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BSI Standards Publication

Intelligent transport systems — Automatic vehicle and equipment identification — Intermodal goods transport numbering and data structures

National foreword

This British Standard is the UK implementation of EN ISO 17262:2012. It is identical to ISO 17262:2012, incorporating corrigendum December 2013. It supersedes DD CEN ISO/TS 17262:2003 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/278, Intelligent transport systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 17262

September 2012

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English Version

Intelligent transport systems - Automatic vehicle and equipment identification - Intermodal goods transport numbering and data structures

Systèmes intelligents de transport - Identification automatique des véhicules et des équipements - Numérotation du transport de marchandises intermodal et structures des données

Intelligente Transportsysteme - Automatische Fahrzeug- und Ausstattungsidentifizierung - Nummerierung und Datenstruktur (ISO 17262:2012)

This European Standard was approved by CEN on 31 August 2012.

EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN ISO 17262:2012) has been prepared by Technical Committee CEN/TC 278 “Road transport and traffic telematics”, the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 204 "Intelligent transport systems".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN ISO/TS 17262:2003.

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Endorsement notice

The text of ISO 17262:2012 has been approved by CEN as a EN ISO 17262:2012 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 17262 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with Technical Committee CEN/TC 278, *Road transport and traffic telematics*.

This first edition of ISO 17262 cancels and replaces the first edition of ISO/TS 17262:2003, which has been technically revised.

Introduction

Within the context of Intelligent transport systems (ITS) (previously known as RTTT/TICS), intermodal goods transport AVI/AEI systems have the specific objective of achieving a unique or unambiguous positive identification of equipment, and to make that identification automatically. this International Standard defines data to achieve this particular objective.

This International Standard specifies data that enable future upward integration and expansion for intermodal goods transport AVI/AEI systems. The standard is thus designed to be flexible and enabling rather than prescriptive.

For the definition of data, “Abstract Syntax Notation One” (ASN.1) is applied. This usage provides maximum interoperability and conformance to existing Standards within the ITS sector.

Annex C can be consulted prior to the main body of this International Standard for an overview of ASN.1. ISO/IEC 8824, ISO/IEC 8825 and other publications on ASN.1 can also be consulted for further information.

INTERNATIONAL STANDARD ISO 17262:2012(E)

Intelligent transport systems — Automatic vehicles and equipment identification — Intermodal goods transport numbering and data structures

1 Scope

This International Standard defines generic numbering and data structures for unambiguous identification of equipment used for Intermodal goods transport. These data are known as “Intermodal Goods Transport Numbering and Data Structures”.

This International Standard defines data independently of the data carrier. The modelling of data is based on Abstract Syntax Notation One (ASN.1) as defined in ISO/IEC 8824. This International Standard excludes any physical aspects such as interfaces, dimensions etc. Data that form part of transmission or storage protocols (headers, frame markers and checksums) are excluded.

Data defined in this International Standard require a system for control and distribution of number series independent of the different AVI/AEI systems. This is required in order to avoid ambiguity and to provide the necessary level of security where appropriate. For this reason the registration authority defined in ISO 14816 applies for this International Standard.

This International Standard enables the use of optimised encoding schemes such as ASN.1 Packed Encoding Rules (PER).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13044, *Swap bodies — Coding, identification and marking*

ISO/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1): Specification of basic notation*

ISO/IEC 8824-2, *Information technology — Abstract Syntax Notation One (ASN.1): Information object specification*

ISO/IEC 8824-3, *Information technology — Abstract Syntax Notation One (ASN.1): Constraint specification*

ISO/IEC 8824-4, *Information technology — Abstract Syntax Notation One (ASN.1): Parameterization of ASN.1 specifications*

ISO 14816:2005, *Road traffic and transport telematics — Automatic vehicle and equipment identification — Numbering and data structure*

ISO 17621, *Intelligent transport systems — Automatic vehicle and equipment identification — Intermodal goods transport architecture and terminology*

ISO 26683-2, *Intelligent transport systems — Freight land conveyance content identification and communication — Part 2: Application interface profiles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17621 and the following apply.

3.1
AEI manager
component, which receives data from 'AEI Readers' and compares it with information in a data base at which point an ok or error message is generated and transferred to the message display component

3.2
reader
complete set of equipment even if it consists of more than one components required to interrogate, receive and interpret the data in the TAG in order to present the identification

3.3
AEI system
AEI application in a RTTT/TICS system either as a stand-alone system or as part of a RTTT/TICS application

3.4
component
type, class or any other work-product that has been specifically engineered to be reusable

EXAMPLE TAG, reader, AEI manager

3.5
conveyance
means of transport

3.6
intermodal transport
movement of goods in one and the same loading unit or vehicle that uses successively several modes of transport without handling of the goods themselves when changing modes

3.7
load unit
cargo transportation unit, which may be loaded on a transport means

NOTE Synonyms: package, container.

3.8
message display
receives data from AEI manager, and display the data on a variable message sign to the driver

3.9
terminal monitoring point
terminal access control point
point administered by the AEI manager where the monitoring of transport objects is performed

3.10
transport object
transport means, load unit or goods item

4 Symbols and abbreviated terms

AEI	Automatic Equipment Identification
ASN.1	Abstract Syntax Notation number One
DSRC	Dedicated Short Range Communication
ITS	Intelligent Transport System(s)
RTTT	Road Transport and Traffic Telematics (CEN/TC 278)

NOTE Legacy European name for ITS

TICS Transport Information and Control Systems (ISO/TC 204)

NOTE now known as ITS

5 Components of AVI/AEI for intermodal goods transport

5.1 Context

This International Standard provides interoperability, not only between simple AVI/AEI and more complex ITS/RTTT functions, but also with pre-existing standards such as container (ISO 10374). Specifications for protecting against changes, classifying and qualifying security aspects of the data are out of scope of this International Standard.

This International Standard relates to AVI/AEI units, but not to smaller containers and units being transported. For smaller units (pallet loads, trays, parcels etc.) please refer to ISO 26683 and JTC 1/SC31 standards, ISO 18000 series, etc.. However, CS10 defined herein, provides a means to provide land conveyance content data using such standards. The numbering structure defined in this International Standard is designed to enable combinations with the data definitions from ISO 18000 series. This combination is covered in ISO 17264.

This International Standard provides the capability to carry application data, associated with the identification, to be carried as part of the AVI/AEI message. Within this International Standard this is provided as a “black box” facility. The definition of the structure and contents of such messages are outside the scope of this International Standard (examples are shown in ISO 17264).

5.2 General

The components, which are involved in the AVI/AEI intermodal goods transport are the:

AEI manager;

reader;

message display;

transport object/TAG.

The overview of components are illustrated in Figure 1:

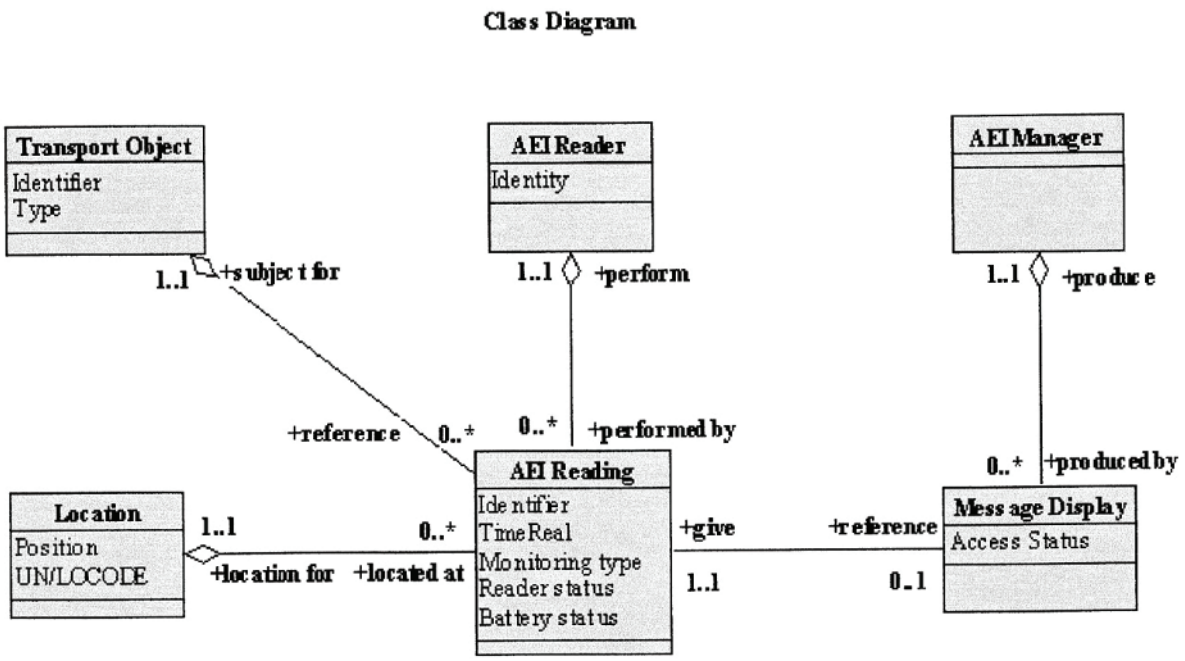


Figure 1 — Components of AVI/AEI for intermodal goods transport

One possible instance of data resided in different components defined in this International Standard is illustrated in Figure B.1. See Annex B for example.

6 Overview of data definitions

This clause contains an overview of the data content of ASN.1 types defined in this International Standard.

'Access Control Status'	'Terminal Monitoring Type'
— Access OK	—Entry
— Access denied	—Exit
—Access pending	—Loading
	—Unloading
'AEI Message Type'	—Stacking
— TimeReal	—Unstacking
— ReaderLocation	—Stuffing
— TerminalMonitoringType	—Stripping
— TransportObjectMessageType	—Registration
'Display Message Type'	'Transport Object Type'
— AccessControlStatus	—Goods item
— TransportObjectMessageType	—Package item
— MsgInfo	—Transport

'Position'

— x co-ordinate

— y co-ordinate

— z co-ordinate

'Reader Location'

— Readeridentity

— Un/Locode

— Geographic point location

— 'Position'

'Transport Component Status'

— OK

— Malfunction

— Battery low

'Transport Object Identifier'

—Issuer identifier

—Manufacturer identifier

—Licence plate number

—Vehicle identification number

—Freight container number (ISO 10374)

—Tax code

—Swap body structure (EN 13044)

— Freight conveyance identifier

'Transport Object Message Type'

–'Transport Object Identifier'

—Transport component status

'Swap body Structure'

— owner code

— equipment category identity

— serial number

— check digit

— length (in centimetres);

— height (in centimetres);

— width (in centimetres);

— container type code

— maximum gross mass (in hundreds of kilograms);

— tare mass (in hundreds of kilograms);

'Freight Land Conveyance Content Information'

- All data specified by ISO 26683 family of standards deliverables

-**r**epresented as specified in CS10

‘ITS consignment in UBL format**’**

-represented as specified in CS11

7 Data definitions

In order to make the data defined within this International Standard valid for use in other RTTT/ITS application standards, the data content of ASN.1 types shall confirm to that defined in ISO/IEC 8824 series. See Annex A for example.

Examples on encoding of data are described in Annex C. See Annex C for example.

7.1 ‘Access Control Status’

7.1.1 Description

‘Access Control Status’ is a code issued by the AEI manager to indicate the status of the access control of a transport means, load unit or a goods item to a terminal monitoring point.

7.1.2 ASN.1 type

```
AccessControlStatus ::= ENUMERATED {
             accessOk (0),
             accessDenied (1),
             accessPending (2) --”Please Wait” indication
}
```

7.2 ‘AEI Message Type’

7.2.1 Description

‘AEI Message Type’ is the complete message, which is transferred from the AEI reader to the AEI manager.

7.2.2 ASN.1 type

```
AEIMessageType ::= SEQUENCE {
      TimeReal, -- Local time reference (precision in seconds)
      ReaderLocation,
      TerminalMonitoringType,
      TransportObjectMessageType -- Transport Means, Package, Goods Item
}
```

7.3 CS9 :SwapBodyStructure

7.3.1 Description

The ‘Swap Body’ data structure shall be based on EN 13044 and consist of the following:

— owner code, in accordance with EN 13044;

— equipment category identity, in accordance with EN 13044;

— serial number, in accordance with EN 13044;

— check digit, in accordance with EN 13044;

— length (in centimetres);

— height (in centimetres);

— width (in centimetres);

— container type code, in accordance with EN 13044;

— maximum gross mass (in hundreds of kilograms);

— tare mass (in hundreds of kilograms).

7.3.2 ASN.1 type

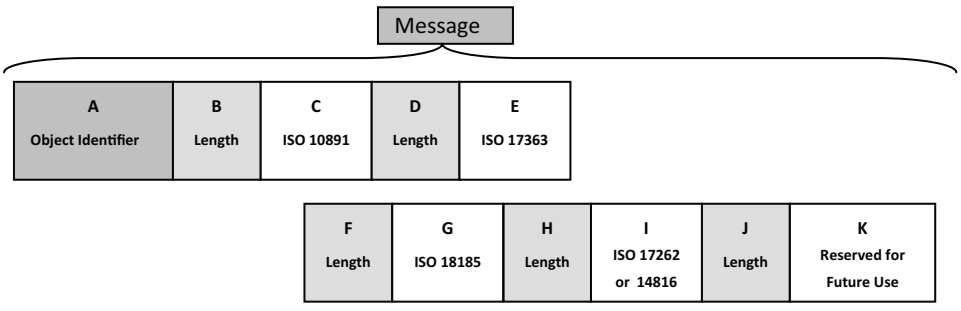
```
CS9 ::= SwapBodyStructure

SwapBodyStructure ::= SEQUENCE {
            ownerCode BIT STRING(SIZE(15)), -- EN 13044
            equipCategoryId BIT STRING(SIZE(3)), -- EN 13044
            serialNumber INTEGER(0 .. 1000000), -- EN 13044
            checkDigit INTEGER(0 .. 10), -- EN 13044
            length INTEGER(1 .. 2048), -- cm
            height INTEGER(1 .. 512), -- cm
            width INTEGER(200 .. 327), -- cm (7bits)
      containerTypeCode INTEGER(0 .. 63), -- EN 13044
      maximumGrossWeight INTEGER(1 .. 512), -- 100 kg
      tareWeight INTEGER(0 .. 63) -- 100 kg
}
```

7.4 CS10 : 'Freight Land Conveyance Content Information'

7.4.1 Description

The 'Freight conveyance identifier' is defined as an octet string that shall contain the corresponding identifier in ISO/TS 26683-2 compliant "'Freight Conveyance Content Identification' data" .

Suggested Data Element Structure (Example)



B – G : used for container
H, I : used for vehicle, chassis
J, K : used for cargo identifiers with general truck, other any purpose from user perspective

7.4.2 ASN.1 type

```
CS10 ::= FreightConveyanceIdentifier
FreightConveyanceIdentifier ::=SEQUENCE{
multipleFreightConveyanceIdentification MultipleFreightConveyanceIdentification,
multipleLoadIdentification MultipleLoadIdentification
```

```
}


MultipleFreightConveyanceIdentification ::= SEQUENCE {
identifierCode INTEGER {
nofreightConveyanceIdentifier (0),
freightContainerIdentification (1),
multipleFreightContainerIdentification (2)
} (0 .. 31),
freightContainerTypeIdentification CS7
}

MultipleLoadIdentification ::= SEQUENCE{
identifierCode INTEGER {
noLoadIdentifier (0),
transportMeansIdentification (1), --ISO14816
intermodalGoodsTransportationIdentification (2), --ISO17262
freightContainerIdentification (3), --ISO17363
returnableTransportItemsIdentification (4), --ISO17364
transportUnitsIdentification (5), --ISO17365
productPackagingIdentification (6), --ISO17366
goodsItemsIdentification (7), --ISO17367
unused1 (8), -- 8-14 unused
unused2 (9), -- 8-14 unused
unused3 (10), -- 8-14 unused
unused4 (11), -- 8-14 unused
unused5 (12), -- 8-14 unused
unused6 (13), -- 8-14 unused
unused7 (14), -- 8-14 unused
electronicSealsIdentification (15) --ISO18185
--16-999 Reserved for future use (0 .. 999)
} (0 .. 999),
noLoadIdetifier PrintableString OPTIONAL,
transportMeansIdentification PrintableString OPTIONAL,
-- Automatic vehicle and equipment identification -Numbering and data structure,
-- containing the corresponding identifier to be defined in ISO 14816,
intermodalGoodsTransportIdentification PrintableString OPTIONAL,
--Automatic vehicle and equipment identification- Numbering and data structures,
-- containing the corresponding identifier to be defined in ISO17262
freightContainerIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17363
returnableTransportItemsIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17364
transportUnitsIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17365
productPckagingIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17366
goodsItemsIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17367
electronicSealsIdentification PrintableString OPTIONAL
--Freight containers
--Part 4: Data protection,
-- containing the corresponding identifier to be defined in ISO18185
}
```

7.5 CS11: ITS consignment in UBL format

7.5.1 Description

CS11 profiles how to populate the UBL transport library data concept : Transport Library::Consignment with data obtained from a freight land conveyance.

CS11 does not specify the air interface used to provide data, it solely provides the means to convert freight consignment data obtained by interrogating a freight land conveyance for data in the format specified by UBL Transport library data concept : 'Transport Library::Consignment' for all of the data concept or for or elements of this data concept as defined in UBL 2.1.

The use of CS11 is OPTIONAL.

In order to comply with ISO 17262, sequence of the OPTIONAL scripts is at the senders' choice (there is no required sequence in ISO 17262).

NOTE 1 These provisions are designed to provide the flexibility to enable only enable parts of the UBL::Consignment data concept to be stored on board and forwarded to a destination where they can be input to the compilation of a UBL data concept, but where it is impracticable or undesirable to hold the whole UML:consignment data concept on board; but to enable those parts stored to be in .xsd form compatible with that required in elements of the UBL::Consignment data concept.

However, in order to claim compliance to UBL2.1, additional discipline is required. Although the use of data element scripts in ISO 17272 is OPTIONAL, and there are no requirements as to sequence, in UBL version 2.1, their use may be mandatory (depending on cardinality), and the order of the sequence is mandatory as specified in UBL 2.1. Those wishing to claim compliance to UBL 2.1 shall refer and comply to **http://docs.oasis-open.org/ubl/prd1-UBL-2.1/UBL-2.1.xml** (Authoritative) or a subsequent version of UBL.

NOTE 2 UBL 2.1 Cardinality:

The optionality and potential occurrences of the BIE.

Cardinality 0..1 – optional and only one

1 – mandatory and only one

Cardinality 0..n – optional and maximum of n

1..n - mandatory and maximum of n

where the letter 'n' represents an unlimited number, and an actual number in place of the letter 'n' is the maximum.

NOTE 3 BIE 'Business Information Entity'

In UBL 2.1 there are three BIE Types:

Basic BIE (BBIE --),

Associate BIE (ASBIE -- "an association"), and

Aggregate BIE (ABIE -- "an aggregate").

Figure 2 shows the data elements comprising ITS consignment in UBL format . The .xsd script for each element can be obtained from the ASN.1 type definition in 7.5.2 below.

UBL Name *Consignment*	**Dictionary Entry Name** *Consignment Details*
ID	Consignment. Identifier
CarrierAssignedID	Consignment. Carrier Assigned_ Identifier. Identifier
ConsigneeAssignedID	Consignment. Consignee Assigned_ Identifier. Identifier
ConsignorAssignedID	Consignment. Consignor Assigned_ Identifier. Identifier

UBL Name *Consignment*	**Dictionary Entry Name** *Consignment Details*
FreightForwarderAssignedID	Consignment. Freight Forwarder Assigned_ Identifier. Identifier
BrokerAssignedID	Consignment. Broker Assigned_ Identifier. Identifier
ContractedCarrierAssignedID	Consignment. Contracted Carrier Assigned_ Identifier. Identifier
PerformingCarrierAssignedID	Consignment. Performing Carrier Assigned_ Identifier. Identifier
SummaryDescription	Consignment. Summary_ Description. Text
TotalInvoiceAmount	Consignment. Total_ Invoice Amount. Amount
DeclaredCustomsValueAmount	Consignment. Declared Customs_ Value. Amount
TariffDescription	Consignment. Tariff Description. Text
TariffCode	Consignment. Tariff Code. Code
InsurancePremiumAmount	Consignment. Insurance Premium Amount. Amount
GrossWeightMeasure	Consignment. Gross_ Weight. Measure
NetWeightMeasure	Consignment. Net_ Weight. Measure
NetNetWeightMeasure	Consignment. Net Net_ Weight. Measure
ChargeableWeightMeasure	Consignment. Chargeable_ Weight. Measure
GrossVolumeMeasure	Consignment. Gross_ Volume. Measure
NetVolumeMeasure	Consignment. Net_ Volume. Measure
LoadingLengthMeasure	Consignment. Loading_ Length. Measure
Remarks	Consignment. Remarks. Text
HazardousRiskIndicator	Consignment. Hazardous Risk_ Indicator. Indicator
AnimalFoodIndicator	Consignment. Animal_ Food Indicator. Indicator
HumanFoodIndicator	Consignment. Human_ Food Indicator. Indicator
LivestockIndicator	Consignment. Livestock_ Indicator. Indicator
BulkCargoIndicator	Consignment. Bulk Cargo_ Indicator. Indicator
ContainerizedIndicator	Consignment. Containerized_ Indicator. Indicator
GeneralCargoIndicator	Consignment. General Cargo_ Indicator. Indicator
SpecialSecurityIndicator	Consignment. Special_ Security Indicator. Indicator
ThirdPartyPayerIndicator	Consignment. Third Party Payer_ Indicator. Indicator
CarrierServiceInstructions	Consignment. Carrier Service_ Instructions. Text
CustomsClearanceServiceInstructions	Consignment. Customs Clearance Service_ Instructions. Text
ForwarderServiceInstructions	Consignment. Forwarder Service_ Instructions. Text
SpecialServiceInstructions	Consignment. Special Service_ Instructions. Text
SequenceID	Consignment. Sequence Identifier. Identifier
ShippingPriorityLevelCode	Consignment. Shipping Priority Level Code. Code
HandlingCode	Consignment. Handling Code. Code
HandlingInstructions	Consignment. Handling_ Instructions. Text
Information	Consignment. Information. Text
TotalGoodsItemQuantity	Consignment. Total_ Goods Item Quantity. Quantity
TotalTransportHandlingUnitQuantity	Consignment. Total_ Transport Handling Unit Quantity. Quantity
InsuranceValueAmount	Consignment. Insurance_ Value. Amount
DeclaredForCarriageValueAmount	Consignment. Declared For Carriage_ Value. Amount
DeclaredStatisticsValueAmount	Consignment. Declared Statistics_ Value. Amount
FreeOnBoardValueAmount	Consignment. Free On Board_ Value. Amount
SpecialInstructions	Consignment. Special_ Instructions. Text
SplitConsignmentIndicator	Consignment. Split Consignment_ Indicator. Indicator
DeliveryInstructions	Consignment. Delivery_ Instructions. Text
ConsignmentQuantity	Consignment. Consignment_ Quantity. Quantity

UBL Name *Consignment*	**Dictionary Entry Name** *Consignment Details*
ConsolidatableIndicator	Consignment. Consolidatable_ Indicator. Indicator
HaulageInstructions	Consignment. Haulage_ Instructions. Text
LoadingSequenceID	Consignment. Loading_ Sequence Identifier. Identifier
ConsigneeParty	Consignment. Consignee_ Party. Party
ExporterParty	Consignment. Exporter_ Party. Party
ConsignorParty	Consignment. Consignor_ Party. Party
ImporterParty	Consignment. Importer_ Party. Party
CarrierParty	Consignment. Carrier_ Party. Party
FreightForwarderParty	Consignment. Freight Forwarder_ Party. Party
NotifyParty	Consignment. Notify_ Party. Party
OriginalDespatchParty	Consignment. Original Despatch_ Party. Party
FinalDeliveryParty	Consignment. Final Delivery_ Party. Party
PerformingCarrierParty	Consignment. Performing Carrier_ Party. Party
SubstituteCarrierParty	Consignment. Substitute Carrier_ Party. Party
LogisticsOperatorParty	Consignment. Logistics Operator_ Party. Party
TransportAdvisorParty	Consignment. Transport Advisor_ Party. Party
HazardousItemNotificationParty	Consignment. Hazardous Item Notification_ Party. Party
InsuranceParty	Consignment. Insurance_ Party. Party
MortgageHolderParty	Consignment. Mortgage Holder_ Party. Party
BillOfLadingHolderParty	Consignment. Bill Of Lading Holder_ Party. Party
OriginalDepartureCountry	Consignment. Original Departure_ Country. Country
FinalDestinationCountry	Consignment. Final Destination_ Country. Country
TransitCountry	Consignment. Transit_ Country. Country
TransportContract	Consignment. Transport_ Contract. Contract
OriginalDespatchTransportationService	Consignment. Original Despatch_ Transportation Service. Transportation Service
FinalDeliveryTransportationService	Consignment. Final Delivery_ Transportation Service. Transportation Service
DeliveryTerms	Consignment. Delivery Terms
PaymentTerms	Consignment. Payment Terms
CollectPaymentTerms	Consignment. Collect_ Payment Terms. Payment Terms
DisbursementPaymentTerms	Consignment. Disbursement_ Payment Terms. Payment Terms
PrepaidPaymentTerms	Consignment. Prepaid_ Payment Terms. Payment Terms
FreightAllowanceCharge	Consignment. Freight_ Allowance Charge. Allowance Charge
ExtraAllowanceCharge	Consignment. Extra_ Allowance Charge. Allowance Charge
MainCarriageShipmentStage	Consignment. Main Carriage_ Shipment Stage. Shipment Stage
PreCarriageShipmentStage	Consignment. Pre Carriage_ Shipment Stage. Shipment Stage
OnCarriageShipmentStage	Consignment. On Carriage_ Shipment Stage. Shipment Stage
TransportHandlingUnit	Consignment. Transport Handling Unit
FirstArrivalPortLocation	Consignment. First Arrival Port_ Location. Location
LastExitPortLocation	Consignment. Last Exit Port_ Location. Location
ConsolidatedShipment	Consignment. Consolidated_ Shipment. Shipment

Figure 2 UBL Transportation library ::Consignment

(Source: OASIS : UBL-CommonLibrary-2.1)

7.5.2 ASN.1 type

The following script is draft to be passed through an ASN.1 compiler

NOTE **bold font** is used within this clause to enable easy identification of the separate elements of this long data concept. The script when used should not be in bold font.

7.5.2.1 Summary of UBL 2.1 ::Consignment

The ITS consignment in UBL format data concept is summarised as follows:

```
ConsignmentType ::= SEQUENCE {
iD                                  ID-1,
carrierAssignedID                   CarrierAssignedID OPTIONAL,
consigneeAssignedID                 ConsigneeAssignedID OPTIONAL,
consignorAssignedID                 ConsignorAssignedID OPTIONAL,
freightForwarderAssignedID          FreightForwarderAssignedID OPTIONAL,
brokerAssignedID                    BrokerAssignedID OPTIONAL,
contractedCarrierAssignedID         ContractedCarrierAssignedID OPTIONAL,
performingCarrierAssignedID         PerformingCarrierAssignedID OPTIONAL,
summaryDescription-list
SEQUENCE OF summaryDescription SummaryDescription,
totalInvoiceAmount                  TotalInvoiceAmount OPTIONAL,
declaredCustomsValueAmount          DeclaredCustomsValueAmount OPTIONAL,
tariffDescription-list
SEQUENCE OF tariffDescription TariffDescription,
tariffCode                          TariffCode OPTIONAL,
insurancePremiumAmount              InsurancePremiumAmount OPTIONAL,
grossWeightMeasure                  GrossWeightMeasure OPTIONAL,
netWeightMeasure                    NetWeightMeasure OPTIONAL,
netNetWeightMeasure                 NetNetWeightMeasure OPTIONAL,
chargeableWeightMeasure             ChargeableWeightMeasure OPTIONAL,
grossVolumeMeasure                  GrossVolumeMeasure OPTIONAL,
netVolumeMeasure                    NetVolumeMeasure OPTIONAL,
loadingLengthMeasure                LoadingLengthMeasure OPTIONAL,
remarks-list                        SEQUENCE OF remarks Remarks,
hazardousRiskIndicator              HazardousRiskIndicator OPTIONAL,
animalFoodIndicator                 AnimalFoodIndicator OPTIONAL,
humanFoodIndicator                  HumanFoodIndicator OPTIONAL,
livestockIndicator                  LivestockIndicator OPTIONAL,
bulkCargoIndicator                  BulkCargoIndicator OPTIONAL,
containerizedIndicator              ContainerizedIndicator OPTIONAL,
generalCargoIndicator               GeneralCargoIndicator OPTIONAL,
specialSecurityIndicator            SpecialSecurityIndicator OPTIONAL,
thirdPartyPayerIndicator            ThirdPartyPayerIndicator OPTIONAL,
carrierServiceInstructions          CarrierServiceInstructions OPTIONAL,
customsClearanceServiceInstructions
CustomsClearanceServiceInstructions OPTIONAL,
forwarderServiceInstructions        ForwarderServiceInstructions OPTIONAL,
specialServiceInstructions          SpecialServiceInstructions OPTIONAL,
sequenceID                          SequenceID OPTIONAL,
shippingPriorityLevelCode           ShippingPriorityLevelCode OPTIONAL,
handlingCode                        HandlingCode OPTIONAL,
handlingInstructions                HandlingInstructions OPTIONAL,
information                         Information OPTIONAL,
totalGoodsItemQuantity              TotalGoodsItemQuantity OPTIONAL,
totalTransportHandlingUnitQuantity
TotalTransportHandlingUnitQuantity OPTIONAL,
insuranceValueAmount                InsuranceValueAmount OPTIONAL,
declaredForCarriageValueAmount
DeclaredForCarriageValueAmount OPTIONAL,
declaredStatisticsValueAmount       DeclaredStatisticsValueAmount OPTIONAL,
freeOnBoardValueAmount              FreeOnBoardValueAmount OPTIONAL,
specialInstructions-list
SEQUENCE OF specialInstructions SpecialInstructions,
```

```
splitConsignmentIndicator              SplitConsignmentIndicator OPTIONAL,
deliveryInstructions-list
SEQUENCE OF deliveryInstructions DeliveryInstructions,
consignmentQuantity                    ConsignmentQuantity OPTIONAL,
consolidatableIndicator                ConsolidatableIndicator OPTIONAL,
haulageInstructions-list
SEQUENCE OF haulageInstructions HaulageInstructions,
loadingSequenceID                      LoadingSequenceID OPTIONAL,
consigneeParty                         ConsigneeParty OPTIONAL,
exporterParty                          ExporterParty OPTIONAL,
consignorParty                         ConsignorParty OPTIONAL,
importerParty                          ImporterParty OPTIONAL,
carrierParty                           CarrierParty OPTIONAL,
freightForwarderParty                  FreightForwarderParty OPTIONAL,
notifyParty                            NotifyParty OPTIONAL,
originalDespatchParty                  OriginalDespatchParty OPTIONAL,
finalDeliveryParty                     FinalDeliveryParty OPTIONAL,
performingCarrierParty                 PerformingCarrierParty OPTIONAL,
substituteCarrierParty                 SubstituteCarrierParty OPTIONAL,
logisticsOperatorParty                 LogisticsOperatorParty OPTIONAL,
transportAdvisorParty                  TransportAdvisorParty OPTIONAL,
hazardousItemNotificationParty
HazardousItemNotificationParty OPTIONAL,
insuranceParty                         InsuranceParty OPTIONAL,
mortgageHolderParty                    MortgageHolderParty OPTIONAL,
billOfLadingHolderParty                BillOfLadingHolderParty OPTIONAL,
originalDepartureCountry               OriginalDepartureCountry OPTIONAL,
finalDestinationCountry                FinalDestinationCountry OPTIONAL,
transitCountry-list
SEQUENCE OF transitCountry TransitCountry,
transportContract                      TransportContract OPTIONAL,
originalDespatchTransportationService
OriginalDespatchTransportationService OPTIONAL,
finalDeliveryTransportationService
FinalDeliveryTransportationService OPTIONAL,
deliveryTerms                          DeliveryTerms OPTIONAL,
paymentTerms                           PaymentTerms OPTIONAL,
collectPaymentTerms                    CollectPaymentTerms OPTIONAL,
disbursementPaymentTerms               DisbursementPaymentTerms OPTIONAL,
prepaidPaymentTerms                    PrepaidPaymentTerms OPTIONAL,
freightAllowanceCharge-list
SEQUENCE OF freightAllowanceCharge FreightAllowanceCharge,
extraAllowanceCharge-list
SEQUENCE OF extraAllowanceCharge ExtraAllowanceCharge,
mainCarriageShipmentStage              MainCarriageShipmentStage OPTIONAL,
preCarriageShipmentStage-list
SEQUENCE OF preCarriageShipmentStage PreCarriageShipmentStage,
onCarriageShipmentStage-list
SEQUENCE OF onCarriageShipmentStage OnCarriageShipmentStage,
transportHandlingUnit-list
SEQUENCE OF transportHandlingUnit TransportHandlingUnit,
firstArrivalPortLocation               FirstArrivalPortLocation OPTIONAL,
lastExitPortLocation                   LastExitPortLocation OPTIONAL,
consolidatedShipment-list
SEQUENCE OF consolidatedShipment ConsolidatedShipment}
}
```

7.5.2.2 ITS consignment in UBL ::Consignment format script definitions

```
XSD ::= CLASS  {  --dummy class to get CS11 compilable
    &NormalizedString      OPTIONAL,
    &String                OPTIONAL,
```

```
    &AnyURI                 OPTIONAL,
    &Language               OPTIONAL,
    &Decimal                OPTIONAL
}


CS11 ::=        TransportLibraryConsignment

TransportLibraryConsignment ::= SEQUENCE {
iD                          ID-1,
carrierAssignedID               CarrierAssignedIDType OPTIONAL,
consigneeAssignedID             ConsigneeAssignedIDType OPTIONAL,
consignorAssignedID             ConsignorAssignedIDType OPTIONAL,
freightForwarderAssignedID      FreightForwarderAssignedIDType OPTIONAL,
brokerAssignedID                BrokerAssignedID OPTIONAL,
contractedCarrierAssignedID     ContractedCarrierAssignedIDType OPTIONAL,
performingCarrierAssignedID     PerformingCarrierAssignedIDType OPTIONAL,
summaryDescription-list         SEQUENCE OF SummaryDescriptionType,
totalInvoiceAmount              TotalInvoiceAmountType OPTIONAL,
declaredCustomsValueAmount      DeclaredCustomsValueAmountType OPTIONAL,
tariffDescription-list          SEQUENCE OF TariffDescriptionType,
tariffCode                      TariffCodeType OPTIONAL,
insurancePremiumAmount          InsurancePremiumAmountType OPTIONAL,
grossWeightMeasure              GrossWeightMeasureType OPTIONAL,
netWeightMeasure                NetWeightMeasureType OPTIONAL,
netNetWeightMeasure             NetNetWeightMeasureType OPTIONAL,
chargeableWeightMeasure         ChargeableWeightMeasureType OPTIONAL,
grossVolumeMeasure              GrossVolumeMeasureType OPTIONAL,
netVolumeMeasure                NetVolumeMeasureType OPTIONAL,
loadingLengthMeasure            LoadingLengthMeasureType OPTIONAL,
remarks-list                    SEQUENCE OF RemarksType,
hazardousRiskIndicator          HazardousRiskIndicatorType OPTIONAL,
animalFoodIndicator             AnimalFoodIndicatorType OPTIONAL,
```

humanFoodIndicator HumanFoodIndicatorType OPTIONAL,
livestockIndicator LivestockIndicatorType OPTIONAL,
bulkCargoIndicator BulkCargoIndicatorType OPTIONAL,
containerizedIndicator ContainerizedIndicatorType OPTIONAL,
generalCargoIndicator GeneralCargoIndicatorType OPTIONAL,
specialSecurityIndicator SpecialSecurityIndicatorType OPTIONAL,
thirdPartyPayerIndicator ThirdPartyPayerIndicatorType OPTIONAL,
carrierServiceInstructions CarrierServiceInstructionsType OPTIONAL,
customsClearanceServiceInstructions CustomsClearanceServiceInstructionsType OPTIONAL,
forwarderServiceInstructions ForwarderServiceInstructionsType OPTIONAL,
specialServiceInstructions SpecialServiceInstructionsType OPTIONAL,
sequenceID SequenceIDType OPTIONAL,
shippingPriorityLevelCode ShippingPriorityLevelCodeType OPTIONAL,
handlingCode HandlingCodeType OPTIONAL,
handlingInstructions HandlingInstructionsType OPTIONAL,
information InformationType OPTIONAL,
totalGoodsItemQuantity TotalGoodsItemQuantityType OPTIONAL,
totalTransportHandlingUnitQuantity TotalTransportHandlingUnitQuantityType OPTIONAL,
insuranceValueAmount InsuranceValueAmountType OPTIONAL,
declaredForCarriageValueAmount DeclaredForCarriageValueAmountType OPTIONAL,
declaredStatisticsValueAmount DeclaredStatisticsValueAmountType OPTIONAL,
freeOnBoardValueAmount FreeOnBoardValueAmountType OPTIONAL,
specialInstructions-list SEQUENCE OF SpecialInstructionsType,
splitConsignmentIndicator SplitConsignmentIndicatorType OPTIONAL,
deliveryInstructions-list SEQUENCE OF DeliveryInstructionsType,
consignmentQuantity ConsignmentQuantityType OPTIONAL,
consolidatableIndicator ConsolidatableIndicatorType OPTIONAL,
haulageInstructions-list SEQUENCE OF HaulageInstructionsType,
loadingSequenceID LoadingSequenceIDType OPTIONAL,
consigneeParty ConsigneeParty OPTIONAL,
exporterParty ExporterParty OPTIONAL,
consignorParty ConsignorParty OPTIONAL,
importerParty ImporterParty OPTIONAL,

```
carrierParty                    CarrierParty OPTIONAL,
freightForwarderParty           FreightForwarderParty OPTIONAL,
notifyParty                     NotifyParty OPTIONAL,
originalDespatchParty           OriginalDespatchParty OPTIONAL,
finalDeliveryParty              FinalDeliveryParty OPTIONAL,
performingCarrierParty          PerformingCarrierParty OPTIONAL,
substituteCarrierParty          SubstituteCarrierParty OPTIONAL,
logisticsOperatorParty          LogisticsOperatorParty OPTIONAL,
transportAdvisorParty           TransportAdvisorParty OPTIONAL,
hazardousItemNotificationParty  HazardousItemNotificationParty OPTIONAL,
insuranceParty                  InsuranceParty OPTIONAL,
mortgageHolderParty             MortgageHolderParty OPTIONAL,
billOfLadingHolderParty         BillOfLadingHolderParty OPTIONAL,
originalDepartureCountry        OriginalDepartureCountry OPTIONAL,
finalDestinationCountry         FinalDestinationCountry OPTIONAL,
transitCountry-list                     SEQUENCE OF TransitCountry,
transportContract               TransportContract OPTIONAL,
originalDespatchTransportationService  OriginalDespatchTransportationService OPTIONAL,
finalDeliveryTransportationService     FinalDeliveryTransportationService OPTIONAL,
deliveryTerms                   DeliveryTerms OPTIONAL,
paymentTerms                    PaymentTerms OPTIONAL,
collectPaymentTerms             CollectPaymentTerms OPTIONAL,
disbursementPaymentTerms        DisbursementPaymentTerms OPTIONAL,
prepaidPaymentTerms             PrepaidPaymentTerms OPTIONAL,
freightAllowanceCharge-list     SEQUENCE OF FreightAllowanceCharge,
extraAllowanceCharge-list               SEQUENCE OF ExtraAllowanceCharge,
mainCarriageShipmentStage       MainCarriageShipmentStage OPTIONAL,
preCarriageShipmentStage-list           SEQUENCE OF PreCarriageShipmentStage,
onCarriageShipmentStage-list            SEQUENCE OF OnCarriageShipmentStage,
transportHandlingUnit-list              SEQUENCE OF transportHandlingUnit TransportHandlingUnit,
firstArrivalPortLocation        FirstArrivalPortLocation OPTIONAL,
lastExitPortLocation            LastExitPortLocation OPTIONAL,
consolidatedShipment-list               SEQUENCE OF ConsolidatedShipment
```

```
}

CarrierAssignedIDType ::= SEQUENCE {
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
schemeID         XSD.&NormalizedString OPTIONAL,
schemeName       XSD.&String OPTIONAL,
schemeURI        XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base             XSD.&NormalizedString
}
ConsigneeAssignedIDType ::= SEQUENCE {
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
schemeID         XSD.&NormalizedString OPTIONAL,
schemeName       XSD.&String OPTIONAL,
schemeURI        XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base             XSD.&NormalizedString
}
ConsignorAssignedIDType ::= SEQUENCE {
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
schemeID         XSD.&NormalizedString OPTIONAL,
schemeName       XSD.&String OPTIONAL,
schemeURI        XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base             XSD.&NormalizedString
}
FreightForwarderAssignedIDType ::= SEQUENCE {
```

```
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
schemeID         XSD.&NormalizedString OPTIONAL,
schemeName       XSD.&String OPTIONAL,
schemeURI        XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base             XSD.&NormalizedString
}
BrokerAssignedIDType ::= SEQUENCE {
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
schemeID         XSD.&NormalizedString OPTIONAL,
schemeName       XSD.&String OPTIONAL,
schemeURI        XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base             XSD.&NormalizedString
}
ContractedCarrierAssignedIDType ::= SEQUENCE {
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
schemeID         XSD.&NormalizedString OPTIONAL,
schemeName       XSD.&String OPTIONAL,
schemeURI        XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base             XSD.&NormalizedString
}
PerformingCarrierAssignedIDType ::= SEQUENCE {
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
```

```
schemeID        XSD.&NormalizedString OPTIONAL,
schemeName      XSD.&String OPTIONAL,
schemeURI       XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base            XSD.&NormalizedString
}
SummaryDescriptionType ::= SEQUENCE {
languageID      XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base            XSD.&String
}
TotalInvoiceAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID   XSD.&NormalizedString OPTIONAL,
base        XSD.&Decimal
}
DeclaredCustomsValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID   XSD.&NormalizedString OPTIONAL,
base        XSD.&Decimal
}
TariffDescriptionType ::= SEQUENCE {
languageID      XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base            XSD.&String
}
TariffCodeType ::= SEQUENCE {
languageID     XSD.&Language OPTIONAL,
listAgencyID   XSD.&NormalizedString OPTIONAL,
listAgencyName XSD.&String OPTIONAL,
listID         XSD.&NormalizedString OPTIONAL,
listName       XSD.&String OPTIONAL,
listSchemeURI  XSD.&AnyURI OPTIONAL,
```

```
listURI        XSD.&AnyURI OPTIONAL,
listVersionID  XSD.&NormalizedString OPTIONAL,
name           XSD.&String OPTIONAL,
base           XSD.&NormalizedString
}
InsurancePremiumAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID   XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
GrossWeightMeasureType ::= SEQUENCE {
unitCode     XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
NetWeightMeasureType ::= SEQUENCE {
unitCode     XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
NetNetWeightMeasureType ::= SEQUENCE {
unitCode     XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
ChargeableWeightMeasureType ::= SEQUENCE {
unitCode     XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
GrossVolumeMeasureType ::= SEQUENCE {
unitCode     XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
```

```
base        XSD.&Decimal
}

NetVolumeMeasureType ::= SEQUENCE {
unitCode     XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base        XSD.&Decimal
}
LoadingLengthMeasureType ::= SEQUENCE {
unitCode     XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base        XSD.&Decimal
}
RemarksType ::= SEQUENCE {
languageID       XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base             XSD.&String
}
HazardousRiskIndicatorType ::= SEQUENCE {
base BOOLEAN
}


AnimalFoodIndicatorType ::= SEQUENCE {
base BOOLEAN
}
HumanFoodIndicatorType ::= SEQUENCE {
base BOOLEAN
}
LivestockIndicatorType ::= SEQUENCE {
base BOOLEAN
}
BulkCargoIndicatorType ::= SEQUENCE {
```

```
base BOOLEAN
}
ContainerizedIndicatorType ::= SEQUENCE {
base BOOLEAN
}
GeneralCargoIndicatorType ::= SEQUENCE {
base BOOLEAN
}
SpecialSecurityIndicatorType ::= SEQUENCE {
base BOOLEAN
}

ThirdPartyPayerIndicatorType ::= SEQUENCE {
base BOOLEAN
}
CarrierServiceInstructionsType ::= SEQUENCE {
languageID      XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base            XSD.&String
}
CustomsClearanceServiceInstructionsType ::= SEQUENCE {
languageID      XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base            XSD.&String
}
ForwarderServiceInstructionsType ::= SEQUENCE {
languageID      XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base            XSD.&String
}
SpecialServiceInstructionsType ::= SEQUENCE {
languageID      XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
```

```
base            XSD.&String
}
SequenceIDType ::= SEQUENCE {
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
schemeID         XSD.&NormalizedString OPTIONAL,
schemeName       XSD.&String OPTIONAL,
schemeURI        XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base             XSD.&NormalizedString
}
ShippingPriorityLevelCodeType ::= SEQUENCE {
languageID     XSD.&Language OPTIONAL,
listAgencyID   XSD.&NormalizedString OPTIONAL,
listAgencyName XSD.&String OPTIONAL,
listID         XSD.&NormalizedString OPTIONAL,
listName       XSD.&String OPTIONAL,
listSchemeURI  XSD.&AnyURI OPTIONAL,
listURI        XSD.&AnyURI OPTIONAL,
listVersionID  XSD.&NormalizedString OPTIONAL,
name           XSD.&String OPTIONAL,
base           XSD.&NormalizedString
}
HandlingCodeType ::= SEQUENCE {
languageID     XSD.&Language OPTIONAL,
listAgencyID   XSD.&NormalizedString OPTIONAL,
listAgencyName XSD.&String OPTIONAL,
listID         XSD.&NormalizedString OPTIONAL,
listName       XSD.&String OPTIONAL,
listSchemeURI  XSD.&AnyURI OPTIONAL,
listURI        XSD.&AnyURI OPTIONAL,
listVersionID  XSD.&NormalizedString OPTIONAL,
```

```
name          XSD.&String OPTIONAL,
base          XSD.&NormalizedString
}
HandlingInstructionsType ::= SEQUENCE {
languageID       XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base             XSD.&String
}
InformationType ::= SEQUENCE {
languageID       XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base             XSD.&String
}
TotalGoodsItemQuantityType ::= SEQUENCE {
unitCode      XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyID XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyName XSD.&String OPTIONAL,
unitCodeListID XSD.&NormalizedString OPTIONAL,
base          XSD.&Decimal
}
TotalTransportHandlingUnitQuantityType ::= SEQUENCE {
unitCode      XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyID XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyName XSD.&String OPTIONAL,
unitCodeListID XSD.&NormalizedString OPTIONAL,
base          XSD.&Decimal
}
InsuranceValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID   XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
DeclaredForCarriageValueAmountType ::= SEQUENCE {
```

```
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID   XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
DeclaredStatisticsValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID   XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
FreeOnBoardValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID   XSD.&NormalizedString OPTIONAL,
base         XSD.&Decimal
}
SpecialInstructionsType ::= SEQUENCE {
languageID       XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base             XSD.&String
}
SplitConsignmentIndicatorType ::= SEQUENCE {
base BOOLEAN
}
DeliveryInstructionsType ::= SEQUENCE {
languageID       XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base             XSD.&String
}
ConsignmentQuantityType ::= SEQUENCE {
unitCode      XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyID XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyName XSD.&String OPTIONAL,
unitCodeListID XSD.&NormalizedString OPTIONAL,
base          XSD.&Decimal
```

```
}
ConsolidatableIndicatorType ::= SEQUENCE {
base BOOLEAN
}


HaulageInstructionsType ::= SEQUENCE {
languageID       XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base             XSD.&String
}
LoadingSequenceIDType ::= SEQUENCE {
schemeAgencyID   XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI    XSD.&AnyURI OPTIONAL,
schemeID         XSD.&NormalizedString OPTIONAL,
schemeName       XSD.&String OPTIONAL,
schemeURI        XSD.&AnyURI OPTIONAL,
schemeVersionID  XSD.&NormalizedString OPTIONAL,
base             XSD.&NormalizedString
}

PartyType ::= SEQUENCE {
markCareIndicator MarkCareIndicator OPTIONAL,
markAttentionIndicator MarkAttentionIndicator OPTIONAL,
websiteURI       WebsiteURI OPTIONAL,
logoReferenceID  LogoReferenceID OPTIONAL,
endpointID       EndpointID OPTIONAL,
industryClassificationCode IndustryClassificationCode OPTIONAL,
partyIdentification-list SEQUENCE OF PartyIdentification,
partyName-list   SEQUENCE OF PartyName,
language         Language-1 OPTIONAL,
postalAddress    PostalAddress OPTIONAL,
```

```
physicalLocation PhysicalLocation OPTIONAL,
partyTaxScheme-list SEQUENCE OF PartyTaxScheme,
partyLegalEntity-list SEQUENCE OF PartyLegalEntity,
contact          Contact OPTIONAL,
person-list      SEQUENCE OF  Person,
agentParty       AgentParty OPTIONAL,
serviceProviderParty-list SEQUENCE OF ServiceProviderParty,
powerOfAttorney-list SEQUENCE OF PowerOfAttorney,
financialAccount FinancialAccount OPTIONAL
}

ConsigneeParty ::= PartyType
ExporterParty ::= PartyType
ConsignorParty ::= PartyType
ImporterParty ::= PartyType
CarrierParty ::= PartyType
FreightForwarderParty ::= PartyType
NotifyParty ::= PartyType
OriginalDespatchParty ::= PartyType
FinalDeliveryParty ::= PartyType
PerformingCarrierParty ::= PartyType
SubstituteCarrierParty ::= PartyType
LogisticsOperatorParty ::= PartyType
TransportAdvisorParty ::= PartyType
HazardousItemNotificationParty ::= PartyType
InsuranceParty ::= PartyType
MortgageHolderParty ::= PartyType
BillOfLadingHolderParty ::= PartyType
OriginalDepartureCountry ::= CountryType

CountryType ::= SEQUENCE {
identificationCode IdentificationCode OPTIONAL,
name               Name-1 OPTIONAL
```

```
}

FinalDestinationCountry ::= CountryType
TransitCountry ::= CountryType

TransportContract ::= ContractType
ContractType ::= SEQUENCE {
iD        ID-1 OPTIONAL,
issueDate  IssueDate OPTIONAL,
issueTime  IssueTime OPTIONAL,
contractTypeCode ContractTypeCode OPTIONAL,
contractType ContractType-1 OPTIONAL,
note-list  SEQUENCE OF Note,
validityPeriod ValidityPeriod OPTIONAL,
contractDocumentReference-list SEQUENCE OF ContractDocumentReference,
nominationPeriod NominationPeriod OPTIONAL,
contractualDelivery ContractualDelivery OPTIONAL
}
OriginalDespatchTransportationService ::= TransportationServiceType
TransportationServiceType ::= SEQUENCE {
transportServiceCode TransportServiceCode,
tariffClassCode  TariffClassCode OPTIONAL,
priority        Priority OPTIONAL,
freightRateClassCode FreightRateClassCode OPTIONAL,
transportationServiceDescription TransportationServiceDescription OPTIONAL,
transportationServiceDetailsURI TransportationServiceDetailsURI OPTIONAL
}
FinalDeliveryTransportationService ::= TransportationServiceType
DeliveryTerms ::= DeliveryTermsType
DeliveryTermsType ::= SEQUENCE {
iD        ID-1 OPTIONAL,
specialTerms SpecialTerms OPTIONAL,
lossRiskResponsibilityCode LossRiskResponsibilityCode OPTIONAL,
```

```
lossRisk   LossRisk OPTIONAL,
amount     Amount OPTIONAL,
deliveryLocation DeliveryLocation OPTIONAL,
allowanceCharge AllowanceCharge OPTIONAL
}
PaymentTerms ::= PaymentTermsType
PaymentTermsType ::= SEQUENCE {
iD         ID-1 OPTIONAL,
paymentMeansID-list SEQUENCE OF PaymentMeansID,
prepaidPaymentReferenceID PrepaidPaymentReferenceID OPTIONAL,
note-list  SEQUENCE OF Note,
referenceEventCode ReferenceEventCode OPTIONAL,
settlementDiscountPercent SettlementDiscountPercent OPTIONAL,
penaltySurchargePercent PenaltySurchargePercent OPTIONAL,
paymentPercent PaymentPercent OPTIONAL,
amount     Amount OPTIONAL,
settlementDiscountAmount SettlementDiscountAmount OPTIONAL,
penaltyAmount PenaltyAmount OPTIONAL,
paymentDueDate PaymentDueDate OPTIONAL,
installmentDueDate InstallmentDueDate OPTIONAL,
settlementPeriod SettlementPeriod OPTIONAL,
penaltyPeriod PenaltyPeriod OPTIONAL,
exchangeRate ExchangeRate OPTIONAL,
validityPeriod ValidityPeriod OPTIONAL
}
CollectPaymentTerms ::= PaymentTermsType
DisbursementPaymentTerms ::= PaymentTermsType
PrepaidPaymentTerms ::= PaymentTermsType

FreightAllowanceCharge ::= AllowanceChargeType
AllowanceChargeType ::= SEQUENCE {
iD         ID-1 OPTIONAL,
chargeIndicator ChargeIndicator,
```

```
allowanceChargeReasonCode AllowanceChargeReasonCode OPTIONAL,
allowanceChargeReason AllowanceChargeReason OPTIONAL,
multiplierFactorNumeric MultiplierFactorNumeric OPTIONAL,
prepaidIndicator PrepaidIndicator OPTIONAL,
sequenceNumeric SequenceNumeric OPTIONAL,
amount     Amount,
baseAmount BaseAmount OPTIONAL,
accountingCostCode AccountingCostCode OPTIONAL,
accountingCost AccountingCost OPTIONAL,
perUnitAmount PerUnitAmount OPTIONAL,
taxCategory-list SEQUENCE OF TaxCategory,
taxTotal   TaxTotal OPTIONAL,
paymentMeans-list SEQUENCE OF PaymentMeans
}


ExtraAllowanceCharge ::= AllowanceChargeType
MainCarriageShipmentStage ::= ShipmentStageType
ShipmentStageType ::= SEQUENCE {
iD                          ID-1 OPTIONAL,
transportModeCode                TransportModeCode OPTIONAL,
transportMeansTypeCode           TransportMeansTypeCode OPTIONAL,
transitDirectionCode        TransitDirectionCode OPTIONAL,
preCarriageIndicator        PreCarriageIndicator,
onCarriageIndicator         OnCarriageIndicator,
estimatedDeliveryDate       EstimatedDeliveryDate OPTIONAL,
estimatedDeliveryTime       EstimatedDeliveryTime OPTIONAL,
requiredDeliveryDate        RequiredDeliveryDate OPTIONAL,
requiredDeliveryTime        RequiredDeliveryTime OPTIONAL,
loadingSequenceID                LoadingSequenceID OPTIONAL,
successiveSequenceID             SuccessiveSequenceID OPTIONAL,
instructions                Instructions OPTIONAL,
demurrageInstructions       DemurrageInstructions OPTIONAL,
```

```
transitPeriod               TransitPeriod OPTIONAL,
carrierParty-list                   SEQUENCE OF CarrierParty,
transportMeans                      TransportMeans OPTIONAL,
loadingPortLocation         LoadingPortLocation OPTIONAL,
unloadingPortLocation       UnloadingPortLocation OPTIONAL,
transshipPortLocation       TransshipPortLocation OPTIONAL,
loadingTransportEvent       LoadingTransportEvent OPTIONAL,
examinationTransportEvent           ExaminationTransportEvent OPTIONAL,
availabilityTransportEvent          AvailabilityTransportEvent OPTIONAL,
exportationTransportEvent           ExportationTransportEvent OPTIONAL,
dischargeTransportEvent             DischargeTransportEvent OPTIONAL,
warehousingTransportEvent           WarehousingTransportEvent OPTIONAL,
takeoverTransportEvent              TakeoverTransportEvent OPTIONAL,
optionalTakeoverTransportEvent OptionalTakeoverTransportEvent OPTIONAL,
dropoffTransportEvent       DropoffTransportEvent OPTIONAL,
actualPickupTransportEvent          ActualPickupTransportEvent OPTIONAL,
deliveryTransportEvent      DeliveryTransportEvent OPTIONAL,
receiptTransportEvent       ReceiptTransportEvent OPTIONAL,
storageTransportEvent       StorageTransportEvent OPTIONAL,
acceptanceTransportEvent            AcceptanceTransportEvent OPTIONAL,
terminalOperatorParty       TerminalOperatorParty OPTIONAL,
customsAgentParty                   CustomsAgentParty OPTIONAL
}
PreCarriageShipmentStage ::= ShipmentStageType

OnCarriageShipmentStage ::= ShipmentStageType
TransportHandlingUnit ::= TransportHandlingUnitType
TransportHandlingUnitType ::= SEQUENCE {
iD                                  ID-1 OPTIONAL,
transportHandlingUnitTypeCode               TransportHandlingUnitTypeCode OPTIONAL,
handlingCode                        HandlingCode OPTIONAL,
handlingInstructions                HandlingInstructions OPTIONAL,
hazardousRiskIndicator                      HazardousRiskIndicator OPTIONAL,
```

```
totalGoodsItemQuantity                TotalGoodsItemQuantity OPTIONAL,
totalPackageQuantity          TotalPackageQuantity OPTIONAL,
damageRemarks-list                    SEQUENCE OF DamageRemarks,
shippingMarks-list                    SEQUENCE OF ShippingMarks,
handlingUnitDespatchLine-list SEQUENCE OF HandlingUnitDespatchLine,
actualPackage-list                    SEQUENCE OF ActualPackage,
receivedHandlingUnitReceiptLine-list SEQUENCE OF ReceivedHandlingUnitReceiptLine,
transportEquipment-list       SEQUENCE OF TransportEquipment,
hazardousGoodsTransit-list            SEQUENCE OF HazardousGoodsTransit,
measurementDimension-list             SEQUENCE OF MeasurementDimension,
minimumTemperature                    MinimumTemperature OPTIONAL,
maximumTemperature                    MaximumTemperature OPTIONAL,
goodsItem-list                SEQUENCE OF GoodsItem,
floorSpaceMeasurementDimension    FloorSpaceMeasurementDimension OPTIONAL,
palletSpaceMeasurementDimension   PalletSpaceMeasurementDimension OPTIONAL
}
```

```
LocationType ::= SEQUENCE {
iD              ID-1 OPTIONAL,
description       Description OPTIONAL,
conditions        Conditions OPTIONAL,
countrySubentity    CountrySubentity OPTIONAL,
countrySubentityCode CountrySubentityCode OPTIONAL,
locationTypeCode    LocationTypeCode OPTIONAL,
validityPeriod-list  SEQUENCE OF ValidityPeriod,
address           Address OPTIONAL,
subsidiaryLocation   SubsidiaryLocation OPTIONAL,
locationCoordinate   LocationCoordinate OPTIONAL
}

FirstArrivalPortLocation ::= LocationType
```

```
LastExitPortLocation     ::= LocationType


ConsolidatedShipment ::= ShipmentType
ShipmentType ::= SEQUENCE {
iD        ID-1,
shippingPriorityLevelCode ShippingPriorityLevelCode OPTIONAL,
handlingCode HandlingCode OPTIONAL,
handlingInstructions HandlingInstructions OPTIONAL,
information Information OPTIONAL,
grossWeightMeasure GrossWeightMeasure OPTIONAL,
netWeightMeasure NetWeightMeasure OPTIONAL,
netNetWeightMeasure NetNetWeightMeasure OPTIONAL,
grossVolumeMeasure GrossVolumeMeasure OPTIONAL,
netVolumeMeasure NetVolumeMeasure OPTIONAL,
totalGoodsItemQuantity TotalGoodsItemQuantity OPTIONAL,
totalTransportHandlingUnitQuantity TotalTransportHandlingUnitQuantity OPTIONAL,
insuranceValueAmount InsuranceValueAmount OPTIONAL,
declaredCustomsValueAmount DeclaredCustomsValueAmount OPTIONAL,
declaredForCarriageValueAmount DeclaredForCarriageValueAmount OPTIONAL,
declaredStatisticsValueAmount DeclaredStatisticsValueAmount OPTIONAL,
freeOnBoardValueAmount FreeOnBoardValueAmount OPTIONAL,
specialInstructions-list SEQUENCE OF SpecialInstructions,
deliveryInstructions-list SEQUENCE OF DeliveryInstructions,
splitConsignmentIndicator SplitConsignmentIndicator OPTIONAL,
consignmentQuantity ConsignmentQuantity OPTIONAL,
consignment-list SEQUENCE (SIZE(1..MAX)) OF Consignment,
goodsItem-list SEQUENCE OF GoodsItem,
shipmentStage-list SEQUENCE OF ShipmentStage,
delivery   Delivery OPTIONAL,
transportHandlingUnit-list SEQUENCE OF TransportHandlingUnit,
returnAddress ReturnAddress OPTIONAL,
originAddress OriginAddress OPTIONAL,
firstArrivalPortLocation FirstArrivalPortLocation OPTIONAL,
```

lastExitPortLocation LastExitPortLocation OPTIONAL,

exportCountry ExportCountry OPTIONAL,

freightAllowanceCharge-list SEQUENCE OF FreightAllowanceCharge

}

7.6 'Display Message Type'

7.6.1 Description

''Display Message Type' ' is a message issued by the AEI manager to a message display to indicate the actual access control and access related information of a transport means, load unit or a goods item to a terminal monitoring point.

7.6.2 ASN.1 type

```
DisplayMessageType ::= SEQUENCE {
             accessControlStatus AccessControlStatus,
             transportObjId TransportObjectIdentifier OPTIONAL,
             msgInfo MsgInfo OPTIONAL
}
```

7.7 Message information

7.7.1 Description

Message information is a data element, which an AEI manager can use to indicate visual information on a display by access control of a transport means, load unit or goods item.

7.7.2 ASN.1 type

```
MsgInfo ::= VISIBLE STRING
```

NOTE The Message Information may comprise information resided in the TAG and/or the AEI reader.

7.8 'Position'

7.8.1 Description

'Position' is relative to a reference point defined by the AEI manager. The three-dimensional position reference is given in metric precision.

7.8.2 ASN.1 type

```
Position ::= SEQUENCE {
xCoordinate INTEGER,
yCoordinate INTEGER,
zCoordinate INTEGER
}
```

7.9 Geographic point location

7.9.1 Description

The type Geographic point location is defined as a printable string that contains a geographic point locations in accordance with ISO6709.

7.9.2 ASN.1 type

Geographicpoint ::= PrintableString (FROM (“0123456789” | “+” | “-” | “.” | “/”)) (SIZE (4..36))

-- in accordance with ISO 6709

NOTE The ‘/’ symbol may be omitted as it is only used in 6709 an optional string terminated symbol (which is not necessary in an ASN.1 encoding)

7.10 ‘Reader Location’

7.10.1 Description

‘Reader Location’ is a unique location reference of the AEI reader administered by the AEI manager.

The geometrical position of the reader location is relative to a reference point defined by AEI manager.

7.10.2 ASN.1 type

```
ReaderLocation ::= SEQUENCE {
readerIdentity CS2 OPTIONAL, -- Global Manufacturer
-- Identifier from
-- ENV ISO 14816
localIdentity INTEGER(1..65535) OPTIONAL, -- Locally determined
-- reader identity
unlocode UNlocode OPTIONAL,
position Position OPTIONAL
}
```

7.11 ‘Terminal Monitoring Type’

7.11.1 Description

The ‘Terminal Monitoring Type’is the type of monitoring, which the AEI manager uses for the purpose of conducting business processes for control and monitoring transport means, load units and goods items by AEI.

7.11.2 ASN.1 type

```
TerminalMonitoringType ::= BIT STRING {
             entry (0),
             exit (1),
             loading (2),
             unloading (3),
             stacking (4),
             unstacking (5),
             stuffing (6),
             stripping (7),
             registration (8) --automatic reading of transport objects
}
```

7.12 'Transport Component Status'

7.12.1 Description

'Transport Component Status' is a status code to indicate the operational status of the components (AEI Reader, Transport Object, and Message Display) defined within this International Standard.

7.12.2 ASN.1 type

```
TransportComponentStatus ::= ENUMERATED {
             oK (0),
             malFunction (1),
             batteryLow (2)
}
```

7.13 'Transport Object Identifier'

7.13.1 Description

The 'Transport Object Identifier' is the identifier of a transport means, package or goods item.

NOTE The 'Transport Object Identifier' normally comprises the TAG identity.

7.13.2 ASN.1 type

```
TransportObjectIdentifier ::= CHOICE {
c1 CS1, --imported from ISO14816, AVIAEI Unambigous identifier
c2 CS2, --ditto
c4 CS4, --ditto
c5 CS5, --ditto
c7 CS7, --ditto
c8 CS8, --ditto
c9 CS9, --Swap Body Structure
c10 CS10, --freight conveyance identifier
c11 CS11
--private defined data can be added here
}
```

7.14 'Transport Object Type'

7.14.1 Description

The 'Transport Object Type' is a qualifier for the type of unit, which is included in a transport chain.

7.14.2 ASN.1 type

```
TransportObjectType ::= ENUMERATED {
         goodsItem (0),
         package (1), --or load unit
         transportMeans (2)
}
```

7.15 'Transport Object Message Type'

7.15.1 Description

A message comprising the identity, type and, if present the battery status of the transport object.

```
ASN.1 type
TransportObjectMessageType ::= SEQUENCE
         TransportObjectIdentifier, -- Depending on the Transport Object
                                    -- Type
         TransportObjectType OPTIONAL, -- Transport Means, Package, Goods
                                       -- Item
TransportComponentStatus OPTIONAL
}
```

7.16 UN/LOCODE

7.16.1 Description

The UN/Locode specifies the geographical location of the AEI reader or the terminal monitoring point subject to administration from the AEI manager.

7.16.2 ASN.1 type

```
UNLocode ::= OCTET STRING -- UNLocode comprises country code + set of
                          -- location code(s)
```

Annex A
(normative)

ASN.1 Module for intermodal goods transport numbering and data structures

A.1 Data definitions

According to advice from ISO/IEC 8824, and in order to make the data defined within this International Standard valid for use in other RTTT/ITS application standards, the definitions below shall be their reference.

```
AVIAEIIntermodalNumberingAndDataStructures

{iso(1) standard(0) iso17262(17262) rev1 (1)} AUTOMATIC TAGS DEFINITIONS ::= BEGIN
--EXPORTS everything;
IMPORTS CS1, CS2, CS3, CS4, CS5, CS7, CS8 FROM ENV ISO 14816:2005
TimeReal FROM ENV ISO 14906:1998
ExportCountry, OriginAddress, ReturnAddress, Delivery, ShipmentStage, Consignment,
ConsignmentQuantity, SplitConsignmentIndicator, DeliveryInstructions, SpecialInstructions,
FreeOnBoardValueAmount, DeclaredStatisticsValueAmount, DeclaredForCarriageValueAmount,
DeclaredCustomsValueAmount, InsuranceValueAmount, TotalTransportHandlingUnitQuantity,
NetVolumeMeasure, GrossVolumeMeasure, NetNetWeightMeasure, NetWeightMeasure,
GrossWeightMeasure, Information,  ShippingPriorityLevelCode, LocationCoordinate,
SubsidiaryLocation, Address,  LocationTypeCode,  CountrySubentityCode,
CountrySubentity,  Conditions, Description, PalletSpaceMeasurementDimension,
FloorSpaceMeasurementDimension, GoodsItem, MaximumTemperature, MinimumTemperature,
MeasurementDimension, HazardousGoodsTransit, TransportEquipment,
ReceivedHandlingUnitReceiptLine, ActualPackage, HandlingUnitDespatchLine,  ShippingMarks,
DamageRemarks,  TotalPackageQuantity, TotalGoodsItemQuantity, HazardousRiskIndicator,
HandlingInstructions, HandlingCode, TransportHandlingUnitTypeCode, CustomsAgentParty,
TerminalOperatorParty, AcceptanceTransportEvent, StorageTransportEvent,
ReceiptTransportEvent, DeliveryTransportEvent, ActualPickupTransportEvent,
DropoffTransportEvent, OptionalTakeoverTransportEvent, TakeoverTransportEvent,
WarehousingTransportEvent, DischargeTransportEvent, ExportationTransportEvent,
AvailabilityTransportEvent, ExaminationTransportEvent, LoadingTransportEvent,
TransshipPortLocation, UnloadingPortLocation,  LoadingPortLocation, TransportMeans,
TransitPeriod,  DemurrageInstructions,  Instructions,  SuccessiveSequenceID,
LoadingSequenceID, RequiredDeliveryTime,  RequiredDeliveryDate,  EstimatedDeliveryTime,
EstimatedDeliveryDate,  OnCarriageIndicator,  PreCarriageIndicator,
TransitDirectionCode, TransportMeansTypeCode,  TransportModeCode, PaymentMeans,
TaxTotal, TaxCategory, PerUnitAmount, AccountingCost, AccountingCostCode, BaseAmount,
SequenceNumeric,  PrepaidIndicator,  MultiplierFactorNumeric,  AllowanceChargeReason,
AllowanceChargeReasonCode,  ChargeIndicator,  ExchangeRate,  PenaltyPeriod,
SettlementPeriod,  InstallmentDueDate, PaymentDueDate,  PenaltyAmount,
SettlementDiscountAmount,  PaymentPercent,  PenaltySurchargePercent,
SettlementDiscountPercent,  ReferenceEventCode,  PrepaidPaymentReferenceID,
PaymentMeansID,  AllowanceCharge,  DeliveryLocation,  Amount,  LossRisk,
LossRiskResponsibilityCode, SpecialTerms,  TransportationServiceDetailsURI,
TransportationServiceDescription, FreightRateClassCode, Priority, TariffClassCode,
TransportServiceCode, ContractualDelivery,  NominationPeriod,  ContractDocumentReference,
ValidityPeriod, Note, ContractType-1,ContractTypeCode,  IssueTime,  IssueDate,  Name-1,
IdentificationCode, FinancialAccount, PowerOfAttorney, ServiceProviderParty, AgentParty,
Person, Contact,  PartyLegalEntity,  PartyTaxScheme,  PhysicalLocation,  PostalAddress,
Language-1,  PartyName,  PartyIdentification,  IndustryClassificationCode, EndpointID,
LogoReferenceID, WebsiteURI,  MarkAttentionIndicator, MarkCareIndicator, BrokerAssignedID,
ID-1 FROM UBL21Module
```

```
AccessControlStatus ::= ENUMERATED {
      accessOk (0),
      accessDenied (1),
      accessPending (2)
}

AEIMessageType ::= SEQUENCE {
      TimeReal, --Local time reference (precision in seconds)
      ReaderLocation,
      TerminalMonitoringType,
      TransportObjectMessageType , --Transport Means, Package, Goods Item
}

CS9 ::= SwapBodyStructure ::= SEQUENCE {
      ownerCode BIT STRING(SIZE(15)), -- EN 13044
      equipCategoryId BIT STRING(SIZE(3)), -- EN 13044
      serialNumber INTEGER(0 .. 1000000), -- EN 13044
      checkDigit INTEGER(0 .. 10), -- EN 13044
      length INTEGER(1 .. 2048), -- cm
      height INTEGER(1 .. 512), -- cm
      width INTEGER(200 .. 327), -- cm (7bits)
      containerTypeCode INTEGER(0 .. 63), -- EN 13044
      maximumGrossWeight INTEGER(1 .. 512), -- 100 kg
      tareWeight INTEGER(0 .. 63) -- 100 kg
}

CS10 ::= FreightConveyanceIdentifier
FreightConveyanceIdentifier ::=SEQUENCE{
multipleFreightConveyanceIdentification MultipleFreightConveyanceIdentification,
multipleLoadIdentification MultipleLoadIdentification
}


MultipleFreightConveyanceIdentification ::= SEQUENCE {
identifierCode INTEGER {
nofreightConveyanceIdentifier (0),
freightContainerIdentification (1),
multipleFreightContainerIdentification (2)
} (0 .. 31),
freightContainerTypeIdentification CS7
}

MultipleLoadIdentification ::= SEQUENCE{
identifierCode INTEGER {
noLoadIdentifier (0),
transportMeansIdentification (1), --ISO14816
intermodalGoodsTransportationIdentification (2), --ISO17262
freightContainerIdentification (3), --ISO17363
returnableTransportItemsIdentification (4), --ISO17364
transportUnitsIdentification (5), --ISO17365
productPackagingIdentification (6), --ISO17366
goodsItemsIdentification (7), --ISO17367
unused1 (8), -- 8-14 unused
unused2 (9), -- 8-14 unused
unused3 (10), -- 8-14 unused
unused4 (11), -- 8-14 unused
unused5 (12), -- 8-14 unused
unused6 (13), -- 8-14 unused
unused7 (14), -- 8-14 unused
electronicSealsIdentification (15) --ISO18185
--16-999 Reserved for future use (0 .. 999)
} (0 .. 999),
noLoadIdetifier PrintableString OPTIONAL,
transportMeansIdentification PrintableString OPTIONAL,
```

```
-- Automatic vehicle and equipment identification -Numbering and data structure,
-- containing the corresponding identifier to be defined in ISO 14816,
intermodalGoodsTransportIdentification PrintableString OPTIONAL,
--Automatic vehicle and equipment identification- Numbering and data structures,
-- containing the corresponding identifier to be defined in ISO17262
freightContainerIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17363
returnableTransportItemsIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17364
transportUnitsIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17365
productPckagingIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17366
goodsItemsIdentification PrintableString OPTIONAL,
--Supply chain applications of RFID,
--containing the corresponding identifier to be defined in ISO17367
electronicSealsIdentification PrintableString OPTIONAL
--Freight containers
--Part 4: Data protection,
-- containing the corresponding identifier to be defined in ISO18185
}



XSD ::= CLASS { --XSD is dummy class to get CS11 compilable
&NormalizedString OPTIONAL,
&String OPTIONAL,
&AnyURI OPTIONAL,
&Language OPTIONAL,
&Decimal OPTIONAL
}
CS11 ::= TransportLibraryConsignment
TransportLibraryConsignment ::= SEQUENCE {
iD ID-1,
carrierAssignedID CarrierAssignedIDType OPTIONAL,
consigneeAssignedID ConsigneeAssignedIDType OPTIONAL,
consignorAssignedID ConsignorAssignedIDType OPTIONAL,
freightForwarderAssignedID FreightForwarderAssignedIDType OPTIONAL,
brokerAssignedID BrokerAssignedID OPTIONAL,
contractedCarrierAssignedID ContractedCarrierAssignedIDType OPTIONAL,
performingCarrierAssignedID PerformingCarrierAssignedIDType OPTIONAL,
summaryDescription-list SEQUENCE OF SummaryDescriptionType,
totalInvoiceAmount TotalInvoiceAmountType OPTIONAL,
declaredCustomsValueAmount DeclaredCustomsValueAmountType OPTIONAL,
tariffDescription-list SEQUENCE OF TariffDescriptionType,
tariffCode TariffCodeType OPTIONAL,
insurancePremiumAmount InsurancePremiumAmountType OPTIONAL,
grossWeightMeasure GrossWeightMeasureType OPTIONAL,
netWeightMeasure NetWeightMeasureType OPTIONAL,
netNetWeightMeasure NetNetWeightMeasureType OPTIONAL,
chargeableWeightMeasure ChargeableWeightMeasureType OPTIONAL,
grossVolumeMeasure GrossVolumeMeasureType OPTIONAL,
netVolumeMeasure NetVolumeMeasureType OPTIONAL,
loadingLengthMeasure LoadingLengthMeasureType OPTIONAL,
remarks-list SEQUENCE OF RemarksType,
hazardousRiskIndicator HazardousRiskIndicatorType OPTIONAL,
animalFoodIndicator AnimalFoodIndicatorType OPTIONAL,
humanFoodIndicator HumanFoodIndicatorType OPTIONAL,
livestockIndicator LivestockIndicatorType OPTIONAL,
bulkCargoIndicator BulkCargoIndicatorType OPTIONAL,
```

```
containerizedIndicator ContainerizedIndicatorType OPTIONAL,
generalCargoIndicator GeneralCargoIndicatorType OPTIONAL,
specialSecurityIndicator SpecialSecurityIndicatorType OPTIONAL,
thirdPartyPayerIndicator ThirdPartyPayerIndicatorType OPTIONAL,
carrierServiceInstructions CarrierServiceInstructionsType OPTIONAL,
customsClearanceServiceInstructions CustomsClearanceServiceInstructionsType OPTIONAL,
forwarderServiceInstructions ForwarderServiceInstructionsType OPTIONAL,
specialServiceInstructions SpecialServiceInstructionsType OPTIONAL,
sequenceID SequenceIDType OPTIONAL,
shippingPriorityLevelCode ShippingPriorityLevelCodeType OPTIONAL,
handlingCode HandlingCodeType OPTIONAL,
handlingInstructions HandlingInstructionsType OPTIONAL,
information InformationType OPTIONAL,
totalGoodsItemQuantity TotalGoodsItemQuantityType OPTIONAL,
totalTransportHandlingUnitQuantity TotalTransportHandlingUnitQuantityType OPTIONAL,
insuranceValueAmount InsuranceValueAmountType OPTIONAL,
declaredForCarriageValueAmount DeclaredForCarriageValueAmountType OPTIONAL,
declaredStatisticsValueAmount DeclaredStatisticsValueAmountType OPTIONAL,
freeOnBoardValueAmount FreeOnBoardValueAmountType OPTIONAL,
specialInstructions-list SEQUENCE OF SpecialInstructionsType,
splitConsignmentIndicator SplitConsignmentIndicatorType OPTIONAL,
deliveryInstructions-list SEQUENCE OF DeliveryInstructionsType,
consignmentQuantity ConsignmentQuantityType OPTIONAL,
consolidatableIndicator ConsolidatableIndicatorType OPTIONAL,
haulageInstructions-list SEQUENCE OF HaulageInstructionsType,
loadingSequenceID LoadingSequenceIDType OPTIONAL,
consigneeParty ConsigneeParty OPTIONAL,
exporterParty ExporterParty OPTIONAL,
consignorParty ConsignorParty OPTIONAL,
importerParty ImporterParty OPTIONAL,
carrierParty CarrierParty OPTIONAL,
freightForwarderParty FreightForwarderParty OPTIONAL,
notifyParty NotifyParty OPTIONAL,
originalDespatchParty OriginalDespatchParty OPTIONAL,
finalDeliveryParty FinalDeliveryParty OPTIONAL,
performingCarrierParty PerformingCarrierParty OPTIONAL,
substituteCarrierParty SubstituteCarrierParty OPTIONAL,
logisticsOperatorParty LogisticsOperatorParty OPTIONAL,
transportAdvisorParty TransportAdvisorParty OPTIONAL,
hazardousItemNotificationParty HazardousItemNotificationParty OPTIONAL,
insuranceParty InsuranceParty OPTIONAL,
mortgageHolderParty MortgageHolderParty OPTIONAL,
billOfLadingHolderParty BillOfLadingHolderParty OPTIONAL,
originalDepartureCountry OriginalDepartureCountry OPTIONAL,
finalDestinationCountry FinalDestinationCountry OPTIONAL,
transitCountry-list SEQUENCE OF TransitCountry,
transportContract TransportContract OPTIONAL,
originalDespatchTransportationService OriginalDespatchTransportationService OPTIONAL,
finalDeliveryTransportationService FinalDeliveryTransportationService OPTIONAL,
deliveryTerms DeliveryTerms OPTIONAL,
paymentTerms PaymentTerms OPTIONAL,
collectPaymentTerms CollectPaymentTerms OPTIONAL,
disbursementPaymentTerms DisbursementPaymentTerms OPTIONAL,
prepaidPaymentTerms PrepaidPaymentTerms OPTIONAL,
freightAllowanceCharge-list SEQUENCE OF FreightAllowanceCharge,
extraAllowanceCharge-list SEQUENCE OF ExtraAllowanceCharge,
mainCarriageShipmentStage MainCarriageShipmentStage OPTIONAL,
preCarriageShipmentStage-list SEQUENCE OF PreCarriageShipmentStage,
onCarriageShipmentStage-list SEQUENCE OF OnCarriageShipmentStage,
transportHandlingUnit-list SEQUENCE OF transportHandlingUnit TransportHandlingUnit,
firstArrivalPortLocation FirstArrivalPortLocation OPTIONAL,
lastExitPortLocation LastExitPortLocation OPTIONAL,
consolidatedShipment-list SEQUENCE OF ConsolidatedShipment
}
CarrierAssignedIDType ::= SEQUENCE {
```

```
schemeAgencyID XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString
}
ConsigneeAssignedIDType ::= SEQUENCE {
schemeAgencyID XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString
}
ConsignorAssignedIDType ::= SEQUENCE {
schemeAgencyID XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString
}
FreightForwarderAssignedIDType ::= SEQUENCE {
schemeAgencyID XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString
}
BrokerAssignedIDType ::= SEQUENCE {
schemeAgencyID XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString
}
ContractedCarrierAssignedIDType ::= SEQUENCE {
schemeAgencyID XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString
}
PerformingCarrierAssignedIDType ::= SEQUENCE {
schemeAgencyID XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
```

```
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString
}
SummaryDescriptionType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
TotalInvoiceAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
DeclaredCustomsValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
TariffDescriptionType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
TariffCodeType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
listAgencyID XSD.&NormalizedString OPTIONAL,
listAgencyName XSD.&String OPTIONAL,
listID XSD.&NormalizedString OPTIONAL,
listName XSD.&String OPTIONAL,
listSchemeURI XSD.&AnyURI OPTIONAL,
listURI XSD.&AnyURI OPTIONAL,
listVersionID XSD.&NormalizedString OPTIONAL,
name XSD.&String OPTIONAL,
base XSD.&NormalizedString
}
InsurancePremiumAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
GrossWeightMeasureType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
NetWeightMeasureType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
NetNetWeightMeasureType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
ChargeableWeightMeasureType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
GrossVolumeMeasureType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
```

```
}
NetVolumeMeasureType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
LoadingLengthMeasureType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
RemarksType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
HazardousRiskIndicatorType ::= SEQUENCE {
base BOOLEAN
}
AnimalFoodIndicatorType ::= SEQUENCE {
base BOOLEAN
}
HumanFoodIndicatorType ::= SEQUENCE {
base BOOLEAN
}
LivestockIndicatorType ::= SEQUENCE {
base BOOLEAN
}
BulkCargoIndicatorType ::= SEQUENCE {
base BOOLEAN
}
ContainerizedIndicatorType ::= SEQUENCE {
base BOOLEAN
}
GeneralCargoIndicatorType ::= SEQUENCE {
base BOOLEAN
}
SpecialSecurityIndicatorType ::= SEQUENCE {
base BOOLEAN
}
ThirdPartyPayerIndicatorType ::= SEQUENCE {
base BOOLEAN
}
CarrierServiceInstructionsType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
CustomsClearanceServiceInstructionsType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
ForwarderServiceInstructionsType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
SpecialServiceInstructionsType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
SequenceIDType ::= SEQUENCE {
schemeAgencyID XSD.&NormalizedString OPTIONAL,
```

```
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString
}
ShippingPriorityLevelCodeType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
listAgencyID XSD.&NormalizedString OPTIONAL,
listAgencyName XSD.&String OPTIONAL,
listID XSD.&NormalizedString OPTIONAL,
listName XSD.&String OPTIONAL,
listSchemeURI XSD.&AnyURI OPTIONAL,
listURI XSD.&AnyURI OPTIONAL,
listVersionID XSD.&NormalizedString OPTIONAL,
name XSD.&String OPTIONAL,
base XSD.&NormalizedString
}
HandlingCodeType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
listAgencyID XSD.&NormalizedString OPTIONAL,
listAgencyName XSD.&String OPTIONAL,
listID XSD.&NormalizedString OPTIONAL,
listName XSD.&String OPTIONAL,
listSchemeURI XSD.&AnyURI OPTIONAL,
listURI XSD.&AnyURI OPTIONAL,
listVersionID XSD.&NormalizedString OPTIONAL,
name XSD.&String OPTIONAL,
base XSD.&NormalizedString
}
HandlingInstructionsType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
InformationType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
TotalGoodsItemQuantityType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyID XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyName XSD.&String OPTIONAL,
unitCodeListID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
TotalTransportHandlingUnitQuantityType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyID XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyName XSD.&String OPTIONAL,
unitCodeListID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
InsuranceValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
DeclaredForCarriageValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
```

```
}
DeclaredStatisticsValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
FreeOnBoardValueAmountType ::= SEQUENCE {
currencyCodeListVersionID XSD.&NormalizedString OPTIONAL,
currencyID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
SpecialInstructionsType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
SplitConsignmentIndicatorType ::= SEQUENCE {
base BOOLEAN
}
DeliveryInstructionsType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
ConsignmentQuantityType ::= SEQUENCE {
unitCode XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyID XSD.&NormalizedString OPTIONAL,
unitCodeListAgencyName XSD.&String OPTIONAL,
unitCodeListID XSD.&NormalizedString OPTIONAL,
base XSD.&Decimal
}
ConsolidatableIndicatorType ::= SEQUENCE {
base BOOLEAN
}
HaulageInstructionsType ::= SEQUENCE {
languageID XSD.&Language OPTIONAL,
languageLocaleID XSD.&NormalizedString OPTIONAL,
base XSD.&String
}
LoadingSequenceIDType ::= SEQUENCE {
schemeAgencyID XSD.&NormalizedString OPTIONAL,
schemeAgencyName XSD.&String OPTIONAL,
schemeDataURI XSD.&AnyURI OPTIONAL,
schemeID XSD.&NormalizedString OPTIONAL,
schemeName XSD.&String OPTIONAL,
schemeURI XSD.&AnyURI OPTIONAL,
schemeVersionID XSD.&NormalizedString OPTIONAL,
base XSD.&NormalizedString}
PartyType ::= SEQUENCE {
markCareIndicator MarkCareIndicator OPTIONAL,
markAttentionIndicator MarkAttentionIndicator OPTIONAL,
websiteURI WebsiteURI OPTIONAL,
logoReferenceID LogoReferenceID OPTIONAL,
endpointID EndpointID OPTIONAL,
industryClassificationCode IndustryClassificationCode OPTIONAL,
partyIdentification-list SEQUENCE OF PartyIdentification,
partyName-list SEQUENCE OF PartyName,
language Language-1 OPTIONAL,
postalAddress PostalAddress OPTIONAL,
physicalLocation PhysicalLocation OPTIONAL,
partyTaxScheme-list SEQUENCE OF PartyTaxScheme,
partyLegalEntity-list SEQUENCE OF PartyLegalEntity,
contact Contact OPTIONAL,
person-list SEQUENCE OF Person,
agentParty AgentParty OPTIONAL,
```

```
serviceProviderParty-list SEQUENCE OF ServiceProviderParty,
powerOfAttorney-list SEQUENCE OF PowerOfAttorney,
financialAccount FinancialAccount OPTIONAL
}
ConsigneeParty ::= PartyType
ExporterParty ::= PartyType
ConsignorParty ::= PartyType
ImporterParty ::= PartyType
CarrierParty ::= PartyType
FreightForwarderParty ::= PartyType
NotifyParty ::= PartyType
OriginalDespatchParty ::= PartyType
FinalDeliveryParty ::= PartyType
PerformingCarrierParty ::= PartyType
SubstituteCarrierParty ::= PartyType
LogisticsOperatorParty ::= PartyType
TransportAdvisorParty ::= PartyType
HazardousItemNotificationParty ::= PartyType
InsuranceParty ::= PartyType
MortgageHolderParty ::= PartyType
BillOfLadingHolderParty ::= PartyType
OriginalDepartureCountry ::= CountryType
CountryType ::= SEQUENCE {
identificationCode IdentificationCode OPTIONAL,
name Name-1 OPTIONAL
}
FinalDestinationCountry ::= CountryType
TransitCountry ::= CountryType
TransportContract ::= ContractType
ContractType ::= SEQUENCE {
iD ID-1 OPTIONAL,
issueDate IssueDate OPTIONAL,
issueTime IssueTime OPTIONAL,
contractTypeCode ContractTypeCode OPTIONAL,
contractType ContractType-1 OPTIONAL,
note-list SEQUENCE OF Note,
validityPeriod ValidityPeriod OPTIONAL,
contractDocumentReference-list SEQUENCE OF ContractDocumentReference,
nominationPeriod NominationPeriod OPTIONAL,
contractualDelivery ContractualDelivery OPTIONAL
}
OriginalDespatchTransportationService ::= TransportationServiceType
TransportationServiceType ::= SEQUENCE {
transportServiceCode TransportServiceCode,
tariffClassCode TariffClassCode OPTIONAL,
priority Priority OPTIONAL,
freightRateClassCode FreightRateClassCode OPTIONAL,
transportationServiceDescription TransportationServiceDescription OPTIONAL,
transportationServiceDetailsURI TransportationServiceDetailsURI OPTIONAL
}
FinalDeliveryTransportationService ::= TransportationServiceType
DeliveryTerms ::= DeliveryTermsType

DeliveryTermsType ::= SEQUENCE {
iD ID-1 OPTIONAL,
specialTerms SpecialTerms OPTIONAL,
lossRiskResponsibilityCode LossRiskResponsibilityCode OPTIONAL,
lossRisk LossRisk OPTIONAL,
amount Amount OPTIONAL,
deliveryLocation DeliveryLocation OPTIONAL,
allowanceCharge AllowanceCharge OPTIONAL
}
PaymentTerms ::= PaymentTermsType
PaymentTermsType ::= SEQUENCE {
iD ID-1 OPTIONAL,
```

```
paymentMeansID-list SEQUENCE OF PaymentMeansID,
prepaidPaymentReferenceID PrepaidPaymentReferenceID OPTIONAL,
note-list SEQUENCE OF Note,
referenceEventCode ReferenceEventCode OPTIONAL,
settlementDiscountPercent SettlementDiscountPercent OPTIONAL,
penaltySurchargePercent PenaltySurchargePercent OPTIONAL,
paymentPercent PaymentPercent OPTIONAL,
amount Amount OPTIONAL,
settlementDiscountAmount SettlementDiscountAmount OPTIONAL,
penaltyAmount PenaltyAmount OPTIONAL,
paymentDueDate PaymentDueDate OPTIONAL,
installmentDueDate InstallmentDueDate OPTIONAL,
settlementPeriod SettlementPeriod OPTIONAL,
penaltyPeriod PenaltyPeriod OPTIONAL,
exchangeRate ExchangeRate OPTIONAL,
validityPeriod ValidityPeriod OPTIONAL
}
CollectPaymentTerms ::= PaymentTermsType
DisbursementPaymentTerms ::= PaymentTermsType
PrepaidPaymentTerms ::= PaymentTermsType
FreightAllowanceCharge ::= AllowanceChargeType
AllowanceChargeType ::= SEQUENCE {
iD ID-1 OPTIONAL,
chargeIndicator ChargeIndicator,
allowanceChargeReasonCode AllowanceChargeReasonCode OPTIONAL,
allowanceChargeReason AllowanceChargeReason OPTIONAL,
multiplierFactorNumeric MultiplierFactorNumeric OPTIONAL,
prepaidIndicator PrepaidIndicator OPTIONAL,
sequenceNumeric SequenceNumeric OPTIONAL,
amount Amount,
baseAmount BaseAmount OPTIONAL,
accountingCostCode AccountingCostCode OPTIONAL,
accountingCost AccountingCost OPTIONAL,
perUnitAmount PerUnitAmount OPTIONAL,
taxCategory-list SEQUENCE OF TaxCategory,
taxTotal TaxTotal OPTIONAL,
paymentMeans-list SEQUENCE OF PaymentMeans
}
ExtraAllowanceCharge ::= AllowanceChargeType
MainCarriageShipmentStage ::= ShipmentStageType
ShipmentStageType ::= SEQUENCE {
iD ID-1 OPTIONAL,
transportModeCode TransportModeCode OPTIONAL,
transportMeansTypeCode TransportMeansTypeCode OPTIONAL,
transitDirectionCode TransitDirectionCode OPTIONAL,
preCarriageIndicator PreCarriageIndicator,
onCarriageIndicator OnCarriageIndicator,
estimatedDeliveryDate EstimatedDeliveryDate OPTIONAL,
estimatedDeliveryTime EstimatedDeliveryTime OPTIONAL,
requiredDeliveryDate RequiredDeliveryDate OPTIONAL,
requiredDeliveryTime RequiredDeliveryTime OPTIONAL,
loadingSequenceID LoadingSequenceID OPTIONAL,
successiveSequenceID SuccessiveSequenceID OPTIONAL,
instructions Instructions OPTIONAL,
demurrageInstructions DemurrageInstructions OPTIONAL,
transitPeriod TransitPeriod OPTIONAL,
carrierParty-list SEQUENCE OF CarrierParty,
transportMeans TransportMeans OPTIONAL,
loadingPortLocation LoadingPortLocation OPTIONAL,
unloadingPortLocation UnloadingPortLocation OPTIONAL,
transshipPortLocation TransshipPortLocation OPTIONAL,
loadingTransportEvent LoadingTransportEvent OPTIONAL,
examinationTransportEvent ExaminationTransportEvent OPTIONAL,
availabilityTransportEvent AvailabilityTransportEvent OPTIONAL,
exportationTransportEvent ExportationTransportEvent OPTIONAL,
```

```
dischargeTransportEvent DischargeTransportEvent OPTIONAL,
warehousingTransportEvent WarehousingTransportEvent OPTIONAL,
takeoverTransportEvent TakeoverTransportEvent OPTIONAL,
optionalTakeoverTransportEvent OptionalTakeoverTransportEvent OPTIONAL,
dropoffTransportEvent DropoffTransportEvent OPTIONAL,
actualPickupTransportEvent ActualPickupTransportEvent OPTIONAL,
deliveryTransportEvent DeliveryTransportEvent OPTIONAL,
receiptTransportEvent ReceiptTransportEvent OPTIONAL,
storageTransportEvent StorageTransportEvent OPTIONAL,
acceptanceTransportEvent AcceptanceTransportEvent OPTIONAL,
terminalOperatorParty TerminalOperatorParty OPTIONAL,
customsAgentParty CustomsAgentParty OPTIONAL
}
PreCarriageShipmentStage ::= ShipmentStageType
OnCarriageShipmentStage ::= ShipmentStageType
TransportHandlingUnit ::= TransportHandlingUnitType
TransportHandlingUnitType ::= SEQUENCE {
iD ID-1 OPTIONAL,
transportHandlingUnitTypeCode TransportHandlingUnitTypeCode OPTIONAL,
handlingCode HandlingCode OPTIONAL,
handlingInstructions HandlingInstructions OPTIONAL,
hazardousRiskIndicator HazardousRiskIndicator OPTIONAL,
totalGoodsItemQuantity TotalGoodsItemQuantity OPTIONAL,
totalPackageQuantity TotalPackageQuantity OPTIONAL,
damageRemarks-list SEQUENCE OF DamageRemarks,
shippingMarks-list SEQUENCE OF ShippingMarks,
handlingUnitDespatchLine-list SEQUENCE OF HandlingUnitDespatchLine,
actualPackage-list SEQUENCE OF ActualPackage,
receivedHandlingUnitReceiptLine-list SEQUENCE OF ReceivedHandlingUnitReceiptLine,
transportEquipment-list SEQUENCE OF TransportEquipment,
hazardousGoodsTransit-list SEQUENCE OF HazardousGoodsTransit,
measurementDimension-list SEQUENCE OF MeasurementDimension,
minimumTemperature MinimumTemperature OPTIONAL,
maximumTemperature MaximumTemperature OPTIONAL,
goodsItem-list SEQUENCE OF GoodsItem,
floorSpaceMeasurementDimension FloorSpaceMeasurementDimension OPTIONAL,
palletSpaceMeasurementDimension PalletSpaceMeasurementDimension OPTIONAL
}
LocationType ::= SEQUENCE {
iD ID-1 OPTIONAL,
description Description OPTIONAL,
conditions Conditions OPTIONAL,
countrySubentity CountrySubentity OPTIONAL,
countrySubentityCode CountrySubentityCode OPTIONAL,
locationTypeCode LocationTypeCode OPTIONAL,
validityPeriod-list SEQUENCE OF ValidityPeriod,
address Address OPTIONAL,
subsidiaryLocation SubsidiaryLocation OPTIONAL,
locationCoordinate LocationCoordinate OPTIONAL
}
FirstArrivalPortLocation ::= LocationType
LastExitPortLocation ::= LocationType
ConsolidatedShipment ::= ShipmentType
ShipmentType ::= SEQUENCE {
iD ID-1,
shippingPriorityLevelCode ShippingPriorityLevelCode OPTIONAL,
handlingCode HandlingCode OPTIONAL,
handlingInstructions HandlingInstructions OPTIONAL,
information Information OPTIONAL,
grossWeightMeasure GrossWeightMeasure OPTIONAL,
netWeightMeasure NetWeightMeasure OPTIONAL,
netNetWeightMeasure NetNetWeightMeasure OPTIONAL,
grossVolumeMeasure GrossVolumeMeasure OPTIONAL,
netVolumeMeasure NetVolumeMeasure OPTIONAL,
totalGoodsItemQuantity TotalGoodsItemQuantity OPTIONAL,
```

```
totalTransportHandlingUnitQuantity TotalTransportHandlingUnitQuantity OPTIONAL,
insuranceValueAmount InsuranceValueAmount OPTIONAL,
declaredCustomsValueAmount DeclaredCustomsValueAmount OPTIONAL,
declaredForCarriageValueAmount DeclaredForCarriageValueAmount OPTIONAL,
declaredStatisticsValueAmount DeclaredStatisticsValueAmount OPTIONAL,
freeOnBoardValueAmount FreeOnBoardValueAmount OPTIONAL,
specialInstructions-list SEQUENCE OF SpecialInstructions,
deliveryInstructions-list SEQUENCE OF DeliveryInstructions,
splitConsignmentIndicator SplitConsignmentIndicator OPTIONAL,
consignmentQuantity ConsignmentQuantity OPTIONAL,
consignment-list SEQUENCE (SIZE(1..MAX)) OF Consignment,
goodsItem-list SEQUENCE OF GoodsItem,
shipmentStage-list SEQUENCE OF ShipmentStage,
delivery Delivery OPTIONAL,
transportHandlingUnit-list SEQUENCE OF TransportHandlingUnit,
returnAddress ReturnAddress OPTIONAL,
originAddress OriginAddress OPTIONAL,
firstArrivalPortLocation FirstArrivalPortLocation OPTIONAL,
lastExitPortLocation LastExitPortLocation OPTIONAL,
exportCountry ExportCountry OPTIONAL,
freightAllowanceCharge-list SEQUENCE OF FreightAllowanceCharge
}

TransportComponentStatus ::= ENUMERATED {
      oK (0),
      malFunction (1),
      batteryLow (2)
}

DisplayMessageType ::= SEQUENCE {
      AccessControlStatus,
      TransportObjectMessageType OPTIONAL,
      MsgInfo OPTIONAL
}

MsgInfo ::= VISIBLE STRING

Position ::= SEQUENCE {
      xCoordinate INTEGER,
      yCoordinate INTEGER,
      zCoordinate INTEGER
}

ReaderLocation ::= SEQUENCE {
      readerIdentity CS2 OPTIONAL, -- Global Manufacturer
                                   -- Identifier from
                                                  ENV ISO 14816:2005
            localIdentity  INTEGER(1..65535) OPTIONAL, -- Locally determined reader
                                                       -- identity
            unlocode        UNlocode            OPTIONAL,
            position        Position            OPTIONAL
}

TerminalMonitoringType ::= BIT STRING {
      entry (0),
      exit (1),
      loading (2),
      unloading (3),
      stacking (4),
      unstacking (5),
      stuffing (6),
      stripping (7),
      registration (8) --automatic reading of transport objects
}
```

```
TransportObjectIdentifier ::= CHOICE {
c1 CS1, --imported from ISO14816, AVIAEI Unambigous identifier
c2 CS2, --ditto
c4 CS4, --ditto
c5 CS5, --ditto
c7 CS7, --ditto
c8 CS8, --ditto
c9 CS9, --Swap Body Structure
c10 CS10, --freight conveyance identifier
c11 CS11
--private defined data can be added here
}

TransportObjectMessageType ::= SEQUENCE
      TransportObjectIdentifier,              -- Depending on the Transport Object
                                               -- Type
      TransportObjectType          OPTIONAL, -- Transport Means, Package, Goods
                                               -- Item
      TransportComponentStatus    OPTIONAL
}

TransportObjectType ::= ENUMERATED {
      goodsItem (0),
      package (1),
      transportMeans (2)
}

UNLocode ::= OCTET STRING

END
```

Annex B
(informative)

Examples of intermodal transport AEI applications

B.1 Example scenario for division of data between different components

Figure B.1 illustrates one possible instance of data resided in different components defined in this International Standard. This means that an AEI application (system) may comprise 'Transport Object'/TAG, reader, AEI manager and message display that contains only a sub-set of data defined in this International Standard.

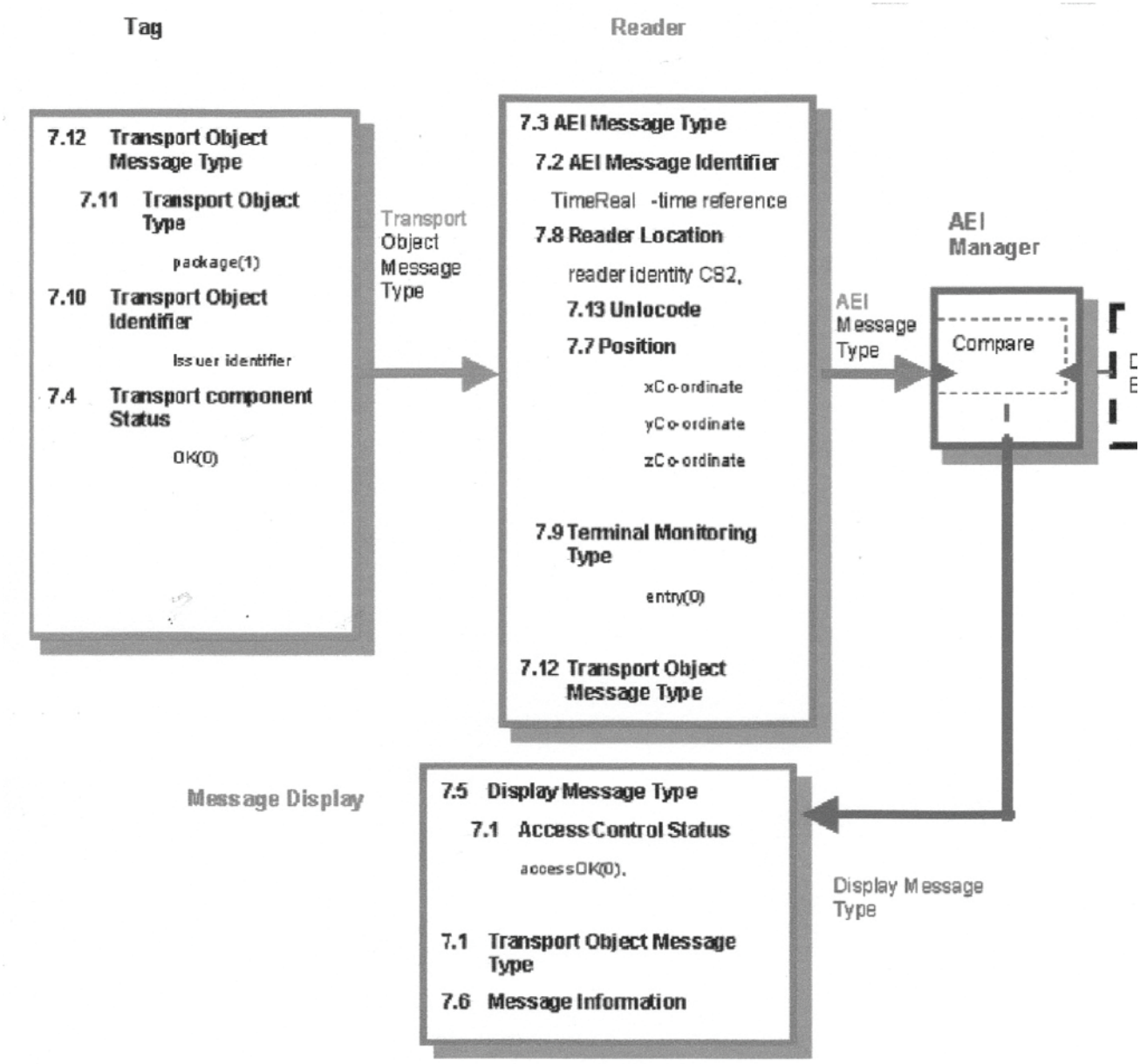


Figure B.1 — Example scenario for division of data between different components

B.2 AEI System architecture based on the European INTERPORT project

The example scenario illustrates how the communication architecture might be for AEI systems.

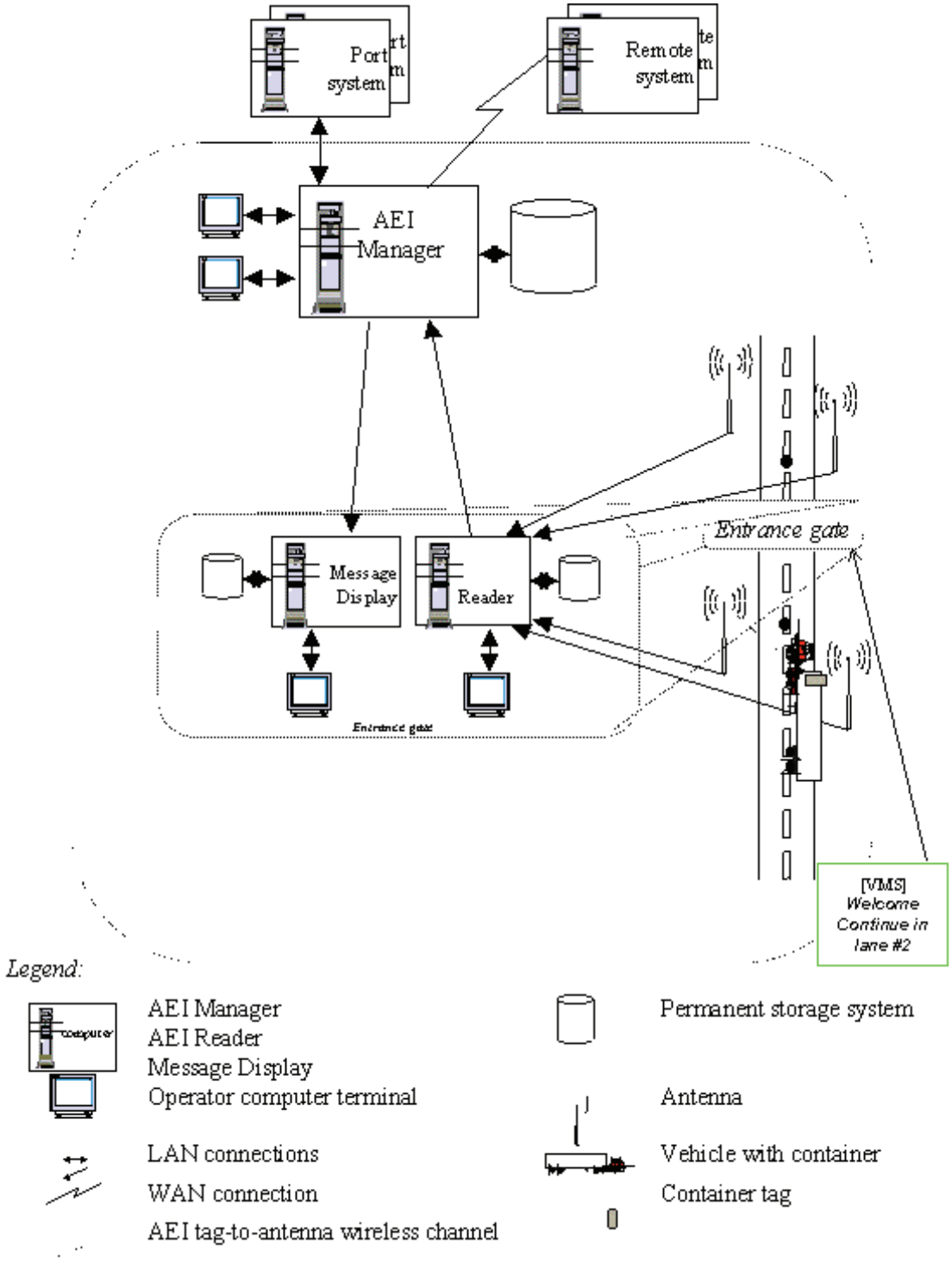


Figure B.2 — System architecture based on the INTERPORT system

The communication architecture shown in Figure B.2. is describing the different communication channels between the system components, and reflects the different parts in the INTERPORT system. The AEI reader communicating with the antennas could be regarded as one system component, even though it may consist of several physical units.

Annex C
(informative)

Examples on the use of intermodal goods transport numbering and data structures

C.1 ASN. 1 introduction and general explanation

Abstract Syntax Notation One (ASN.1) is a data specification language and is standardised in ISO/IEC 8824-1, ISO/IEC 8824-2, ISO/IEC 8824-3, ISO/IEC 8824-4 and ITU-T X.680 - X.683. ASN.1 allows unambiguous specification of complex data structures including those with variable-length fields, optional fields and recursion.

ASN.1 comprises a set of data types, notably ASN.1 types. Examples of such types are the BOOLEAN type, the BIT STRING type, the INTEGER type, the OBJECT IDENTIFIER type, the OCTET STRING type and the SEQUENCE type.

ASN.1 comprises a specification language, which is a set of rules of how to specify the types by means of syntax and semantics. This also includes a set of reserved words. In ASN.1 a 'module' is a basic building block that all ASN.1 specifications employ. Moreover the ASN.1 module is a collection to types, values and other items that can be defined in ASN.1, grouped together because they are somehow logically related. The ASN.1 module can include an unambiguous identifier such that referencing the module by other modules is made possible. This identifier is an OBJECT IDENTIFIER type.

All specifications developed using ASN.1 must conform to the ASN.1 syntax and semantics in ISO/IEC 8824 in order to be used in real systems. ASN.1 syntax checkers can ease this conformity process.

The ASN.1 types are transformed into programming language types in order to be applied in a computer environment. ASN.1 compilers can be used to automatically transform ASN.1 type definitions into the data representation of various programming languages, such as C, C++, Java, Pascal.

Before types can be transferred between communicating entities, the types need to be encoded by the transmitter and decoded by the receiver. The encoding and decoding is covered in other Standards, notably ISO/IEC 8825-1 /ITU-T X.690 (basic encoding rules or BER) and ISO/IEC 8825-2 / ITU-T X.691 (packed encoding rules or PER).BER may allow data to be decoded by systems that have general knowledge of ASN.1 but do not know the details of the specification used to form the data. In other words, the data types are encoded along with the data values.

PER is much more efficient since only data values are encoded and the coding is designed with very little redundancy. This method can be used when both the transmitter and the receiver expect data to adhere to a known structure.

The encoding and decoding routines for the ASN.1 types must be implemented in a programming language as for the target of the ASN.1 compilers.

C.2 Examples on encoding of data

EXAMPLE 1: An ASN.1 Module with 'Coding Scheme 2': AVI/AEI Manufacturer ID

The "Example1Module" is an example module created to show the representation of a single value (e.g. instance) of the AVI/AEI manufacturer ID.

Example1Module

```
Example1Module DEFINITIONS ::= BEGIN
IMPORTS CS2 FROM ENV ISO 14816:2005; --AVI/AEI Numbering and Data Structures
value CS2 ::= { '8AE'H 'AB4130'H}
END
```

Representation of value in ASN.1 Basic Encoding Rules

Table C.1 — Encoding of value (CS2) using BER (Definite Length)

value		
Element	Value	Binary representation
Identifier	'30'H	00110000
Length	'0A'H	00001010
Identifier	'02'H	00000010
Length	'02'H	00000010
ManufacturerId	'08AE'H	0000100010101110
Identifier	'01'H	00000001
Length	'20'H	00100000
Service Number	'00AB4130'H	00000000101010110100000100110000

Representation of value in ASN.1 Packed Encoding Rules

Table C.2 — Encoding of Coding Scheme (CS2) using PER Octet Aligned

CodingScheme		
Element	Value	Binary representation
ManufacturerId	'08AE'H	0000100010101110
Service Number	'00AB4130'H	00000000101010110100000100110000

EXAMPLE 2: An ASN.1 Module with AEIMessageType

Example2Module

The 'Example2Module' is an example module created to show the representation of a single value (e.g. instance) of the AEIMessageType.

```
Example2Module DEFINITIONS ::= BEGIN
   IMPORTS AEIMessageType
                FROM AVIAEIIntermodalNumberingAndDataStructures; --This standard

         value AEIMessageType ::=
{
         timereal 100000000,
       readerlocation {
       readerIdentity
{
```

```
        issuerIdentifier 1000,
        serviceNumber '31323334'H
}
},
        termMonitorType '0080'H
}
END
```

Representation of AEIMessageType in ASN.1 'Basic Encoding Rules'

The representation in hexadecimal numbers of the AEIMessageType in ASN.1' Basic Encoding Rules' (Definite Length) will be as follows (28 octets):

301B810405 F5E100A2 0DA00B02 0203E803 05003132 33348303 070080

Binary representation (31 octets):

00110000 00011101 10000000 00000001 00001010 10000001 00000100 00000101 11110101 11100001 00000000 10100010 00001101 10100000 00001011 00000010 00000010 00000011 11101000 00000011 00000101 00000000 00110001 00110010 00110011 00110100 10000011 00000011 00000111 00000000 10000000

Representation of the AEIMessageType in ASN.1 'Packed Encoding Rules'

The representation in hexadecimal numbers of the AEIMessageType using ASN.1 'Packed Encoding Rules' (Unaligned version) will be as follows (15 octets):

002140BE BC20001F 41899199 A04804

Binary Representation (15 octets):

00000000 00100001 01000000 10111110 10111100 00100000 00000000 00011111 01000001 10001001 10010001 10011001 10100000 01001000 00000100

This means that the use of 'Packed Encoding Rules' in this example is more than twice as efficient in the representation of AEIMessageType than the use of 'Basic Encoding Rules'.

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