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XML Messaging Reference Guide Version 2.0 (FRS)

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1. Introduction

1.1 Revision history

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1.2 Background

The FRS (Fartygsrapporteringsystemet) system is a system for handling reports from ships bound for ports in Sweden. FRS is also the Swedish part of SafeSeaNet (SSN).

SafeSeaNet is a distributed network that links the maritime administrations of the EU Member States (including Norway) together. SSN is based on the directive no 2002/59/EC of the European Parliament and the Council, establishing a Community vessel traffic and monitoring system. SSN is linked up to the Member States through one focal point per state (NCA), and for Sweden it is the Swedish Maritime Administration.

The general principle of SSN is that all factual information is stored locally at the NCA and whenever information change, a notification is sent to the Central Index database (SSN). Whenever a Member State needs information that is not stored in its own database, a request is sent to the Central Index database for the information. All message communication in this network is done through the Internet with defined XML-messages.

1.3 Scope of this document

FRS provides reporting facilities by a web-browser interface, a XML-based interface or a EDI interface.

This document describes the XML-based interface.

1.4 Document Overview

The second chapter provides a global overview of the FRS system.

The third chapter provides a global overview of the FRS functions.

The fourth chapter describes the used messages in detail.



2. FRS System Overview

2.1 Scope of FRS

The FRS (Fartygsrapporteringsystemet) system is a system for handling reports from ships bound for ports in Sweden. FRS is also the Swedish part of the SafeSeaNet (SSN).

In this version handles reports for:

- Port visit (according to directive no 2002/59/EC of the European Parliament and the Council)
- Dangerous Goods declaration (according to directive no 2002/59/EC of the European Parliament and the Council)
- Waste report (according to directive no 2000/59/EC of the European Parliament and the Council).
- Alert report

It also provides functions for:

- Statistic summaries
- Report summaries
- Notifications to SSN (Ship, Hazmat, Port and Alert)
- Requests from SSN (Ship and Hazmat)

2.2 Data encoding

Every XML message exchanged between FRS and the different systems must be UTF-8 encoded. The chosen language is English.



3. FRS Functional Services Overview

3.1 Overview

3.1.1 Introduction

FRS provides services enabling Customers to report in information about vessels. Relevant parts of the information are sent to other Customer systems, for example SSN or different ports.

The Customer systems will act as data providers (by sending notifications to FRS). Some systems may also act as data requesters (by asking FRS for detailed information about previous notifications). At present, only SafeSeaNet will be acting as data requester. FRS also provides Customer systems to subscribe information for a specific port.

FRS will provide three different interfaces to help the Customers to communicate with the FRS system:

- A browser-based web interface,
- A XML message-based interface and
- A EDI message-based interface

This document aims only at describing the XML message-based interface that will enable the Customer applications to communicate programmatically with the FRS system.

This chapter aims at describing, at a higher level, the functional services offered by FRS, and how they should be implemented in terms of activities and exchange of XML messages between the FRS system and the Customer applications.

3.1.2 FRS browser-based web interface

FRS provides a browser-based web interface to help Customers to communicate manually and visually with the FRS system. The browser-based web interface enables the Customers to:

- Manually send notifications to FRS (by filling in web forms)
- Manually view detailed information about previously sent notifications (by filling in web forms and viewing results)

The web application is hosted by the FRS system and accessible via the Internet.

The description of the default browser-based web interface is out of the scope of this document. It is described in a separate document.



3.1.3 FRS XML message-based interface

FRS will also provide a XML message-based interface to enable the Customer applications to communicate programmatically with the FRS system. The XML message-based interface consists of a set of XML messages fulfilling the needs of both data requesters and data providers.

This chapter aims at identifying all XML messages and describing how and when they should be used in the process flow of the different FRS functional services.



3.2 Definition of a Data Provider

3.2.1 Introduction

In FRS, a Data Provider is a Customer owning information about vessels, and making it available by sending notifications to FRS. This section explains the responsibilities of a Data Provider and how it may interact with the FRS system. As described earlier, FRS provides two different interfaces to enable data providers to send notifications to the FRS system:

- The default browser-based web interface
- The XML message-based interface,
- The EDI message-based interface.

3.2.2 Types of data providers

Mainly there are two types of data providers that may be encountered:

- Data Providers already having their own databases to store vessel movements and manifest details in XML format.
- Data Providers still having their own detailed information being stored in paper format.

For data providers already equipped with central stores, they will more likely implement the FRS XML message-based interface for sending notifications. Data providers storing information in paper format will likely use the browser-based web interface.

3.2.3 XML message-based interface for data provider

The XML message-based interface supplied by FRS enables automated communication between a Customer application and the FRS system. The XML message-based interface consists of a set of XML messages fulfilling the needs for providing data (as well as requesting data).

In terms of data provider's responsibilities, the XML message-based interface provides XML messages enabling a Customer application (acting as Data Provider) to send notifications to the FRS system

Obviously, such interface requires some development effort in terms of implementing the set of XML messages described in this document. Nevertheless, for data providers already equipped with central stores, automating the data provider services using this XML message-based interface can quickly provide benefits like sending notifications faster and reducing the risk of typo error (no need for manual typing).

The XML messages related to the data provider's responsibilities are easily identified through the naming convention. The data provider sends **FRS_<FRS_Not_Type>_Not** XML notification message to FRS and receives **FRS_Receipt** XML message back as confirmation.



3.3 Description of the “Send Notifications” process

3.3.1 Overview

This process outlines the flow of activities performed when a Customer (acting as Data Provider) sends information about a vessel to FRS.

3.3.2 Notification Types

Notifications can be of the following different types:

Type	Description
Port	Used to notify FRS that a given vessel is bound for a particular port with an estimated time of arrival and with a number of persons aboard. Note that the destination port can be ‘unknown’ (then cancelling a previous port notification).
Hazmat	Used to notify FRS about dangerous goods onboard a vessel.
Waste	Used to notify FRS about the amount waste onboard a vessel.

3.3.3 Flow

The information may also be reported to FRS using the web application.

Description of the flow:

Step	Description
1	The Customer application prepares the <i>FRS_<FRS_Tx_Type>_Not</i> XML message and sends it to FRS.
2	FRS logs and validates the notification message. <ul style="list-style-type: none"> If valid, FRS stores the notification information, and sends back the <i>FRS_Receipt</i> XML message with a positive status code as response (synchronous connection). If invalid or any problem during the processing of the notification, FRS sends back the <i>FRS_Receipt</i> XML message with a negative status code as response (asynchronous connection).
3	The Customer application analyzes the received XML response and processes it accordingly.



3.4 Description of the “Subscription” process

3.4.1 Overview

This process outlines the flow of activities performed when FRS (acting as Data Provider) gets some information about a port visit that a Customer systems subscribes to. To be put up as a subscriber, please contact the Swedish Maritime Administration.

3.4.2 Versions

FRS generates subscription messages in two versions for Hazmat and Waste. The messages will be put in different destinations so the customers can choose version them self. We recommend using version 2.0 since 1.0 will lack some values and have some values converted. For conversion rules see Conversion rules under FRS_Waste_Not.xml messages and FRS_Hazmat_Not.xml messages.

3.4.3 Notification Types

Subscribe notifications can be of the following different types:

Type	Description
Port	Used to notify that a given vessel is bound for the port with an estimated time of arrival and with a number of persons aboard. Note that a port-message with actioncode = ‘Delete’ indicates that a previously reported port visit for this vessel is to be deleted. The deletion includes also the eventual hazmat and waste reports for this port visit. Even if hazmat and waste reports are deleted, FRS will send just a Port-notification to the subscribers.
Hazmat	Used to notify about dangerous goods onboard a vessel bound to the port.
Waste	Used to notify about the amount waste onboard a vessel.

3.4.4 Flow

Description of the flow:

Step	Description
1	FRS gets information about a port visit, that the Customer system provides. The information can be delivered via the web-interface or via the XML-interface.



2	FRS logs and validates the information. <ul style="list-style-type: none">• If valid, FRS stores the information, prepares one or many notification messages to the subscribing Customer system. The notification messages can be one or many of the following:<ul style="list-style-type: none">○ <i>FRS_Port_Not,</i>○ <i>FRS_Hazmat_Not,</i>○ <i>FRS_Waste_Not.</i>
3	The Customer application analyzes the received XML messages and processes it accordingly.



4. FRS XML Messages

4.1 Overview

FRS aims at collecting maritime data related to vessels from various sources and exchanging selected information with the rest of EU via a central system, SafeSeaNet. The collection and exchange of information will be ensured through the use of XML messages.

The exchange of data required by the different processes will be performed using XML messages. The different XML messages for sending information to/from FRS are the following:

- Send Port Notification
- Send Hazmat Notification
- Send Waste Notification

External systems may request information from the FRS system using the following XML messages:

- Get Hazmat Notification Details
- Get Ship Notification Details

At present, the only system requesting information is SSN. Other Customer systems may receive information from FRS but is then triggered by information updates relevant for the Customer.

This chapter describes the XML messages exchanged between FRS and the Customer systems.



4.2 Conventions

4.2.1 Overview

This section presents the conventions used for improving the understanding the description of the XML messages.

4.2.2 Conventions used in this chapter

The tables used to describe the XML messages provide the following information:

- Item
- Occ (Occurrence) Type
- Len (Length)
- Description

The information is described in the following sections.

4.2.2.1 Item

Item indicates the name of the item. A *XML element* is indicated in ***bold & italic***. An attribute is indicated by normal typing.

4.2.2.2 Occ

Occ shows the expected occurrence of the element or attribute.

The value	Indicates
1	A mandatory item.
0-1	An optional item but if present, the item must be unique.
0-n	An optional item. When present, it may appear more than once.
1-n	A mandatory item. The item may also appear more than once.

4.2.2.3 Type

The Type-column indicates the data type of the attribute.

The value	Indicates
Text	A sequence of characters (string).
DT	Date and Time in Local format as 'YYYY-MM-DDThh:mm:ss'.
Date	Date as 'YYYY-MM-DD'
Enum	Enumeration giving the list of possible values . The possible values are case sensitive (Ex. PDF, DOC) and will be listed in bold .
Int	Integer value between -2147483648 and 2147483647.
Uri	Uniform Resource Identifier reference.
Choice	Allows one and only one of the elements contained in the selected group to be present within the containing element (exclusive choice).

4.2.2.4 Len

The Len-column indicates the length of the attribute.

The value	Indicates
n	A fixed length where 'n' the number of characters.
m-n	A variable length where "m" is the minimum length and "n" is the maximum length.

4.2.2.5 Description

The Description-column describes the items and the possible values of the attribute.



4.2.3 Conventions for naming the XML messages

4.2.3.1 Namespace

In version 2.0 of FRS XML messages a namespace is mandatory. Since only Waste_Not and Hazmat_Not exist in version 2.0 the namespace is only mandatory in these messages.

The namespace follows Sjöfartsverkets standards for namespace and has the following structure:

http://www.sjofartsverket.se/scheme/frs/<Type_Not>/2.0

For Hazmat_Not it looks like this:

http://www.sjofartsverket.se/scheme/frs/Hazmat_Not/2.0

4.2.3.2 Root element

The root element of each XML message gives the name of the message and must then be used to identify whether the message is a notification, an information request or a response to an information request, and the type of the notification or information request (port, ship, etc).

4.2.3.3 Naming convention

The names of the messages are always built as follows (except for the special FRS_Receipt XML message) – “<Direction>_<FRS_Tx_Type>_<MsgType>”.

Name part	Possible values	Description
<Direction>	FRS	Message sent by a NCA application to the central SafeSeaNet system or sent by the central SafeSeaNet system to a NCA application
<FRS_Tx_Type>	Port	Port Notification
	Hazmat	Hazmat Notification
	Alert	Alert Notification
<MsgType>	Not	The message consists of a notification



	Req	The message consists of a request for notification details
	Res	The message consists of a response to a request for notification details

Member States acting as Data requesters should send or receive (process) the following XML messages (only if they do not want to use the FRS default browser-based web interface but implement their own interface):

Member States acting as Data providers should receive (process) or send the following XML messages:

FRS_<FRS_Tx_Type>_Not (send notification to FRS)

FRS_<FRS_Tx_Type>_Req (receive request from FRS)

FRS_<FRS_Tx_Type>_Res (send response to FRS)



4.2.4 XML Structure and Schema Definition (XSD)

4.2.4.1 General structure of the XML Messages

The structure of every XML message is the following:

```

<Root element>

    <Header>...</Header>

    <Body>...</Body>

</Root element>

```

Element or node	Description
Root element	Gives the name of the XML message (see Naming convention above for more details).
Header	There is always a Header node giving “non business” information about the current FRS transaction (such as reference id for correlation, sending and expiration timestamp, global status code and status message...).
Body	There is always a Body node (except when a XML response must be sent corresponding to a request which format was invalid) giving the “business” information of the current FRS transaction. Such “business” information consists of one or more node element(s) containing different attributes.

4.2.4.2 XSD of the XML messages

The XML Schema Definition (XSD) of all the XML messages will be supplied separately in an electronic format.

XSD (XML Schema Definition), a Recommendation of the World Wide Web Consortium (W3C), specifies how to formally describe the elements in an Extensible Markup Language (XML) document.

4.2.4.3 From and To attributes

The *From* and *To* attributes of the Header element node of every XML message is used to identify the sender and the recipient of the message. FRS will use the following convention as internal identification of the FRS stakeholders:

The central FRS system will be identified under the name ‘FRS’.



4.2.4.4 Versioning

The official version of the XML specifications will be specified through the Version attribute of the Header element of any XML message. FRS now supports XML-version 1.0 for all messages and 2.0 for Waste, and Hazmat messages.

FRS will only support the two latest versions of the XML specifications. That means that, prior to using a new version of the XML specifications, all Stakeholders must have upgraded to the latest version.



4.2.5 Validation of the XML messages

4.2.5.1 Validation principle

When receiving a XML message, the FRS system as well as all Customer applications must check whether it is a “Well Formed” XML document (i.e. a document that conforms to the XML syntax rules) and must validate it against its XML Schema definition (XSD).

If an error is detected, an ‘InvalidFormat’ status code (in the StatusCode attribute of the Header element node) must be returned within the XML message that should normally follow in the flow of the transaction.

The StatusMessage attribute of the Header element node can also be used to communicate more information about the error (see example below).

4.2.5.2 Invalid Notification

When a XML Notification (*FRS_<FRS_Tx_Type>_Not*) validation fails, a *FRS_Receipt* XML message is sent back to the caller with status code ‘InvalidFormat’.



4.2.6 ID Correlation between the XML messages in a transaction

4.2.6.1 Header Attributes

Knowing that the exchange of the XML messages between the Customer applications and FRS is asynchronous, one special attributes has been defined in the Header element node of the XML messages to allow the correlation between Request and Response:

- RefId given by the Stakeholder Applications

4.2.6.2 RefId

'Refid' consists of a unique identifier (the format is free to choose provided it's XML compliant) generated by a Customer application for identifying a port visit. A port visit is defined as one visit (arrival and departure) at a port. All reports due to a port visit must use the same RefId.

'Refid' is inserted in the RefId attribute of the Header element node of the initial *FRS_<FRS_Tx_Type>_Not XML* message.



4.2.7 Location code

Location code is the United Nations Code for Trade and Transport Locations (UN/Locode). The first two characters indicate the country in which the port is located. The next three characters indicate the location. For example SELYS is used to for the port of Lysekil in Sweden.

If the port is a Swedish unknown port, Locode 'SEUKN' may be used. If it is an unknown port elsewhere, Locode 'UNKWN' may be used.

4.2.8 Status Codes, Status Messages and Action Codes

4.2.8.1 Status Code

A status code is defined in every FRS XML response/receipt message. It is defined as the StatusCode attribute of the Header element with the following enumerated set of values:

Attribute value	Description
InvalidFormat	The corresponding XML request/notification/response message was not valid.
Timeout	The corresponding XML request/notification message has not been processed within time (according to the TimeoutValue attribute).
ServerError	The corresponding XML request/notification message has not been successfully processed due to a server problem (e.g. connection problem, database problem, application problem...).
OK	The notification has been successfully processed or the notification details requested in the corresponding XML request message has been found.
NotFound	The notification details requested in the corresponding XML request message do not exist. This value may only be used in an XML response message.
NotAvailable	The data provider system is temporarily unavailable (e.g. due to planned and announced maintenance).
AccessDenied	The user (identified via the From attribute of the Header element) is not allowed to send the corresponding XML request/notification or doesn't exist.



4.2.8.2 Status Message

Next to the StatusCode attribute, there's always a corresponding StatusMessage attribute that might be used to specify an optional message giving more detailed information about the status code value.

As that status message (free text) could be useful for debugging purpose, it is recommended to insert message text in English.

Please refer to the description of the XML messages for more details.

4.2.8.3 Action Code

The action code is defined in every *_HAZMAT_NOT, *_PORT_NOT and *_WASTE_NOT. It indicates the following status:

New	Indicates that the message is new.
Update	Indicates that the message contains an update of the information of a former message.
Delete	Indicates that the information in a former message should be deleted.



4.3 Receipt XML message

4.3.1 FRS_receipt

4.3.1.1 Introduction

The goal of the *FRS_Receipt.xml* message receipt is twofold:

- It must be sent by FRS as the confirmation message (indicating whether the notification message has been successfully validated and processed, or not) to every notification message (*FRS_<FRS_Not_Type>_Not*) received from a Customer.
- When a received response (*FRS_<FRS_Tx_Type>_Res*) is not well-formatted (not XML compliant) or not valid (not compliant to corresponding XSD), this message receipt must be sent to indicate an InvalidFormat error.

4.3.1.2 Scenarios

4.3.1.3 Message description

The following table describes the XML message used for the transaction.

Attribute value	Occ	Type	Len	Description
<i>Header</i>	<i>1</i>	-	-	<i>Header Node</i>
Version	1	Text	3	Current version of the FRS XML specification
TestId	0-1	Text	1-8	Test Case identification. Only useful for testing.
RefId	1	Text	1-36	Reference number given by the Customer
PortVisitId	0-1	Text	7	Port visit identification.
SentAt	1	Date	19	Message creation local date and time
From	1	Text	3-8	“FRS”
To	1	Text	3-8	The name of the originator of the message
StatusCode	1	Enum		Global status code.
StatusMessage	0-1	Text	0-255	Global status message string



4.4 Send Notifications

4.4.1 Introduction

This section describes the different XML messages that may be used by Customers to send information to FRS, or used by FRS to send information to a Customer. A *FRS_Receipt* XML message will be returned as response to a notification when FRS receives notifications. The different types of notifications (<FRS_Not_Type>) are:

- Port
- Hazmat
- Waste

4.4.2 FRS_Port_Not.xml messages

4.4.2.1 Introduction

The *FRS_Port_Not.xml* message is sent by the Customer in order to report that a given vessel is bound to a particular port with an estimated time of arrival and a number of persons aboard, and by FRS to notify a subscriber of this information.

4.4.2.2 Message description

The following table describes the XML message used for the transaction.

Attribute value	Occ	Type	Len	Description
<i>Header</i>	1	-	-	<i>Header Node</i>
Version	1	Text	3	Current version of the FRS XML specification
RefId	1	Text	1-36	Reference number Given by the Customer when sending a port notification to FRS. Given by FRS when sending subscription messages to customers.
PortVisitId	0-1	Text	1-36	Port visit identification
SentAt	1	DT	19	Message creation local date and time
From	1	Text	3-8	The name of the originator of the message. All subscription messages will use 'FRS' as the originator of the message



Attribute value	Occ	Type	Len	Description
To	1	Text	3-8	The name of the receiver of the message. When sending to FRS use "FRS" as receiver name
DocumentType	1	Text	1-10	Type of document. e.g.. 'Port_Not' Subscription messages from FRS will have the prefix 'FRS_' e.g. 'FRS_Port_Not'
ActionCode	1	Text	1-6	Action code for message, possible values are: <ul style="list-style-type: none"> ▪ Update ▪ New ▪ Delete
<i>Body</i>	<i>1</i>	<i>-</i>	<i>-</i>	<i>Body node</i>
<i>VesselInformation</i>	<i>1</i>	<i>-</i>	<i>-</i>	<i>VesselIdentification element node</i>
IMONumber	0-1	Text	7	IMO number of the vessel. Mandatory if MMSI number not given.
MMSINumber	0-1	Text	9	MMSI number of the vessel. Mandatory if IMO number not given.
CallSign	1	Text	1-7	Call sign of the vessel.
ShipName	1	Text	1-35	Name of the vessel
FlagState	0-1	Text	3	Flagstatecode of country. Ex Sweden=265. Mandatory if MMSINumber not given
GrossTonnage	0-1	Int	-	Not Implemented
VesselType	0-1	Text	1-3	Type code of Vessel
INFClass	0-1	Enum		Code for the license of the vessel according to INF Code. Possible values are: <ul style="list-style-type: none"> • INF1 • INF2 • INF3
ExDGD	0-1	Text	1-5	Indicates if the vessel is not obliged to report dangerous goods Possible values are: <ul style="list-style-type: none"> • True • False



Attribute value	Occ	Type	Len	Description
<i>VoyageInformation</i>	1	-	-	<i>VoyageInformation element node</i>
ExDGD	0-1	Text	1-5	Indicates if this port visit is not obliged to report any dangerous goods Possible values are: <ul style="list-style-type: none"> • True • False
<i>Arrival_Information</i>	1	-	-	<i>Arrival_Information element node</i>
ETA	0-1	DT	19	Date and time of the estimated time of arrival at next port of call. Use the time zone of the next port of call and the format YYYY-MM-DDThh:mm:ss. May only be optional if NextPortOfCall attribute value is unknown (this may only occur due to a cancellation of a port notification message).
Crew	1	Int	1-5	Total number of crew onboard. 99999 if actually unknown.
Passengers	1	Int	1-5	Total number of passengers onboard. 99999 if actually unknown.
CompulsoryPilotage	1	Enum		Valid values are: <ul style="list-style-type: none"> • True • False
PilotageRequest	1	Enum		Valid values are: <ul style="list-style-type: none"> • True • False
ActualDraught	0-1	Dec		Actual draught of the vessel.
ContactInfo	0-1	Text	0-100	Contact information for port or authority, if additional information needed when unloading vessel. Recommended information is company name and phone number.
<i>PilotageInformation</i>	1	-	-	<i>Preliminary pilotage information element node</i>



Attribute value	Occ	Type	Len	Description
PilExeCerNo	0-5	Text	6-7	Identification number of the pilot exemption certificate, allowing exemption from compulsory pilotage.
<i>Departure_Information</i>	1	-	-	<i>Departure_Information element node</i>
ETD	0-1	DT	19	Date and time of the estimated time of departure from next port of call (ETD > ETA). Use the time zone of next port of call and the format (YYYY-MM-DDThh:mm:ss). May only be optional if NextPortOfCall attribute value is unknown (this may only occur due to a cancellation of a port notification message).
ATD	0-1	DT	19	Date and time of the actual time of departure from next port of call (ATD > ETA). Use the time zone of next port of call and the format (YYYY-MM-DDThh:mm:ss).
Crew	1	Int	1-5	Total number of crew onboard. 99999 if actually unknown.
Passengers	1	Int	1-5	Total number of passengers onboard. 99999 if actually unknown.
CompulsoryPilotage	1	Enum		Valid values are: <ul style="list-style-type: none"> • True • False
PilotageRequest	1	Enum		Valid values are: <ul style="list-style-type: none"> • True • False
ActualDraught	0-1	Dec		Actual draught of the vessel
ContactInfo	0-1	Text	0-100	Contact information for port or authority, if additional information needed when unloading vessel. Recommended information is company name and phone number.
<i>PilotageInformation</i>	1	-	-	<i>Preliminary pilotage information element node</i>
PilExeCerNo	0-5	Text	6-7	Identification number of the pilot exemption certificate, allowing exemption from compulsory pilotage.



Attribute value	Occ	Type	Len	Description
<i>Position_ArrivalTo</i>	1	-	-	<i>Position_ArrivalTo</i> element node
Locode	0-1	Text	5	Location code (UN/Locode) of arrival port of call or the arrival anchorage of call. Contact Sjöfartsverket for valid Locodes.
Latitude	0-1	Int		Latitude in 1/10000 min (+/- 90 degrees; North=positive ; South=negative; 91=not available). Examples: 91°(north)→54600000 -90°(south)→-54000000 0°0'1"(north)→167 50°50'(north)→30500000
Longitude	0-1	Int		Longitude in 1/10000 min (+/- 180 degrees; East=positive ; West=negative; 181=not available). Examples: 181°(east)→108600000 -180°(west)→-108000000 0°0'1"(east)→167 4°20'(east)→2600000
<i>Position_LastPort</i>	1	-	-	<i>Position_LastPort</i> element node
Locode	0-1	Text	5	Location code (UN/Locode) of last port of call or the last anchorage of call. Contact Sjöfartsverket for valid Locodes.
Latitude	0-1	Int		Latitude in 1/10000 min (+/- 90 degrees; North=positive ; South=negative; 91=not available). Examples: 91°(north)→54600000 -90°(south)→-54000000 0°0'1"(north)→167 50°50'(north)→30500000
Longitude	0-1	Int		Longitude in 1/10000 min (+/- 180 degrees; East=positive ; West=negative; 181=not available). Examples: 181°(east)→108600000 -180°(west)→-108000000 0°0'1"(east)→167 4°20'(east)→2600000
<i>Position_NextPort</i>	1	-	-	<i>Position_NextPort</i> element node
Locode	0-1	Text	5	Location code (UN/Locode) of next port of call or the next anchorage of call. Contact Sjöfartsverket for valid Locodes.



Attribute value	Occ	Type	Len	Description
Latitude	0-1	Int		Latitude in 1/10000 min (+/- 90 degrees; North=positive ; South=negative; 91=not available). Examples: 91°(north)→54600000 -90°(south)→-54000000 0°0'1''(north)→167 50°50'(north)→30500000
Longitude	0-1	Int		Longitude in 1/10000 min (+/- 180 degrees; East=positive ; West=negative; 181=not available). Examples: 181°(east)→108600000 -180°(west)→-108000000 0°0'1''(east)→167 4°20'(east)→2600000

4.4.2.3 Example

```

<?xml version="1.0" encoding="utf-8" ?>
<FRS_Port_Not>
  <Header>
    <Version>1.0</Version>
    <RefId>3.0_D1_11_N_050415-01</RefId>
    <PortVisitId></PortVisitId>
    <SentAt>2004-05-31T13:00:00</SentAt>
    <From>Test1</From>
    <To>FRS</To>
    <DocumentType>Port_Not</DocumentType>
    <ActionCode>New</ActionCode>
  </Header>
  <Body>
    <VesselInformation>
      <IMONumber>0230401</IMONumber>
      <MMSINumber>765230401</MMSINumber>
      <Callsign>T3D01</Callsign>
      <Shipname>M/S T3D01</Shipname>
      <FlagState>765</FlagState>
      <GrossTonnage>16</GrossTonnage>
      <VesselType>bbu</VesselType>
      <INFClass>INF1</INFClass>
      <ExDGD>False</ExDGD>
    </VesselInformation>
    <VoyageInformation>
      <ExDGD>False</ExDGD>
      <Arrival_Information>
        <ETA>2004-06-28T13:20:00</ETA>
        <Crew>8</Crew>
        <Passengers>120</Passengers>
        <CompulsoryPilotage>True</CompulsoryPilotage>
        <PilotageRequest>False</PilotageRequest>
        <ActualDraught>15.32</ActualDraught>
        <ContactInfo>Kontaktperson tel 11111</ContactInfo>
        <PilotageInformation>
          <PilExeCerNo>999-111</PilExeCerNo>
          <PilExeCerNo>999-222</PilExeCerNo>
          <PilExeCerNo>999-333</PilExeCerNo>
          <PilExeCerNo>999-444</PilExeCerNo>
          <PilExeCerNo>999-555</PilExeCerNo>
        </PilotageInformation>
      </Arrival_Information>
      <Departure_Information>
        <ETD>2004-06-29T13:20:00</ETD>
        <ATD>2004-06-29T15:20:00</ATD>
        <Crew>9</Crew>
        <Passengers>125</Passengers>
        <CompulsoryPilotage>True</CompulsoryPilotage>
        <PilotageRequest>False</PilotageRequest>
        <ActualDraught>19.32</ActualDraught>
        <ContactInfo>Kontaktperson tel 222222</ContactInfo>
        <PilotageInformation>
          <PilExeCerNo>011-111</PilExeCerNo>
          <PilExeCerNo>011-222</PilExeCerNo>
          <PilExeCerNo>011-333</PilExeCerNo>
        </PilotageInformation>
      </Departure_Information>
    </VoyageInformation>
  </Body>
</FRS_Port_Not>

```



```
                <PilExeCerNo>011-444</PilExeCerNo>
                <PilExeCerNo>011-555</PilExeCerNo>
            </PilotageInformation>
        </Departure_Information>
        <Position_ArrivalTo>
            <Locode>SEGOT</Locode>
        </Position_ArrivalTo>
        <Position_LastPort>
            <Locode>SEDEG</Locode>
        </Position_LastPort>
        <Position_NextPort>
            <Locode>SENRK</Locode>
        </Position_NextPort>
    </VoyageInformation>
</Body>
</FRS_Port_Not>
```



4.4.3 FRS_Hazmat_Not.xml messages

4.4.3.1 Introduction

The *FRS_Hazmat_Not.xml* message is sent by a Customer in order to report dangerous goods for a given vessel and port-visit, and by FRS to notify a subscriber of this information.

A Hazmat-notification must always be preceded with a port-notification (*FRS_Port_Not*) with information regarding the port visit.

4.4.3.2 News in version 2.0

New information in version 2.0

- Namespace, “http://www.sjofartsverket.se/scheme/frs/Hazmat_Not/2.0”
- CargoManifestURL and CargoManifestDocType
- TechnicalNameCode

There are some new and changed validation rules, see message description for all the details.

4.4.3.3 Conversion rules for version 1.0 to version 2.0

- Since no new fields are mandatory, they will not be assign any values.
- CargoManifestOnboard is omitted in version 2.0

4.4.3.4 Message description

The following table describes the XML message used for the transaction.

Attribute value	Occ	Type	Len	Description
<i>Header</i>	1	-	-	<i>Header Node</i>
Version	1	Text	3	Current version of the FRS XML specification
RefId	1	Text	1-36	Reference number Given by the Customer when sending a hazmat notification to FRS. Given by FRS when sending a subscription message to customers.
PortVisitId	0-1	Text	1-36	Port visit identification
SentAt	1	DT	19	Message creation local date and time



Attribute value	Occ	Type	Len	Description
From	1	Text	3-8	The name of the originator of the message. All subscription messages will use 'FRS' as the originator of the message
To	1	Text	3-8	The name of the receiver of the message. When sending to FRS use "FRS" as receiver name
ActionCode	1	Text	1-6	Action code for message, possible values are: <ul style="list-style-type: none"> ▪ Update ▪ New ▪ Delete
DocumentType	1	Text	1-10	Type of document. e.g. 'Hazmat_Not' Subscription messages from FRS will have the prefix 'FRS_' e.g. 'FRS_Hazmat_Not'
ArrDepCode	1	Text	1	Indicates if the Hazmat notification is bound to the ships arrival or departure. A = Arrival, D = Departure
<i>Body</i>	<i>1</i>	<i>-</i>	<i>-</i>	<i>Body node</i>
<i>NotificationDetails</i>	<i>1</i>	<i>-</i>	<i>-</i>	<i>NotificationDetails element node.</i>
<i>CargoInformation</i>	<i>1</i>	<i>-</i>	<i>-</i>	<i>CargoInformation element node</i>
INFClass	0-1	Enum		Code for the license of the vessel according to INF Code. Possible values are: <ul style="list-style-type: none"> • INF1 • INF2 • INF3
CargoManifestURL	0-1	Text		The URL to the Manifest document.
CargoManifestDocType	0-1	Text		Document type of the Manifest document
<i>DPG</i>	<i>1-9999</i>			<i>DPG element node describing each type of dangerous goods on board.</i>
BookingNr	0-1	Text	0-15	Booking number.
LoadPort	1	Text	1-50	Load port
DischargePort	1	Text	1-50	Discharge port
TechnicalName	1	Text	1-450	Technical name of DPG



Attribute value	Occ	Type	Len	Description
TechnicalNameCode	1	Enum		Technical name code of DPG. Possible values are: <ul style="list-style-type: none">• IMDG• IBC• IGC• BC• Marpol
UNNumber	0-1	Text	4	UN number of DPG. If the DPG have a UN number this information is mandatory
IMOHazardClass	0-1	Text	1-7	IMO Hazard class (IMDG-IBC-IGC codes) of DPG
PackGroup	0-1	Enum		Type of Packgroup. Possible values are: <ul style="list-style-type: none">• 0• 1• 2• 3
<i>WeightGross</i>	<i>0-1</i>	<i>Choice</i>		<i>WeightGross</i> element specifying the gross weight of the dangerous good. Mandatory if <i>WeightNet</i> not present.
UnitOf Measurement	1	Enum	-	Indication of the unit of measurement in which the weight (mas) is expressed. Possible values are: <ul style="list-style-type: none">• KGM (kilogram)• TNE (Metric tonne)
GrossQuantity	1	Text	1-18	Gross weight of the dangerous goods including respectively their packing, but without the equipment used by the carrier for their transport.
<i>WeightNet</i>	<i>0-1</i>	-	-	<i>WeightNet</i> element specifying the net weight of the dangerous good. Mandatory if <i>WeightGross</i> not present.



Attribute value	Occ	Type	Len	Description
UnitOfMeasurement	1	Enum	-	Indication of the unit of measurement in which the weight (mas) is expressed. Possible values are: <ul style="list-style-type: none"> • KGM (kilogram) • TNE (Metric tonne)
NetQuantity	1	Text	1-18	Net weight of the dangerous goods excluding respectively their packing, and without the equipment used by the carrier for their transport.
PlacementOfGoods	0-99	-	-	<i>PlacementOfGoods element describing the location of goods which are not in containers.</i>
LocationOnBoardGoods	1	Text	1-25	The following formats for Stowage cells are recommended: <p>If container vessels as per ISO standard: Bay/Row/Tier in format: BBBRRTT. If Bay number is less than 3 characters it must be filled with leading zeros, e.g. "0340210".</p> <p>If feeder vessels as per ISO standard: Hatch/Tier/Row in format: HHTTTRR. If hatch number is less than 3 characters it must be filled with leading zeroes.</p> <p>If ro-ro vessels: Deck/Bay/Row/Tier in format: DDBBBRRTT</p> <p>If general cargo vessels: 3 to 9 characters, format:</p> <ul style="list-style-type: none"> • firstly 3 characters (mandatory) for the cell number (01, 02, etc. with a further indication: S (starboard), P (Portside) of C (Centre)); • secondly 3 characters (optional) for the indication of the deck level: <ul style="list-style-type: none"> ○ WED = weather deck 0 ○ TD9 = tween deck 9 ○ ... ○ TD1 = tween deck 1 ○ LOH = lower hold • thirdly 3 characters (optional) for a further indication within a hold, e.g. hatch covers. <p>If tanker vessel: tank number.</p>
PlacementOfGoodsInContainer	0-99	-	-	<i>PlacementOfGoodsInContainer element specifying the placement of the container which contains the dangerous good.</i>



Attribute value	Occ	Type	Len	Description
TransUnitId	1	Text	1-17	Identification number of cargo transport unit (if no tanks)
LocationOnBoardContainer	1	Text	1-25	<p>Location of container which contains the dangerous good on board of ship. The following formats for Stowage cells are recommended:</p> <p>If container vessels as per ISO standard: Bay/Row/Tier in format: BBBRRTT. If Bay number is less than 3 characters it must be filled with leading zeros, e.g. "0340210".</p> <p>If feeder vessels as per ISO standard: Hatch/Tier/Row in format: HHHTTRR. If hatch number is less than 3 characters it must be filled with leading zeroes.</p> <p>If ro-ro vessels: Deck/Bay/Row/Tier in format: DDBBBRRTT</p> <p>If general cargo vessels: 3 to 9 characters, format:</p> <ul style="list-style-type: none"> • firstly 3 characters (mandatory) for the cell number (01, 02, etc. with a further indication: S (starboard), P (Portside) of C (Centre)); • secondly 3 characters (optional) for the indication of the deck level: <ul style="list-style-type: none"> ○ WED = weather deck ○ TD9 = tween deck 9 ○ ... ○ TD1 = tween deck 1 ○ LOH = lower hold • thirdly 3 characters (optional) for a further indication within a hold, e.g. hatch covers.
<i>ContactDetails</i>	1	-	-	<i>Contact details node</i>
Url	0-1	Text	0-50	Contact Url. Mandatory if Name not specified.



Attribute value	Occ	Type	Len	Description
DocType	0-1	Enum		Supported document formats. Mandatory if Url specified. Possible value are: <ul style="list-style-type: none"> • HTML • PDF • DOC • TXT • XML
Name	0-1	Text	0-50	Name of contact person. Mandatory if Url not specified.
LoCode	0-1	Text	5	Location code of contact person. Mandatory if Url not specified.
Phone	0-1	Text	1-20	Phone number of contact person. Mandatory if Url not specified.
Fax	0-1	Text	1-20	Fax number of contact person. Mandatory if Url not specified.
EMail	0-1	Text	0-50	Email of contact person.
<i>VoyageInformation</i>	1	-	-	<i>Voyage Information node</i>
ETD	1	DT	19	When ArrDepCode=A then ETD is the estimated time of departure from previous port or area of anchorage. When ArrDepCode=D then ETD is the estimated time of arrival at the next port or area of anchorage. Use the time zone of the port notification arriving port and the format YYYY-MM-DDThh:mm:ss



4.4.3.5 Example

```

<ns0:FRS_Hazmat_Not xmlns:ns0="http://www.sjofartsverket.se/scheme/frs/Hazmat_Not/2.0">
  <Header>
    <Version>2.0</Version>
    <RefId>4.2_12_N_061005-02</RefId>
    <PortVisitId></PortVisitId>
    <SentAt>2006-10-05T13:00:00</SentAt>
    <From>Test1</From>
    <To>FRS</To>
    <ActionCode>New</ActionCode>
    <DocumentType>Hazmat_Not</DocumentType>
    <ArrDepCode>A</ArrDepCode>
  </Header>
  <Body>
    <NotificationsDetails>
      <CargoInformation>
        <CargoManifestURL>CargoManifestURL</CargoManifestURL>
        <CargoManifestDocType>PDF</CargoManifestDocType>
        <DPG>
          <BookingNr>222</BookingNr>
          <LoadPort>SESTO</LoadPort>
          <DischargePort>SEUDD</DischargePort>
          <TechnicalName>carbon dioxide</TechnicalName>
          <TechnicalNameCode>IMDG</TechnicalNameCode>
          <UNNumber>1013</UNNumber>
          <IMOHazardClass>2.2</IMOHazardClass>
          <WeightGross>
            <UnitOfMeasurement>TNE</UnitOfMeasurement>
            <GrossQuantity>450</GrossQuantity>
          </WeightGross>
          <WeightNet>
            <UnitOfMeasurement>KGM</UnitOfMeasurement>
            <NetQuantity>23</NetQuantity>
          </WeightNet>
          <PlacementOfGoods>
            <LocationOnboardGoods>Location 1</LocationOnboardGoods>
          </PlacementOfGoods>
          <PlacementOfGoods>
            <LocationOnboardGoods>Location 2</LocationOnboardGoods>
          </PlacementOfGoods>
          <PlacementOfGoodsInContainer>
            <TransUnitId>34</TransUnitId>
          </PlacementOfGoodsInContainer>
        </DPG>
        <DPG>
          <BookingNr>3333</BookingNr>
          <LoadPort>SESTO</LoadPort>
          <DischargePort>SEUDD</DischargePort>
          <TechnicalName>Butanols</TechnicalName>
          <TechnicalNameCode>IMDG</TechnicalNameCode>
          <UNNumber>1120</UNNumber>
          <IMOHazardClass>3</IMOHazardClass>
          <PackGroup>2</PackGroup>
          <WeightGross>
            <UnitOfMeasurement>KGM</UnitOfMeasurement>
            <GrossQuantity>4</GrossQuantity>
          </WeightGross>
          <WeightNet>
            <UnitOfMeasurement>KGM</UnitOfMeasurement>
            <NetQuantity>2</NetQuantity>
          </WeightNet>
          <PlacementOfGoods>
            <LocationOnboardGoods>Location 1</LocationOnboardGoods>
          </PlacementOfGoods>
          <PlacementOfGoods>
            <LocationOnboardGoods>Location 2</LocationOnboardGoods>
          </PlacementOfGoods>
          <PlacementOfGoodsInContainer>
            <TransUnitId>b-34</TransUnitId>
          </PlacementOfGoodsInContainer>
        </DPG>
      </CargoInformation>
    </NotificationsDetails>
  </Body>
</ns0:FRS_Hazmat_Not>

```



```
                </PlacementOfGoodsInContainer>
            </DPG>
        </CargoInformation>
        <ContactDetails>
            <Url>lenktilmanifestdokument</Url>
            <DocType>PDF</DocType>
            <Name>Svensson Lars</Name>
            <LoCode>Segot</LoCode>
            <Phone>+46 45 56 78</Phone>
            <Fax>+46 78 66 55</Fax>
            <EMail>Kalle@sverige.se</EMail>
        </ContactDetails>
        <VoyageInformation>
            <ETD>2006-11-01T00:20:00</ETD>
        </VoyageInformation>
    </NotificationsDetails>
</Body>
</ns0:FRS_Hazmat_Not>
```



4.4.4 FRS_Waste_Not.xml messages

4.4.4.1 Introduction

The *FRS_Waste_Not.xml* message is sent by a Customer to FRS in order to report Waste for a given vessel and port-visit, and by FRS to notify a subscriber of this information.

A Hazmat-notification must always be preceded with a port-notification (*FRS_Port_Not*) with information regarding the port visit

4.4.4.2 News in version 2.0

- Namespace, http://www.sjofartsverket.se/scheme/frs/Waste_Not/2.0
- Date and port for last delivery of sludge, PreviousDepositDateSludge, PreviousDepositPortSludge
- Date and port for last delivery of solid waste, PreviousDepositDateSolidWaste and PreviousDepositPortSolidWaste
- If the information for AmountDeposit, AmountLeftOnboard or EstimatedGeneratedWaste it's possible to supply NA as value (Not applicable)
- AmountDeposit, AmountLeftOnboard, EstimatedGeneratedWaste and CapacityOnBoard now support decimals.
- NextDepositPort only take locodes, not anchorage

There are some new and changed validation rules, see message description for all the details.

4.4.4.3 Conversion rules for version 1.0 to version 2.0

- Since no new fields are mandatory, they will not be assign any values.
- PortLastDisch and DateLastDisch is omitted in version 2.0

4.4.4.4 Message description

The following table describes the XML message used for the transaction.

Attribute value	Occ	Type	Len	Description
Header	1	-	-	Header Node
Version	1	Text	3	Current version of the FRS XML specification



Attribute value	Occ	Type	Len	Description
RefId	1	Text	1-36	Reference number. Given by the Customer when sending a waste notification to FRS. Given by FRS when sending subscription messages to customers.
SentAt	1	DT	19	Message creation local date and time
From	1	Text	3-8	The name of the originator of the message. All subscription messages will use 'FRS' as the originator of the message
To	1	Text	3-8	The name of the receiver of the message. When sending to FRS use 'FRS' as receiver name
ActionCode	1	Text	1-6	Action code for message, possible values are: <ul style="list-style-type: none"> ▪ Update ▪ New ▪ Delete
PortVisitId	0-1	Text		Port visit identification
DocumentType	1	Text	1-10	Type of document. e.g. 'Waste_Not' Subscription messages from FRS will have the prefix 'FRS_' e.g. 'FRS_Waste_Not'
<i>Body</i>		-	-	<i>Body Node</i>
<i>WasteInformation</i>	1	-	-	<i>Waste information node</i>
PreviousDepositDateSolidWaste	0-1	DT	19	Date of previous deposit date for solid waste. If PreviousDepositPortSolidWaste is supplied then this information is mandatory
PreviousDepositPortSolidWaste	0-1	Text	1-10	Previous deposit port or Area for solid waste (UN/Locode). If PreviousDepositDateSolidWaste is supplied then this information is mandatory
PreviousDepositDateSludge	0-1	DT	19	Date of previous deposit date for sludge. If PreviousDepositPortSludge is supplied then this information is mandatory



Attribute value	Occ	Type	Len	Description
PreviousDepositPortSludge	0-1	Text	1-10	Previous deposit port or Area for sludge (UN/Locode). If PreviousDepositDateSludge is supplied then this information is mandatory
<i>WasteList</i>	1-9999	-	-	Waste list node
TypeOfWaste	1	Int	1-4	Type of waste Possible values: 10, Waste oils 20, Garbage 30, Sewage 40, Cargo-associated waste 50, Cargo residues
SpecificationOfWaste	1	Int	1-4	Specification of waste Possible values If TypeOfWaste is 10 (Waste oils) 1, Sludge 2, Bilge water 3, Specify If TypeOfWaste is 20 (Garbage) 1, Food waste 2, Plastic 3, Specify If TypeOfwaste is 30 (Sewage) 1, Sewage If TypeOfWaste is 40 (Cargo-associated waste) 1, Specify If TypeOfWaste is 50 (Cargo residues) 1,Specify
NameOfWaste	0-1	Text	1-100	Name of waste Must only be supplied if SpecificationOfWaste has a value corresponding to the text 'Specify'
CapacityOnBoard	1	Double	1-4	Capacity onboard (m ³) Must be grater then the sum of AmountLeftOnbord and EstimatedGeneratedWaste



Attribute value	Occ	Type	Len	Description
AmountDeposit	1	String	1-4	The amount of waste deposit (m ³). Use 'NA' if not relevant and use '.' as separator for decimal numbers
AmountLeftOnboard	1	String	1-4	The amount of waste kept on board (m ³). Use 'NA' if not relevant and use '.' as separator for decimal numbers
EstimatedGeneratedWaste	1	String	1-4	Estimated generated waste until next port (m ³). Use 'NA' if not relevant and use '.' as separator for decimal numbers
NextDepositPort	0-1	Text	1-10	Next deposit port (Un/Locode). If AmountLeftOnBord is lager then 0 and not NA NextDepositPort is mandatory.

4.4.4.5 Example

```

<ns0:FRS_Waste_Not xmlns:ns0="http://www.sjofartsverket.se/scheme/frs/Waste_Not/2.0">
  <Header>
    <Version>2.0</Version>
    <RefId>v4.2_13_N_20061005_01</RefId>
    <SentAt>2006-10-09T15:15:15</SentAt>
    <From>Test1</From>
    <To>FRS</To>
    <ActionCode>New</ActionCode>
    <PortVisitId></PortVisitId>
    <DocumentType>Waste_Not</DocumentType>
  </Header>
  <Body>
    <WasteInformation>
      <PreviousDepositDateSolidWaste>2006-10-02T00:00:00</PreviousDepositDateSolidWaste>
      <PreviousDepositPortSolidWaste>ISAKR</PreviousDepositPortSolidWaste>
      <PreviousDepositDateSludge>2006-10-01T00:00:00</PreviousDepositDateSludge>
      <PreviousDepositPortSludge>NLAMS</PreviousDepositPortSludge>
      <WasteList>
        <TypeOfWaste>10</TypeOfWaste>
        <SpecificationOfWaste>1</SpecificationOfWaste>
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