

PCS Bulgaria

Integration with the TOS system

Port of Varna EAD

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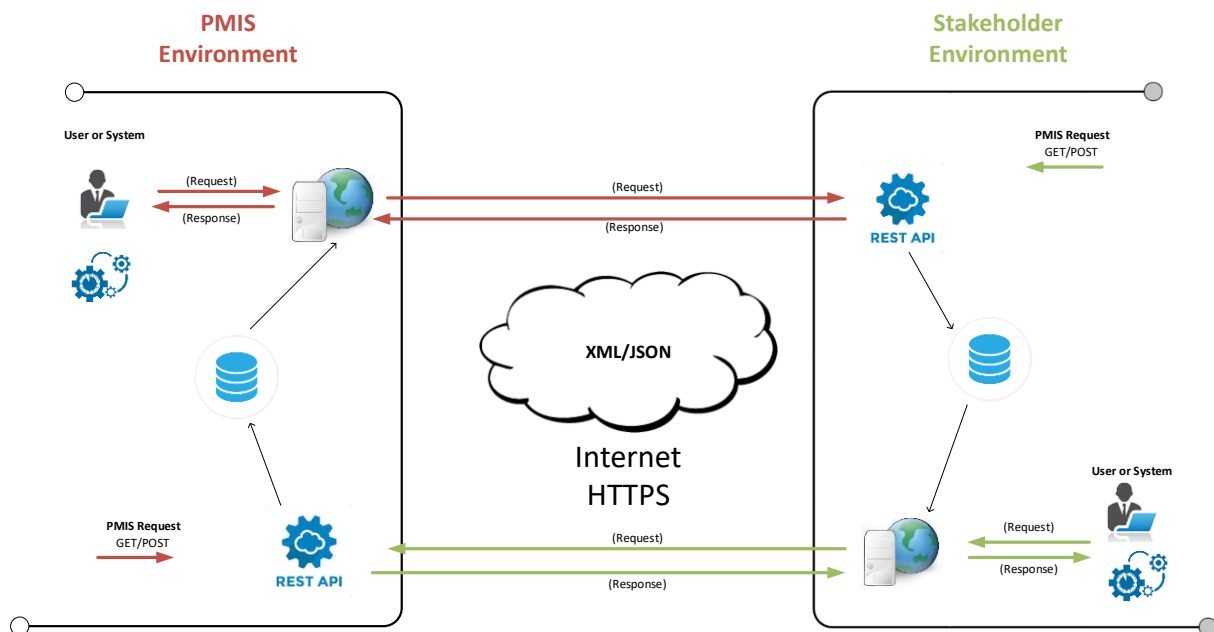
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3 Technical rules of data exchange with all stakeholders:

- a. PCS Bulgaria will use REST API's or SOAP API's to exchange data with stakeholders.
- b. The data exchange must be performed under Secure Hypertext Transfer Protocol (HTTPS)
- c. The data will be transferred using XML or JSON format.
- d. Each stakeholder will have a username and password to access PCS' web API. The basic HTTP authentication will be used.
- e. The validation of data must be performed twice: at the client side and in the API.
- f. PCS's API's will provide as a response for any request 3 attributes:
 - a. Status number indicating whether the request has been successfully processed.
 - b. An error message containing a meaningful description of the error occurred.
 - c. An XML/JSON string object containing the requested data if the request is a GET request.Only when the communication defined as two-way communication.
- g. Actual I.T. will provide a detailed technical documentation for every API related to the concerned stakeholders. Actual I.T. expects the same documentation to be provided by the stakeholders for their API's.
- h. The following diagram illustrates the technical interface with the stakeholders



4 Common API Design Definition

4.1 URI Construction

To be updated in coordination with terminal

Resource	POST	GET	

4.2 Security

The https and username and password

4.3 HTTP response status codes

The PCS will always return the right HTTP status code to the client.

- 200 – OK – Everything is working
- 201 – OK – New resource has been created
- 204 – OK – The resource was successfully deleted
- 400 – Bad Request – The request was invalid or cannot be served. The exact error should be explained in the error payload. E.g. „The JSON is not valid “
- 401 – Unauthorized – The request requires a user authentication
- 403 – Forbidden – The server understood the request but is refusing it or the access is not allowed.

In case of error responses, the error payload will be used to further describe the error.

5 Common xml Syntax Definition

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

5.1 Conventions used in this chapter

The table used to describe the xml messages provides the following information:

- a) Item
- b) Occ (Occurrence)
- c) Type
- d) Len
- e) Description
- f) ENUM
- g) Description from other IT systems (Optional)

5.1.1 Item

It indicates the item name

- A. An XML element is indicated in bold & italic.
- B. An attribute is indicated by a normal appearance.

5.1.2 Occurrence

The column indicates the occurrence of the element or attribute

Table 1: Occurrences

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

5.1.3 Type

This column indicates the data type and length of the attribute.

Table 2: Data types

The value	Indicates
Nvarchar / string	A sequence of characters.
Int	Integer value between -2147483648 and 2147483647. Use of dots and commas is prohibited.
Datetime2	Date and Time in UTC format (Coordinated Universal Time) - ISO 8601 Format "YYYY-MM-DDThh:mm:ssTZD" where TZD = time zone designator (Z or +hh:mm or -hh:mm).

Date	Format “YYYY-MM-DD”
Time	Format “hh:mm:ssTZD”
Decimal	Represents a subset of real numbers, which can be represented by decimal numerals. The maximum number of decimal digits may be specified between brackets in the column “Len”.
Bit	
Base64	Indicates the attribute contains base64-encoded value.

5.1.4 Description

The column is providing a description for the element or node

5.1.5 ENUM

The column is providing a description if an element has predefined set of values that needs to be used.

Values:

Y – Codelist

F – Fixed Set

5.1.6 Description from other IT systems (Optional)

The column is providing a description of the element from another IT system

5.2 XML Structure and Schema Definition (XSD) - PCS Base Message definition

The general structure of every XML message is the following:

```
<root element xmlns="http://tobedefined/NameOfMessage">
<Header>...</Header>
<Payload>...</Payload>
</root element >
```

Table 3: XML Structure

Element or node	Description
Root element	Gives the name of the XML message
Header	There is always a Header node giving “non business” information about the current PCS transaction (such as reference id for correlation, sender and recipient data, generated date and unique message id)
Payload	There is always a Payload node giving the “business” information of the current PCS transaction. Such “business” information consists of one or more node element(s) containing different attributes.

5.2.1 XSD of the XML message

The XML Schema Definition (XSD) of all the XML messages will be supplied separately in an electronic format. The official namespace of the PCS XSD specifications is “http://to be defined/NameOfMessage” and must be specified as xmlns attribute value of the root element of every XML message.

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

5.2.2 Sender and Recipient attributes

The Sender and Recipient attributes of the Header element node of every XML message is used to identify the sender and the recipient of the message. PCS will use the following convention as internal identification of the PCS stakeholders

The PCS system will be identified under the name “PCSBG”.

Every Stakeholder interfacing the PCS using the XML message-based interface will receive its own identification code or ID.

5.2.3 PCS speaks English

All the information (vessel, cargo, DG,...) transmitted as attributes values of the XML messages must be in English.

5.2.4 Base Message xsd scheme includes

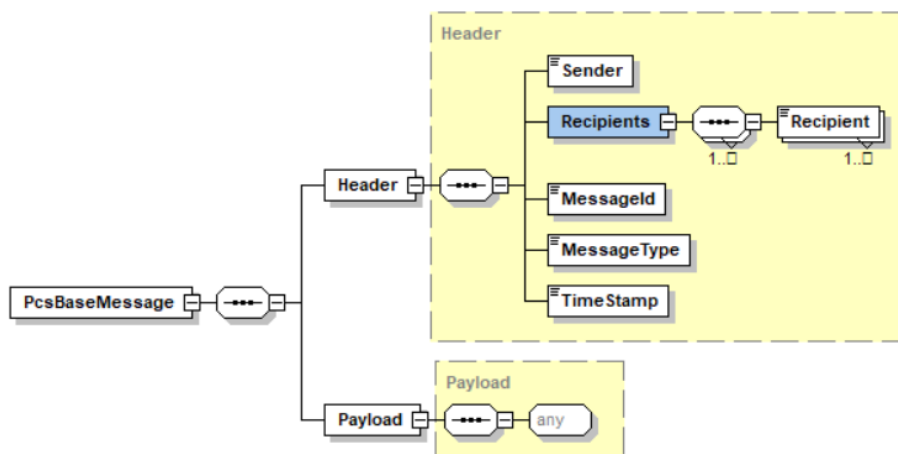


Figure 1: Base message schema

In the following table is the description of header elements.

Table 4: XML Header elements

Element name/Item	Description	Occ.	Type	ENUM
PcsBaseMessage		1	Xml_segment	
Header		1	Xml_segment	
Sender	The participant who sends the message.	1	string	Y
Recipients		1	Xml_segment	
Recipient	The participant who is intended to receive the message.	1-n	string	Y

	MessageId	Unique message Id from sender	1	string	
	MessageType	The name of the message.	1	string	
	TimeStamp	The date and time that the message was generated by the sender.	1	datetime	
	Payload		1	Xml_segment	
	"Any"	Body of message from sender			

6 Scope of integration

For the integrating between the TOS at Port of Varna EAD and the PCS, the following scope of the integration is foreseen.

A. The PCS will receive data from TOS for:

- a. VESSEL DATA
 - i. Vessel Voyage Numbers
 - ii. Events registered for the vessel to create the Statement of Facts
- b. TRUCK DATA
 - i. When a truck is arriving at the terminal
 - ii. When a truck is departing the terminal
 - iii. Each time the truck is being weighed (weight scale)
- c. RAIL DATA
 - i. When a wagon is arriving at the terminal
 - ii. When a wagon is departing the terminal
 - iii. Each time the wagon is being weighed (weight scale)
- d. UNIT MOVES (Containers, Ro-Ro)
 - i. When container or Ro-Ro Unit is loaded to / discharged from the vessel
 - ii. When container or Ro-Ro Unit is moved to/from the yard
 - iii. When there are additional services (e.g. stripping) done on container or Ro-Ro Unit
 - iv. When container or Ro-Ro Unit enters/leaves the port
- e. STORAGE DOCUMENT (non containerized cargo)
 - i. When a storage document for goods entering the warehouse is created
 - ii. Each time the storage document is amended or cancelled

B. The PCS will send data to TOS

- a. VESSEL DATA
 - i. Vessel announcement data for vessels confirmed to arrive at the terminal
- b. SERVICE REQUEST DATA
 - i. Expedition orders
 - ii. Unloading Orders
 - iii. Loading orders
 - iv. Additional Services Orders
- c. TRUCK/WAGON WEIGHING
 - i. Request to weigh a truck
 - ii. Request to weigh a wagon

7 List of Messages

7.1 Message from PCS to TOS

XSD Schema	Message Name	Message Description
VSAN	Vessel Announcement	When the arrival vessel procedure is approved in the MSW, the PCS system will send the message VSAN - Vessel Announcement to TOS
SRVR	Service Request	After Terminal Operator has approved the request, PCS will send SR data to TOS.

7.2 Message from TOS to PCS

XSD Schema	Message Name	Message Description
VAN	Vessel Announcement	When the vessel will be accepted by the terminal and the ETB will be inserted in the TOS system the message VAN - Vessel Announcement will be send to PCS.
MAN	Means Of Transport Announcement	The truck and rail announcement in the PCS system will be created, updated, and closed or completed after the message from TOS is successfully processed.
CNTM	Container Movement	TOS will send a message whenever there is a container movement operation completed on the terminal.
SDOC	Storage Document	TOS will send a message whenever there is a cargo movement operation completed on the terminal.
ROPM	RoRo/Pax Movement	TOS will send a message whenever there is a vehicle movement operation completed on the terminal as well as passengers embarking / disembarking from a RoRo vessel.

8 Integration case and scenarios

8.1 From PCS to TOS

8.1.1 Vessel announcement

8.1.1.1 Description

When the terminal operator confirms vessel acceptance in PCS, PCS will send below message to TOS.

If required by TOS, PCS can send additional information about vessel call, available from MSW (e.g. additional voyage information, cargo declaration, DG cargo declaration, etc.)

8.1.1.2 Messages - VSAN - Vessel Announcement

In the below table the structure of data and data structure is defined.

Levels used in the message:

Level	Name	Occ
1	Vessel	1
1.1	Co Loader	0-1

Table 5: Vessel announcement: transfer data from PCS to TOS

VSAN - Vessel announcement						
Level	Attribute	Occ	Data Type	Description	ENUM	Remark
1	Action	1	Nvarchar(3)	CRT-Create New, UPD-Update existing, DLT-Delete existing		
1	MSW Voyage	1	Nvarchar(50)	MSW voyage number		
1	VesselImo	1	Nvarchar(20)	IMO number of the vessel		
1	PortVoyageNumber	0-1	Nvarchar(50)	Vessel voyage used by terminal, if available in MSW		
1	VesselName	1	Nvarchar(255)	Vessel Name		
1	VesselLength	0-1	Decimal(19,5)	Vessel Length		
1	VesselGT	1	Decimal(19,5)	Vessel Gross tonnage		
1	VesselDeadWeight	0-1	Decimal(19,5)	Vessel Load Capacity		

1	VesselCallSign	0-1	Nvarchar(20)	Call Sign of the vessel		
1	Eta	1	DateTime	Estimated time of arrival		
1	CarrierOperator	1	Nvarchar(20)	Agreed code for the carrier	Y	
1	CarrierOperatorAgent	1	Nvarchar(20)	Agreed code for the Agent	Y	
1	VesselLine	0-1	Nvarchar(20)	Agreed code for the vessel Line	Y	
1	NumberOfCranes	0-1	Integer	Total Number of cranes on the vessel		
1.1	LineCode	1	Nvarchar(4)	Agreed code for the cargo agent	Y	
1.1	VoyageIn	1	Nvarchar(20)	Cargo Agent voyage number		
1.1	VoyageOut	1	Nvarchar(20)	Cargo Agent voyage number		

8.1.2 Service Request

8.1.2.1 Description

The PCS system will send the Service Request message to the TOS after the Terminal will approve it in PCS.

8.1.2.2 Messages – SRVR – Service Request

In the below table the structure of data and data structure is defined.

Levels used in the message:

Level	Name	Occ
1	Order	1
1.1	Vessel	0-2
1.2	AdditionalService	0-9
1.3	Container	0-999
1.3.1	Ports	0-1
1.3.2	Truck	0-1
1.3.3	Rail	0-1
1.3.4	Warehouse	0-1
1.3.5	SealNumbers	0-9
1.3.6	ContainerCargo	0-99
1.4	Cargo	0-999
1.4.1	CargoItem	0-999
1.5	Vehicle	0-999
1.6	Passengers	0-999

Table 6: Service Request: transfer data from TOS to PCS

SRVR - Service Request						
Level	Attribute	Occ	Data Type	Description	ENUM	Remark
1	Action	1	Nvarchar(3)	CRT-Create New, UPD-Update existing, DLT-Delete existing		
1	ServiceRequestNumber	1	BigInt	Service Request Number		
1	Customer	1	Nvarchar(4)	Customer Code	Y	

1	ServiceType	1	Nvarchar(5)	Service Type	Y	
1	ShipmentType	1	Nvarchar(20)	EMPTYCNT,FULLCNT,NONCNTC,RORO	Y	
1	Manipulation	1	Nvarchar(60)	Type of operation (e.g. VSIN-Unload Vessel, VSOUT - Load vessel)	Y	
1	CustomsApprovalDate	0-1	Datetime2	Date of Customs Approval, if applicable		
1	CustomsApprovalRemark	0-1	Nvarchar(255)	Customs Approval Remark		
1	CustomsHold	0-1	Boolean	Customs Hold Active		
1	Remark	0-1	Nvarchar(255)	Remark		
1.1	VesselDirection	1	Nvarchar(4)	"Load" or "Disc", depending on cargo operation	F	
1.1	MSWVoyageNumber	1	Nvarchar(50)	Reference to voyage number, if related to service request		
1.1	VesselImo	1	Nvarchar(20)	IMO number of the vessel		
1.1	PortVoyageNumber	0-1	Nvarchar(50)	Vessel voyage used by terminal, if available in MSW		
1.2	AdditionalService	0-1	Nvarchar(5)	Additional Services	Y	
1.3	ContainerNumber	0-1	Nvarchar(11)	Container Number		
1.3	LineCode	1	Nvarchar(3)	Line Code	Y	
1.3	AgentCode	1	Nvarchar(4)	Agent Code	Y	
1.3	ContainerStatus	1	Nvarchar(1)	F - Full or E - Empty	Y	
1.3	CustomsHold	0-1	Boolean	Customs Hold Active		
1.3	ContainerType	1	Nvarchar(3)	Container Type	Y	
1.3	ContainerHeight	1	Nvarchar(2)	Container Height		
1.3	ContainerLength	1	Nvarchar(2)	Container Length		
1.3	ContainerISO	0-1	Nvarchar(4)	Container ISO	Y	
1.3	FCL	1	Boolean	When Full container Loaded = true		
1.3	TareWeight	0-1	Decimal(19,5)	Container tara weight		
1.3	VgmWeight	0-1	Decimal(19,5)	VGM weight		
1.3	BookingNumber	0-1	Nvarchar(15)	Booking number		
1.3	ReleaseOrderNumber	0-1	Nvarchar(40)	Release number		
1.3	TemperatureFrom	0-1	Decimal(19,5)	Temperature in Celsius		
1.3	TemperatureTo	0-1	Decimal(19,5)	Temperature in Celsius		
1.3.1	Origin	0-1	Nvarchar(5)	Port of origin	Y	
1.3.1	PortOfLoading	0-1	Nvarchar(5)	Port of loading	Y	
1.3.1	PortOfDischarge	0-1	Nvarchar(5)	Port of discharge	Y	

1.3.1	FinalDestination	0-1	Nvarchar(5)	Port of destination	Y	
1.3.2	LicencePlate	0-1	Nvarchar(20)	Licence Plate of the truck used to transport the container		
1.3.3	Operator	1	Nvarchar(4)	Rail Operator	Y	
1.3.3	RailCall	0-1	Nvarchar(25)	Rail Call		
1.3.3	WagonNumber	0-1	Nvarchar(13)	Wagon number		
1.3.4	WarehouseCode	1	Nvarchar(4)	Warehouse Code	Y	
1.3.4	WarehouseType	0-1	Nvarchar(3)	Warehouse Type	Y	
1.3.4	ToWarehouseCode	0-1	Nvarchar(4)	Warehouse Code of the destination WH, in case of cargo moving from one WH to another	Y	
1.3.5	SealNumber	1	Nvarchar(20)	Seal number		
1.3.5	SealType	0-1	Nvarchar(2)	Default CA - Carrier	Y	
1.3.6	CargoPCSIId	1	BigInt	Cargo ID from PCS		
1.3.6	CargoDescription	0-1	Nvarchar(255)	Cargo Description		
1.3.6	CargoDirection	0-1	Nvarchar(1)	Cargo direction	Y	
1.3.6	CargoOwner	0-1	Nvarchar(255)	Cargo Owner		
1.3.6	BillOfLading	0-1	Nvarchar(40)	Bill of lading		
1.3.6	PackageType	1	Nvarchar(2)	Cargo Package type	Y	
1.3.6	PackageQuantity	1	Int	Number of packages (quantity)		
1.3.6	NetWeight	0-1	Decimal(19,5)	Cargo Net weight		
1.3.6	GrossWeight	1	Decimal(19,5)	Cargo Gross weight		
1.3.6	Volume	0-1	Decimal(19,5)	Cargo Volume		
1.3.6	TaricCode	0-1	Nvarchar(30)	Taric Code used for Cargo	Y	
1.3.6	NHMCCode	0-1	Nvarchar(30)	NHM Code used for Cargo	Y	
1.3.6	UOMWeight	0-1	Nvarchar(8)	Unit Of Measurement for Weight (default kg)	Y	
1.3.6	UOMVolume	0-1	Nvarchar(8)	Unit Of Measurement for Volume	Y	
1.3.6	IMDGClass	0-1	Nvarchar(5)	IMDG Class	Y	
1.3.6	UNNNumber	0-1	Nvarchar(4)	UN Number	Y	
1.3.6	PackagingGroup	0-1	Nvarchar(3)	IMDG Package group	Y	
1.3.6	IMDGDescription	0-1	Nvarchar(255)	IMDG description		
1.3.6	MrnNumber	0-1	Nvarchar(18)	MRN Number		
1.3.6	LrnNumber	0-1	Nvarchar(18)	LRN Number		
1.4	CargoPCSIId	0-1	Nvarchar(50)	Cargo ID from PCS		ShipmentId

1.4	CargoDescription	1	Nvarchar(255)	Cargo Description		
1.4	CustomsHold	0-1	Boolean	Customs Hold Active		
1.4	CargoDirection	1	Nvarchar(1)	Cargo direction		
1.4	CargoOwner	0-1	Nvarchar(255)	Cargo Owner		
1.4	BillOfLading	0-1	Nvarchar(40)	Bill Of Lading		
1.4	Marking	1	Nvarchar (50)	Cargo marking ("Not Defined" default value)		
1.4	PackageType	0-1	Nvarchar(2)	Cargo Package type	Y	
1.4	PackageQuantity	0-1	Int	Cargo Package quantity		
1.4	NetWeight	0-1	Decimal(19,5)	Cargo Net weight		
1.4	GrossWeight	1	Decimal(19,5)	Cargo Gross weight		
1.4	Volume	0-1	Decimal(19,5)	Cargo Volume		
1.4	TaricCode	0-1	Nvarchar(30)	Taric Code used for Cargo	Y	
1.4	NHMCCode	0-1	Nvarchar(30)	NHM Code used for Cargo	Y	
1.4	UOMWeight	1	Nvarchar(8)	Unit Of Measurement for Weight (default kg)		
1.4	UOMVolume	0-1	Nvarchar(8)	Unit Of Measurement for Volume		
1.4	MrnNumber	0-1	Nvarchar(18)	MRN Number		
1.4	LrnNumber	0-1	Nvarchar(18)	LRN Number		
1.4	IMDGClass	0-1	Nvarchar(5)	IMDG Class	Y	
1.4	UNNumber	0-1	Nvarchar(4)	UN Number	Y	
1.4	PackagingGroup	0-1	Nvarchar(3)	IMDG Package group	Y	
1.4	IMDGDescription	0-1	Nvarchar(255)	IMDG description		
1.4.1	CargoItemUniqueIdentifier	1	BigInt	Unique PCS Id for Cargo Item record		
1.4.1	MOTType	1	Nvarchar(20)	Mean Of Transport Type (Truck, Wagon)	Y	
1.4.1	MOTNumber	0-1	Nvarchar(50)	Mean Of Transport Number (Licence plate, wagon number)		
1.4.1	Trailers	0-1	Int	Number of trailers		
1.4.1	TralierLicencePlates	0-1	Nvarchar(255)	Trailers licence plates, separated by ","		
1.4.1	CargoItemPackageQuantity	0-1	Int	Cargo Package quantity		
1.4.1	CargoItemNetWeight	0-1	Decimal(19,5)	Cargo Net weight		
1.4.1	CargoItemGrossWeight	1	Decimal(19,5)	Cargo Gross weight		
1.4.1	CargoItemVolume	0-1	Decimal(19,5)	Cargo Volume		
1.4.1	UOMWeight	0-1	Nvarchar(8)	Unit Of Measurement for Weight (default kg)		
1.4.1	UOMVolume	0-1	Nvarchar(8)	Unit Of Measurement for Volume		

1.4.1	MrnNumber	0-1	Nvarchar(25)	MRN Number		
1.4.1	LrnNumber	0-1	Nvarchar(25)	LRN Number		
1.5	VehiclePCSID	1	Bigint	Unique PCS Identifier for RoRo Unit		
1.5	VehicleType	1	Nvarchar(20)	Truck/Trailer/Car/...	Y	
1.5	VIN	0-1	Nvarchar(20)	Vehicle Identification Number		
1.5	LicencePlate	0-1	Nvarchar(20)	Licence Plate of VIN		
1.5	SequenceNumber	0-1	Int	Order of loading/discharge		
1.5	ContainerNumber	0-1	Nvarchar(11)	Container number when vehicle is in container		
1.5	VehicleBrandId	0-1	nvarchar(20)	Unique ID for the vehicle brand/manufacturer.	Y	
1.5	Length	0-1	decimal(19, 5)	Total vehicle length (in meters).		
1.5	Tara	0-1	decimal(19, 5)	Unladen weight of the vehicle (in kg).		
1.5	CountryOfOriginId	0-1	nvarchar(2)	Unique ID for the country of vehicle origin.	Y	
1.5	PortOfLoadingId	0-1	nvarchar(6)	Unique ID for the port where the vehicle/cargo was loaded.	Y	
1.5	PortOfDischargeId	0-1	nvarchar(6)	Unique ID for the port where the vehicle/cargo will be unloaded.	Y	
1.5	PortOfDestinationId	0-1	nvarchar(6)	Unique ID for the final destination port.	Y	
1.5	Owner	0-1	nvarchar(255)	Name or ID of the vehicle owner.		
1.5	DriverName	0-1	nvarchar(50)	Full name of the primary driver.		
1.5	SecondDriver	0-1	nvarchar(50)	Full name of the second driver (if applicable).		
1.5	HasCargo	0-1	Boolean	Indicates if the vehicle is carrying cargo (true/false).		
1.5	CargoWeight	0-1	decimal(19, 5)	Total weight of cargo (in kg).		
1.5	CargoParticulars	0-1	nvarchar(80)	Description of the cargo being transported.		
1.5	Consignee	0-1	nvarchar(255)	Name or ID of the person/company receiving the cargo.		
1.5	ImdgClassId	0-1	nvarchar(4)	Unique ID for the IMDG (dangerous goods) class of the cargo.	Y	
1.5	UnNumberId	0-1	nvarchar(4)	Unique ID for the UN number of hazardous materials.	Y	
1.5	ImdgPackingGroupId	0-1	nvarchar(4)	Unique ID for the IMDG packing group (degree of danger).	Y	
1.5	Remark	0-1	nvarchar(255)	Additional notes or comments about the vehicle/cargo.		
1.5	TrailerLicencePlate	0-2	Nvarchar(20)	Licence plate number of the trailer.		
1.5	TrailerVin	0-1	nvarchar(25)	Vehicle Identification Number (VIN) of the trailer.		
1.5	TrailerLength	0-1	decimal(19, 5)	Total trailer length (in meters).		

1.5	TrailerTara	0-1	decimal(19, 5)	Unladen weight of the trailer (in kg).		
1.5	TrailerCargoWeight	0-1	decimal(19, 5)	Total weight of the cargo in the trailer (in kg).		
1.5	TrailerCargoParticulars	0-1	nvarchar(255)	Description of the cargo in the trailer.		
1.6	PassengerPCSID	1	Bigint	Unique PCS Identifier for each passenger		
1.6	VehiclePCSID	0-1	Bigint	Reference to the vehicle if the passenger is linked to a vehicle		
1.6	SequenceNumber	0-1	int	Passenger's sequence number on the manifest		
1.6	PassengerTypeId	1	Nvarchar(20)	Type of passenger: Driver, passenger	Y	
1.6	Name	0-1	Nvarchar(80)	Full name of the passenger		
1.6	NationalityId	0-1	Nvarchar(2)	Unique ID for passenger's nationality (country code)	Y	
1.6	DateOfBirth	0-1	Datetime2(7)	Date of birth of the passenger		
1.6	PlaceOfBirth	0-1	Nvarchar(80)	Place of birth of the passenger		
1.6	DocumentTypeId	0-1	Nvarchar(20)	Type of identification document: Passport, ID Card, etc.	Y	
1.6	DocumentNumber	0-1	Nvarchar(80)	Identification document number		
1.6	DocumentCountry	0-1	Nvarchar(2)	Document issuing country	Y	
1.6	DocumentIssuingDate	0-1	Datetime2(7)	Issuing date of the identification document		
1.6	DocumentExpirationDate	0-1	Datetime2(7)	Expiration date of the identification document		
1.6	EmbarkationPortId	0-1	Nvarchar(6)	Port where the passenger boarded the vessel	Y	
1.6	DisembarkationPortId	0-1	Nvarchar(6)	Port where the passenger will disembark	Y	
1.6	TicketNumber	0-1	Nvarchar(80)	Ticket number for the passenger's travel		
1.6	Remark	0-1	Nvarchar(255)	Additional notes or comments regarding the passenger		

8.2 From TOS to PCS

8.2.1 Vessel announcement

8.2.1.1 Description

TOS can send additional information about vessel to PCS:

1. When an event is registered for the vessel
2. Voyage numbers

8.2.1.2 Messages - VAN – Vessel Announcement

In the below table the structure of data and data structure is defined.

Levels used in the message:

Level	Name	Occ
1	Vessel	1
1.1	Co Loader	0-999
1.2	VesselEvents	0-999

Table 7: Vessel announcement: transfer data from TOS to PCS

VAN - Vessel announcement						
Level	Attribute	Occ	Data Type	Description	ENUM	Remark
1	Action	1	Nvarchar (3)	CRT-Create New, UPD-Update existing, DLT-Delete existing		
1	MSW Voyage	1	Nvarchar(50)	MSW voyage number		
1	TOSVoyage	0-1	Nvarchar(50)	TOS vessel voyage number		
1	VoyageIN	0-1	Nvarchar(20)	Line Vessel Voyage In		
1	VoyageOUT	0-1	Nvarchar(20)	Line Vessel Voyage Out		
1	VesselImo	0-1	Nvarchar(20)	Vessel IMO Number		
1	VesselCallsign	0-1	Nvarchar(20)	Vessel Call Sign		
1.1	LineCode	1	Nvarchar(4)	Agreed code for the cargo agent	Y	
1.1	VoyageIn	1	Nvarchar(20)	Cargo Agent voyage number		
1.1	VoyageOut	1	Nvarchar(20)	Cargo Agent voyage number		

1.2	EventType	1	Nvarchar(4)	Event Type	Y	
1.2	EventDescription	1	Nvarchar(255)	Event Description		
1.2	EventStartDateTime	1	DateTime2	Event Start date and time		
1.2	EventEndDateTime	1	DateTime2	Event End date and time		

8.2.2 Truck and Rail announcement

8.2.2.1 Description

The truck and rail announcement in the PCS system will be created, updated, and closed or completed after the message from TOS is successfully processed.

8.2.2.2 Messages – MAN – Means Of Transport Announcement

In the below table the structure of data and data structure id defined.

Levels used in the message:

Level	Name	Occ
1	Rail	0-1
1.1	Wagon	0-999
2	Truck	0-1
2.1	Trailer	0-2
2.2	AccompaniedPersons	0-2

Table 8: Truck and Rail announcement: transfer data from TOS to PCS

MAN - Means Of Transport Announcement						
Level	Attribute	Occ	Data Type	Description	ENUM	Remark
1	Action	1	Nvarchar (3)	CRT-Create New, UPD-Update existing, DLT-Delete existing		
1	TosTrainVisitId	0-1	Nvarchar(20)	Train visit Id from TOS		
1	TrainVisitName	1	Nvarchar(255)	Train Visit Name from TOS		
1	VoyageIN	0-1	Nvarchar(20)	Train Inbound Call		
1	VoyageOUT	0-1	Nvarchar (20)	Train Outbound Call		
1	TrainDirection	1	Nvarchar(1)	Train Direction		
1	ETA	1	DateTime2	ETA of the train		
1	ATA	0-1	DateTime2	ATA of the train		
1	ETD	0-1	DateTime2	ETD of the train		
1	ATD	0-1	DateTime2	ATD of the train		
1.1	TOSRailVisitId	0-1	Nvarchar(20)	Rail Visit ID from TOS		
1.1	WagonNumber	1	Nvarchar (12)	Wagon number		

1.1	TOSWagonId	0-1	Nvarchar(20)	Wagon ID from TOS		
1.1	WagonType	1	Nvarchar (20)	Wagon Type	Y	
1.1	WagonTareWeight	1	Decimal(19,5)	Wagon Tare Weight		
1.1	WagonGrossWeight	1	Decimal(19,5)	Wagon Gross Weight		
1.1	FullOrEmpty	1	Nvarchar(1)	If the wagon is loaded		
1.1	WagonDamage	1	Bit	If the wagon is damaged = true		
2	TosTruckVisitId	0-1	Nvarchar(20)	Truck Visit ID from TOS		
2	TruckLicencePlate	1	Nvarchar(12)	Truck Licence plate		
2	Haulier	1	Nvarchar(255)	Haulier Name		
2	Direction	1	Nvarchar(3)	IN - Gate In, OUT - Gate Out	Y	
2	Model	0-1	Nvarchar(255)	Truck Model		
2	TruckTareWeight	1	Decimal(19,5)	Truck Tare Weight		
2	TruckGrossWeight	1	Decimal(19,5)	Truck Gross Weight		
2	Accompanied	0-1	Bit	If the accompanying person is in the truck = true		
2	FullOrEmpty	1	Nvarchar(1)	If the truck is loaded	Y	
2	Damage	1	Bit	If the wagon is damaged = true		
2	PortEntranceId	0-1	Nvarchar(20)	PermitId		
2.1	TrailerLicencePlate	0-1	Nvarchar(12)	Trailer Licence plate		
2.1	Model	1	Nvarchar(255)	Trailer Model		
2.1	TrailerTareWeight	1	Decimal(19,5)	Trailer Tare Weight		
2.1	TrailerGrossWeight	1	Decimal(19,5)	Trailer Gross Weight		
2.1	FullOrEmpty	1	Nvarchar(20)	If the trailer is loaded		
2.1	Damage	1	Bit	If the wagon is damaged = true		
2.1	PortEntranceId	0-1	Nvarchar(20)	Port of Entrance	Y	
2.2	Name	1	Nvarchar(20)	Name of accompanying person		
2.2	Surname	1	Nvarchar(20)	Surname of accompanying person		
2.2	DocumentId	0-1	Nvarchar(20)	Number of Document ID		
2.2	AccompaniedPersonsType	1	Nvarchar(20)	Driver, passenger,...		
2.2	PortEntranceId	0-1	Nvarchar(20)	PermitId		

8.2.3 Container Movement

8.2.3.1 Description

The container movement will be sent to PCS, upon confirmation of cargo operation in TOS.

8.2.3.2 Messages – CNTM – Container Movement

In the below table the structure of data and data structure id defined.

Levels used in the message:

Level	Name	Occ
1	Header	1
1.1	Container	1-999
1.1.1	Seal	0-9

Table 9: Container Movement: transfer data from TOS to PCS

CNTM – Container Movement						
Level	Attribute	Occ	Data Type	Description	ENUM	Remark
1	Action	1	Nvarchar (3)	CRT-Create New, UPD-Update existing, DLT-Delete existing		
1	ServiceRequestNumber	1	BigInt	Reference to PCS ServiceRequestId		
1	Manipulation	1	Nvarchar (5)	Manipulation	Y	
1	AdditionalService	0-1	Nvarchar(60)	Additional Service	Y	
1	ActivityDate	1	DateTime2	Date of container movement		
1.1	ContainerNumber	0-1	Nvarchar(11)	Container number		
1.1	ContainerMoveDate	1	DateTime2	Date of container movement		
1.1	OriginLocation	0-1	Nvarchar(255)	Location the container was moved from		
1.1	DestinationLocation	0-1	Nvarchar(255)	Location the container was moved to		
1.1	FullOrEmpty	0-1	Nvarchar(5)	Whether the container is full or empty	Y	
1.1	BookingNumber	0-1	Nvarchar(255)	Booking number associated with the container move		
1.1	VGM	0-1	Decimal(19,5)	VGM of container		

1.1	ContainerType	1	Nvarchar(3)	Container type	Y	
1.1	ContainerHeight	1	Nvarchar(2)	Container height		
1.1	ContainerLength	1	Nvarchar(2)	Container length		
1.1	ContainerISO	0-1	Nvarchar(4)	Container ISO code	Y	
1.1	TareWeight	0-1	Decimal(19,5)	Tare weight of the container		
1.1	TemperatureFrom	0-1	Decimal(19,5)	Minimum temperature (if applicable)		
1.1	TemperatureTo	0-1	Decimal(19,5)	Maximum temperature (if applicable)		
1.1	MOTNumber	0-1	Nvarchar(20)	MOT Number (if moved by truck/wagon)		
1.1	WarehouseCode	0-1	Nvarchar(4)	Warehouse code where the container was stored	Y	
1.1	WarehouseType	0-1	Nvarchar(3)	Type of warehouse where the container is stored	Y	
1.1	Remarks	0-1	Nvarchar(255)	Remarks related to container move		
1.1.1	SealNumber	0-1	Nvarchar(20)	Actual seal number(s) used during container movement		
1.1.1	SealType	0-1	Nvarchar(2)	Type of seal applied (if different from planned)	Y	

8.2.4 Storage Document

8.2.4.1 Description

The Storage Document message will be sent to PCS, upon confirmation of (non-unitized) cargo operation in TOS.

8.2.4.2 Messages – SDOC – Storage Document

In the below table the structure of data and data structure id defined.

Levels used in the message:

Level	Name	Occ
1	Header	1
1.1	CargoItem	1-999

Table 10: Storage Document: transfer data from TOS to PCS

SDOC – Storage Document						
Level	Attribute	Occ	Data Type	Description	ENUM	Remark
1	Action	1	Nvarchar (3)	CRT-Create New, UPD-Update existing, DLT-Delete existing		
1	ServiceRequestNumber	1	BigInt	Reference to ServiceRequestNumber received in SRVR message		
1	ShipmentId	1	BigInt	Reference to PCS ShipmentId, received in SRVR message, segment 1.4		
1	Manipulation	1	Nvarchar (5)	Manipulation	Y	
1	AdditionalService	0-1	Nvarchar(60)	Additional Service	Y	
1	BillOfLading	0-1	int	Bill of landing		
1	PackageType	0-1	Nvarchar (5)	Cargo Package type	Y	
1	Marking	1	Nvarchar (50)	Cargo marking		
1	CargoDirection	1	Nvarchar(1)	Direction of cargo: Import (I) or Export (E)	Y	
1	CargoOwner	0-1	Nvarchar(255)	Owner of the cargo		
1	TaricCode	0-1	Nvarchar(30)	Taric code used for the cargo	Y	
1	NHMCODE	0-1	Nvarchar(30)	NHM code used for the cargo	Y	
1	IMDGClass	0-1	Nvarchar(5)	IMDG class for dangerous goods	Y	
1	UNNumber	0-1	Nvarchar(4)	UN number for hazardous materials	Y	
1	PackagingGroup	0-1	Nvarchar(3)	packaging group for dangerous goods	Y	
1	IMDGDescription	0-1	Nvarchar(255)	IMDG description		
1.1	ActivityDate	1	DateTime2	Date of storage document		
1.1	CargoItemUniqueIdentifier	1	BigInt	Reference to CargoItemUniqueIdentifier received in SRVR message, segment 1.4.1		
1.1	NumberOfPackages	1	int	Number of packages (quantity)		
1.1	NetWeight	0-1	decimal(19,5)	Cargo Net weight		
1.1	GrossWeight	1	decimal(19,5)	Cargo Gross weight		
1.1	Volume	0-1	decimal(19,5)	Cargo Volume		
1.1	Warehouse	0-1	Nvarchar (255)	Warehouse	Y	
1.1	DamagedCargo	0-1	int	If the cargo is damaged = true		
1.1	DamageRemark	0-1	Nvarchar (255)	Damage remark		

1.1	Storekeeper	0-1	Nvarchar (255)	Storekeeper remarks		
1.1	Remarks	0-1	Nvarchar(255)	General remarks related to cargo		
1.1	MeanOfTransportNumber	0-1	Nvarchar (50)	Licence plate or wagon number		
1.1	TrailerLicencePlate	0-1	Nvarchar(255)	Trailer licence plate		
1.1	DriverName	0-1	Nvarchar(255)	Driver name		
1.1	MrnNumber	0-1	Nvarchar(18)	Realized MRN number for customs clearance		
1.1	LrnNumber	0-1	Nvarchar(18)	Realized LRN number for customs clearance		

8.2.5 RoRo/Pax Movement

8.2.5.1 Description

The vehicle/pax movement will be sent to PCS, upon confirmation of the operation in TOS.

8.2.5.2 Messages – ROPM – RoRo/Pax Movement

In the below table the structure of data and data structure id defined.

Levels used in the message:

Level	Name	Occ
1	Header	1
1.1	Vehicle	0-999
1.2	Passenger	0-999

Table 11: RoRo/Pax Movement: transfer data from TOS to PCS

CNTM – Container Movement						
Level	Attribute	Occ	Data Type	Description	ENUM	Remark
1	Action	1	Nvarchar (3)	CRT-Create New, UPD-Update existing, DLT-Delete existing		
1	ServiceRequestNumber	1	BigInt	Reference to PCS ServiceRequestId		
1	Manipulation	1	Nvarchar (5)	Manipulation	Y	
1	AdditionalService	0-1	Nvarchar(60)	Additional Service	Y	

1	ActivityDate	1	DateTime2	Date of container movement		
1.1	VehiclePCSID	1	BigInt	Unique PCS Identifier for RoRo unit		
1.1	VehicleType	1	Nvarchar(20)	Vehicle type (Truck, Trailer, Car, etc.)	Y	
1.1	VIN	0-1	Nvarchar(20)	Vehicle Identification Number (VIN)		
1.1	LicencePlate	0-1	Nvarchar(20)	Licence plate number of the vehicle		
1.1	ContainerNumber	0-1	Nvarchar(11)	Container number (if vehicle is inside a container)		
1.1	VehicleBrandId	0-1	Nvarchar(20)	Unique ID for the vehicle brand	Y	
1.1	Length	0-1	Decimal(19,5)	Total vehicle length in meters		
1.1	Tara	0-1	Decimal(19,5)	Unladen weight of the vehicle in kg		
1.1	CountryOfOriginId	0-1	Nvarchar(2)	Unique ID for the country of vehicle origin	Y	
1.1	PortOfLoadingId	0-1	Nvarchar(6)	Port where the vehicle was loaded	Y	
1.1	PortOfDischargeId	0-1	Nvarchar(6)	Port where the vehicle will be unloaded	Y	
1.1	PortOfDestinationId	0-1	Nvarchar(6)	Final destination port of the vehicle	Y	
1.1	Owner	0-1	Nvarchar(255)	Name or ID of the vehicle owner		
1.1	DriverName	0-1	Nvarchar(50)	Name of the primary driver		
1.1	SecondDriver	0-1	Nvarchar(50)	Name of the second driver (if any)		
1.1	HasCargo	0-1	Boolean	Indicates if the vehicle is carrying cargo (true/false)		
1.1	CargoWeight	0-1	Decimal(19,5)	Total weight of the cargo in kg		
1.1	CargoParticulars	0-1	Nvarchar(80)	Description of the cargo being transported		
1.1	Consignee	0-1	Nvarchar(255)	Name of the consignee receiving the vehicle or cargo		
1.1	ImdgClassId	0-1	Nvarchar(4)	Unique ID for IMDG (dangerous goods) class	Y	
1.1	UnNumberId	0-1	Nvarchar(4)	Unique ID for the UN number of hazardous materials	Y	
1.1	ImdgPackingGroupId	0-1	Nvarchar(4)	Unique ID for IMDG packing group	Y	
1.1	Remark	0-1	Nvarchar(255)	Additional remarks or comments		

1.2	PassengerPCSID	1	BigInt	Unique PCS Identifier for each passenger		
1.2	VehiclePCSID	0-1	BigInt	Reference to the vehicle if the passenger is linked		
1.2	SequenceNumber	0-1	Int	Passenger's sequence number on the manifest		
1.2	PassengerTypeId	1	Nvarchar(20)	Type of passenger: Driver, Passenger	Y	
1.2	Name	0-1	Nvarchar(80)	Full name of the passenger		
1.2	NationalityId	0-1	Nvarchar(2)	Unique ID for passenger's nationality (country code)	Y	
1.2	DateOfBirth	0-1	DateTime2(7)	Date of birth of the passenger		
1.2	PlaceOfBirth	0-1	Nvarchar(80)	Place of birth of the passenger		
1.2	DocumentTypeId	0-1	Nvarchar(20)	Type of identification document: Passport, ID Card, etc.	Y	
1.2	DocumentNumber	0-1	Nvarchar(80)	Identification document number		
1.2	DocumentCountry	0-1	Nvarchar(2)	Document issuing country	Y	
1.2	DocumentIssuingDate	0-1	DateTime2(7)	Issuing date of the identification document		
1.2	DocumentExpirationDate	0-1	DateTime2(7)	Expiration date of the identification document		
1.2	EmbarkationPortId	0-1	Nvarchar(6)	Port where the passenger boarded the vessel	Y	
1.2	DisembarkationPortId	0-1	Nvarchar(6)	Port where the passenger will disembark	Y	
1.2	TicketNumber	0-1	Nvarchar(80)	Ticket number for the passenger's travel		
1.2	Remark	0-1	Nvarchar(255)	Additional notes or comments regarding the passenger		

9 OPEN QUESTIONS AND ISSUES

The following list states open questions and issues regarding the integration between PCS and TOS