Report

META: Transport Status Request and Notification implementation guide

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VERSION	**DATE**
2.0	2013-09-25

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PROJECT NO.	**NUMBER OF PAGES/APPENDICES:**
102002330	48 pages / 2 annexes

Abstract

This implementation guide is established by the META project and addresses the implementation of the GS1-defined Transport Status transaction which is implemented by means of two messages: Transport Status Request and Transport Status Notification. These messages support status reporting on transport instructions and associated transport operation executions.

The report has a technical and a logical part. In the technical part the structure and the content of the messages are defined. In the logical part a scenario illustrates how the messages are to be used, and answers to frequent asked questions are provided together with message content examples.

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REPORT NO.	**ISBN**	**CLASSIFICATION**	**CLASSIFICATION THIS PAGE**
SINTEF A24919	978-82-14-05329-6	Unrestricted	Unrestricted

SINTEF

Message history

VERSION	DATE	VERSION DESCRIPTION
1.0.	2013-06-30	Preliminary version
2.0	2013-09-25	Final version

Foreword

This implementation guide is established by the META project. META is an acronym for More Efficient Transport with ARKTRANS, and addresses the improvement of freight transport by means of standardised information exchange in the transport chains. Focus has been on the ARKTRANS framework and its successor the European Common Framework for Freight Information Exchange as well as on the use of other frameworks and standards.

The META project is funded by the Research Council of Norway and by the participants which are ITS Norway, the TakeCargo transport portal, the logistic department of the consumer's cooperative society Coop, Short Sea Promotion Centre, the Norwegian Public Road Administration, the software company Timpex and the forwarder Tollpost Globe. The project is managed by SINTEF.

This implementation guide addresses the implementation of the GS1-defined Transport Status transaction between Logistics Service Clients and Logistics Service Providers. The guide is based on needs expressed by the stakeholders, and the solutions are also discussed with GS1 and other users of the Transport Status transaction, among others in the European projects e-Freight and iCargo.

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Terms and abbreviations

Abbreviation	Description
Code list	A list of fixed codes and corresponding values. Typically defined by global standardization bodies such as UNCEFACT, ISO, etc.
Common Framework	European initiative that spans several European research projects. Builds on the ARKTRANS framework.
Consignment	A logical composition of items related to logistics services. Focus is on how logistics units are packaged and transported.
Consignee	The receiver of the cargo from the leg addressed by the consignment
Consignor	The provider of the cargo to the leg addressed by the consignment. For a door-to-door transport the first consignor will be the sender.
GS1	Global Standards One
GSIN	Global Shipment Identification Number
GINC	Global Identification Number for Consignment
GRAI	Global Returnable Asset Identifier
GIAI	Global Individual Asset Identifier
GTIN	Global Trade Item Number
SGTIN	Serial Global Trade Item Number
SSCC	Serial Shipping Container Code
GLN	Global Location Number
ID	Identifier
LSC	Logistics Service Client. The role responsible for gathering information about a transport service as well as purchasing and following up a logistics service
LSP	Logistics Service Provider. The role responsible for announcing, selling and executing logistics services.
META	Mer Effektiv Transport med ARKTRANS (More Efficient Transport with ARKTRANS)
Message	One single XML structure being communicated between parties. A message is a part of a transaction.
OASIS	Organization for the Advancement of Structured Information Standards
Receiver	The final receiver of the cargo.
Shipper	The original shipper of the cargo.
Shipment	Trade items related to a commercial transaction which will be transported.
Transaction	The message exchange that takes place between two collaborating parties. May involve one or more messages in order to complete the transaction.
TI	Transport Instruction
TS	Transport Status
TSD	Transport Service Description
UBL	Universal Business Language. A library of standard electronic XML business messages.
urn	Uniform resource name. Intended to serve as persistent, location-independent identifiers for resources, allowing the simple mapping of namespaces into a single URN namespace. Defined in RFC 2141.
XML	eXtensible Markup Language. A markup language that defines a set of rules for encoding messages in a format that is both human-readable and machine-readable. Often used in web services to communicate messages between collaborating parties. Relies on XML Schemas (XSD).
XSD	XML Schema Definition. A schema describing the structure of an XML message.
XSLT	eXtensible Stylesheet Language Transformation

1 Introduction

This implementation guide is established by the META project and addresses the implementation of the Transport Status transaction which is implemented according to the GS1-defined Transport Status Request and Notification standard [1]. The transaction supports status reporting on transport instructions and associated transport operation executions.

The report has a technical and a logical part. In the technical part the structure and the content of the messages are defined. In the logical part a scenario illustrates how Transport Status transactions are used together with the Transport Instruction transactions (see Transport Instruction and Response implementation guide [2] for details on this transaction), and frequently asked questions are answered by means of guidelines and examples.

1.1 The META project

The META project is funded by the Research Council of Norway, ITS Norway, the TakeCargo transport portal; the logistic department of the consumer's cooperative society Coop; the freight operator Tollpost; Norwegian Public Road Administration; the Short Sea Promotion Centre; and the Timpex software company. META is managed by SINTEF.

To achieve more efficient, reliable, flexible and environmental friendly freight transport META aims to stimulate the implementation of standardised information exchange in transport chains in the Norwegian transport sector. This is done through an involvement in the standardisation processes of OASIS UBL and GS1 to ensure fulfilment of the requirements of the META participants. META has via participation in technical committees contributed to the establishment of the following standards:

- The GS1-defined Transport Instruction and Response [3]
- The GS1-defined Transport Status Request and Notification [1] (the main focus of this implementation guide)
- The OASIS UBL-defined Transport Service Description [4]

Together these standards represent a common way for information exchange in all phases of transport.

1.2 Transactions addressed

As described above, META addresses a family of transactions consisting of the Transport Service Description transaction, the Transport Instruction transaction and the Transport Status transaction. Assuming that a Logistics Service Clients (LSC) has a transport demand and a Logistics Service Provider (LSP) can provide a transport service, these transactions enable an LSC to find, initiate and follow up transport services provided by an LSP.

As indicated by Table 1, this implementation guide will focus on the Transport Status transaction. The other transactions and the associated messages have their own implementation guides.

Table 1 Transactions and messages

Transactions	Messages	Sender	Receiver	Addressed by
Transport Instruction	Transport Instruction	LSC	LSP	The Transport Instruction implementation guide [2]
	Transport Instruction Response	LSP	LSC	
Transport Status	Transport Status Request	LSC	LSP	This implementation guide
	Transport Status Notification	LSP	LSC	
Transport Service Description	Transport Service Description Request	LSC	LSP	The Transport Service Description implementation guide [5]
	Transport Service Description	LSP	LSC	

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1.2.1 Transport Service Description (TSD)

The Transport Service Description transaction supports acquisition and provision of information about relevant transport services by means of two messages:

- The Transport Service Description Request message defines a query which defines the properties of a service that is requested.
- The Transport Service Description message supports announcements of transport services in a standardised way that enable LSC to find relevant transport services.

The LSC issues a Transport Service Description Request message to a LSP which in turn returns a Transport Service Description message. A Transport Service Description may however also be issued independent of e Request to provide information about available services.

One of the foreseen usages of the Transport Service Description is that the LSC queries a repository of stored Transport Service Descriptions and receives one or more relevant Transport Service Descriptions in return. In Figure 1 this is however illustrated as an interaction between LSP and LSC since the realisation may be done in several ways. A repository may for example represent one or more LSPs.
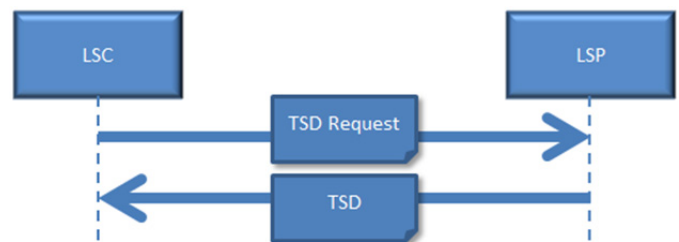

Figure 1 Transport Service Description transaction

1.2.2 Transport Instruction (TI)

Transport service call-offs are supported by two messages:

- The Transport Instruction message carries a request for a transport related service for any transport mode.
- The Transport Instruction Response message carries either an acceptance, a partial acceptance, an amendment or a rejection of the transport service request expressed by the Transport Instruction message.
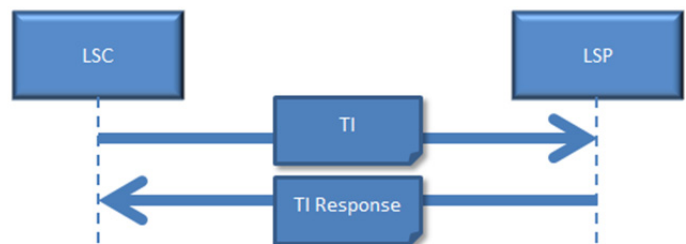
Figure 2 Transport Instruction transaction

The LSC issues a Transport Instruction to a LSP which in turn returns a Transport Instruction Response.

1.2.3 Transport Status (TS)

Transport status reporting is supported by two messages:

- The Transport Status Request message requests a status report.
- The Transport Status Notification message support status reporting both related to the entire transport and to the individual cargo units.

The LSC may issue a Transport Status Request resulting in a Transport Status Notification sent from the LSP, or a Transport Status Notification may be pushed from the LSP on events or according to agreements.

Figure 3 Transport Status Notification transaction

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1.3   Implementation guide content

This implementation guide has two parts, one part addressing technical issues and one part addressing logical issues related to the Transport Instruction transaction.

The technical part describes how relevant transactions are to be implemented.

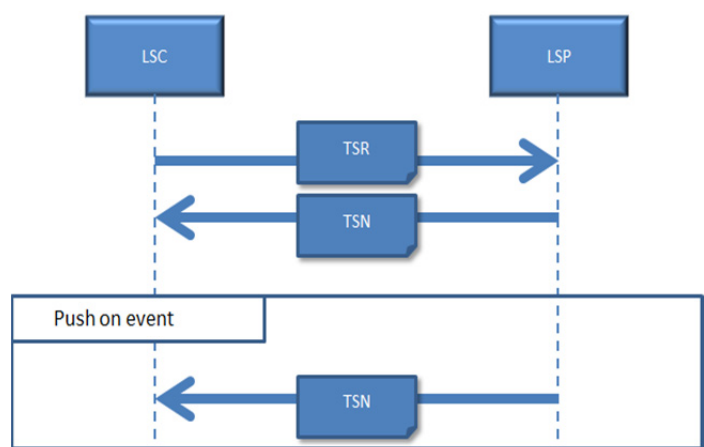- Chapter 2 defines the XML structures and content used to implement the Transport Status Request and Transport Status Notification messages as a data dictionary which explains the information elements.
- Chapter **Error! Reference source not found.** describes the code lists that are used

The logical part is technology independent and describes how the Transport Status transaction is used in transport management processes.

- Chapter 4 provides a scenario which explains the usage of Transport Status transactions related to Transport Instruction transactions. This scenario makes relevant references to Chapter **Error! Reference source not found.**.
- Chapter **Error! Reference source not found.** provides answers to frequent asked questions. XML examples are also included.
- Chapter 6 provides an overview of the services that support the exchange of the messages between the sender and the receiver.

The report also contains annexes

- Annex A provides some XML examples
- Annex B presents some code list modifications

Technical part

2 Message structure and content

This chapter describes the structure of the Transport Status Request and Transport Status Notification messages. The XSD schemas are available from the GS1 Web-site [6].

2.1 Transport Status Notification message structure and content

Table 2 provides an overview of the Transport Status Notification message structure, and the message elements are also defined by means of their data types, cardinality[1] (the C cloumn) and a textual description. Whenever an element is of the same type as a previous element, a reference is made to the line number the (# coloumn) where it is defined. Thus, each data type is only described once. Elements that are not to be used are marked with strike through.

Table 2 Transport Status Notification message structure and content

#	Message elements	Data type, etc.	C	Description
2	transportStatusNotificationMessage	Type: TransportStatusNotificationMessageType	1	
3	StandardBusinessDocumentHeader	Type: StandardBusinessDocumentHeader	1	The UN/CEFACT standard,. Contains information about routing and processing of the business document, identifies the message set sent together with on SBDH and the version number of the document(s) contained.
4	HeaderVersion	Type: string	1	Version number of the SBDH standard used.
5	Sender	Type: Partner	1..n	Sender of the message, party representing the organization which created the standard business document.
6	Identifier	Type: PartnerIdentification	1	A unique identification key for the Sender party. The value may be a GLN. Or another identifier. In cae of the latter the Authority attribute should be used to indicate the authority agency of the identification key.
7	ContactInformation	Type: ContactInformation	0..n	Conrtact information for contact person or department. The element although optional, SHOULD be used, if possible.
8	Contact	Type: string	1	Name of contact person or department. Although optional, should be used, if possible.
9	EmailAddress	Type: string	0..1	Email address of contact person or department according to ITU-T Recommendation E.123.
10	FaxNumber	Type: string	0..1	Fax number of contact person or department according to ITU-T Recommendation E.123.
11	TelephoneNumber	Type: string	0..1	Telephone number of contact person or department according to ITU-T Recommendation E.123.
12	ContactTypeIdentifier	Type: string	0..1	The role of the contact person or department, e.g. EDI coordinator.
13	Receiver	Type: Partner (see line 5)	1..n	Receiver of the message, party representing the organization which receives the standard business document.
14	DocumentIdentification	Type: DocumentIdentification	1	Identification information for the document
15	Standard	Type: string	1	The name of the document standard contained in the payload. The value of the element „Standard" MUST be set to the value „GS1"
16	TypeVersion	Type: string	1	The version number of the XSD schema used ine the payload of the message
17	InstanceIdentifier	Type: string	1	Identifies the instance of the transport instruction message. This identifier identifies this document as being distinct from others.
18	Type	Type: string	1	Identifies the type of the document, e.g. "Transport Instruction"
19	~~MultipleType~~	~~Type: boolean~~	~~0..1~~	~~TRUE if many different document types after the same header.~~ **~~Will not be used.~~**
20	CreationDateAndTime	Type: dateTime	1	The update time of this submission, e.g. 2006-03-23T01:00:78.000+02:00
21	~~Manifest~~	~~Type: Manifest~~	~~0..1~~	~~Attachments to the instruction.~~ **~~Will not be used.~~**

[1] The cardinality is the number of instances of this element that has to or can be provided

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#	Name	Type	Card.	Description
22	~~NumberOfItems~~	~~Type: integer~~	~~1~~	-
23	~~ManifestItem~~	~~Type: ManifestItem~~	~~1..n~~	~~-~~
24	~~MimeTypeQualifierCode~~	~~Type: MimeTypeQualifier~~	~~1~~	-
25	~~MimeQualifier~~	~~Type: string~~	~~1~~	-
26	~~UniformResourceIdentifier~~	~~Type: anyURi~~	~~1~~	-
27	~~Description~~	~~Type: string~~	~~0..1~~	~~-~~
28	~~LanguageCode~~	~~Type: Language~~	~~0..1~~	-
29	~~Language~~	~~Type: string~~	~~1~~	-
30	**BusinessScope**	Type: BusinessScope	0..1	Description of the complete business environment in which the SBDH and SBD will be processed. The business scope provides a basis to determine which rules are applicable to the transaction involving the enclosed business documents.
31	**Scope**	Type: Scope	0..n	
32	**ScopeAttributes**	Group	1	
33	Type	Type: string	1	Name of XSD used.
34	InstanceIdentifier	Type: string	1	Leave empty
35	Identifier	Type: string	0..1	Namespace of XSD
36	~~ScopeInformation~~	~~Type: anyType~~	~~0..n~~	~~This is an abstract element with a substitution group. **Will not be used.**~~
37	~~BusinessService~~	~~SubstitutionGroup~~	~~0..1~~	-
38	~~BusinessServiceName~~	~~Type: string~~	~~0..1~~	-
39	~~ServiceTransaction~~	~~ServiceTransaction~~	~~0..1~~	~~-~~
40	~~ScopeInformation~~	~~Substitution Group: anyType~~	~~0..1~~	-
41	~~CorrelationInformation~~	~~SubstitutionGroup~~	~~0..1~~	-
42	~~RequestingDocumentCreationDateTime~~	~~Type: dateTime~~	~~0..1~~	~~-~~
43	~~RequestingDocumentInstanceIdentifier~~	~~Type: string~~	~~0..1~~	-
44	~~ExpectedResponseDateTime~~	~~Type: dateTime~~	~~0..1~~	-
45	~~ScopeInformation~~	~~Substitution Group: anyType~~	~~0..1~~	-
46	**transportStatusNotification**	Type: TransportStatusNotificationType	1..n	Message providing information on the transport status and movements of a transport related object.
47	**DocumentType**	Extention base	1	
48	creationDateTime	Type: dateTime	1	Date and time when the document was created.
49	documentStatusCode	Enum type: DocumentStatusEnumerationType	1	Indicates if the document is a copy or an original.
50	documentActionCode	Enum type: DocumentActionEnumerationType	0..1	Code specifying the action to be taken in the system of the recipient using the information in the document.
51	documentStructureVersion	Type: string	0..1	Specification of the version of the standard on which the structure of the document is based, for example 3.0.
52	lastUpdateDateTime	Type: dateTime	0..1	Date and time when the document was last updated.
53	~~extension~~	~~ExtentionType~~	~~0..1~~	~~Extension point for inclusion of additional information through an extension to the document. **Will not be used.**~~
54	**transportStatusNotificationIdentification**	Type: EntityIdentificationType	**1**	The identification of the transport status notification document.
55	**entityIdentification**	Type: restricted string	**1**	The unique identifier of the piece of information, such as the object id or the document id.
56	**contentOwner**	Type: PartyIdentificationType	0..1	Uniquely identifies the creator of the entity identification.
57	gln	Type: GLNType	1	Global Location Number (GLN), the GS1 key used for the identification of parties and locations.
58	additionalPartyIdentification	Type: AdditionalPartyIdentificationType	0..n	Identification of a party by use of a code other than the Global Location Number.
59	**transportStatusInformationCode**	Type: TransportStatusInformationEnumerationType	**1**	Code specifying the type of transport status information that is being reported. Example: STATUS_ONLY.
60	transportStatusObjectCode	Type: TransportStatusObjectEnumerationType	1	Code specifying the type of object for which transport status information is being reported. Example: CONSIGNMENT.
61	**transportStatusRequestor**	Type: TransactionalPartyType	**1**	The party that requests and/or receives the status report from another party.
62	gln	Type: GLNType	0..1	Global Location Number (GLN), the GS1 key used for the identification of parties and locations.
63	**additionalPartyIdentification**	Type: AdditionalPartyIdentificationType	0..n	Identification of a party by use of a code other than the Global Location Number.
64	**address**	Type: AddressType	0..1	Address of the party involved in the business transaction.
65	city	Type: restricted string	0..1	Text specifying the name of the city.
66	cityCode	Type: restricted string	0..1	Identifier for a city, expressed as a short code rather than the full name
67	countryCode	Type: CountryCodeType	0..1	Code specifying the country for the address.

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68			~~countyCode~~	~~Type: restricted string~~	~~0..1~~	~~A code that identifies a county. A county is a territorial division in some countries, forming the chief unit of local administration. In the US, a county is a political and administrative division of a state.~~ **~~Will not be used.~~**
69			~~crossStreet~~	~~Type: restricted string~~	~~0..1~~	~~A street intersecting a main street (usually at right angles) and continuing on both sides of it.~~ **~~Will not be used.~~**
70			~~currencyOfPartyCode~~	~~CurrencyCodeType~~	~~0..1~~	~~Code specifying the currency of an addressed party.~~ **~~Will not be used.~~**
71			~~languageOfThePartyCode~~	~~Type: LanguageCodeType~~	~~0..1~~	~~Code specifying the language of an addressed party.~~ **~~Will not be used.~~**
72			name	Type: restricted string	0..1	The name of the party expressed in text.
73			pOBoxNumber	Type: restricted string	0..1	The number that identifies a PO box. A PO box is a box in a post office or other postal service location assigned to an organization where postal items may be kept.
74			postalCode	Type: restricted string	0..1	Text specifying the postal code for an address.
75			state	Type: restricted string	0..1	One of the constituent units of a nation having a federal government.
76			streetAddressOne	Type: restricted string	0..1	The first free form line of an address, This first part is printed on paper as the first line below the name. For example, the name of the street and the number in the street or the name of a building.
77			streetAddressTwo	Type: restricted string	0..1	The second free form line of an address, This second part is printed on paper as the second line below the name. The second free form line complements the first free form line to locate the party e.g. floor number, name of a building, suite number.
78			**geographicalCoordinates**	Type: GeographicalCoordinatesType	0..1	Geographical coordinates for the address.
79			latitude	Type: restricted string	1	Angular distance North or South from the earth's equator measured through 90 degrees.
80			longitude	Type: restricted string	1	The arc or portion of the earth's equator intersected between the meridian of a given place and the prime meridian and expressed either in degrees or in time
81			**contact**	Type: ContactType	0..n	Person or department that can be contacted regarding the business transaction.
82			contactTypeCode	Type: ContactTypeCodeType	0..1	Code specifying the function or role of a contact.
83			personName	Type: restricted string	0..1	The name of the individual that can be contacted to provide additional information.
84			departmentName	Type: restricted string	0..1	The name of the department that can be contacted to provide additional information.
85			jobTitle	Type: restricted string	0..1	The job title of the person that can be contacted.
86			~~responsibility~~	~~Type: Description70Type~~	~~0..n~~	~~Text further specifying the area of responsibility of the trade contact.~~ **~~Will not be used.~~**
87			**communicationChannel**	Type: communicationChannelType	0..n	The channel or manner in which a communication can be made with the contact, such as telephone or email.
88			communicationChannelCode	Type: CommunicationChannelCodeType	1	Code specifying the type of communication channel, for example TELEPHONE.
89			communicationValue	Type: restricted string	1	Text identifying the endpoint for the communication channel, for example a telephone number or an e-mail address.
90			**afterHoursCommunicationChannel**	Extention base:CommunicationChannelType (see line 87)	0..n	The channel or manner in which a communication can be made with the contact after regular office hours.
91			**dutyFeeTaxRegistration**	Type: DutyFeeTaxRegistrationType	0..n	The registration details of a party related to a particular duty, tax or fee.
92			dutyFeeTaxRegistrationID	Type: IdentifierType	1	Identifier of the party for this particular duty, fee or tax.
93			duryFeeTaxTypeCode	Type: DuryFeeTaxTypeCodeType	1	Code specifying the type of duty, fee or tax.
94			dutyFeeTaxAgencyName	Type: restricted string	0..1	Agency responsible for the collection of this duty, fee or tax.
95			dutyFeeTaxDescription	Type: Description80Type	0..1	Textual description of this duty, fee or tax.
96			**organisationDetails**	Type: OrganisationType	0..1	Information about the legal organisation of the party involved in the business transaction.
97			organisationName	Type: restricted string	1	The official name of the organisation.
98			~~issuedCapital~~	~~Type: AmountType~~	~~0..1~~	~~The amount of the issued capital.~~ **~~Will not be used.~~**
99			~~legalStructure~~	~~Type: Description80Type~~	~~0..1~~	~~Description of the type of legal structure of the organisation.~~ **~~Will not be used.~~**
100			**officialAddress**	**Type: AddressType (see line 64)**	0..1	The address where the organisation is officially based.
101			**legalRegistration**	Type: LegalRegistrationType	0..n	The registration details of an organisation in a particular legal register.
102			legalRegistrationNumber	Type: restricted string	1	Unique identifier of the organization in the legal register.
103			legalRegistrationType	Type: LegalRegistrationCodeType	1	Code specifying the type of legal register.
104			**financialInstitutionInformation**	Type: FinancialInstitutionInformationType	0..n	Information on the financial institution(s) where the party holds an account.
105			financialInstitutionName	Type: restricted string	0..1	The name of the account holder's financial institution.
106			financialInstitutionBranchName	Type: restricted string	0..1	The name of a division or location of the account holder's financial institution.
107			**financialAccount**	Type: FinancialAccountType	0..1	Information identifying a client's financial account with a financial institution.
108			financialAccountNumber	Type: restricted string	1	Text specifying the number of the financial account.

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#	Element	Type	Card.	Description
109	financialAccountNumberTypeCode	Type: FinancialAccountNumberTypeCodeType	1	Identifies the type of financial account number.
110	financialAccountName	Type: restricted string	0..1	Text specifying the name of the financial account.
111	**financialRoutingNumber**	Type: FinancialRoutingNumberType	0..1	Provides the Routing Number for the Financial Institution.
112	financialRoutingNumber	Type: restricted string	1	Number assigned to a transaction in financial routing between parties. The number is determined by and used in conjunction with the type of routing, e.g. SWIFT,ABA,CHIPS.
113	financialRoutingNumberTypeCode	Type: FinancialRoutingNumberTypeCodeType	1	Code specifying the type of financial routing, e.g. SWIFT.
114	~~additionalFinancialInformation~~	~~Type: MultiDescription70Type~~	~~0..1~~	~~A description used to provide any additional information about a financial institution. **Will not be used.**~~
115	~~description~~	~~Type: Description70Type~~	~~1..n~~	~~Text content of the description. **Will not be used.**~~
116	**address**	**Type: AddressType (see line 64)**	0..1	Address of the financial institution involved in the business transaction.
117	**transportStatusProvider**	**Type: TransactionalPartyType (see line 61)**	1	The party that provides the status report
118	**transportStatusRequest**	Type: DocumentReferenceType	0..1	Optional reference to the transport status request that triggered the sending of the transport status notification.
119	**EntityIdentificationType**	**Extention base: EntityIdentificationType (see line 54)**	1	Identifies the request
120	creationDateTime	Type: dateTime	0..1	Date and time of creation of the referenced document.
121	lineItemNumber	Type: nonNegativeInteger	0..1	Number specifying a line in the referenced document.
122	**transportStatusNotificationConsignment**	Type: TransportStatusNotificationConsignmentType	0..1	Information on the status and movements of a consignment.
123	**ConsignmentIdentificationType**	Extention base	1	Identifies the consignment
124	**ginc**	Type: GINCType	1	The GS1 Global Identification Number for Consignment (GINC) key used for the identification of consignments
125	additionalConsignmentIdentification	Type: AdditionalConsignmentIdentificationType	0..n	Identifier of the consignment specified in addition to the GINC.
126	**parentConsignment**	**Type: ConsignmentIdentificationType (see line 123)**	0..1	Reference to another consignment that contains this consignment (and several other consignments).
127	cargoTypeCode	Type: CargoTypeCodeType	1	Code specifying the classification of a type of cargo for example hazardous cargo.
128	cargoTypeDescription	Type: Description70Type	0..1	Free text specifying the classification of a type of cargo.
129	**consignor**	**Type: TransactionalPartyType (see line 61)**	0..1	The party despatching a consignment of goods.
130	**consignee**	**Type: TransactionalPartyType (see line 61)**	0..1	The party receiving a consignment of goods.
131	**includedShipment**	Type: ShipmentIdentificationType	0..n	Reference to the shipment(s) contained in this consignment.
132	gsin	Type: GSINType	1	Global Shipment Identification Number (GSIN), the GS1 key used for the identification of shipments.
133	additionalShipmentIdentification	Type: AdditionalShipmentIdentificationType	0..n	Additional identification key used to identify a shipment.
134	**includedTransportEquipment**	Type: TransportEquipmentType	0..n	Details on the transport equipment contained in the consignment.
135	transportEquipmentTypeCode	Type: CodeType	1	Code specifying the transport equipment size and type.
136	returnableAssetTypeIdentification	Type: ReturnableAssetIdentificationType	0..1	The returnable asset identifier for the type of transport equipment.
137	individualReturnableAssetIdentification	Type: ReturnableAssetIdentificationType	0..n	The returnable asset identifier for an individual piece of transport equipment.
138	**individualAssetIdentification**	Type: IndividualAssetIdentificationType	0..n	The individual asset identifier for an individual piece of transport equipment.
139	giai	Type: GIAIType	1	Global Individual Asset Identifier (GIAI), the GS1 key used for the identification of individual assets.
140	additionalIndividualAssetIdentification	Type: AdditionalIndividualAssetIdentificationType	0..n	Identifier of the asset, specified in addition to the GIAI.
141	**includedLogisticUnit**	Type: LogisticUnitIdentificationType	0..n	Identification of the logistic units contained in the consignment.
142	sscc	Type: SSCCType	1	Serial Shipping Container Code (SSCC),the GS1 key used for the identification of logistic units.
143	additionalLogisticUnitIdentification	Type: AdditionalLogisticUnitIdentificationType	0..n	Additional (non-SSCC) identification attached to a shipping container or shipping package and used for logistical and traceability purposes.
144	**transportReference**	Type: TransportReferenceType	0..n	References to the commercial transaction or to transport or legal documents related to the consignment.
145	**DocumentReferenceType**	Extention base	1	
146	**EntityIdentificationType**	**Extention base: EntityIdentificationType (see line 54)**	1	Identifies the commercial transaction or the transport or the legal documents related to the consignment.
147	creationDateTime	Type: dateTime	0..1	Date and time of creation of the referenced document.
148	lineItemNumber	Type: nonNegativeInteger	0..1	Number specifying a line in the referenced document.
149	transportReferenceTypeCode	Type: TransportReferenceTypeCodeType	1	Code specifying the type of information that is being referred to.
150	**transportStatus**	Type: TransportStatusType	1..n	The transport status details for this consignment.
151	transportStatusConditionCode	Type: TransportStatusConditionCodeType	1..n	Code specifying a transport status condition. Allowed code values are specified in GS1 Code List.
152	transportStatusDateTime	Type: dateTime	0..1	A date time that applies to the reported transport status.

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			Name	Type	Card.	Description
153			transportStatusDescription	Type: Description500Type	0..1	The textual description of the transport status.
154			transportStatusReasonCode	Type: TransportStatusReasonCodeType	0..n	Code specifying a transport status reason. Allowed code values are specified in GS1 Code List
155			transportStatusReasonDescription	Type: Description500Type	0..1	A reason, expressed as text, for the transport status.
156			**logisticLocation**	Type: LogisticLocationType	0..1	A location related to the reported transport status.
157			unLocationCode	Type: UNLocationCodeType	0..1	UN/LOCODE is a geographic coding scheme maintained by UN/ECE for locations used in trade and transport with functions such as seaports, rail and road terminals, airports, post offices and border crossing points.
158			gln	Type:GLNType	0..1	The GS1 global location number (GLN) of this logistic location.
159			additionalLocationIdentification	Type: IdentifierType	0..n	Identification of a location by use of a code other than the Global Location Number.
160			sublocationIdentification	Type: resricted string	0..1	Text further specifying the exact logistic location. For example: dock door, department, building.
161			locationName	Type: resricted string	0..1	The name of this logistic location.
162			locationSpecificInstructions	Type: Description200Type	0..1	Instructions related to the pick-up or drop-off of goods at this location.
163			utcOffset	Type: float	0..1	Numeric value specifying the time zone of the location as offset from the Coordinated Universal Time (UTC).
164			**address**	**Type: AddressType (see line 64)**	0..1	Address details of this logistic location.
165			**contact**	**Type: ContactType (see line 81)**	0..n	Person or department that can be contacted at this logistic location.
166			**regularOperatingHours**	Type: OperatingHoursType	0..n	The period during which a business or facility is operational on a weekday.
167			dayOfTheWeekCode	Type: DayOfTheWeekEnumerationType	1	Code specifying the day of the week to which the operating hours apply.
168			isOperational	Type: boolean	1	Indicator specifying whether or not the business or facility is operational on the specified day.
169			closingTime	Type: time	0..1	Time on which the business or facility closes on the specified day.
170			openingTime	Type: time	0..1	Time on which the business or facility opens on the specified day.
171			**specialOperatingHours**	Type: SpecialOperatingHoursType	0..n	The period during which the location is operational on special days, such as holidays.
172			isOperational	Type: boolean	1	Indicator specifying whether or not the business or facility is operational on the specified day.
173			specialDate	Type: date	1	Date specifying the day to which the special operating hours apply.
174			closingTime	Type: time	0..1	Time on which the business or facility closes on the specified day.
175			openingTime	Type: time	0..1	Time on which the business or facility opens on the specified day.
176			specialDateName	Type: Description80Type	0..1	Text describing the day to which the special operating hours apply. Example: Christmas.
177			**transportStatusNotificationTransportMovement**	**Type: TransportStatusNotificationTransportMovementType**	0..n	The transport movement details for this consignment.
178			sequenceNumber	Type: positiveInteger	1	Unique number identifying the sequence of this transport movement with respect to the other specified movements.
179			transportModeTypeCode	Type: TransportModeCodeType	1	Code specifying the transportation mode used for this transport movement.
180			routeIdentifier	Type: IdentifierType	0..1	Unique identifier of the standard route used for this transport movement.
181			**carrier**	**Type: TransactionalPartyType (see line 61)**	0..1	A party that physically transports goods from one place to another.
182			**transportStatusResponsibleParty**	**Type: TransactionalPartyType (see line 61)**	0..1	Party in charge of collecting and forwarding the information about the transport movement.
183			**plannedDeparture**	Type: LogisticEventType	0..1	The expected time of departure from the designated departure location.
184			~~logisticEventTypeCode~~	~~Type: LogisticEventTypeCodeType~~	~~0..1~~	~~Code specifying the type of logistic event. Example: Customs clearance~~ **Will not be used.**
185			~~logisticEventDuration~~	~~Type: TimeMeasurementType~~	~~0..1~~	~~Measurement value specifying the duration of the logistic event.~~ **Will not be used.**
186			**logisticLocation**	Type: LogisticLocationType (see line 156)	0..1	The location where the logistic event occurs.
187			**logisticEventPeriod**	Type: DateTimeRangeType	0..1	The timeframe during which the logistic event occurs.
188			beginDate	Type: date	0..1	Date specifying the first day for the date time range.
189			BeginTime	Type: time	0..1	Time specifying the start time for the date time range.
190			endDate	Type: date	0..1	Date specifying the last day for the date time range.
191			endTime	Type: time	0..1	Time specifying the end time for the date time range.
192			**logisticEventDateTime**	Type: DateOptionalTimeType	0..1	The date and time on which the logistic event occurs.
193			date	Type: date	1	The specification of a day as calendar date.
194			time	Type: time	0..1	The specification of a point in time during the day.
195			**plannedArrival**	**Type: LogisticEventType (see line 183)**	0..1	The expected time of arrival on the designated arrival location.
196			**actualDeparture**	**Type: LogisticEventType (see line 183)**	0..1	The actual time of departure from the designated departure location.
197			**actualArrival**	**Type: LogisticEventType (see line 183)**	0..1	The actual time of arrival to designated arrival location.

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198			actualLoading	**Type: LogisticEventType (see line 183)**	0..1	The actual time and location of loading.
199			actualUnloading	**Type: LogisticEventType (see line 183)**	0..1	The actual time and location of unloading.
200			recipientSignOff	**Type: LogisticEventType (see line 183)**	0..1	Details on the sign-off of the receipt at the arrival location, such as the responsible person.
201			plannedWayPoint	**Type: LogisticEventType (see line 183)**	0..n	An planned administrative procedure taking place at a specific location that may have an effect on the lead time of a transport movement, such as dangerous goods handling, customs clearance,
202			actualWayPoint	**Type: LogisticEventType (see line 183)**	0..n	An administrative procedure that took place at a specific location that may have an effect on the lead time of a transport movement, such as dangerous goods handling, customs clearance, ...
203			associatedPerson	Type: PersonType	0..n	A person associated with the execution of this transport movement, for example the driver.
204			personName	Type: string	1	Text used to identify the person, such as the family name and given name.
205			dateOfBirth	Type: date	0..1	Calendar date on which the person was born.
206			gender	Type: GenderEnumerationType	0..1	Code specifying the sex of the person.
207			nationality	Type: CountryCodeType	0..n	Code specifying the nation the person belongs to by birth or naturalization.
208			identityDocument	Type: IdentityDocumentType	0..n	An identity document is any document which may be used to verify aspects of a person's personal identity or of a person's relationship with an organisation. If issued in the form of a small, mostly standard-sized card, it is usually called an identity card (IC).
209			identityDocumentNumber	Type: string	1	Unique identifier in this identity document, intended to identify a particular person.
210			identityDocumentType	Type: IdentityDocumentTypeCodeType	1	Code specifying the type of identity document.
211			identityDocumentIssuer	Type: string	0..1	Text specifying the issuer of the identity document.
212			relatedTransportMeans	Type: TransportMeansType	0..1	The type of vehicle, aircraft, vessel or other device used for the transport of goods in this transport movement.
213			transportMeansType	Type: TransportMeansTypeCodeType	1	Code specifying the type of vehicle, aircraft, vessel or other device used for the transport of goods.
214			transportMeansName	Type: IdentifierType	0..1	The unique identifier of a particular means of transport. E.g. A license plate number or vessel id.
215			transportMeansID	Type: string	0..1	The name, expressed as text, of a particular means of transport. E.g. The vessel name.
216			communicationChannel	**Type:CommunicationChannelType (see line 87)**	0..n	The channel or manner in which a communication can be made with the transport means. E.g. telephone or email.
217			relatedTransportEquipment	**Type: TransportEquipmentType (see line 134)**	0..n	The type of trailer, container, ULD or other device used for the transport of goods in this transport movement.
218	**transportStatusNotificationShipment**			Type: TransportStatusNotificationShipmentType	0..1	Information on the status and movements of a shipment.
219		**ShipmentIdentificationType**		**Extention base:ShipmentIdentificationType (see line 131)**	1	The shipment addressed in this status report
220		**parentShipmentReference**		**Type: ShipmentIdentificationType (see line 129)**	0..1	The unique identifier of a shipment in which this shipment is included
221		**shipper**		**Type: TransactionalPartyType (see line 61)**	0..1	A party which engages in shipping this shipment of goods.
222		**receiver**		**Type: TransactionalPartyType (see line 61)**	0..1	A party which engages in receiving this shipment of goods.
223		**transportReference**		**Type: TransportReferenceType (see line 144)**	0..n	References to the commercial transaction or to transport or legal documents related to the shipment.
224		**includedLogisticUnit**		**Type: LogisticUnitIdentificationType (see line 141)**	0..n	Identification of the logistic units contained in the shipment.
225		**transportStatus**		**Type: TransportStatusType (see line 150)**	1..n	The transport status details for this shipment.
226		**transportStatusNotificationTransportMovement**		**Type: TransportStatusNotificationTransportMovementType (see line 177)**	0..n	The transport movement details for this shipment.
227	**transportStatusNotificationLogisticUnit**			Type: transportStatusNotificationLogisticUnitType	0..1	Information on the status and movements of a logistic unit.
228		**logisticUnitIdentificationType**		**Extention base: LogisticUnitIdentificationType (see line 141)**	1	The logistic unit addressed in this status report
229		**shipper**		**Type: TransactionalPartyType (see line 61)**	0..1	A party which engages in shipping this logistic unit.
230		**receiver**		**Type: TransactionalPartyType (see line 61)**	0..1	A party which engages in receiving this logistic unit.
231		**relatedConsignment**		**Type: ConsignmentIdentificationType (see line 123)**	0..1	Identification of the consignment in which the logistic unit is contained.
232		**reassignedConsignment**		**Type: ConsignmentIdentificationType (see line 123)**	0..1	Identification of the consignment to which the logistic unit has been reassigned.
233		**relatedShipment**		**Type: ShipmentIdentificationType (see line 129)**	0..1	Identification of the shipment in which the logistic unit is contained.
234		**transportStatus**		**Type: TransportStatusType (see line 150)**	1..n	The transport status details for this logistic unit.
235		**transportStatusNotificationTransportMovement**		**Type: TransportStatusNotificationTransportMovementType (see line 177)**	0..n	The transport movement details for this logistic unit.
236	**transportStatusNotificationTransportMeans**			Type: transportStatusNotificationTransportMeansType	0..n	Information on the status, movements and event log of one or more means of transport.

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237		TransportMeansType	Extention base: TransportMeansType (see line 212)	1	
238		transportMeansOwner	Type: TransactionalPartyType (see line 61)	0..1	The party who owns the transport means.
239		transportStatus	Type: TransportStatusType (see line 150)	1..n	The transport status details for this transport means.
240		transportStatusNotificationTransportMovement	Type: TransportStatusNotificationTransportMovementType (see line 177)	0..n	The transport movement details for this transport means.
241		transportTrackingLogEvent	Type: transportTrackingLogEventType	0..n	The transport tracking details for this piece of transport means
242		logEventDateTime	Type: dateTime	1	The date time of the recorded event.
243		transortTrackingObservation	Type: transortTrackingObservationType	0..n	Information on one or more observations. An amount, size, or extent as established by measuring during transport.
244		transportObservationTypeCode	Type: String80Type	1	Code specifying the type of observation.
245		transportObservationValueCode	Type: CodeType	0..1	Coded vale of the observation.
246		transportObservationValueMeasurement	Type: MeasurementType	0..1	Measurement value of the observation.
247		transportObservationValueNumeric	Type: float	0..1	Numeric value of the observation.
248		transportTrackingSensorObservation	Type: TransportTrackingSensorObservationType	0..n	Information on one or more observations grouped by sensor.
249		sensorLocation	Type: string	1	Text specifying the location of the sensor. For example: rear door.
250		transportTrackingObservation	Type: transportTrackingObservationType	0..n	The observations reported by the sensor. An amount, size, or extent as established by measuring during transport.
251		transportObservationTypeCode	Type: String80Type	0..1	Code specifying the type of observation.
252		transportObservationValueCode	Type: CodeType	0..1	Coded vale of the observation.
253		transportObservationValueMeasurement	Type: MeasurementType	0..1	Measurement value of the observation.
254		transportObservationValueNumeric	Type: float	0..n	Numeric value of the observation.
255	transportStatusNotificationTransportEquipment		Type: TransportStatusNotificationTransportEquipmentType	0..n	Information on the status, movements and event log of one or more pieces of transport equipment.
256		TransportEquipmentType	Extention type: TransportEquipmentType (see line 134)	1	Provides information on the transport equipment
257		transportEquipmentOwner	Type: TransactionalPartyType (see line 61)	0..1	The party who owns the transport equipment
258		transportStatus	Type: TransportStatusType (see line 150)	1..n	The transport status details for this transport equipment
259		transportStatusNotificationTransportMovement	Type: TransportStatusNotificationTransportMovementType (see line 177)	0..n	The transport movement details for this transport equipment
260		transportTrackingLogEvent	Type: transportTrackingLogEventType (see line 241)	0..n	The transport tracking details for this piece of transport equipment.

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2.2 Transport Status Request message structure and content

Table 3 provides an overview of the Transport Status Request message structure, and the message elements defined in the same way as in section section 2.1. Whenever an element is of the same type as defined for the Transport Status, a reference is made to the line number (#) in Table 2 in section 2.1.

Table 3 Transport Status Request message structure and content

#	Message elements	Data type, etc.	C	Description
261	**transportStatusRequestMessage**	Type: TransportStatusRequestMessageType		
262	**StandardBusinessDocumentHeader**	**Type: StandardBusinessDocumentHeader (see 2)**	1	The UN/CEFACT standard,. Contains information about routing and processing of the business document, identifies the message set sent together with on SBDH and the version number of the document(s) contained.
263	**transportStatusRequest**	Type: TransportStatusRequestType	1..n	Message requesting information on the transport status and movements of a transport related object.
264	**DocumentType**	**Extention base: DocumentType (see 47)**	1	
265	**transportStatusRequestIdentification**	**Type: EntityIdentificationType (see 54)**	1	Message requesting information on the transport status and
266	transportStatusInformationCode	Type: TransportStatusInformationEnumerationType	1	Code specifying the type of transport status information that is being requested. Example: STATUS_ONLY.
267	transportStatusObjectCode	Type: TransportStatusObjectEnumerationType	1	Code specifying the type of object for which transport status information is being requested. Example: CONSIGNMENT.
268	**transportStatusProvider**	**Type: TransactionalPartyType (see 61)**	1	A party that provides transport status information to another party.
269	**transportStatusRequestor**	**Type: TransactionalPartyType (see 61)**	1	A party that requests transport status information from another party.
270	**reportingPeriod**	**Type: DateTimeRangeType (see 187)**	0..1	The date time range for which transport status information is being requested.
271	**transportStatusRequestConsignment**	Type: TransportStatusRequestConsignmentType	0..1	Information identifying the consignment for which transport status information is being requested.
272	**ConsignmentIdentificationType**	**Extention base: ConsignmentIdentificationType (see 123)**	1	
273	**consignor**	**Type: TransactionalPartyType (see 61)**	0..1	The party despatching a consignment of goods.
274	**consignee**	**Type: TransactionalPartyType (see 61)**	0..1	The party receiving a consignment of goods.
275	**transportReference**	**Type: TransportReferenceType (see 144)**	0..n	References to the commercial transaction or to transport or legal documents related to the consignment.
276	**transportStatusRequestShipment**	Type: TransportStatusRequestShipmentType	0..1	Information identifying the shipment for which transport status information is being requested.
277	**ShipmentIdentificationType**	**Extention base:ShipmentIdentificationType (see 131)**	1	
278	**shipper**	**Type: TransactionalPartyType (see 61)**	0..1	A party which engages in shipping this shipment of goods.
279	**receiver**	**Type: TransactionalPartyType (see 61)**	0..1	A party which engages in receiving this shipment of goods.
280	**transportReference**	**Type: TransportReferenceType (see 144)**	0..n	References to the commercial transaction or to transport and legal documents related to the shipment.
281	**transportStatusRequestLogisticUnit**	Type: TransportStatusRequestLogisticUnitType	0..1	Information identifying the logistic unit for which transport status information is being requested.
282	**LogisticUnitIdentificationType**	**Type: LogisticUnitIdentificationType (see 141)**	1	
283	**shipper**	**Type: TransactionalPartyType (see 61)**	0..1	A party which engages in shipping this logistic unit.
284	**receiver**	**Type: TransactionalPartyType (see 61)**	0..1	A party which engages in receiving this logistic unit.
285	**transportStatusRequestTransportMeans**	Type: TransportStatusRequestTransportMeansType	0..1	Information identifying the transport means for which transport status information is being requested.
286	**TransportMeansType**	**Type: TransportMeansType (see 212)**	1	Information on the transport means addressed
287	**transportMeansOwner**	**Type: TransactionalPartyType (see 61)**	0..1	The party who owns the transport means.
288	**transportStatusRequestTransportEquipment**	Type: TransportStatusRequestTransportEquipmentType	0..1	Information identifying the piece of transport equipment for which transport status information is being requested.
289	**TransportEquipmentType**	**Type: TransportEquipmentType (see 134)**	1	Information on the transport equipment addressed.
290	**transportMeansOwner**	**Type: TransactionalPartyType (see 61)**	0..1	The party who owns the piece of transport equipment.

3 Code lists

Several of the data types in the Transport Status Request and Transport Status Notification schemas refer to code lists. GS1 has identified these code lists, and they are listed in Table 4. The code lists must either be used as they are (indicated by "As is" in the Use column of the table) or they are modified (indicated by "Modification in ..." in the Use column of the table). These modified versions are specified in Annex B.

Table 4 Code lists identified by GS1

Data type	Code list	Defined where	Use
CargoTypeCodeType	CargoTypeCode	BMS eCom Common Library [7]	As is
CommunicationChannelCodeType	Communication Channel Code List	BMD GDSN Common [8]	As is
ContactTypeCodeType	ContactTypeCode	BMS Shared Common Library [9]	As is
CountryCodeType	CountryCode	ISO 3166-1 [10]	As is
DayOfTheWeekEnumerationType	Day of the Week Enumeration	BMS Shared Common Library [9]	As is
DocumentActionEnumerationType	Document Action Enumeration	BMS Shared Common Library [9]	As is
DocumentStatusEnumerationType	Document Status Enumeration	BMS Shared Common Library [9]	As is
DutyFeeTaxTypeCodeType	DutyFeeTaxType Code	BMS eCom Common Library [7]	As is
FinancialAccountNumberTypeCodeType	FinanceRoutingNumberTypeCode	BMS Shared Common Library [9]	As is
FinancialRoutingNumberTypeCodeType	FinanceRoutingNumberTypeCode	BMS Shared Common Library [9]	As is
GenderEnumerationType	GenderEnumeration	BMS Shared Common Library [9]	As is
IdentityDocumentTypeCodeType	IdentityDocumentTypeCode	BMS eCom Common Library [7]	As is
LegalRegistrationCodeType	LegalRegistrationCode	BMS eCom Common Library [7]	As is
LogisticEventTypeCodeType	LogisticEventTypeCode	BMS eCom Common Library [7]	Modification in B.1
TransportMeansTypeCodeType	TransportMeansTypeCode	BMS eCom Common Library [7]	As is
TransportModeCodeType	TransportModeCode	BMS eCom Common Library [7]	As is
TransportReferenceTypeCodeType	TransportReferenceTypeCode	BMS eCom Common Library [7]	As is
TransportStatusConditionCodeType	TransportStatusConditionCode	BMS eCom Common Library [7]	As is
transportStatusInformationEnumerationCode	transportStatusInformationEnumeration	BMS Transport Status Request and Notification [1]	As is
TransportStatusObjectEnumerationType	TransportStatusObjectEnumeration	BMS Transport Status Request and Notification [1]	As is
TransportStatusReasonCodeType	TransportStatusReasonCode	BMS eCom Common Library [7]	As is
unLocationCodetype	UN/LOCCODE	United Nations Code for Trade and Transport Locations [11]	As is

Logical part

This logical part of the implementation guide provides a scenario which explains the use of the Transport Status messages. In addition frequently asked questions are answered. Many of these answers are related to the scenario, and XML examples are provided in order to demonstrate how the messages should be used.

4 Scenario

The scenario describes a transport chain example in order to demonstrate the use of the Transport Status transactions. Such Transport Status transactions are related to Transport Instructions, and due to this, the Transport Instructions are also included in the scenario. However, The Transport Instruction Implementation guide [2] should be consulted for details on the Transport Instruction transactions.

4.1 Transport Instructions transactions
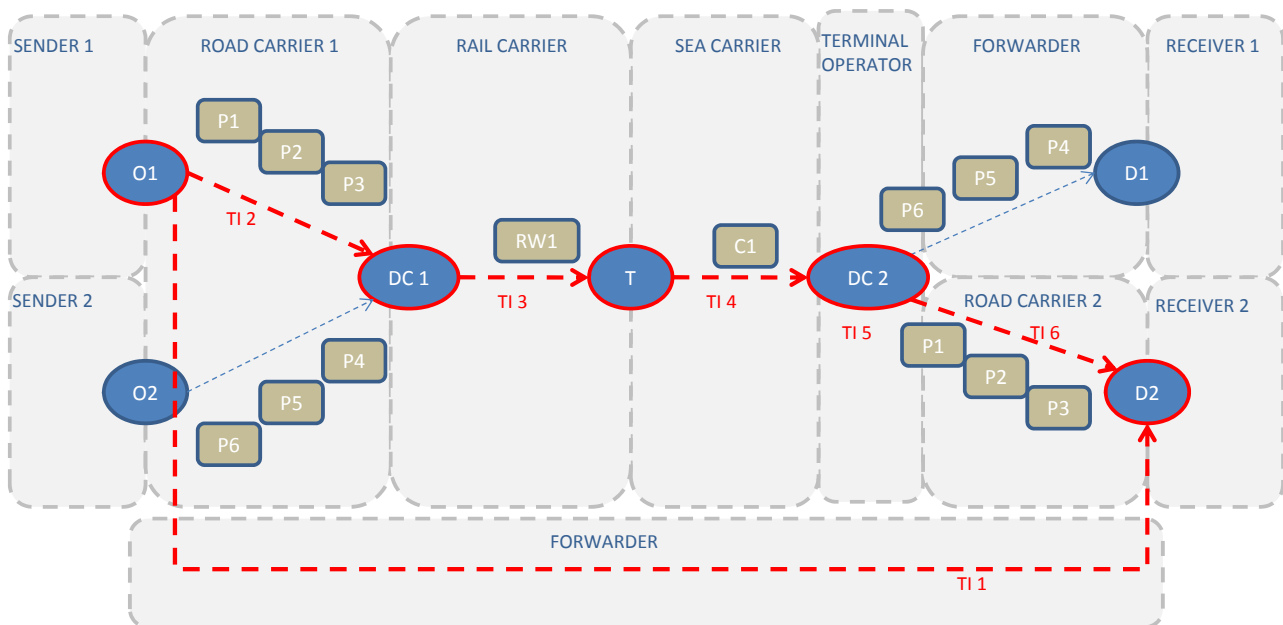
Figure 4 Overall scenario: Transport Instructions (TI1 – TI6) for the different legs

The transport chain addressed is highlighted in red in Figure 4. The chain is established by RECEIVER 2 and a FORWARDER:

1. RECEIVER 2 has a door-to-door transport demand and requests a transport service from the FORWARDER
   a. Transport Instruction TI1 is sent from RECEIVER 2 to the FORWARDER to request a door-to-door transport of three pallets (P1-P3) from O1 (Munich, Germany) to D2 (Hamar, Norway).
2. The FORWARDER also gets a transport request of other pallets destined for Norway (P4-P6), but we do not go into the Transport Instruction related to this request. However, the transport chains of P1-P3 and P4-P6 are coordinated to improve the utilization of resources, and as a response to the transport requests, the FORWARDER organizes the transport chain of all pallets:
   a. Transport Instruction TI2 is sent from the FORWARDER to ROAD CARRIER 1 to request a transport from the locations of SENDER 1 and SENDER 2 in the Munich area to the FORWARDER's distribution centre (DC1) in Hamburg.
   b. Transport Instruction TI3 is sent from the FORWARDER to RAIL CARRIER to request that six pallets are loaded into a rail wagon and transported to the port terminal in Kiel (T).

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c. Transport Instruction TI4 is sent from the FORWARDER to SEA CARRIER to request a consolidation of the six pallets in a container before the container is transported by sea from Kiel (T) to Oslo (DC 2).

d. Transport Instruction TI5 is sent from the FORWARDER to TERMINAL OPERATOR in Oslo (DC 2) to request a de-consolidation (break-bulk) service and a customs broking services (related to import) at the terminal in Oslo (DC2).

e. Transport Instruction TI6 is sent from the FORWARDER to ROAD CARRIER 2 to request transports the three pallets from Oslo (DC 2) to Hamar (D2) where they will be delivered to RECEIVER 2.

In the scenario, the IDs of the pallets are unknown before pick-up. Thus, information on the IDs must be established and exchanged later:

- ROAD CARRIER 1 registers the IDs of the pallets when they are picked up, and the IDs are provided to the FORWARDER by means of a Transport Status transaction.
- The FORWARDER provides the IDs of the pallets to its LSC (i.e. RECEIVER 2) by means of a Transport Status transaction

Table 5 provides an overview of the Transport Instructions; the LSCs and LSPs involved; the requested services; and related transactions (Transport Status transactions included). For more details on the Transport Instructions the Implementation guide on the Transport Instruction should be consulted. Details on the Transport Status (TS) transaction are described below.

Table 5 Transport Instructions related to the transport chain example

Transport Instruction	LSC and LSP	Service description	Required transactions
TI1	LSC: RECEIVER 2 LSP: FORWARDER	International door-to-door transport from Munich in Germany (O1) to Hamar in Norway (D2)	Transport Instruction TI1 for door-to-door that involves import.
TI2	LSC: FORWARDER LSP: ROAD CARRIER 1	Road transport service for the leg between the SENDER 1 (O1) to the forwarder's distribution centre (DC 1) in Hamburg.	Transport Instruction TI2 for road transport Transport Status TS1 from ROAD CARRIER 1to FORWARDER with IDs. See 0. Transport Status TS2 from ROAD CARRIER 1to FORWARDER reports about a delay. See 0.
TI3	LSC: FORWARDER LSP: RAIL CARRIER	Rail transport service for the leg between the distribution centre (DC) in Hamburg and the terminal in port of Kiel (T)	Transport Instruction TI3 for rail transport TI3 update triggered by TS1 with pallet IDs. TI3 update due to delay in previous road transport (triggered by TS2). The pallets have to be transported by another train.
TI4	LSC: FORWARDER LSP:SEA CARRIER	Consolidation service Sea transport service from the port terminal in Kiel (T) to the port terminal in Oslo (DC 2)	Transport Instruction TI4 for consolidation and sea transport. TI4 update when FORWARDER triggered by TS1 with pallet IDs. Even though the previous railway leg (TI3) is delayed, the pallets do arrive to the port of Kiel in time for the ship departure. Thus, it is not necessary to update TI4.
TI5	LSC: FORWARDER LSP: TERMINAL OPERATOR	De-consolidation service at the port terminal in Oslo (DC 2)	Transport Instruction TI5 for de-consolidation. TI5 update when FORWARDER triggered by TS1 with pallet IDs.
TI6	LSC: FORWARDER LSP: ROAD CARRIER 2	Road transport service from the distribution centre at the port terminal in Oslo (DC 2) to RECEIVER 2 in Hamar (D2)	Transport Instruction TI6 for road transport. TI6 update when FORWARDER triggered by TS1 with pallet IDs.

4.2   Transport Status transactions

Transport Status transactions provide status reports from the LSPs to the LSCs. Based on such reports, the LSC can follow up the transport and take necessary actions.

In the scenario, the FORWARDER will do the main part of the follow up, but if a status report informs about deviations that may affect the final delivery to RECEIVER 2, the FORWARDER will also send status reports to RECEIVER 2, which is the LSC in Transport Instruction TI1. RECEIVER 2 may also receive

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Transport Status Notification reports directly from the legs if this is agreed with the FORWARDER. This may for example be the case related to import. The sea carrier may be told to send arrival notifications to RECEIVER 2 to initiate customs declaration activities.

By default, status reports should be issued in case of deviations that affects the service provision and in case of border crossings (to facilitate coordination with customs declaration). In addition, the LSC and the LSP can agree upon other situations to be reported. Such agreements are however outside the scope of this scenario. In the scenario, Transport Status transaction are used

- To distribute the IDs of the pallets (as mentioned in 4.1)
  - Transport Status TS1: ROAD CARRIER 1, whom registers the IDs of the pallets when they are picked up, provides the IDs to the FORWARDER.
- To inform the LSC about deviations that will or may affect the service provision.
  - Transport Status TS2: ROAD CARRIER 1 informs FORWARDER about a delay.
  - Transport Status TS3: SEA CARRIER informs FORWARDER about a damage.
  - Transport Status TS4: FORWARDER informs RECEIVER 2 about a damage.
- To request a status report from a LSP at any time
  - Transport Status TS5: FORWARDER sends a request for status information to SEA CARRIER, and SEA CARRIER responds.
- To inform about border crossings and other events
  - Transport Status TS6: Either SEA CARRIER informs FORWARDER about a border crossing, or SEA CARRIER informs RECEIVER 2 directly.
  - Transport Status TS7: If TS6 is sent to FORWARDER, FORWARDER informs RECEIVER 2 about the arrival in Oslo (may for example trigger a customs declaration if such a declaration is not done in advance).
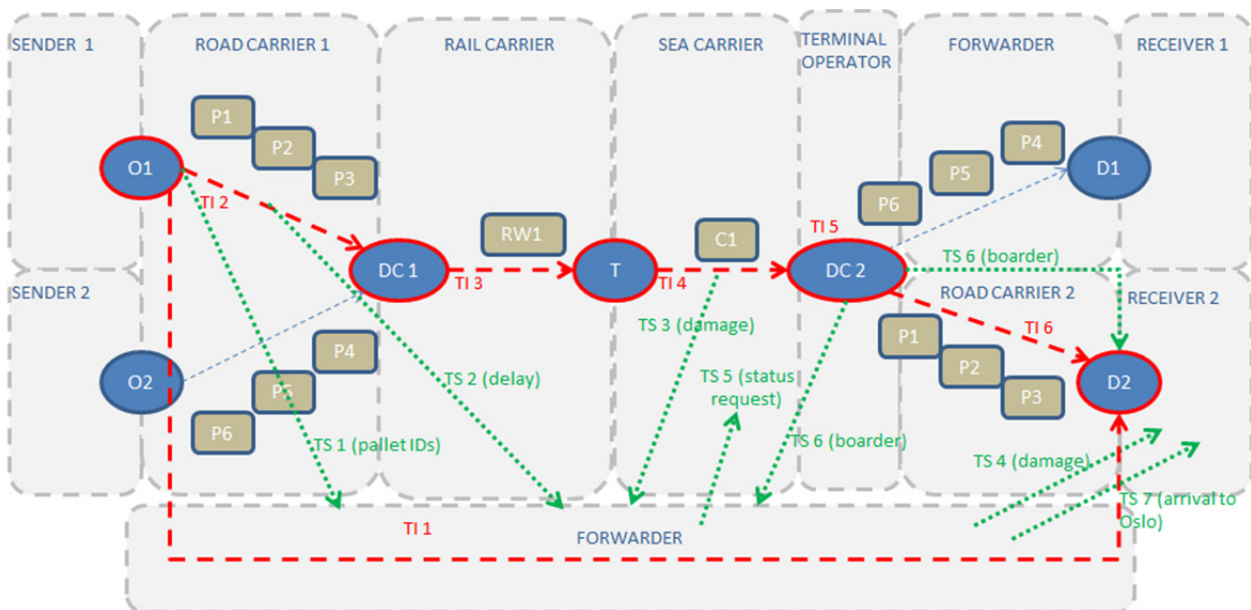
Figure 5 Overall scenario - the Transport Status Notification reports

Table 6 provides an overview of the Transport Status transactions in the scenario; the LSCs and LSPs involved; the trigger of the status reporting and the effect of the report; the type of status report; and the frequently asked questions (FAQ) that should be consulted for further information.

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Table 6 Transport Status transactions

Transport Status transaction	Related Transport Instruction	LSC and LSP	Triggered by and effects	Type of status report	FAQ
TS1	TI2	LSC: FORWARDER LSP: ROAD CARRIER	Triggered by: The IDs of the pallets are registered at pick-up. On reception: TI2 - TI6 update due to new information on pallet IDs. See 4.1.	Status report Pallet IDs registered	New identifiers. See 5.8
TS2	TI2	LSC: FORWARDER LSP: ROAD CARRIER 1	Triggered by: The road transport is delayed due to traffic congestions. On reception: TI3 is updated. (The pallets do however arrive to the port of Kiel in time for the ship departure. Thus, it is not necessary to update TI4.)	Delay report. New ETA for DC 1	Delay reporting. See 5.9
TS3	TI4	LSC: FORWARDER LSP: SEA CARRIER	Triggered by: Damages on one of the packages on pallet P1 during consolidation into container C1. The package is removed from the pallet. On reception: Notify RECEIVER 2 (see TS4)	Damage report Damage on pallet P1	Cargo deviation reporting. See 5.10 and 5.12
TS4	TI1	LSC: RECEIVER 2 LSP: FORWARDER	Triggered by: TS3. On reception: Take decisions based on awareness.	Damage report Damage on pallet P1	Cargo deviation reporting. See 5.10 and 5.12
TS5	TI5	LSC: FORWARDER LSP: SEA CARRIER	Triggered by: A need for status information On reception: Take decisions based on awareness.	Full status request and report	Full status report. See 5.6
TS6	TI5	LSC: FORWARDER LSP: SEA CARRIER or RECEIVER 2	Triggered by: Arrival to boarder (due to import - to support customs declaration) On reception: If the SEA CARRIER has not been told to inform RECEIVER 2 directly: see TS7	Arrival notification report ETA for ship leg	Arrival notification reporting. See 5.13
TS7	TI5	LSC: RECEIVER 2 LSP FORWARDER	Triggered by: TS6. On reception: Initiate customs declaration.	Arrival notification report ETA for ship leg	Arrival notification reporting. See 5.14

5 Frequently asked questions

Based on the Transport Status Request and Transport Status Notification message schemas, this chapter provides answers to questions and relevant examples. Some of the examples are related to the scenario in chapter 4. An overview of the message elements can be found in Chapter 2.

5.1 What is the overall structure of the Transport Status Request and Notification messages?
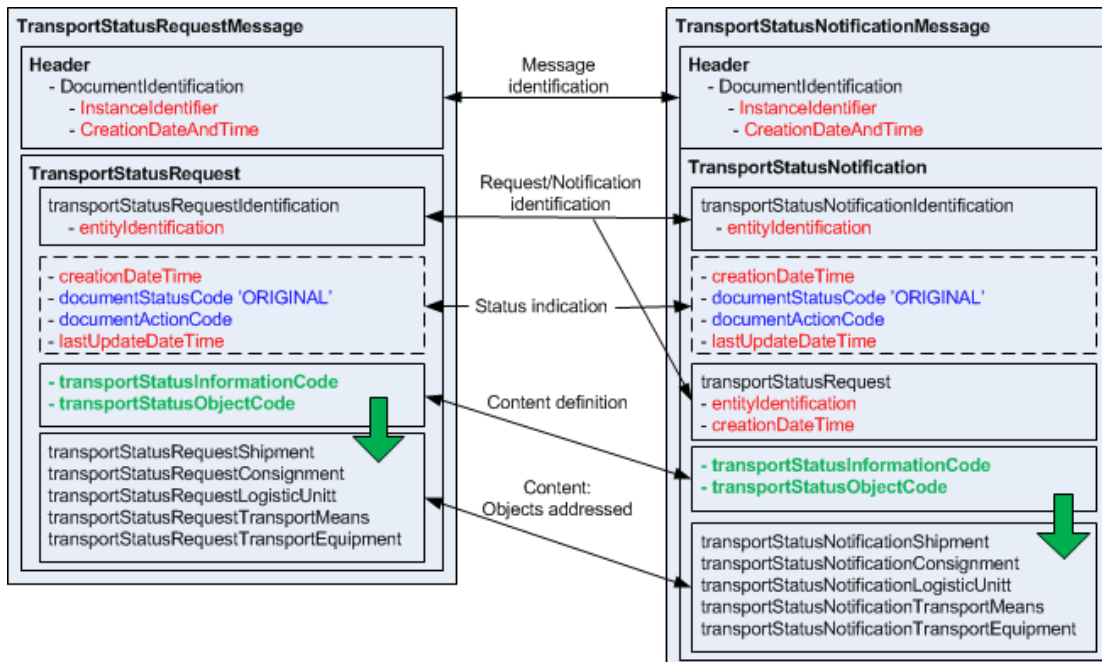
Figure 6 Overall structure of Transport Status Request and Notification messages

A TransportStatusRequstMessage with one or more TransportStatusRequest elements is sent from the LSC to the LSP, and the LSP will respond by sending a TransportStatusNotificationMessage with one or more TransportStatusNotification elements. Figure 6 depicts the most relevant message elements. The dialogue and content are controlled by identifiers (red ink in the figure), status indicators (blue ink in the figure) and content indicators (green ink in the figure).

The identifiers are (indicated by red ink in Figure 6):

- On message level: The InstanceIdentifier and CreationDateAndTime elements in the DocumentIdentification part of the StandardBusinessDocumentHeader identify each individual Transport Status Request message or a new Transport Status Notification message. The content will be updated every time a new message is sent.
- On transport status request and transport status notification level: The entityIdentification will together with the creationDateTime and lastUpdateDateTime identify the specific versions of the Transport Status Request or the Transport Status Notification in a unique way.
  - creationDateTime defines the date and time for the first creation of the Transport Status Request or Transport Status Notification.
  - lastUpdateDateTime is used in case of deletions and defines the date and time of the version to be deleted (i.e. the CreationDateAndTime in the header of this message)[2].
- On transaction level: If the TransportStatusNotification is a response to a TransportStatusRequest, the transportStatusResponse element will refer to the associated TransportStatusRequest by means of its entityIdentification and creationDateTime.

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[2] We assume that updates are not done.

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There are also identifiers related to consignments, shipments, logistic units and transport equipment addressed by the messages (not visible in the figure - for more information see section 5.5.):

- In transportStatusRequestShipment/transportStatusNotificationShipment: GSIN
- In transportStatusRequestConsignment/transportStatusNotificationConsignment: GINC
- In transportStatusRequestLoadUnit/transportStatusNotificationLoadUnit: SSCC
- In transportStatusRequestTransportEquipment/transportStatusNotificationTransport-Equipment: GRAI or GIAI

The status indicators are (indicated by blue ink in Figure 6):

- documentStatusCode indicates the status with respect to originality. Permitted values are:
  - ADDITIONAL TRANSMISSION - if the information content is a copy of information sent by other communication channels, e.g. paper, fax, etc.
  - COPY - if this is a confirmation or re-sending of information sent previously
  - ORIGINAL - if the information content is the original. In an electronic supply chain this value should be used.
- documentActionCode indicates the status of a TransportStatusNotification sent by a LSC and the required action to be performed by the LSP. The following values may be used[3]:
  - ADD – if the TransportStatusNotification is a new status report.
  - DELETE - if the TransportStatusNotification is cancelled and should be deleted.

The content codes are (indicated by green ink in Figure 6):

- TransportStatusInformationCode indicates the type of status information requested or provided
- TransportStatusObjectCode indicated the type of object addressed.

The use of the content codes are further described in section 5.3

The actual content, which will contain the status information, will depend on the TransportStatusObjectCode and may include one or more of the following:

- transportStatusRequestShipment/transportStatusNotificationShipment
- transportStatusRequestConsignment/transportStatusNotificationConsignment
- transportStatusRequestLoadUnit/transportStatusNotificationLoadUnit
- transportStatusRequestTransportMeans/transportStatusNotificationTransportMeans
- transportStatusRequestTransportEquipment/transportStatusNotificationTransportEquipment

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[3] The CHANGE BY REFRESH value is not used. Faulty status reports should be deleted (DELETE), and new report should be sent (ADD).

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5.2 How to do the Transport Status choreography?

A Transport Status transaction may be initiated and carried out in two ways:

1. A Transport Status Request message is sent from the Transport Logistic Client (LSC), and the Transport Logistic Provider (LSP) will respond with a Transport Status Notification message. Such transactions are triggered by a transport status demand. Identifiers will handle the linkage between the messages, as described in 5.1.

2. A Transport Status Notification Message sent from the Transport Logistic Provider (LSP). Such transactions are triggered by pre-defined conditions. These can either be default procedures on when a LSP shall send Transport Status Notifications to a LSC, or by agreements between LSP and LSC.

Figure 7 Transport Status transactions

If an in-correct Transport Status Notification Message is sent, it should be deleted before a new Transport Status Notification message can be sent. The Transport Status Notification deletion is done as follows:

- entityIdentification and lastUpdateDateTime refers to the message that is to be deleted
- The documentActionCode is set to DELETE, as described in 5.1.

Figure 8 Transport Status transaction state machine

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5.3 Which status reports can be requested and provided?

In the Transport Status Notification, the status can be provided in three ways:
1) By means of pre-defined status codes
2) By movement information, reported as planned or actual time schedules related to locations
3) By events information, reported by measurements.

Different primary objects can be addressed dependent on the TransportStatusObjectCode value (see 5.1):
- CONSIGNMENT – the primary object is a consignment. Information on the related transport means and equipment may also be provided
- SHIPMENT – the primary object is a shipment. Information on the related transport means and equipment may also be provided.
- LOGISTIC_UNIT – the primary object is a logistic unit. Information on the related transport means and equipment may also be provided.
- TRANSPORT_MEANS – the primary object is a transport means.
- TRANSPORT_EQUIPMENT – the primary object is transport equipment.

The TransportStatusInformationCode (see 5.1) indicates the type of status report. Possible values are:
- STATUS_ONLY – status report with pre-defined codes which indicate the status
- EVENT_LOG_ONLY – status report with measurements
- STATUS_AND_MOVEMENT – status report with pre-defined codes which indicate status and planned or actual time schedules related to locations
- STATUS_MOVEMENT_AND_EVENT_LOG – status report with pre-defined codes; planned or actual time schedules related to locations; and measurements
- INFIRMATION_ON_DELIVERY – status report with pre-defined code for final delivery

Table 7 describes the composition of status reports by means of XML elements depending on the values of the TransportStatusObjecCode and the TransportStatusInformationCode.

Table 7 Mandatory (M) and optional (O) XML elements in different types of status reports

TransportStatusObjectCode values and associated top-level XML elements	XML elements used for status provision below the top-level elements		
	In status report with pre-defined codes	In status report with movement information	In status report with measurements
CONSIGNMENT - see Note 1: transportStatusNotificationConsignment (M) transportStatusNotificationTransportEquipment (O) transportStatusNotificationTransportMeans (O)	transportStatus (M)	transportStatusNotification-TransportMovement (M)	includedTransportEquipment (O) in transportStatusNotificationConsignment transportTrackingLogEvent (M) in transportStatusNotificationTransportEquipment AND/OR tansportStatusNotificationTransport-Means – **see NOTE 2**
SHIPMENT - see Note 1: transportStatusNotificationConsignment (M) transportStatusNotificationTransportEquipment (O) transportStatusNotificationTransportMeans (O)	transportStatus (M)	transportStatusNotification-TransportMovement (M)	transportTrackingLogEvent (M) in transportStatusNotificationTransportEquipment AND/OR transportStatusNotificationTransport-Means – **see NOTE 2**
LOGISTIC_UNIT - see Note 1: transportStatusNotificationConsignment (M) transportStatusNotificationTransportEquipment (O) transportStatusNotificationTransportMeans (O)	transportStatus (M)	transportStatusNotification-TransportMovement (M)	transportTrackingLogEvent (M) in transportStatusNotificationTransportEquipment AND/OR transportStatusNotificationTransport-Means – **see NOTE 2**
TRANSPORT_EQUIPMENT: transportStatusNotificationTransportEquipment (M)	transportStatus (M)	transportStatusNotification-TransportMovement (M)	transportTrackingLogEvent (M)
TRANSPORT_MEANS: transportStatusNotificationTransportMeans (M)	transportStatus (M)	transportStatusNotification-TransportMovement (M)	transportTrackingLogEvent (M)
transportStatusInformationCode values to be used:	STATUS_ONLY INFIRMATION_ON_ DELIVERY	-	EVENT_ LOG_ONLY - **see NOTE 3**
	STATUS_AND_MOVEMENT		
	STATUS_MOVEMENT_AND_EVENT_LOG		

Some notes are related to the table (see the NOTE labels in the table):

- NOTE 1: If TransportStatusObjectCode is CONSIGNMENT, SHIPMENT or LOGISTIC_UNIT, information on related transport means and transport equipment may also be provided. They have to be included if TransportStatusInformationCode indicates EVENT_LOG.
- NOTE 2: Status reports with measurements (TransportStatusInformationCode includes EVENT_LOG) can only be provided for transport means and transport equipment. Thus, if TransportStatusObjectCode is CONSIGNMENT, SHIPMENT or LOGISTIC_UNIT, the consignment, shipment or logistic unit must refer to transport means or transport equipment, and the associated transportStatusNotificationEquipment or transportStatusNotificationTransportMeans elements with a transportTrackingLogEvent element must also be included.
- NOTE 3: The transportStatus XML element will also be included when the TransportStatusInformationCode is EVENT_LOG_ONLY, but not when STAUS_MOVEMENT_AND_EVENT _LOG..

5.4 What are shipments and consignments?

The Transport Instruction and Transport Instruction Response messsages to whom the Transport Status Requests and Transport Status Notifications are related will include shipment structures and/or consignment structures. As illustrated by Figure 9 shipments are related to commercial transactions and the trade items to be transported; and consignments are related to logistics service transactions and contain information about the route and the transport movement. The trade item information is in the consignments structure is only at an aggregated level.
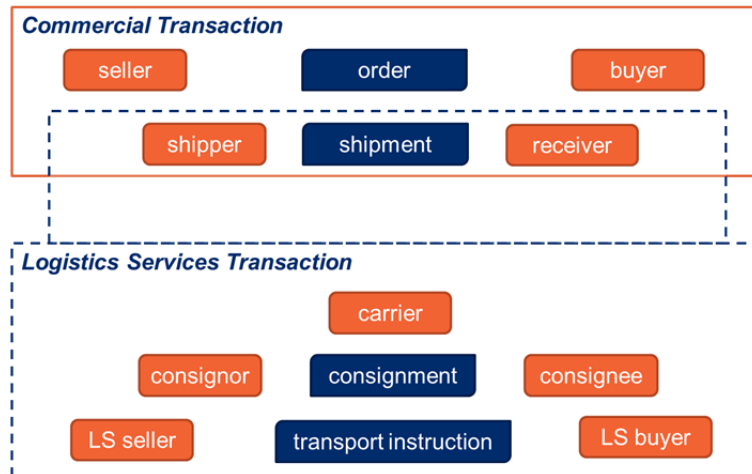
Figure 9 Shipments vs. consignments [12]

Only the shipment structure are used when

- The LSC does not want to or cannot specify the transport execution details (transport equipment, movement, etc.). It is assumed that the LSP will take care of the execution details. (The shipment may however refer to equipment such as containers.)

Only the consignment structure are used when

- The LSC specifies the transport execution details and the shipment details are not required and there is no need for provision of the shipment details.

Both the shipment and consignment structures are used if

- The transport instruction includes consolidations, de-consolidation, break-bulk and cross-docking. Information about the consignment structure is required – and this includes information on shipments (e.g. product codes).
- Consignment is needed, but the LSC wants to specify the shipment details.

5.5　How to use the Identifiers?

The Transport Instruction XSD arrange for the use of either GS1 identifiers or alternative identifiers. The GS1 identifier element is always included, but if alternative identifiers are used, the value is set to a number of zeros equal to the minimum number of digits in the GS1 identifier as as illustrated by the example in Figure 10. Figure 11 illustrates the use of identifiers, and Table 8 provides a description of these identifiers as well as GLN and the number of digits used to represent them.

Figure 10 Identification example: a) GS1 GSIN identifier b) Alternative identifier
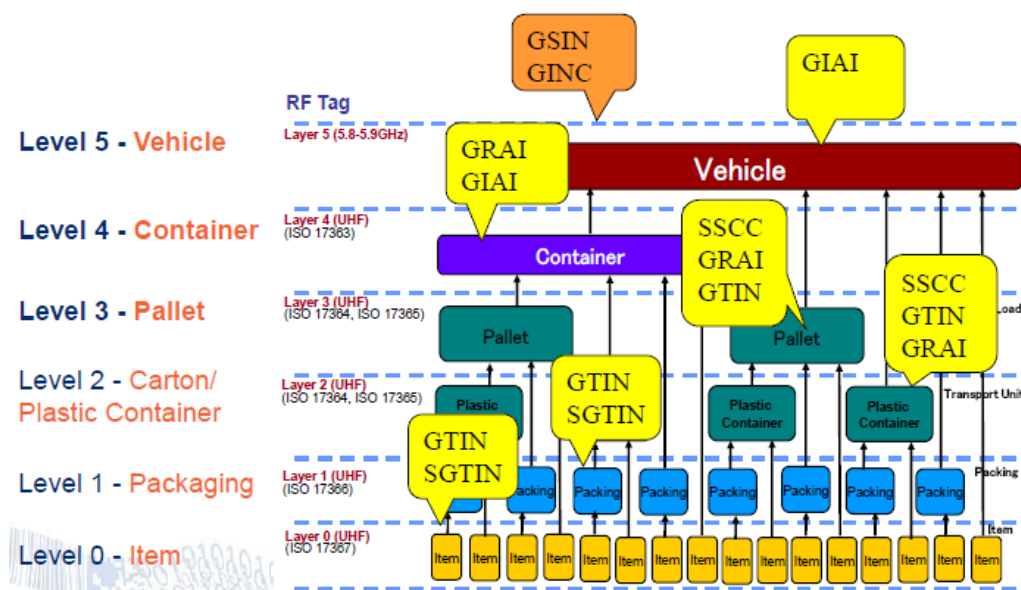
Figure 11 GS1 Identifiers (Ref Mia Lenman, GS1 Sweden)

Table 8 GS1 identifiers

GS1 keys	Description	Used to identify	Numbers of digits
GSIN	Global Shipment Identification Number	A grouping of logistics units that comprise a shipment	17
GINC	Global Identification Number for Consignment	A grouping of logistics units that are assembled to be transported together under one transport message (should not be confused with shipment which identifies a grouping for trade purposes)	Minimum 4 Maximum 30
GRAI	Global Returnable Asset Identifier	Reusable package or transport equipment that is considered an asset. Assigned for the lifetime of the asset.	Minimum 14 Maximum 30
GIAI	Global Individual Asset Identifier	A diverse range of business applications, for example recording the life cycle history of an asset.	Minimum 4 Maximum 30
GTIN	Global Trade Item Number	Any item (product or service) that may be priced, or ordered, or invoiced at any point in any supply chain	14
SGTIN	Serial Global Trade Item Number	Same as GTIN, but a sequence number is added for unique identification.	Minimum 15
SSCC	Serial Shipping Container Code	Any item of any composition established for transport and/or storage which needs to be managed through the supply chain. Assigned for the lifetime of the item.	18
GLN	Global Location Number	Physical locations and legal entities[4].	13

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[4] According to common practice different receivers have different GLNs to the same location, e.g. to the same warehouse. This is not the correct use of GLN, but many of the current systems are based upon such use of GLN.

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5.6   How to request status reports?

A Transport Status Notification message contains status reports that can be initiated in several ways:

- They may be requested by a Transport Status Request message
- They can be provided according to a pre-defined agreement between the LSP and the LSC
- There may be some sort of default procedures on when a LSP shall send Transport Status Notifications to the LSC

In the scenario in section 4, the FORWARDER requests a status report from the SEA CARRIER. Figure 12 provides an example of XML elements in a Transport Status request message.

documentStatusCode states the status of the message with respect to originality (see section 5.1). In this case ORIGINAL is used since this is new and original information

transportStatusInformationCode and transport-StatusObjectCode indicate what type of status report that is requested (see section 5.3).

transportStatusRequestConsignment and transportStatusRequestTransportEquipment identify the consignment and the equipment addressed.

Figure 12 The Transport Status Request Message

Figure 13 provides an example of XML elements in a Transport Status Notification message provided as a response to a previous Transport Status Request.

transportStatusRequest refers to the associated request.

transportStatusNotificationTransportEquipment provides the status on the transport equipment (which is a part of the consignment). Measurements are provided in the transportTrackingLogEvent.

Figure 13 The Transport Status Notification Message

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5.7   How to arrange for status reporting with measurements?

The Transport Status transaction provides status information related to consignments, shipments, logistic units, transport means and transport equipment addressed in Transport Instructions. However

- Status information with measurements (e.g. a temperature measured by a sensor) can only be provided for transport means and transport equipment.
- Cargo equipped with sensors must be defined as transport equipment if there is a need for status reports with measurements. This is done in a Transport Instruction message (as mention in the introduction, the Transport Status transaction belongs to a family of transactions, which also includes the Transport Instruction – see the implementation guide for Transport Instruction [2]).

Goods on pallets may for example be damaged due to overheating, and to arrange for monitoring, a pallet may be equipped with sensors. Temperature measurements can be reported as events as described in section 5.12. The example in Figure 14 illustrates how a Transport Instruction can facilitate such a reporting. The pallet is defined as both a logistic unit and transport equipment:

- In transportInstructionConsignment an includedTransportEuipment element is defined with a grai referring to the pallet.
- In transportInstructionConsignment, the transportInstructionConsignmentItem contains a logisticUnit element for the pallet with a referencedTransportEquipment referring to the grai. This is the link between the pallet as a logistic unit and the same pallet as transport equipment.

Figure 14 Transport Instruction defining a pallet as both logistic unit and transport equipment.

5.8   How to report new identifiers?

This section is related to the scenario in section 4. As mentioned in the scenario, the identifiers of the logistic units may be unknown until the cargo is picked-up by ROAD CARRIER 1. When the cargo is picked up and registered, ROAD CARRIER 1 may provide the identifiers in a Transport Status Notification.

transportStatusRequestor and transportStatusProvider:
These are the receiver and provider of the Transport Service Notification. Both have to be included also in cases where there is no previous Transport Status Request. This is the case in Figure 15 since there is no transportStatusRequest element (which would have been referring to the previous request). The Transport Status Notifications was initiated by the Logistics Service Provider due to an agreement with the Logistics Service Client and not due to a request.

transportStatusNotificationConsignment:
ginc refers to the consignment addressed by the Transport Instruction.

includedLogisticUnit defines the logistic units in this consignment, and their sscc values are provided.

In the code list defined by GS1 there is no transportStatusConditionCode indicating that identifiers are registered. Thus, in the transportStatus element the transportStatusConditionCode is set to 13, which is collection/pick up completed. The gln of the logistic location is provided.

- sh:StandardBusinessDocumentHeader   1.0
- transportStatusNotification   2011-07-25T14:05:00.000+01:05
  - creationDateTime   2011-07-25T14:05:00.000+01:05
  - documentStatusCode   ORIGINAL
  - documentActionCode   ADD
  - documentStructureVersion   1.0
  - lastUpdateDateTime   2011-07-25T14:05:00.000+01:05
  - transportStatusNotificationIdentification   TSN0000001
  - transportStatusInformationCode   STATUS_ONLY
  - transportStatusObjectCode   CONSIGNMENT
  - transportStatusRequestor   4098765000012
    - gln   4098765000012
    - additionalPartyIdentification   "Party reference" FORWARDER
    - address   Hamburg
    - contact   Jon Hanson
    - organisationDetails   FORWARDER
  - transportStatusProvider   4098765000017
    - gln   4098765000017
    - additionalPartyIdentification   "Party reference" ROAD CARRIER 1
    - address   Hamburg
    - contact   Johan Strauss
    - organisationDetails   ROAD CARRIER 1
  - transportStatusNotificationConsignment   7365566156191234567
    - ginc   7365566156191234567
    - cargoTypeCode   12
    - cargoTypeDescription   "EN" Antibiotics
    - consignor   7365566156190
    - consignee   4098765000012
    - includedLogisticUnit   123456789123456700
      - sscc   123456789123456700
    - includedLogisticUnit   123456789123456701
      - sscc   123456789123456701
    - includedLogisticUnit   123456789123456702
      - sscc   123456789123456702
    - transportStatus   13
      - transportStatusConditionCode   13
      - transportStatusDateTime   2011-07-25T14:05:00.000+01:00
      - transportStatusDescription   "EN" Collection/pick-up, completed
    - logisticLocation   7365566156190

Figure 15 Transport Service Notification reporting updated identifiers.

5.9 How to report statuses related to time schedules?

The transportStatusNotificationConsignment, transportStatusNotificationShipment, transportStatus-NotificationLogisticUnit, transportStatusNotificationTransportMeans and transportStatusNotification-TransportEquipment elements of the Transport Status Notification message may have one or more transportStatus elements and may also have one or more transportStatusNotificationTransportMovement elements that can be used to report status with respect to time schedules. The two options facilitate different types of reports. The transportStatus element provides pre-defined status codes. transportStatusNotificationTransportMovement provide detailed information on:

- Planned departure and actual departure
- Planned arrival and actual arrival
- Actual loading
- Actual unloading
- Planned waypoint and actual waypoint

Related to the scenario in section 4, the transport performed by ROAD CARRIER 1 is delayed, and a new planned arrival is reported.

transportStatusInfomationCode:
The value is STATUS_AND_MOVEMENT since the time schedule information has to be reported in the movement part.

transportStatusObjectCode:
The value is CONSIGNMENT since the delay affects the whole consignment (which was addressed in the Transport Instruction).

For other details on the first part of the message see section 5.8.

transportStatusNotificationConsignment:
ginc refers to the consignment addressed by the Transport Instruction.

includedLogisticUnit defines the logistic units in this consignment, and their sscc values are provided.

transportStatusConditionCode in transportStatus is 20, which is "delayed, in course of transport".

In transportStatusNotificationTransport-Movement, sequenceNumber is 1 since there is just one leg associated with this TransportInstruction.
transportModeTypeCode is 30, which is road transport. plannedArrival provides an GLN which identifies location and planned arrival time.

Figure 16 Transport Status Notification reporting delay

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5.10 How to report damage by means of status codes?

Related to the scenario in section 4, packets on one pallet transported by the SEA CARRIER are damaged. This damage can be reported by a pre-defined status code, as described in this section, or as a measurement (e.g. temperature) as described in section 5.12.

transportStatusInfomationCode:
The value is STATUS_ONLY since there is no need for movement information.

transportStatusObjectCode:
The value is LOGISTIC_UNIT since the damage just affects one of the logistic unit and not the whole container or whole consignment.

For other details on the first part of the message see section 5.8.

transportStatusNotificationLogisticUnit:
sscc refers to the logistic unit addressed by the associated Transport Instruction.

relatedConsignment refers to the consignment by means of its ginc.

relatedShipment refers to the shipment by means of its gsin.

transportStatusConditionCode in transportStaus is set to 18, which is "damaged, in course of transport".

transportStatusReasonCode in transportStaus is set to 51E, which is "damaged during manipulation".

Figure 17 Transport Status Notification reporting damage

5.11   How to report status on shipment?

Section 5.10 describes how the SEA CARRIER in the scenario in section 4 reports a deviation to the FORWARDER. The FORWARDER will in this case forward the information by sending a status report to RECEIVER 2, as illustrated in Figure 5. The message will be quite similar to the one illustrated in 5.10.

- **transportStatusInfomationCode:** The value is STATUS_ONLY since there is no need for movement information.
- **transportStatusObjectCode:** The value is LOGISTIC_UNIT since the damage affects just one of the logistic unit and not the whole shipment.
- **transportStatusNotificationLogisticUnit**: the sscc refers to the logistic unit addressed by the associated Transport Instruction.
  - relatedShipment refers to the shipment by means of its gsin.
  - transportStatusConditionCode of the transportStaus is set to 18, which is "damaged, in course of transport".
  - transportStatusReasonCode of the transportStatus is set to 51E, which is "damaged during manipulation".

5.12   How to report damage as an event with measurements?

In the scenario in section 4, packets on a pallet transported by the SEA CARRIER are damaged. Section 5.10 describes how a status can be provided by predefined codes. This section describes how a status report can include measurements (e.g. temperatures).

Note: In section 5.10, the damage cannot be reported as a measurement since the pallet is a logistic unit and not transport equipment (measurements are only supported for transport equipment and transport means). To arrange for measurement reporting, the cargo units must be defined as transport equipment as described in section 5.7. In that way a status report can also provide measurements related to the pallet, as illustrated by Figure 18.

transportStatusInformationCode:
The value is EVENT_LOG_ONLY.

transportStatusInformationCode:
The value is CONSIGNMENT since the event is related to a consignment where the pallet is a logistic unit registered as a transport equipment.

For other details on the first part of the message see section 5.8.

transportStatusNotificationConsignment:
This element supports a link towards the consignment (identified by its ginc) in the associated Transport Instruction.

includedTransportEquipment links to the damaged transport equipment (identified by its grai).

transportStatusConditionCode in transportStatus is set to 69E, which is "damaged".

transportStatusNotificationTransport-Equipment:
individualReturnableAssetIdentification links to the pallet by means of its grai.

transportStatusConditionCode in transportStatus is set to 69E, which is "damaged".

transportTrackingLogEvent provides the event information, which is a temperature of 35 degrees Celsius.

Figure 18 Transport Status Notification with measurement.

5.13   How to report movement status on consignment?

As described in the scenario in section 4, the FORWARDER is informed on border crossing. The example XML in Figure 19 shows how this is done.

transportStatusInfomationCode:
The value is STATUS_AND_MOVEMENT.

transportStatusInfomationCode:
The value is CONSIGNMENT since the event is related to a consignment.

For other details on the first part of the message see section 5.8.

transportStatusNotificationConsignment:
This element supports a link towards the consignment (identified by the GINC) in the associated Transport Instruction.

transportStatusConditionCode in transportStatus is set to 357, which is "en route via international route".

In transportStatusNotificationTransportMovement information on two logistic events is provided:

- plannedArrival to the terminal in Oslo.
- actualWaypoint which is the national border crossing. The location and the date and time for the boarder crossing is provided.

Figure 19 Transport Status Notification with movement.

5.14   How to report movement status on shipment?

Section 5.13 describes how the SEA CARRIER in the scenario in section 4 reports time schedule information to the FORWARDER. The FORWARDER will in this case, based on the status report received from the SEA CARRIER (see 5.13) forward status information by sending a status report to RECEIVER 2, as illustrated in Figure 5. The message will be quite similar to the one illustrated in 5.13. The main differences are:

- **transportStatusInfomationCode:** The value is STATUS_AND_MOVEMENT.
- **transportStatusObjectCode:** The value is SHIPMENT since status is related to a shipment.
- **transportStatusNotificationShipment**: This element supports a link towards the shipment (identified by the GSIN) in the associated Transport Instruction.
  - transportStatusConditionCode in transportStatus is set to 357, which is en route via international route.
  - In transportStatusNotificationTransportMovement information with one logistic events is provided: plannedArrival to the terminal in Oslo

6 Overview of supporting services

The Transport Status transaction contains of a Transport Status Request message sent from the LSC to the LSP and/or a Transport Status Notification message sent from the LSP to the LSC. The fundamental services that are needed are: the possibility to create a new Transport Status Request; to create a new Transport Status Notification; and to delete a Transport Status Notification.

Due to the asynchronous nature of the Transport Status transaction (i.e. there may take a long time from a Transport Status Request is received to the Transport Status Notification is sent), each interaction should be realised as a service with a request and an acknowledge. The required services are listed in Table 9.

Table 9 Transport Instruction Services

Services	Message involved	Explanation
CreateTransportStatusRequest	Transport Status Request	A Transport Status Request is sent from a LSC to a LSP.
CreateTransportServiceNotification	Transport Status Notification	A response to a Transport Status Request is sent from a LSP to a LSC, or a Transport Service Notifications is send without any previous request.
DeleteTransportServiceNotification	Transport Status Notification	A Transport Service Notifications previously send is deletes..

In the CreateTransportStatusRequest service a Transport Status Request message is sent as a request from the LSC to the LSP as illustrated in Figure 20. The LSP responds by confirming receipt.
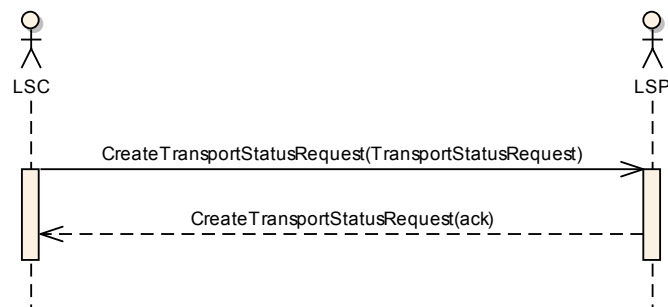

Figure 20 CreateTransportStatusRequest service

In the CreateTransportStatusNotification service a Transport Status Notification message is sent from the LSP to the LSC. The LSC responds by confirming receipt with an acknowledgement.

Figure 21 CreateTransportStatusNotification service

In the DeleteTransportServiceNotification service a Transport Status Notification message is sent from the LSP to the LSC. The LSC responds by confirming receipt with an acknowledgement.
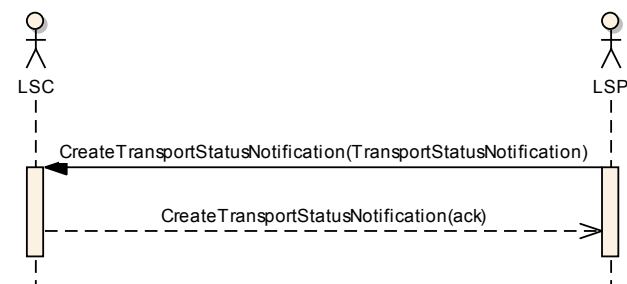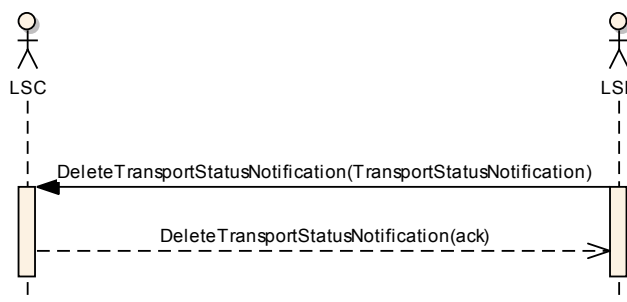

Figure 22 DeleteTransportStatusNotification service

Annexes

Annex A. Transport Status Request and Notification XML examples

This annex provides some examples of full messages. There may be some inconsistencies in the message content details, but the messages should provide a fair good overview of what the content could look like.

A.1. Transport Status Request from FORWARDER to SEA CARRIER

- transport_status_request:transportStatusRequestMessage "urn:gs1:ecom:transport_status_common:xsd:3"
  - sh:StandardBusinessDocumentHeader HeaderVersion0
    - sh:HeaderVersion HeaderVersion0
    - sh:Sender 4098765000012
      - sh:Identifier "GS1" 4098765000012
      - sh:ContactInformation Jon Hansson
        - sh:Contact Jon Hansson
        - sh:EmailAddress jon@forwarder.no
        - sh:TelephoneNumber +4794651111
        - sh:ContactTypeIdentifier Buyer
    - sh:Receiver 4098765000010
      - sh:Identifier "GS1" 4098765000010
      - sh:ContactInformation Jon Persson
        - sh:Contact Jon Persson
        - sh:EmailAddress jon@ferryoperator.se
        - sh:TelephoneNumber +4694651111
        - sh:ContactTypeIdentifier Seller
    - sh:DocumentIdentification GS1
      - sh:Standard GS1
      - sh:TypeVersion 3.0
      - sh:InstanceIdentifier 200001
      - sh:Type Type0
      - sh:MultipleType false
      - sh:CreationDateAndTime 2011-08-02T15:00:00.0Z
  - transportStatusRequest 2006-05-04T18:13:51.0Z
    - creationDateTime 2006-05-04T18:13:51.0Z
    - documentStatusCode ORIGINAL
    - documentActionCode ADD
    - documentStructureVersion documentStructureVersion0
    - lastUpdateDateTime 2006-05-04T18:13:51.0Z
    - transportStatusRequestIdentification entityIdentification0
      - entityIdentification entityIdentification0
      - contentOwner 4098765000012
        - gln 4098765000012
        - additionalPartyIdentification "Party reference" FORWARDER
    - transportStatusInformationCode EVENT_LOG_ONLY
    - transportStatusObjectCode CONSIGNMENT
    - transportStatusProvider 0000000000000
      - gln 0000000000000
      - additionalPartyIdentification "Party reference" SEA CARRIER
      - contact Jon Persson
        - personName Jon Persson
        - communicationChannel E-mail
          - communicationChannelCode E-mail
          - communicationValue jon@ferryoperator.se

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- ▲ ● communicationChannel   Telephone
  - ● communicationChannelCode   Telephone
  - ● communicationValue   +4694651111
- ▲ ● organisationDetails   SEA CARRIER
  - ● organisationName   SEA CARRIER
- ▲ ● transportStatusRequestor   4098765000012
  - ● gln   4098765000012
  - ● additionalPartyIdentification   "Party reference" FORWARDER
  - ▲ ● address   Hamburg
    - ● city   Hamburg
    - ● countryCode   DE
    - ● postalCode   20999
    - ● streetAddressOne   Billwerder 24
  - ▲ ● contact   Jon Hanson
    - ● personName   Jon Hanson
    - ▲ ● communicationChannel   E-mail
      - ● communicationChannelCode   E-mail
      - ● communicationValue   jonn@forwarder.no
    - ▲ ● communicationChannel   Telephone
      - ● communicationChannelCode   Telephone
      - ● communicationValue   +4794651111
  - ▲ ● organisationDetails   FORWARDER
    - ● organisationName   FORWARDER
- ▲ ● reportingPeriod   2011-08-02
  - ● beginDate   2011-08-02
  - ● beginTime   01:01:01.001
  - ● endDate   2011-08-02
  - ● endTime   23:59:01.001
- ▲ ● transportStatusRequestConsignment   7365566156191234504
  - ● ginc   7365566156191234504
  - ▲ ● consignor   4098765000012
    - ● gln   4098765000012
    - ▷ ● contact   Peter Muller
    - ▷ ● organisationDetails   RAIL CARRIER
  - ▷ ● consignee   TERMINAL_OPERATOR
  - ▷ ● transportReference   entityIdentification1

A.2. Transport Status Notification (delay – movement) from ROAD CARRIER 1 to FORWARDER

A delay is reported by means of a status code and movement information with planned arrival.

```
transport_status_notification:transportStatusNotificationMessage "urn:gs1:ecom:ecom_common:xsd:3"
  sh:StandardBusinessDocumentHeader  1.0
    sh:HeaderVersion  1.0
    sh:Sender  4098765000013
      sh:Identifier  "GS1"  4098765000013
      sh:ContactInformation  Johan Strauss
        sh:Contact  Johan Strauss
        sh:EmailAddress  johan@roadcarrier1.de
        sh:TelephoneNumber  +499955664411
        sh:ContactTypeIdentifier  Seller
    sh:Receiver  4098765000012
      sh:Identifier  "GS1"  4098765000012
      sh:ContactInformation  Jon Hansson
        sh:Contact  Jon Hansson
        sh:EmailAddress  jon@forwarder.no
        sh:TelephoneNumber  +4794651111
        sh:ContactTypeIdentifier  Buyer
    sh:DocumentIdentification  GS1
      sh:Standard  GS1
      sh:TypeVersion  3.0
      sh:InstanceIdentifier  100024
      sh:Type  Transport Status Notification
      sh:CreationDateAndTime  2011-07-25T14:05:00.0Z
  transportStatusNotification  2011-07-25T14:05:00.000+01:05
    creationDateTime  2011-07-25T14:05:00.000+01:05
    documentStatusCode  ORIGINAL
    documentActionCode  ADD
    documentStructureVersion  1.0
    lastUpdateDateTime  2011-07-25T14:05:00.000+01:05
    transportStatusNotificationIdentification  TSN0000001
      entityIdentification  TSN0000001
    transportStatusInformationCode  STATUS_AND_MOVEMENT
    transportStatusObjectCode  CONSIGNMENT
    transportStatusRequestor  4098765000012
      gln  4098765000012
      additionalPartyIdentification  "Party reference"  FORWARDER
      address  Hamburg
        city  Hamburg
        countryCode  DE
        postalCode  20999
        streetAddressOne  Billwerder 24
      contact  Jon Hanson
        personName  Jon Hanson
        communicationChannel  E-mail
          communicationChannelCode  E-mail
          communicationValue  jonn@forwarder.no
        communicationChannel  Telephone
          communicationChannelCode  Telephone
          communicationValue  +4794651111
      organisationDetails  FORWARDER
        organisationName  FORWARDER
```

- transportStatusProvider 4098765000017
  - gln 4098765000017
  - additionalPartyIdentification "Party reference" ROAD CARRIER 1
  - address Hamburg
    - city Hamburg
    - countryCode DE
    - postalCode 20999
    - streetAddressOne Billwerder 30
  - contact Johan Strauss
    - personName Johan Strauss
    - communicationChannel E-mail
      - communicationChannelCode E-mail
      - communicationValue johan@roadcarrier1.de
    - communicationChannel Telephone
      - communicationChannelCode Telephone
      - communicationValue +499955664411
  - organisationDetails ROAD CARRIER 1
    - organisationName ROAD CARRIER 1
- transportStatusNotificationConsignment 7365566156191234567
  - ginc 7365566156191234567
  - cargoTypeCode 12
  - cargoTypeDescription "EN" Antibiotics
  - consignor 7365566156190
    - gln 7365566156190
  - consignee 4098765000012
    - gln 4098765000012
  - includedLogisticUnit 123456789123456700
    - sscc 123456789123456700
  - includedLogisticUnit 123456789123456701
    - sscc 123456789123456701
  - includedLogisticUnit 123456789123456702
    - sscc 123456789123456702
  - transportStatus 20
    - transportStatusConditionCode "2010" 20
    - transportStatusDateTime 2011-07-25T14:12:00.000+01:00
    - transportStatusDescription "EN" Delayed, in course of transportation
  - transportStatusNotificationTransportMovement 1
    - sequenceNumber 1
    - transportModeTypeCode 30
    - plannedArrival
      - logisticLocation 4098765000012
        - gln 4098765000012
      - logisticEventDateTime 2011-08-01
        - date 2011-08-01
        - time 08:30:00

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A.3. Transport Status Notification (damage – measurement) from SEA CARRIER to FORWARDER

A damage is reported with temperature measurement.

- transport_status_notification:transportStatusNotificationMessage "urn:gs1:shared:shared_common:xsd:3"
- sh:StandardBusinessDocumentHeader HeaderVersion0
  - sh:HeaderVersion HeaderVersion0
  - sh:Sender 4098765000010
    - sh:Identifier "GS1" 4098765000010
    - sh:ContactInformation Jon Persson
      - sh:Contact Jon Persson
      - sh:EmailAddress jon@ferryoperator.se
      - sh:TelephoneNumber +4694651111
      - sh:ContactTypeIdentifier Seller
  - sh:Receiver Identifier1
    - sh:Identifier "Authority1" Identifier1
    - sh:ContactInformation Jon Hansson
      - sh:Contact Jon Hansson
      - sh:EmailAddress jon@forwarder.no
      - sh:TelephoneNumber +4794651111
      - sh:ContactTypeIdentifier Buyer
  - sh:DocumentIdentification GS1
    - sh:Standard GS1
    - sh:TypeVersion 3.0
    - sh:InstanceIdentifier 200001
    - sh:Type Type0
    - sh:MultipleType false
    - sh:CreationDateAndTime 2011-08-02T15:00:00.0Z
- transportStatusNotification 2011-08-02T15:00:00.0Z
  - creationDateTime 2011-08-02T15:00:00.0Z
  - documentStatusCode ORIGINAL
  - documentActionCode ADD
  - documentStructureVersion 1.0
  - lastUpdateDateTime 2011-08-02T15:00:00.0Z
  - transportStatusNotificationIdentification TSN000005
    - entityIdentification TSN000005
  - transportStatusInformationCode EVENT_LOG_ONLY
  - transportStatusObjectCode CONSIGNMENT
  - transportStatusRequestor 4098765000012
    - gln 4098765000012
    - additionalPartyIdentification "Party reference" FORWARDER
    - address Hamburg
      - city Hamburg
      - countryCode DE
      - postalCode 20999
      - streetAddressOne Billwerder 24

- contact   Jon Hanson
  - personName   Jon Hanson
  - communicationChannel   E-mail
    - communicationChannelCode   E-mail
    - communicationValue   jonn@forwarder.no
  - communicationChannel   Telephone
    - communicationChannelCode   Telephone
    - communicationValue   +4794651111
- organisationDetails   FORWARDER
  - organisationName   FORWARDER
- transportStatusProvider   0000000000000
  - gln   0000000000000
  - additionalPartyIdentification   "Party reference" FerryOperator
  - contact   Jon Persson
    - personName   Jon Persson
    - communicationChannel   E-mail
      - communicationChannelCode   E-mail
      - communicationValue   jon@ferryoperator.se
    - communicationChannel   Telephone
      - communicationChannelCode   Telephone
      - communicationValue   +4694651111
  - organisationDetails   SEA CARRIER
    - organisationName   SEA CARRIER
- transportStatusNotificationConsignment   7365566156191234567
  - ginc   7365566156191234567
  - cargoTypeCode   12
  - cargoTypeDescription   "EN" Antibiotics
  - includedTransportEquipment   PA
    - transportEquipmentTypeCode   PA
    - individualReturnableAssetIdentification   12345678950000
      - grai   12345678950000
  - transportStatus   18
    - transportStatusConditionCode   "2010" 18
    - transportStatusDateTime   2011-08-02T15:00:00.0Z
    - transportStatusDescription   "EN" Damaged, in course of transportation
    - transportStatusReasonCode   "2011A" 51E
    - transportStatusReasonDescription   "EN" Damaged during manibulation
- transportStatusNotificationTransportEquipment   PA
  - transportEquipmentTypeCode   PA
  - individualReturnableAssetIdentification   12345678950000
    - grai   12345678950000
  - transportStatus   18
    - transportStatusConditionCode   "2010" 18
    - transportStatusDateTime   2011-08-02T15:00:00.0Z
    - transportStatusDescription   "EN" Damaged, in course of transportation
    - transportStatusReasonCode   "2011A" 51E
    - transportStatusReasonDescription   "EN" Damaged during manibulation
- transportStatusNotificationTransportEquipment   PA
  - transportEquipmentTypeCode   PA
  - individualReturnableAssetIdentification   12345678950000
    - grai   12345678950000
  - transportStatus   69E
    - transportStatusConditionCode   69E
    - transportStatusDateTime   2011-08-02T15:00:00.0Z
    - transportStatusDescription   "EN" Damaged
  - transportTrackingLogEvent   2011-08-02T13:00:00.0Z
    - logEventDateTime   2011-08-02T13:00:00.0Z
    - transportTrackingObservation   TEMPERATURE
      - transportObservationTypeCode   TEMPERATURE
      - transportObservationValueMeasurement   "CEL" 35

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Annex B. Code List modifications

B.1. Logistic Event Type Code

Code Value	Code Name	Comment
TRANSFER_POINT_ARRIVAL	Transfer point arrival	
TRANSFER_POINT_DEPARTURE	Transfer point departure	
CUSTOMS_ARRIVAL	Customs arrival	
CUSTOMS_DEPARTURE	Customs departure	
TERMINAL_ARRIVAL	Terminal arrival	
TERMINAL_DEPARTURE	Terminal departure	
NATIONAL_BORDER_CROSSING	National border crossing	Added by META
FINAL_DELIVERY	Final delivery	Added by META

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