

Oslo Børs News Feed

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Change log

This document can be updated at any time, and has been through the following iterations:

Issue	Date	Description
1.0	01.02.2009	<ul style="list-style-type: none">Initial release
1.1	11.03.2010	<ul style="list-style-type: none">Added the field CompID
1.2	10.01.2012	<ul style="list-style-type: none">Categories "Resolution" and "Announcement from the FSA" added
1.3	02.05.2012	<ul style="list-style-type: none">Category "Information from other participants" added.
1.4	19.04.2013	<ul style="list-style-type: none">Added newsTypes for Burgundy; "BGY-MATCHING HALT", "BGY-TRADING HALTS", "BGY-LISTING/DELISTING", "BGY-OTHER INFORMATION"Added marketCodes for Burgundy: "15 – Burgundy Nordic MTF" and "16 – Burgundy Regulated Market"Added newsSources for Burgundy: "4 – Burgundy Nordic MTF" and "5 – Burgundy Regulated Market"
2.0	01.10.2013	<ul style="list-style-type: none">New document layoutAdded information on connectivity and technical parameters (chapter 2)Added information on error messages (chapter 3)
2.1	18.05.2015	<ul style="list-style-type: none">Category "Closing Price Derivatives" added
2.2	31.08.2015	<ul style="list-style-type: none">Added newsTypes "RESULT OF GOVERNMENT BOND AUCTION - BUYBACK", "ISSUANCE OF GOVERNMENT BONDS - REOPENING" and "ISSUANCE OF TREASURY BILLS - REOPENING"Renamed the newsType "INFORMATION DOCUMENT" to "DETAILED ANNOUNCEMENT/INFORMATION DOCUMENT"The marketCodes, newsSources and newsTypes for Burgundy removed
2.3	01.10.2015	<ul style="list-style-type: none">Renamed the newsType "NEWS1" to "NEWS GOVERNMENT DEBT"
2.4	30.10.2015	<ul style="list-style-type: none">"NEWS GOVERNMENT DEBT" renamed to "NEWS1"Added "NEWS GOVERNMENT DEBT" as new newsType
2.5	07.01.2016	<ul style="list-style-type: none">"PROSPECTUS" renamed to "PROSPECTUS/ADMISSION DOCUMENT" (EN)/"PROSPEKT/OPPTAKSDOKUMENT" (NO)"LISTING OF SECURITIES" renamed to "LISTING/ADMISSION OF SECURITIES" (EN)/"NOTERING/OPPTAK AV VERDIPAPIRER" (NO)"ANDRE BØRSMELDINGER" renamed to "ANDRE MELDINGER" (NO)"BØRSPAUSE" renamed to "BØRSPAUSE/HANDELSPAUSE" (NO)Added newsSource for Merkur Market: "4 – Merkur Market"

		<ul style="list-style-type: none"> • Added marketCode for Merkur Market: “29 – Merkur Market”
2.6	15.02.2017	<ul style="list-style-type: none"> • Updated the list of valid newsTypes, section 5.4.3 • Renamed 4 newsTypes. Please refer to section 5.4.4 for details. • Added a list of new newsTypes. Please refer to section 5.4.5 for an overview of the new newsTypes • Removed newsTypes. Please refer to section 5.4.6 for a list of the removed newsTypes • Added a new section (5.4.7) that explains the mapping of removed newsTypes against the new newsTypes
2.7	03.03.2020	<ul style="list-style-type: none"> • New Euronext layout • Added Irish Markets Dublin • Sections, 2.1.2, 5.4.2, 5.4.4, 5.4.6

Please note that only the latest issue of this document will be available from the Oslo Børs website.

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1 INTRODUCTION

The Oslo Børs News Feed is a service from Euronext where news is distributed through the feed 365/24/7. The feed service is the part of the Official Appointed Mechanism (OAM) for Norwegian (Oslo) and Irish markets (Dublin).

1.1 PURPOSE

This is a document aimed at the client side system developer to provide the necessary information for implementing a client system for receiving news messages from listed companies disseminated in real time through Euronext Distribution Network.

1.2 DEFINITIONS, ABBREVIATIONS AND ACRONYMS

Abbreviation	Description
FC	Feed Client. Client side of the communication.
FS	Feed Server. Euronext side of the communication.

1.3 SUPPORT, CALENDAR AND CORE HOURS

The Euronext News Feed will be running 365/24/7, except from a short maintenance window around midnight.

Euronext provides a manned technical services desk in the hours specified below, excluding exchange holidays, unless advised otherwise.

Personnel and queries covered	Hours (CET)	Telephone	E-mail
Technical support and operational issues	07:00-21:00	+47 22 34 19 90	technicalsupport@oslobors.no
Product and commercial issues	07:30-18:30	+47 22 34 18 02	products@oslobors.no

1.4 NOTIFICATION POLICY

- Major changes – three months
- Minor changes – one month
- Bug fixes – as soon as possible if critical and coordinated with major/minor releases where appropriate

2 CONNECTIVITY

2.1 CONNECTION

The Euronext News Feed is distributed to clients over a TCP/IP connection, through Internet or fixed lines. Clients need to enable their IP address(es) for access to the feed. Euronext offers a test environment enabling clients to test their connections and applications before connection to the production feed.

2.1.1 IP addresses – Oslo Markets

Environment	IP addresses	TCP Port
Production	146.72.205.26	9403
Test	146.72.205.27	9403

2.1.2 IP addresses – Dublin Market

Environment	IP addresses	TCP Port
Production	146.72.205.77	9403
Test	146.72.205.78	9403

2.2 TECHNICAL PARAMETERS

2.2.1 Timeouts

A timeout of 30 seconds will disconnect the client if the client connects to the system, but does not complete the login or a request command.

A timeout of 30 seconds will disconnect the client if the client does not answer an ack response (S_ACK) where this is specified by the protocol.

Timeout in the realtime command mode (heartbeat):

- If there has not been any activity on the network within the last 60 seconds the server will send a heartbeat request (S_ENQ_REQ)
- The server expects to receive a heartbeat ack (S_ENQ_ACK) within 60 seconds
- If no heartbeat ack is received within 60 seconds the server will try to send heartbeat requests (S_ENQ_REQ) up to 3 times. If the client does not answer any of these heartbeat requests the client will be disconnected from the system.

2.2.2 Usage limitations

If a user attempts to login with the wrong password 3 times in a row the user will be deactivated.

2.2.3 Maximum number of concurrent connections

The maximum number of concurrent connections is 4 by default, but may be changed on client request.

3 SESSION CONTROL

Session control is in this context the process of a client system (FC) establishing a connection to the server system (FS) and both parts maintaining this connection for delivering data to the FC application. This relates to the “session layer” of the OSI reference model.

3.1 MESSAGES

All session control messages exchanged between FS and FC start with S_.

Internally generated «messages» within FS or FC are in this documentation indicated and given names starting with I_, but these are NOT exchanged between FS and FC.

The following table lists the session control messages passed between FC and FS:

Message	Parameters ¹	FS ² ⇒	FC ³ ⇐	Description
S_ACK	[; infoText]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Positive acknowledge to a request, sent both ways.
S_ABORT	; status [; infoText]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Abort message that unconditionally will cause the session to be stopped in any state, even while in command processing mode. This message can be sent both ways. Defined status codes are: -1 Undefined error -2 Operator initiated shutdown -3 Internal error -4 Time-out -5 Error count exceeded
S_CMD_END_REQ	; status [; infoText]	<input checked="" type="checkbox"/>		Command end request message sent from FS to FC. Acknowledge is required from FC. Status is an integer code with processing status for the command: 0 OK -1 No data -2 Illegal (request)command -3 Illegal (restart)parameter -4 Illegal parameters -5 Not a tradeday -6 Configuration file cannot be read -7 Other error Can also include an informational text message.

¹ Optional parameters are listed in brackets, others are mandatory. N/A implies no parameters

² Messages sent from FS to FC

³ Messages sent from FC to FS

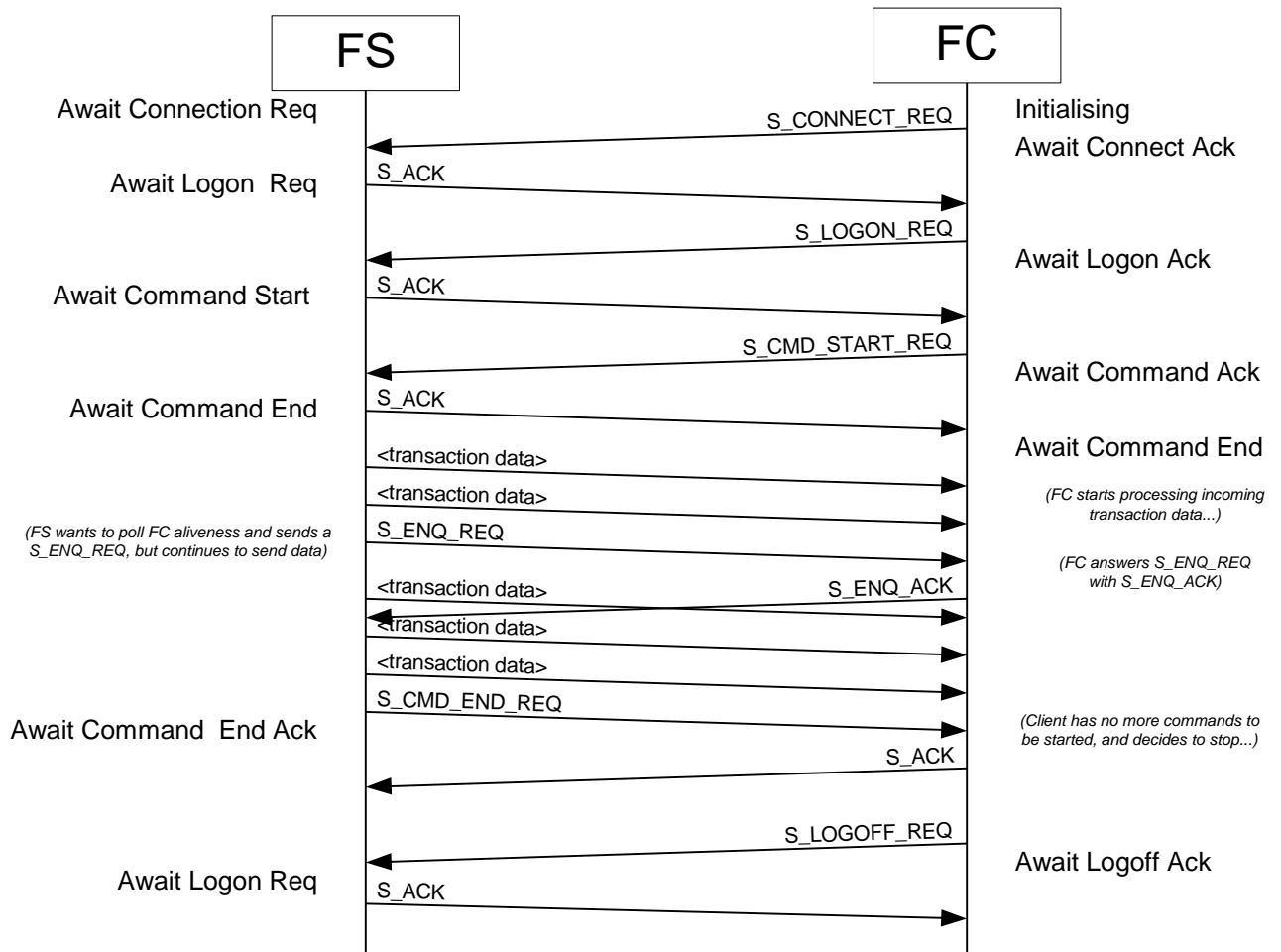
Message	Parameters ¹	FS ² ⇒	FC ³ ⇐	Description
S_CMD_START_REQ	; command [; args]		<input checked="" type="checkbox"/>	Command start request message, sent from FC to FS. If the command can be started, a S_ACK is sent as reply to the message, otherwise a S_NAK is returned.
S_CONNECT_REQ	[; infoText]		<input checked="" type="checkbox"/>	Connection request from FC to FS.
S_ENQ_REQ	; seqNo [; infoText]	<input checked="" type="checkbox"/>		Enquiry request message or «aliveness poll», sent from FS to FC with regular time intervals. FC shall immediately respond with a S_ENQ_ACK message, returning the sequence number received in S_ENQ_REQ from FS.
S_ENQ_ACK	; seqNo [; infoText]		<input checked="" type="checkbox"/>	Enquiry acknowledge message sent from FC as response to a S_ENQ_REQ. The sequence number (integer between 1 and 99) in the S_ENQ_REQ message should be returned in the S_ENQ_ACK message.
S_LOGOFF_REQ	[; infoText]		<input checked="" type="checkbox"/>	Logoff message, sent from FC to FS. Shall in any case be responded to with a S_ACK from the FS.
S_LOGON_REQ	; userId ; password		<input checked="" type="checkbox"/>	Logon request message, sent from FC to FS. User ID and password is sent as plain text parameters, to be checked against FS system's password validation mechanisms. Response should be S_ACK if logon is accepted, S_NAK otherwise.
S_NAK	; status [; infoText]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Negative acknowledge to a request, sent both ways. Status codes that can be returned are:

Message	Parameters ¹	FS ² ⇒	FC ³ ⇐	Description
				<ul style="list-style-type: none"> -1 Undefined error -2 Invalid logon (userID/password) -3 Invalid FC host address -4 Internal FS error, cannot execute command. -5 Unexpected message in current state
I_ERROR	N/A			<p>Internal (FS) error «message»: Too many errors flagged during communication with FC. FS shall respond with S_ABORT. The error limit should be configurable, with a suggested default value of 3.</p>
I_TIMEOUT	N/A			<p>Internal (FS) time-out «message»: Too long time has passed without response from FC. FS shall respond with S_ABORT. The time-out value should be configurable in the range 1s to 300s, with a suggested default value of 30s. Different timeout values may be configured for different states.</p>

[; infoText] fields are optional text fields, and may contain useful text information for determining error cause in both FS and FC. This could e.g. be session identification, state information, and expected behaviour when error detected and so on. Examples and actual text from FS presented here may be altered without further notice.

3.2 MESSAGE SCENARIO

The following figure describes a normal session between FS and FC.



A typical FC processing sequence may be as follows:

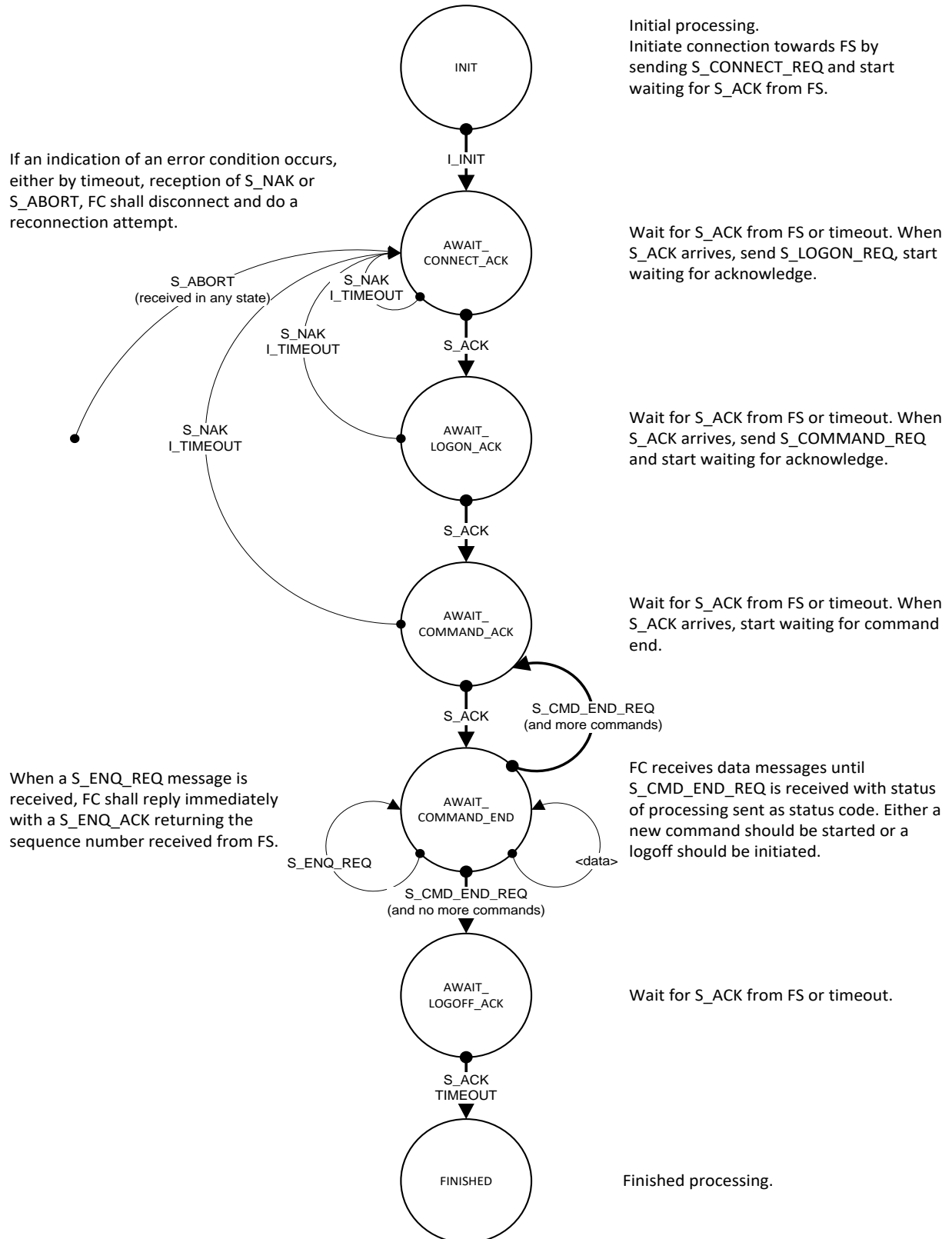
1. Initial processing
2. Connect
3. Logon
4. Get transaction definitions using command TRANSACTIONS_DEF
5. Get field definitions using command FIELDS_DEF
6. Get instrument definitions using command FIXED_DATA
7. Get real-time data using command REALTIME from GSN 0
8. If REALTIME session interrupted, continue from last GSN received
9. Finish processing when S_CMD_END_REQ returns with OK status code

Below is a more detailed example of how the message exchange might occur:

From FC to FS (Out from FC)	
From FS to FC (In to FC)	
<i>(FC initiates a session by opening a socket connection to FS, which starts a FS process)</i>	
S_CONNECT_REQ	<i>FC initiates connection</i>
S_ACK;sessionId=e53319d1-d3d6-45...	<i>FS acknowledges connection</i>
S_LOGON_REQ;TESTFEED;testfeed	<i>FC logs on</i>
S_ACK;state=AWAIT_COMMAND_ST...	<i>FS acknowledges logon</i>
S_CMD_START_REQ;TRANSACTIONS_...	<i>FC asks for transaction definitions</i>
S_ACK;state=AWAIT_COMMAND_END Bt;;nBond;TAgBb;DsBond;CMdFIXED_D... Bt;;nEquity;TAgBe;DsEquity data;CMdFIX...	<i>FS sends transaction definitions</i>
...	
S_CMD_END_REQ;0;sessionId=e53319d1-d3d6-4...	<i>FS indicates end of data</i>
S_ACK	<i>FC acknowledges end of data</i>
S_CMD_START_REQ;FIELDS_DEF	<i>FC asks for field definitions</i>
S_ACK;state=AWAIT_COMMAND_END Bf;;nnewsHeader;TAgNh;FtString;Vf19980708;DsH... Bf;;nnewsLength;TAgNl;FtInteger;Vf19980708;DsN...	<i>FS sends field definitions</i>
...	
S_CMD_END_REQ;0;sessionId=e53319d1-d3d6-45...	<i>FS indicates end of data</i>
S_ACK	<i>FC acknowledges end of data</i>
S_CMD_START_REQ;FIXED_DATA	<i>FC asks for instrument definitions</i>
S_ACK;state=AWAIT_COMMAND_END Bc;;Cld148;ISYmSTORL;CnStorebrand Livsforsi...	<i>FS sends instrument definitions</i>
Bc;;Cld1007;ISYmAFK;CnArendals Fossekempa...	
...	
S_CMD_END_REQ;0;sessionId=e53319d1-d3d6-45...	<i>FS indicates end of data</i>
S_ACK	<i>FC acknowledges end of data</i>
S_CMD_START_REQ;REALTIME;1	<i>FC asks for realtime data from seqNo 1</i>
S_ACK;state=AWAIT_COMMAND_END Fe;1;DsOCDF START;t201309110000002	<i>FS sends realtime data from seqNo1</i>
n;2;Ns1;t20130911070000;URLnhttp://www.newsw...	
...	
S_ENQ_REQ;12	<i>FS checks that client is alive</i>
S_ENQ_ACK;12	<i>FC answers that it is alive and well</i>
n;3;Ns1;t20130911090000;URLnhttp://www.newsw...	<i>FS sends realtime data</i>
...	
Fe;252;DsOCDF STOP;t201309112359999	<i>FS closes down connection for end of day maintenance</i>
S_ABORT;-2;Operator initiated shutdown	
<i>(Finished real-time processing, FS terminating connections)</i>	

3.3 FC STATE DIAGRAM

The session control as seen from the FC side described as a state machine:



FC states are:

FC State	Description
INIT	Initial processing state. Initialise the FC system, attempt to open socket connection to FS and send S_CONNECT_REQ to FS.
AWAIT_CONNECT_ACK	Await connection acknowledge – S_ACK. Send S_LOGON_REQ with username and password when received.
AWAIT_LOGON_ACK	Await logon acknowledge – S_ACK. Send first command (of several scheduled) when received.
AWAIT_COMMAND_ACK	Await command acknowledge – S_ACK. Start waiting for transaction data when received.
AWAIT_COMMAND_END	Await command end request – S_CMD_END_REQ. Receive and process transactions until S_CMD_END_REQ is received. If S_ENQ_REQ received, these should be responded to with S_ENQ_ACK immediately.
AWAIT_LOGOFF_ACK	Await logoff acknowledge – S_ACK. When received, finish processing.
FINISHED	Finished processing state. Perform any postprocessing on data received.

3.4 FC STATES AND MESSAGE PROCESSING

3.4.1 Common message processing for all states

The following messages / events should be handled equally for all states. If special handling is required, this is described specially.

Message	FC action
S_ABORT	FS has for some reason (indicated by the status code) decided to abort the connection. FC shall respond by closing the socket connection to FS, close the socket connection, attempt opening again and change state to AWAIT_CONNECTION_ACK, waiting for a response from FS.
I_TIMEOUT	No valid response has been received from FS within a predefined amount of time. The elapsed time before a timeout is generated may differ from state to state, but should be configurable. Perform same action as when receiving S_ABORT.
<ANY UNDEFINED>	FC shall discard the message, increment an internal error counter. If the internal error counter exceeds a configured number of errors, the same action as for S_ABORT should be performed.

3.4.2 State INIT

The FC is initialising in this state. After reading configuration files, initialising output files and databases and so on, a socket connection is established to FS, and a S_CONNECT_REQ message is sent, before state AWAIT_CONNECT_ACK is entered.

3.4.3 State AWAIT_CONNECT_ACK

The FC has opened a connection to FS, has sent a connection request message to FS and is in this state waiting for an connection acknowledge from FS or a timeout.

Message	FC action
S_ACK	FS has accepted the connection attempt from FC. FC shall send a S_LOGON_REQ to FS and enter AWAIT_LOGON_ACK state.

3.4.4 State AWAIT_LOGON_ACK

FC has established a connection, and has sent a logon request to FS. FC is waiting for FS to acknowledge the logon request or a timeout.

Message	FC action
S_ACK	FC has successfully logged on and should send a S_CMD_START_REQ message to FS. This could either be the typical start-up sequence of first downloading protocol definitions, thereafter instrument definitions, before starting real-time update, or it could be a restart of real-time update.

3.4.5 State AWAIT_COMMAND_ACK

FC has issued a command to FS, and is waiting for FS to return an acknowledge on the command or a timeout.

Message	FC action
S_ACK	FS has accepted and initiated command sent by FC, and will process the command until it is terminated either by the FS (with S_CMD_END_REQ), or FC (by aborting the command by sending S_ABORT).
S_NAK	FS could not start the command from FC. This is an internal FS error, indicated by the status code returned with the S_NAK message.

3.4.6 State AWAIT_CMD_END

FC is receiving data from the FS, and proceeds until FS signals there is no more data to be transmitted or for the FS or FC to abort the data transfer due to an error.

Message	FC action
S_CMD_END	Command processing has ended in FS. The status of the processing is sent as parameter (see . FC shall respond by sending S_ACK to FS. If FC has further commands to be processed, a S_CMD_START_REQ should be send, and current state should be changed to AWAIT_CMD_START_ACK. If FC processing is finished, a FC should send a S_LOGOFF_REQ and change state to AWAIT_LOGOFF_ACK.
S_ENQ_REQ	FS has sent a probe to FC to see that it is alive and well. FC shall respond immediately by sending a S_ENQ_ACK, and returning the same sequence number as received in the S_ENQ_REQ.
<data>	Any application layer data (transactions) is messages not beginning with «S_», and should be processed by the FC application. Valid or known transactions are defined by the transaction definitions, available as a command. Others should be discarded (after reporting to the FC operator).
<ANY UNDEFINED>	This applies to any messages not handled above, i.e. unknown messages starting with «S_». FC shall discard the message, increment an internal error counter. If internal error counter exceeds a configured number of errors, the session should be aborted with S_ABORT, and a retry attempt could be made.

3.4.7 State AWAIT_LOGOFF_ACK

FC has logged off, and is waiting for an acknowledge from FS or a timeout.

Message	FC action
S_ACK	FC has logged off FS in an orderly manner, and should disconnect and finish processing.

3.5 INITIATING DATA TRANSFER COMMANDS

When the feed client has logged in, a data transfer can be initiated.

3.5.1 Batch sessions

The batch requests are sent from FC to FS, and the coding of the data content returned from FS to FC in response («transactions») is based on the same framework as with real-time information. The

batch type of transmission is used to distribute reference data like security name, ticker and ISIN code.

3.5.2 Real time sessions

There is only one command for ordering real-time information available to each client. This command has also a restart option. When the FC has logged in, a data transfer session can be initiated with the S_CMD_START_REQ message. In such a session, transactions containing “payload” data are transferred from the FS to the FC.

3.6 FC REQUESTS – “COMMANDS”

The following table is a list of the available commands that can be initiated from the FC in the S_CMD_START_REQ message:

Command	Parameter	Description
FIELDS_DEF	N/A	Send field definitions.
FIXED_DATA	N/A	Send security fixed information.
TRANSACTIONS_DEF	N/A	Send transaction definitions.
REALTIME	[; seqNo]	Send real-time information from start of trading day. If optional value <i>seqNo</i> is given and > 0, this implies a restart with transmission from the given sequence number.

Example:

```
S_CMD_START_REQ; FIELDS_DEF
(or)
S_CMD_START_REQ; REALTIME; 10234
```

3.7 FS RESPONSES – “TRANSACTIONS”

Transaction layout:

Item	Type	Range	Description
TransType	String		Transaction type identification, i.e. <i>TransTag</i> , is always the first value.
TransSeqNo	Integer	> 0	Transaction Global Sequence Number (GSN) is always the second value. GSN is only used for realtime data, i.e. empty for batch data.
<body>	N/A		One or more <i>fields</i> , see chapter 4.1.
<TD>	N/A	[<CR> +] <LF>	Transaction delimiter character sequence.

3.8 ERROR MESSAGES

If an error or timeout occur the FC will receive S_NAK or S_ABORT. If one of these instances occurs the FC shall disconnect and do a reconnection attempt.

See also chapter 3.1.

4 PRESENTATION AND ENCODING OF DATA

This chapter describes the presentation or the “packaging” of the application layer information content, and relates to the “presentation layer” of the OSI reference model.

4.1 TRANSACTION META-FORMAT

A meta-format description of the transactions from the news feed server:

```
{Trans} = {Head} + {Body} + <TD>
{Head} = {TransType} + <SC> + {TransSeqNo}
{Body} = {Field1}[ + {Field2}...{Fieldn}]
{Fieldn} = <SC> + {Tagp} [ + {Valuep}]
```

Special characters are:

```
<TD> = {transactionDelimiterChar}[<CR>+]4<LF> = [ASCII (13)+] ASCII (10) ]
<SC> = {separatorChar}';' = ASCII (59)
<AC> = {arraySeparatorChar}',' = ASCII (44)
<EC> = {escapeChar}'\' = ASCII (92)
```

- [] – optional items are in brackets
- { } – item names are in braces
- Tαβλϵ 70 – special characters

4.2 SPECIAL CHARACTERS

The following special characters are used:

Character	Description
TdtransactionDelimiterChar	Transaction delimiter character used to separate transactions. ASCII (10) = <LF> (Line Feed). An additional Carriage Return ASCII (13) = <CR> (<CR><LF>) will also be interpreted as a TD.
ScseparatorChar	Separator character that is used to separate fields and also used in the head to separate the head elements. ASCII (59) = ';'.
AarraySeparatorChar	Array value separator character used to separate array values. ASCII (44) = ','.

⁴ <CR> is optional

EcescapeChar	Escape character. Used in strings to escape special character so that they are interpreted as ASCII characters rather than characters with a special handling during decoding of the transaction. ASCII (92) = '\
--------------	---

4.3 TRANSACTION HEAD

The transaction *Head* consist of a *TransType* and a *TransSeqNo*:

Item	Description
TransType	Transaction type, a string that describes the type of data in the transaction.
TransSeqNo	Transaction sequence number, a sequence number that identifies the transaction uniquely even across different sessions. It will typically be used by the client to restart communication from a defined point. The sequence number starts at 1 for the first transaction each day. The transactions have increasing numbers, but may increase by more than 1 from one transaction to another depending on the client's configuration. Only transactions received after ordering REALTIME data (see chapter3.6) will have a transaction sequence number. For all other transactions, this field will be empty.

4.4 TRANSACTION BODY

The transaction *Body* consists of one or more *Fields* that consists of a *Tag* and a *Value*:

Item	Description
Tag	Field name or identifier. The tag is encoded and delimited this way: The tag characters are always in set [A..Z, a..z,0..9]. The length of the tag is arbitrary, but the last character is always a lower-case character in the set [a..z]. If the first character of the tag is in set [a..z], this means that the tag has a length of 1 character, if in set [A..Z,0..9], it means that the tag has a length of more than 1 characters.
Value	Field value. The field value will be one of the defined value types, and is implicitly determined by the tag and its specification. The value can be omitted for a field, and in that case the value implicitly is will be NULL (see chapter 0) for the field.

4.5 UNKNOWN FIELD TAGS

If the client parser detects unknown field tags, these should be discarded, allowing for introduction of new fields on the server side.

4.6 NULL FIELD VALUES

A field does always contain a tag, but not necessarily have a value corresponding to the tag. If the tag's existence is carrying sufficient information, the value may be omitted. This should be interpreted as the field has a NULL value (which is void and undefined) as opposed to a value of 0.0 (which is valid and defined). See also chapter 0.

4.7 FIELD VALUE TYPES

Type	Encoded as	Description
Char[n]	ccc	fixed number of ASCII characters in set of [A..Z,a..z,0..9] AlphaChar is ASCII subset [A..Z, a..z] NumChar is ASCII subset [0..9] Number of characters is given in braces.
String(n)	sss	String of characters in a set defined by ISO Latin-1 character set (ISO8859-1). Embedded special characters will be escaped with escapeChar (i.e. embedded escapeChar, separatorChar, arraySeparatorChar and delimiterChar characters). An indication on maximum length may be given in parenthesis. It should be noted that this value can be changed on short notice.
Date	yyyymmdd	Year yyyy[0000-], month mm[01-12], date dd[01-31] Always encoded as 8 NumChar
Time	hh[mm[ss [...]]]	Time – hour hh[0-23], minute mm[0-59], second ss[0-59] etc. – Encoded as 2,4,6 or >6 digits NumChar. 12 => 12:00:00 (2 digits is hour) 1234 => 12:34:00 (4 digits is hour and minute) 123456 => 12:34:56 (6 digits is hour, minute and second) 123456789 => 12:34:56.789 (>6 digits is including sec. Fractions)
Integer	[-]n	Signed or unsigned integral number ⁵ .
Float	[-]n[.n]	Signed floating-point number ⁶ . Decimal point and decimals may be omitted
IntVec	i ₁ ,i ₂ ,..i _n	Vector of arbitrary length containing Int values, separated by arraySeparatorChar
FloatVec	f ₁ ,f ₂ ,..f _n	Vector of arbitrary length containing Float values, separated by arraySeparatorChar
StringVec	s ₁ ,s ₂ ,..s _n	Vector of arbitrary length containing String values, separated by arraySeparatorChar
None	N/A	No value associated with the field. The presence of the field itself carries sufficient information

⁵All *integer* values can be represented as an integral number, unless otherwise specifically noted.

⁶ All *float* values may have up to 14 significant digits

4.8 FIELDS AND NULL VALUES

Field values should on the client side be initialized to a distinct NULL (i.e. “not defined”) value at the start of the trade-day and set when a non-NULL value when actual values are received from the news feed server. A field consisting of a tag without a corresponding value shall be interpreted as NULL value. Fields that are defined for a transaction but not disseminated from the news feed server, should be handled as unchanged.

Example:

Unique identifier for a security “isinCode” with tag “i” is only applicable for news attached to a specific security. If the server should not disseminate data for this value, it would be represented as [i;]. When isin is present, it will be represented as e.g. [iNO0010263023;].

5 TRANSACTION AND FIELDS

This chapter describes all fields and which transactions they may occur in. A field tag may be of variable length, and a lowercase *alphaChar* character marks the last character.

5.1 REAL TIME TRANSACTIONS

5.1.1 NewsItem (n)

Field name	Field tag
newsHeader	Nh
newsLength	Nl
newsMsg	Nm
compld	Cld
isinCode	i
issuerSymbol	ISYm
newsSource	Ns
newsType	Nt
newsTypeEnglish	NTe
newsURL	URLn
newsMessageld	Nld
Timestamp	t
newsLanguage	NLa
newsCorrectionId	NCld

5.2 BASIC DATA TRANSACTIONS (BATCH)

5.2.1 Equity (Be)

Field name	Field tag
isinCode	i
marketCode	Mc
secName	Sn
symbol	s

compld	CId
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5.2.2 Bond (Bb)

Field name	Field tag
isinCode	i
marketCode	Mc
secName	Sn
symbol	s
compld	CId

5.2.3 Issuers (Bc)

Field name	Field tag
compld	CId
compName	Cn
issuerSymbol	ISYm

5.2.4 Fields (Bf)

Field name	Field tag
description	Ds
fieldType	Ft
name	n
tag	TAg
validFrom	Vf
validTo	Vt

5.2.5 Transactions (Bt)

Field name	Field tag
command	CMd
description	Ds
name	n
tag	TAg

5.2.6 FeedEvent (Fe)

Field name	Field tag
description	Ds
timestamp	t

5.3 FIELD DESCRIPTIONS

This table contains all available fields in the feed. Tags may be of variable length. A lowercase character marks the last character. This table is sorted by field names.

Field name	Field tag	Field type	Description
compId	CId	Integer	Company identification
compName	Cn	String	Company name
fieldType	Ft	String	Field type
isinCode	i	Char[12]	Unique identifier for security
issuerSymbol	ISYm	String	Symbol for issuer
newsCorrectionId	NCId	Integer	Reference to a previously distributed news message to be corrected by the current one
newsHeader	Nh	String	Header for a news message
newsId	NId	Integer	News identification
newsLanguage	NLa	String	Specifies the language of the news message. Not mandatory field.
newsLength	NI	Integer	Number of characters in the news message body, including any escape-characters. Maximum 50000 characters
newsMsg	Nm	String	News message
newsSource	Ns	IntegerVector	News message sources. See table “News source values” for available values
newsType	Nt	String	Type of the news (Norwegian Language)
newsTypeEnglish	Nte	String	Type of news (English language)
newsURL	URLn	String	URL (Uniform Resource Locator) pointing to OB’s website, where the news message can be looked up
secName	Sn	String	Security name
symbol	s	String	Symbol for security
validFrom	Vf	Date	First official date for the field <i>Fieldname</i> on the feed
validTo	Vt	Date	Last official date for the field <i>Fieldname</i> on the feed

5.4 CONSTANT VALUES FOR SPECIFIC FIELDS

5.4.1 marketCode (Mc) – Oslo markets

Value	Description
1	Oslo Børs Equities
2	Oslo Børs Bonds
3	Oslo Børs Derivatives
4	Oslo Axxess
7	Nordic ABM
8	External
29	Merkur Market

31	VINX equity indices
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5.4.2 marketCode (Mc) – Dublin market

Value	Description
50	Dublin (XDUB)

5.4.3 newsSource (Ns) – Oslo markets

Value	Description
1	Oslo Børs
2	Nordic ABM
3	Oslo Axess
4	Merkur Market

5.4.4 newsSource (Ns) – Dublin market

Value	Description
50	Dublin (XDUB)

5.4.5 newsType (Nt)/ newsTypeEnglish (Nte) – Oslo markets

Nt values	Nte values
ANNEN INFORMASJONSPLIKTIG REGULATORISK INFORMASJON	ADDITIONAL REGULATED INFORMATION REQUIRED TO BE DISCLOSED UNDER THE LAWS OF A MEMBER STATE
BØRSPAUSE / HANDELSPAUSE	MATCHING HALT
DERIVATMELDINGER	DERIVATIVE NOTICES
EKS.DATO	EX DATE
ENDRINGER I RETTIGHETENE TIL AKSJER / VERDIPAPIRER	CHANGES IN THE RIGHTS ATTACHING TO THE CLASSES OF SHARES OR SECURITIES
FLAGGING	MAJOR SHAREHOLDING NOTIFICATIONS
HALVÅRSRAPPORTER OG REVISJONSBERETNINGER / UTTALELSER OM FORENKLET REVISORKONTROLL	HALF YEARLY FINANCIAL REPORTS AND AUDIT REPORTS / LIMITED REVIEWS
IKKE-INFORMASJONSPLIKTIGE PRESSEMELDINGER	NON-REGULATORY PRESS RELEASES
INNSIDEINFORMASJON	INSIDE INFORMATION
KAPITAL- OG STEMMERETTSENDRINGER	TOTAL NUMBER OF VOTING RIGHTS AND CAPITAL
MELDING FRA ANDRE AKTØRER	ANNOUNCEMENT FROM OTHER PARTICIPANTS
MELDING FRA OSLO BØRS	ANNOUNCEMENT FROM OSLO BØRS
MELDEPLIKTIG HANDEL FOR PRIMÆRINNSIDERE	MANDATORY NOTIFICATION OF TRADE PRIMARY INSIDERS
MELDING FRA FINANSTILSYNET	ANNOUNCEMENT FROM THE FSA
MELDING FRA NORGES BANK	ANNOUNCEMENT FROM NORGES BANK
NOTERING / OPPTAK AV VERDIPAPIRER	LISTING / ADMISSION OF SECURITIES
PROSPEKT / OPPTAKSDOKUMENT	PROSPECTUS / ADMISSION DOCUMENT

Nt values	NTe values
RAPPORTERING OM BETALING TIL MYNDIGHETER (LAND-FOR-LAND RAPPORTERING)	PAYMENTS TO GOVERNMENTS
RENTEREGULERING	ADJUSTMENT OF INTEREST RATE
SLUTTKURSER DERIVATER	CLOSING PRICES DERIVATIVES
SUSPENSJONER	TRADING HALTS
SÆRLIG OBSERVASJON	SPECIAL OBSERVATION
UTSTEDERS MELDEPLIKT VED HANDEL I EGNE AKSJER	ACQUISITION OR DISPOSAL OF THE ISSUER'S OWN SHARES
VALG AV HJEMSTAT	HOME MEMBER STATE
ÅRSRAPPORTER OG REVISJONSBERETNINGER	ANNUAL FINANCIAL AND AUDIT REPORTS

5.4.6 newsType (Nt)/ newsTypeEnglish (NTe) – Dublin market

Nt values	NTe values
Irish Regulatory	Irish Regulatory

5.4.7 Renamed newsTypes

5.4.7.1 Renamed 1

Nt value	NTe value
MELDEPLIKTIG HANDEL	MANDATORY NOTIFICATION OF TRADE

Renamed to:

MELDEPLIKTIG HANDEL FOR PRIMÆRINNSIDERE	MANDATORY NOTIFICATION OF TRADE PRIMARY INSIDERS
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5.4.7.2 Renamed 2

Nt value	NTe value
INFORMASJON FRA OSLO BØRS	INFORMATION FROM OSLO EXCHANGE

Renamed to:

MELDING FRA OSLO BØRS	ANNOUNCEMENT FROM OSLO BØRS
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5.4.7.3 Renamed 3

Nt value	NTe value
INFORMASJON FRA ANDRE AKTØRER	INFORMATION FROM OTHER PARTICIPANTS

Renamed to:

MELDING FRA ANDRE AKTØRER	ANNOUNCEMENT FROM OTHER PARTICIPANTS
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5.4.7.4 Renamed 4

Nt value	NTe value
NYHETER1	NEWS1

Renamed to:

MELDING FRA NORGES BANK	ANNOUNCEMENT FROM NORGES BANK
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5.4.8 List of new newsTypes

Nt value (new)	NTe value (new)
ANNEN INFORMASJONSPLIKTIG REGULATORISK INFORMASJON	ADDITIONAL REGULATED INFORMATION REQUIRED TO BE DISCLOSED UNDER THE LAWS OF A MEMBER STATE
ENDRINGER I RETTIGHETENE TIL AKSJER / VERDIPAPIRER	CHANGES IN THE RIGHTS ATTACHING TO THE CLASSES OF SHARES OR SECURITIES
FLAGGING	MAJOR SHAREHOLDING NOTIFICATIONS
HALVÅRSRAPPORTER OG REVISJONSBERETNINGER / UTTALELSER OM FORENKLET REVISORKONTROLL	HALF YEARLY FINANCIAL REPORTS AND AUDIT REPORTS / LIMITED REVIEWS
INNSIDEINFORMASJON	INSIDE INFORMATION
KAPITAL- OG STEMMERETTSENDRINGER	TOTAL NUMBER OF VOTING RIGHTS AND CAPITAL
RAPPORTERING OM BETALING TIL MYNDIGHETER (LAND-FOR-LAND RAPPORTERING)	PAYMENTS TO GOVERNMENTS
RENTEREGULERING	ADJUSTMENT OF INTEREST RATE
UTSTEDERS MELDEPLIKT VED HANDEL I EGNE AKSJER	ACQUISITION OR DISPOSAL OF THE ISSUER'S OWN SHARES
VALG AV HJEMSTAT	HOME MEMBER STATE
ÅRSRAPPORTER OG REVISJONSBERETNINGER	ANNUAL FINANCIAL AND AUDIT REPORTS

5.4.9 List of removed newsTypes

Nt value (removed)	NTe value (removed)
ANDRE MELDINGER	OTHER ANNOUNCEMENTS
AUKSJONSKALENDER KORTE STATSPA	AUCTION CALENDAR TREASURY BILL
AUKSJONSKALENDER STATSOBLIGASJ	AUCTION CALENDAR GOVERNMENT BON
AVTALER	AGREEMENTS
FINANSIELL KALENDER	FINANCIAL CALENDAR
FINANSIELL RAPPORTERING	FINANCIAL REPORT
FISJON / FUSJON	DEMERGER / MERGER
FLAGGING	DISCLOSURE REQUIREMENT
GENERALFORSAMLINGSINFO	GENERAL MEETING INFORMATION
INDEKSINFORMASJON	INDEX INFORMATION
UTVIDET MELDING/INFORMASJONSDOKUMENT	DETAILED ANNOUNCEMENT/INFORMATION DOCUMENT
KAPITALENDRINGER / UTBYTTEOPPLYSNINGER	SHARE CAPITAL CHANGES / DIVIDEND INFORMATION
NYHETER2	NEWS2
NYHETER STATSGJELD	NEWS GOVERNMENT DEBT
OBLIGASJONSHENDELSER	FIXED INCOME NEWS
OPPKJØP	ACQUISITIONS

Nt value (removed)	NTe value (removed)
PETROLEUM RESERVER	PETROLEUM RESERVES
RESULTAT KORTE STATSPAPIRER	RESULT OF TREASURY BILL AUCTION
RESULTAT STATSOBLIGASJONER	RESULT OF GOVERNMENT BOND AUCTION
RESULTATUTSIKTER	EARNINGS GUIDANCE
SØKNAD	APPLICATION
UTLEGGELSE AV STATSOBLIGASJONER	ISSUANCE OF GOVERNMENT BONDS
UTLEGGELSE KORTE STATSPAPIRER	ISSUANCE OF TREASURY BILLS
VEDTAK	RESOLUTIONS
RESULTAT STATSOBLIGASJONER - TILBAKEKJØP	RESULT OF GOVERNMENT BOND AUCTION - BUYBACK
UTLEGGELSE AV STATSOBLIGASJONER - UTVIDELSE	ISSUANCE OF GOVERNMENT BONDS - REOPENING
UTLEGGELSE KORTE STATSPAPIRER - UTVIDELSE	ISSUANCE OF TREASURY BILLS - REOPENING
ÅRSOVERSIKT	ANNUAL INFORMATION

5.4.10 Mapping removed newsTypes to new newsTypes

Below is a description of how to map the new and the old news types in order to keep historical records:

5.4.10.1 Mapping 1

Nt value (removed)	NTe value (removed)
FINANSIELL RAPPORTERING	FINANCIAL REPORT

Will be mapped to:

Nt value (new)	NTe value (new)
HALVÅRSRAPPORTER OG REVISJONSBERETNINGER / UTTALELSER OM FORENKLET REVISORKONTROLL	HALF YEARLY FINANCIAL REPORTS AND AUDIT REPORTS / LIMITED REVIEWS

5.4.10.2 Mapping 2

Nt value (removed)	NTe value (removed)
ANDRE MELDINGER	OTHER ANNOUNCEMENTS
AVTALER	AGREEMENTS
FISJON / FUSJON	DEMERGER / MERGER
GENERALFORSAMLINGSINFO	GENERAL MEETING INFORMATION
NYHETER2	NEWS2
NYHETER STATSGJELD	NEWS GOVERNMENT DEBT
OBLIGASJONSHENDELSER	FIXED INCOME NEWS
OPPKJØP	ACQUISITIONS
RESULTAT KORTE STATSPAPIRER	RESULT OF TREASURY BILL AUCTION
RESULTAT STATSOBLIGASJONER	RESULT OF GOVERNMENT BOND AUCTION
RESULTATUTSIKTER	EARNINGS GUIDANCE
UTLEGGELSE AV STATSOBLIGASJONER	ISSUANCE OF GOVERNMENT BONDS
UTLEGGELSE KORTE STATSPAPIRER	ISSUANCE OF TREASURY BILLS

Nt value (removed)	NTe value (removed)
RESULTAT STATSOBLIGASJONER - TILBAKEKJØP	RESULT OF GOVERNMENT BOND AUCTION - BUYBACK
UTLEGGELSE AV STATSOBLIGASJONER - UTVIDELSE	ISSUANCE OF GOVERNMENT BONDS - REOPENING
UTLEGGELSE KORTE STATSPAPIRER - UTVIDELSE	ISSUANCE OF TREASURY BILLS - REOPENING

Will be mapped to:

Nt value (new)	NTe value (new)
INNSIDEINFORMASJON	INSIDE INFORMATION

5.4.10.3 Mapping 3

Nt value (removed)	NTe value (removed)
FLAGGING	DISCLOSURE REQUIREMENT

Will be mapped to:

Nt value (new)	NTe value (new)
FLAGGING	MAJOR SHAREHOLDING NOTIFICATIONS

5.4.10.4 Mapping 4

Nt value (removed)	NTe value (removed)
KAPITALENDRINGER / UTBYTTEOPPLYSNINGER	SHARE CAPITAL CHANGES / DIVIDEND INFORMATION

Will be mapped to:

Nt value (new)	NTe value (new)
KAPITAL- OG STEMMERETTSENDRINGER	TOTAL NUMBER OF VOTING RIGHTS AND CAPITAL

5.4.10.5 Mapping 5

Nt value (removed)	NTe value (removed)
AUKSJONSKALENDER KORTE STATSPA	AUCTION CALENDAR TREASURY BILL
AUKSJONSKALENDER STATSOBLIGASJ	AUCTION CALENDAR GOVERNMENT BON
FINANSIELL KALENDER	FINANCIAL CALENDAR
UTVIDET MELDING/INFORMASJONSDOKUMENT	DETAILED ANNOUNCEMENT/INFORMATION DOCUMENT
PETROLEUM RESERVER	PETROLEUM RESERVES
SØKNAD	APPLICATION

Will be mapped to:

Nt value (new)	NTe value (new)
ANNEN INFORMASJONSPLIKTIG REGULATORISK INFORMASJON	ADDITIONAL REGULATED INFORMATION REQUIRED TO BE DISCLOSED UNDER THE LAWS OF A MEMBER STATE

5.4.10.6 Mapping 6

Nt value (removed)	NTe value (removed)
INDEKSINFORMASJON	INDEX INFORMATION
VEDTAK	RESOLUTIONS

Will be mapped to:

Nt value (renamed)	NTe value (renamed)
MELDING FRA OSLO BØRS	ANNOUNCEMENT FROM OSLO BØRS

5.4.11 newsLanguage (NLa)

Value	Description
NO	Norwegian
EN	English

