني:	
12-	عدد الفروع / المكاتب :	
13-	المدير العام / التنفيذي أو القائم بأعماله:	
14-	رقم هاتف المدير العام / التنفيذي أو القائم بأعماله:	
15-	البريد الإلكتروني للمدير العام / التنفيذي أو القائم بأعماله:	
16-	المدير المالي:	
17-	مدير الوساطة أو القائم بأعماله:	
18-	رقم هاتف مدير الوساطة أو القائم بأعماله:	
19-	البريد الإلكتروني لمدير الوساطة أو القائم بأعماله:	

	بأعماله :	
	ضابط الامتثال:	-20
	رقم هاتف ضابط الامتثال:	-21
	البريد الإلكتروني لضابط الامتثال:	-22
	ضابط الارتباط:	-23
	رقم هاتف ضابط الارتباط:	-24
	البريد الإلكتروني لضابط الارتباط:	-25

التراخيص الممنوحة من قبل هيئة الأوراق المالية:

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

أسماء المفوضين بالتوقيع عن الشركة ونماذج توقيعاتهم:

الاسم	الوظيفة	نموذج التوقيع	
			-1
			-2
			-3
			-4
			-5
			-6
			-7

			-8
			-9
			-10

أسماء الشركاء وحصصهم ونسبة مساهماتهم في رأس مال الشركة أو أسماء المساهمين ب 5% أو أكثر:

الاسم	الحصة	نسبة الملكية	
			-1
			-2
			-3
			-4
			-5
			-6
			-7

أسماء أعضاء مجلس الإدارة أو أعضاء هيئة المديرين وأسماء أشخاص الإدارة التنفيذية العليا ونسبة مساهمة كل منهم حسب واقع الحال:

الاسم	المنصب	نسبة الملكية	
			-1
			-2
			-3
			-4
			-5
			-6

			-7
			-8
			-9
			-10

أسماء الوسطاء الماليين المعتمدين من قبل هيئة الأوراق المالية العاملين في الشركة (وسيطان على الأقل):

الاسم	الفرع	تاريخ منح الاعتماد	
			-1
			-2
			-3
			-4
			-5
			-6
			-7
			-8
			-9
			-10
			-11
			-12
			-13
			-14
			-15
			-16
			-17

أسماء الموظفين:

الوظيفة	الاسم	
		-1
		-2
		-3
		-4
		-5
		-6
		-7
		-8
		-9
		-10
		-11
		-12
		-13
		-14
		-15
		-16
		-17
		-18
		-19

معلومات المركز الرئيسي والفروع:-

المركز الرئيسي:

			العنوان:
	عدد الوسطاء:		مدير المكتب:
	عدد شاشات التداول:		رقم الهاتف:
	عدد شاشات الرقابة:		رقم الفاكس:

فرع 1:

			العنوان:
	عدد الوسطاء:		مدير الفرع:
	عدد شاشات التداول:		رقم الهاتف:
	عدد شاشات الرقابة:		رقم الفاكس:

فرع 2:

			العنوان:
	عدد الوسطاء:		مدير الفرع:
	عدد شاشات التداول:		رقم الهاتف:
	عدد شاشات الرقابة:		رقم الفاكس:

فرع 3:

			العنوان:
	عدد الوسطاء:		مدير الفرع:
	عدد شاشات التداول:		رقم الهاتف:
	عدد شاشات الرقابة:		رقم الفاكس:

المرفقات المطلوبة:

1. شهادة تسجيل الشركة وحق الشروع في العمل .
2. عقد تأسيس الشركة ونظامها الأساسي .
3. نسخة من الترخيص الممنوح للشركة من قبل الهيئة لممارسة العمل كوسيط .
4. المصدرون الذين تملك الشركة أو أي من أعضاء مجلس إدارتها أو أي من أعضاء هيئة مديريها أو مديرها أو معتمديها (5%) أو أكثر من الأوراق المالية الصادرة عنهم.
5. اسم وعنوان مدقق حسابات الشركة.
6. آخر تقرير مالي سنوي مدقق من قبل مدقق حسابات الشركة إن وجد.
7. اجراءات العمل الخطية المتعلقة بكافة أعمال الوسيط.

إقرار وتعهد:-

- تقرر الشركة على مسؤوليتها الكاملة وتحت طائلة المسؤولية بأن جميع المعلومات والبيانات ضمن هذا الطلب والمرفقة معه صحيحة وأنه للبورصة الحق في اتخاذ كافة الإجراءات اللازمة وفق التشريعات المعمول بها في حال تبين خلاف ذلك.
- تقرر الشركة بموافقتها على قيام البورصة بتزويد المعلومات الخاصة بالشركة لأي جهة رسمية مختصة.
- تتعهد الشركة بالالتزام بأحكام قانون الأوراق المالية والأنظمة والتعليمات والقرارات الصادرة بمقتضاها.
- تتعهد الشركة بإعلام البورصة بأي تغيير يطرأ على المعلومات الواردة فور حدوثها.

اسم المفوض بالتوقيع:

المنصب:

التوقيع وختم الشركة:

التاريخ:

ملاحظات:

- * يراعى عند تقديم الطلب أن تحقق الشركة الشروط الواردة في المادة (4) من نظام العضوية.
- * يرفق كتاب من الشركة لطلب العضوية في البورصة.
- * يتم تسليم النموذج لدائرة الإدراج في بورصة عمان يرفق مع النموذج أسماء كافة الدوائر والأقسام في الشركة وموظفيها.
- * يتكون هذا الطلب من (9) صفحة .

ملحق 2



المتطلبات الفنية لتشغيل واستخدام أنظمة إدارة الأوامر

التاريخ
17-03-2019

نسخة الإصدار
1.1

بورصة عمان

عدد الصفحات

7

مقدمة

تتضمن هذه الوثيقة المتطلبات الفنية التي يجب توفرها في أنظمة إدارة الأوامر لاعتمادها من قبل بورصة عمان والموافقة على تشغيلها واستخدامها لدى شركات الوساطة.

تستهدف الوثيقة

شركات الوساطة الأعضاء في بورصة عمان والشركات المزودة لأنظمة إدارة الأوامر.

التعديلات

النسخة	وصف التعديل
1.1	<p>تعديل المتطلبات الفنية المتعلقة ببوابة تبادل المعلومات (CAP-FIX)</p> <p>Tag 109 -6</p> <p>إضافة المتطلبات الفنية المتعلقة بنظام بث المعلومات الفورية للتداول (Live Data Feed)</p> <p>إضافة المتطلبات الفنية المتعلقة بتزامن التوقيت بين نظام إدارة الأوامر (Order Management OMS System) ونظام التداول الإلكتروني.</p> <p>إضافة المتطلبات الفنية المتعلقة بالاتصال ببوابة تبادل المعلومات (CAP-FIX)</p> <p>إضافة المتطلبات الفنية المتعلقة بنسخة نظام إدارة الأوامر (Order Management OMS System)</p>

وثائق مرتبطة

يرجى قراءة هذه الوثيقة مع الوثائق التالية:

- 1- أسس تقديم المعلومات الفورية لأعضاء بورصة عمان.
- 2- المتطلبات الوظيفية لأنظمة إدارة الأوامر.
- 3- التعاميم الصادرة عن بورصة عمان لتنظيم خدمة أنظمة إدارة الأوامر.

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1. المتطلبات الفنية المتعلقة بنظام إدارة الأوامر (Order Management System)

1- عدم إمكانية الدخول إلى نظام إدارة الأوامر إلا بموجب معلومات دخول تتضمن اسم المستخدم وكلمة المرور، وألا يُسمح باستخدام المعلومات نفسها للدخول إلى النظام من أكثر من جهاز بنفس الوقت.

2- توفير سجل تاريخي (Historical Log) لحركات مستخدمي نظام إدارة الأوامر يتضمن المعلومات التالية على الأقل:

- اسم المستخدم
- نوع المستخدم (مشرف، مُتداول، مراقب، عميل....)
- صلاحيات المستخدم
- تاريخ ووقت الدخول
- تاريخ ووقت الخروج
- حركات المستخدم
- عنوان الاتصال (IP Address) للأجهزة المرتبطة بخادم إدارة نظام المعلومات (OMS).

3- توفير تقارير حول المعلومات المذكورة أعلاه.

4- توفير اسم مستخدم وكلمة مرور لصالح بورصة عمان على نظام إدارة الأوامر (OMS) لتمكين البورصة من إجراء عمليات التدقيق على الخدمة، وبما يمكنها الوصول إلى المعلومات المذكورة أعلاه.

5- توفير اسم مستخدم وكلمة مرور لصالح بورصة عمان على الخادم الخاص (Server) بنظام إدارة الأوامر (OMS)، وبما يمكنها الوصول إلى المعلومات المذكورة أعلاه عن بعد (Remotely) وفي أي وقت.

6- الالتزام بتعبئة الحقل (Tag 109) في البرتوكول (CAP-FIX) بالقيم المبينة أدناه، وذلك للتمييز بين مصدر أوامر الشراء والبيع المدخلة وعلى النحو التالي:

Field	Tag	Message
ClientID	109	New Order Single (D)

Order Origin	Tag 109- No. of Digits	Tag 109 Value
Broker OMS Station	3	OMS station serial number; 001, 002, ...etc.
Online Trading (Web or Desktop app)	3	999
Client/ Online Trading (Mobile App)	3	990

2. المتطلبات الفنية المتعلقة بالاتصال ببوابة تبادل المعلومات (CAP-FIX)

- 1- توفر البورصة خادم رئيسي وخادم احتياطي للاتصال ببوابة تبادل المعلومات (CAP-FIX).
- 2- يتصل الوسيط ببوابة تبادل المعلومات (CAP-FIX) من خلال الاتصال بالخادم الرئيسي، وذلك لإدخال الأوامر باستخدام بروتوكول (FIX4.2).
- 3- يُحول نظام إدارة الأوامر (OMS) الاتصال تلقائياً من الخادم الرئيسي إلى الخادم الاحتياطي في حالة فشل أو انقطاع الاتصال بالخادم الرئيسي.
- 4- يضمن نظام إدارة الأوامر (OMS) لدى الوسيط عند الاتصال بالخادم الاحتياطي معالجة معلومات التداول اعتباراً من آخر رسالة مستلمة من خلال الاتصال القديم وبما يمنع أية أخطاء في معلومات التداول المعروضة أو المرسل.

3. المتطلبات الفنية المتعلقة بتزامن التوقيت بين نظام إدارة الأوامر (Order

Management OMS System) و نظام التداول الإلكتروني

- 1- توفر البورصة خادم تزامن (NTP server) لغايات تزامن التوقيت بين نظام إدارة الأوامر (OMS) ونظام التداول الإلكتروني.
- 2- يتصل نظام إدارة الأوامر (OMS) لدى الوسيط بخادم التزامن (NTP server) لتحديث الوقت والتأكد من تزامنه مع نظام التداول الإلكتروني.

3- يضمن نظام إدارة الأوامر (OMS) إدخال الأوامر بالوقت الصحيح والمتزامن مع نظام التداول لدى البورصة .

4. المتطلبات الفنية المتعلقة بنظام بث المعلومات الفورية للتداول (Live Data Feed)

1- اتصال نظام إدارة الأوامر بخادمين رئيسيين لبث المعلومات (Data Feed Servers)، وذلك للحصول على معلومات التداول الحية والمباشرة بشكل متزامن (Active-Active) من خلال الخادمين، سواءً حصل الوسيط على المعلومات من خلال البورصة أو من خلال شركة توزيع بيانات معتمدة من قبل البورصة.

2- اتصال نظام الأوامر بجهاز خادم ثالث احتياطي للحصول على معلومات التداول من البورصة.

3- التزام النظام باستلام معلومات التداول بشكل متزامن من خلال الخادمين الرئيسيين، وبما يضمن استمرار تحديث معلومات التداول على نظام إدارة الأوامر في حال فشل أو انقطاع الاتصال بأي من الخادمين أو في حال انقطاع أو تأخر المعلومات لأي سبب كان، مع ضرورة بحيث تحويل الاتصال تلقائياً إلى الخادم الاحتياطي الثالث في حالة فشل أو انقطاع الاتصال بالخادمين الرئيسيين.

4- الاتصال بنظام إدارة الأوامر لأول مرة بالخادم الاحتياطي لنظام بث المعلومات أو بأحد الخادمين الرئيسيين يتضمن إعادة إرسال جميع معلومات التداول، الأمر الذي يتطلب من نظام إدارة الأوامر معالجة تحديث معلومات التداول اعتباراً من آخر رسالة مستلمة من خلال الاتصال القديم وبما يمنع تكرار معلومات التداول المعروضة.

5. المتطلبات الفنية المتعلقة بنسخة نظام إدارة الأوامر (Order Management OMS System)

1. يلتزم مطورو أنظمة إدارة الأوامر بتطبيق نظام إصدار لنسخ البرامج التي يتم تطويرها.

2. يلتزم مطورو الأنظمة بتزويد البورصة برقم الإصدار لنظام إدارة الاوامر (OMS) للنسخة المراد اختبارها أو المطبقة حالياً لدى شركات الوساطة.
3. يلتزم مطورو الأنظمة بعدم تعديل أنظمة إدارة المعلومات لدى شركات الوساطة بعد إصدار شهادة اعتماد البرنامج أو الانتهاء من اختبارها ، الا بعد موافقة البورصة على التعديلات واختبارها.
4. يقوم مزودي البيانات بتزويد البورصة بكود ملفات تشغيل النظام (Hash Code MD5) بهدف مقارنة نسخة النظام المطبقة عند الوسيط بالبرنامج الذي تم اختبارها والموافقة على تطبيقه.

ملحق 3

Amman Stock Exchange Internet Trading - IT Controls

Control	Control Existence	Management Approval	Periodic Review	Comp.?	Comments
Information Security Policy The company should develop an information security policy that should cover the following:					
• Data management and classification					
• Physical and environment security					
• Internet and intranet security					
• Email security					
• Communication and operations management					
• Logical access controls					
• Acquisition, development and maintenance of information systems					
• Periodic review of information security policy					
Confidentiality Requirements All employees shall sign a confidentiality agreement with their respective companies					
• Confidentiality agreement					
• Annual review of the agreements by the company's management					
• More strict provisions in the agreement for employees serving in critical positions					
System Vendors Vendors access to companies' information system shall be provided based on a formal contract					
• Signing system vendors agreements					
• Agreements shall contain confidentiality and non-disclosure clauses					
• Term of service					

Physical and Environmental Security Physical access to information processing areas and their supporting infrastructure should be controlled					
<ul style="list-style-type: none"> Secure Data Center (servers and communication equipment) 					
<ul style="list-style-type: none"> Limited access 					
<ul style="list-style-type: none"> Authorized access 					
<ul style="list-style-type: none"> Access logged 					
<ul style="list-style-type: none"> Firefighting equipment 					
<ul style="list-style-type: none"> UPS and generators if possible 					
<ul style="list-style-type: none"> Maintenance agreements for Data Center equipments 					
<ul style="list-style-type: none"> Labeling all equipment and cables 					
Operational Procedures and Responsibilities Companies should develop an operational procedures manual that documents all its critical processes and all changes to information systems environment shall be documented					
<ul style="list-style-type: none"> Operational procedures manual includes: <ul style="list-style-type: none"> ✓ Applications ✓ Hardware specifications ✓ Operating systems ✓ Database configuration ✓ Network configuration 					
<ul style="list-style-type: none"> Document, review, authorize, and test changes in operational manual 					

Password Management (for customers and employees) All information systems shall require identification and authentication through passwords.					
<ul style="list-style-type: none"> • Passwords authorization, creation, communication procedures 					
<ul style="list-style-type: none"> • All systems must be password protected 					
<ul style="list-style-type: none"> • Minimum passwords length six characters 					
<ul style="list-style-type: none"> • Passwords should be alphanumeric 					
<ul style="list-style-type: none"> • Stored passwords in Databases should be encrypted 					
<ul style="list-style-type: none"> • Default passwords should be changed 					
<ul style="list-style-type: none"> • Unused accounts should be removed 					
<ul style="list-style-type: none"> • User accounts lock after three failure attempts to login 					
<ul style="list-style-type: none"> • Users' credentials reset procedure after lock 					
<ul style="list-style-type: none"> • Session inactivity handling procedure 					
Monitoring Significant event details in information systems shall be logged and reviewed					
<ul style="list-style-type: none"> • Logging significant events for: <ul style="list-style-type: none"> ✓ Application ✓ Database ✓ OS ✓ Hardware 					
<ul style="list-style-type: none"> • Review logs periodically 					

Information Backup and Media Handling All applications, databases, user configuration, and hardware configuration shall be back upped in accordance with backup and restoration procedures. Media shall be controlled and physically protected					
<ul style="list-style-type: none"> Backup should include databases, applications, operating systems, hardware configuration: <ul style="list-style-type: none"> ✓ Backup schedules and procedures ✓ Backup restore procedures ✓ OS mirroring 					
<ul style="list-style-type: none"> Labeling backup media 					
<ul style="list-style-type: none"> Backup media should be stored in safe and secure environment 					
<ul style="list-style-type: none"> Backup copies with documented restoration procedure should be stored in remote locations 					
Network Access Control and Configuration Management The following policies shall be complied with during configuration of the companies' firewalls					
<ul style="list-style-type: none"> Internal network must be segregated from the ASE network using firewalls and ACLs. Back office must be located in the DMZ 					
<ul style="list-style-type: none"> Firewall should be placed between DMZ and internal networks 					
<ul style="list-style-type: none"> All protocols ports and services allowed should be documented 					
<ul style="list-style-type: none"> Disable unnecessary and insecure services and protocols 					
<ul style="list-style-type: none"> Review firewall logs periodically 					
<ul style="list-style-type: none"> Installation of the latest security patches 					

World Wide Web Companies WWW resources shall be secured					
<ul style="list-style-type: none"> Secure online trading application servers under firewalls' DMZ 					
<ul style="list-style-type: none"> Applications and Databases vulnerabilities assessment (by the ASE) 					
Protection against Viruses					
<ul style="list-style-type: none"> Installing Antivirus applications that is constantly updated with the latest virus definitions released 					
Securing Customer Transactions Companies should implement adequate cryptographic techniques to secure transactions transit					
<ul style="list-style-type: none"> Strong encryption protocols for transmissions of transactions 					
Contingency Plans The company should develop a contingency plan pertaining to the Internet trading process					
<ul style="list-style-type: none"> Contingency Plan for Internet trading service 					

ملحق 4

خطة طوارئ لشركة الوساطة في حال حدوث خلل في خدمة التداول عبر الإنترنت

تتضمن هذه الخطة الإجراءات التي تقوم بها شركة الوساطة في حال حدوث خلل في تقديم خدمة التداول عبر الإنترنت، وذلك لضمان جودة الخدمة المقدمة من قبل الشركة:-

1- في حال تعطل أي مما يلي:

أ- خدمة الإنترنت، سواء كان الانقطاع في الاتصال بين العميل وشبكة الإنترنت أو كان انقطاع في الاتصال بين شركة الوساطة وشبكة الإنترنت، أو حدوث بطء شديد في خدمة الإنترنت مما يحول دون القدرة على إدخال الأوامر من قبل العميل ومتابعتها ومتابعة أسعار الأسهم.

ب- نظام (Web Server) الخاص بشركة الوساطة.

يقوم العميل بالاتصال بشركة الوساطة عن طريق الهاتف أو الفاكس أو البريد الإلكتروني لتعديل أو حذف أوامره المدخلة أو إدخال أوامر جديدة إلى نظام التداول، حيث يقوم الوسيط بمتابعة أوامر العميل المدخلة وتعديلها أو حذفها أو إدخال أمر جديدة من خلال نظام (OMS).

2- في حال تعطل نظام (OMS) والذي يحول دون قدرة العملاء من متابعة أوامره المدخلة أو إدخال أوامر جديدة عبر الإنترنت، كما و يحول دون قدرة الوسيط من متابعة أوامر العملاء المدخلة أو إدخال أوامر جديدة من خلال نظام (OMS).

يقوم العميل بالاتصال بشركة الوساطة عن طريق الهاتف أو الفاكس أو البريد الإلكتروني لتعديل أو حذف أوامره المدخلة أو إدخال أوامر جديدة إلى نظام التداول، حيث يقوم الوسيط بمتابعة أوامر العميل المدخلة وتعديلها أو حذفها أو إدخال أوامر جديدة من خلال شاشات نظام التداول الإلكتروني (Trading Station) الموفرة من قبل البورصة بعد التحقق من الرصيد النقدي والرصيد من الأوراق المالية للعميل.

3- في حال تعطل خط الـ (Leased Line) الرئيسي الرابط بين شركة الوساطة وبورصة عمان يتم التحويل بشكل مباشر إلى الخط البديل (Back up Leased Line).

4- في حال عدم تمكن شركة الوساطة من استلام بث المعلومات (Market Data Feed) من بورصة عمان لأي سبب من الأسباب، توقف الشركة خدمة التداول عبر الإنترنت الخاصة بعملائها، كما توقف الشركة تعديل أو إدخال الأوامر من خلال نظام (OMS) وذلك لتجنب إدخال الأوامر بأسعار غير صحيحة. كما يقوم العميل بالاتصال بشركة الوساطة عن طريق الهاتف أو الفاكس أو البريد الإلكتروني لتعديل أو حذف أوامره المدخلة أو إدخال أوامر جديدة إلى نظام التداول، حيث يقوم الوسيط بمتابعة أوامر العميل المدخلة وتعديلها أو حذفها أو إدخال أوامر جديدة من خلال شاشات نظام التداول الإلكتروني (Trading Station) الموفرة من قبل البورصة بعد التحقق من الرصيد النقدي والرصيد من الأوراق المالية للعميل.

- التأكيد على ضرورة إضافة رقم هاتف الخط الساخن، وعنوان الموقع الإلكتروني للشركة.

ملحق 5

Document title**SPECIFICATION TO ACCESS CAP-FIX****Document type or subject****Amman Stock Exchange****Revision number/ Version number****V4****Date****11 Oct 2018****Number of pages****58****Author****Euronext**

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PREFACE

PURPOSE

This document must be used by entities developing the client application required to connect to Amman Stock Exchange and send orders in FIX format.

It contains the description of the FIX Session and Applications messages, and error codes.

TARGET AUDIENCE

This document should be read by the Exchange IT people responsible of the implementation of the CAP-FIX and entities developing client application allowing members to send orders in FIX format to ASE.

WHAT'S NEW?

The following lists only the most recent modification made to this revision/version. For the Document History table, see the Appendix.

REVISION NO./ VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
4.0	11 October 2018	Euronext	Adding Cross orders and Repeating section in - New Order 'D' message Modification of Tag requirements for : - New Order 'D' message - Order Cancel/Replace 'G' message Tag 22 and Tag 59 are required, while Tag 44 becomes conditional
3.1	4 Sep 2018	Euronext	Modification on Tag 59 TimeInForce in - New Order 'D' message - Order Cancel/Replace 'G' message - Execution Report '8' message
3.0	16 Nov 2017	Euronext	Adding NSC Error Codes
2.0	13 Nov 2017	Euronext	Adding Tag 9947 TraderID in - New Order 'D' message - Order Cancel/Replace 'G' message Adding constraint on Tag 9596 OrderConfirmation
1.0	1 Mar 2017	Euronext	Initial Version

ASSOCIATED DOCUMENTS

The following lists the associated documents, which either should be read in conjunction with this document or which provide other relevant information for the user:

- fix-42-with_errata_20010501.doc

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1. INTRODUCTION

1.1 ARCHITECTURE OVERVIEW

The CAP (Certified Access Point) designates both the hardware (PC) and the software. It is installed at the Exchange.

The CAP is the gateway used by members to send and receive Order Entry type messages to the NSC.

The FIX feature allows the members to send and receive Order Entry messages in FIX format rather than in the native format.

The CAP (CAP-FIX) performs every checks and controls related to the expected FIX syntax, and manages also the FIX session.

1.2 FOREWORD

The FIX protocol version used by CAP-FIX is 4.2.

FIX fields description is based on the FIX 4.2 referential file “fix-42-with_errata_20010501.doc” (also known as F42RF) managed by Fix Protocol organization.

FIX users are strongly advised to read this document since:

- FIX advanced knowledge is required to use the CAP-FIX documents
- Cross-references are often made to the F42RF document in order to keep this document clear
- Words “as per FIX specifications” are used without further details when strict FIX protocol is used

This file may be downloaded from the FIX official web site: <http://www.fixprotocol.org>.

The reading and understanding of the F42RF document is a prerequisite for any use of the CAP-FIX document.

Likewise, this document does not include the functional specifications of the different trading engines.

The knowledge of the Exchange trading principles is required. Please refer to the Exchange documentation for further information concerning the market features, fields’ significance, etc.

1.3 PREREQUISITES

Advanced knowledge of FIX 4.2 protocol and of Exchange trading principles are required. These information are not included in the CAP-FIX related documents.

1.4 CONNECTION PARAMETERS

In order to connect to the CAP-FIX it is required to have the following information:

- IP address and port number of the CAP-FIX
- FIX Protocol version: FIX 4.2

- SenderCompID: ID of the application sending the message
- TargetCompID: ID of the application receiving the message
- Hub Subscriber ID and Password

These information must be requested to Amman Stock Exchange

Note: Message sequence number (<34 – MsgSeqNum>) are initialized at the start of day. It is essential to manage correctly this number to avoid missing messages.

1.5 CONVENTIONS USED IN THIS DOCUMENT

In CAP-FIX related documents, FIX messages are often tackled by the following subsets:

- Order Entry (in-way) messages: order related messages sent by the member application to a trading engine, via the CAP-FIX
- Order Entry (out-way) messages: order related messages sent by a trading engine to the member application, via the CAP-FIX
- Administrative messages: FIX session related messages sent/received by the member application to/from the CAP-FIX

2. MESSAGE CONTEXT

2.1 MESSAGE SUMMARY

The following tables show Incoming and outgoing messages.

The CAP will send a Reject (3) for any messages that are not defined in the specification.

Session Messages	
Incoming Message	Outgoing Message
Logon (A)	Logon (A) or For Binary : Logon Reject (L)
Heartbeat (0)	None
Test Request (1)	Heartbeat (0)
Resend Request (2)	Messages resent
Sequence Reset (4)	None
Logout (5)	Logout (5)
Message not recognised	Reject (3)

Application Messages	
Incoming Message	Outgoing Message
New Order Single (D)	Execution Report (8)
Order Cancel Request (F)	Execution Report (8) or Order Cancel Reject (9)
Order Cancel/Replace Request (G)	Execution Report (8) or Order Cancel Reject (9)
	Trading Session Status (h)

3. MESSAGE DESCRIPTION

This chapter describes the messages and fields used by the Exchange. Repeating groups are represented in light blue colour. Header and footer are trailer are shown in light green. For the FIX protocol the first field in a repeating group is mandatory and must be populated for each repeating group as it used as a group delimiter when parsing for repeating groups.

3.1 EXCEPTIONS TO THE FIX STANDARD:

The following table gives exceptions to the FIX standard in the message definition tables in this chapter:

Message Definition Column	Exceptions to the FIX 5.0 SP2 Standard	Example
Field	Some FIX standard fields required by the Exchange have been associated with messages in which they are not currently present. These exceptions are denoted by an asterisk after the field name.	fieldname*
Req'd	Mandatory fields have been determined from a combination of the FIX standard and Exchange requirements. Fields that have been defined as mandatory are denoted by a tick. Fields that are required by the Exchange but not required by the FIX standard are shown followed by an asterisk.	✓*

The Req'd column indicates if the field is required, conditionally required or optional:

Required Column	Explanation
✓	Field is required (inbound)/always provided (outbound)
+	Field is conditionally required (inbound)/provided (outbound)
o	Field is optional

Table below provides the mapping for the types specified in the "Type" column of message tables.

Format	Length	FIX Type
Char	1	Char
String	N>1	String
Bool	1	Boolean
Int	N	Int
Qty	N	Qty
Price	N	Price (maximum value 999,999.999)
Float	N	Float
SeqNum	17	SeqNum
UTCTimestamp	17	UTCTimestamp, format YYYYMMDD-HH:MM:SS
LocalMktDate	8	UTCDate, format YYYYMMDD

3.2 HEADER AND TRAILER

3.2.1 Header

All messages will have the following standard header.

The header identifies the message type, length, destination, sequence number, origination point and time.

Reminder: IN-WAY represents FIX messages sent by the member application to the CAP-FIX.

OUT-WAY represents FIX messages sent by the CAP FIX to the member application.

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | O optional

Tag	Field	Format	Len	Req.	Description	Values
8	BeginString	String	8	✓	Message sequence no. of first message	Always "FIX.4.2". (Must be first field in message)
9	BodyLength	Length	6	✓	Message length. (This is the length of the entire message including header and trailer).	Must be second field in message
35	MsgType	String	2	✓	MsgType	Must be third field in message
49	SenderCompID	String	5	✓	CompID of application sending the message	Assigned by the exchange. IN-WAY <ul style="list-style-type: none"> Application messages Must contain the MemberID code on behalf the message is sent Administrative messages Must contain the ISV identification. OUT-WAY <ul style="list-style-type: none"> Application messages Always contains the sending Application ID(1) Administrative messages Always contains the CAP-FIX ID(1)
56	TargetCompID	String	5	✓	CompID of application receiving the message	Assigned by the exchange IN-WAY <ul style="list-style-type: none"> Application messages Always contains the target Application ID(1) Administrative messages Always contains the target CAP-FIX ID(1) OUT-WAY <ul style="list-style-type: none"> Application messages <ul style="list-style-type: none"> Solicited message: Equal to the SenderCompID in the corresponding application message sent by client Unsolicited message: Blank. Administrative messages Equal to the SenderCompID in the Logon message received from client.

Tag	Field	Format	Len	Req.	Description	Values
34	MsgSeqNum	SeqNum	10	✓	Message sequence number	Negative values are invalid
50	SenderSubID			o		Required in Logon message. Administration messages – Orders Must contain the HUB Subscriber ID assigned by the Exchange – Used for authentication. Must be unique for each simultaneous session.
57	TargetSubID			o		
43	PossDupFlag	Boolean	1	o	Possible retransmission of message with this sequence number	'Y' = Possible duplicate 'N' = Original transmission
52	SendingTime	UTCTimestamp	21	✓	Time of message transmission	YYYYMMDD-HH:MM:SS

3.2.2 Trailer

All messages will have the following standard footer.

The trailer is used to segregate messages and contains the three digit character representation of the Checksum value.

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional

Tag	Field	Format	Len	Req.	Description	Values
10	Checksum	String	3	✓	Authentication checksum	

3.3 SESSION MESSAGES

Session Messages are responsible for providing reliable, ordered transport of application messages. Session messages are used to manage sessions and with the exception of the logon/out messages, they are not passed to the Matching Engine (NSC v900).

3.3.1 Logon (A)

The Logon message authenticates the user establishing a connection to the CAP FIX. The Logon message must be the first message sent by the application requesting to initiate a FIX Session.

The authentication is based on the following fields :

- SenderSubID (50 – Header) : HUB Subscriber ID – Assigned by the exchange
- RawDataLength (95) and RawData (96) : HUB password – Assigned by the exchange

In case of invalid logon, the member application receives a logout message with a text field explaining the cause of the rejection.

Sequence Reset (ResetSeqNumFlag set to 'Y') is always initiated by the CAP FIX. If the client application initiates the Sequence Reset, the CAP will respond with a Logout message (35=5).

3.3.1.1 FIX Message Fields - Logon

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		A - Logon
108	HeartBtInt	Int	3	✓	Heartbeat interval (seconds)	Format: SSS
98	EncryptMethod	Int	1	✓	Method of encryption	Always set to 0 = None
95	RawDataLength			○		Required for IN-WAY messages
96	RawData			○		Required for IN-WAY messages Must contain the HUB Subscriber Password.
141	ResetSeqNumFlag			○		
	Message Trailer			✓		

3.3.1.2 Message Usage

The client uses the Logon message to establish a connection. The logon message must be the first message sent after establishing a TCP connection on the port agreed upon with the Exchange. The client application must wait for a Logon response from the Matching Engine before sending other messages and beginning gap fill operations. If another message is sent before the logon is completed then the Exchange will respond with a Reject (3) message with the Session RejectReason set to 'Logon problem'.

The client application must specify a heartbeat interval in the Logon message which the Matching Engine will use to determine if the connection is active.

If the client application disconnects during the trading day and reconnects again, the Logon that will be received in reply may have a sequence number greater than expected. It is critical that the client application detects this condition and issues a Resend Request to retrieve any missed Executions.

3.3.1.3 Back-Up facility for the CAP-FIX

The CAP_FIX provides two types of channel:

- Order entry/confirmation channel, called SLE channel

The backup facility is based on the unique message identifier, called MessageID.

- For order entries (SLE-IN), the MessageID is set by the CAP FIX, derived from the incoming FIX sequence number
- For order confirmation (SLE-OUT), the MessageID is set by the HUB

In all the application messages sent by CAP FIX to SLE, the MsgID is set in the tag 9262.

To use this backup facility and get messages from a specific MsgID, the client must specify the MsgID in the Logon message as follows:

The tag 9262 must be set inside the tag 96 using the following format.

96=<HubPassword>;9262:<MsgID>;<SOH>

Tag 9262 MsgID is a unique message identification ID delivered by the HUB. It is set in a string of 19 characters in the following format:

HUB session ID (9) + HUB message number (10).

3.3.1.4 Response

Logon (A) or Logout (5)

If the logon is successful then the CAP will return the logon message back to the client confirming their logon.

If the logon is unsuccessful, then the CAP will respond with a Logout (5).

3.3.2 Heartbeat (0)

The Heartbeat monitors the status of the communication link during inactivity periods.

CAP-FIX accepts and generates Heartbeat as per FIX specifications.

3.3.2.1 FIX Message Fields - Heartbeat

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | O optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		0 - Heartbeat
112	TestReqID	String		+	Test Request ID	Required when the heartbeat is the result of a TestRequest message.
	Message Trailer			✓		

3.3.2.2 Message Usage

The Heartbeat message is used to respond to the:

Heartbeat interval set by the Client in the Logon message and Test Request messages.

It lets the other side know that connection is still good during periods of inactivity.

The Matching Engine will also use the heartbeat interval specified by the client in the Logon message to determine if the client is alive and the networks connecting the Client to the CAP-FIX are functioning. A heartbeat interval of 30 seconds is recommended. A value too small will waste bandwidth and a value too large will defeat the purpose of the heartbeat.

3.3.3 Test Request (1)

The Test Request message forces a heartbeat from the opposing application.

CAP FIX accepts and generates Test Request as per FIX specifications.

3.3.3.1 FIX Message Fields – Test Request

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		1 - Test Request
112	TestReqID	String		✓	Test Request ID	Conditionally required in Hearbeat Message if the heartbeat message is in response to TestRequest
	Message Trailer			✓		

3.3.3.2 Message Usage

The Test Request can be sent by either the Client or the CAP-FIX. It is used during times of inactivity (when no messages have been exchanged) to ask whether the other party is still connected.

The Test Request message is sent by either side of the connection to request the other side to respond with a Heartbeat message. If the other party does not respond to a Test request message, the application should assume an abnormal situation and terminate the TCP/IP connection.

3.3.3.3 Response

Heartbeat (0)

3.3.4 Resend Request (2)

The Resend Request message is sent by the receiving application to initiate the retransmission of messages. This function is used when a sequence number gap is detected, if the receiving application lost a message, or as a function of the initialization process.

The resend request can be used to request a single message, a range of messages or all messages subsequent to a particular message.

CAP FIX accepts and generates Resend Request as per FIX specifications.

3.3.4.1 FIX Message Fields – Resend Request

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | O optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		2 - Resend Request
7	BeginSeqNo	SeqNum	10	✓	Message sequence no. of first message	
16	EndSeqNo	SeqNum	10	✓	Message sequence no. of last message (EndSeqNo = "0" represents infinity)	
	Message Trailer			✓		

3.3.4.2 Message Usage

The Resend Request may be sent by either the client application or the CAP-FIX to request the retransmission of messages. If the client application receives a Resend Request with a sequence gap, it is critical that the client application resends the appropriate messages first before sending their own Resend Request.

The FIX standard defines two methods to recover from gaps in messages. The first method is where the client application receives messages 1-10, then 15. The client application responds by requesting messages 11-14 before processing 15.

The Exchange recommends the second method where the client application discards message 15, and request messages 11-9999999999999999. NSC will resend all messages with sequence numbers greater than or equal to 11.

Note that this circumstance refers to the general case; the FIX standard outlines more specific recovery behaviour for certain out of sequence Administrative messages.

3.3.4.3 Response

Messages resent

3.3.5 Reject (3)

The Reject message is issued when a message is received but cannot be properly processed due to a session-level rule violation.

The CAP-FIX generates Reject message as per FIX specifications.

However, the CAP-FIX does not accept Reject message. When a member application sends a Reject message, the CAP-FIX responds with a Logout message (35=5).

3.3.5.1 FIX Message Fields - Reject

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		3 - Reject
45	RefSeqNum	SeqNum	10	✓	Sequence number of rejected message	
371	RefTagID					
372	RefMsgType	String	2	✓	Referenced message. Message Type of incoming message	
373	SessionRejectReason	Int	3	○	Reject Reason code	Please refer to list of possible values in section 3.3.8 Session reject codes
58	Text	String	71	○	Message from the Exchange	Please refer to list of possible values in section 3.3.8 Session reject codes
	Message Trailer			✓		

3.3.5.2 Message Usage

The CAP-FIX will use this message to reject poorly formed messages where the Message Type cannot be recognised. Members should keep a record of which messages the CAP-FIX rejects and never resend them.

3.3.6 Sequence Reset (4)

The sequence reset message is used by the sending application to reset the incoming sequence number on the opposing side.

This message has two modes :

- Sequence Reset-Gap Fill : when GapFillFlag is 'Y'
- Sequence Reset-Reset : when GapFillFlag is 'N' or not present.

CAP-FIX generates Sequence Reset message as per FIX specifications.

However, CAP-FIX accepts Sequence Reset-Gap Fill message but does not accept Sequence Reset-Reset message. When a member application sends a Sequence Reset-Reset message, the CAP responds with a Logout message (35=5).

3.3.6.1 FIX Message Fields – Sequence Reset

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		4 - Sequence Reset
123	GapFillFlag	Boolean	1	○	Purpose of sequence reset	'Y' = Gap fill message 'N' = Sequence reset
36	NewSeqNo*	SeqNum	10	✓	New sequence number	
	Message Trailer			✓		

3.3.6.2 Message Usage

The Sequence Reset message may be sent by the Client or the CAP-FIX. It indicates that there is a gap in the message sequence numbers.

The Sequence Reset message can be used if the sending application chooses not to send an internal message to the Exchange. The Sequence Reset marks the place of that message.

The Exchange recommends that Clients use the Sequence Reset message with the GapFillFlag = 'Gap Fill Message'. The Gap Fill must occur in sequence with the message sequence numbers.

For example, if sending 10-15, and 11-14 are administrative messages other than Reject, the client should resend 10, then 11 should be a Sequence Reset, with a NewSeqNum of 15, and then resend 15. As per the FIX standard, all messages in answer to a Resend Request must be flagged PossDupFlag.

The Sequence Reset message with GapFillFlag = Sequence Reset means that messages sequence numbers are being reset. NSC will never automatically send messages with this setting.

However, it may be sent by manual intervention, possibly to stop an endless loop of Resend Requests and resends, and it is recommended that the Client do the same. The Exchange makes no attempt to recover skipped messages on receiving a Sequence Reset, which is advantageous to breaking out of an infinite resend loop.

3.3.6.3 Response

None

3.3.7 Logout (5)

The Logout message initiates or confirms the termination of a FIX session.

CAP FIX accepts and generates Logout as per FIX specifications.

3.3.7.1 FIX Message Fields - Logout

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		5 - Logout
58	Text	String		○	Message from the Exchange	
	Message Trailer			✓		

3.3.7.2 Message Usage

It is the Client's responsibility to log out before the end of the trading day. The Client must verify, prior to logout, that there are no live or pending orders.

The party initiating the logout must be the party that breaks the TCP connection to NSC. This requirement allows for both sides to issue a Resend Request should the logout or its reply arrive with a MsgSeqNum that is not consecutive (i.e. there is a gap in the message sequence numbers).

If the client application receives a logout without a consecutive MsgSeqNum then, as per the protocol specification, it must issue a Resend Request and then log out.

3.3.7.3 Response

The CAP-FIX will respond to a successful Logout with a Logout (5).

The CAP-FIX will respond to an unsuccessful Logout with a Reject (3).

Logout failure may occur, for example, where a Logout message is submitted by a client application that is not logged on.

3.3.8 Session reject codes

Set of value for Tag 373 SessionRejectReason.

Table 1 – Session Reject Codes

Reject code	Description
0	Invalid tag number
1	Required tag missing
2	Tag not defined for this message type
3	Undefined Tag
4	Tag specified without a value
5	Value is incorrect for this tag (out of range)
6	Incorrect data format value
7	Decryption problem
8	Signature problem
9	CompID problem
10	SendingTime accuracy problem
11	Invalid MsgType

Note that other session-level rule violations may exist, in which case the field SessionRejectReason is not specified.

3.4 CLIENT APPLICATION MESSAGES

3.4.1 New Order Single (D)

3.4.1.1 FIX Message Fields – New Order Single

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | o optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		D – New Order Single
11	ClOrdID	String	16	✓	Unique Identifier of the order	There is no mandatory format for this field. It is defined by the broker and must be unique for each order.
21	HandlInst	Char	1	✓		= 1 (Automated execution order, private, no Broker intervention)
22	SecurityDSrc	Char	1	✓		= 4 (ISIN number)
38	OrderQty	Qty		✓	Order Quantity	
40	OrdType	Char	1	✓		FIX <-> NSC 1 <-> K = Market 2 <-> L = Limit 3 <-> S = Stop 6 <-> O = Opening 7 <-> M = At Best Limit
44	Price	Price	10	+	Order Price	Maximum Value 999,999.999
48	SecurityID	String	12	✓	ISIN Code	
54	Side	Char	1	✓		1 = Buy 2 = Sell 8 = Cross
55	Symbol	String	12	✓	ISIN Code	Not used by NSC
59	TimeInForce	Char	1	✓		FIX <-> NSC 0 <-> J = Day 1 <-> F = GTC 4 <-> E = FAK 6 <-> D = GTD 9 <-> R = Sliding
60	TransactTime	UTCTim estamp	17	✓	Transaction Date and Time Format YYYYMMDD- HH:MM:SS	Not used by NSC v900 but still required
99	StopPx	Price	10	+	Stop Price	Replace previous Tag 5167 TriggerPrice Maximum Value 999,999.999 Mandatory if tag 40 OrdType = 3 Stop
110	MinQty	Qty		o	Minimum quantity of an order to be executed	
111	MaxFloor	Qty		+	Maximum quantity within an order to be shown at any given time	
126	ExpireTime	UTCTim estamp	17	+	Expiry Date & Time Format YYYYMMDD- HH:MM:SS	Mandatory if Tag 59 = 6

Tag	Field	Format	Len	Req.	Description	Values
9596	OrderConfirmation	Char	1	+		1 = order not confirmed, checking to be done by the Trading Engine 2 = order confirmed, no checking to be done by the Trading Engine Mandatory if Tag 54 = 2 and must be equal to 2
9917	RepeatNext	Char	1	✓	Number of Repeat entries.	1 = one repeating section for Buy & Sell orders 2 = two repeating sections for Cross orders
47	Rule80A	Char	1	✓	Account Type	FIX <-> NSC C <-> 1 = Client N <-> 2 = House M <-> 6 = Market Maker
9947	TraderID	String	8	✓	ID of the Trader issuing the order	
1	Account	String	16	✓	Account Number	This field is required by the trading rules. Message to be rejected if missing or not filled. Must be set after tag 47 Rule80A
109	ClientID	String	8	o	Client	Must be set after tag 47 Rule80A
58	Text	String	18	o	Text (18 characters)	Replace Tag 5149 Memo Must be set after tag 47 Rule80A
439	ClearingFirm	String	8	o	Clearing Firm	Must be set after tag 47 Rule80A
	Message Trailer			✓		

3.4.1.2 Message Usage

The New Order message requests the creation of a new order.

3.4.1.3 Response

Execution Report (8)

3.4.2 Order Cancel/Replace Request (G)

3.4.2.1 FIX Message Fields – Order Cancel/Replace Request

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | o optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		G – Order Cancel/Replace Request
1	Account	String	16	✓	Account Number	This field is required by the trading rules. Message to be rejected if missing or not filled. Must be set after tag 47 Rule80A
11	ClOrdID	String	16	✓	Unique Identifier of the order	There is no mandatory format for this field. It is defined by the broker and must be unique for each order.
21	HandlInst	Char	1	✓		= 1 (Automated execution order, private, no Broker intervention)
22	SecurityIDSource	Char	1	✓		= 4 (ISIN number)
38	OrderQty	Qty		o	Order Quantity	
40	OrdType	Char	1	✓		FIX <-> NSC 1 <-> K = Market 2 <-> L = Limit 3 <-> S = Stop 6 <-> O = Opening 7 <-> M = At Best Limit
41	OrigClOrdID	String	16	o	ClOrdID of the order to modify	This tag will not be used by CAP-FIX
44	Price	Price	10	+	Order Price	Maximum Value 999,999.999
47	Rule80A	Char	1	✓		FIX <-> NSC C <-> 1 = Client N <-> 2 = House M <-> 6 = Market Maker
48	SecurityID	String	12	✓	ISIN Code	
54	Side	Char	1	✓		1 = Buy 2 = Sell
55	Symbol	String	12	✓	ISIN Code	Not used by NSC
59	TimeInForce	Char	1	✓		FIX <-> NSC 0 <-> J = Day 1 <-> F = GTC 4 <-> E = FAK 6 <-> D = GTD 9 <-> R = Sliding
60	TransactTime	UTCTimestamp	17	o	Transaction Date and Time Format YYYYMMDD-HH:MM:SS	Not used by NSC v900
99	StopPx	Price	10	+	Stop Price	Replace previous Tag 5167 TriggerPrice Maximum Value 999,999.999 Mandatory if tag 40 OrdType = 3 Stop
110	MinQty	Qty		o	Minimum quantity of an order to be executed	
111	MaxFloor	Qty		+	Maximum quantity within an order to be shown at any given time	

Tag	Field	Format	Len	Req.	Description	Values
126	ExpireTime	UTCTim estamp	17	+	Expiry Date & Time Format YYYYMMDD- HH:MM:SS	Mandatory if Tag 59 = 6
9005	ExpRemainQty (New)	Qty		✓*	Expected Remaining quantity	Must be equal to the value sent in tag 151 LeavesQty of Execution Report '8' if the order has already been partially matched; or equal to the total quantity if no matching happened. Control is done depending on the NSC configuration.
9596	OrderConfirmation	Char	1	+		1 = order not confirmed, checking to be done by the Trading Engine 2 = order confirmed, no checking to be done by the Trading Engine Mandatory if Tag 54 = 2 and must be equal to 2
9945	OrigOrderID (New)	String	14	✓*	Original order reference sent by NSC in Tag 37 OrderID of the Execution Report	Format is YYYYMMDDnnnnnn YYYYMMDD represents date of the order and xxxxxx represents the order ID in 6 digits assigned by NSC
9947	TraderID	String	8	✓	ID of the Trader issuing the order	
	Message Trailer			✓		

3.4.2.2 Message Usage

The Order Cancel/Replace Request message is used to amend an order's original quantity, price, stop price and validity. No other parameters can be changed.

The OrigOrderID will be used to identify the cancelled/replaced order.

The original OrderID (Tag 37) can be found on the Execution Report that confirmed the order.

3.4.2.3 Response

Execution Report (8) or Order Cancel Reject (9)

3.4.3 Order Cancel Request(F)

3.4.3.1 FIX Message Fields – Order Cancel Request

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		F – Order Cancel Request
11	ClOrdID	String	16	✓	Unique Identifier of the order	There is no mandatory format for this field. It is defined by the broker and must be unique for each order.
22	SecurityIDSource	Char	1	✓		= 4 (ISIN number)
38	OrderQty	Qty		○	Order Quantity	
41	OrigClOrdID	String	16	○	ClOrdID of the order to modify	This tag will not be used by CAP-FIX
54	Side	Char	1	✓		1 = Buy 2 = Sell
55	Symbol	String	12	✓	ISIN Code	
60	TransactTime	UTCTim estamp	17	○	Transaction Date and Time Format YYYYMMDD- HH:MM:SS	Not used by NSC v900
9945	OrigOrderID (New)	String	14	✓*	Original order reference sent by NSC in Tag 37 OrderID of the Execution Report	Format is YYYYMMDDnnnnnn YYYYMMDD represents date of the order and xxxxxx represents the order ID in 6 digits assigned by NSC
	Message Trailer			✓		

3.4.3.2 Message Usage

The Order Cancel Request message requests the cancellation of all the remaining quantity of an existing order. The OrigOrderID will be used to identify the cancelled order.

The original OrderID (Tag 37) can be found on the Execution Report that confirmed the order.

3.4.3.3 Response

Execution Report (8) or Order Cancel Reject (9)

3.4.4 Execution Report (8)

3.4.4.1 FIX Message Fields for Execution Report

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		8 – Execution Report
1	Account	String	16	○	Account Number	
6	AvgPx	Price	10	✓	Average Price	This tag will be empty
11	ClOrdID	String	16	✓	Unique Identifier of the order	
14	CumQty	Qty		✓	Total number of shares filled	This tag will be empty
17	ExecID	String	20	✓	Unique Identifier of the execution message	
19	ExecRefID	String	8	○	Trade number assigned by NSC at every trade creation. A number is unique by instrument and trading day	Filled in case of execution
20	ExecTransType	Char	1	✓		0 = New 1 = Cancel 3 = Status
22	SecurityIDSource	Char	1	○		= 4 (ISIN number)
31	LastPx	Price	10	○	Executed price of this (last) fill	Filled in case of execution
32	LastShares	Qty		○	Quantity of shares bought/sold on this (last) fill	Filled in case of execution
37	OrderID	String	14	✓	Order reference assigned by NSC	Concatenation of the date and the order ID (6 digits) (format : yyyymmddnnnnnn).
38	OrderQty	Qty		○	Order Quantity	
39	OrdStatus	Char	1	✓	Order current status	0 = New 1 = Partially filled 2 = Filled 4 = Canceled 5 = Replaced 6 = Pending cancel 8 = Rejected 9 = Suspended A = Pending New C = Expired
40	OrdType	Char	1	○		FIX <-> NSC 1 <-> K = Market 2 <-> L = Limit 3 <-> S = Stop 6 <-> O = Opening 7 <-> M = At Best Limit
41	OrigClOrdID	String	16	+	Original ClOrdID in case of response to Cancel/Replace message	This tag will be empty or not provided
44	Price	Price	10	○	Order Price	Maximum Value 999,999.999
47	Rule80A	Char	1	✓		FIX <-> NSC C <-> 1 = Client N <-> 2 = House

Tag	Field	Format	Len	Req.	Description	Values
						M <-> 6 = Market Maker
48	SecurityID	String	12	✓	ISIN Code	
54	Side	Char	1	✓		1 = Buy 2 = Sell
55	Symbol	String	12	✓	ISIN Code	Always equal to tag 48
58	Text	String	71	o	Text	
59	TimeInForce	Char	1	o		FIX <-> NSC 0 <-> J = Day 1 <-> F = GTC 4 <-> E = FAK 6 <-> D = GTD 9 <-> R = Sliding
60	TransactTime	UTCTim estamp	17	✓	Transaction Date and Time Format YYYYMMDD- HH:MM:SS	
99	StopPx	Price	10	+	Stop Price	Replace previous Tag 5167 TriggerPrice Maximum Value 999,999.999
103	OrdRejReason	Int	1	o	Code to identify reason for order rejection	5 = Unknown order 6 = Duplicate order (dupe ClOrdID) 9 = Market Control command
109	ClientID <i>(New)</i>	String	8	o	Client	
110	MinQty <i>(New)</i>	Qty		o	Minimum quantity of an order to be executed	
111	MaxFloor <i>(New)</i>	Qty		+	Maximum quantity within an order to be shown at any given time	
126	ExpireTime	UTCTim estamp	17	+	Expiry Date & Time Format YYYYMMDD- HH:MM:SS	Mandatory if Tag 59 = 6 and Tag 39 OrdStatus different from 1 or 2
150	ExecType	Char	1	✓		0 = New 1 = Partially filled 2 = Filled 4 = Canceled 5 = Replaced 6 = Pending cancel 8 = Rejected 9 = Suspended A = Pending New C = Expired D = Restated F = Triggered
151	LeavesQty	Qty		✓	Remaining unmatched quantity	Significant only when the order has been partially executed
378	ExecRestatementReason	Int		+	Code to identify reason for an ExecutionRpt message sent with ExecType_(150) = Restated or used when communicating an unsolicited cancel.	0 = Corporate Action 4 = Broker Option 5 = Partial decline of OrderQty_(38) (e.g. exchange-initiated partial cancel) 6 = Full decline of order quantity 7 = Exchange option
439	ClearingFirm	String	8	o	Clearing Firm	
9262	MsgID <i>(New)</i>	String	19	✓	Unique message identification ID	Contains HUB session ID (9) + HUB message number (10)

Tag	Field	Format	Len	Req.	Description	Values
					delivered by the HUB	
9265	PriorityTime <i>(New)</i>	String	20	✓	Order priority time stamp	Format : yyyymmddhhmmss999999 (999999: micro-seconds)
9596	OrderConfirmation	Char	1	o		1 = order not confirmed, checking to be done by the Trading Engine 2 = order confirmed, no checking to be done by the Trading Engine
9945	OrigOrderID <i>(New)</i>	String	14	✓*	Original OrderID provided by NSC. Corresponds to order date and sequence number in the format YYYYMMDDnnnnnn	YYYYMMDD represents date of the order and nnnnnn represents the order ID in 6 digits assigned by NSC
	Message Trailer			✓		

3.4.4.2 Message Usage

The Execution Report message is used in response to order and fill related client messages.

In response to cancellation or rejection, the Execution Report will contain a minimal subset of the possible fields (all mandatory fields will be returned).

3.4.4.3 Order enters the order book

In case the order enters the order book, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	order enters the order book	0 = New
150	ExecType	stop order (tag 40 OrdType = 3)	A = Pending New
		When responding to FIX message type D 'Order Entry' or F 'Order Cancel request'	0 = New
		When responding to FIX message type G 'Order Cancel/Replace Request'	5 = Replaced
39	OrdStatus	stop order (tag 40 OrdType = 3)	A = Pending New
		when responding to FIX message type D 'Order Entry' or F 'Order Cancel Request' and the order has not been partially matched	0 = New
		when responding to FIX message type D 'Order Entry' or F 'Order Cancel Request' and the order has been matched	2 = Filled
		When responding to FIX message type G 'Order Cancel/Replace Request' and the order has not been partially matched	5 = Replaced
		when the order has been partially matched	1 = Partially filled

3.4.4.4 Order rejected

In case an order is rejected by NSC for business reason, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Order definitively rejected by Market Operation following the instrument freezing	0 = New
150	ExecType		8 = Rejected
39	OrdStatus		8 = Rejected
58	Text		Business Reject Description as described in section 4.1

Tag	Field	Conditions	Values
			NSC error codes

3.4.4.5 Order cancelled by member

In case the order is cancelled by member, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	order cancelled by member	0 = New
150	ExecType		4 = Canceled
39	OrdStatus		4 = Canceled

3.4.4.6 Stop order triggered

In case the stop order is triggered, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Stop order triggered at opening	0 = New
150	ExecType		0 = New
39	OrdStatus		0 = New

3.4.4.7 Stop order triggered at opening

In case the stop order is triggered at opening, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Stop order triggered at opening	0 = New
150	ExecType		F = Triggered
39	OrdStatus		0 = New

3.4.4.8 FAK order eliminated

In case an FAK order is eliminated, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	FAK order eliminated at opening	0 = New
150	ExecType		4 = Canceled
39	OrdStatus		4 = Canceled
378	ExecRestatementReason		6 = Full decline of order quantity

3.4.4.9 FAK order, partially executed, eliminated at opening

In case an FAK order, partially executed, is eliminated at opening, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	FAK order eliminated at opening	0 = New

Tag	Field	Conditions	Values
150	ExecType		4 = Canceled
39	OrdStatus		4 = Canceled

3.4.4.10 FAK order, not executed, eliminated at opening

In case an FAK order, not executed, is eliminated at opening, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	FAK order eliminated at opening	0 = New
150	ExecType		D = Restated
39	OrdStatus		4 = Canceled
378	ExecRestatementReason		6 = Full decline of order quantity

3.4.4.11 Order temporarily eliminated

In case the order is temporarily eliminated because it will cause instrument to freeze (may be re-integrated by Market Operation), these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Order temporarily eliminated because it will cause instrument to freeze (may be re-integrated by Market Operation)	0 = New
150	ExecType		9 = Suspended
39	OrdStatus		9 = Suspended

3.4.4.12 Order definitively rejected

In case an order is definitively rejected by Market Operation following the instrument freezing, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Order definitively rejected by Market Operation following the instrument freezing	0 = New
150	ExecType		8 = Rejected
39	OrdStatus		8 = Rejected
103	OrdRejReason		9 = Market Control command

3.4.4.13 Order cancelled by Market Operation

In case an order is cancelled by Market Operation, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Order cancelled by Market Operation	0 = New
150	ExecType		4 = Canceled
39	OrdStatus		4 = Canceled

Tag	Field	Conditions	Values
378	ExecRestatementReason		7 = Exchange option

3.4.4.14 Order eliminated by Market Operation

In case an order is eliminated by Market Operation, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Order cancelled by Market Operation	0 = New
150	ExecType		D = Restated
39	OrdStatus		4 = Canceled
378	ExecRestatementReason		7 = Exchange option

3.4.4.15 Order eliminated due to Corporate Action

In case an order is eliminated during post session because of a corporate action on the instrument, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Order cancelled by Market Operation	0 = New
150	ExecType		D = Restated
39	OrdStatus		4 = Canceled
378	ExecRestatementReason		0 = Corporate Action

3.4.4.16 Order totally executed

In case an order is totally executed, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Order totally executed	0 = New
150	ExecType	when the order has been matched	2 = Filled
		when responding to FIX message type G 'Order Cancel/Replace Request'	5 = Replaced
39	OrdStatus		2 = Filled

3.4.4.17 Trade cancelled by Market Operation

In case a trade is cancelled by Market Operation, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Trade cancelled by Market Operation	1 = Cancel
150	ExecType		D = Restated
39	OrdStatus		2 = Filled
378	ExecRestatementReason		4 = Broker Option

3.4.4.18 Trade created by Market Operation

In case a trade is created by Market Operation, these specific tags will take the following values

Tag	Field	Conditions	Values
20	ExecTransType	Trade created by Market Operation	0 = New
150	ExecType		D = Restated
39	OrdStatus		2 = Filled
378	ExecRestatementReason		4 = Broker Option

3.4.4.19 Summary of possible field value

All possible scenario are described hereafter with the values of the following tags:

- 150 ExecType
- 378 ExecRestatementReason
- 20 ExecTransType
- 39 OrdStatus

ExecType (150)	Exec Restatement Reason (378)	Exec TransType (20)	Ord Status (39)	Description
D	4	1	2	Trade cancellation notice
D	4	0	2	Trade creation notice
2		0	2	Execution notice order fully executed
1		0	1	Execution notice order partially executed
D	7	0	4	Order eliminated by Market Control
D	6	0	4	FAK order eliminated not executed at security opening
D	0	0	4	Order eliminated in post-session for corporate action
4		0	4	FAK order eliminated partially executed at security opening
C		0	C	Order eliminated in post-session for validity expired N/U
A		0	A	Stop order entry not triggered
0		0	0	New order/triggered stop order put in the order book not executed
0		0	1	New order/triggered stop order put in the order book partially filled
0		0	2	New order/triggered stop order fully filled/FAK order partially filled
5		0	5	Order cancel/replace put in the order book not executed
5		0	1	Order cancel/replace put in the order book partially filled
5		0	2	Order cancel/replace fully filled/FAK order partially filled
4	6	0	4	FAK order entry not executed in trading session or Minimum qty order unsatisfied
9		0	9	New order/order cancel-replace causing security to be frozen order is temporarily eliminated
8		0	8	New order/order cancel-replace causing security to be frozen order is definitively eliminated by Market Control
4		0	4	Order cancelled by the member
4	4	0	4	Order cancelled by the member (Global cancel)
F		0	0	Stop order triggered at opening
4	7	0	4	Order cancelled by Market Control

3.4.5 Order Cancel Reject (9)

3.4.5.1 FIX Message Fields for Order Cancel Reject

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		9 – Order Cancel Reject
11	ClOrdID	String	30	✓	Client order ID. 0 will be returned if the ClOrderID was not specified in the original request	User defined value
37	OrderID	String	20	✓	Exchange Order ID	If no exchange order ID available then this field will contain the value 'NONE'
41	OrigClOrdID	String	30	○	Client Order ID of the order that is to be cancelled/modified. This field or the Order ID must be entered	User defined value
58	Text	String	71	○	Message from the Exchange	
380	BusinessReject-Reason	Int	6	○	Code to identify reason for an Order Reject message	See section 4 Error Codes for the given message type
434	CxlRejResponseTo	Char	1	✓	Identifies the type of request that a Cancel Reject is in response to	'1' = Order cancel Request '2' = Order cancel/replace Request
9262	MsgID <i>(New)</i>	String	19	✓	Unique message identification ID delivered by the HUB	Contains HUB session ID (9) + HUB message number (10)
	Message Trailer			✓		

3.4.5.2 Message Usage

The Order Cancel Reject message is used in response to Order Cancel Request 'F' and Order Cancel/Replace Request 'G' messages.

3.4.6 Trading Session Status (h)

3.4.6.1 FIX Message Fields for Trading Session Status

✓ required (inbound)/always provided (outbound) | + conditionally required (inbound)/provided (outbound) | ○ optional/* Non-standard FIX

Tag	Field	Format	Len	Req.	Description	Values
	Message Header			✓		h – Trading Session Status
55	Symbol	String	12	○	ISIN Code	equal to tag 48 when message concerns instrument
9262	MsgID	String	19	✓	Unique message identification ID delivered by the HUB	Contains HUB session ID (9) + HUB message number (10)
9918	SecurityGroup <i>(New)</i>	String	2	○	Instrument Group ID	Mandatory when Tag 10072 = 2 Set by the exchange
9963	SecurityGroupState	Char	1	○	Group State	Mandatory when Tag 10072 = 2 See values below
10072	TypeInformation	Int	1	✓	Type of information	2 = concerns group state 8 = concerns instrument state
10074	Instrument/Group State	String	2	○		Mandatory when Tag 10072 = 8 See values below
	Message Trailer			✓		

3.4.6.2 Message Usage

The trading Session Status message is sent at each Group or Instrument State change.

3.4.6.3 Group State Change

In case of change of a group state, tag 9918 must be filled with the instrument group ID and tag 10072 must have the value '2'. Here is the list of possible values for tag 9963:

Values	Description
B	Post-session
C	Start of Consultation
F	End of Consultation
I	Forbidden
N	Surveillance Intervention
O	Opening/closing
P	Pre-opening / Pre-closing
R	Trading At Last
S	Continuous trading
U	Changing of trading session
Z	Interrupted

3.4.6.4 Instrument State Change

In case of change of an instrument state, tag 55 must be filled with the instrument ISIN code and tag 10072 must have the value '8'. Here is the list of possible values for tag 10074:

Values	Description
I	Prohibited/Forbidden
R	Reserved
O	Opened
G	Frozen
S	Suspended

4. ERROR CODES

4.1 NSC ERROR CODES

NSC error code	Application message text
1000	This instrument doesn't exist
1001	Unknown function
1002	Forbidden function for broker type
1003	Group state doesn't allow this function
1004	Instrument state doesn't allow this function
1005	Quantities must be numeric
1006	Price format is not valid
1007	A mandatory area is not or bad filled
1008	Invalid Hour area format
1009	Group not authorized for this broker
1010	Mandatory field is not filled
1011	Field is bad filled
1012	Unknown group of instrument
1013	Tick expression format is invalid
1014	This instrument doesn't allow this function
1015	Instrument must belong to BOO group
1016	Only one broker authorized on buy side for BOO group
1017	broker not authorized to enter an order on this side of BOO Group
1018	The Group is already a BOO Group
1019	The Group is already a non-BOO Group
1020	Min Price is Mandatory
1021	Tick Limit Modification is invalid
1022	BOO group action code is bad filled
1023	The Group must not contain instruments
1024	Valuation indicator group must be 0 or 1
1025	Valuation indicator unchanged
1026	SLE code already exists in Database
1027	Field ORDER DISCLOSED QUANTITY is bad filled
1028	Field MEMBER ID is bad filled
1029	Field TECHNICAL ORIGIN is bad filled
1030	Field ORDER CONFIRMATION FLAG is bad filled
1031	Field PREOPENING ORDER FLAG is bad filled

NSC error code	Application message text
1032	Field ORIGINAL TRIGGER PRICE is bad filled
1033	Field ORDER VALIDITY DURATION is bad filled
1034	Field TYPE OF CLEARING ACCOUNT is bad filled
1035	Field CLIENT ACCOUNT NUMBER is bad filled
1036	Field CLIENT ACCOUNT NUMBER must be filled for CLIENT orders
1037	Field TRADE ORDER NUMBER is bad filled
1038	Field ORIGINAL ORDER DATE is bad filled
1039	Field BRANCH CODE is bad filled
1040	Field BANK CODE is different from MEMBER ID
1041	Field TYPE OF CLEARING ACCOUNT (2nd ag) is bad filled
1042	Field CLIENT ACCOUNT NUMBER (2nd ag) is bad filled
1043	Field CLIENT ACCOUNT NUMBER (2nd ag) must be filled for CLIENT orders
1044	Field TRADE ORDER NUMBER (2nd ag) is bad filled
1045	Field ORIGINAL ORDER DATE (2nd ag) is bad filled
1046	Field BRANCH CODE (2nd ag) is bad filled
1047	Field BANK CODE (2nd ag) is different from MEMBER ID
1048	ACCOUNT is not active
1049	ACCOUNT (2nd ag) is not active
1050	Field CLIENT ACCOUNT NUMBER is bad filled
1051	Either BANK CODE or BRANCH CODE is filled with blank
1052	Price is invalid according to quotation range
1053	Reference Price is invalid according to quotation range
1054	One threshold is invalid according to quotation range
1055	Field <ID of clearing system member> (1st ag) is bad filled
1056	Filler (1st ag) contains binary data
1057	Field <Free Text> (1st ag) contains binary data
1058	Field <Posting action for an order> (1st ag) is bad filled
1059	Field <Clearing of operation mode> (1st ag) is bad filled
1060	Field <ID of clearing system member> (2nd ag) is bad filled
1061	Filler (2nd ag) contains binary data
1062	Field <Free Text> (2nd ag) contains binary data
1063	Field <Posting action for an order> (2nd ag) is bad filled
1064	Field <Clearing of operation mode> (2nd ag) is bad filled
1065	Field <short sell indicator> is bad filled
1500	Insufficient balance for designated instrument
1501	Nationality group cannot own more than n%

NSC error code	Application message text
1502	Investor category cannot own more than n%
1503	Trader cannot trade more than a certain amount
1504	Investor suspended
1505	Investor status invalid it must be filled with - 00 01 02 03
1506	Investor/Broker does not hold enough qty to sell order
1507	Investor suspended in bid side
1508	Investor suspended in ask side
1509	Order origin does not match the account origin
1510	Investor not found in link investor / account
1511	Unknown Investor in credit check data base
1512	Unknown broker indicators in credit check data base
1513	No broker/account found in credit check data base (tccpositions)
1518	short sell qty to decrement is greater than total qty owned
1519	ownership qty to decrement is greater than total qty owned
1520	No %Ownership for this instrument
1521	This instrument does not exist in stock check control
1522	No Short-selling positions for this instrument
1523	Credit Limit Cap exceeded
1524	Credit Limit informations does not exist
1525	Held quantity of shares is insufficient
1526	Held qty of shares is insufficient - broker not authorized for SS
1527	Investor suspended but cancel of all its orders not completely performed
1528	The order cannot be modified nor cancelled until its exposure time has elapsed
1529	The order account number can t be modified
1530	Credit Limit position to decrement is negative
1531	Type of position update is invalid - it must be equal 1 or 2
1532	Account not authorized on Buy side
1533	Account not authorized on Sell side
1534	Account is Margin - the instrument must be Margin for this side
1535	Buy order cannot be Short Sell
1536	Sell order cannot be Buy Back
1537	Buy or Sell order cannot be CROSS Short Sell and Buy Back
1538	The lshortsell indicator is invalid according of the side
2003	Order price must be filled for limited orders
2004	Order price must not be filled in for Opening, Market to limit and Market orders
2005	Quantities must be multiple of traded lot

NSC error code	Application message text
2006	Type of price invalid or not authorized according to instr or GR state
2007	Order quantity is equal to percentage of the Free Float Shares
2008	Price must be valid against percent-tick parameter
2009	CROSS orders forbidden in pre-opening stage
2010	CROSS order price type must be limited
2011	Total quantity must be greater than traded lot for a cross order
2012	Order quantity exceeds percentage of the Free Float Shares
2013	MARKET TO LIMIT order not supported by opposite limit
2014	Price must be valid against tick table
2016	FAK orders forbidden for MARKET and STOP-LOSS orders
2017	Order quantity can not be increased
2018	Invalid Date format
2019	Validity date must be higher than current session date
2020	Validity date must be lower than default date
2021	Validity date must be equal to current session date
2022	Amount exceeds capital amount authorized according to param CapMaxOmNg
2023	Buy-Out Orders must have limit price and multiply quantity
2025	Validity date of FAK, DAY or DEFAULT orders must not be filled
2026	Validity date must be filled
2027	One quantity is lower than Min Quantity for instrument
2028	Disclosed or minimum quantity greater than total quantity
2029	Min quantity forbidden for cross, stop orders or market orders
2031	Disclosed quantity too small
2032	Disclosed quantity forbidden for FAK,MOO,CROSS,MARKET and STOP-LOSS orders
2033	This broker doesn t exist
2034	Order cannot be entered for surveillance
2035	Only surveillance can capture for another broker
2037	Order sequential number must be numeric
2040	Minimum quantity cannot be modified
2041	This order is routed
2042	No modification for the order
2044	Validity date for this type of order must be FAK
2045	This order is not in the book
2046	Disclosed quantity cannot be greater than total or remaining qty
2048	Unfreeze with acceptance impossible, Best orders not given
2049	Cross order forbidden for STOP orders

NSC error code	Application message text
2053	MINIMUM QUANTITY forbidden for FAK order
2055	TRIGGER PRICE format is invalid
2056	TRIGGER PRICE must be valid against tick table
2057	TRIGGER PRICE invalid for order type
2058	STOP PRICE maxi-mini must be \geq TRIGGER PRICE
2059	STOP PRICE maxi-mini must be \leq TRIGGER PRICE
2060	TRIGGER PRICE must be $<$ last price or last day price
2061	TRIGGER PRICE must be $>$ last price or last day price
2062	Remaining qty in book \neq from expected remaining qty in order
2064	This Trader does not belong to this Member
2065	Trader Id cannot be updated
2066	Origin date (in clearing agregat) greater than current
2069	Leg price is outside the thresholds
2071	Price must be > 0
2072	Foreign firm broker must be different from original broker
2075	Order outside the thresholds because of related instrument
2076	Short Sell indicator cannot be modified
2099	Client account number must be numeric
2100	Client account number is invalid
2102	Order Creat,Modif,Cancel forbidden at Supervisory Intervention stage
2103	Hidden quantity forbidden in pre-opening stage
2105	Buy order price must be $<$ than the upper price threshold during AHM
2106	Sell order price must be $>$ than the lower price threshold during AHM
2107	Cancelling an order better or equal than the TOP is forbidden
2108	Cant decrease the price of buy orders participating in TOP calc
2109	Cant decrease fin. amount of buy orders participating in TOP calc
2110	Cant increase the price of sell orders participating in TOP calculation
2111	This Instrument is not allowed to trade in After Hour Market Session
2112	Function forbidden on expired instrument
2113	Function forbidden on not activated instrument
2115	Total quantity must be inside the limits
2116	Quantity exceeded the limit for AHM
2117	Cant decrease the quantity of sell orders participating in TOP calc
2118	Cant modify Stop order in preopening stage
2129	Minimum quantity forbidden for STOP orders
2130	Minimum quantity forbidden in pre-opening stage

NSC error code	Application message text
2137	Order price is outside the thresholds
2138	Invalid order price
2140	This instrument is not eligible for short selling
2141	Only RSS orders are allowed for this instrument
2142	Only PDT orders are allowed for this instrument
2143	Technical Origin is suspended for this instrument
2144	Short sell order not authorized on Buy Side
2145	Short Sell order must be a Limit order
2146	Short Sell order price does not comply with the Up_Tick rule
2147	Invalid Order Technical Origin. It must be filled with -R J V E P K W F
2148	The Technical Origin is already suspended for this instrument
2149	The Technical Origin is already activated for this instrument
2200	Account not authorized to trade on this instrument
2201	Account (2nd ag) not authorized to trade on this instrument
2500	Confirmation mandatory for this order
2501	Order handled in PreOpening - rejected in Continuous Trading
2502	Error, Instrument already in Fast-Market
2503	Error, Instrument already in Slow-Market
2504	Error, Instrument already in Very-Fast-Market
2505	Credit Limit Cap exceeded
2506	Percentage ownership exceeded
2507	Held quantity of shares is insufficient
2508	Credit Limit Cap and percentage ownership exceeded
2509	Credit Limit Cap exceeded and held quantity of shares is insufficient
2510	Percentage ownership exceeded and held qty of shares is insufficient
2511	Credit Limit Cap, %ownership exceeded and held qty of shares insufficient
2525	Error, Instrument already in Internal broadcast mode for Surveillance
2600	The Member is NOT Liquidity provider for this Instrument
2601	Buy price must be less or equal to sell price
2602	Invalid price publicity type
2603	Invalid broker type
2604	Trader Id is invalid
2605	broker not allowed to enter a reference price
2606	No Liquidity provider for this Instrument
2917	Validity type of block must be day
3000	Instrument already suspended

NSC error code	Application message text
3001	Instrument already reserved
3002	Instrument must be reserved or suspended
3003	Instrument must be frozen
3004	Instrument must be authorized
3005	Instrument must be forbidden
3006	No specialist broker for this instrument
3007	Fixing time must be less than End Consultation time
3008	No order to delete in the book
3009	High limit must be greater to Low limit
3010	Frozen price must be inside high and low limit
3011	Reservation indicator must be different
3012	Old Last day price invalid
3016	A group or an instrument must be filled
3017	Invalid datas for Low and high limits
3018	The group has no instrument
3019	The Group opening Time commands the Instrument s one
3020	No opening time or fixing recorded for the Instrument
3021	The opening-Fixing time must be greater than system Time
3022	Opening Time must be < PostSession Time or PS Time must exists
3023	TRADING-DATE must be > ORDER-ENTRY-DATE
3024	Previous Lot size different from the current one
3025	Previous H-L Limits different from current ones
3026	Previous Ref.P-T.Limit-Vali.D. different from the current ones
3027	Previous maximum quantity (B/S) different from the current one
3029	The Lot size or maximum quantity cannot be changed if there are orders in the Book
3030	FIRST-LINE-REQUESTED must be filled
3031	NBRE-LINES-REQUESTED must be filled
3032	Selection is empty
3033	Opening or Fixing already scheduled for this Time
3034	Opening or Fixing already scheduled, Time entry rejected
3035	Opening or Fixing already scheduled, Reset rejected
3036	The Min and Max values entered are incorrect
3037	The Max value must be greater than the Min value
3038	The Posted Request to suppress is not in the REQUESTS table
3039	There is no Request corresponding to selection in the REQUESTS table
3040	High limit must be different than zero

NSC error code	Application message text
3041	The Tick limit must be equal or > 0 and < or equal to 100%
3042	HOST ORDER NUMBER cannot be null
3043	ORDER SIDE must be A or V
3045	The Times entered must be greater than the System Time
3046	Opening or Fixing already scheduled, Cancel before
3048	Time POST-SESSION is mandatory, unique and equal to last Time
3049	All the Group event must have different scheduled Times
3050	The After-Opening scheduled state must be at least 10 minutes after
3051	Minimun delay between 2 scheduled Group events not respected
3052	At Least 10 minutes between Opening and Surv-Interv
3053	A State Change Time cannot be scheduled if State is the current one
3060	This group does not exist
3061	This group already exists
3062	The OLD TEMP TICK LIMIT is invalid
3063	The OLD DEFAULT TICK LIMIT is invalid
3064	An indic. value must be 0 or 1
3065	The old value of an indicator is incorrect
3066	Relative day 0 cannot have events with triggered time = 00:00:00
3067	Data unchanged
3068	PRICE VALIDITY DATE is wrong
3069	Undefined currency for the instrument. Instrument still forbidden
3070	No Tick or Ref Price for the instrument, Instrument still forbidden
3071	The concerned broker does not have the type MEMBER
3072	The reservation indic. must be + or -
3073	The entered date does not exist in the system calendar
3074	There is no Variable Tick row for the specified criteria
3075	The warrant is under automatic processing
3094	Post-session timer must be > Instrument differed opening timer
3095	Forbidden break after Interruption during end-consult stage
3096	Restarting in Continuous impossible after a Market Interrupt
3097	Impossible Upd, an Instrument has odd lots in the book
3099	Previous Instr. different from the current one
3100	The Instrument Reference Price must be non null
3101	If thresholds are null, Instr. or Group Tick Limit must be non null
3102	The temporary tick limit must be non null
3103	The default Tick Limit must be non null

NSC error code	Application message text
3104	No valid tick for limit computed
3105	Forbidden cancellation according to instrument state
3106	The Last Adjusted Closing Price must be non null
3107	The Request Time must be smaller or equal to System Time
3108	Request already exists for the Instrument or the Group
3109	Indic. order cancellation can only take values 0,1,3
3110	There are STOP orders for this Instr, Reset is rejected
3111	Change displayed Qty is forbidden on STOP-AON orders
3112	Incorrect value for Ref-Settl. Price
3113	Incorrect value for the Last Adjusted Closing Price
3114	Trading Day indicator = 0 or 1
3115	Session Template must be empty for day type F or O
3116	Day type incompatible with next day
3117	Day type incompatible with previous day
3118	First Default schedule time must have relative day value 0
3119	Forbidden delete, instrument \$\$ state forbidden or frozen
3120	Invalid Group Event code
3121	Group state after opening empty or badly filled
3122	Group state after opening must be filled only if Opening
3123	Session template incompatible with market type associated to Group
3124	Forbidden if one threshold or the reference price is null
3125	Price type of CROSS phase must be filled only if pre-opening
3132	State change invalid :
3133	Scheduled time for the group are expired
3134	Update canceled, the day does not exist in calendar
3135	Invalid day type
3136	Invalid matching algorithm type (A-F-2)
3137	Matching algorithm type is already Allocation
3138	Matching algorithm type is already FIFO
3139	The reference price must be inside high and low limits
3140	Invalid demand regarding current algorithm
3154	The state of a leg doesn't allow this function
3200	The Strategy type already exists
3201	The Strategy type doesn't exist
3202	This strategy does not exist
3203	This couple group-strategy type is already forbidden

NSC error code	Application message text
3204	This couple group-strategy type is not forbidden
3205	The delay is not higher than the minimum delay
3206	Max-Min leg must be between including 2-40 and Min = or < Max
3207	A leg cannot be a Strategy
3208	Number of legs must be between including Min and Max
3209	The quantity type must be filled with Blank or AON
3210	Number of legs is bad filled
3211	The legs must have the same contract
3212	All instrument codes in the reserved bracket are used
3213	A similar strategy \$\$ already exists
3214	The ratios must respect conditions on strategy type
3215	Strategy not authorised for group
3216	Autorization forbidden - transaction unauthorised for strategy
3217	This function can not be captured for another broker
3218	This strategy is forbidden for this quantity type
3219	Invalid instrument code
3220	Two legs of this strategy are similar
3221	The leg \$\$ does not exist
3222	The legs must respect conditions on strategy type
3223	Command rejected, the couple group-strategy type is forbidden
3224	This strategy cannot be a delta neutral
3225	Invalid instrument type
3226	Ratios must be less than 99
3227	Stock thawed is rejected because the order is no more valid
3228	Date was expired for the instrument
3229	Command rejected, duration goes through the next stage
3230	Strategy type must be filled
3231	Indicator ratio authorized must be Y or N
3232	Authorization to trade on strategy type must be Y or N
3233	Inconsistent leg price algorithm ID
3234	Same underlying indicator for a strategy must be Y or N
3235	Invalid number of legs
3236	Ratio must be numeric
3237	Ratio sign must be + or -
3238	Inconsistent leg type
3239	Too many legs for the number defined

NSC error code	Application message text
3240	Same leg defined several times
3241	Leg number inconsistent regarding max legs
3242	Strategy Type does not authorize to Trade
3243	Function forbidden for this IXM
3244	Implied orders forbidden for this strategy
3245	Algorithm forbidden for this strategy
3246	Algorithm value is forbidden for this strategy
3247	The Lot size cannot be changed for implied strategy
3248	Strategies cannot be thawed
3249	Ratio or ratio sign inconsistent with leg price algorithm ID
3250	At least one leg can't belong to the strategy
3308	Trigger price outside allowed limits
3400	Reservation with acceptance forbidden for cross/market to limit/Qty min
3401	AON orders forbidden when Market Order are allowed
3402	CROSS order price must be inside the limits
3403	The cross quantity must be greater than total quantity to limit
3404	Change the order side is forbidden
3405	Bad ratio between disclosed and total quantity
3410	Market Maker not authorized for class
3411	IXMs have different class
3412	More one quote for IXM
3413	Cross quote forbidden
3414	Incoherent number of quote
3415	Side must be A or V
3416	Quantity side must be - or +
3417	The mandatory field Posting Action is bad filled
3418	The mandatory field Order user origin is bad filled
3419	The mandatory field Origin account is bad filled
3420	Can't modify expiration date when IXM already expired
3421	Inconsistent ratio regarding strategy type
3422	Unknown quote in book
3423	Couple Group-Associated group does not exist
3424	An associated group already exists for this Group
3425	This Group is already associated to another one
3426	Action code must be D or C
3427	No associated group for underlying IXM(s)

NSC error code	Application message text
3428	Associated groups must be different
3429	Couple Group-Associated group already exists
3430	Couple Group-broker does not exist
3431	Associated groups must have the same op-val-grc
3432	Association impossible : groups now definitively in <> Trading Units
3433	Function forbidden - Quotes still in the order book
3450	Automaton Level is bad filled
3451	Variation Side is bad filled
3452	Beginning Time or-and Ending Time is bad filled
3453	Percentage of Variation is bad filled
3454	Group Opening Delay is bad filled
3455	Action Code must be C or D
3456	Index Code is bad filled
3457	The Index Code doesn't exist
3458	One or more Groups is bad filled
3459	Technical error on Action Code
3460	ICB : Error when programming schedule on group
3461	ICB : Error on group interruption
3462	ICB : Error on group interdiction
3463	Automate Level cannot be modified, try later
3464	No corresponding data in table
3465	ICB : The robot ICB is just deactivate
3466	ICB : Level 1 has been triggered
3467	ICB : Level 2 has been triggered
3468	ICB : Level 3 has been triggered
3500	Unknow Dealer
3501	Order price outside the limits NBBO
3502	Quantity must be greater than minimum improvement quantity
3503	Invalid phase number
3504	Improvement period already started
3505	Only price must be updated
3506	Price must be better than last initial price
3507	Invalid improvement quantity
3508	Only price and quantity must be updated
3509	Unknown management type
3510	Unknown improvement type

NSC error code	Application message text
3511	Maximum price must be better than price
3512	Mandatory field client account is not filled
3513	Mandatory field trader order number is not field
3514	Improvement order forbidden for dealer
3515	Forbidden improvement phase for IXM
3516	Invalid improvement side
3517	Forbidden update for automatic phase
3518	One IXM hasn't got an improvement tick
3519	Inconsistent improvement tick
3520	Improvement phase to be in progress, Minimum quantity forbidden
3521	Deferred opening on IXM
3522	Maximum improvement price must be filled
3523	Quantity must be greater than last improvement quantity
3524	Order Account type is Incoherent with Combined Order Type
3525	Forbidden exposition for group
3526	NBBO crossed
3532	Lot size greater than Maximum Quantity of Instrument
3550	implied orders forbidden for strategy
3551	Number of legs forbidden for implied
3552	Ratio inconsistent for implied
3553	Lot size or tick inconsistent for implied
3901	Unknown order in book
3902	Old priority invalid for database
3903	New and Old priority are equal
3904	Priority already exists
3905	Priority hour greater than current time
3906	Old shown qty is not equal to database
3907	Displayed quantity is not multiple from trade unit
3908	New and Old quantity are equal
3909	New Displayed qty greater than disclosed quantity
3910	New Displayed quantity greater than left quantity
3911	Trade hour greater than current
3912	Traded quantity less than trade unit
3913	Traded quantity not multiple of trade unit
3914	Invalid trade price
3915	The brokers are not member firms

NSC error code	Application message text
3916	Cancel trade date not equal to current
3917	Trade does not exist
3918	Invalid trade price against tick table
3919	trade hour must be greater than last trade hour
3920	Invalid hour format
3921	Trade hour must be less than last trade hour
3922	Order MUST have a hidden Qty in order to change its displayed Qty
3923	Trade rejected: its price crosses STOP orders in the book
3924	Delay till first asked time is too short or first time is obsolete
3925	Next to Last price and Last adj closing price are invalid
3926	Cancel is impossible: Ask Stop with trigg. price > next to last traded
3927	Cancel is impossible: Bid Stop with trigg. price < next to last traded
3928	Trade must be inside the price thresholds
3929	Cancel impossible : this trade is linked to Strategy Trade
3930	Cancel trade impossible : No order found
3931	This trade number is already used
3932	Cancel trade impossible : No order found
3933	Number of transaction and date can't be filled for a Strategy
3934	Trade number must be < last trade number of the instrument concerned
3999	The OBBP and the CP are allowed only in auction trading
4001	Parameter Threshold
4002	Parameter Quantity
4004	Parameter Quantity
4006	Parameter Price
4008	Only one field should be informed
4009	One or more group(s) must be selected
5500	SQL Error, Advise Computer staff
5501	SQL tables mismatch, Advise computer staff
5502	No anomalies itemized
5503	Invalid Group-user, Access denied
5504	Invalid password, Access denied
5505	Password expired, please update it
5506	Captured data unknown in database
5507	You're not authorized to break this screen
5508	Direct screen break for this screen
5509	Your logon was changed. Please logon again

NSC error code	Application message text
5510	Data were created
5511	Data were updated
5512	Date were deleted
5513	Logon authorization doesn't allow to execute this function
5514	Data already exist
5515	Invalid new password
5516	Invalid id code, advise production staff
5517	0000 screen access must be authorized
5518	Invalid screen (check nb-authorization)
5519	SLE Id unknown in SDF Frontend file
5520	NSC unknown in SDF Frontend file
5529	No member authorization for the Group
5530	No Group authorization for the member
5531	No group defined in NSC database
5532	No member defined in NSC database
5533	Surveillance broker, no update allowed
5534	broker is not Market maker for the instr.
5535	Delete canceled, trader is connected
5536	Delete canceled, associated instruments still exist
5537	Server name invalid
5538	Data were read
5539	Delete canceled, associated groups still exist
5540	Min price too low
5541	Min price too high
5542	Last page raised
5543	Invalid key. Too many field captured.
5544	Invalid key. Tick not captured
5545	Invalid key for Tick and min price compute.
5546	Cotation Step to low compare to nb decimal ext
5547	Cotation Step price must be filled
5548	Delete canceled, Variable tick table index still use
5549	Class code doesn't exist
5550	Server launched
5551	Launch canceled
5552	Batch mode doesn't allow this function
5553	File in use try later

NSC error code	Application message text
5554	Update canceled, profile does not exist
5555	Surveillance broker does not exist
5556	Profile does not exist
5599	Error message doesn't exist
5998	Cancel orders in progress
5999	Error on open file /File doesn't exist or error of securities/
6000	Empty file
6001	Invalid record type
6002	Invalid File name
6003	Invalid date
6004	Invalid record number
6005	Existing record after footer record
6006	IXM code not numeric
6007	Footer record not found
6008	Header record not found
6009	Mandatory Data
6010	IXM type must be F, C, P or S
6011	Validity date type must be E, D, J, F or S
6012	NOT numeric data
6013	Not numeric under. IXM code
6014	Under. IXM filled and indicator not present
6015	Invalid price format
6016	Strike fill. strike currency code missing
6017	strike currency filled, strike missing
6018	H-L variation type expression is <> 1 or 2
6019	records chaining impossible for the Instrument
6020	Date-hour expired for record type I or C
6021	Underlying Instr not filled while indic fill.
6022	Settle Indicator must be blank, N or C
6023	Settle Indicator inconsistent
6024	Settle Indicator must be 0 or 1
6025	Price definition must be 1, 2 or blank
6026	Exp. date must be >= Activ. date
6027	Matching code must be A or F
6028	Exp and activ. date must be > system date
6029	Unknown Instrument in NSC-C Database

NSC error code	Application message text
6030	Instrument already exists in NSC-C Database
6031	IXM code conversion Error. Ask technical support
6032	Max Quantity must be greater than Min Quantity
6033	Low limit must be lower than High limit
6034	Invalid Margin Rate
6035	Credit class must be blank
6036	Stop orders to cancel, command must be confirmed
6041	Variable tick table index does not exist
6043	Invalid tick
6044	Minimum price already exists
6045	Invalid APF price
6046	A zero minimum price is mandatory
6047	File size limited to 50 instruments for this request
6048	There are duplicate instruments in the list
6100	Trader authorization doesn't exist.
6101	Trader authorization already created.
6230	No Group authorization for the Trader
6231	Group not authorized for this Trader
6232	Group not authorized on Buy Side for this Trader
6233	Group not authorized on Sell Side for this Trader
6234	Couple Group/Trader does not exist
6235	This Trader does not exist
6236	If Member/group author is checked, Bid or Ask auth must also be checked
6237	If Trader/Group author is checked, Bid or Ask auth must also be checked
6238	Member / Trader does not exist in traders table
7000	Invalid market type (cash or futures)
7001	KUR not to be fill in (cash)
7002	NDS account clearer not to be fill in (cash)
7003	NIK not to be fill in (cash)
7004	Nik sub account not to be fill in (cash)
7005	Client inst id not to be fill in (futures)
7006	Broker not found in TFINT
7007	Clearer not found in TFINT
7008	Broker not found in TFABI
7009	Clearer not found in TFABI
7010	Client-Clearer not found in TFKKL

NSC error code	Application message text
7011	Inactive link between Client -Clearer
7012	Broker-Clearer not found in TFIUR
7013	Inactive link between Broker -Clearer
7014	Date of settlement invalid or not found
7015	Date of settlement < Session Date
7016	Value limit overload during pre opening
7017	Value limit overload during session
7018	Trade quantity invalid during pre opening
7019	Trade quantity invalid during session
7020	Declaration cancelled by surveillance
7021	Declaration cancelled by broker
7022	The quantity between the two counterpart are different
7023	The price between the two counterpart are different
7024	Declaration has been eliminated
7025	Accrued interest not found in TFCOUPON
7026	Invalid type of value
7027	Type of settlement not found in TFDLAI
7028	Client not found in TFIINT
7029	Client not found in TFABI
7030	I.B.O. and I.A.O. group states allowed only for fixing group
7031	It is not a specialist of the instrument
7032	To modify, it must be assigned to same broker which created it
7033	The order side can't be modified
7034	The instrument id can't be modified
7035	The new quantity order must be >= than the old quantity
7036	The new price must be >= than the old for a buy (less for a sell)
7037	The orders at opening price cannot be modified
7038	The orders Market cannot be modified
7039	Modification is limited to 3%
7040	There is no modification
7041	Only limited order on crossing phase
7042	Only limited orders at the last quoted price on crossing phase
7043	No cross available
7044	Client-Negotiator not found in TNG
7045	Negotiator already exists in TNG
8000	This Subscriber is not principal

NSC error code	Application message text
8001	This Subscriber already exists
8002	This Subsidiary already exists
8003	This Subsidiary doesn't exist
8004	This Subscriber is already subsidiary
8005	mifid active parameter doesn't exist
8006	This Member is already principal or subsidiary
8007	There is no apf row for the specified criteria
8008	Can't delete apf index still linked to a group
8009	Duplicate Key
8010	Zero minimum reference price mandatory for APF table
8011	The specified APF index doesn't exist in APF table
8012	Invalid APF index format
8100	Liquidity provider animation side unchanged
8101	Animation side must be Ask(A), bid(V) or both (2)
8102	Invalid account type for member/instrument
8103	Field Routing & Notice Indicator is bad filled
9010	Group not authorized on Buy Side for this broker
9011	Group not authorized on Sell Side for this broker
9015	Field INTERNAL BROKER REFERENCE is bad filled
9016	Field FUNCTION CODE is bad filled
9017	Field ORDER ENTRY DATE is bad filled
9018	Field ORDER SEQUENCE NUMBER is bad filled
9019	Field INSTRUMENT CODE is bad filled
9020	Field ORDER SIDE is bad filled
9021	Field ORDER TOTAL QUANTITY is bad filled
9022	Field TYPE OF LIMIT is bad filled
9023	Field ORIGINAL ORDER PRICE is bad filled
9024	Field VALIDITY TYPE is bad filled
9025	Field ORDER VALIDITY DATE is bad filled
9026	Field ORDER MINIMUM QUANTITY is bad filled
9027	Order must be rejected for forbidden instruments
9028	This group or user doesn't exist
9029	Maximum of 20 rows for cotation step table
9030	Matching algorithm type is already FIFO2
9031	Order price value must be < 100,000,000
9994	Echo message

NSC error code	Application message text
9995	Technical error - Session Change not performed
9996	Technical error - Automatic Authorization-Interdiction not performed
9997	Technical error - Delayed Opening not performed
9998	Technical error - Group State Change not performed
9999	Technical error - Function not performed.

5. SAMPLES

5.1 SELL ORDER CREATION ACCEPTED

- New Order Single (D)

```
09:56:57.008 <1> <fix> <O>
<8=FIX.4.2.9=207.35=D.49=CAS00001.56=1.34=22.50=CASPAM00001.52=20160205-
09:56:57.21=1.60=20160129-
11:53:04.11=CAS00002.48=JO4100311011.22=4.55=JO4100311011.54=2.38=786.40=2
.44=20.59=0.47=N.1=0123456789123456.58=GL Day order.10=175.>
```

- Execution Report (8)

```
09:56:57.307 <1> <fix> <I>
<8=FIX.4.2.9=369.35=8.34=190.49=1.56=CAS00001.52=20160205-
09:56:57.11=CAS00002 .37=20160205000006.150=0.20=0.39=0.48=JO410031
1011.22=4.55=JO4100311011.14=.6=.54=2.38=786.40=2.44=20.00.151=0.126=00000
000-
00:00:00.110=0.111=0.59=0.9945=00000000000000.9596=1.9265=2016020509560990
5968.47=N.439=.1=0123456789123456.109=.58=GL Day
order .9262=20160205A00000000552.10=242.>
```

5.2 BUY ORDER CREATION REJECTED

- New Order Single (D)

```
12:13:13.009 <1> <fix> <O>
<8=FIX.4.2.9=260.35=D.49=CAS00001.56=1.34=42.50=CASPAM00001.52=20160205-
12:13:13.21=1.60=20160129-
11:53:04.11=CAS00002.48=JO4100311011.22=4.55=JO4100311011.54=1.38=687.40=1
.44=300.59=0.47=N.99=123456,789.1=0123456789123456.109=DaltonCl.42=2005122
0-16:29:59.58=Saisie Ord n 002.10=083.>
```

- Execution Report (8)

```
12:13:13.033 <1> <fix> <I>
<8=FIX.4.2.9=197.35=8.34=214.49=1.56=CAS00001.52=20160205-
12:13:13.11=CAS00002 .20=0.39=8.150=8.380=002004.58=Order price
must not be filled in for Opening, Market to limit and
Mark.9262=20160205A00000000595.10=131.>
```

5.3 ORDER MODIFICATION ACCEPTED

- Order Cancel/Replace Request (G):

```
12:29:59.009 <1> <fix> <O>
<8=FIX.4.2.9=300.35=G.49=CAS00001.56=1.34=52.50=CASPAM00001.52=20160205-
12:29:59.21=1.60=20160129-11:53:04.11=ModifOrdre n
001.9945=201602050000012.22=4.55=JO4100311011.48=JO4100311011.54=2.38=555.4
0=2.44=20.2.59=0.47=N.9596=2.9005=123456789012.1=0123456789123456.109=Dalt
onCl.42=20051220-16:29:59.58=ModifOrdre n 001.10=007.>
```

- Execution Report (8)

```
12:29:59.035 <1> <fix> <I>
<8=FIX.4.2.9=371.35=8.34=224.49=1.56=CAS00001.52=20160205-
12:29:59.11=ModifOrdre n 001.37=20160205000001
3.150=5.20=0.39=5.48=JO4100311011.22=4.55=JO4100311011.14=.6=.54=2.38=555.
40=2.44=20.20.151=786.126=00000000-00:00:00.110=0.111=0.59
```

```
=0.9945=20160205000012.9596=2.9265=20160205122911967341.47=N.439=
.1=0123456789123456.109=DaltonCl.58=ModifOrdre n 001 .9262
=20160205A00000000611.10=105.>
```

5.4 ORDER MODIFICATION REJECTED

- Order Cancel/Replace Request (G):

```
09:57:00.008 <1> <fix > <O>
<8=FIX.4.2.9=355.35=G.49=CAS00001.56=1.34=23.50=CASPAM00001.52=20160205-
09:57:00.21=1.60=20160129-11:53:04.11=ModifOrdre n
001.9945=20060102123456.22=4.55=JO4100311011.48=JO4100311011.54=1.38=555.4
0=1.59=0.47=N.126=20051220-
16:29:59.110=123.111=123456789012.9596=2.5167=123456.789.9005=123456789012
.1=0123456789123456.109=DaltonCl.42=20051220-16:29:59.58=ModifOrdre n
001.10=200.>
```

- Order Cancel Reject (9)

```
09:57:00.032 <1> <fix > <I>
<8=FIX.4.2.9=145.35=9.34=191.49=1.56=CAS00001.52=20160205-
09:57:00.11=ModifOrdre n 001.434=2.380=002045.58=This order is not in the
book.9262=20160205A00000000554.10=095.>
```

5.5 ORDER CANCELLATION ACCEPTED

- Order Cancel Request (F):

```
11:17:46.009 <1> <fix > <O>
<8=FIX.4.2.9=181.35=F.49=CAS00001.56=1.34=12.50=CASPAM00001.52=20160208-
11:17:46.21=1.60=20160129-11:53:04.11=AnuGlOrd n
001.9945=20160208000002.22=4.55=JO4100311011.54=2.38=555.58= AnuGlOrd n
001.10=084.>
```

- Execution Report (8)

```
11:17:46.035 <1> <fix > <I>
<8=FIX.4.2.9=369.35=8.34=144.49=1.56=CAS00001.52=20160208-
11:17:46.11=AnuGlOrd n 001
.37=20160208000002.150=4.20=0.39=4.48=JO4100311011.22=4.55=JO4100311011.14
=.6=.54=2.38=786.40=2.44=20.00.151=0.126=20160208-
00:00:00.110=0.111=0.59=0.9945=00000000000000.9596=2.9265=2016020811151766
2787.47=N.439=.1=0123456789123456.109=.58=GL Day order
.9262=20160208A00000000511.10=168.>
```

5.6 ORDER CANCELLATION REJECTED

- Order Cancel Request (F):

```
11:32:34.009 <1> <fix > <O>
<8=FIX.4.2.9=181.35=F.49=CAS00001.56=1.34=15.50=CASPAM00001.52=20160208-
11:32:34.21=1.60=20160129-11:53:04.11=AnuGlOrd n
001.9945=20160208000002.22=4.55=JO4100311011.54=2.38=555.58=ModifOrdre n
001.10=081.>
```

- Order Cancel Reject (9)

```
11:32:34.045 <1> <fix > <I>
<8=FIX.4.2.9=145.35=9.34=147.49=1.56=CAS00001.52=20160208-
11:32:34.11=AnuGlOrd n 001 .434=1.380=002045.58=This order is not in the
book.9262=20160208A00000000513.10=170.>
```

5.7 GROUP STATE CHANGE

- Trading Session Status (h)
09:56:57.134 <1> <fix > <I>
<8=FIX.4.2.9=90.35=h.34=172.49=1.56=.52=20160205-
09:56:57.9963=S.9918=25.10072=2.9262=20160205A00000000512.10=135.>

5.8 INSTRUMENT STATE CHANGE

- Trading Session Status (h)
09:56:57.285 <1> <fix > <I>
<8=FIX.4.2.9=108.35=h.34=188.49=1.56=.52=20160205-
09:56:57.55=JO4100311011.10074=RB.10072=8.9262=20160205A00000000545.10=106.
>

APPENDIX A: REVIEW LOG, DOCUMENT HISTORY

REVIEW LOG

DOCUMENT NAME	Specification to access CAP-FIX
PROJECT NAME	CAP-FIX Implementation
LOCATION	Amman Stock Exchange
REVISION VERSION	Revision Number 4.0

DOCUMENT HISTORY

REVISION NO./ VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
4.0	11 October 2018	Euronext	Adding Cross orders and Repeating section in - New Order 'D' message Modification of Tag requirements for : - New Order 'D' message - Order Cancel/Replace 'G' message Tag 22 and Tag 59 are required, while Tag 44 becomes conditional
3.1	4 Sep 2018	Euronext	Modification on Tag 59 TimeInForce in - New Order 'D' message - Order Cancel/Replace 'G' message - Execution Report '8' message
3.0	16 Nov 2017	Euronext	Adding NSC Error Codes
2.0	13 Nov 2017	Euronext	Adding Tag 9947 TraderID in - New Order 'D' message - Order Cancel/Replace 'G' message Adding constraint on Tag 9596 OrderConfirmation
1.0	1 Mar 2017	Euronext	Initial Version

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Important CAP-FIX Information

Connection Information (For Testing):

Server IP: 10.1.156.30

CAP Port: 39112

Logon Message (35=A):

- SenderCompID: Tag 49 (49=0## where ##= Broker No.)
- TargetCompID: Tag 56 (56=0)
- SenderSubID: Tag 50 (50=AMMBR0## where ##= Broker No.)
- TargetSubID: Tag 57 (57=unknown)
- RawDataLength: Tag 95 (95=8)
- RawData: Tag 96 (96=Password)

Logout Message (35=5):

- SenderCompID: Tag 49 (49=0## where ##= Broker No.)
- TargetCompID: Tag 56 (56=0)
- SenderSubID: Tag 50 (50=AMMBR0## where ##= Broker No.)
- TargetSubID: Tag 57 (57=PACFIX)

New Order Single (35=D) and Cancel/Replace Order (35=G):

- SenderCompID: Tag 49 (49=0## where ##= Broker No.)
- TargetCompID: Tag 56 (56=1)
- SenderSubID: Tag 50 (50=AMMBR0## where ##= Broker No.)
- Account: Tag 1 (1=0##-----***** where ##= Broker No. and *****= Client No.)
- TraderID: Tag 9947 (9947=0##00*** where ##= Broker No. and ***= CAP Station ID)

Cancel Order (35=F):

- SenderCompID: Tag 49 (49=0## where ##= Broker No.)
- TargetCompID: Tag 56 (56=1)
- SenderSubID: Tag 50 (50=AMMBR0## where ##= Broker No.)

ملحق 7

Amman Stock Exchange

MMTP Messages Specifications

Prepared By: Eng. Shaheen Al-Habash

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Introduction

Overview

This document specifies the structure of the public MMTP messages for the Amman Stock Exchange. MMTP messages are used to disseminate the public market data Vendors.

This document is organized into three main parts:

1. **Part One:** specifies the structure of the messages headers.
2. **Part Two:** specifies the structures of the different messages.
3. **Part Three:** specifies the definitions of the messages fields.

Conventions

The type of a field can be one of the following:

Type Code	Meaning
X	Alphanumeric
N	Numerical
B	Binary

Message Header

Message Format

A message received by the client application is subdivided into 4 sections:

1. MMTP header between the client application and the feed reception station.
2. Technical header.
3. Functional header (characteristic of the stock concerned by the message contents).
4. Message contents.

The following figure shows MMTP message subdivisions:

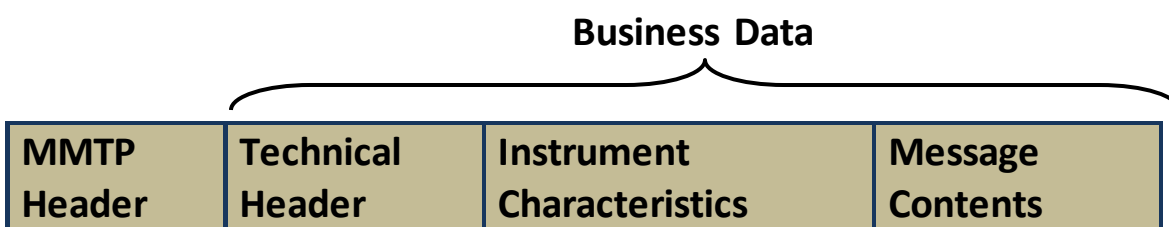


Figure 1: An MMTP message subdivisions.

MMTP Header

This header is common to all MMTP messages. Its function is to delimit messages within the TCP/IP character stream and facilitate rapid resynchronization following transmission hitches.

Table 1: MMTP Header

Field	Type	Length	Pos.	Short description	Value
STX	N	1	0	Start of text	02
Length of Primitive	N	4	1	Length of Primitive	96+m
Primitive Identifier	N	2	5	Primitive Identifier	23
Sequence Number	N	8	7	Message sequence number generated by sender	
Admin Data Length	N	4	15	Length of admin data field	72
Business Data Length	N	4	19	Length of business data	m
Admin Data Type	X	2	23	Data Format	
Message ID	X	24	25	Unique message ID assigned by sender	

Table 1: MMTP Header (*continued*)

Field	Type	Length	Pos.	Short description	Value
Send Timestamp	N	12	49	Date and time of transmission	
Delivery Timestamp	N	12	61	Date and time of delivery	
Delivery Timeout	N	6	73	Delivery timeout	HHMMSS
Route Data	X	11	79	Additional routing data	
Filler	X	5	90		
Business Data		m	95	Technical Header, Instrument Characteristics and Message Contents	
ETX	N	1	95+m	End of text	03
Header length		96+m			

Business Data

Technical Header

This technical header is used to keep statistics on message reception. It is used also to detect messages losses. The following table shows the fields of this header.

Table 2: Technical Header

Field	Type	Length	Pos.	Short description	Value
Technical Header Type	X	1	0	Technical Header Type	1
Item Code	B	2	1	Item code	
Session Number	B	2	3	Session number	
Absolute Message Number	B	4	5	Absolute Message Number	
Message Number for the Item Code	B	4	9	Message number for the item code	
Broadcast Timestamp	B	4	13	Broadcast timestamp	
Transmitter Signature	B	8	17	Reserved for future use	
Header length		25			

Instrument Characteristic Header

This header describes the main instrument characteristics, and message types contained in the body of the message. The following table shows the fields of this header.

Table 3: Instrument Characteristic Header

Field	Type	Length	Pos.	Short description	Value	Page
Instrument Characteristic Header Type	X	1	0	Type of the instrument characteristic header	1	
CFImVal	X	2	1	Market flow code for an instrument		72
Quote Place Code	X	3	3	Market place ID for instrument		
Financial Market Code	X	3	6	Financial Market Code		
CIdGrc	X	2	9	Instrument group identification		129
InstrumentID	X	12	11	Instrument identifier		101
CValMne	X	5	23	Instrument mnemonic code		84
DEven	N	8	28	Date of event	YYYYMMDD	86
HEven	N	6	36	Time of event		89
Message Type Code	X	4	42	Message type code		
Sequence By Instrument and Message Type	N	6	46	Sequence number by instrument and message type code		
Header length		52				

In the following sections, the header structures are not repeated in the message structures.

Message Structures

MMTP 01: Opening Trade

The following table shows the structure of MMTP 01 message.

Table 4: MMTP 01 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
QtitTran	N	12	1	Traded quantity	137
PTran			13	Trade Price	126
Ift	X	1	13	Decimal point locator	98
Qmt	N	13	14	Amount	129
CIdAdhNSCAc	X	8	27	ID of NSC® Buying Member	74
CIdAdhNSCVt	X	8	35	ID of NSC® Selling Member	74
QTitNgJ	N	12	43	Total traded quantity of the trading day	136
IsensVarP	X	1	55	Last trade price variation as compared to the reference price	102
Filler	X	5	56		
YCpteOmAc	X	1	61	Type of Clearing Account for the buyer Member in the Trade	155
YCpteOmVt	X	1	62	Type of Clearing Account for the seller Member in the Trade	156
Filler	X	2	63		
ItranYApl	N	1	65	Cross Trade Flag	105
IfinTran	X	1	66	Flag indicating end of trades at the same price	96
YOmAc	X	1	67	Code for the technical origin of the buy order	160
YOmVt	X	1	68	Code for the technical origin of the sell order	161
CSensVarPTranPP	X	1	69	Sign of price variation as compared to the previous price	81
NTran	N	7	70	Trade number	116
Filler	X	3	77		
YMarNSC	X	2	80	NSC® market segment	159
Filler	X	86	82		
DHTran	X	14	168	Trade Date and Time	87
YOmOrgTran	X	1	182	Type of orders at the origin of a trade	161

Table 4: MMTP 01 message structure (*continued*)

Field	Type	Length	Pos.	Short description	Page
XQVarPJDrPRf			183	Price Variation As Compared to Reference Price	149
lft	X	1	183	Decimal point locator	98
Qmt	N	13	184	Amount	129
Message length		196			

Processing rules

This message is sent for the first trades occurring for one instrument during a trading day. The Opening Trade message could be sent at the opening or during the continuous trading phase.

At opening:

For the first opening of an instrument since the start of the trading day, an Opening Trade message is sent for each trade that is generated. The Flag Indicating End of Trades at the Same Price (IfinTran) is set to 0 for all the opening trades except for the last trade, where it is set to 1. For the second and subsequent openings of the day, the MMTP-02 – Trade message is used.

During continuous trading phase:

If the instrument has not traded at the Opening, an Opening Trade message is sent for the first trade generated during Continuous Trading. The subsequent trades will be MMTP-02 – Trade messages.

Caution: In case of an Opening Trade cancellation, the cancelled trade is broadcast using a MMTP-02 – Trade message with a trade cancellation flag (IAnuTran) set to “00”.

Transmission functions

Opening a group of instruments

If it is the first opening of the instrument, all trades generated are broadcast with an Opening Trade message. The last trade at the same price indicator is set to 0 for all the opening trades except for the last one which is set to 1.

Instrument opening

Same as Opening a group of instruments.

Order entry during continuous trading

When an instrument is traded for the first time of the trading day, an Opening Trade message is sent. Subsequent trades are broadcast with MMTP-02 – Trade messages.

MMTP 02: Trade

The following table shows the structure of MMTP 02 message.

Table 5: MMTP 02 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
QtitTran	N	12	1	Traded quantity	137
PTran			13	Trade Price	126
Ift	X	1	13	Decimal point locator	98
Qmt	N	13	14	Amount	129
CIdAdhNSCAc	X	8	27	ID of NSC® Buying Member	74
CIdAdhNSCVt	X	8	35	ID of NSC® Selling Member	74
QTitNgJ	N	12	43	Total traded quantity of the trading day	136
IsensVarP	X	1	55	Last trade price variation as compared to the reference price	102
Filler	X	5	56		
YCpteOmAc	X	1	61	Type of Clearing Account for the buyer Member in the Trade	155
YCpteOmVt	X	1	62	Type of Clearing Account for the seller Member in the Trade	156
PphSeaCotJ			63	Highest trade price of the trading day	124
Ift	X	1	63	Decimal point locator	98
Qmt	N	13	64	Amount	129
PpbSeaCotJ			77	Lowest trade price of the trading day	123
Ift	X	1	77	Decimal point locator	98
Qmt	N	13	78	Amount	129
IAnuTran	N	2	91	Trade cancellation flag	94
Filler	X	2	93		
ItranYApI	N	1	95	ItranYApI	105
IfinTran	X	1	96	Flag indicating end of trades at the same price	96
YOmOrgTran	X	1	97	Type of orders at the origin of a trade	161
YOmAc	X	1	98	Code for the technical origin of the buy order	160
YOmVt	X	1	99	Code for the technical origin of the sell order	161
CSensVarPTranPP	X	1	100	Sign of price variation as compared to the previous price	81
NTran	N	7	101	Trade number	116

Table 5: MMTP 02 message structure (*continued*)

Field	Type	Length	Pos.	Short description	Page
Filler	X	3	108		
YMarNSC	X	2	111	NSC® market segment	159
Filler	X	86	113		
DHTran	X	14	199	Trade Date and Time	87
XQVarPJDrPrf			213	Price Variation As Compared to Reference Price	149
Ift	X	1	213	Decimal point locator	98
Qmt	N	13	214	Amount	129
Filler	X	16	227		
Message length		242			

Processing rules

This message is sent for all the trades occurring after the Opening trades or to indicate a trade cancellation. The Flag Indicating End of Trades at the Same Price (IfinTran) is set for the last trade at a given price in case of order entry.

Transmission functions

Opening a group of instruments

If the instrument has already been traded (instrument's first traded price filled in), all trades generated are broadcast with a Trade message.

Instrument opening

Same as Opening a group of instruments.

Order entry and processing in session

If the instrument has already been traded, all trades generated are broadcast with a Trade message.

Cancellation of trade by the Market Control

When a trade is cancelled by Market Control, the cancelled trade is broadcasted using a MMTP-02 – Trade message with a trade cancellation flag (IAnuTran) set to "00".

MMTP 03: Price

The following table shows the structure of MMTP 03 message.

Table 6: MMTP 03 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
PobjMsgP			1	Price	123
Ift	X	1	1	Decimal point locator	98
Qmt	N	13	2	Amount	129
PphSeaCotJ			15	Highest trade price of the trading day	124
Ift	X	1	15	Decimal point locator	98
Qmt	N	13	16	Amount	129
PpbSeaCotJ			29	Lowest trade price of the trading day	123
Ift	X	1	29	Decimal point locator	98
Qmt	N	13	30	Amount	129
YPMsgP	N	2	43	Price type	163
IsensVarP	X	1	45	Last trade price variation as compared to the reference price	102
Filler	X	5	46		
CSensVarPValPP	X	1	51	Trade price versus next to last trade price variation flag	81
XQVarPJDrPRf			52	Price Variation As Compared to Reference Price	149
Ift	X	1	52	Decimal point locator	98
Qmt	N	13	53	Amount	129
Filler	X	6	66		
Message length		71			

Processing rules

This message indicates a modification of instrument specific prices.

Transmission functions

Change in previous day's adjusted closing price

This change leads to the transmission of a MMTP-03 – Price message with a price trend flag (YPMsgP) set to 34 indicating that the previous day's closing price has been modified. Then according to the type of price, another MMTP-03 – Price message is sent with a price trend flag set to 35 if the modified price is a settlement price, or with a price trend flag set at 36 if the

modified price is a final settlement price, or with a price trend flag set to 38 if the modified price is a reference price.

Change in settlement price (for derivatives)

This change leads to the transmission of a MMTP-03 – Price message with a price trend flag (YPMsgP) set to 34 indicating that the previous day's closing price has been modified and an MMTP-03 – Price message with the price trend flag set to 35 indicating that the settlement price has been modified.

Change in final settlement price (for derivatives)

This change leads to the transmission of a MMTP-03 – Price message with the price trend flag (YPMsgP) set to 34 indicating that the previous day's closing price has been modified and a MMTP-03 – Price message with the price trend flag set to 36 indicating that the final settlement price has been modified.

Change in reference price

This change leads to the transmission of a MMTP-03 – Price message with the price trend flag (YPMsgP) set to 34 indicating that the previous day's closing price has been modified, and an MMTP-03 – Price message with a price trend flag set to 38 indicating that the reference price has been modified. Note that this transmission is submitted to the parametrization of the trading rule [CALCUL-VAR], indeed if [CALCUL-VAR] = 0 (cash configuration), only one MMTP-03 – Price message is sent with a price trend flag set to 38.

Trade cancellation

In the event of a modification to the previous traded price (trend flag YPMsgP set to 33), the first traded price (trend flag set to 30), to the highest traded price (trend flag set to 31) or the lowest traded price (trend flag set to 32), a MMTP-03 – Price message is sent for each modified extreme value.

MMTP 04: Best Limits

The following table shows the structure of MMTP 04 message.

Table 7: MMTP 04 message structure

Field	Occ.	Type	Length	Pos.	Short description	Page
Headers						
YOmOrgTran		X	1	1	Type of orders at the origin of a trade	161
Filler		X	6	2		
ItabModMeLim	6	X	1	8	Change of best limit flag	104
AMeLim	6			14	Best limit aggregate	66
QTitMeDem		N	12	14	Best buy limit quantity	134
ZOrdMeDem		N	4	26	Number of orders at a best buy limit	169
PmeDem				30	Best buy limit price	122
Ift		X	1	30	Decimal point locator	98
Qmt		N	13	31	Amount	129
PmeOf				44	Best sell limit price	122
Ift		X	1	44	Decimal point locator	98
Qmt		N	13	45	Amount	129
ZOrdMeOf		N	4	58	Number of orders at a best sell limit	169
QTitMeOf		N	12	62	Best sell limit quantity	135
Filler		X	2	74		
Minimum message length			75			
Maximum message length			385			

Processing rules

The MMTP-04 – Best Limits message is broadcast as changes occur to the order books of an instrument. For each of the 5 best limits on each side, it shows:

- The number of orders at that level (limit);
- The total quantity of orders at that level;
- The price.

This message is broadcast as soon as something changes in these five best limits. In pre-opening mode, an additional occurrence is broadcast in the message called Market summary.

The concept of market summary for an instrument

The Market summary for an instrument is the summary of the orders that would be executed if the Opening of the instrument took place at the moment this message was sent. The market

summary has no meaning except when the TOP (Theoretical Opening Price) has been determined during the Pre-opening phase.

Orders participating in the calculation of the best limits

Non-triggered Stop orders are not included in the MMTP-04 – Best Limits message. To minimize the message length, only the modified limits (Bid and Ask) are broadcast. In pre-opening mode, if a Theoretical Opening Price (TOP) is determined:

- The first occurrence contains the Market Order (MO) limit if it exists
- The second occurrence contains the Market On Opening (MOO) limit if it exists
- The third occurrence contains the price overridden limit at the TOP
- The sixth occurrence is the sum of the MO limit, the MOO limit and total price overwrites. If the sixth occurrence is equal to the first one (no buy or sell "Market Order" and no buy or sell "Market On Opening" orders for an instrument) it is not filled in and its corresponding flag in ItabModMeLim is set to "0".

In Continuous Trading mode, the sixth element is meaningless and the corresponding change flag in ItabModMeLim is set to "0".

Best Limits sent when the order book is modified

In order to minimize the size of MMTP-04 – Best Limits messages, only the best limits that have been modified or deleted are sent. The market summary is only present during the Pre-Opening phase.

The MMTP-04 – Best Limits message therefore has a variable length. The presence in the message of modified or deleted best limits and of the market summary is indicated via a table (ItabModMeLim) with 6 Boolean flags:

- Flags 1 to 5 indicate whether or not the best limit for rank 1, 2, 3, 4 or 5 respectively is presented in the message.
- Flag 6 indicates whether the market summary is present.

Caution: It is important to note that, except by chance, the position of a best limit in the message does not correspond to its rank in the order book, because not all best limits in the book appear in the message: the first limit present in a given occurrence of the Best Limits message can for example correspond to the limit with a rank of 3 in the order book.

The relative order of the best limits in the message is the same as the relative order of the best limits in the book; thus, the rank N in the order book of the best limit that has the position X in the message is equal to the position in the flags table of the Xth flag that has the value of 1. For example, if the flags are 001000, this means that there is only one best limit in the message and its rank is 3.

Transmission functions

Preparation for the Session

At the beginning of a new trading session, for each instrument whose order book has been modified by Post-Session processing (elimination of orders in the order book after a corporate event or after the expiration of a derivative instrument or after the order validity date has been reached), an MMTP-04 – Best Limits message is sent.

Entry, modification, cancellation of an order during the Pre-Opening

For each order (except non triggered Stop orders) which modifies one of the values associated with the five best limits of the instrument (quantity, number of orders, price), a MMTP-04 – Best Limits message is sent.

Opening of an Instrument with Its Group

For each instrument for which a TOP has been determined that falls within the price thresholds, a MMTP-04 – Best Limits message is sent.

Opening/Auction of an Instrument

Same as Opening of an Instrument with Its Group.

Modification of the Last Adjusted Closing Price

The modification of the last adjusted closing price can cause the recalculation of the theoretical opening price because of an update to the static reference price, and therefore can also result in the modification of the best limits whose prices are overwritten by the theoretical opening price. Consequently, if the instrument group is in Pre-Opening, or if the instrument is suspended or reserved, a MMTP-04 – Best Limits message is sent.

Order Entry and Processing During Continuous Trading

For each order entered into the order book, modified or cancelled, if one of the values associated with the best limits for the instrument is modified (in particular, if a trade modifies the cumulative displayed quantities), a MMTP-04 – Best Limits message is sent.

Modification of the Static Reference Price and the Static Authorized Price Fluctuation for an Instrument

The modification of the static reference price can cause the recalculation of the theoretical opening price and therefore a modification of the best limits.

Immediate Rebroadcasting of the Best Limits

For each instrument affected by the command (for a given instrument or all instruments in a group or all instruments): an MMTP-04 – Best Limits message is sent, with the 5 best limits provided if they exist, and the market summary is provided if appropriate.

Elimination of All Orders for an Instrument

An MMTP-04 – Best Limits message is sent.

Cancellation of All Orders for a Member

For each instrument for which at least one of the 5 best limits is affected, an MMTP-04 – Best Limits message is sent.

Elimination of All Orders for a Group (Orders whose timestamps are later than a time specified in the command)

For each instrument for which at least one of the 5 best limits is modified, an MMTP-04 – Best Limits message is sent.

Post-Session

- Purging of the Orders for a Member (command entered by Market Control at the request of the member, but executed by the system during Post-Session): for each instrument for which at least one of the 5 best limits is affected, an MMTP-04 – Best Limits message is sent.
- Rebroadcasting of the market sheet for one or more instruments or for all instruments: for each group for which rebroadcasting has not been explicitly forbidden and for each instrument in a group for which rebroadcasting has not been explicitly forbidden, an MMTP-04 – Best Limits message is sent.

MMTP 05 Instrument State Change

The following table shows the structure of MMTP 05 message.

Table 8: MMTP 05 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
IetaCotVal	X	1	1	Instrument trading state indicator	95
IOrgResVal	X	1	2	Indicator giving origin of instrument reservation	101
DDebSuVal	N	8	3	Start date for suspension of instrument	85
HdebSuVal	N	6	11	Start time for suspension of instrument	89
CEtaVal	X	2	17	Code indicating the state of the instrument in NSC®	71
CActModEtaVal	X	1	19	Action code for the instrument state change	68
HOvPgmVal	X	6	20	Programmed opening time for instrument	92
CEtaValSysTCS	X	1	26	Instrument state code in TCS system	71
Filler	X	22	27		
Message length		48			

Processing rules

This message is sent by NSC® to indicate a status change of an instrument:

- Trading suspension on instrument.
- Reservation.
- Resumption of trading.
- Etc.

Transmission functions

Preparing for the session

For each instrument that remains suspended, reserved or forbidden from the previous trading day, and for each instrument created in a forbidden state, an MMTP-05 – Instrument State Change message is sent, with an action code (CActModEtaVal) of N (State at initialization).

Opening of an instrument with its group

For each instrument in the group,

- If the instrument is neither reserved nor suspended:
 - If the Theoretical Opening Price cannot be determined and some Must-Be-Filled orders or At Opening orders or Market Orders remain unfilled, then an MMTP-05 – Instrument State Change message is sent with an instrument trading state indicator (IetaCotVal) at H (instrument reserved upward) or B (Instrument reserved downward), the indicator giving origin of instrument reservation (IOrgResVal) set to A (Automatic) and an action code (CActModEtaVal) of R (Reservation). Otherwise, an MMTP-05 – Instrument State Change message is sent with the action code of O (Changes to Open state).
 - If the Theoretical Opening Price has been determined and falls within the price thresholds, an MMTP-05 – Instrument State Change message is sent with an action code (CActModEtaVal) of C (Trading), followed by an MMTP-05 – Instrument State Change message with an action code of O (Changes to Open state).
 - If the Theoretical Opening Price has been determined and falls outside the price thresholds, an MMTP-05 – Instrument State Change message is sent with an instrument trading state indicator (IetaCotVal) of H (Instrument reserved upward) or B (Instrument reserved downward), the indicator giving origin of instrument reservation set to A (Automatic) and an action code (CActModEtaVal) of R (Reservation).
- If the instrument is already reserved or suspended: the conditions for sending this message are identical to those of the Opening of an instrument function (see below).

Opening of an instrument (immediate or programmed)

- If the Theoretical Opening Price cannot be determined,
 - If some Must-Be-Filled orders (In the strict sense: excluding Market Orders) or some Market On Opening orders are unfilled, the system sends an MMTP-05 – Instrument State Change message with an instrument trading state indicator (IetaCotVal) at H (Instrument reserved upward) or B (Instrument reserved downward), the indicator giving origin of instrument reservation (IOrgResVal) set to A (Automatic) and an action code (CActModEtaVal) of R (Reservation).
 - Otherwise, the system sends an MMTP-05 – Instrument State Change message with an action code (CActModEtaVal) of O (Changes to Open state).
- If the Theoretical Opening Price has been determined and falls within the price thresholds, the system sends an MMTP-05 – Instrument State Change message with the action code (CActModEtaVal) set to C (Trading), followed by an MMTP-05 – Instrument State Change message with an action code of O (Changes to Open state).
- If the Theoretical Opening Price has been determined and falls outside the price thresholds, the system sends an MMTP-05 – Instrument State Change message with an instrument trading state indicator (IetaCotVal) of H (Instrument reserved upward) or B (Instrument reserved downward), the indicator giving origin of instrument reservation (IOrgResVal) set to A (Automatic) and an action code (CActModEtaVal) of R (Reservation).

Instrument auction (immediate or programmed)

- If the Theoretical Opening Price cannot be determined,
 - If (the instrument is neither suspended nor reserved before the auction, and some Must-Be-Filled orders or some Market Orders or some At Opening orders are unfilled) or (the instrument is suspended or reserved before the auction and some Must-Be-Filled orders or At Opening orders are unfilled), the system sends an MMTP-05 – Instrument State Change message with an instrument trading state indicator (IetaCotVal) of H (Instrument reserved upward) or B (Instrument reserved downward), the indicator giving origin of instrument reservation (IOrgResVal) set to A (Automatic) and an action code (CActModEtaVal) of R (Reservation).
 - Otherwise, if in addition the instrument was not open before the auction, the system sends an MMTP-05 – Instrument State Change message with the action code (CActModEtaVal) of O (Change to Open state).
 - If the instrument was authorized for order entry, the system sends an MMTP-05 – Instrument State Change message with an action code (CActModEtaVal) set to I (Order entry forbidden).
- If the Theoretical Opening Price has been determined and falls within the price thresholds, the system sends an MMTP-05 – Instrument State Change message with an action code (CActModEtaVal) of C (Trading), followed by an MMTP-05 – Instrument State Change message with an action code of O (Change to Open state).
- If the Theoretical Opening Price has been determined and falls outside the price thresholds, the system sends an MMTP-05 – Instrument State Change message with an instrument trading state indicator of (IetaCotVal) H (Instrument reserved upward) or B (Instrument reserved downward), the indicator giving origin of instrument reservation (IOrgResVal) set to A (Automatic) and an action code (CActModEtaVal) of R (Reservation), followed by an MMTP-05 – Instrument State Change message with an action code of I (Order entry forbidden) if the instrument was authorized.

Processing of an order during the Continuous Trading phase

If the instrument is frozen, the system sends an MMTP-05 – Instrument State Change message with an action code (CActModEtaVal) of G (Freeze of an instrument).

Market Control commands

- Programming of a deferred opening for a reserved or suspended instrument: an MMTP-05 – Instrument State Change message is sent with an action code (CActModEtaVal) of P and a programmed opening time provided and a space for the instrument trading state indicator (IetaCotVal).
- Cancellation of a deferred opening: an MMTP-05 – Instrument State Change message is sent with an action code (CActModEtaVal) of D.
- Reservation of an instrument by a Market Control command: an MMTP-05 – Instrument State Change message is sent with an instrument trading state indicator (IetaCotVal) of H, B or P and an action code (CActModEtaVal) of M.

- Suspension of an instrument:
 - If the suspension command relates to a reserved instrument with a programmed deferred opening, an MMTP-05 – Instrument State Change message is sent with a space for the instrument trading state indicator (IetaCotVal) and an action code (CActModEtaVal) of D.
 - In all cases, an MMTP-05 – Instrument State Change message is sent with an instrument trading state indicator (IetaCotVal) of S and an action code (CActModEtaVal) of M.
- Forbidding or authorization of an instrument: an MMTP-05 – Instrument State Change message is sent with a space for the instrument trading state indicator (IetaCotVal) and an action code (CActModEtaVal) of I or A.
- Stopping of the broadcasting of the market sheet for an instrument (Change to a Fast Market): an MMTP-05 – Instrument State Change message is sent with a space for the instrument trading state indicator (IetaCotVal) and an action code (CActModEtaVal) of F.
- Resumption of the broadcasting of the market sheet for an instrument (Return to a Slow Market): an MMTP-05 – Instrument State Change message is sent with a space for the instrument trading state indicator (IetaCotVal) and an action code (CActModEtaVal) of S.
- Elimination of all orders in the book for an instrument: an MMTP-05 – Instrument State Change message is sent with an action code (CActModEtaVal) of E.
- If the instrument is thawed, the system sends an MMTP-05 – Instrument State Change message with an action code (CActModEtaVal) of G (Thaw of an instrument).

MMTP 07/08: Start/End of Session

The following table shows the structure of MMTP 07/08 message.

Table 9: MMTP 07/08 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
Message length		0			

Processing rules

The Start of Session message indicates the start of a system at the beginning of a new trading session. More precisely, this message announces, at the beginning of each new trading day, that the system is starting its activity of sending MMTP messages.

As a general rule, each system that sends MMTP messages sends 0 or 1 start of session message per trading day. However:

- NSC® sends one start of session message per trading unit.
- The sending of such a message is optional (some system do not send it).

NSC® Transmission functions

Management of start of session for trading day

The start of session management process sends a starting message to the broadcasting process. It then sends all messages generated by "Post-Session" processing during post session.

Changeover the group of instrument's status

The session management process sends an End of Session message as soon as all the non-forbidden groups of instruments have switched to post-session state (End-of-Day Inquiries).

PFI2 Transmission Functions

The PFI2 application sends 1 type-07 message per trading day. This message is sent by the start-of-day batch processes, which are started at a specific configurable time (currently, 6:15 am ET). This message precedes all other MMTP messages sent by PFI2. the PFI2 application sends 1 type-08 message per trading day. This message is sent by the end-of-day batch processes, which are started when all the following conditions are met:

1. The earliest time for starting end-of-day batch processes has been reached (a configurable time).
2. The Cash Instruments Reference Data coming from RCE has been processed.
3. All indices are closed (and therefore all type-B2 messages have been sent).

MMTP 16: Group State Change

The following table shows the structure of MMTP 16 message.

Table 10: MMTP 16 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
CIdGrc	X	2	1	Instrument group identification	129
CEtaGrc	X	1	3	Instrument group state	70
ZPcsNSCEmetMsgRLCGrc	N	2	4	Number of Trading Units used by the group	169
Filler	X	23	6		
Message length		28			

Processing rules

Indicates a change in the state of an instrument group. The number of messages of this type corresponds to the number of NSC® trading units for the corresponding group, and the number of these links is stated in the message (ZPcsNSCEmetMsgRLCGrc).

Transmission functions

Session management in case of change of group instrument's status

An MMTP-16 – Group State Change message is transmitted every time the status of a group of instruments changes. Both the group of instruments code (CIdGrc) and the new status (CEtaGrc) are transmitted by the broadcasting process (except for change to post-session).

Session management in case of trading interruption

An MMTP-16 – Group State Change message is transmitted whenever a group of instruments is interrupted. For an overall market interruption, one message is sent per group of instruments.

Session management in case some groups of instrument are forbidden

An MMTP-16 – Group State Change message is transmitted whenever a group of instruments is forbidden. For an overall market interruption, one message is sent per group of instruments.

MMTP 23: Text Message

The following table shows the structure of MMTP 23 message.

Table 11: MMTP 23 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
YMarMsg	X	2	1	Type of Market concerned by the message	159
IUrg	X	1	3	Priority Indicator	105
YCrI	X	1	4	Nature of Message	157
YDest	X	2	5	Address Type	157
CIdMsg	X	3	7	Message Number	75
ZTotSeg	X	2	10	Number of messages in this message	170
NSeqSeq	X	2	12	Sequence number of message within this message	115
LTit	X	80	14	Message title	112
LMsg	X	854	94	Message text	111
Message length		947			

Processing rules

Enables the Market Control to send a free text to the market participants. This type of message is sent by the Market Control to inform brokerage firms about events of general interest that occurred in the market (halting of stocks, deletion of order books, new listing of stocks, various technical messages, etc.) A long message can be split into several transmissions, each of which is a separate message (type 23). Information in the header enables to rebuild the entire message.

Transmission functions

The message is sent through the Market Surveillance tool SPI MAIL.

MMTP 30: Theoretical Opening Price

The following table shows the structure of MMTP 30 message.

Table 12: MMTP 30 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
PTeoOvJ			1	Theoretical Opening Price	125
Ift	X	1	1	Decimal point locator	98
Qmt	N	13	2	Amount	129
QXtePTeoOvj	N	12	15	Total traded quantity at pening	138
IsensVarP	X	1	27	Last trade price variation as compared to the reference price	102
Filler	X	5	28		
CSensQNrepOv	X	1	33	Unfilled quantity side at opening price	81
QnrepOv	N	12	34	Unfilled quantity at opening	132
QTitMeLimSimAc	N	12	46	Total simulated buy quantity	135
PmeLimSimAcVal			58	Simulated buy price	122
Ift	X	1	58	Decimal point locator	98
Qmt	N	13	59	Amount	129
PmeLimSimVtVal			72	Simulated sell price	122
Ift	X	1	72	Decimal point locator	98
Qmt	N	13	73	Amount	129
QTitMeLimSimVt	N	12	86	Total simulated sell quantity	135
XQVarPJDrPRf			98	Price Variation As Compared to Reference Price	149
Ift	X	1	98	Decimal point locator	98
Qmt	N	13	99	Amount	129
Filler	X	6	112		
Message length		117			

Processing rules

Indicates an instrument's Theoretical Opening Price, or TOP (also known as an Indicative Opening Price, or IOP): what the trading price would be if the instrument were to open at the moment when the calculation was made (PTeoOvJ). Furthermore, the message provides for both sides the simulated prices (PmeLimSimAcVal and PmeLimSimVtVal), the total simulated quantities (QTitMeLimSimAc and QTitMeLimSimVt), as well as the side (CSensQNrepOv) and quantity (QnrepOv) that would remain unfilled and the price variation as compared to the reference price (XQVarPJDrPRf).

An MMTP-30 – Theoretical Opening Price message is transmitted if the theoretical price or if any datum of the message (except the variation) varies.

If the theoretical price remain undetermined, but the reason for this indetermination changes, then an MMTP-30 – Theoretical Opening Price message is sent.

Transmission functions

Every function capable of entailing recalculation of the Theoretical Opening Price can trigger the transmission of this message.

- Management of the group of instruments pre-opening preparation session: This processing can be triggered either in Session or in Post-session.
- Entering and Order processing in pre-opening mode
- Changes in previous day's adjusted closing price
- Changes to reference price and tick limit
- Overall cancellation of a Subscriber's orders
- Overall cancellation of orders for a group of instruments
- Cancellation of orders in the book for an instrument

Note: If the variation is the only modified item, the message is not sent because the variation is not stored in the database.

MMTP 32: Opening Summary

The following table shows the structure of MMTP 32 message.

Table 13: MMTP 32 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
PPrCJ			1	First trade price of the trading day	124
Ift	X	1	1	Decimal point locator	98
Qmt	N	13	2	Amount	129
PDrCotJ			15	Last trade price of the trading day	119
Ift	X	1	15	Decimal point locator	98
Qmt	N	13	16	Amount	129
PphSeaCotJ			29	Highest trade price of the trading day	124
Ift	X	1	29	Decimal point locator	98
Qmt	N	13	30	Amount	129
PpbSeaCotJ			43	Lowest trade price of the trading day	123
Ift	X	1	43	Decimal point locator	98
Qmt	N	13	44	Amount	129
YPOvVal	N	2	57	Trend flag	164
QtitNgOvVal	N	12	59	Total traded quantity at opening	136
IsensVarP	X	1	71	Last trade price variation as compared to the reference price	102
Filler	X	5	72		
CSensVarPTranPP	X	1	77	Sign of price variation as compared to the previous price	81
XQVarPJDrPRf			78	Price Variation As Compared to Reference Price	149
Ift	X	1	78	Decimal point locator	98
Qmt	N	13	79	Amount	129
Filler	X	26	92		
Message length		117			

Processing rules

Summarizes an instrument's opening trades.

The MMTP-32 – Opening Summary message is sent after an instrument opening (fixing) that has been traded to summarize the opening (fixing), or if the first trade(s) occurred during continuous trading.

The message provides the first (PPrCJ), highest (PphSeaCotJ), lowest (PpbSeaCotJ) and last (PDrCotJ) trade prices for the trading day, the total traded quantity at opening (QtitNgOvVal), as well as the sign of variation (CSensVarPTranPP) as compared to the previous traded price and the

variation (XQVarPJDrPrf) as compared to the reference price of the instrument. The trend indicator YPOvVal() indicates whether this corresponds to the 1st opening on the instrument or to the first traded price (value 04) or the nth opening if the instrument has already traded (value 07).

Transmission functions

Opening a group of instruments

For each instrument with a TOP between the thresholds, an MMTP-32 – Opening Summary message is sent. Trades take place at the TOP. The message summarizes the opening.

Instrument opening

If the instrument has a TOP between the thresholds, an MMTP-32 – Opening Summary message is sent.

Instrument fixing

If the instrument has a TOP between the thresholds, an MMTP-32 – Opening Summary message is sent.

Entering and processing the order in continuous trade mode

During continuous trading, when an instrument is traded for the first time (first trade of the day), an Opening Summary message is sent after the MMTP-01 – Opening Trade messages. This message summarizes the Opening trade.

MMTP 33: TCS Trade

The following table shows the structure of MMTP 33 message.

Table 14: MMTP 33 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
QtitTran	N	12	1	Traded quantity	137
PTran			13	Trade Price	126
Ift	X	1	13	Decimal point locator	98
Qmt	N	13	14	Amount	129
Filler	X	16	27		
QTitNgJ	N	12	43	Total traded quantity of the trading day	136
Filler	X	8	55		
PphSeaCotJ			63	Highest trade price of the trading day	124
Ift	X	1	63	Decimal point locator	98
Qmt	N	13	64	Amount	129
PpbSeaCotJ			77	Lowest trade price of the trading day	123
Ift	X	1	77	Decimal point locator	98
Qmt	N	13	78	Amount	129
IAnuTran	N	2	91	Trade cancellation flag	94
Filler	X	2	93		
ItranYApI	N	1	95	Cross Trade Flag	105
Filler	X	15	96		
YMarNSC	X	2	111	NSC® market segment	159
Filler	X	86	113		
DHTran	X	14	199	Trade Date and Time	87
XQVarPJDrPRf			213	Price Variation As Compared to Reference Price	149
Ift	X	1	213	Decimal point locator	98
Qmt	N	13	214	Amount	129
Filler	X	16	227		
Message length		242			

Processing rules

Indicates a trade on TCS, or a trade cancellation.

This message informs all addresses of any trades occurred on TCS during the trading day. The cross trade indicator is set at 1 if trading results from a cross order, else it is filled in at 0.

Creation/cancellation of trade

TCS sends a TRADE message in case of creation or cancellation of trade. The trade cancellation indicator is set at:

- '07' for trading.
- '00' for cancellation

MMTP 37: Static Thresholds

The following table shows the structure of MMTP 37 message.

Table 15: MMTP 37 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
PSGelStaMax			1	Upper static threshold of freezing	125
Ift	X	1	1	Decimal point locator	98
Qmt	N	13	2	Amount	129
PSGelStaMin			15	Lower static threshold of freezing	125
Ift	X	1	15	Decimal point locator	98
Qmt	N	13	16	Amount	129
Filler	X	20	29		
Message length		48			

Processing rules

The MMTP-37 – Static Thresholds message informs Subscribers of modifications in authorized price intervals (from PSGelStaMin to PSGelStaMax) for an instrument. This message is subjected to selective transmission according to the group of instruments to which the instrument belongs.

Transmission functions

Post-Session

During the Post-Session processing, static thresholds may be recalculated for some groups of instruments from the previous day's adjusted closing price.

Opening a group of instruments

Static thresholds may be recalculated during the instruments group opening processing with respect to the reference price. The latter is updated:

- Either on the basis of the Theoretical Opening Price, if valid.
- Or on the basis of the crossed threshold if the Theoretical Opening Price lies outside the static thresholds.

The new static thresholds may or may not be broadcast, depending on the group of instruments concerned.

Changes in static thresholds

Modifications to static thresholds may or may not lead to the broadcasting of an MMTP-37–Static Thresholds message, depending on the group of the instrument concerned.

Changes in instrument tick limit

Any modification of the static tick limit leads to a recalculation of static thresholds and possibly a broadcast to that effect.

Changes in reference price

Any modification of the reference price leads to a recalculation of static thresholds and possibly a broadcast to that effect.

Changes in previous day's adjusted closing price

Any modification to the previous day's adjusted closing price implies a reference price update, which leads to a recalculation of static thresholds and possibly to a broadcast, depending on the instrument update flags for the post-session static thresholds and the broadcast flag for the static thresholds.

MMTP 52/53: Deletion/Creation of Instrument Characteristics

The following table shows the structure of MMTP 52/53 message.

Table 17: MMTP 52/53 message structure

Field	Occ.	Type	Length	Pos.	Short description	Page
Headers						
ACarValRLC				1	Aggregate for instrument characteristics	61
Lval18		X	18	1	18-character instrument name	112
YVal		N	3	19	Type of instrument	166
Filler		N	1	22		
CPyEmet		X	3	23	Code (ISO3A norm) for country of issuer	80
QnmVlo				26	Amount of par value of instrument for calculating amount for trade	131
Ift		X	1	26	Decimal point locator	98
Qmt		N	13	27	Amount	129
Filler		X	3	40		
ZTitAd		N	12	43	Number of shares or bonds outstanding	169
CSocCSAC		X	5	55	Code for issuing company	83
Lsoc30		X	30	60	30-character AFC name for issuing company	112
Filler		N	66	90		
DESop		N	8	156	Date on which the creation, modification, or deletion of an instrument takes effect	86
YOP SJ		N	2	164	Type of corporate event causing instrument modification on current day	161
CGdSVal		X	1	166	Code of the instrument category	73
Filler		N	7	167		
CDevPEmis		X	3	174	Currency code (ISO3A format) for issue price of bond or warrant	69
Pemis				177	Issue price for an instrument (bond, new issue, right, or warrant)	120
Ift		X	1	177	Decimal point locator	98
Qmt		N	13	178	Amount	129
Filler		N	14	191		

Table 17: MMTP 52/53 message structure (*continued*)

Field	Occ.	Type	Length	Pos.	Short description	Page
IlcoVwap		X	1	205	VWAP listed security flag	99
CGrValCot		X	2	206	Instrument group ID	73
Filler		X	15	208		
CPyCot		X	3	223	Code (ISO3A norm) for the country where the instrument is listed	79
CDevCot		X	3	226	Trading currency code according to the Iso3A coding system	69
DInMar		N	8	229	Date of first day of trading for instrument	87
CCpmLco		X	1	237	ID of segment for listed security	69
Filler		N	6	238		
CIdxPasCotVarVal		X	2	244	Index of the Variable Tick Table	75
YUniExpP		N	1	246	Type of unit of expression for instrument price	165
DDrCV		N	8	247	Date of last price for instrument	85
PDrAjSajCotV				255	Last adjusted and super-adjusted closing price	118
Ift		X	1	255	Decimal point locator	98
Qmt		N	13	256	Amount	129
Filler		X	13	269		
PDrAjCotV				282	Last adjusted closing price	118
Ift		X	1	282	Decimal point locator	98
Qmt		N	13	283	Amount	129
QpasCotFxeVal				296	Amount of the fixed price tick for an instrument	132
Ift		X	1	296	Decimal point locator	98
Qmt		N	13	297	Amount	129
Lval18AFC		X	18	310	18-character instrument name (AFC norm)	113
Filler		N	19	328		
CAFCValObjMsg		X	6	347	Cash Product code for instrument about which the message is sent	68
Filler		X	50	353		
QqtTranMarVal		N	12	403	Instrument lot size	133
Filler		X	9	415		
Lval30		X	30	424	30-character instrument name	113

Table 17: MMTP 52/53 message structure (*continued*)

Field	Occ.	Type	Length	Pos.	Short description	Page
Filler		X	21	454		
ClSin		X	12	475	ISIN code for the Cash product	76
Filler		X	48	487		
ZNorTitBlcNg		N	12	535	Weighted Average spread quantity	167
Filler		X	25	547		
CFImVal		X	2	572	Market flow code for an instrument	72
Filler		X	57	574		
DHDebCotProdMdv		X	14	631	Date and time at which trading starts on a derivative product	86
DHFinCotProdMdv		X	14	645	Date and time at which trading ends on a derivative product	87
IvaliOmIns		X	1	659	Default date validity	105
CProdCpsProdYCbn	40	X	12	660	NSC® Code for a combined product component	79
AKProdCpsProdYCbn	40			1140	Aggregate ratio for a leg of strategy instrument	65
CSignKMuProdCps		X	1		Leg multiplication coefficient sign	82
KmuProdCpsProdCbn		N	2		Leg multiplication ratio	109
Filler		X	1	1260		
YExpVarPValDrPRf		X	1	1261	Net change expression type	158
Filler		X	14	1262		
PExoProdMdv				1276	Strike price for a derivative product	121
Ift		X	1	1276	Decimal point locator	98
Qmt		N	13	1277	Amount	129
CDevPExoProdMdv		X	3	1290	Strike price currency code	70
QtitMinSaiOmProd		N	12	1293	Minimum quantity which can be entered for orders on the instrument	135
QTitMaxSaiOmProd		N	12	1305	Maximum quantity which can be entered for orders on the instrument	134
Filler		X	24	1317		

Table 17: MMTP 52/53 message structure (*continued*)

Field	Occ.	Type	Length	Pos.	Short description	Page
PsaiSMaxOkValMdv				1341	High Intermediate Threshold	124
Ift		X	1	1341	Decimal point locator	98
Qmt		N	13	1342	Amount	129
PsaiSMinOkValMdv				1355	Low Intermediate Threshold	129
Ift		X	1	1355	Decimal point locator	98
Qmt		N	13	1356	Amount	129
ZMaxLimDifVal		N	2	1369	Maximum number of limits transmitted in the limit message for the instrument	167
YAppaValMdv		X	1	1371	Matching type	154
YQStg		X	3	1372	Strategy Quantity Type	164
PCpsDrvObl				1375	Future-type leg price	117
Ift		X	1	1375	Decimal point locator	98
Qmt		N	13	1376	Amount	129
XDtaStg				1389	Delta Strategy percentage	142
Ift		X	1	1389	Decimal point locator	98
Qmt		N	13	1390	Amount	129
YStg		X	2	1403	Strategy Type	164
YCreValMdv		X	1	1405	Strategy creation type	157
CIdAdfCreValMdv		X	8	1406	Identification of the UDS Member creator	74
CIdNgCreValMdv		X	8	1414	Identification of the UDS Trader creator	75
CIsinProdSja		X	12	1422	ISIN code for the underlying product	76
YMarNSC		X	2	1434	NSC® market segment	159
YExoFamProdYOpt		X	1	1436	Execution type for an option instrument	158
Filler		X	1	1437		
IetaPcsOI		X	1	1438	Implied order processing flag	96
CComVal		X	1	1439	Board Code	69
CSecVal		X	3	1440	Sector Code	80
CSoSecVal		X	4	1443	Sub-sector Code	83
YDeComp		N	1	1447	Settlement Delay Type	157
IprodIsl		X	1	1448	Syariah Indicator	101
Filler		X	3	1449		
IvtDec		X	1	1452	Short sell indicator	106
LPra		X	10	1453	Practice Notes	111
Filler		X	28	1463		

ClsinForeign		X	12	1491	ISIN foreign cash product	76
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Table 17: MMTP 52/53 message structure (*continued*)

Field	Occ.	Type	Length	Pos.	Short description	Page
LocForeignIndicator		N	1	1503	Local Foreign Indicator	111
CIndustryValICB		X	4	1504	Industry Code ICB	76
CSuperSecValICB		X	4	1508	Super Sector Code ICB	83
CSecValICB		X	4	1512	Sector Code ICB	80
Filler		X	1	1516		
StSplitAgg				1517	Stock Split Aggregate	139
QCurStSplit		N	12	1517	Current Number of Shares for Stock Split	128
QnewStSplit		N	12	1529	New Number of Shares for Stock Split	131
StDivAgg				1541	Stock Dividend Aggregate	139
QCurStDiv		N	12	1541	Current Number of Shares for Stock Dividend	128
QAddStDiv		N	12	1553	Additional Number of Shares for Stock Dividend	127
QTitMaxSaiOmBuy		N	12	1565	Maximum quantity which can be entered for buy orders on the instrument	133
QTitMaxSaiOmSell		N	12	1577	Maximum quantity which can be entered for sell orders on the instrument	134
PDrCotV				1589	Closing price before adjustment.	120
Ift		X	1	1589	Decimal point locator	98
Qmt		N	13	1590	Amount	129
YTrading		X	1	1603	Instrument Trading Mode	165
Filler		X	13	1604		
IAtAcVtDec		X	1	1617	Pending Buy Indicator for Short Sell	94
ICtlVtTran		X	1	1618	Selling Check Indicator on Trades	95
ClsinProdSja		X	12	1619	ISIN code for the underlying product	76
QMinConsCptePret		N	12	1631	Minimum Quantity which can be Retained within a Client ID lendable account	129
YDnRjTran		X	1	1643	Clearing Method of Failing Trades	158
YDVP		X	1	1644	DVP Settlement Method	158
IngDrUn		X	1	1645	Trading Once a Right Indicator	100

YMethCalntObl		X	2	1646	Type of Interest Calculation Formula for Bonds	159
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Table 17: MMTP 52/53 message structure (*continued*)

Field	Occ.	Type	Length	Pos.	Short description	Page
KfrsHyp				1648	Coefficient for Pledging Fee	109
Ift		X	1	1648	Decimal point locator	98
Qmt		N	13	1649	Amount	129
KfrsEmp				1662	Coefficient for Borrowing Fee	109
Ift		X	1	1662	Decimal point locator	98
Qmt		N	13	1663	Amount	129
KcompEmp				1676	Coefficient for Borrowing Compensation	109
Ift		X	1	1676	Decimal point locator	98
Qmt		N	13	1677	Amount	129
KtranEchComp				1690	Coefficient for Failed Trade Compensation	109
Ift		X	1	1690	Decimal point locator	98
Qmt		N	13	1691	Amount	129
Filler		X	2	1704		
Message length			1705			

Definition

This message indicates the main characteristics of a listed instrument:

- Characteristics of the instrument itself
- Trading characteristics of the instrument
- Previous trading day price and amount of capital traded.

The message contains characteristics that are valid on **D+1**. The MMTP message header contains the switching criteria that are valid on D+1; the date of MMTP event is D+1 if D is the trading day that is just finishing when the message is sent.

This message allows receiving application to initialize their local Instrument Referential at the beginning of the Trading Day.

Transmission functions

This message is sent for every listed security affected by one of the following events:

- The listed security has been created with effect on D+1;
- The listed security exists in the Closed state on day D and changes to Open on D+1;
- At least one of the listed security's characteristics or at least one of the related instrument's Characteristics has been modified by an event that takes effect on D+1;
- The AFC code of the instrument has changed with effect on D+1.

MMTP 5E: Boards

The following table shows the structure of MMTP 5E message.

Table 18: MMTP 5E message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
CComVal	X	1	1	Board Code	69
LBoard	X	40	2	Board Name	111
Filler	X	35	42		
Message length		76			

Definition

This message identifies a Board with a code and a name.

Transmission functions

This type of message is sent:

- Every day within the referential data sequence (MMTP-50/51 – Start/End of Instrument Reference Data Flow messages)
- For each Board defined by the Exchange in the RCE referential application.

MMTP 5F: Sectors

The following table shows the structure of MMTP 5F message.

Table 19: MMTP 5F message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
CSecVal	X	3	1	Sector Code	80
LsecVal	X	40	4	Sector Name	112
CSuperSecVal	X	4	44	Super Sector Code	83
CSecValICB	X	4	48	Sector Code ICB	80
Filler	X	25	52		
Message length		76			

Definition

This message identifies a Sector with a code and the corresponding characteristics.

Transmission functions

This type of message is sent:

- Every day within the referential data sequence (MMTP-50/51 – Start/End of Instrument Reference Data Flow messages)
- For each Sector defined by the Exchange in the RCE referential application.

MMTP 5G: Sub-sectors

The following table shows the structure of MMTP 5G message.

Table 20: MMTP 5G message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
CSecVal	X	3	1	Sector Code	80
CSoSecVal	X	4	4	Sub-sector Code	83
LSoSecVal	X	40	8	Sub-sector Name	112
CSecValICB	X	4	48	Sector Code ICB	80
Filler	X	25	52		
Message length		76			

Definition

This message identifies a Sub-sector with a code and the corresponding characteristics.

Transmission functions

This type of message is sent:

- Every day at the start-up of the X-DIFF application
- For each Sub-sector defined by the Exchange in the RCE referential application.

MMTP 5J: Closing Price

The following table shows the structure of MMTP 5J message.

Table 24: MMTP 5J message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
PClosing			1	Closing price	117
Ift	X	1	1	Decimal point locator	98
Qmt	N	13	2	Amount	129
Iclose	X	1	15	Close indicator	94
YClose	X	1	16	Type of closing price	154
PClosingNoAdj			17	Closing price not adjusted	117
Ift	X	1	17	Decimal point locator	98
Qmt	N	13	18	Amount	129
PVWAP			31	Value-Weighted Average Price	126
Ift	X	1	31	Decimal point locator	98
Qmt	N	13	32	Amount	129
PVWAPNoAdj			45	VWAP not adjusted	126
Ift	X	1	45	Decimal point locator	98
Qmt	N	13	46	Amount	129
PdrCotVal			59	Last Traded Price	120
Ift	X	1	59	Decimal point locator	98
Qmt	N	13	60	Amount	129
PdrCotValNoAdj			73	Last Traded price not adjusted	120
Ift	X	1	73	Decimal point locator	98
Qmt	N	13	74	Amount	129
ZTotTran	N	12	87	Total number of trades	171
QtotTran5J	N	12	99	Total number of shares traded	138
QtotCap			111	Total trade value	137
Ift	X	1	111	Decimal point locator	98
Qmt15	N	15	112	Amount	129
Filler	X	100	127		
Message length		226			

Definition

This message indicates the closing price of an instrument which can be one of the following:

- NSC® Last Traded Price,
- NSC® Last Traded Price adjusted,

- VWAP price,
- VWAP price adjusted.

Transmission functions

Depending on an RCE application parameter this message is sent on a real time basis or at the end of the Trading Day.

MMTP A0: Start/End of Market Sheet Broadcasting

The following table shows the structure of MMTP A0 message.

Table 25: MMTP A0 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
IMsgA0DebFin	X	1	1	Start/end indicator for RLC market sheet messages	100
ZTotPcsNSCEmetMsgRLC	N	2	2	Total Number of NSC® Trading Units	170
Message length		3			

Processing Rules

This message is used, in a set of Market Sheet Rebroadcasting messages for one or several instruments, to announce the start and end of the set generated by a given NSC® instance.

- A set of Market Sheet Rebroadcasting messages is composed of the following messages:
- 1 MMTP-A0 – Start / End of Market Sheet Broadcasting message (Start / End transmission indicator IMsgA0DebFin = D) per NSC® trading unit).
- N MMTP-A3 – Market Sheet messages (action code CActFdm = R for retransmission) (1 message per order present in the market sheet for normal orders of the instrument(s) to be retransmitted).
- 1 MMTP-A0 – Start / End of Market Sheet Broadcasting message (Start / End transmission indicator IMsgA0DebFin = F) per NSC® trading unit defined in the technical architecture of the sending NSC® instance.

Transmission functions

Post-Session

This message is sent systematically by the Post-Session Request Processing process to the Transmission process, with one Start message and one End message per NSC® trading unit defined in the technical architecture of the sending NSC® instance.

Resumption of broadcasting of the market sheet for normal orders (return to Slow Market after a period of Fast Market), with retransmission

This message is sent systematically at the start and end of market sheet rebroadcasting for an instrument during the trading day when the Flag Indicating Broadcast of the Market Sheet Updates is

reset, with one Start message and one End message per trading unit defined in the technical architecture of the sending NSC® instance.

MMTP A3: Market Sheet

The following table shows the structure of MMTP A3 message.

Table 26: MMTP A3 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
CActFdm	X	1	1	Market sheet action code	68
ISensOm	X	1	2	Side of order of order	101
PLimSaiOm			3	Original Order Price	121
	Ift	X	3	Decimal point locator	98
	Qmt	N	4	Amount	129
QTitMtrOm	N	12	17	Order displayed quantity	136
QTitRestOm	N	12	29	Remaining Quantity of the Order	137
PAffOm			41	Displayed order price	117
	Ift	X	41	Decimal point locator	98
	Qmt	N	42	Amount	129
YCpteOm	X	1	55	Type of Clearing Account for Member that owns the order	154
YOm	X	1	56	Code for the Technical Origin of the Order	160
Filler	X	1	57		
AIdOm			58	Order identification	65
	CIdAdh	X	58	Member ID (EMPTY)	74
	DSaiOm	N	66	Order entry date (in the Central Trading System)	88
	NSeqOm	N	74	Order sequence number	115
YPLimSaiOm	X	1	80	Type of Limit for an Order	162
DHPriOm	X	20	81	Order priority date time	87
YAppaValMdv	X	1	101	Matching type	154
Message length		101			

Processing rules

This message, which is sent by NSC®, indicates the creation or modification of an order for an instrument. It is also used when the Market Sheet is rebroadcast. The deletion of an order is indicated via an MMTP-A4 – Delete N Lines message. This processing concerns any order type except Stop orders. Indeed, Stop orders are not broadcast to the market participants until their triggering.

This message enables the market participant to consult the full market depth.

The action code (CActFdm) defines whether the order is to be added or updated or whether the message is sent during rebroadcasting of the market sheets.

The order identification (entry date DSaiOm and sequence number NSeqOm) and characteristics (side ISensOm, original price PLimSaiOm, displayed price PAffOm, displayed quantity

QTitMtrOm, remaining quantity QTitRestOm, type of clearing account YCpteOm, technical origin YOm, type of limit YPLimSaiOm, priority date & time DHPriOm) are also provided.

Transmission functions

Processing in Pre-Opening

- For each incoming order into the order book, the system sends a Market Sheet message with an action code (CActFdm) of C (Creation).
- For each modified order, the system sends an MMTP-A4 – Delete N Lines message with a deletion type (YSupOm) set to 1 (Delete one order) and a MMTP-A3 – Market Sheet message with an action code (CActFdm) of C (Creation).

Opening of an instrument with its group

- During opening processing, in case of matching with Market Orders and Market On Opening orders.

If Market On Opening orders are not executed, then sending of an MMTP-A4 – Delete N Lines message with a deletion type (YSupOm) set to 2 for the Market Orders, and sending of a A4 – Delete N Lines message with a deletion type set to 1 for each unfilled Market On Opening orders. And then sending of a Market Sheet message with an action code (CActFdm) of C (Creation) for each unfilled Market On Opening order.

If Market On Opening orders are partially executed, then sending of a MMTP-A4 – Delete N Lines message with a deletion type (YSupOm) set to 2 indicating that the Market On Opening order has been cancelled and sending of a Market Sheet message with an action code (CActFdm) of C (Creation) allowing to recreate the unfilled Market On Opening orders as Limited orders.

- During opening processing, sending of an MMTP-A3 – Market Sheet message with an action code (CActFdm) of C (Creation) for each triggered Stop order.

Opening of an instrument

Same as Opening of an instrument with its group.

Auction of an instrument

Same as Opening of an instrument with its group.

Processing of an Order during Continuous Trading

- When an order is entered into the order book, the system sends an MMTP-A3 – Market Sheet message with an action code (CActFdm) of C (Creation)
 - When an order is modified in the order book, the system sends a MMTP-A4 – Delete N Lines message with a deletion type (YSupOm) of 1 and an MMTP-A3 – Market Sheet message with an action code (CActFdm) of C (Creation)
 - For each partially executed order, the system sends an MMTP-A3 – Market Sheet message with an action code (CActFdm) of M (Modification)
 - In case of order with a disclosed quantity matching
- In case of complete "first round of matching": the system sends a MMTP-A4 – Delete N Lines message with a deletion type (YSupOm) of 1 and an MMTP-A3 – Market Sheet message with an action code (CActFdm) of C (Creation)
- In case of non complete "round of matching": the system sends an MMTP-A3 – Market Sheet message with an action code (CActFdm) of M (Modification)

Market Control Commands

Modification of the Market Sheet broadcasting flag

In case of transition from Fast Market to Slow Market, the resumption of the broadcasting of the Market Sheet update message is preceded by a re-broadcasting of the entire Market Sheet.

NSC®

sends an MMTP-A3 – Market Sheet message (action code CActFdm of R) for each order remaining in

the order book for the instrument, these messages are surrounded by two MMTP-AO – Start / End of

Market Sheet Broadcasting messages.

Post-Session

When the Market Sheet for one, several, or all instruments is rebroadcast, then for each group where re-broadcasting has not explicitly forbidden, for each instrument in a group which is not in Fast Market and where rebroadcasting has not been explicitly forbidden, for each normal order present in the order book, the system sends an MMTP-A3 – Market Sheet message with an action code CActFdm) of R (Rebroadcasting). These messages are surrounded by two MMTP-AO – Start / End of Market Sheet Broadcasting messages.

MMTP A4: Delete N Lines

The following table shows the structure of MMTP A4 message.

Table 27: MMTP A4 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
YSupOm	X	1	1	Deletion type	165
AIdOm			2	Order identification	65
	CIdAdh	X	8	Member ID (EMPTY)	74
	DSaiOm	N	10	Order entry date (in the Central Trading System)	88
	NSeqOm	N	18	Order sequence number	115
ISensOm	X	1	24	Side of order	101
Message length		24			

Processing rules

This message, which is sent by NSC®, indicates the deletion of an order for an instrument. This processing concerns any order type except Stop orders. Indeed, Stop orders are not broadcast to the market participants until their triggering, thus it is not necessary to broadcast an MMTP - A4 – Delete N Lines message in case of Stop order deletion.

This message makes it possible for the market participants to realign their order book by indicating orders that should be deleted.

Three types of deletion are possible (YSupOm):

- Type 1: deletion of an order
- Type 2: deletion of all orders for a given side (buy or sell) starting with the referenced order
- Type 3: deletion of all orders for the instrument

The referenced order identification (entry date DSaiOm and sequence number NSeqOm) and side

ISensOm are provided to allow the message addressee to process the deletion in the market sheet.

Transmission functions

Processing in Pre-Opening

- For each order that is cancelled, an MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent.
- For each modified order, the system sends an MMTP-A4 – Delete N Lines message (YSupOm Type 1) and an MMTP-A3 – Market Sheet message with an action code (CActFdm) of C (Creation).

Opening of an instrument with its group

- If the instrument is neither reserved nor suspended

* If the TOP (Theoretical Opening Price) cannot be determined and there are no unmatched Market On Opening orders or Market Orders for this instrument, then for each FAK order in the order book, an MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent.

* If the TOP has been determined and falls within the price thresholds, in case of trade, two MMTP-A4 – Delete N Lines messages (one per side ISensOm) are sent (YSupOm Type 2), indicating up to which order, all orders should be deleted. And for each nonexecuted FAK order, an MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent.

- If the instrument is reserved or suspended:

The conditions for sending the message are identical to those of the function "Opening of an Instrument" See below.

Opening of an instrument

- If the TOP (Theoretical Opening Price) cannot be determined and there are no unmatched Must Be Filled orders, Market On Opening orders or Market Orders for this instrument, then for each FAK order in the order book, an MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent.

- If the TOP has been determined and falls within the price thresholds, in case of trade, two MMTP-A4 – Delete N Lines messages (one per side ISensOm) are sent (YSupOm Type 2), indicating up to which order, all orders should be deleted. And for each non-executed FAK order, an MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent.

Auction of an instrument

- If the TOP (Theoretical Opening Price) cannot be determined and there are no unmatched Must Be Filled orders, Market On Opening orders or Market Orders for this instrument, then for each FAK order in the order book, an MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent.

- If the TOP has been determined and falls within the price thresholds, in case of trade, two MMTP-A4 – Delete N Lines messages (one per side) are sent (YSupOm Type 2), indicating up to which order, all orders should be deleted. And for each non-executed FAK order, an MMTPA4 – Delete N Lines message (YSupOm Type 1) is sent.

Processing of an Order during Continuous Trading

- For each order that is cancelled, an MMTP-A4 – Delete N Lines message is sent (YSupOm Type 1).

- For each order that is modified, the system sends an MMTP-A4 – Delete N Lines message (YSupOm Type 1) and an MMTP-A3 – Market Sheet message with an action code (CActFdm) set at C (Creation).

- For each partially executed order, the system sends an MMTP-A3 – Market Sheet message with an action code (CActFdm) of M (Modification). No MMTP-A4 – Delete N Lines message is sent in that case.

- For all fully executed orders, an MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent.

Market Control Commands

Elimination of all orders in the book for an instrument

If at least, one order remains in the order book, an MMTP-A4 – Delete N Lines message is sent with

a deletion type that indicates deletion of all orders (YSupOm Type 3).

Elimination of orders in the book for an instrument group

When the Market Control purges all orders for all instruments in a group, starting with a given time,

an MMTP-A4 – Delete N Lines message is sent with a deletion type that indicates deletion of an individual order (YSupOm Type 1).

Cancellation of all orders for a Member An MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent for each cancelled order.

Post-Session

Purging of orders (the order validity has been reached)

An MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent for each cancelled order.

Purging of the orders for a Member (command entered by Market Control at the request of the member, but executed by the system in Post-Session)

For each order in the order book, an MMTP-A4 – Delete N Lines message (YSupOm Type 1) is sent.

Resending of the Market Sheet for one or more instruments

for each group for which Market Control has not explicitly forbidden resending, and for each instrument in a group for which Market Control has not explicitly forbidden resending, an

MMTP-A4 –

Delete N Lines message (YSupOm Type 3) is sent.

MMTP A5: Composition of an Index

The following table shows the structure of MMTP A5 message.

Table 28: MMTP A5 message structure

Field	Occ.	Type	Length	Pos.	Short description	Page
Headers						
ACapValIdx	15			1	Aggregate of index component	61
CIdLngCpsIdx		X	12	1	Long instrument ID of index component	75
CValMneCpsIdx		X	5	13	Mnemonic code of index component	84
XValCarRfV		N	7	18	Instrument's % in previous day's reference capitalization of the index	150
KajCapValCpsIdx				25	Capitalization adjustment coefficient of an instrument within an index	108
Ift		X	1	25	Decimal point locator	98
QMt12		N	12	26	Amount	130
ZTitValCaldx				38	Number of shares used for index calculation	170
Ift		X	1	38	Decimal point locator	98
Qmt15		N	15	39	Amount	130
Filler		X	3	54		
IdrMsgMMTPEchnIdx		X	1	841	Flag indicating the last MMTP message for an index	95
ZTotValIdx		N	3	842	Total number of instruments in an index	171
XInuClMresVIdx				845	Previous day's reference closing level for an index (daily summary)	142
Ift		X	1	845	Decimal point locator	98
Qmt9		N	9	846	Amount	131
CFDifIdx		X	1	855	Frequency of index broadcast mode	72
Filler		X	60	856		
Message length			915			

Processing rules

This message transmits all or part of the list of instruments making up an index:

- Instrument IDs (long ID and mnemonic)
- Percentage of each instrument in the index capitalization

- Adjustment coefficient for the capitalization of each instrument
- Total number of instruments making up the index

This list can be broken down into several type-A5 messages, depending on the number of instruments in the index.

Transmission Functions

Each trading day, when the index platform is initialized, one or more type-A5 messages are sent by the platform for each index of type "stock index" that exists in its reference database (this rule excludes bond indexes, ETF - Index Estimate indices and ETF- Indicative NAV indices), with the following exceptions:

- PFI2 does not send a type-A5 message for indices whose sample contains no components.
- PFI2 does not send a type-A5 message for indices extracted from a third party data flow and rebroadcast.

If two indices are linked in the PFI2 reference database by a relationship indicating that the two indices have the same sample (EPRA and NAREIT indices), PFI2 sends only one type-A5 message for this couple of indices, with the ISIN code common to the two indices.

MMTP A6: Display of Bid or Offer

The following table shows the structure of MMTP A6 message.

Table 29: MMTP A6 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
POfDemVal			1	Bid or Ask Price	123
Ift	X	1	1	Decimal point locator	98
Qmt	N	13	2	Amount	129
CSensOrdNrepVal	N	2	15	Unfilled order(s) at opening flag	81
Filler	X	20	17		
Message length		36			

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The Bid or Offer for an instrument for which there is an unfilled bid or offer. This message is sent only

when the order book for the instrument is unbalanced.

If the Opening Price varies and no new Theoretical Opening Price can be determined and if there are

Market orders orders that are not entirely filled, then:

- If the Market orders are on the sell side, an MMTP-A6 – Display of Bid or Offer (offer) message is sent (Trend Flag = 03 and Price = Lower price threshold)
- If the Market orders are on the buy side, an MMTP-A6 – Display of Bid or Offer (bid) message is sent (Trend Flag = 02 and Price = Upper price threshold).

If the Opening Price varies and the new determined Opening Price lies outside the instrument's thresholds, then:

- If the determined Opening price is greater than the upper price threshold, a MMTP-A6 – Display of Bid or Offer (bid) message is sent (Trend Flag = 02 and Price = Upper price threshold)
- If the determined Opening price is less than the lower price threshold, a MMTP-A6 – Display of Bid or Offer (offer) message is sent (Trend Flag = 03 and Price = Lower price threshold).

If the previous Theoretical Opening Price was indeterminate because of unfilled Market orders and

the new Theoretical Opening Price lies outside the thresholds, or inversely, then the MMTP-A6 – Display of Bid or Offer message is sent, even if it has not changed side:

- If the Market orders are on the sell side, an MMTP-A6 – Display of Bid or Offer (offer) message is sent (Trend Flag = 03 and Price = Lower price threshold)
- If the Market orders are on the buy side, an MMTP-A6 – Display of Bid or Offer (bid) message is sent (Trend Flag = 02 and Price = Upper price threshold)
- If the determined opening price is greater than the upper price threshold, an MMTP-A6 – Display of Bid or Offer (bid) message is sent (Trend Flag = 02 and Price = Upper price threshold)
- If the determined opening price is less than the Lower price threshold, an MMTP-A6 –

Display of Bid or Offer (offer) message is sent (Trend Flag = 03 and Price = Lower price threshold).

A Display of Bid or Offer message is often accompanied by an MMTP-04 – Best Limits message, whereas a Best Limits message may be sent even without a Display of Bid or Offer message. In this case the MMTP-04 – Best Limits message is constructed on the basis of the Theoretical Opening Price.

Transmission functions

Overall cancellation of a Subscriber's orders

If the group of instruments is in the pre-opening stage or if the instrument is reserved or halted, Display of Bid or Offer message is sent along with a MMTP-04 – Best Limits message if the new Theoretical Opening Price lies outside the thresholds or if the Market orders can no longer be entirely filled.

Cancellation of orders in the book for an instrument

In case of partial cancellation of the order book, if the group of instruments is in pre-opening stage or

if the instrument is reserved or halted, an MMTP-A6 – Display of Bid or Offer message is sent along

with a MMTP-04 – Best Limits message if the new Theoretical Opening Price lies outside price thresholds or if the Market orders can no longer be entirely filled.

Change in previous day's adjusted closing price

If the group of instruments is in the pre-opening stage or if the instrument is reserved or halted, an

MMTP-A6 – Display of Bid or Offer message is sent along with an MMTP-04 – Best Limits message if

the new Theoretical Opening Price lies outside the thresholds.

Change in reference price and instrument tick limit

If the group of instruments is in the pre-opening stage or if the instrument is reserved or halted, an

MMTP-A6 – Display of Bid or Offer message is sent along with an MMTP-04 – Best Limits message if

the new Theoretical Opening Price lies outside the thresholds.

Change in intermediate thresholds

If the group of instruments is in the pre-opening stage or if the instrument is reserved or halted, an

MMTP-A6 – Display of Bid or Offer message is sent along with an MMTP-04 – Best Limits message if

the new Theoretical Opening Price lies outside the thresholds.

Order entry and processing in pre-opening stage

See processing rules.

Session management when preparing group of instruments pre-opening

See processing rules.

MMTP B1: Real-time Data for an Index

The following table shows the structure of MMTP B1 message.

Table 30: MMTP B1 message structure

Field	Type	Length	Pos.	Short description	Page
Headers					
CNivIdx	X	1	1	Index level code	77
XDrNivJIdx	N	6	2	Day's last index level	140
XPhNivJIdx	N	6	8	Day's highest index level	149
HphJIdx	N	6	14	Time of day's highest index level	92
XPbNivJIdx	N	6	20	Day's lowest index level	148
HPbJIdx	N	6	26	Time of day's lowest index level	92
ZValIdxCot	N	3	32	Number of traded instruments in the index	172
XCapValAcfIdx	N	5	35	Percentage of capitalization for the active instruments in the index	140
IsensXVarIdxJ	X	1	40	Sign of Variation for Day's Index ('Forerunner')	102
XVarIdxJ	N	5	41	Variation for Day's Index ('Forerunner')	151
IsensXVarIdxJRfV	X	1	46	Sign of Variation for Day's Index / Previous Day's Reference	103
XVarIdxJRfV	N	5	47	Variation for Day's Index / Previous Day's Reference	152
Filler	X	6	52		
IsensXVarIdxJDrAnP	X	1	58	Sign of Variation for Day's / Last for Previous Year	103
XVarIdxJDrAnP	N	5	59	Variation for Day's Index / Last for Previous Year	152
XNivlrteNetlbs			64	Net Return Index Level	148
lft	X	1	64	Decimal point locator	98
Qmt6	N	6	65	Amount	130
XNivlrteGllbs			71	Gross Return Index Level	146
lft	X	1	71	Decimal point locator	98
Qmt6	N	6	72	Amount	130
ZValBailbs	N	3	78	Number of declining instruments in the index	171
ZValHaulbs	N	3	81	Number of rising instruments in the index	172
ZValIchglbs	N	3	84	Number of unchanged instruments in the index	172
ZValNonCotlbs	N	3	87	Number of non-traded instruments in the index	172

Table 30: MMTP B1 message structure

Field	Type	Length	Pos.	Short description	Page
ZValReslbs	N	3	90	Number of reserved instruments in the index	173
ZValSulbs	N	3	93	Number of suspended instruments in the index	173
ZTotVallbs	N	3	96	Total number of instruments in the index	171
IsensXMoyVarVallbs	X	1	99	Sign of Average Variation for Instruments in the Index	102
XMoyVarVallbs	N	6	100	Average Variation for Instruments in the Index	144
XMoyVarValBailbs	N	6	106	Average Variation for Declining Instruments in the Index	142
XMoyVarValHaulbs	N	6	112	Average Variation for Rising Instruments in the Index	143
IIBsAscNivlbs	X	1	118	Flag for Indicators Related to an Index Level	99
ANivIdxJ			119	Aggregate of Index Levels for the Day (Ift/QMt Format)	67
XDrNivJIdx_IftQMt			119	Day's last index level	141
Ift	X	1	119	Decimal point locator	98
Qmt9	N	9	120	Amount	131
XPhNivJIdx_IftQMt			129	Day's highest index level	149
Ift	X	1	129	Decimal point locator	98
Qmt9	N	9	130	Amount	131
XPbNivJIdx_IftQMt			139	Day's lowest index level	149
Ift	X	1	139	Decimal point locator	98
Qmt9	N	9	140	Amount	131
Message length		148			

Processing Rules

For stock indices

This message handles the real-time characteristics of an index: the level of the index or of the forerunner, variations in the index level, type of index level (first, real-time, forerunner,...), and various indicators for the instruments that make up the index.

For ETF - Index Estimate indices and ETF- Indicative NAV (indicative Net Asset Value) indices

This message handles in real-time the "intraday" (indicative) Net Asset Value of an ETF-type instrument (Exchange-Traded Fund).

There are two formulas for calculating the "intraday" (indicative) Net Asset Value of an ETF:

- One formula is based on the real-time price of the instruments that make up the ETF fund; this formula is called the Indicative NAV index,

- The other formula is based on the real-time level of the stock index for which the ETF tries to duplicate the performance; this formula is called the Index Estimate.

The Index Estimate formula is used as a backup so that an intraday NAV can continue to be broadcast when prices of instruments are not available.

The PFI2 application uses the type-B1 message to broadcast the intraday indicative Net Asset Values of ETFs. In these messages, the ETF is identified by its ISIN code and its mnemonic code (the "intraday codes" of the ETF). These "intraday" codes are not the same as the ISIN code and mnemonic code of the ETF as a listed security in NSC® (an explicit link must be managed between these two instruments). It should also be noted that, in PFI2, two indices are configured for each ETF: one uses the Index Estimate calculation formula, the other uses the Indicative NAV formula. The index manager configures whether one or the other is broadcast (or the two simultaneously). The ISIN and mnemonic codes are identical for the two indices that are associated with the same ETF. Thus, viewed from the outside, it is not possible to distinguish between type-B1 messages that send Indicative NAVs from type-B1 messages that send Index Estimates.

Transmission Functions

The sending conditions and the nature of type-B1 messages that are sent for each index are dependent on two factors: the broadcast mode of the index, and the current calculation phase of the index. These two factors are explained below.

Broadcast mode

There are three broadcasting modes for type-B1 messages:

- CONTINUOUS: Calculated index levels are broadcast periodically, at a frequency that can be configured for each index. The frequency must be a multiple of the base calculation frequency (15 seconds).
- DISCONTINUOUS: a single broadcast during the day, occurring at a time (a "fixed time") that can be configured for each index.
- AT CLOSING only: no broadcast during the day.

The conditions for sending type-B1 messages for each of these three modes are described below.

Calculation phases of an index

The type of index level (expressed in the data item CNivIdx) contained in a type-B1 message depends on the current calculation phase of the index. During the day, every index passes successively through the following phases:

- PRE-OPENING phase

The index enters the Pre-Opening phase as soon as one of three conditions occurs (for a given index, the three conditions are mutually exclusive):

- The weight (in the previous day's reference capitalization of the index) of the instruments for which PFI2 has received a theoretical opening price (an NSC® MMTP-30 – Theoretical Opening Price message) is greater than a threshold that has been configured,

- The number of instruments in the index for which PFI2 has received a theoretical opening price is greater than a threshold that has been configured,
- The time for passing into the Pre-Opening phase has arrived.

- **OPENING phase**

The index enters the Opening phase as soon as one of three conditions occurs (for a given index, the three conditions are mutually exclusive):

- The weight (in the previous day's reference capitalization of the index) of the instruments for which PFI2 has received an opening price (an NSC® MMTP-32 – Opening Summary message, Opening Summary) is greater than a threshold that has been configured.
- The number of instruments in the index for which PFI2 has received an opening price is greater than a threshold that has been configured.
- The time for passing into the Opening phase has arrived.

- **CONTINUOUS TRADING phase**

The index enters the Continuous Trading phase as soon as one of three conditions occurs (for a given index, the three conditions are mutually exclusive):

- The weight (in the previous day's reference capitalization of the index) of the instruments for which PFI2 has received a price (NSC® MMTP-32 – Opening Summary or MMTP-02 – Trade messages) is greater than a threshold that has been configured.
- The number of instruments in the index for which PFI2 has received a price is greater than a threshold that has been configured.
- The time for passing into the Continuous Trading phase has arrived.

- **PROVISIONAL CLOSING phase**

The index enters the Provisional Closing phase as soon as one of two mutually exclusive conditions occurs:

- PFI2 receives a group state message indicating the end of the Market Control Intervention phase for each instrument group that has an instrument in the index; that is, an NSC® MMTP-16 – Group State Change message with the group state code = F (End-of-Day Inquiries); this condition of course applies only to instruments traded on NSC®.
- The time for passing into the Provisional Closing phase has arrived.

- **FINAL CLOSING phase**

The index enters the Final Closing phase after being in the Provisional Closing phase for a configurable period of time, which depends on the index.

Indices in CONTINUOUS broadcast mode

- In the morning, during the start-of-day batch processing (around 7:30 am): For each index, PFI2 sends a type-B1 message with CNivIdx=5 (reference closing index) and the value of the previous day's reference closing index. If an index is not treated (no trade from NSC®) and if the index has been declared with the parameter "broadcast not treated index" set to YES, the B1 messages will be generated with CNivIdx='Z'.
- While the index is in the Pre-Opening phase, if the Calculate Forerunner flag is set to Yes, every X seconds (X being a parameter of the index level): sending of a type-B1 message with CNivIdx = 8 (pre-opening forerunner).
- While the index is in Opening phase, if the Calculate Forerunner flag is set to Yes, every X seconds: sending of a type-B1 message with CNivIdx = 3 (real-time forerunner).
- When the index enters the Continuous Trading phase, and if the Calculate Opening Index Level Using Opening Prices flag is set to Yes:
 - If PFI2 has not yet received opening prices for all instruments in the index (NSC® MMTP-32 – Opening Summary messages): sending of a type-B1 message with CNivIdx = A (partial, provisional opening index).
 - If PFI2 has received opening prices for all instruments in the index (NSC® MMTP-32 – Opening Summary messages): sending of a type-B1 message with CNivIdx = B (complete, provisional opening index).
- During the Continuous Trading phase, when PFI2 receives an opening price for all instruments in the index (an NSC® 32 – Opening Summary message), and if the Calculate Opening Index Level Using Opening Prices flag is set to Yes: sending of a type-B1 message with CNivIdx = B (complete, provisional opening index).
- While the index is in Continuous Trading phase, every X seconds:
 - Always: sending of a type-B1 message with CNivIdx=1 (first real-time index of the day) for the first message, and CNivIdx=2 (real-time index (except the first of the day)) for the subsequent messages.
 - If, in addition, at this moment a time period for calculating the average of index levels is active, sending of a type-B1 message with CNivIdx = the value of CNivIdx set to the index level for this time period; in theory, the configured CNivIdx should have a value of 6 (daily settlement index level) or a value of 7 (at-expiration settlement index level).
- When the index passes into the Provisional Closing phase, and if the index is a "stock index" (which thus excludes ETF- Indicative NAV indices and ETF - Index Estimate indices):
 - Always: sending of a type-B1 message with CNivIdx = 5 (reference closing index).
 - If in addition the Calculate Opening Index Level Using Opening Prices flag is set to Yes: sending of a type-B1 message with CNivIdx = C (reference opening index).
- When the index enters the Final Closing phase:
 - Always: sending of a type-B1 message with CNivIdx = 5 (reference closing index).

- If in addition the Calculate Opening Index Level Using Opening Prices flag is set to Yes: sending of a type-B1 message with CNivIdx = C (reference opening index).

Indices in DISCONTINUOUS broadcast mode

- In the morning, during the start-of-day batch processing (around 7:30 am): For each index, PFI2 sends a type-B1 message with CNivIdx=5 (reference closing index) and the value of the previous day's reference closing index.
- At a given time configured for the index:
 - If at this moment the index is in the Continuous Trading phase and if the Calculate Opening Index Level Using Opening Prices flag is set to Yes: sending of a type-B1 message with CNivIdx=A (partial, provisional opening index).
 - If at this instant the index is in another phase, and if the Calculate Forerunner flag for this index is set to Yes: sending of a type-B1 message with CNivIdx = 9 (opening forerunner).
- When the index passes into the Provisional Closing phase, and if the index is a "stock index" (which thus excludes ETF- Indicative NAV indices and ETF - Index Estimate indices):
 - Always: sending of a type-B1 message with CNivIdx = 5 (reference closing index).
 - If in addition the Calculate Opening Index Level Using Opening Prices flag is set to Yes: sending of a type-B1 message with CNivIdx = C (reference opening index).
- When the index passes into the Final Closing phase:
 - Always: sending of a type-B1 message with CNivIdx = 5 (reference closing index).
 - If in addition the Calculate Opening Index Level Using Opening Prices flag is set to Yes: sending of a type-B1 message with CNivIdx = C (reference opening index).

Indices in AT CLOSING ONLY broadcast mode

- In the morning, during the start-of-day batch processing (around 7:30 am): For each index, PFI2 sends a type-B1 message with CNivIdx=5 (reference closing index) and the value of the previous day's reference closing index.
- When the index passes into the Provisional Closing phase, and if the index is a "stock index" (which thus excludes ETF- Indicative NAV indices and ETF - Index Estimate indices):
 - Always: sending of a type-B1 message with CNivIdx = 5 (reference closing index).
 - If in addition the Calculate Opening Index Level Using Opening Prices flag is set to Yes: sending of a type-B1 message with CNivIdx = C (reference opening index).
- When the index passes into the Final Closing phase:
 - Always: sending of a type-B1 message with CNivIdx = 5 (reference closing index).
 - If in addition the Calculate Opening Index Level Using Opening Prices flag is set to Yes: sending of a type-B1 message with CNivIdx = C (reference opening index).

SUSPENSION and RESUMPTION of BROADCASTING of an index

In certain circumstances, described below, the broadcasting of type-B1 messages with an index level of 2 (real-time index) for a given index (which is in the Continuous Trading phase) can be temporarily suspended, then resumed. When an index is in a suspended state, PFI2 broadcasts type-B1 messages with an index level of 3 (real-time forerunner), in place of messages with an index level of 2 (real-time index).

- The suspension of broadcasting for an index can be initiated:
 - Either manually by the index manager (if the index is in the Continuous Trading phase),
 - Or automatically by PFI2, when the conditions for maintaining the index in the Continuous Trading phase are no longer met (see the description above of the conditions for when an index passes into the Continuous Trading phase).
- The resumption of broadcasting for an index can be initiated:
 - Either manually by the index manager (regardless of whether the origin of the suspension was manual or automatic),
 - Or automatically by PFI2. Automatic resumption occurs at the moment $T_0 + P$, where T_0 is the moment when conditions permit the index to return to the Continuous Trading phase, and where P is a period of time that is configurable for each index, with the restriction that conditions for being in the Continuous Trading phase are still met at the moment $T_0 + P$.

Glossary

A

ACapValIdx aggregate

Definition **Aggregate of index component**
A data aggregate that describes the characteristics of an index component.

Possible values (please refer to each component of the aggregate)

Used in MMTP-A5 – Composition of an Index

See also Components of the aggregate:

- **CIdLngCpsIdx** (Long instrument ID of index component)
- **CValMneCpsIdx** (Mnemonic code of index component)
- **XValCarRfV** (Instrument's % in previous day's reference capitalization of the index)
- **KajCapValCpsIdx** (Capitalization adjustment coefficient of an instrument within an index)

ACarValRLC aggregate

Definition **Aggregate for instrument characteristics.**
Contains the main information regarding instrument characteristics. Necessary for managing the local reference database of each system. (please refer to each component of the aggregate)

Used in MMTP-52/53 – Deletion/Creation of Instrument characteristics

See also Components of the aggregate:

- **Lval18** (18-character instrument name)
- **YVal** (Type of instrument)
- **CPyEmet** (Code (ISO3A norm) for country of issuer)
- **QnmVlo** (Amount of par value of instrument for calculating amount for trade)

ACIsEcoFtseSoc

aggregate

Definition

Aggregate for FTSE classification for issuing company.

Regroups the data items that distinguish the following:

For a listed instrument: the issuer's business segment within the FTSE International classification system.

For a sector index: the FTSE business segment for the instruments that comprise a given index sample.

According to the FTSE norm, a business segment is composed of three levels:

economic group sector (whereby a given sector belongs to one and only one economic group) sub-sector (whereby a given sub-sector belongs to one and only one sector) Each issuing company is listed in one and only one sub-sector that is determined according to the proportion of profits earned within the company's various businesses. The criteria used for each breakdown are purely economic and make it possible to analyze the issuing companies beyond their geopolitical borders. A given sub-sector belongs to one and only one sector. A given sector belongs to one and only one economic group. In the case of a stock, the aggregate expresses the relationship of the issuer to a FTSE sub-sector (and, as a result, the links Sub-sector / Belongs to / Sector, and Sector / Belongs to / Economic group).

In the case of a level 1 sector index (which represents an economic group), the aggregate expresses the link Index/Represents/Economic Group. The sector and sub-sector IDs are not provided. In the case of a level 2 sector index (which represents a sector), the aggregate expresses the link Index / Represents / Sector. The sub-sector ID is not provided, and the economic group ID expresses the link Sector / Belongs to / Economic Group. In the case of a level 3 sector index (which represents a sub-sector), the aggregate expresses the link Index / Represents / Sub-sector. The sector ID expresses the link Sub-sector / Belongs to / Sector. The economic group ID expresses the link Sector / Belongs to / Economic Group.

Possible values (please refer to each component of the aggregate)

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See also Components of the aggregate:

- **CGdSecEcoFtse** (FTSE ID for economic group)
- **CSecEcoFtse** (FTSE ID for sector)
- **CSoSecEcoFtse** (FTSE ID for sub-sector)
- **ACarValRLC** (Aggregate for instrument characteristics)

ADHEvenRLC

aggregate

Definition	<p>Aggregate for time stamp for MMTP event (up to the milliseconds).</p> <p>Contains the time stamp for the MMTP message, which is exact to the millisecond.</p> <ul style="list-style-type: none">• In real-time messages, represents the date and time when the MMTP message was generated by the sending application.• In messages sent using a file transfer, represents the date and time at which the file creation was begun. <p>Role: groups the various data items related to the MMTP message time-stamp. Integrity constraints: all the messages contained in a given file transfer have the same time-stamp. (please refer to each component of the aggregate)</p>
Possible values	
Used in	MMTP Header
See also	Components of the aggregate: <ul style="list-style-type: none">• DEven (Date of MMTP event)• HEven (Time of MMTP event)• ZMIsHevenRLC (Number of milliseconds in time of MMTP event)

AEttFnIRLCY1

aggregate

Definition	<p>Functional header for MMTP message, type 1.</p> <p>This data aggregate describes the structure for the functional part of the standard MMTP message header when YTChRLC (Type of header for MMTP message) in the message is 1. The MMTP functional header contains the core business data that appears in most MMTP messages. This includes, for example, the exchange, AFC and ISIN codes for the instrument concerned, and the time at which the MMTP message was created.</p>
Possible values	(please refer to each component of the aggregate)
Used in	MMTP Header
See also	Components of the aggregate: <ul style="list-style-type: none">• CSicoRGA(Short instrument ID)• CValMne (Instrument mnemonic code)• CPICot(Market place ID for instrument)• ADHEvenRLC (Aggregate for time stamp for MMTP event (up to the milliseconds))

AEttRLCY1

aggregate

Definition Header for MMTP message, type 1.

This data aggregate describes the structure of the standard header for a MMTP message when the Type of header for MMTP message (YTchRLC) in the message is 1. In contrast to the MMTP message header of type 0, the type 1 MMTP message header has the following characteristics:

- Imposes a specific structure on the first 84 bytes of the message.
- Contains two MMTP message lengths: the old N(3) format (which is deprecated and will become a filler) and the new N(5) format (which makes it possible for MMTP messages to be as long as 99 999 bytes).
- Uses the ISIN code (X(12) format) to identify the instrument referred to in the message. After the first 84 bytes of the MMTP type 1 header, the structure of the message depends solely on the Type of header for MMTP message (YTchRLC) data item.

Possible values (please refer to each component of the aggregate)

Used in MMTP Header

See also Components of the aggregate:

- **AEttTchRLCY1**(Technical header for MMTP message, type 1)
- **AEttFnIRLCY1**(Functional header for MMTP message, type 1)

AEttTchRLCY1

aggregate

Definition Technical header for MMTP message, type 1.

This data aggregate describes the structure for the technical part of the standard header for a MMTP message when the Type of header for MMTP message (YTchRLC) in the message is 1.

The MMTP technical header contains data that the MMTP software uses to switch messages and to verify their integrity, including, for example, switching criteria and sequence numbers.

Possible values (please refer to each component of the aggregate)

Used in MMTP Header

See also Components of the aggregate:

- **YTchRLC** (Type of header for MMTP message)
- **CEmetRLC** (ID of the MMTP sending application)
- **ZOctMsgRLC** (MMTP message length in bytes (3 digits))
- **NMsgInRLC** (Number for incoming MMTP message)
- **NMsgOutRLC** (Number for outgoing MMTP message)
- **CGrRLC** (MMTP group code)
- **CSgrRLC** (Code for MMTP subgroup)
- **YMsgRLC** (Type of MMTP message)
- **AETtRLCY1** (Header for MMTP message, type 1)

AldOm

aggregate

Definition **Order identification.**

This aggregate enables to identify an order with its sequential order number, its order entry date and its time stamp.
It identifies the order to insert or modify in the order book.

Possible values (please refer to each component of the aggregate)

Used in MMTP-A3 – Market Sheet
MMTP-A4 – Delete N Lines

See also Components of the aggregate:

- CIdAdh (Member ID)
- DSaiOm (Order entry date (in the Central Trading System))
- NSeqOm (Order sequence number)
- ISensOm (Side of order)

AKProdCpsProdYCbn

aggregate

Definition **Aggregate ratio for a leg of strategy instrument.**

Defines the ratio of the leg for a strategy.

Possible values (please refer to each component of the aggregate)

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See also Components of the aggregate:

- **CSignKMuProdCps** (Leg multiplication coefficient sign)
- **KmuProdCpsProdCbn** (Leg multiplication ratio)

AMeLim

aggregate

Definition **Best limit aggregate.**

One to six occurrences in a message MMTP-04 – Best Limits or in each "bulk best limits aggregate":

One occurrence for each modified best limits of the five best limits and one occurrence for the market summary - during the pre-opening phase - if that one is significant.

A best limit may be present but not significant for cancelling a previous best limits. The selling or the buying side may be present and not significant if only the other side of the best limits exist. The six previous data ItabModMeLim (Change of best limit flag) indicate which best limits is here present in the aggregate.

Possible values **(please refer to each component of the aggregate)**

1/ Messages during pre-opening phase. 1.a/ The Indicative Opening Price (IOP) is either determinate or indeterminate because of an order "At Best" / "Market Order" without a possibility of matching:

There is, in the following order and if those types of limits exist in the order book:

- One limit for "MX"
- One for "OUV"
- One for the sum of limits at the overwriting price,
- n limits for the others following best limits until 5 best limits,
- The 6th best limit who adds limits for "MX", "OUV" and limits at the overwriting price.

If the 6th best limit is equal to the first one then the 6th best limits is transmitted at null. The limits at the overwriting price are equal to:

- The Indicative Opening Price (IOP), if that one is determined,
- Upper (lower) threshold if the Indicative Opening Price (IOP) is indeterminate and the balance of "MX" orders without a possibility of matching is at the buying (selling) side.

1.b/ Other cases:

There is, in the following order and if those types of limits exist in the order book:

- One limit for "MX"
- One for "OUV"
- n limits for the others following best limits until 5 best limits,
- The 6th best limit at null.

2/ Messages during the continuous trading phase.

There is, in the following order and if those types of limits exist in the order book:

- One limit for "MX" if there are orders "MO" in the order book,
- n limits for the others following best limits until 5 best limits.

The 6th best limit at null.

Used in MMTP-04 – Best Limits

See also Components of the aggregate:

- **QTitMeDem** (Best buy limit quantity)
- **ZOrdMeDem** (Number of orders at a best buy limit)
- **PmeDem** (Best buy limit price)
- **PmeOf** (Best sell limit price)
- **ZOrdMeOf** (Number of orders at a best sell limit)
- **QTitMeOf** (Best sell limit quantity)
- **ItabModMeLim** (Change of best limit flag)

ANivIdxJ

aggregate

Definition Aggregate of Index Levels for the Day (Ift/QMt Format).

Possible values (please refer to each component of the aggregate)

Used in B1 – Real-time Data for an Index

See also Components of the aggregate:

- XDrNivIdx_IftQMt (Day's last index level)
- XPhNivIdx (Day's highest index level)
- XPbNivIdx (Day's lowest index level)

C

CActFdm X(1)

Definition	Market sheet action code. Determines the type of update to apply to the market sheet.
Possible values	C Creation of an order M Modification of an order R Rebroadcasting
Used in	MMTP-A3 – Market Sheet

CActModEtaVa X(1)

Definition	Action code for the instrument state change. Indicates the type of event that caused the instrument state change in NSC® Trading Engine.
Possible values	(blank) Not provided P Programming of a deferred opening time for the instrument M Reservation or suspension by a manual Market Control command C Trading on the instrument O Change to Open state R Automatic Reservation D Cancellation of a Deferred opening A Authorization of order entry on the instrument I Forbidding of order entry on the instrument E Elimination of all orders in the book for an instrument N State at initialization (start of trading day) F Stopping of the broadcasting of the market sheet (instrument in a Fast Market) S Resumption of the broadcasting of the market sheet (instrument in a Slow Market) G Freeze / thaw of an instrument L Reservation Linked to underlyings X Instrument eXpiry
Used in	MMTP-05 – Instrument State Change

CAFCValObjMsg X(6)

Definition	Cash Product code for instrument about which the message is sent.
Possible values	Numerical.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
MMTP-25 – Available number of shares for Foreigner
See Also ACarValRLC (Aggregate for instrument characteristics)

CComVal X(1)

Definition **Board Code.**

Identifies the board to which the instrument belongs. For example, a given exchange might have these boards: Cash, Derivatives, Index, etc. This information is defined at the company level in RCE.

Possible values Numerical.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
MMTP-5E – Boards

CCpmLco X(1)

Definition **ID of segment for listed security.**

Subset of the instruments listed on the marketplace. Each listed security belongs to a given segment.

Possible values Alphanumeric.

Used by Euronext only, blank for other exchanges.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also ACarValRLC (Aggregate for instrument characteristics)

CDevCot X(3)

Definition **Trading currency code according to the Iso3A coding system.**

Gives the code for the currency in which a security is traded according to the iso3a coding system.

When the price of a security is expressed as a percentage of the nominal, this data field contains the currency in which the nominal is expressed.

Possible values Alphanumeric (standard codification).

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also ACarValRLC (Aggregate for instrument characteristics)

CDevPEmis X(3)

Definition **Currency code (ISO3A format) for issue price of bond or warrant.**

Gives the ISO3A currency code in which the issue price of a bond or warrant is expressed.

Possible values Alphanumeric (standard codification).

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also ACarValRLC (Aggregate for instrument characteristics)

CDevPExoProdMdv X(3)

Definition	Strike price currency code. Determines the currency of the strike price for a derivative product.
Possible values	Alphanumeric. ISO3A currency codification.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

CEmetRLC X(2)

Definition	ID of the MMTP sending application. Identifies the system that sends an MMTP message (a system corresponds to an application on a computer). Role: identifies the sender of a message. In clearing systems, this data item is extracted from MMTP Trade for Clearing messages and mapped, identifying the trade's original trading venue. Clearing House workstations then use this data as the principal criterion for research on trades. Used as a criterion for switching messages. Integrity Constraints: none.
Possible values	11 Messages sent by RCE 15 Messages sent by NSC®
Used in	MMTP Header
See Also	A EttTchRLCY1 (Technical header for MMTP message, type 1)

CEtaGrc X(1)

Definition	Instrument group state. Enables to identify the state or the trading phase of an instrument group.
Possible values	C Start of Consultation P Pre-opening O Opening/closing E Pre-closing S Continuous trading R Trading At Last N Surveillance F End of Consultation B Post-session I Forbidden

Z Interrupted

Used in MMTP-16 – Group State Change

CEtaVal

X(2)

Definition Code indicating the state of the instrument in NSC®.

The instrument state code indicates the state of a listed security in the NSC® system, based on two criteria:

- Whether order entry is authorized for the instrument,
- The trade state of the instrument.

These two criteria are totally independent; taken together, they completely describe what is referred to as the instrument state.

Role: in the trading system, the state of an instrument determines:

- The functions that are authorized on the instrument
- The management rules that are applicable for the order entry and processing function.

For example:

- When an instrument is forbidden, no order can be entered on the instrument.
- When an order is entered on a suspended or reserved instrument, the same management rules apply as during the Pre-Opening of an instrument group.

Integrity Constraints: a value may be provided only if the message was sent by NSC®.

In messages sent by NSC®, all combinations of values for the first and second character are possible.

Possible values First character:

(spaces) Not provided

A Order entry authorized

I Order entry forbidden

Second character:

(spaces) Instrument open or not provided

G Frozen

S Suspended

R Reserved

Used in MMTP-05 – Instrument State Change

CEtaValSysTCS

X(1)

Definition	Instrument state code in TCS system. Describes the state of an instrument in the TCS system, that is, whether entry of declarations is authorized for the instrument. Instrument state changes in TCS are decided by the Market Control department. In TCS, determines whether or not declarations are accepted. A value is provided if and only if the message was sent by the TCS system.
Possible values	(space) Not provided A Instrument authorized in TCS S Instrument forbidden in TCS
Used in	MMTP-05 – Instrument State Change

CFDifIdx X(1)

Definition	Frequency of index broadcast mode. Expresses the frequency with which an index is broadcast. Two types of frequency are distinguished: <ul style="list-style-type: none"> • Continuous: the index level is broadcast at regular time intervals, with a frequency configurable for each index. • Discontinuous: the index level is broadcast once a day, at an hour configurable for each index.
Possible values	C Continuous D Discontinuous / at closing only
Used in	MMTP-A5 – Composition of an Index

CFImVal X(2)

Definition	Market flow code for an instrument. Gives the market data flow to which a given instrument belongs. Within the context of the X-DIFF application, market data flow is a group of instruments with the same characteristics. It also serves to regroup the instruments in commercial units for satellite broadcasting.
Possible values	Alphanumerical. It is equal to the Market Flow Code defined at the Cash Product level for the instrument in RCE.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	ACarValRLC (Aggregate for instrument characteristics)

CGdSecEcoFtse X(2)

Definition	FTSE ID for economic group. Identifies an economic group within the classification system for issuers as defined by FTSE International. (The FTSE classification
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system is composed of three levels: economic group, sector and sub-sector).

Possible values Alphanumeric.
Not populated.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **ACIsEcoFtseSoc** (Aggregate for FTSE classification for issuing company)

CGdSVal X(1)

Definition **Code of the instrument category.**

This code is a characteristic of the instrument and provides the broad instrument category: stock, bond or other.

Possible values **A** Share
I Index

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **ACarValRLC** (Aggregate for instrument characteristics)

CGrRLC X(2)

Definition **MMTP group code.**

Identifies the specific MMTP group to which the instrument referred to in the message belongs. Each cash or derivatives instrument belongs to only one of the MMTP groups.

This data is supplied by the application that sends the MMTP message, as per the indications of the MMTP reference messages.

Role: serves as a switching criterion used in directing the message towards its recipients.

Possible values Alphanumeric.

Used in MMTP Header

See Also **AEttTchRLCY1** (Technical header for MMTP message, type 1)

CGrValCot X(2)

Definition **Instrument group ID.**

Designates the group of instruments to which an instrument belongs. Instruments that are traded by the NSC® central trading system can be organized into subsets called groups. Each of these subsets includes instruments that obey the same rules, such as the trading timetable and authorized price fluctuation.

Possible values Alphanumeric.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also **ACarValRLC** (Aggregate for instrument characteristics)

CIdAdfCreValMdv X(8)

Definition **Identification of the UDS Member creator.**
 Identifies the member who creates the User Defined Strategy.
Possible values Alphanumerical.
Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also **YCreValMdv** (Strategy creation type)
CIdNgCreValMdv (Identification of the UDS Trader creator)

CIdAdh X(8)

Definition **Member ID.**
 The identifier of the NSC® member who enters, modifies or cancels an order.
 The coding system used depends on the market organization that is using NSC®.
Role:

- NSC® member ID.
- Broadcast by MMTP.

Possible values Alphanumerical, Blank if not provided
Used in MMTP-A3 – Market Sheet
 MMTP-A4 – Delete N Lines
See also **AIdOm** (Order identification)

CIdAdhNSCAc X(8)

Definition **ID of NSC® Buying Member.**
 The identifier of the NSC® buying member in a trade.
Role:

- NSC® member ID.
- Broadcast by MMTP.

Possible values Alphanumerical.
Used in MMTP-01 – Opening Trade
 MMTP-02 – Trade
 MMTP-33 – TCS Trade

CIdAdhNSCVt X(8)

Definition **ID of NSC® Selling Member.**
 The identifier of the NSC® selling member in a trade.

	Role:
	<ul style="list-style-type: none"> • NSC® member ID. • Broadcast by MMTP.
Possible values	Alphanumeric.
Used in	MMTP-01 – Opening Trade MMTP-02 – Trade MMTP-33 – TCS Trade

CldLngCpsIdx X(12)

Definition	Long instrument ID of index component. Identifies an instrument that is a component of an index by its "long" ID (12 characters). For instruments not listed by the Stock Exchange, this is the ISIN code of the instrument. This code, entered by the Index manager, is not checked by PFI2. For instruments listed by Stock Exchange, either the true ISIN code of the instrument is used, or a code assigned by Stock Exchange.
Possible values	Alphanumeric, not provided (blank) in the last occurrences of the ACapValIdx aggregate of the last MMTP-A5 – Composition of an Index message for a given index, if the number of instruments making up the index is not a multiple of 15.
Used in	MMTP-A5 – Composition of an Index
See Also	ACapValIdx (Aggregate of index component)

CldMsg X(3)

Definition	Message Number. Aids in rebuilding a message that was sent as several messages.
Possible values	Alphanumeric.
Used in	MMTP-23 – Text Message

CldNgCreValMdv X(8)

Definition	Identification of the UDS Trader creator. Identifies the trader who creates the User Defined Strategy.
Possible values	Alphanumeric.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	CldAdfCreValMdv (Identification of the UDS Member creator) YCreValMdv (Strategy creation type)

CldxPasCotVarVal X(2)

Definition	Index of the Variable Tick Table. The index data item refers to a set of lines which make it possible to determine the price tick for an instrument, based on the price range in which a given price for the instrument falls (i.e. a price to be rounded off or a limit to be checked).
Possible values	Alphanumerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	QpasCotFxeVal (Amount of the fixed price tick for an instrument) ACarValRLC (Aggregate for instrument characteristics)

CIndustryVal X(4)

Definition	Industry Code.
Possible values	Alphanumerical.
Used in	MMTP-5K – Super-sectors MMTP-5L – Industry

CIndustryValICB X(4)

Definition	Industry Code ICB.
Possible values	Alphanumerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

Clisin X(12)

Definition	ISIN code for the Cash product. Identifies a product.
Possible values	Alphanumerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	ACarValRLC (Aggregate for instrument characteristics)

ClisinForeign X(12)

Definition	ISIN foreign cash product.
Possible values	Alphanumerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

ClisinProdSja X(12)

Definition	ISIN code for the underlying product. Identifies the underlying product for a derivative product.
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Possible values	Alphanumeric.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

CNivIdx X(1)

Definition Index level code.

The index level code describes two concepts:

- The type of price used to calculate the given index level: theoretical opening price, opening price, last price, etc.
- Whether the weight of the instruments for which a price of the day is available at the moment of the given index calculation is greater than a specific configured threshold (the idea of index versus forerunner).

Possible values *For stock indexes*

- 1 First real-time index of the day (used only for continuously broadcast indexes)
- 2 Real-time index (except the first of the day) (used only for continuously broadcast indexes; calculated during the Continuing Trading phase)
- 3 Real-time forerunner (used only for continuously broadcast indexes for which the Calculate Forerunner flag is set to Yes; broadcast when the index is in the Opening phase, or in the Suspended state; this opening forerunner is calculated using traded prices)
- 5 Reference closing index (calculated using the last prices of the day)
- 6 Daily settlement index level (an average of index levels, calculated during the clearing phase, for a continuous index that supports the derivatives market)
- 7 At-expiration settlement index level (an average of index levels, calculated during the settlement phase, for a continuous index that supports the derivatives market)
- 8 Pre-opening forerunner (used only for continuously broadcast indexes for which the Calculate Forerunner flag is set to Yes; broadcast when the index is in Pre-Opening phase; the pre-opening forerunner is calculated using theoretical opening prices)
- 9 Opening forerunner (used only for discontinuous indexes for which the Calculate Forerunner flag is set to Yes)
- A Partial, provisional opening index (calculated using known opening prices)

- B** Complete, provisional opening index (calculated using the opening prices for each instrument in the index, which means that all instruments in the index have traded, and therefore that no instrument is in a Suspended or Reserved state)
- C** Reference opening index (calculated using opening prices, when the index passes into the Provisional Closing phase and into the FinalClosing phase).
- Z** Index not treated.

Index levels for ETF - Indicative NAV indexes and ETF - Index Estimate indexes

- 1** First real-time index of the day (used only for continuously broadcast indexes)
- 2** Real-time index (except the first of the day) (used only for continuously broadcast indexes; calculated during the Continuous Trading phase)
- 5** Reference closing index (calculated using the last prices of the day)

Used in MMTP-B1 – Real-time Data for an Index

CoKSS

X(2)

Definition **Short Sell eligible flag.**

Determines if an instrument is eligible for Regulated Short Selling (RSS), or not.

Possible values **R** Instrument eligible for RSS

(Blank) Instrument not eligible for Short Selling

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

CPICot

N(3)

Definition **Market place ID for instrument.**

Place where the instrument's price or the valuation of the instrument's price in the broad sense is established:

- Geographic location of the market on which the instrument is traded.
- Geographic location of the instruments that make up an index.
- Trading organisms: market maker.
- Information sources: newspapers in which indices are calculated and organizations that value mutual funds.
- Regroups instruments that are not traded or are due to trade.

- Non-traded instruments that are still active for settling trades.

In the header of MMTP messages for type 2-file transfers (Instruments and Corporate Events), this item represents the exchange. In other words, it represents:

- The place where instruments traded in NSC® were floated
- The trading place for the other instruments.

Role:

- Identifies the origin of a price
- MMTP broadcasting
- Satellite broadcasting

Integrity constraints: in the header of satellite-broadcast messages, this data is not provided in technical messages such as Start of Satellite Broadcasting.

Possible values Numerical.
Not provided if "000".
Used in MMTP Header
See Also **AettFnIRLCY1** (Functional header for MMTP message, type 1)

CProdCpsProdYCb X(12)

n

Definition **NSC® Code for a combined product component.**
Identifies the NSC® code of the legs for a strategy.

Possible values Alphanumerical.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

CPyCot X(3)

Definition **Code (ISO3A norm) for the country where the instrument is listed.**

The country indicated is the country where the instrument is quoted.

Possible values Alphanumerical (standard codification).

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **ACarValRLC** (Aggregate for instrument characteristics)

CPyEmet X(3)

Definition Code (ISO3A norm) for country of issuer.

Provides the ISO3A code for the country of location for the corporate headquarters of the company that issued the instrument. The term *country code* is synonymous with the nationality of the issuer in certain screen displays.

Possible values Alphanumeric (standard codification).
It is equal to the Country Code defined at the Company in RCE level for the instrument.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also ACarValRLC (Aggregate for instrument characteristics)

CSEcoFtse X(2)

Definition FTSE ID for sector.

Identifies a sector within the classification system for issuers as defined by FTSE International. (The FTSE classification system is composed of three levels: economic group, sector and sub-sector.) This code is an ID within its own right -- there is no need to attach the prefix for its economic group in order for the ID to be unique.

Possible values Alphanumeric.
Not populated..

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also ACIsEcoFtseSoc (Aggregate for FTSE classification for issuing company)

CSEcVal X(3)

Definition Sector Code.

Identifies the sector of the instrument. The business sectors related to the companies that are traded on the exchange and defined at the Company level in RCE.

Possible values Alphanumeric.
Three first characters of the company identification.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
MMTP-52/53 – Deletion/Creation
MMTP-5F – Sectors
MMTP-5G – Sub-sectors

CSEcValICB X(4)

Definition Sector Code ICB.

Possible values Alphanumeric.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

CSensOrdNrepVal N(2)

Definition **Unfilled order(s) at opening flag.**
This data indicates the side of the unfilled orders.

Possible values **02** unfilled orders are on the bid side
03 unfilled orders are on the ask side

Used in MMTP-A6 – Display of Bid or Offer

CSensQNrepOv X(1)

Definition **Unfilled quantity side at opening price.**
Provides the side where quantity is unmatched at the opening price (surplus).

Possible values **A** Buy
V Sell
(space) No unfilled quantity

Used in MMTP-30 – Theoretical Opening Price

CSensVarPTranPP X(1)

Definition **Sign of price variation as compared to the previous price.**
Determines the variation of the trade price according to the previous (next last) trade price on the instrument.
For trades that are generated as part of the first trade of the day on an instrument, this field is always set to '+'.
Possible values **+** Price going up (or first trade of the trading day)
- Price going down
0 Same price, no variation

Used in MMTP-01 – Opening Trade
MMTP-02 – Trade
MMTP-32 – Opening Summary

CSensVarPVaIP X(1)

Definition **Trade price versus next to last trade price variation flag.**
Describes the new variation flag in the "Price" message considering the trade cancellation processing.

Possible values **+** Price going up (or first trade of the trading day)
- Price going down
0 Same price, no variation OR non-significant

Used in MMTP-03 – Price

CSgrRLC X(2)

Definition **Code for MMTP subgroup.**

Identifies the MMTP subgroup to which the instrument in the message belongs. An instrument can belong to only one MMTP subgroup. Note that a MMTP subgroup is not a subsection of a MMTP group. Hence, the assignment of an instrument to a MMTP subgroup bears no relation to the assignment of that same instrument to a MMTP group. The MMTP group code and subgroup code are totally unrelated items. The system sending the message to MMTP provides this data, as per the indications of MMTP Instrument Reference Data messages.

Role: one of the switching criteria that makes it possible to direct a message to its recipients.

Possible values Alphanumeric.

Used in MMTP Header

See Also **AETTchRLCY1** (Technical header for MMTP message, type 1)

CSicoRGA X(6)

Definition **Short instrument ID.**

Short identification code of the instrument.

Possible values Alphanumeric.

Used in MMTP Header

See Also **AETtFnIRLCY1** (Functional header for MMTP message, type 1)

CAFCValObjMsg (Cash Product code for instrument about which the message is sent)

CSignKMuProdCps X(1)

Definition **Leg multiplication coefficient sign.**

Represents the sign (buy or sell) of the leg of a strategy instrument.

Possible values **(space)** Not provided

+ Buy

- Sell

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **AKProdCpsProdYCbn** (Aggregate ratio for a leg of strategy instrument)

CSocCSAC X(5)

Definition **Code for issuing company.**

Identifier of the company that issued a given financial instrument.

An exchange that calculates and broadcasts one or more indices is considered to be the issuer of these index-type instruments.

Possible values Numerical, 1~99999

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **ACarValRLC** (Aggregate for instrument characteristics)

CSoSecEcoFtse X(3)

Definition **FTSE ID for sub-sector.**

Identifies a sub-sector within the classification system for issuers as defined by FTSE International. (The FTSE classification system is composed of three levels: economic group, sector and sub-sector.) This code is an ID within its own right -- there is no need to attach the prefix for its economic group in order for the ID to be unique.

Possible values Alphanumerical.

Not populated.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **ACIsEcoFtseSoc** (Aggregate for FTSE classification for issuing company)

CSoSecVal X(4)

Definition **Sub-sector Code.**

Identifies the sub-sector of the instrument and is a subdivision of a sector. For example, if the sector is Mining, a sub-sector could be Gold mining. This information is defined at the Company level in RCE.

Possible values Alphanumerical.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
MMTP-5G – Sub-sectors

CSuperSecVal X(4)

Definition **Super Sector Code.**

Possible values Alphanumerical.

Used in MMTP-5F – Sectors
MMTP-5K – Super-sectors

CSuperSecValICB X(4)

Definition	Super Sector Code ICB.
Possible values	Alphanumeric.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

CValMne X(5)

Definition	Instrument mnemonic code. In messages concerning cash instruments, the mnemonic code is attributed by the company that runs the exchange to identify a listed security. This code is principally used by traders (physical people). Depending on the company that runs the exchange, all or some listed securities have a mnemonic code.
Possible values	Alphanumeric. Same as Mnemonic Code defined at the Cash Instrument level in RCE.
Used in	MMTP Header

CValMneCpsIdx X(5)

Definition	Mnemonic code of index component. Identifies an instrument that is a component of an index by its mnemonic code.
Possible values	Alphanumeric, not provided (blank) in the last occurrences of the ACapValIdx aggregate of the last MMTP-A5 – Composition of an Index message for a given index, if the number of instruments making up the index is not a multiple of 15.
Used in	MMTP-A5 – Composition of an Index
See Also	ACapValIdx (Aggregate of index component)

D

DDebSuVal N(8)

Definition **Start date for suspension of instrument.**

Date that suspension of trading started for an instrument. This data is provided only when the Instrument State Change message refers to a manual suspension. Note that the date is zero in the Instrument State Change message that is sent at the initialization of the trading system for each instrument that remains suspended from the previous trading day.

Possible values Format: "YYYYMMDD" (year - month – day)
Not provided if "00000000".

Used in MMTP-05 – Instrument State Change

DDrCV N(8)

Definition **Date of last price for instrument.**

Represents the last known date that an instrument traded or that a price for an instrument was estimated, at the time the message is sent. This date takes into account only events such as trades or price estimations. It does not represent indications (bid only or offer only) that might have occurred since the last trade or estimation, nor does it represent the date of price changes that have arisen from a subsequent corporate event that made it necessary to calculate an adjustment or super-adjustment ratio. Corresponds to the date of the most recent closing level for an index if the message concerns an index.

Possible values Format: "YYYYMMDD" (year - month – day)

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **ACarValRLC** (Aggregate for instrument characteristics)

Delivery Timeout N(6)

Definition **Delivery timeout.**

Reserved for subsequent application feature.

Possible values **HMMSS** (hour minutes seconds)

Used in MMTP Header

Delivery Timestamp N(12)

Definition **Date and time of delivery.**

Assigned by access point when sending message to MMTP client.

Possible values Numerical.

Used in MMTP Header

DESop N(8)

Definition	Date on which the creation, modification, or deletion of an instrument takes effect. Gives the date on which the creation, modification or deletion of the characteristics for a listed security or related instrument takes effect.
Possible values	Format: "YYYYMMDD" (year - month – day)
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	ACarValRLC (Aggregate for instrument characteristics)

DEven N(8)

Definition	Date of MMTP event. System date that indicates when a MMTP message was generated by the sending application. (This date is not provided by the message switching system). Unless otherwise stated in the documentation for a specific MMTP message, this date is a technical date. Core business dates (for example, the date of a trading session and the clearing date) are generally included in the body of the message (and the documentation for each of those dates clarifies its exact meaning).
	Role: for information purposes.
	Integrity constraints: none.
Possible values	Format: "YYYYMMDD" (year - month – day)
Used in	MMTP Header
See Also	ADHEvenRLC (Aggregate for time stamp for MMTP event (up to the milliseconds)) HEven (Time of MMTP event) ZMIsHevenRLC (Number of milliseconds in time of MMTP event)

DHDebCotProdMdv X(14)

Definition	Date and time at which trading starts on a derivative product. Date and time from which a derivative product can be traded. This data field is known under the name "activation date time".
Possible values	Format: "YYYYMMDDHHMMSS" (year - month – day – hours – minutes - seconds)

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also **DHFinCotProdMdv** (Date and time at which trading ends on a derivative product)

DHFinCotProdMdv X(12)

Definition **Date and time at which trading ends on a derivative product.**
This data field is known under the name "expiration date time".

Possible values Format: "YYYYMMDDHHMMSS"
(year - month – day – hours – minutes - seconds)

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **DHDebCotProdMdv** (Date and time at which trading starts on a derivative product)

DHPriOm X(20)

Definition **Order priority date time.**
Defines the time-stamp of the order.
It enables to define the priority of the order according to FIFO matching algorithm (price - time priority) or the FIFO Origin matching algorithm (price – origin – time priority).

Possible values Format: "YYYYMMDDHHMMSS999999"
(year - month – day – hours – minutes – seconds – fractions of second)

Used in MMTP-A3 – Market Sheet

DHTran X(14)

Definition **Trade Date and Time.**
Gives the date and the time of the trade.

Possible values Format: "YYYYMMDDHHMMSS"
(year - month – day – hours – minutes – seconds)

Used in MMTP-M1 – Trade For Clearing

See Also MMTP-01 – Opening Trade
MMTP-02 – Trade

DInMar N(8)

Definition **Date of first day of trading for instrument.**
Indicates the flotation date of an instrument.

Possible values Format: "YYYYMMDD" (year - month – day)
Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also ACarValRLC (Aggregate for instrument characteristics)

DSaiOm N(8)

Definition **Order entry date (in the Central Trading System).**

The calendar date on which the order is entered in the central trading system.

Enables to identify an order associated with the instrument ID and the order sequence number.

Possible values Format: "YYYYMMDD" (year - month – day)

Zero if not provided

Used in MMTP-A3 – Market Sheet

MMTP-A4 – Delete N Lines

See Also AldOm (Order identification)

NSeqOm (Order sequence number)

H

HdebSuVal N(6)

Definition **Start time for suspension of instrument.**

For a given date, the time that suspension of trading started for an instrument (the time that the suspension command was entered by the Market Control department). This data must be interpreted with the start date for suspension of instrument. This data is provided only when the Instrument State Change message refers to a manual suspension. Note that the date is zero in the Instrument State Change message that is sent at the initialization of the trading system for each instrument that remains suspended from the previous trading day.

Possible values Format: "YYYYMMDD" (year - month – day)
Zero if not provided

Used in MMTP-05 – Instrument State Change

HEven N(6)

Definition **Time of MMTP event.**

Represents the system time that indicates when a MMTP message was generated by the sending application. This time is not provided by the message switching system.

Role: for information purposes. Integrity constraints: to be interpreted in connection with the Date of MMTP event (DEven).

Possible values Format: "YYYYMMDD" (year - month – day)
Zero if not provided

Used in MMTP Header

See Also **ADHEvenRLC** (Aggregate for time stamp for MMTP event (up to the milliseconds))

DEven (Date of MMTP event)

ZMIsHevenRLC (Number of milliseconds in time of MMTP event)

HnivlcpRfibs N(6)

Definition **Time of reference daily settlement index level.**

The broadcast time for the reference daily settlement index level for a given stock index and a given trading day. The value for this data item is determined by the index calculation system when the last calculated daily settlement index level is broadcast, or if the daily

settlement index level is manually modified by the index manager at the end of the day, during the Index Manager Intervention phase.

Possible values Format: "HHMMSS" (hour - minutes –seconds)
A value is provided if and only if a daily settlement index level was calculated on the given day.

Used in MMTP-B2 – Stock Index: Daily Summary

HnivllqRflbs N(6)

Definition **Time of reference at-expiration settlement index level.**
The broadcast time for the at-expiration settlement index level for a given stock index and a given trading day. The value for this data item is determined by the index calculation system when the last calculated at-expiration settlement index level is broadcast, or if the at-expiration settlement index level is manually modified by the index manager at the end of the day, during the Index Manager Intervention phase.

Possible values Format: "HHMMSS" (hour - minutes –seconds)
A value is provided if and only if an at-expiration settlement index level was calculated on the given day.

Used in MMTP-B2 – Stock Index: Daily Summary

HnivlnuClMreslbs N(6)

Definition **Time of reference closing index level (daily summary).**
The broadcast time for the index level unadjusted for dividends of the type "reference closing" for a given stock index and a given trading day. The value for this data item is determined by the index calculation system when this index level is broadcast, or if the reference closing index level, unadjusted for dividends, is manually modified by the index manager at the end of the day, during the Index Manager Intervention phase.

Possible values Format: "HHMMSS" (hour - minutes –seconds)

Used in MMTP-B2 – Stock Index: Daily Summary

HnivlnuOvPrvMreslbs N(6)

Definition **Time of provisional opening index level (daily summary).**
The broadcast time for the level unadjusted for dividends, of the type "provisional opening," for a given stock index and a given trading day; please refer to XNivlnuOvPrvMreslbs (Provisional Opening Index Level (daily summary)). The value for this data item is determined by the index calculation system when this index level is broadcast, or if the "provisional opening" index level unadjusted for dividends is manually modified

by the index manager at the end of the day, during the Index Manager Intervention phase.

Possible values Format: "HHMMSS" (hour - minutes –seconds)
A value is provided if and only if the Calculate Opening Index Level Using Opening Prices flag is Yes for the given index.

Used in MMTP-B2 – Stock Index: Daily Summary

HnivInuOvRfMreslbs N(6)

Definition **Time of reference opening index level (daily summary).**
The broadcast time for the index level unadjusted for dividends of the type "reference opening" for a given stock index and a given trading day. The value for this data item is determined by the index calculation system when this index level is broadcast, or if the reference opening index level unadjusted for dividends is manually modified by the index manager at the end of the day, during the Index Manager Intervention phase.

Possible values Format: "HHMMSS" (hour - minutes –seconds)
A value is provided if and only if the Calculate Opening Index Level Using Opening Prices flag is Yes for the given stock index.

Used in MMTP-B2 – Stock Index: Daily Summary

HnivInuPbMreslbs N(6)

Definition **Time of lowest opening index level (daily summary).**
The broadcast time for the lowest index level unadjusted for dividends that is broadcast for a given stock index and a given trading day. The value for this data item is re-evaluated by the index calculation system after each index level broadcasting during the day. The value can be modified by the index manager at the end of the day, during the Index Manager Intervention phase; that is why this is called a "daily summary" time.

Possible values Format: "HHMMSS" (hour - minutes –seconds)

Used in MMTP-B2 – Stock Index: Daily Summary

HnivInuPhMreslbs N(6)

Definition **Time of highest opening index level (daily summary).**
The broadcast time for the highest index level unadjusted for dividends that is broadcast for a given stock index and a given trading day. The value for this data item is re-

evaluated by the index calculation system after each index level broadcasting during the day. The value can be modified by the index manager at the end of the day, during the Index Manager Intervention phase; that is why this is called a "daily summary" time.

Possible values Format: "HHMMSS" (hour - minutes – seconds)
Used in MMTP-B2 – Stock Index: Daily Summary

HnivInuPrDifMreslbs N(6)

Definition **Time of first index level broadcast (daily summary).**
 The broadcast time for the first index level unadjusted for dividends that is broadcast for a given stock index and a given trading day. The value for this data item is determined by the index calculation system when this index level is broadcast.

Possible values Format: "HHMMSS" (hour - minutes – seconds)
 A value is provided if and only if the broadcast mode for the index is continuous.
Used in MMTP-B2 – Stock Index: Daily Summary

HOvPgmVal X(6)

Definition **Programmed opening time for instrument.**
 Defines the instrument opening time that has been programmed by the Market Control department. This data item indicates for a reserved instrument with a programmed opening, the time at which the instrument is to open.

Possible values Format: "HHMMSS" (hour - minutes – seconds)
 Zero if not provided
Used in MMTP-05 – Instrument State Change

HPbJIdx N(6)

Definition **Time of day's lowest index level.**
 The time at which the index reached the lowest level broadcast for the current day, up until the moment that this message is sent.

Possible values Format: "HHMMSS" (hour - minutes – seconds)
 Zero if not provided
Used in MMTP-B1 – Real-time Data for an Index

HphJIdx N(6)

Definition	Time of day's highest index level. The time at which the index reached the highest level broadcast for the current day, up until the moment that this message is sent.
Possible values	Format: "HHMMSS" (hour - minutes –seconds) Zero if not provided
Used in	MMTP-B1 – Real-time Data for an Index

I

IAggressiveSide X(1)

Definition	Indicates the side of the entering order that has created the execution. Indicates if the order that has created the execution was a buy order ('B' in the flag) that has hit the sell side of the order book. Indicates if the order that has created the execution was a Sell order ('S' in the flag) that has hit the buy side of the order book. When the matching engine is not able to determine what was the aggressive order (i.e. for Auction, or when the market operation and control team enter a trade) the IAggressiveSide is set with space.	
Possible values	B	When the order entered that has hit sell orders already in the order book. (The order entered is a Buy order in this case).
	S	When the order entered that has hit buy orders already in the order book. ((The order entered is a Buy order in this case).
	Space	Not provided
Used in	MMTP-01 – Opening Trade	

IAnuTran N(2)

Definition	Trade cancellation flag. Indicates whether the message describes a trade cancellation or a trade creation (a trade can be cancelled by Market Control).	
Possible values	00	Trade cancellation
	07	Trade
Used in	MMTP-02 – Trade	

IAtdAcVtDec X(1)

Definition	Pending Buy Indicator for Short Sell. Indicator whether pending buys are taken into account in the short-selling check (based on ISIN code).	
Possible values	0	Pending buys ignored
	1	Pending buys increment the share position used for the short-selling check
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics	

Iclose X(1)

Definition **Close indicator.**
Indicates whether the closing price is broadcast on a real time basis or at the end of the Trading Day.

Possible values **0** the message is sent in real time during the session
1 the message is sent at the end of the day

Used in MMTP-5J – Closing Price

ICtlVtTran X(1)

Definition **Selling Check Indicator on Trades.**
Indicator whether selling checks are performed on trades (based on NSC® code).

Possible values **0** Selling check on trades not performed
1 Selling check on trades performed

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

IdrMsgMMTPEchnId X(12)

X

Definition **Flag indicating the last MMTP message for an index.**
The sample of an index is described using one or more MMTP-A5 –Composition of an Index messages; there are 15 instruments per message. This data item indicates if the message containing it is the last in a series of A5 messages describing the sample of the index identified in the header of the message.

Possible values **0** Not the last MMTP message
1 Last MMTP message

Used in MMTP-A5 – Composition of an Index

IetaCotVal X(1)

Definition **Instrument trading state indicator.**
In the Instrument State Change messages sent by the trading systems:

- this data item indicates the trading state of the given instrument at the moment that the message was sent: suspension, reservation, or resumption of trading for an instrument that was suspended or reserved
- in addition, the data item makes it possible to distinguish between different types of reservation: reserved upward, reserved downward, or simple reservation.

Integrity Constraints:

- The resumption state (R) is only possible if there has been a suspension (S) or a reservation (H/B/P) during the trading day

- No value is provided in Instrument State Change messages where the action code is:
 - programming of a deferred opening
 - stopping of the broadcasting of the market sheet (Fast Market)
 - resumption of the broadcasting of the market sheet (Slow Market)
 - cancellation of a deferred opening
 - authorization of order entry on the instrument
 - forbidding of order entry on the instrument
- Trading status P (simple reservation) is only valid for an instrument at its opening; only the NSC® system can send Instrument State Change messages with the instrument trading state indicator (IEtaCotVal) = P.

Possible values	(space) Not provided
S	suspension of trading for an instrument, or an options class suspension of calculation of a stock index
R	resumption of trading for an instrument or an options class resumption of calculation of a stock index
H	reservation upward
B	reservation downward
P	simple reservation (existence of a Must-Be-Filled order / Market Order on an instrument whose theoretical opening price cannot be determined)
Used in	MMTP-05 – Instrument State Change

IetaPcsOI X(1)

Definition Implied order processing flag.

This flag indicates whether or not the implied/revolving functionality processing should be activated for an instrument at its creation in the system.

Possible values	(space) Not provided
0	The implied/revolving order processing is deactivated
2	The implied/revolving order processing is activated
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

IfinTran X(1)

Definition Flag indicating end of trades at the same price.

Indicates the end of a series of trades that have been generated by NSC® at the same price for a given instrument.

Possible values	0 Trade at the same price as the previous trade
	1 Last trade at the same price
Used in	MMTP-01 – Opening Trade
	MMTP-02 – Trade

Ift

X(1)

Definition **Decimal point locator.**

Used in the AEMS norm for prices and amounts to express the number of decimal places and the sign for a numeric data item. The item is always followed by a whole integer field that gives the value (both before and after the decimal point) of the numeric data.

Role: makes it possible to interpret the following zone, and to store a value between -0,000000001 and +999999999 (for 9-digit figures) using the least possible space. Makes it possible to express amounts with a variable number of decimals (e.g. for amounts expressed in different currencies). Makes it possible to express the sign of the related numeric data item.

Integrity constraints: Ift data item is always followed by a Qmt data item.

The meaning of the item represented in Ift-Qmt is described in an aggregate that includes Ift followed by Qmt.

The possible values for Ift are limited by the length of the related Qmt data item.

Possible values

(space) Not provided

- 0** positive amount, 0 decimal
- 1** positive amount, 1 decimal
- 2** positive amount, 2 decimals
- 3** positive amount, 3 decimals
- 4** positive amount, 4 decimals
- 5** positive amount, 5 decimals
- 6** positive amount, 6 decimals
- 7** positive amount, 7 decimals
- 8** positive amount, 8 decimals
- 9** positive amount, 9 decimals
- A** negative amount, 0 decimal
- B** negative amount, 1 decimal
- C** negative amount, 2 decimals
- D** negative amount, 3 decimals
- E** negative amount, 4 decimals
- F** negative amount, 5 decimals
- G** negative amount, 6 decimals
- H** negative amount, 7 decimals
- I** negative amount, 8 decimals
- J** negative amount, 9 decimals

Used in

- MMTP-01 – Opening Trade
- MMTP-02 – Trade
- MMTP-03 – Price
- MMTP-04 – Best Limits

MMTP-30 – Theoretical Opening Price
 MMTP-33 – TCS Trade
 MMTP-32 – Opening Summary
 MMTP-52/53 – Deletion/Creation of Instrument Characteristics
 MMTP-5I – Market Activity
 MMTP-5J – Closing Price
 MMTP-A5 – Composition of an Index
 MMTP-B1 – Real-time Data for an Index
 MMTP-B2 – Stock Index: Daily Summary

See Also Qmt (Amount)

IIBsAscNivlbs

X(1)

Definition Flag for Indicators Related to an Index Level.

Indicates whether or not special data ("indicators") related to a given index level or forerunner exist – such as the number of rising instruments in the index, etc. (PFI2 does not broadcast indicators for each index level, but only for certain ones).

Indicators are calculated using the same prices as the corresponding index level. Indicators can be calculated for all index types in PFI2 (stock indexes, Indicative NAV indexes, and Index Estimate indexes).

Integrity constraints:

- For a continuous index, PFI2 (the Index Calculation system) sets the IIBsAscNivlbs flag to 1 and broadcasts indicators for the following index levels:
 - complete, provisional opening index,
 - reference opening index,
 - reference closing index.
- For a discontinuous index, PFI2 sets the IIBsAscNivlbs flag to 1 and broadcasts indicators for the following index levels:
 - complete, provisional opening index,
 - opening forerunner,
 - reference opening index,
 - reference closing index.

Possible values 0 Indicators not provided in MMTP

1 Indicators provided in MMTP

Used in MMTP-B1 – Real-time Data for an Index

IlcoVwap

X(1)

Definition VWAP listed security flag.

Indicates whether the listed security can be included in VWAP (Variable Weighted Average Price) declarations, that is, trades outside the central order book, where the price

must be checked with the weighted average price on the central market. In theory, all instruments of the type Equity Traded in Continuous Trading can be VWAP instruments (except for warrants and trackers), but some exceptions can exist.

Values for this data item are entered into IVAL by the Euronext Corporate Events department. Used by TCS to determine the set of listed securities for which VWAP calculations and VWAP message broadcasting should be performed.

Possible values 0 Non-VWAP listed security
1 VWAP listed security
Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also ACarValRLC (Aggregate for instrument characteristics)

IMsgA0DebFin X(1)

Definition Start/end indicator for RLC market sheet messages

Indicates the nature of the MMTP-AO – Start / End of Market Sheet

Broadcasting messages that frame the market sheet messages.

Possible values D Start of market sheet broadcasting
F End of market sheet broadcasting

Used in MMTP-AO – Start / End of Market Sheet Broadcasting

IlimEtr X(1)

Definition Foreign Limitation Indicator.

Indicates if a foreigner can trade this instrument or not. The control is performed by NSC upon order entry from the account number entered by the broker.

Possible values 0 Allowed for Foreigners
1 Not allowed for Foreigners

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

IngDrUn X(1)

Definition Trading Once a Right Indicator.

Indicates whether a right can be traded once or not (significant for a rights security only).

Possible values 0 right cannot be traded
1 The right can be traded once

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

InstrumentID X(1)

Definition Instrument identifier
NSC code identifying the instrument and the market segment it is traded on.

Possible values Alphanumeric

Used in Instrument Characteristics Header

IOrgResVal X(1)

Definition **Indicator giving origin of instrument reservation.**
Indicates the origin (manual or automatic) of an event relating to reservation, suspension or resumption of trading for an instrument.

Possible values **(space)** Not provided
A automatic (trading system)
M manual (command by Market Control department)

Used in MMTP-05 – Instrument State Change

IprodIsl X(1)

Definition **Syariah Indicator.**
Indicates if the instrument is an Islamic product. This information is defined at the Cash product level in RCE.

Possible values Alphanumeric.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

ISensOm X(1)

Definition Indicates the side (buy or sell) for an operation related to an order.

Role:

- Used in numerous management rules for the trading system
- RLC broadcasting

Integrity constraints: a value must be provided.

Possible values **A** Buy
V Sell

Used in MMTP-A3 – Market Sheet

MMTP-A4 – Delete N Lines

See also AldOm (Order identification)

IsensVarDrInuClv X(1)

Definition **Sign of variation for last index level versus previous day's closing.**

Sign (plus or minus) for the variation of the last index level unadjusted for dividends that was broadcast for a given index on a given day, as compared to the reference closing index level unadjusted for dividends of the previous day.

To be interpreted in conjunction with VarDrInuClV (Variation for last index level versus previous day's closing).

Possible values + Positive variation or no variation
- Negative variation
0 Not provided

Used in MMTP-B2 – Stock Index: Daily Summary

See Also **XVarDrInuClV** (Variation for last index level versus previous day's closing)

IsensVarP X(1)

Definition **Last trade price variation as compared to the reference price.**
Determines the variation of the last trade price according to the reference price. The reference price can be the previous day's closing price or the settlement price.

Possible values + price going up
- price going down
0 same price, no variation

Used in MMTP-01 – Opening Trade
MMTP-02 – Trade
MMTP-03 – Price
MMTP-30 – Theoretical Opening Price
MMTP-32 – Opening Summary

IsensXMoyVarVallbs X(1)

Definition Sign of Average Variation for Instruments in the Index.
Sign (plus or minus) for the average percentage of variation for the instruments that make up an index, as compared with the previous day's reference prices of these instruments.
Provided if and only if a value is provided for XMoyVarVallbs (Average).

Possible values + Positive or no variation
- Negative variation
(blank) Not provided

Used in MMTP-B1 – Real-time Data for an Index

IsensXVarIdxJ X(1)

Definition **Sign of Variation for Day's Index ('Forerunner').**

Sign (plus or minus) for the data item Variation for Day's Index ('Forerunner'). Provided if and only if a value is provided for XVarIdxJ (Variation for Day's Index ('Forerunner')).

Possible values + Positive or no variation
- Negative variation
(blank) Not provided
Used in MMTP-B1 – Real-time Data for an Index

IsensXVarIdxJDrAnP X(1)

Definition **Sign of Variation for Day's / Last for Previous Year.**
Sign (plus or minus) for the variation of the index level as compared with its closing level on the last trading day of the previous year.
Provided if and only if a value is provided for XVarIdxJDrAnP (Variation for Day's Index / Last for Previous Year).

Possible values + Positive or no variation
- Negative variation
(blank) Not provided
Used in MMTP-B1 – Real-time Data for an Index

IsensXVarIdxJRfV X(1)

Definition **Sign of Variation for Day's Index / Previous Day's Reference.**
Sign (plus or minus) for the variation of the index level as compared with the previous day's reference closing index level.
Provided if and only if a value is provided for XVarIdxJRfV (Variation for Day's Index / Previous Day's Reference).

Possible values + Positive or no variation
- Negative variation
(blank) Not provided
Used in MMTP-B1 – Real-time Data for an Index

IsensXVarIdxPbJCIV X(1)

Definition **Sign of Variation for Lowest Index Level versus Previous Day's Closing.**
Sign (plus or minus) for the variation of the lowest index level that was broadcast for a given stock index on a given day, as compared to the reference closing index level of the

previous day for the same index. To be interpreted in conjunction with XVarIdxPbJCIV (Variation for lowest index level versus previous day's closing).

Possible values + Positive or no variation
- Negative variation
(blank) Not provided

Used in MMTP-B2 – Stock Index: Daily Summary

See Also XVarIdxPbJCIV (Variation for lowest index level versus previous day's closing)

IsensXVarIdxPhJCIV X(1)

Definition **Sign of Variation for Highest Index Level versus Previous Day's Closing.**

Sign (plus or minus) for the variation of the highest index level that was broadcast for a given stock index on a given day, as compared to the reference closing index level of the previous day for the same index. To be interpreted in conjunction with XVarIdxPhJCIV (Variation for highest index level versus previous day's closing).

Possible values + Positive or no variation
- Negative variation
(blank) Not provided

Used in MMTP-B2 – Stock Index: Daily Summary

See Also XVarIdxPhJCIV (Variation for highest index level versus previous day's closing)

ItabModMeLim X(1)

Definition **Change of best limit flag.**

Indicates the limits which are present in the message (see following structure).

Occurrence 1 to 5: best limit; 6th occurrence: opening summary based on the indicative opening price and only used during pre-opening mode.

Possible values For the occurrence N (1 to 5):

0 the Nth limit is not modified (neither the nth buy nor the nth sell limit)

1 the Nth limit is modified (buy or / and sell sides)

For the 6th occurrence:

0 the opening summary is not modified or is equal to the first limit

1 the opening summary is modified and is not equal to the first limit

***** the opening summary is insignificant (continuous trading mode)

Used in MMTP-04 – Best Limits

ltranSml N(1)

Definition **Small Trade Indicator.**

Not filled

Indicates that the trade is a small trade (trades for which the amount is below a given amount i.e. set to 1,000 \$) are not taken into account in the closing price calculation. Moreover, these small trades are not involved in the index computation and do not update the highest and lowest price statistics.

Possible values **(Blank)** not filled

0 the trade is not a small trade

1 the trade is a small trade

Used in MMTP-01 – Opening Trade

MMTP-02 – Trade

ltranYApl N(1)

Definition **Cross Trade Flag.**

Indicates whether the trade is the result of two matching orders, or whether the same member simultaneously entered both sides of the trade (cross order). In the latter case, the trade is known as a cross trade.

Possible values **0** Not a cross trade

1 Cross trade (TRIAX: not applicable)

Used in MMTP-01 – Opening Trade

MMTP-02 – Trade

lurg X(1)

Definition **Priority Indicator.**

Indicates the urgency of the message.

Possible values **O** Urgent message

N Non-urgent message

Used in MMTP-23 – Text Message

lvaliOmIns X(1)

Definition **Default date validity.**

Defines the validity order with a validity type default. This data field is known under the name type of default validity.

Possible values **E** Expiration

J Day (default value)

Used in MMTP-52/53 – Deletion/Creation of Instrument

Characteristics

IvtDec	X(1)
Definition	<p>Short sell indicator.</p> <p>Describes whether the control against the short selling must be applied by the Control module (and in case of check failure, whether the order is rejected or a confirmation is needed) and whether the buy order executions must update (immediately) or not the share positions of the investor. This indicator is defined at the Cash instrument level in RCE.</p>
Possible values	<p>0 No short-selling check, The positions are not managed by the CCM for this instrument.</p> <p>1 Short-selling check with rejection, position not updated. CCM will check the incoming order, and if short-sell, will check that the Investor's position is long enough to accept it. If not, the incoming order will be rejected. However, the Investor's position will not be updated.</p> <p>2 Short-selling check confirmation request, position not updated. CCM will check the incoming order, and if short-sell, will check that the Investor's position is long enough to accept it. If not, CCM will ask for a confirmation of the order by the Trader (and if confirmed, will accept the order). In any case, the Investor's position will not be updated.</p> <p>3 No short-selling check, position updated</p> <p>4 Short-selling check with rejection, position updated</p> <p>5 Short-selling check confirmation request, position updated</p>
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

K

KajCapBzlbs	aggregate
Definition	<p>Adjustment coefficient for the base capitalization of an index.</p> <p>The number without units by which the base market capitalization for a given stock index should be multiplied to neutralize the effect on the unadjusted-for-dividends index level of all change-of-capital corporate events that have been applied (to the instruments in the index sample) since the date that this base capitalization was calculated. If the Recalculate Base Capitalization of the Index flag is Yes, this coefficient is recalculated by the index calculation system at the beginning of each trading day J, based on the corporate events effective on day J. The coefficient is obtained using the following formula:</p>

$$\text{Coeff J} = \text{Coeff}_{J-1} \times \frac{\text{Cap after CE}_J}{\text{Cap before CE}_J}$$

where:

- CoeffJ = adjustment coefficient for the base capitalization of the index, on the given date J
- CoeffJ-1 = adjustment coefficient for the base capitalization of the index, on the previous trading day

Cap after CEJ = previous day's reference capitalization for index I after corporate events effective on day J = Sum for all instruments V in the index sample of the following calculation: Number of shares of V in I after applying the corporate events effective on day J x Adjusted reference price of V on J-1 x Capitalization adjustment coefficient for V in I.

Cap before CEJ = previous day's reference capitalization for index I before corporate events effective on day J = Sum for all instruments V in the index sample of the following calculation: Number of shares of V in I before applying the corporate events effective on day J x Non-adjusted reference price of V on J-1 x Capitalization adjustment coefficient for V in I.

This adjustment coefficient can be modified manually by the index manager in case of an error in the characteristics or in the automatic processing of corporate events.

Possible values (Please refer to each component of the aggregate)

Used in MMTP-B2 – Stock Index: Daily Summary

See Also Components of the aggregate:

- KajCapBzlbsPti (Adjustment coefficient for the base capitalization of an index (integer portion))
- KajCapBzlbsPdc (Adjustment coefficient for the base capitalization of an index (decimal portion))

KajCapBzlbsPdc

N(15)

Definition Adjustment coefficient for the base capitalization of an index (decimal portion).

The decimal portion of KajCapBzlbs (Adjustment coefficient for the base capitalization of an index).

Possible values Numerical, unsigned integer.

Used in MMTP-B2 – Stock Index: Daily Summary

See Also **KajCapBzlbsPti** (Adjustment coefficient for the base capitalization of an index (integer portion))

KajCapBzlbs (Adjustment coefficient for the base capitalization of an index)

KajCapBzlbsPti N(2)

Definition	Adjustment coefficient for the base capitalization of an index (integer portion). The integer portion of KajCapBzlbs (Adjustment coefficient for the base capitalization of an index).
Possible values	Numerical, unsigned integer.
Used in	MMTP-B2 – Stock Index: Daily Summary
See Also	KajCapBzlbsPdc (Adjustment coefficient for the base capitalization of an index (decimal portion)) KajCapBzlbs (Adjustment coefficient for the base capitalization of an index)

KajCapValCpsIdx aggregate

Definition	Capitalization adjustment coefficient of an instrument within an index. Coefficient used to adjust the capitalization of a given instrument in a given index. This coefficient is part of a calculation formula for the capitalization of an instrument in an index: $\text{Capitalization}_i(V) = \text{Price}(V) \times \text{NumberOfShares}_i(V) \times \text{AjustementCoefficient}$ <p>This coefficient is initialized automatically to 1 by the Index Platform application when an index is created. It can be manually modified by the index manager. It is not modified by the automatic processing of corporate events. Used to modulate the weight of an instrument in an index according to its "free-float" (number of shares not held by stable shareholders). Used to limit the relative weight of an instrument in an index, for example to take into account the regulation of mutual funds, which limits the capitalization weight of an instrument to a certain percentage of its total portfolio ("capped index").</p>
Possible values	Ift / QMt12 format, zero authorized, not provided (Ift=blank, QMt12=zero) in the last occurrences of the ACapValIdx aggregate of the last MMTP-A5 –Composition of an Index message for a given index, if the number of instruments making up the index is not a multiple of 15.
Used in	MMTP-A5 – Composition of an Index
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • QMt12 (Amount) ACapValIdx (Aggregate of index component)

KcompEmp aggregate

Definition Coefficient for Borrowing Compensation.

Possible values Ift / Qmt format.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

KfrsEmp aggregate

Definition Coefficient for Borrowing Fee.

Possible values Ift / Qmt format.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

KfrsHyp aggregate

Definition Coefficient for Pledging Fee.

Possible values Ift / Qmt format.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

KmuProdCpsProdCbn N(2)

Definition Leg multiplication ratio.

Multiplication coefficient for the leg of a strategy instrument.

Possible values Numerical.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **AKProdCpsProdYCbn** (Aggregate ratio for a leg of strategy instrument)

KtranEchComp aggregate

Definition Coefficient for Failed Trade Compensation.

Possible values	Ift / Qmt format.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount)

L

LBoard	X(40)
Definition	Board Name. Gives the name of the board.
Possible values	Alphanumeric.
Used in	MMTP-5E – Boards
LIndustryVal	X(40)
Definition	Industry Name.
Possible values	Alphanumeric.
Used in	MMTP-5L – Industry
Lmsg	X(854)
Definition	Message text. Unstructured data to provide information text to the market participants.
Possible values	Alphanumeric. The following control characters have a special meaning; # Page separator @ Carrier return (end of line)
Used in	MMTP-23 – Text Message
LocForeignIndicator	N(1)
Definition	Practice Notes. Company's practice notes defined at the Company level in RCE.
Possible values	Alphanumeric.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
LPra	X(10)
Definition	Practice Notes. Company's practice notes defined at the Company level in RCE.
Possible values	Alphanumeric.
Used in	RLC-52/53 – Deletion/Creation of Instrument Characteristics

LsecVal X(40)
Definition **Sector Name.**
Possible values Alphanumeric.
Used in MMTP-5F – Sectors

Lsoc30 X(30)
Definition **30-character AFC name for issuing company.**
 Gives the short name of the company that has issued a given instrument. Makes it possible to identify precisely the issuer by using key words from the company's name.
Possible values Alphanumeric.
Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also **ACarValRLC** (Aggregate for instrument characteristics)

LSoSecVal X(40)
Definition **Sub-sector Name.**
Possible values Alphanumeric.
Used in MMTP-5G – Sub-sectors

LsuperSecVal X(40)
Definition **Super-sector Name.**
Possible values Alphanumeric.
Used in MMTP-5K – Super-sectors

Ltit X(80)
Definition **Message title.**
 Gives the title of the message. If the message is urgent, the title can indicate this.
Possible values Alphanumeric.
Used in MMTP-23 – Text Message

Lval18 X(18)
Definition **18-character instrument name.**
 Represents the short text description of an instrument or underlying instrument for the derivatives markets.
Possible values Alphanumeric.

Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics	
See Also	ACarValRLC (Aggregate for instrument characteristics)	
Lval18AFC		X(18)
Definition	18-character instrument name (AFC norm). Short text ID of an instrument or underlying instrument.	
Possible values	Alphanumeric.	
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics	
See Also	ACarValRLC (Aggregate for instrument characteristics)	
Lval30		X(30)
Definition	30-character instrument name. Represents the long text description of an instrument or underlying instrument for the derivatives markets.	
Possible values	Alphanumeric.	
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics	
See Also	ACarValRLC (Aggregate for instrument characteristics)	

NMsgInRLC

N(6)

Definition **Number for incoming MMTP message.**

Message sequence number that enables the software that receives a MMTP message to detect lost messages.

- Concerning MMTP sender data flow (which leaves applications that send MMTP messages)

This data item represents a sequence number that is assigned chronologically to each message by each process that sends messages to the MMTP message-switching system. A sequence number is assigned according to the day on which the message is sent, and according to the application process that sends the message. The number enables the switching software to detect lost messages. Note that a given MMTP message sending application can have several message sending processes. In this case, each process assigns a number that is independent of the message number that is assigned by the other processes in the same system.

- Concerning MMTP receiver data flow (which enters applications that receive MMTP messages)

This data item represents a sequence number that is assigned chronologically to each message by the MMTP message-switching system. A sequence number is assigned according to the day on which the message is sent, and according to the application process that receives the message. This is valid for all sending applications. The number enables the application process to detect lost messages. Note that a given MMTP message receiving system can have several message receiving processes. In this case, the message number received by each process is independent of the message number received by the other processes in the same system.

Role: makes it possible to verify or recreate the sequence in which the messages occurred, and to determine which messages, if any, are missing.

Possible values 000001~999999.

Used in MMTP Header

See Also **AETtChRLCY1** (Technical header for MMTP message, type 1)
NMsgOutRLC (Number for outgoing MMTP message)

NMsgOutRLC

N(6)

Definition **Number for outgoing MMTP message.**

The meaning of this item depends on the type of software that sent the message.

For applications that send MMTP messages to the message-switching application:

A value is to be provided for this item as follows:

- If the MMTP message is forwarded by MMTP in real time (and is not part of a file transfer), the value is 000000.
- If the message is part of a file transfer, the value indicates the type of file transferred by MMTP to which the message belongs.

For the MMTP message-switching system: this is a sequence number that is assigned chronologically to each MMTP message by the application process that sends that message. In other words, this is the number in the NMsgInRLC field of the incoming MMTP message, which MMTP places in the NMsgOutRLC field of its outgoing message. This number is unique for each sending application process and for each day.

Role:

- For real time messages, this item allows the receiving application process to verify the sequence of messages by sending application process.
- For a file transfer, this item allows the MMTP system to check whether the contents of the received file is consistent with what was expected by the MMTP process that is dedicated to processing the file transfer identified by the MMTP file transfer number.

Possible values Numerical.

Used in MMTP Header

See Also **AETtChRLCY1** (Technical header for MMTP message, type 1)
NMsgInRLC (Number for incoming MMTP message)

NSeqSeg

X(2)

Definition **Sequence number of message within this message.**

Aids in rebuilding a message.

Possible values 01~10.

Used in MMTP-23 – Text Message

NSeqOm

N(6)

Definition **Order sequence number.**

Number assigned by NSC® when an order is entered into the system.

Role:

- Contributes to the identification of an order. The number increases (by instrument) during a given day.

- Satellite broadcasting.

Integrity Constraints: to be interpreted in conjunction with the date of order

entry (DSaiOm) and the instrument ID of the order.

Possible values Numerical.

Used in MMTP-A3 – Market Sheet

MMTP-A4 – Delete N Lines

See also AldOm (Order identification)

DSaiOm (Order entry date (in the Central Trading System))

NTran

N(7)

Definition Trade number.

Number given by NSC® at each creation of trade. Unique by instrument and trading day (HTN - Host Trade Number).

Possible values Numerical.

Not populated by NSC®

Used in MMTP-01 – Opening Trade

MMTP-02 – Trade

P

PAffOm aggregate

Definition **Displayed order price.**
Indicates the displayed price of the order. It can be different than the entered price in case of price overwritten by the theoretical opening price (when the TOP is less good than the order price in pre-opening phase).

Possible values Ift / Qmt format

Used in MMTP-A3 – Market Sheet

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

PClosing aggregate

Definition **Closing price.**
Closing price or adjusted closing price determined by RCE.

Possible values Ift / Qmt format

Used in MMTP-5J – Closing Price

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

PClosingNoAdj (Closing price not adjusted)
YClose (Type of closing price)

PClosingNoAdj aggregate

Definition **Closing price not adjusted.**
Closing price not adjusted determined by RCE.

Possible values Ift / Qmt format

Used in MMTP-5J – Closing Price

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

PClosing (Closing price)
YClose (Type of closing price)

PCpsDrvObl aggregate

Definition **Future-type leg price.**
In a Delta Neutral strategy (composed of one future and several options), this data represents the price of the first leg,

which underlies on the future. This data is mandatory only for the type of strategy Delta Neutral.

Possible values	Ift / Qmt format
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount)

PDrAjCotV

aggregate

Definition Last adjusted closing price.

Represents the last traded or estimated closing price known at the end of trading session D, if D+1 is the date that is featured in the message header. The price is adjusted to reflect corporate events.

This price takes into account price estimations but not price indications (bid only or offered only). It is calculated using the last traded or estimated closing price which is then adjusted to account for corporate events that only take effect at a later date than that of the last traded or estimated closing price (however it is not super-adjusted). The item is to be interpreted as per the unit of expression for the price: absolute value (YUniExpP=1) or percentage (YUniExpP=2).

Possible values	Ift / Qmt format
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount) ACarValRLC (Aggregate for instrument characteristics)

PDrAjSajCotV

aggregate

Definition Last adjusted and super-adjusted closing price.

Represents the last traded or estimated closing price known at the end of trading session D, if D+1 is the date that is featured in the message header. The price is adjusted and super-adjusted (multiple adjustments) to reflect corporate events and super-adjusted to reflect the detaching of dividends. This price takes into account price estimations but not price indications (bid only or offered only).

It is calculated based on the last traded or estimated price by:

- adjusting the price to account for corporate events that take effect only at a later date than that of the last traded or estimated price.

- and then adjusting again to account for dividend payments for which the dividend detachment dates are later than the date of the last traded or estimated price.

This item can be modified by a NSC® command that is used solely by Market Control if the instrument has not traded the day the command is performed. In this case, NSC® sends a Price message (price type 34 - Modification of Last Adjusted or Super-adjusted Closing Price). The item is to be interpreted according to the unit of expression for the price: absolute value (YUniExpP=1) or percentage (YUniExpP=2).

Role:

- In the case of a corporate event or dividend payment, this item is used by NSC® to determine the instrument's initial static and dynamic reference prices at the start of the session. Both these reference prices are used to check price variations for the instrument during the trading session.
- Makes it possible to compare an instrument's price before and after a corporate event. In particular, it makes it possible to calculate the authorized price fluctuation for the coming day against the last adjusted closing price.
- Used by NSC® as a basis for calculating the price variation on a trade when a corporate event occurs that day on the instrument concerned.

Possible values Ift / Qmt format
Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

PDrCotJ

aggregate

Definition Last trade price of the trading day.

Determines the last traded price of the trading day.

Possible values Ift / Qmt format

Used in MMTP-32 – Opening Summary

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

PDrCotV aggregate

Definition	Closing price before adjustment. This price is the closing price after application of corporate events but before adjustments.
Possible values	Ift / Qmt format
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount)

PdrCotVal aggregate

Definition	Last Traded Price. This price is the last traded price adjusted.
Possible values	Ift / Qmt format
Used in	MMTP-5J – Closing Price
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount) PdrCotValNoAdj (Last Traded price not adjusted)

PdrCotValNoAdj aggregate

Definition	Last Traded price not adjusted. This price is the last traded price received from the NSC [®] trading engine for a day. If the instrument has not been traded, it is the previous day closing price. This price is not adjusted with corporate events.
Possible values	Ift / Qmt format
Used in	MMTP-5J – Closing Price
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount) PdrCotVal (Last Traded Price)

Pemis aggregate

Definition	Issue price for an instrument (bond, new issue, right, or warrant). Represents the price at which a financial instrument is offered to the public. It is the price that subscribers are to pay. The financial instrument can be: <ul style="list-style-type: none">• Bond issue: this item represents the issue price of a bond, which is the same as the par value if the issue is made at par.
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	<ul style="list-style-type: none"> • Cash capital increase for a company that is already listed. In this case, it gives rise to the creation of a new instrument (new shares) or to when-issued shares except when the new issue is immediately fungible with the old. This type of issue can also lead to the creation of subscription rights, or possibly warrants.
Possible values	Ift / Qmt format Non-significant (If=" ") for instruments other than bonds, rights or warrants.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount) ACarValRLC (Aggregate for instrument characteristics)

PexoProdMdv aggregate

Definition	Strike price for a derivative product. Price at which the buyer and seller of an Option make a joint commitment to buy or sell (according to the sign of the option) a set quantity of the underlying security.
Possible values	Ift / Qmt format
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount)

PLimSaiOm aggregate

Definition	Original Order Price. Order Price entered by the trader. This price represents the limit of the order (maximum price for a buy order and minimum price for a sell order). This price is non significant when the type of limit (YPLimSaiOm) is "M" or "O" or "K".
Possible values	IFt / QMt format When the the price is non significant, then IFt will be blank, and the Amount QMt will be equal to 0.
Used in	MMTP-A3 – Market Sheet
See Also	Components of the aggregate: <ul style="list-style-type: none"> • IFt (Decimal point locator) • QMt (Amount) YPLimSaiOm (Type of Limit for an Order)

PmeDem aggregate

Definition	Best buy limit price. Price of orders at a best buy limit.
Possible values	Ift / Qmt format <ul style="list-style-type: none">• for a "Market On Opening" limit type (YPLimSaiOm), the first data is "0" and the second one is "OUV",• for an "At Best" limit type or "Market Order" limit type, the first data is "0" and the second one is "MX",
Used in	MMTP-04 – Best Limits
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount) AMeLim (Best limit aggregate) YPLimSaiOm (Type of Limit for an Order)

PmeLimSimAcVal aggregate

Definition	Simulated buy price. Provides the best buy limit price that would be present after opening (if opening processing starts immediately).
Possible values	Ift / Qmt format
Used in	MMTP-30 – Theoretical Opening Price
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount)

PmeLimSimVtVal aggregate

Definition	Simulated sell price. Provides the best sell limit price that would be present after opening (if opening processing starts immediately).
Possible values	Ift / Qmt format
Used in	MMTP-30 – Theoretical Opening Price
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount)

PmeOf aggregate

Definition	Best sell limit price. Price of orders at a best sell limit.
Possible values	Ift / Qmt format <ul style="list-style-type: none">• for a "Market On Opening" limit type (YPLimSaiOm), the first data is "0" and the second one is "OUV",

- for an "At Best" limit type or "Market Order" limit type, the first data is "0" and the second one is "MX",

Used in MMTP-04 – Best Limits

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

PobjMsgP

aggregate

Definition Price.

Generic data to transfer a new price in the "Price" message. Please refer to the "Price type" data to qualify the price.

Possible values Ift / Qmt format

Used in MMTP-03 – Price

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

POfDemVal

aggregate

Definition Bid or Ask Price.

Indicates the Bid or Ask Price on an instrument in pre-opening phase for which an "At best" orders is not completely filled or a Theoretical Opening Price is outside the authorized thresholds.

Possible values Ift / Qmt format

Used in MMTP-A6 – Display of Bid or Offer

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

PpbSeaCotJ

aggregate

Definition Lowest trade price of the trading day.

Determines the lowest traded price of the trading day.

Possible values Ift / Qmt format

Used in MMTP-02 – Trade
MMTP-03 – Price
MMTP-32 – Opening Summary
MMTP-33 – TCS Trade

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

PphSeaCotJ aggregate

Definition	Highest trade price of the trading day. Determines the highest traded price of the trading day.
Possible values	Ift / Qmt format
Used in	MMTP-02 – Trade MMTP-03 – Price MMTP-32 – Opening Summary MMTP-33 – TCS Trade
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount)

PPrCJ aggregate

Definition	First trade price of the trading day. Determines the first traded price of the trading day.
Possible values	Ift / Qmt format
Used in	MMTP-32 – Opening Summary
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount)

PsaiSMaxOkValMdv aggregate

Definition	High Intermediate Threshold. Maximum price authorized for the instrument (also called Highest Limit). Entered by Market Control when the Authorized Price Fluctuation (APF) for the instrument is not filled in.
Possible values	Ift / Qmt format
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none">• Ift (Decimal point locator)• Qmt (Amount)

PsaiSMinOkValMdv (Low Intermediate Threshold)

PsaiSMinOkValMdv aggregate

Definition	Low Intermediate Threshold.
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Minimum price authorized for the instrument (also called Lowest Limit). Entered by Market Control when the Authorized Price Fluctuation (APF) for the security is not filled in.

Possible values Ift / Qmt format.
Used in Defined at the Cash Instrument level in RCE.
See Also MMTP-52/53 – Deletion/Creation of Instrument Characteristics
 Components of the aggregate:
 • Ift (Decimal point locator)
 • Qmt (Amount)

PsaISMaxOkValMdv (High Intermediate Threshold)

PSGelStaMax X(12)

Definition **Upper static threshold of freezing.**
 Maximum authorized price for a trade according to the static circuit breaker.

Possible values Ift / Qmt format.
Used in MMTP-37 – Static Thresholds
See Also Components of the aggregate:
 • Ift (Decimal point locator)
 • Qmt (Amount)

PSGelStaMin aggregate

Definition **Lower static threshold of freezing.**
 Minimum authorized price for a trade according to the static circuit breaker.

Possible values Ift / Qmt format.
Used in MMTP-37 – Static Thresholds
See Also Components of the aggregate:
 • Ift (Decimal point locator)
 • Qmt (Amount)

PTeoOvJ aggregate

Definition **Theoretical Opening Price.**
 Provides the opening price at which all opening trades would be generated if the opening phase would start immediately.

Possible values Ift / Qmt format.
Used in MMTP-30 – Theoretical Opening Price
See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

PTran

aggregate

Definition	Trade Price. Defines the price of the trade.
Possible values	Ift / Qmt format.
Used in	MMTP-01 – Opening Trade MMTP-02 – Trade MMTP-33 – TCS Trade
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount)

PVWAP

aggregate

Definition	Value-Weighted Average Price. VWAP or adjusted VWAP computed by RCE.
Possible values	Ift / Qmt format.
Used in	MMTP-5J – Closing Price
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount)

PVWAPNoAdj (VWAP not adjusted)

PVWAPNoAdj

aggregate

Definition	VWAP not adjusted. VWAP not adjusted computed by RCE.
Possible values	Ift / Qmt format.
Used in	MMTP-5J – Closing Price
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount)

PVWAP (Value-Weighted Average Price)

Q

QAddStDiv N(12)

Definition	Additional Number of Shares for Stock Dividend.
Possible values	Numerical when YOPSJ=05 (Stock Dividend) Spaces if not a Stock Dividend
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	StDivAgg (Stock Dividend Aggregate) QCurStDiv (Current Number of Shares for Stock Dividend) YOPSJ (Type of corporate event causing instrument modification on current day)

QCapBsRfVlbs N(15)

Definition	<p>Amount of previous day's reference capitalization for the index.</p> <p>The previous day's reference capitalization for an index is equal to the sum of the previous day's reference capitalizations for each instrument in the index sample. The previous day's reference capitalization for instrument V in index I is calculated using the following formula: Previous day's reference capitalization for V in I = Previous day's adjusted reference price for V on the calculation day * number of shares of V in I * adjustment coefficient of V in I This amount is expressed in the currency that has been configured for the index.</p> <p>Makes it possible for the index calculation system to determine the weight (in the previous day's reference capitalization for the index) of the instruments for which the index calculation system has received an opening price, and to deduce from this, by comparing this weight with the thresholds that have been configured for this index, the phase changes to be initiated for the index--between the Pre-Opening, Opening, Continuous Trading, Suspension, and Resumption phases (see the description of the conditions for sending type-B1 messages, Real-Time Data for an Index).</p>
Possible values	Numerical, fixed format "999999999999.99" without the decimal separator.
Used in	MMTP-A5 – Composition of an Index

QCurStDiv	N(12)
Definition	Current Number of Shares for Stock Dividend.
Possible values	Numerical when YOPSI=05 (Stock Dividend) Spaces if not a Stock Dividend
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	StDivAgg (Stock Dividend Aggregate) QAddStDiv (Additional Number of Shares for Stock Dividend) YOPSI (Type of corporate event causing instrument modification on current day)

QCurStSplit	N(12)
Definition	Current Number of Shares for Stock Split.
Possible values	Numerical when YOPSI=04 (Stock Split) Spaces if not a Stock Split
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	StDivAgg (Stock Dividend Aggregate) QnewStSplit (New Number of Shares for Stock Split) YOPSI (Type of corporate event causing instrument modification on current day)

QDvdGIJVallbs	N(15)
Definition	Total gross dividends detached today for all instruments in index. The sum (in Euros) of all gross dividends detached on a given day, for the complete set of instruments in the index sample.
Possible values	Numerical, fixed format “999999999999.99” without the decimal separator.
Used in	MMTP-B2 – Stock Index: Daily Summary

QDvdNetJVallbs	N(15)
Definition	Total net dividends detached today for all instruments in index. The sum (in Euros) of all net dividends detached on a given day, for the complete set of instruments in the index sample.
Possible values	Numerical, fixed format “999999999999.99” without the decimal separator.
Used in	MMTP-B2 – Stock Index: Daily Summary

QMinConsCptePret N(12)

Definition	Minimum Quantity which can be Retained within a Client ID lendable account. Minimum quantity which can be retained within a (non-zero) client ID lendable account (based on ISIN code).
Possible values	Numerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

Qmt N(13)

Definition	Amount. Provides the value of the numeric data item represented, regardless of the format (position of decimal point) and sign. The format and sign are expressed by the format indicator lft that necessarily precedes QMt. Role: makes it possible to express real numbers between 0.0000000000001 and 9,999,999,999,999 using only 13 figures. Makes it possible to express prices with different numbers of decimal places (e.g. prices expressed in different currencies). Important note: in the context of the MMTP-04 – Best Limits message, the QMt field may contain an alphanumerical value ('MX', 'OUV') for orders without price (and thus should be considered as alphanumerical). In that case the lft field is left blank.
Possible values	Numerical (Alphanumerical for MMTP-04 – Best Limits message)
Used in	MMTP-01 – Opening Trade MMTP-02 – Trade MMTP-03 – Price MMTP-04 – Best Limits MMTP-30 – Theoretical Opening Price MMTP-32 – Opening Summary MMTP-33 – TCS Trade MMTP-52/53 – Deletion/Creation of Instrument Characteristics MMTP-5J – Closing Price lft (Decimal point locator)

QMt12

N(12)

Definition **Amount.**

Provides the value of the numeric data item represented, regardless of the format (position of decimal point) and sign. The format and sign are expressed by the format indicator lft that necessarily precedes QMT.

Role: makes it possible to express real numbers between 0.000000000001 and 999,999,999,999 using only 12 figures.

Makes it possible to express prices with different numbers of decimal places (e.g. prices expressed in different currencies).

Possible values Numerical.

Used in MMTP-5I – Market Activity
MMTP-05 – Instrument State Change
lft (Decimal point locator)

Qmt15

N(15)

Definition **Amount.**

Provides the value of the numeric data item represented, regardless of the format (position of decimal point) and sign. The format and sign are expressed by the format indicator lft that necessarily precedes QMT.

Role: makes it possible to express real numbers between 0.000000000000001 and 999,999,999,999,999 using only 15 figures.

Makes it possible to express prices with different numbers of decimal places (e.g. prices expressed in different currencies).

Possible values Numerical.

Used in MMTP-5I – Market Activity
lft (Decimal point locator)

Qmt6

N(6)

Definition **Amount.**

Provides the value of the numeric data item represented, regardless of the format (position of decimal point) and sign. The format and sign are expressed by the format indicator lft that necessarily precedes QMT.

	Role: makes it possible to express real numbers between 0.000001 and 999,999 using only 6 figures. Makes it possible to express prices with different numbers of decimal places (e.g. prices expressed in different currencies).
Possible values	Numerical.
Used in	MMTP-B1 – Real-time Data for an Index MMTP-B2 – Stock Index: Daily Summary Ift (Decimal point locator)

Qmt9

N(9)

Definition	Amount. Provides the value of the numeric data item represented, regardless of the format (position of decimal point) and sign. The format and sign are expressed by the format indicator Ift that necessarily precedes QMT.
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	Role: makes it possible to express real numbers between 0.0000001 and 999,999,999 using only 9 figures. Makes it possible to express prices with different numbers of decimal places (e.g. prices expressed in different currencies).
Possible values	Numerical.
Used in	MMTP-A5 – Composition of an Index MMTP-B1 – Real-time Data for an Index Ift (Decimal point locator)

QnewStSplit

N(12)

Definition	New Number of Shares for Stock Split.
Possible values	Numerical when YOPSI=04 (Stock Split) Spaces if not a Stock Split
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics StSplitAgg (Stock Split Aggregate) QCurStSplit (Current Number of Shares for Stock Dividend) YOPSI (Type of corporate event causing instrument modification on current day)

QnmVlo

aggregate

Definition	Amount of par value of instrument for calculating amount for trade. Represents the amount of par value of the instrument that is paid up or that is still to be amortized, which is used for calculating an amount for a trade. It is calculated from the
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amount of par value that is paid up or that has been amortized, from the type of par value, and from the indicator for the par value that is paid up or that has been amortized.

Possible values Ift / Qmt format

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

ACarValRLC (Aggregate for instrument characteristics)

QnrepOv N(12)

Definition **Unfilled quantity at opening.**

Provides the total quantity of orders where quantity is unmatched at the opening price (surplus).

Possible values Numerical.

Used in MMTP-30 – Theoretical Opening Price

QpasCotFxeVal aggregate

Definition **Amount of the fixed price tick for an instrument.**

The degree of precision with which the price of an instrument or the limit of an order can be expressed, when the degree of precision is fixed; that is, when it is not associated with a given range for a price or limit. The degree of precision is expressed in the trading currency of the instrument. This data item is managed by the company that runs the exchange. If the price tick of an instrument is variable, a value is not provided for this data item. In applications that round off to the price tick or that check limits, the price tick is then determined from the data item CldxPasCotVarVal (Index of the Set of Variable Price Ticks for the Instrument).

Possible values Ift / Qmt format

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

CldxPasCotVarVal (Index of the Variable Tick Table)

ACarValRLC (Aggregate for instrument characteristics)

QqtTranMarVal

N(12)

Definition Instrument lot size.

Amount, expressed in number of shares, of the lot size.
The lot size is a number of shares that is set for each instrument by the company that runs the exchange.
The quantity for an order must be a multiple of the lot size for the order to be entered by a trading member on the market.

Possible values Numerical.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also ACarValRLC (Aggregate for instrument characteristics)

QTickValMdv

aggregate

Definition Amount of the tick limit for the derivative product.

When it is provided, expresses the absolute or percentage value of the authorized change in the derivative product's price against the reference price during a trading session.

- The instruments reference database manager can enter this in order to override (for this instrument only) the temporary tick limit defined for the group to which the instrument belongs.
- Used in the calculation of the upper and lower thresholds.

Possible values lft / Qmt format

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also Components of the aggregate:

- lft (Decimal point locator)
- Qmt (Amount)

QTitMaxSaiOmBuy

N(12)

Definition Maximum quantity which can be entered for buy orders on the instrument.

Maximum authorized number of shares or lots for buy orders.
This data is defined at the cash instrument level in RCE.
Enables to check the amount of the quantity entered.

Possible values Numerical.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also QTitMaxSaiOmSell (Maximum quantity which can be entered for sell orders on the instrument)

QTitMaxSaiOmProd (Maximum quantity which can be entered for orders on the instrument)
QtitMinSaiOmProd (Minimum quantity which can be entered for orders on the instrument)

QTitMaxSaiOmProd N(12)

Definition	Maximum quantity which can be entered for orders on the instrument. Maximum authorized number of shares or lots for orders. Enables to check the amount of the quantity entered. on the instrument) QtitMinSaiOmProd (Minimum quantity which can be entered for orders on the instrument)
Possible values	Numerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	QTitMaxSaiOmBuy (Maximum quantity which can be entered for buy orders on the instrument) QTitMaxSaiOmSell (Maximum quantity which can be entered for sell orders)

QTitMaxSaiOmSell N(12)

Definition	Maximum quantity which can be entered for sell orders on the instrument. Maximum authorized number of shares or lots for sell orders. This data is defined at the cash instrument level in RCE. Enables to check the amount of the quantity entered.
Possible values	Numerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	QTitMaxSaiOmBuy (Maximum quantity which can be entered for buy orders on the instrument) QTitMaxSaiOmProd (Maximum quantity which can be entered for orders on the instrument) QtitMinSaiOmProd (Minimum quantity which can be entered for orders on the instrument)

QTitMeDem N(12)

Definition	Best buy limit quantity. Sum of displayed quantity of all orders present at a best buy limit.
Possible values	Numerical.

Used in MMTP-04 – Best Limits
See Also **AMeLim** (Best limit aggregate)
QTitMeOf (Best sell limit quantity)

QTitMeLimSimAc N(12)

Definition **Total simulated buy quantity.**
 Provides the total quantity of orders that would be present at the best buy limit price after opening (if opening processing starts immediately).
Possible values Numerical.
Used in MMTP-30 – Theoretical Opening Price
See Also **QTitMeLimSimVt** (Total simulated sell quantity)

QTitMeLimSimVt N(12)

Definition **Total simulated sell quantity.**
 Provides the total quantity of orders that would be present at the best sell limit price after opening (if opening processing starts immediately).
Possible values Numerical.
Used in MMTP-30 – Theoretical Opening Price
See Also **QTitMeLimSimAc** (Total simulated buy quantity)

QTitMeOf N(12)

Definition **Best sell limit quantity.**
 Sum of displayed quantity of all orders present at a best sell limit.
Possible values Numerical.
Used in MMTP-04 – Best Limits
See Also **AMeLim** (Best sell limit quantity)
QTitMeDem (Best buy limit quantity)

QtitMinSaiOmProd N(12)

Definition **Minimum quantity which can be entered for orders on the instrument.**
 Minimum authorized number of shares or lots for orders. This data is defined at the cash instrument level in RCE. Enables to check the amount of the quantity entered.
Possible values Numerical.
Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also QTitMaxSaiOmBuy (Maximum quantity which can be entered for buy orders on the instrument)
 QTitMaxSaiOmSell (Maximum quantity which can be entered for sell orders on the instrument)
 QTitMaxSaiOmProd (Maximum quantity which can be entered for orders on the instrument)

QTitMtrOm N(12)

Definition **Order displayed quantity.**

Indicates the order quantity shown to the market participants.

The displayed quantity is equal to the remaining quantity to be executed except if the order has been entered with a disclosed quantity.

In the case of order with disclosed quantity, the displayed quantity is equal to disclosed quantity minus the traded quantity.

When the traded quantity is greater than the disclosed quantity, a new block of disclosed quantity is shown to the market participants as a new order entry.

Possible values Numerical.

Used in MMTP-A3 – Market Sheet

QTitNgJ N(12)

Definition **Total traded quantity of the trading day.**

This quantity corresponds to the cumulated quantity of each trade executed during the trading day.

Possible values Numerical.

Used in MMTP-01 – Opening Trade

MMTP-02 – Trade

MMTP-33 – TCS Trade

QtitNgOvVal N(12)

Definition **Total traded quantity at opening.**

Cumulated quantity which has been executed at the instrument opening.

Possible values Numerical.

Used in MMTP-32 – Opening Summary

QtitRef N(12)

Definition **Reference volume for VWAP calculation.**

For an instrument participating in an index calculation, this volume represents the total number of instruments used to adjust the price which the index based on.

Possible values Numerical.

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

QTitRestOm N(12)

Definition **Remaining Quantity of the Order.**
 Defines the number of titles which remains to be executed from the order.
 This data is only significant when the order has been executed partially.

Possible values Numerical.

Used in MMTP-A3 – Market Sheet

QtitTran N(12)

Definition **Traded quantity.**
 Number of shares, lots, or contracts exchanged in a trade.
 Makes it possible to calculate the total amount for a trade (in the instrument's own currency). Makes it possible to update members' positions for the clearing house.

Possible values Numerical.

Used in MMTP-01 – Opening Trade
 MMTP-02 – Trade
 MMTP-33 – TCS Trade

QtotCap aggregate

Definition **Total trade value.**

Possible values Ift / Qmt format

Used in MMTP-5I – Market Activity
 MMTP-5J – Closing Price

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

QtotTran aggregate

Definition **Total number of shares traded.**

Possible values Ift / Qmt format

Used in MMTP-5I – Market Activity

See Also Components of the aggregate:

- lft (Decimal point locator)
- Qmt (Amount)

QtotTran5J **N(12)**

Definition Total number of shares traded.
Possible values Numerical.
Used in MMTP-5J – Closing Price

QXtePTeoOvj **N(12)**

Definition Total traded quantity at opening.
 Simulated quantity executed at the theoretical opening price (if the instrument would open immediately).
Possible values Numerical.
Used in MMTP-30 – Theoretical Opening Price

StDivAgg aggregate

Definition	Stock Dividend Aggregate. This aggregate contains the ratio used for stock dividend corporate actions.
Possible values	(Please refer to the description of each component of the aggregate)
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none"> • QCurStDiv (Current Number of Shares for Stock Dividend) • QAddStDiv (Additional Number of Shares for Stock Dividend)

StSplitAgg aggregate

Definition	Stock Split Aggregate. This aggregate contains the ratio used for stock split Corporate Actions (CA type 04).
Possible values	(Please refer to the description of each component of the aggregate)
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	Components of the aggregate: <ul style="list-style-type: none"> • QCurStSplit (Current Number of Shares for Stock Split) • QnewStSplit (New Number of Shares for Stock Split)

XCapValAcflIdx N(5)

Definition	Percentage of capitalization for the active instruments in the index. Sum of the percentages of capitalization for the instruments that have already traded at the moment that the message is broadcast.
Possible values	Numerical, fixed format "999.99" without the decimal separator. Less than or equal to 100%.
Used in	MMTP-B1 – Real-time Data for an Index

XDrNivJIdx N(6)

Definition	Day's last index level. The value of the last level for the index that is the subject of this message. The type of index level is identified in the related data item, Index level code (CNivIdx). The formula for calculating the index level depends on the type of index, as described below. For stock indexes The index level is calculated from the day's prices for the listed securities that make up the index sample, using the following formula:
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$$\text{Index level} = \frac{\text{NivBas} \times \text{CapInst}}{\text{CoefAjCapBas} \times \text{CapBas}}$$

where:

NivBas = base index level, assigned arbitrarily on the date that the CapBas was calculated (for example, 1000 on 31 December 1987)

CapInst = real-time capitalization of the index = sum of the real-time capitalizations of the instruments in the index (the capitalization of an instrument in an index being the product of: the price of the instrument x number of shares of the instrument in the index x adjustment coefficient for the instrument in the index)

CoefAjCapBas = adjustment coefficient for the base capitalization of the index

CapBas = base capitalization of the index = sum of the capitalizations of the instruments in the index, on the date of the base index level value NivBas.

For ETF- Indicative NAV indexes

The index level is calculated using the day's prices for the instruments that make up the ETF.

For ETF - Index Estimate indexes

The index level is calculated using the real-time level of the stock index for which the ETF tries to duplicate the performance.

Possible values Numerical, fixed format "9999.99" without the decimal separator.
(provided if and only if CNivIdx=1, 2, 5, 6, 7, A, B, or C, zero if not provided)

Used in MMTP-B1 – Real-time Data for an Index

See Also XDrNivIdx_lftQMt (Day's last index level)

XDrNivIdx_lftQMt

aggregate

Definition Day's last index level.

The value of the last level for the index that is the subject of this message. The type of index level is identified in the related data item, Index level code (CNivIdx).

The formula for calculating the index level depends on the type of index, as described below.

For stock indexes

The index level is calculated from the day's prices for the listed securities that make up the index sample, using the following formula:

$$\text{Index level} = \frac{\text{NivBas} \times \text{CapInst}}{\text{CoefAjCapBas} \times \text{CapBas}}$$

where:

NivBas = base index level, assigned arbitrarily on the date that the CapBas was calculated (for example, 1000 on 31 December 1987)

CapInst = real-time capitalization of the index = sum of the real-time capitalizations of the instruments in the index (the capitalization of an instrument in an index being the product of: the price of the instrument x number of shares of the instrument in the index x adjustment coefficient for the instrument in the index)

CoefAjCapBas = adjustment coefficient for the base capitalization of the index

CapBas = base capitalization of the index = sum of the capitalizations of the instruments in the index, on the date of the base index level value NivBas.

For ETF- Indicative NAV indexes

The index level is calculated using the day's prices for the instruments that make up the ETF.

For ETF - Index Estimate indexes

The index level is calculated using the real-time level of the stock index for which the ETF tries to duplicate the performance.

Possible values Ift/Qmt format.
(provided if and only if CNivIdx=1, 2, 5, 6, 7, A, B, or C, zero if not provided)

Used in MMTP-B1 – Real-time Data for an Index

See Also XDrNivJIdx (Day's last index level)

XDtaStg

aggregate

Definition **Delta Strategy percentage.**

Maximum percentage of price variation accepted on the first leg of a strategy when this leg is a future (between the given and the real future leg price). This data is used for clearing.

Possible values Ift / Qmt format

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt (Amount)

XInuCIMresVIdx

aggregate

Definition **Previous day's reference closing level for an index (daily summary).**

Previous day's index level of the type "closing reference" for a given index. The value of this data item can be modified by the index manager at the end of the day when it was computed, during the provisional closing phase of the index; this is why this index level is referred to as a "daily summary".

Possible values Numerical.

Used in MMTP-A5 – Composition of an Index

XMoyVarValBailbs

N(6)

Definition **Average Variation for Declining Instruments in the Index.**

Average variation in percentage for the prices of the instruments in a stock index sample, that are declining as compared with their previous day's reference prices.

Only the following instruments are taken into account: instruments that have traded at least once since the beginning

of the trading day, whose trading state is "tradable," and whose price at the moment that the given stock index level or forerunner is calculated is less than the instrument's previous day's reference price.

This variation is calculated using the following formula:

$$\text{Average variation} = \frac{100}{N} \times \sum_{\text{instruments}} \frac{\text{previous day's reference price} - \text{last known price}}{\text{previous day's reference price}}$$

where N is the number of instruments in the index sample that meet the criteria described above at the moment of calculation.

Possible values Numerical, fixed format "999.999" without the decimal separator.
Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.

Used in MMTP-B1 – Real-time Data for an Index

XMoyVarValHaulbs

N(6)

Definition **Average Variation for Rising Instruments in the Index.**

Average variation in percentage for the prices of the instruments in a stock index sample, that are rising as compared with their previous day's reference prices. Only the following instruments are taken into account: instruments that have traded at least once since the beginning of the trading day, whose trading state is "tradable," and whose price at the moment that the given stock index level or forerunner is calculated is greater than the instrument's previous day's reference price.

This variation is calculated using the following formula:

$$\text{Average variation} = \frac{100}{N} \times \sum_{\text{instruments}} \frac{\text{previous day's reference price} - \text{last known price}}{\text{previous day's reference price}}$$

where N is the number of instruments in the index sample that meet the criteria described above at the moment of calculation.

Possible values Numerical, fixed format "999.999" without the decimal separator.
Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.

Used in MMTP-B1 – Real-time Data for an Index

XMoyVarVallbs

N(6)

Definition Average Variation for Instruments in the Index.

Average variation in percentage for the prices of the instruments in a stock index sample as compared with their previous day's reference prices. Only the following instruments are taken into account: instruments that have traded at least once since the beginning of the trading day and whose trading state is "tradable" at the moment that the given stock index level or forerunner is calculated.

This variation is calculated using the following formula:

$$\text{Average variation} = \frac{100}{N} \times \sum_{\text{instruments}} \left| \frac{\text{previous day's reference price} - \text{last known price}}{\text{previous day's reference price}} \right|$$

where N is the number of instruments in the index sample that meet the criteria described above at the moment of calculation.

Possible values

Numerical, fixed format "999.999" without the decimal separator.

Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.

Used in

MMTP-B1 – Real-time Data for an Index

XNivlcpRflbs

aggregate

Definition Reference Daily Settlement Index Level.

The daily settlement index level that serves as the reference for the derivatives markets. This is the last index level of the real-time daily settlement index that is calculated by the index calculation system on a given day. It can be modified at the end of each day by the index manager.

Possible values

Ift/Qmt format.

A value is provided if and only if a daily settlement index level was calculated for the given index on the given day.

Used in

MMTP-B2 – Stock Index: Daily Summary

XNivllqRflbs

aggregate

Definition Reference At-expiration Settlement Index Level.

The at-expiration settlement index level that serves as the reference for the derivatives markets. This is the last index level of the real-time at-expiration settlement index level calculated by the index calculation system on a given day. It can be modified at

the end of each day by the index manager. Used by LIFFE CONNECT and C21.

Possible values lft/Qmt format.
A value is provided if and only if the at-expiration settlement index level was calculated for the given index on the given day.

Used in MMTP-B2 – Stock Index: Daily Summary

XNivInuClMreslbs aggregate

Definition **Reference Closing Index Level (daily summary).**
The index level unadjusted for dividends of the type "reference closing" for a given stock index and a given trading day. The value of this data item can be modified by the index manager at the end of the day, during the Index Manager Intervention phase; this is why this index level is referred to as a "daily summary".

Possible values lft/Qmt format.

Used in MMTP-B2 – Stock Index: Daily Summary

XNivInuOvPrvMreslbs aggregate

Definition **Provisional Opening Index Level (daily summary).**
The index level unadjusted for dividends of the type "provisional opening" for a given stock index and a given trading day. This can be either an index level of the type "partial, provisional opening index" or an index level of the type "complete, provisional opening index" if the index calculation system could calculate the latter type (that is, if the system received an opening price for each instrument in the index). The value of this data item can be modified by the index manager at the end of the day, during the Index Manager Intervention phase; this is why this index level is referred to as a "daily summary".

Possible values lft/Qmt format.

Used in MMTP-B2 – Stock Index: Daily Summary

XNivInuOvRfMreslbs aggregate

Definition **Reference Opening Index Level (daily summary).**
The index level unadjusted for dividends of the type "reference opening" for a given stock index and a given trading day. The value of this data item can be modified by the index manager at the end of the day, during the Index Manager Intervention phase; this is why this index level is referred to as a "daily summary".

Possible values lft/Qmt format.
Used in MMTP-B2 – Stock Index: Daily Summary

XNivInuPhMreslbs aggregate

Definition **Highest Index Level (daily summary).**
 The highest index level unadjusted for dividends that is broadcast for a given stock index and a given trading day. The value for this data item is re-evaluated by the index calculation system after each index level broadcasting during the day. The value can be modified by the index manager at the end of the day, during the Index Manager Intervention phase; this is why this index level is referred to as a "daily summary".

Possible values lft/Qmt format.
Used in MMTP-B2 – Stock Index: Daily Summary

XNivInuPrDifMreslbs aggregate

Definition **First Index Level Broadcast (daily summary).**
 The first index level unadjusted for dividends that is broadcast for a given stock index and a given trading day.

Possible values lft/Qmt format.
Used in MMTP-B2 – Stock Index: Daily Summary

XNivlrteGIClbs aggregate

Definition **Closing index level for gross return index.**
 The index level of the gross return index that corresponds to the closing index level unadjusted for dividends for a given stock index on a given date. Used in the formula for calculating real-time gross return index levels for the next trading day (see the calculation formula in the data item Gross Return Index Level).

Possible values lft/Qmt format.
 A value is provided if and only if the Calculate the Gross Return Index flag was Yes at the time of calculation.

Used in MMTP-B2 – Stock Index: Daily Summary

XNivlrteGIIbs aggregate

Definition **Gross Return Index Level.**
 This index level is calculated using reintegration of the gross dividends (net dividends + "avoir fiscal" tax credits, as defined in French tax law) that are paid by the issuers of the

instruments in the index sample. The gross return index level is always calculated from the corresponding index level unadjusted for dividends using the following formula:

$$ir_t = ir_{j-1} \times \frac{inu_t}{inu_{j-1}} \times \frac{1 + \text{div-tot}_j}{inu_{j-1} \times \text{capbas} \times \text{coeff}_{j-1}}$$

where:

- t = time that the return index is calculated
- j = day that the return index is calculated
- ir_t = value of the day's gross return index level for day j at time t
- ir_{j-1} = value of the gross return index level that is related to the previous day's closing index level unadjusted for dividends
- inu_t = value of the index level unadjusted for dividends at time t
- inu_{j-1} = value of the previous day's closing index level unadjusted for dividends
- div-tot_j = total of the gross dividends paid on day j (the day that dividends are payable = j)
- capbas = base capitalization of the index
- coeff_{j-1} = adjustment coefficient for base capitalization on day $j-1$

Possible values	Numerical, fixed format "9999.99" without the decimal separator. A value is provided here if a value is provided for XDrNivJIdx (Day's last index level) and if the Calculate Gross Return Index Level flag is set to Yes (therefore, by definition, a value is not provided for ETF - Indicative NAV indexes and ETF - Index Estimate indexes).
Used in	MMTP-B1 – Real-time Data for an Index

XNivlrteNetlbs

aggregate

Definition Net Return Index Level.

This index level is calculated using reintegration of the net dividends that are paid by the issuers of the instruments in the index sample.

The net return index level is always calculated from the corresponding index level unadjusted for dividends using the following formula:

$$ir_t = ir_{j-1} \times \frac{inu_t}{inu_{j-1}} \times \frac{1 + \text{div-tot}_j}{inu_{j-1} \times \text{capbas} \times \text{coeff}_{j-1}}$$

where:

- t = time that the return index is calculated
- j = day that the return index is calculated
- ir_t = value of the day's gross return index level for day j at time t
- ir_{j-1} = value of the gross return index level that is related to the previous day's closing index level unadjusted for dividends
- inu_t = value of the index level unadjusted for dividends at time t
- inu_{j-1} = value of the previous day's closing index level unadjusted for dividends
- $div-tot_j$ = total of the gross dividends paid on day j (the day that dividends are payable = j)
- $capbas$ = base capitalization of the index
- $coeff_{j-1}$ = adjustment coefficient for base capitalization on day $j-1$

Possible values Numerical, fixed format "9999.99" without the decimal separator.
A value is provided here if a value is provided for XDrNivJIdx (Day's last index level) and if the Calculate Net Return Index Level flag is set to Yes (therefore, by definition, a value is not provided for ETF - Indicative NAV indexes and ETF - Index Estimate indexes).

Used in MMTP-B1 – Real-time Data for an Index

XNivlrteNetCIlbs

aggregate

Definition Closing index level for net return index.

The index level of the net return index that corresponds to the closing index level unadjusted for dividends for a given stock index on a given date. Used in the formula for calculating real-time net return index levels for the next trading day (see the calculation formula in the data item Net Return Index Level).

Possible values Ift/Qmt format.
A value is provided if and only if the Calculate the Net Return Index flag was Yes at the time of calculation.

Used in MMTP-B2 – Stock Index: Daily Summary

XPbNivJIdx

N(6)

Definition Day's lowest index level.

The highest value of an index level broadcast for the current trading day, up until the moment that this message is sent.

Possible values Numerical, fixed format "9999.99" without the decimal separator.

Used in MMTP-B1 – Real-time Data for an Index

See Also **XPbNivIdx_IftQMt** (Day's lowest index level)

XPbNivIdx_IftQMt aggregate

Definition **Day's lowest index level.**
The highest value of an index level broadcast for the current trading day, up until the moment that this message is sent.

Possible values Ift/Qmt format.

Used in MMTP-B1 – Real-time Data for an Index

See Also **XPbNivIdx** (Day's lowest index level)

XPhNivIdx N(6)

Definition **Day's highest index level.**
The highest value of an index level broadcast for the current trading day, up until the moment that this message is sent.

Possible values Numerical, fixed format "9999.99" without the decimal separator.

Used in MMTP-B1 – Real-time Data for an Index

See Also **XPhNivIdx_IftQMt** (Day's highest index level)

XPhNivIdx_IftQMt aggregate

Definition **Day's highest index level.**
The highest value of an index level broadcast for the current trading day, up until the moment that this message is sent.

Possible values Ift/Qmt format.

Used in MMTP-B1 – Real-time Data for an Index

See Also **XPhNivIdx** (Day's highest index level)

XQVarPJDrPRf aggregate

Definition Price Variation As Compared to Reference Price.
Determines the change of the price (e.g. according to the message: last traded price, theoretical opening price, etc.) for an instrument. For a derivative instrument, the change is

calculated against its Last Reference Price. For a cash instrument, the net change is calculated against its Last adjusted and super-adjusted closing price. The change is expressed either as a percentage or in the same unit as the instrument price, depending on the associated data element format for the prices relative to the instrument (YExpVarPValDrPrf).

Possible values	Ift / Qmt format
Used in	MMTP-01 – Opening Trade MMTP-02 – Trade MMTP-03 – Price MMTP-30 – Theoretical Opening Price MMTP-32 – Opening Summary MMTP-33 – TCS Trade
See Also	Components of the aggregate: <ul style="list-style-type: none"> • Ift (Decimal point locator) • Qmt (Amount)

YExpVarPValDrPrf (Net change expression type)

XValCarRfV N(7)

Definition **Instrument's % in previous day's reference capitalization of the index.**

Percentage that the capitalization amount of an instrument represents in the previous day's reference capitalization of a given index. The capitalization of each instrument in the index is calculated using the following formula:

$$\text{LastRefPrice} \times \text{No.Shares} \times \text{KAjCapValCpsIdx}$$

where

- LastRefPrice: last adjusted and super-adjusted reference price of the instrument
- No.Shares: number of shares of the instrument in the index (number of shares issued sent by IVAL, or manually managed by the index manager, depending on the index)
- KAjCapValCpsIdx: capitalization adjustment coefficient of the instrument in the index.

Possible values	Numerical, fixed format "999.9999" without the decimal separator, not provided (zero) in the last occurrences of the ACapValIdx aggregate of the last MMTP-A5 – Composition of an Index message for a given index, if the number of instruments making up the index is not a multiple of 15.
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Used in MMTP-A5 – Composition of an Index
See Also ACapValIdx (Aggregate of index component)

XVarDrInuClv N(6)

Definition **Variation for last index level versus previous day's closing.**
 Variation in percentage of the last index level unadjusted for dividends that was broadcast for a given stock index on a given day, as compared with the reference closing index level unadjusted for dividends of the previous trading day.

Possible values Numerical, fixed format "999.999" without the decimal separator.
 To be interpreted in conjunction with the related IsensVarDrInuClv (Sign of variation for last index level versus previous day's closing)

Used in MMTP-B1 – Real-time Data for an Index

See Also IsensVarDrInuClv (Sign of variation for last index level versus previous day's closing)

XVarIdxJ N(5)

Definition **Variation for Day's Index ('Forerunner').**
 This data item, commonly referred to as the "forerunner", expresses the variation in percentage between the real-time market capitalization of the instruments in the given index, as compared with the reference capitalization. This percentage is calculated using the following formula:

$$\text{Value for the forerunner index level} = 100 \times \frac{\text{CapInst} - \text{CapRef}}{\text{CapRef}}$$

- Depending on the type of forerunner, the following instruments are used in the calculation of capitalizations:
 - pre-opening forerunner (CNivIdx=8): The non-suspended and non-reserved instruments that have a theoretical opening price.
 - opening forerunner (CNivIdx=9): The non-suspended and non-reserved instruments that have traded.
 - real-time forerunner (CNivIdx=3): The non-suspended and non-reserved instruments that have traded.
- CapInst = the real-time market capitalization of the index = The sum of the real-time capitalizations of the instruments (the capitalization of an instrument in an index being the product of: the price of the instrument *

the number of shares of the instrument in the index * adjustment coefficient for the instrument in the index). The prices that are used in the calculation depend on the type of forerunner:

- pre-opening forerunner (CNivIdx=8): theoretical opening price.
- opening forerunner (CNivIdx=9): opening prices.
- real-time forerunner (CNivIdx=3): last traded price.

• CapRef= the reference capitalization of the index= The sum of the reference capitalizations of the instruments (the capitalization of an instrument in an index being the product of: the price of the instrument * the number of shares of the instrument in the index * adjustment coefficient for the instrument in the index). The prices that are used in the calculation depend on the type of forerunner:

- pre-opening forerunner (CNivIdx=8): previous day's reference price of the instrument.
- opening forerunner (CNivIdx=9): previous day's reference price of the instrument.

• real-time forerunner (CNivIdx=3): last known price at the moment when the index was suspended.

Possible values Numerical, fixed format "999.99" without the decimal separator, provided if and only if CNivIdx = 3, 8 or 9. Not provided for Indicative NAV or Index Estimate indexes.

Used in MMTP-B1 – Real-time Data for an Index

XVarIdxJRfV N(5)

Definition **Variation for Day's Index / Previous Day's Reference.**
Absolute value of the variation in percentage for the real-time index level as compared with the previous day's reference closing index level.

Possible values Numerical, fixed format "999.99" without the decimal separator. Zero if not provided.

Used in MMTP-B1 – Real-time Data for an Index

XVarIdxJDrAnP N(5)

Definition **Variation for Day's Index / Last for Previous Year.**
Absolute value of the variation in percentage for the real-time index level as compared with its closing level on the last trading day of the previous year.

Possible values Numerical, fixed format "999.99" without the decimal separator. Zero if not provided.

Used in MMTP-B1 – Real-time Data for an Index

XVarIdxPbJCIV **N(6)**

Definition **Variation for lowest index level versus previous day's closing.**
Absolute value of the variation in percentage for the lowest index level of a stock index broadcast on a given day, as compared with the previous day's reference closing index level for the same index.

Possible values Numerical, fixed format "999.999" without the decimal separator.
To be interpreted in conjunction with IsensXVarIdxPbJCIV (Sign of Variation for Lowest Index Level versus Previous Day's Closing). Zero if not provided.

Used in MMTP-B2 – Stock Index: Daily Summary

See Also IsensXVarIdxPbJCIV (Sign of Variation for Lowest Index Level versus Previous Day's Closing)

XVarIdxPhJCIV **N(6)**

Definition **Variation for highest index level versus previous day's closing.**
Absolute value of the variation in percentage for the highest index level of a stock index broadcast on a given day, as compared with the previous day's reference closing index level for the same index.

Possible values Numerical, fixed format "999.999" without the decimal separator.
To be interpreted in conjunction with IsensXVarIdxPhJCIV (Sign of Variation for Highest Index Level versus Previous Day's Closing). Zero if not provided.

Used in MMTP-B2 – Stock Index: Daily Summary

See Also IsensXVarIdxPhJCIV (Sign of Variation for Highest Index Level versus Previous Day's Closing)

YAppaValMdv X(1)

Definition **Matching type.**

Defines the matching algorithm of the instrument during the continuous trading phase. Allows to determine the priority of orders in the book. It is defined at the Cash Product level in RCE.

- Possible values**
- F** FIFO (First In First Out) matching algorithm (price / time order priority)
 - O** FIFO Origin (also called FIFO2) matching algorithm (price / origin / time order priority)

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YClose X(1)

Definition **Type of closing price.**

Indicates the type of rule used to determine the closing price.

- Possible values**
- 1** Closing price is based on last traded price
 - 2** Closing price is based on VWAP

Used in MMTP-5J – Closing Price

YCpteOm X(1)

Definition **Type of Clearing Account for Member that owns the order.**
(Often named *order origin*)

Indicates the account type for which an order has been entered using the clearing house member's account typology. This account identification scheme makes it possible to segregate trade data flows by distinguishing between client and house accounts.

In house accounts, it makes it possible to distinguish between market maker accounts. In Clearing Application this data item is known as an Open Origin or Segregation Type.

When an order includes give-up instructions, this item indicates the account of the member that is due to receive the give-up.

When an order does not include give-up instructions, this item indicates the account of the member that traded the order.

At the clearing application level, this item is used to determine the open origin of trades and to reference the systematic posting and/or systematic give-up instructions that may be applied to them.

Possible values	1 Client
	2 House
	5 Others
	6 Market Maker
Used in	MMTP-A3 – Market Sheet

YCpteOmAc X(1)

Definition **Type of Clearing Account for Member that owns the order.**
(Often named *order origin*)
Indicates the account type for which an order has been entered using the clearing house member's account typology. This account identification scheme makes it possible to segregate trade data flows by distinguishing between client and house accounts. In house accounts, it makes it possible to distinguish between market maker accounts. In Clearing Application this data item is known as an Open Origin or Segregation Type.
When an order includes give-up instructions, this item indicates the account of the member that is due to receive the give-up. When an order does not include give-up instructions, this item indicates the account of the member that traded the order. At the clearing application level, this item is used to determine the open origin of trades and to reference the systematic posting and/or systematic give-up instructions that may be applied to them.

Possible values	1 Client
	2 House
	5 Others
	6 Market Maker
Used in	MMTP-A3 – Market Sheet

YCpteOmAc X(1)

Definition **Type of Clearing Account for the buyer Member in the Trade.**
Indicates the account type for which the buy order has been entered using the clearing house member's account typology. This account identification scheme makes it possible to segregate trade data flows by distinguishing between client

and house accounts. In house accounts, it makes it possible to distinguish between market maker accounts. In Clearing Application this data item is known as an Open Origin or Segregation Type. When an order includes give-up instructions, this item indicates the account of the member that is due to receive the give-up. When an order does not include give-up instructions, this item indicates the account of the member that traded the order. At the clearing application level, this item is used to determine the open origin of trades and to reference the systematic posting and/or systematic give-up instructions that may be applied to them.

Possible values 1 Client

2 House

5 Others

6 Market Maker

Used in MMTP-01 – Opening Trade

MMTP-02 – Trade

See Also **YCpteOmVt** (Type of Clearing Account for the seller Member in the Trade)

YCpteOmVt

X(1)

Definition **Type of Clearing Account for the seller Member in the Trade.**

Indicates the account type for which the sell order has been entered using the clearing house member's account typology. This account identification scheme makes it possible to segregate trade data flows by distinguishing between client and house accounts. In house accounts, it makes it possible to distinguish between market maker accounts. In Clearing Application this data item is known as an Open Origin or Segregation Type.

When an order includes give-up instructions, this item indicates the account of the member that is due to receive the give-up.

When an order does not include give-up instructions, this item indicates the account of the member that traded the order.

At the clearing application level, this item is used to determine the open origin of trades and to reference the systematic posting and/or systematic give-up instructions that may be applied to them.

Possible values 1 Client

2 House

5 Others

6 Market Maker

Used in MMTP-01 – Opening Trade

MMTP-02 – Trade

See Also **YCpteOmAc** (Type of Clearing Account for the buyer Member in the Trade)

YCreValMdv X(1)

Definition **Strategy creation type.**

Indicates if the strategy is created on line by a broker (User Defined Strategy) or in a batch procedure with a file of referential data (Exchange Defined Strategy).

Possible values **S** UDS

F EDS

(space) Not a strategy instrument

Used in MMTP-53 – Deletion/Creation of Instrument Characteristics

See Also **CIdAdfCreValMdv** (Identification of the UDS Member creator)
CIdNgCreValMdv (Identification of the UDS Trader creator)

YCrI X(1)

Definition **Nature of Message.**

Indicates the general contents of the message.

Possible values **B** Message contains market information

T Message contains technical information

R Message contains both market and technical information

Used in MMTP-23 – Text Message

YDeComp N(1)

Definition **Settlement Delay Type.**

Defines the settlement delay of a trade for the instrument.

This information is defined at the Cash instrument level in RCE.

Possible values **0** Delivery delay trade T+0

1 Delivery delay trade T+1

2 Delivery delay trade T+2

3 Delivery delay trade T+3

9 Default Delivery delay. (The default value is T+3)

If the Settlement Delay Type field is not or bad filled, NSC® will apply a default value equal to 3 "Delivery delay trade T+3".

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YDest X(2)

Definition **Address type.**

Indicates the users to whom the message is addressed.

Possible values **TO** TO TOPCAC message
FI FI FIM message
FT FT FIM and TOPCAC message
Used in MMTP-23 – Text Message

YDnRjTran X(1)

Definition **Clearing Method of Failing Trades.**

Method of clearing to be used for the instrument at the clearing system level (e.g. Whether buying-in attempted). This parameter allows configuring the processing of trades that could fail, in particular it controls when a buy-in order is generated.

Possible values **0** Never generate a buying-in order
1 Buying-in prior to settlement
2 Buying-in on settlement failure

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YDVP X(2)

Definition **DVP Settlement Method.**

DVP settlement method used by the clearing system.

Possible values **1** DVP1
2 DVP2
3 DVP3

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YExoFamProdYOpt X(1)

Definition **Execution type for an option instrument.**

Determines whether the option can be exercised at any time up to a given expiry date (American style options) or only on that expiry date (European style options). If the instrument is not an Option, this field is not filled. This information is defined at the Product Family level in RCE.

Possible values **(space)** Instrument is not an Option
A American style
E Option European style

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YExpVarPValDrPRf X(1)

Definition **Net change expression type.**

Indicates how to calculate Net Change and thresholds for the instrument. This value is defined in RCE at the Cash Product level.

Possible values **1** Change and thresholds are calculated in value (point)
2 Net change and thresholds are calculated in percentage

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **XQVarPJDrPRf** (Price Variation As Compared to Reference Price)

YMarMsg**X(2)****Definition** **Type of Market concerned by the message.**

In a text message, identifies the type of market the message concerns.

Possible values **AC** Equities
OB Bonds
ST Miscellaneous
(group) Any NSC® group code (see CldGrc)

Used in MMTP-23 – Text Message

YMarNSC**X(2)****Definition** **NSC® market segment.**

Identifies the market segment to which belongs the instrument. This information is defined at the Cash instrument level.

Possible values **NO** Normal market
ID market
OL Odd Lot Market

Used in MMTP-01 – Opening Trade
MMTP-02 – Trade
MMTP-33 – TCS Trade
MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YMethCalntObl**X(2)****Definition** **Type of Interest Calculation Formula for Bonds.**

Possible values **00** Accrual basis (30/360, Act/365, etc.)
01 Coupon start date
02 Coupon end date
03 Coupon offset days
04 Coupon rate type
05 Coupon rate
06 Coupon index
07 Coupon margin

08 Coupon margin factor

09 Coupon cry

[...] (non exhaustive value list)

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YMsgRLC

X(2)

Definition **Type of MMTP message.**

Defines the functional meaning of a MMTP message and defines the structure of the message body (which consists of the bytes following the MMTP header). The type of message is defined by the sender.

Role:

- Serves as one of the switching criteria used in directing the message towards its recipients.
- Allows the receiving software to determine the position and length of each data item in the body of the message.

Integrity constraints: none.

Possible values Alphanumerical.

Used in MMTP Header

See Also **AETTchRLCY1** (Technical header for MMTP message, type 1)
YTchRLC (Type of header for MMTP message)

YOm

X(1)

Definition Code for the Technical Origin of the Order.
Describes the nature of an order according to different classes of orders used in program trading. (This item is also known as Technical Origin).
Coded for the Market Control system (SPI) in satellite messages.

Possible values **(space)** Not provided

A Other orders

M Manual buying-in order

U Automatic buying-in order

Used in MMTP-A3 – Market Sheet

YOmAc

X(1)

Definition **Code for the technical origin of the buy order.**

Describes the nature of an order according to different classes of orders used in program trading. (This item is also known as Technical Origin)

Coded for the Market Control system (SPI) in satellite messages.

Possible values (space) Not provided
A Other orders
M Manual buying-in order
U Automatic buying-in order

Used in MMTP-01 – Opening Trade
MMTP-02 – Trade

See Also **YOmVt** (Code for the technical origin of the sell order)

YOmOrgTran X(1)

Definition **Type of orders at the origin of a trade.**

This data item is a characteristic of a trade on an instrument that can be cleared, in contrast to a trade on a strategy. It expresses the type of the orders that are at the origin of the trade, by distinguishing between simple orders (orders concerning an instrument that can be cleared) and orders concerning various types of strategies.

Possible values (space) Not provided
B Simple orders
I Trade with at least an implied order

Used in MMTP-01 – Opening Trade
MMTP-02 – Trade
MMTP-04 – Best Limits

YOmVt X(1)

Definition **Code for the technical origin of the sell order.**

Describes the nature of an order according to different classes of orders used in program trading. (This item is also known as Technical Origin)
Coded for the Market Control system (SPI) in satellite messages.

Possible values (space) Not provided
A Other orders
M Manual buying-in order
U Automatic buying-in order

Used in MMTP-01 – Opening Trade
MMTP-02 – Trade

See Also **YOmAc** (Code for the technical origin of the buy order)

YOPJS N(2)

Definition **Type of corporate event causing instrument modification on current day.**

Indicates the type of corporate event that has occurred on an instrument on the current day, such as detachment of rights, or of coupons. The possible values listed below correspond to predefined, standard corporate events that can be completed using RCE. However, NSC® purges the order books for some predefined codes mentioned below.

Possible values Standard corporate events provided with RCE

- 00** No corporate event
- 01** Dividend payment in cash
- 03** Interest payment
- 04** Split
- 05** Bonus (attribution)
- 09** Reverse split
- 12** Capital reduction
- 18** Rights
- 19** Bonus and rights
- 20** Bonus also entitled for Rights
- 21** Rights also entitled for Bonus

Corporate event codes that cause an order book purge in NSC®

- 01** Dividend payment in cash
- 02** (not predefined)
- 04** Split
- 05** Bonus (attribution)
- 06** (not predefined)
- 07** (not predefined)
- 08** (not predefined)
- 09** Reverse split
- 11** (not predefined)
- 12** Capital reduction
- 13** (not predefined)
- 14** (not predefined)
- 15** (not predefined)
- 16** (not predefined)
- 17** (not predefined)

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **ACarValRLC** (Aggregate for instrument characteristics)
QCurStSplit (Current Number of Shares for Stock Split)
QnewStSplit (New Number of Shares for Stock Split)
QCurStDiv (Current Number of Shares for Stock Dividend)
QAddStDiv (Additional Number of Shares for Stock Dividend)

YPLimSaiOm

X(1)

Definition **Type of Limit for an Order.**

Indicates the type of limit that has been entered for an order.

	The type of limit intervenes in the rules for executing orders.	
Possible values	L	<i>Limit order.</i> This can be an order with a specific limit that was originally entered as such, or one that is the result of a Stop order that has been triggered, or of a Market order or of a Market on Opening order.
	O	<i>Market on Opening order.</i> This order type is to be executed at the instrument's opening price. It can only be entered during the Pre-Opening. This type of order becomes a Limit order at the opening price after the instrument opening if the order has not been executed.
	K	<i>Market order</i>
	S	<i>Stop order.</i> This can be a Stop Loss order or a Stop Limit order
	M	<i>Market to Limit order.</i> This type of order must be executed at the best price on the opposite side at its entry. This order type can only be entered during the Continuous Trading phase, and becomes a Limit order if it is not fully executed immediately after entering.
Used in	MMTP-A3 – Market Sheet	
See also	PLimSaiOm (Original Order Price) PMeDem (Best buy limit price) PMeOf (Best sell limit price)	

YPMsgP

N(2)

Definition	Price type. Describes and qualifies the new price transmitted in the field "Price" of the message.
Possible values	30 first trade price modification
	31 highest trade price modification
	32 lowest trade price modification
	33 last trade price modification
	34 previous day's closing price modification
	35 settlement price modification
	36 final settlement price modification
	38 reference price
Used in	MMTP-03 – Price

YPOvVal N(2)

Definition	Trend flag. Defines the type of price broadcast in the message.
Possible values	04 corresponding to the 1 st opening on the instrument or to the first traded price (if the instrument has not traded at the opening). 07 price corresponding to the nth opening on the instrument when the instrument has already traded previously.
Used in	MMTP-32 – Opening Summary

YQStg X(3)

Definition	Strategy Quantity Type. Type of ratio combination accepted for a strategy.
Possible values	(space) the greatest ratio common divisor must be one AON (All Or None) every ratio are accepted
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YStg X(2)

Definition	Strategy Type. Indicates the strategy type of the instrument when the instrument is a strategy. Strategy type may be calendar spread, butterfly, strip,....
Possible values	Alphanumerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YTchRLC N(1)

Definition	Type of header for MMTP message. Defines the structure of a MMTP message header. For historical reasons, two different types of MMTP headers co-exist. Type 0 header <ul style="list-style-type: none">• a fixed length of 24 bytes.• includes only technical data used by the MMTP functions to switch messages and to verify their integrity.• the maximum message length is 999 bytes, because of the format of the MMTP Message Length in Bytes (ZOctMsgRLC) data item.• the structure of the rest of the message depends exclusively on the Type of MMTP Message (YMsgRLC), with the possible inclusion of a functional message header.
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Type 1 header

- a fixed length of 84 bytes.
- includes a technical part (regarding switching and integrity) and a functional part (core business data is present in most messages, including the ISIN code).
- the maximum message length is 99 999 bytes, because of the format of the message length (ZOctMsgRLC5).
- the structure of the rest of the message depends solely on the Type of MMTP Message (YMsgRLC).

Role: allows the receiving application to determine the structure of the fixed part of MMTP messages that are received.

Possible values 0 Type 0 header

1 Type 1 header

Used in MMTP Header

See Also AEtTchRLCY1 (Technical header for MMTP message, type 1)
ZOctMsgRLC (MMTP message length in bytes (3 digits))
ZOctMsgRLC5 (MMTP message length in bytes (5 digits))
YMsgRLC (Type of MMTP message)

YTrading

X(1)

Definition Instrument Trading Mode.

Specifies the way the instrument is to be managed within a trading cycle, depending mainly on its liquidity.

Possible values C Continuous mode

F Auction mode

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

YSupOm

X(1)

Definition Deletion type.

Determines the type of order deletion from the order book (market sheet).

Possible values 1 Deletion of a precise order (the order specified in the message).

2 Deletion of all previous orders in the specified side (all better orders from the specified order in the message according to FIFO).

3 Deletion of all orders (both sides).

Used in MMTP-A4 – Delete N Lines

YUniExpP

N(1)

Definition Type of unit of expression for instrument price.

Indicates the type of units that are used to express the price and the quantity of an instrument for orders and trades.

For example:

- Price per share in currency and quantity in number of shares
- Price in percentage of par value and quantity in number of bonds

Possible values	1 In absolute value 2 In percentage
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	ACarValRLC (Aggregate for instrument characteristics)

YVal

N(3)

Definition Type of instrument.
Represents a group of instruments that are subject to the same issue procedures, general processing and that give shareholders the same rights with regard to voting, dividends and rights. Determines the processing of corporate events for the instrument on which the event is occurring, and for the resulting instrument.

Possible values	Numerical.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics
See Also	ACarValRLC (Aggregate for instrument characteristics)

Z

ZMaxLimDifVal N(2)

Definition	Maximum number of limits transmitted in the limit message for the instrument. Represents the maximum number of limits to be transmitted in the "Limits" (MA) message for a given instrument. Not used any more in the Trading Engine NSC®.
Possible values	Numerical. It is an RCE parameter always set to 5.
Used in	MMTP-52/53 – Deletion/Creation of Instrument Characteristics

ZMIsHevenRLC X(3)

Definition	Number of milliseconds in time of MMTP event. Represents the milliseconds portion of the time stamp for an MMTP message. This data item complements the Time of MMTP event (HEven), which is exact to the second. Not provided by any system that sends MMTP messages as of Feb 2001.
	Role: added to the MMTP type 1 message header at the request of certain NSC® clients (not Euronext NV). Integrity constraints: to be interpreted in connection with the data item Time of MMTP event (HEven).
Possible values	000~999. Not provided if blank.
Used in	MMTP Header
See Also	ADHEvenRLC (Aggregate for time stamp for MMTP event (up to the milliseconds)) DEven (Date of MMTP event) HEven (Time of MMTP event)

ZNorTitBlcNg N(12)

Definition	Weighted Average spread quantity. This quantity represents the minimum tradable quantity for the block trading market.
Possible values	Numerical.
Used in	MMTP 52/ 53 – Creation of Instrument Characteristics
See Also	ACarValRLC (Aggregate for instrument characteristics)

ZOctMsgRLC

N(3)

Definition **MMTP message length in bytes (3 digits).**

Gives the total length in bytes of the MMTP message (including the header).

Must be provided by all applications that send MMTP messages, including applications that use the MMTP type 1 message header (because this is compatible with the MMTP software).

Role: enables the MMTP message switching system to verify that the length of the incoming message corresponds to the length specified by the sending application. Although this data appears in the MMTP type 1 message header, receiving applications that process the type 1 header must not use this item. Instead, those applications must use only the new MMTP message length data item (in N(5) format). The N(3) format message length data item will eventually disappear from the MMTP Type 1 header and will only be used for the MMTP software itself.

Integrity constraints: provided by the system that sends the message to MMTP.

Possible values Unsigned integer, less than or equal to 999.

For messages having a superior length, the last figure(s) are not reproduced (for example, if length is 1700 bytes ⇒ ZOOctMsgRLC=170).

Deprecated. Please refer to the ZOOctMsgRLC5 field instead for the real message length.

Used in MMTP Header

See Also **AETtTchRLCY1** (Technical header for MMTP message, type 1)
YTchRLC (Type of header for MMTP message)
ZOOctMsgRLC5 (MMTP message length in bytes (5 digits))

ZOOctMsgRLC5

N(5)

Definition **MMTP message length in bytes (5 digits).**

Represents the total length in bytes of the MMTP message (including the header). Must be provided by all applications that send MMTP messages and use the MMTP type 1 message header.

Role: enables the HUB I/A message switching system, and in some cases the receiving application, to verify that the length of the incoming message corresponds to the length specified by the sending application. Applications that receive MMTP messages and that process the MMTP type 1 message header must use this item, and not the N(3) format length

item. The N(3) format item will eventually be replaced by a filler.

Integrity constraints: none.

Possible values Unsigned integer, less or equal to 99999.
This field supersedes the deprecated ZOOctMsgRLC field.

Used in MMTP Header

See Also **A EttFnRLCY1** (Functional header for MMTP message, type 1)
YTchRLC (Type of header for MMTP message)
ZOOctMsgRLC (MMTP message length in bytes (3 digits))

ZOrdMeDem N(4)

Definition **Number of orders at a best buy limit.**
Number of orders composing the buy limit.
First limit only: equal to zero if the buy limit contains at least one implied order.

Possible values Numerical.

Used in MMTP-04 – Best Limits

See Also **AMeLim** (Best limit aggregate)
ZOrdMeOf (Number of orders at a best sell limit)

ZOrdMeOf N(4)

Definition **Number of orders at a best sell limit.**
Number of orders composing the best sell limit.

Possible values Numerical.
First limit only: equal to zero if the sell limit contains at least one implied order.

Used in MMTP-04 – Best Limits

See Also **AMeLim** (Best limit aggregate)
ZOrdMeDem (Number of orders at a best buy limit)

ZPcsNSCEmetMsgRLCGrc N(2)

Definition **Number of Trading Units used by the group.**
Technical data which gives the number of processes which broadcast MMTP messages for a given instrument group.
This data is used to calculate the number of change group state notice.

Possible values Numerical, always set to 01.

Used in MMTP-16 – Group State Change

ZTitAd N(12)

Definition **Number of shares or bonds outstanding.**

- i. Stocks: number of shares issued on the market at the moment of the IPO, or during a subsequent capital increase.
- ii. Bonds: number of bonds issued.
- iii. Mutual funds or instruments that are not quoted: not managed.
 - one of the factors for determining the free float for the instrument
 - calculation of market capitalization
 - checking of open positions on the options market.

Possible values Numerical (Greater than or equal to zero).

Used in MMTP-52/53 – Deletion/Creation of Instrument Characteristics

See Also **ACarValRLC** (Aggregate for instrument characteristics)

ZTitDispoEtra N(12)

Definition **Available number of shares for foreigner .**

This field indicate the number of shares that can be bought by foreigner for the share or the bond.

Possible values Numerical (Greater than or equal to zero).

Used in MMTP 25 – Available number of shares for Foreigner

ZTitValCaldx aggregate

Definition Number of shares used for index calculation.

Given an instrument participating to an index, the number of shares is used for calculation of the index level.

Possible values Numerical.

Used in MMTP-A5 – Composition of an Index

See Also Components of the aggregate:

- Ift (Decimal point locator)
- Qmt15 (Amount)

ZTotPcsNSCEmetMsgRLC N(2)

Definition **Total Number of NSC® Trading Units.**

Possible values Numerical.

Used in MMTP-AO – Start / End of Market Sheet Broadcasting

ZTotSeg X(2)

Definition **Number of messages in this message.**

Aids in rebuilding a message that was sent in several transmissions.

Possible values 01~10.

Used in MMTP-23 – Text Message

ZTotTran N(12)

Definition Total number of trades.
Possible values Numerical.
Used in MMTP-5I – Market Activity
MMTP-5J – Closing Price

ZTotVallbs N(3)

Definition Total number of instruments in the index.
Total number of instruments in a stock index sample at the moment that a given index level or forerunner level is calculated.
Possible values Numerical, greater than or equal to 0.
Used in MMTP-B1 – Real-time Data for an Index

ZTotValldx N(3)

Definition Total number of instruments in an index.
For stocks: The number of shares per security/constituent used by PFI2 to calculate the index.
For bonds : The number of bonds per security/constituent used by PFI2 to calculate the index. According to the index methodology, this number can differ from the number of outstanding shares/bonds for each security. This number does not take into account any adjustment factor such as free float factor, capping factor, etc.
Possible values Numerical, greater than or equal to 0.
Used in MMTP-A5 – Composition of an Index

ZValBailbs N(3)

Definition Number of declining instruments in the index.
Number of instruments in a stock index sample for which the last price known by PFI2 is less than the previous day's reference price at the moment that a given index level or forerunner level is calculated. An instrument can only be considered as declining if it has traded at least once since the start of the current trading day and if its trading state is "tradable".
Possible values Numerical, less than or equal to the number of instruments in the index. Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.
Used in MMTP-B1 – Real-time Data for an Index

ZValHaulbs N(3)

- Definition** **Number of rising instruments in the index.**
Number of instruments in a index sample for which the last price known by PFI2 is greater than the previous day's reference price at the moment that a given index level or forerunner level is calculated. An instrument can only be considered as rising if it has traded at least once since the start of the current trading day and if its trading state is "tradable".
- Possible values** Numerical, less than or equal to the number of instruments in the index. Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.
- Used in** MMTP-B1 – Real-time Data for an Index

ZVallchglbs N(3)

- Definition** **Number of unchanged instruments in the index.**
Number of instruments in a index sample for which the last price known by PFI2 is equal to the previous day's reference price at the moment that a given index level or forerunner level is calculated. An instrument can only be considered as unchanged if it has traded at least once since the start of the current trading day and if its trading state is "tradable".
- Possible values** Numerical, less than or equal to the number of instruments in the index. Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.
- Used in** MMTP-B1 – Real-time Data for an Index

ZValidxCot N(3)

- Definition** **Number of traded instruments in the index.**
Number of instruments in the index that have traded at the moment that the index level is calculated.
- Possible values** Numerical, less than or equal to the number of instruments in the index. Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.
- Used in** MMTP-B1 – Real-time Data for an Index

ZValNonCotlbs N(3)

- Definition** **Number of non-traded instruments in the index.**
Number of instruments in a index sample that have not traded at least once since the start of the current trading day and whose trading state is "tradable" at the moment that a given index level or forerunner level is calculated.

Possible values Numerical, less than or equal to the number of instruments in the index. Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.

Used in MMTP-B1 – Real-time Data for an Index

ZValReslbs X(12)

Definition **Number of reserved instruments in the index.**

Number of instruments in a index sample for which the trading state known by PFI2 is "reserved" at the moment that a given index level or forerunner level is calculated, whether or not the instrument has traded since the start of the current trading day.

Possible values Numerical, less than or equal to the number of instruments in the index. Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.

Used in MMTP-B1 – Real-time Data for an Index

ZValSulbs N(3)

Definition **Number of suspended instruments in the index.**

Number of instruments in a index sample for which the trading state known by PFI2 is "suspended" at the moment that a given index level or forerunner level is calculated, whether or not the instrument has traded since the start of the current trading day.

Possible values Numerical, less than or equal to the number of instruments in the index. Provided if and only if the indicators related to an index level are provided (IIBsAscNivlbs = 1). Zero if not provided.

Used in MMTP-B1 – Real-time Data for an Index