RÉPUBLIQUE FRANÇAISE
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DIRECTION GÉNÉRALE DE LA PRÉVENTION DES RISQUES
MISSION TRANSPORTS DE MATIÈRES DANGEREUSES

Cerema
CLIMAT & TERRITOIRES DE DEMAIN

DATEX II IN STRATEGIC/WIDER PERSPECTIVE: DANGEROUS GOODS

Claude Pfauvadel, Chairman of RID/ADR/ADN Joint Meeting
Jean-Philippe Méchin, Cerema

A LONG STORY

✓**1815 First regulation for river navigation on Rhin & Danube**

✓Objectives :

- Prevent consequence of accident
- Define packaging
- Define rules and procedures

✓**1957 ADR applied in 1968**

✓**UNECE WP.15/AC.1: Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods**

- Ensure convergence between RID, ADR and ADN
- Adapt regulations every 2 years
- More than 50 countries are contracting parties

DANGEROUS GOODS TRANSPORT DOCUMENTS

✓5.4.1 Dangerous goods transport document and related information

- Defines what is mandatory
- 10 pages
- Exhaustive list & description of DG transported
- Many special rules regarding the DG transported
- Many link to other chapter of the 1,400 pages of the regulation

✓5.4.0.2: Use of electronic documents

- **The use of electronic data** processing (EDP) or electronic data interchange (EDI) techniques as **an aid to or instead** of paper documentation **is permitted**, provided that the procedures used for the capture, storage and processing of electronics data **meet the legal requirements as regards** the evidential value and availability of data during transport in a manner **at least equivalent to that of paper** documentation.

UNECE / JOINT MEETING / TELEMATIC WG

ECE/TRANS/WP.15/AC.1/108/Add.3 on www.unece.org

Mandat from EC: The working group shall:

1. Consider what information provided by telematics enhances the safety and security of the transport of dangerous goods and facilitates such transport. In particular, consider who might benefit from the provision of such information and in what way, having regard, inter alia, to:
   consignors, transport operators, emergency responders, enforcers, regulators;

2. Consider necessary parameters for telematics systems, and examine if existing systems meet these parameters and what further developments might be necessary;

3. Consider the cost/benefit analysis of using telematics for the purposes identified above;

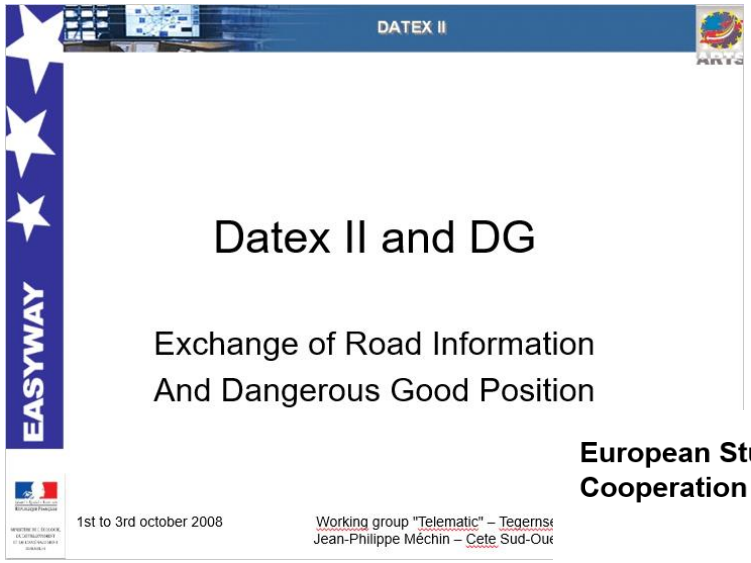
4. Consider what procedures/responsibilities might be necessary to monitor the information captured by telematics and how access to data should be controlled;

5. Consider interfaces and synergy with other systems.

GUIDELINES FOR THE USE OF RID/ADR/ADN 5.4.0.2

- ✓**The RID ADR ADN joint meeting has approved guidelines for the use of 5.4.0.2**
  - https://unece.org/DAM/trans/danger/publi/adr/guidelines/ADR_Guidelines_Telematics_e.pdf
- ✓**By notifying the use of the guidelines a contracting party makes it binding on its territory to use and accept any transport document in conformity with them coming from any other contracting party using the guidelines**
- ✓**The guidelines are a way to harmonize the prescription for the use of 5.4.0.2 at the international level**

COOPERATION BETWEEN WP15/AC1 AND DATEX II



European Study 5 – DATEX II
Cooperation with RID/ADR WG „Telematic“

RID/ADR WG “Telematic”
Bordeaux
14-16 January 2009

Josef Kaltwasser
Chairman DATEX Technical Group
EasyWay European Study V: DATEX II

Datex I is used to exchange traffic informations and events (accident, rerouting, …) between countries, road operator or service provider (TMC) for more than 10 years

Datex II is an evolution to be more conform with the new technologies

On demand of European Commission (DG-TREN), Datex II is on the way for standardization

DATEX II PRINCIPLES:

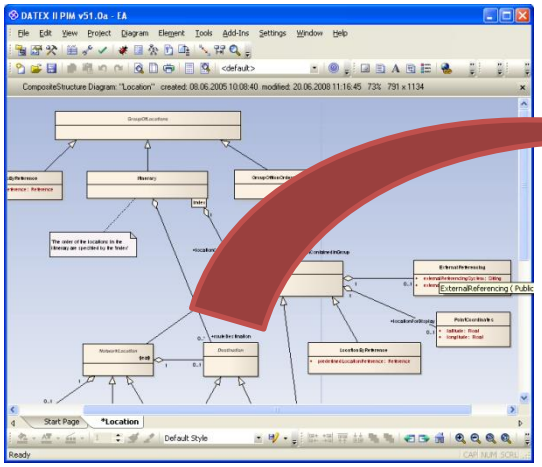
SEPARATION OF CONCERNS

Decouple domain modelling & implementation

Create a domain model for ITS takes long

Adapt to rapidly changing ITS technologies

UML Data model



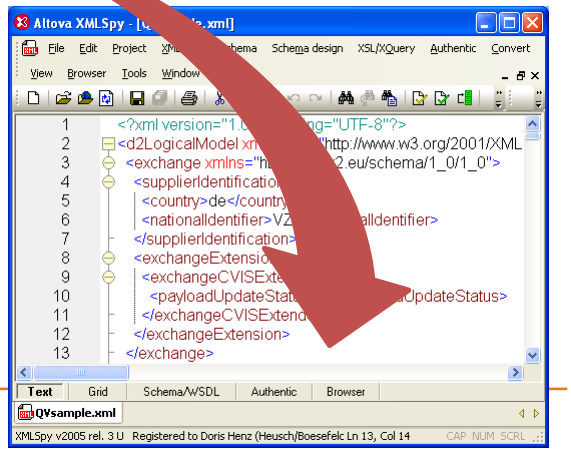
One click tool!

TOOLKIT READY FOR EXTENSIONS

Provides a methodology and tools to specify interoperable data exchange

Is widely used throughout Europe for traffic management as European standard in CEN

Has a backing organisation that supports users in applying DATEX II

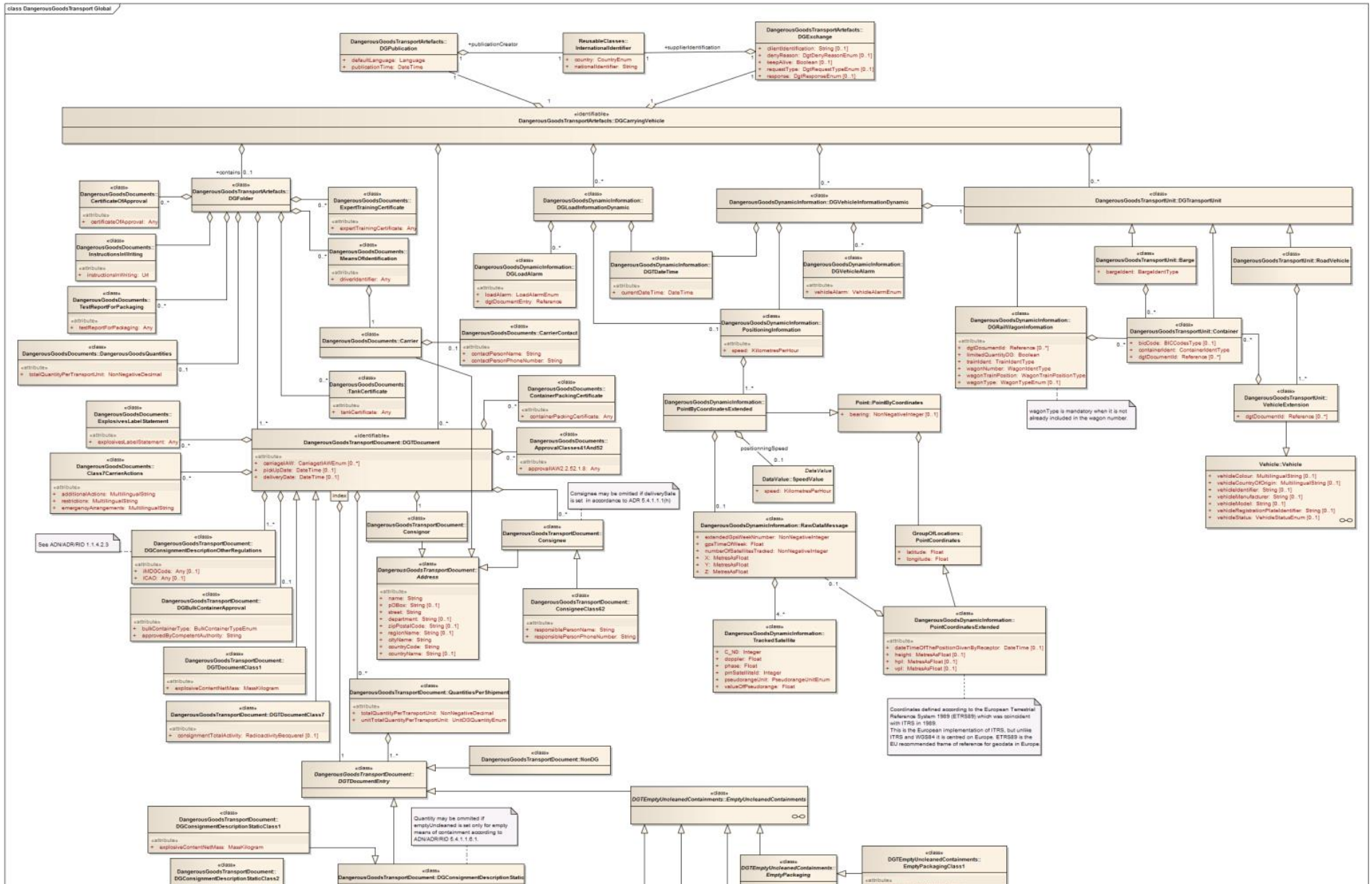


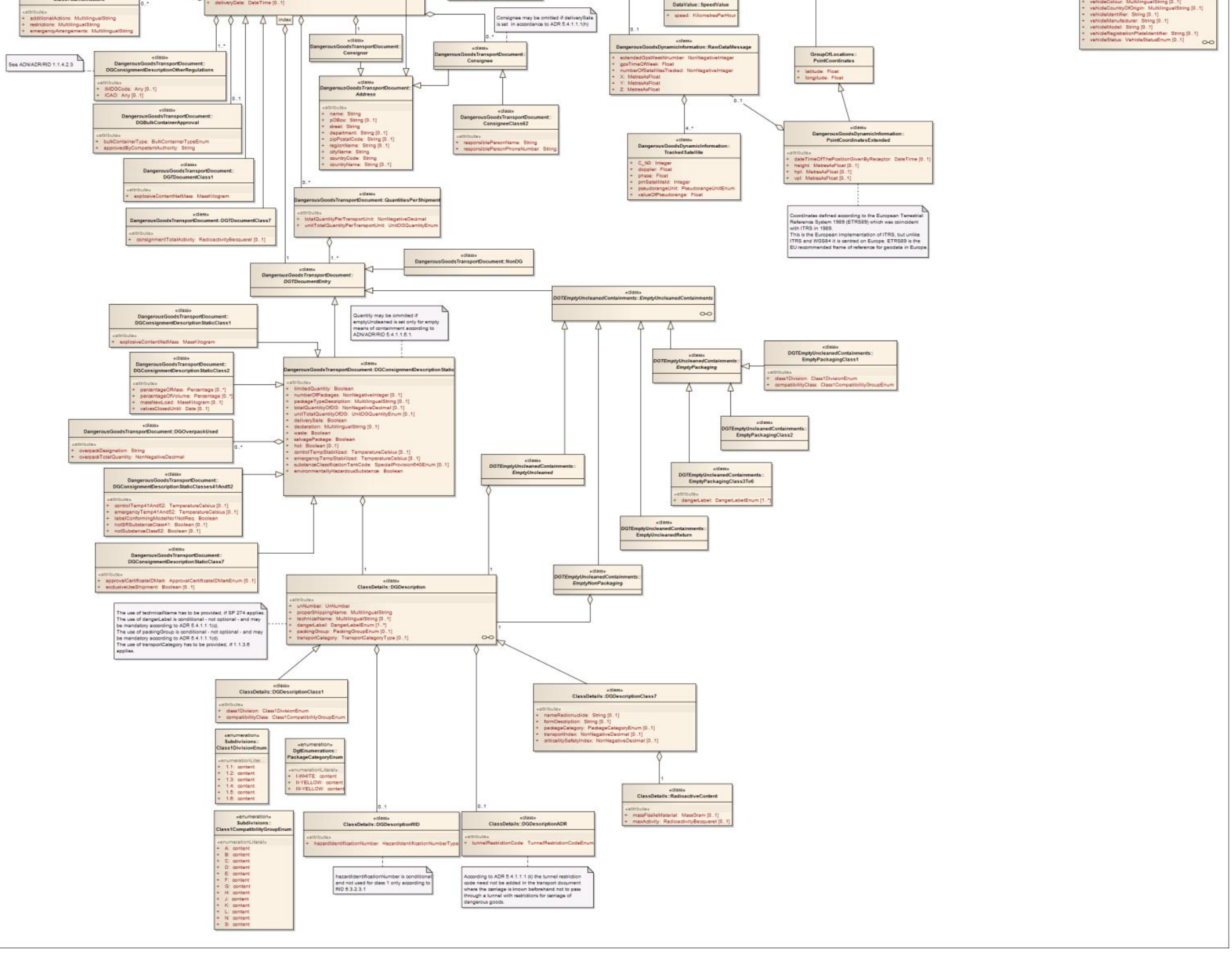
Platform Transfer Syntax, e.g. XML Exchange schema

COOPERATION STEP BY STEP: DATA IDENTIFICATION

No.	INFORMATION	WHO IS IT FOR?															WHAT IS IT FOR?	WHEN IS IT NEEDED? [3]	HOW IS IT PROVIDED?	AVAILABILITY		USE OF TELEMATICS		
		Driver / Crew	Shipper/Consignor/ Sender[1]	Freight forwarder	Consignee	Loader	Carrier	Tank-wagon operator	Packer	Filler	Tank-container operator	Infrastructure manager[2]	Public: Competent authority	Public: emergency responders	Public: Enforcement bodies	Public: Security bodies		All information in the transport document under A is necessary before and throughout the journey. This column only indicates particular circumstances where this information needs to be available.		Operational	In case of incident/accident	Technical feasibility	Better availability in case of incidents/accidents	Possible operational advantages for public authorities or enterprises
A.	Entry in the transport document or documents attached to the transport document																							
1	UN number 5.4.1.1.1 (a) [+ 5.2.1 + 5.3.2]	X	X	X	X	X	X	X	X	X	X	X		X	X	X	Identify DG	Initial incident, initial enforcement, initial security	Transport document [, package markings, plates]	Y	P R: Y	Y	Y	Y
2	Proper Shipping Name 5.4.1.1.1 (b) [, 5.2.1.5, 5.2.1.6, 5.2.1.7]	X	X	X	X	X	X	X	X	X	X	X		X	X	X	Identify DG	Later in incident, clean-up, later enforcement	Transport document [, package markings Class 1 & 7, sometimes	Y	P	Y	Y	Y
B.	Miscellaneous																							
3	Technical nam 5.4.1.1.1 (b)	33 Instructions in writing 5.4.3	X									X					X	Emergency information for the vehicle crew	Before the journey, initial incident/accident, operational requirements	Information sheet	Y	P	Y	N	?
4	Class (for Clas 5.4.1.1.1 (c) [+ 5.2 + 5.3.1]	34 Tank certificate 6.8.2.3.1						O	O			A:	X		X	X		X	O	X	Suitability for the	Operational requirements	Certificate	N	N	Y	Y	Y
5	Code (for Clas 5.4.1.1.1 (c) [+ 5.2 + 5.3.1]	35 Test report for packa 6.1.5.8, 6.5.6.14, 6.6.																						
6	Danger labels subsidiary risk 5.4.1.1.1 (c) [+ 5.2 + 5.3.1]	36 Labels and markings 5.2 + 3.4.3 - 3.4.5 + 3 3.4.8 + 3.5.4																						
7	Packing Group 5.4.1.1.1 (d)	X	X																					
8	Number & type of packages 5.4.1.1.1 (e)	X	X																					
9	Total quantity of DG 5.4.1.1.1 (f)	X	X																					
10	Consignor name & address 5.4.1.1.1 (g)	X		X	X	O	X			O														
C.	New information[4]																							
	48 Alert-system for incident/accident - fire	S	O	O	O		O	O			O	S		S			Various	During loading, throughout journey, in case of incident/accident	Fire detector; automatic alert transmission system	A/R: N AN: E	N			
	49 Alert-system for road traffic incident/accident (e.g. stability, shock) (ADR)	A:	O	O	O		O	O			O	A:		A:			Automatic	In case of an accident	Tilt/shock sensor;	A: E	N			
	50 Alert-system for rail incident/accident (derailment) (RID)																							
	51 Alert-system for incident/accident - axle-bearing temper detection																							
	69 Positioning information (coordinates, speed, direction, ….)	S	O	O	O	O	S	O		O	O	S		S	S	S	Knowing the position	In relation to alerts. Throughout journey.	Location referen on OBU providin information (use EGNOS correcti integrity) (It has the container or transport unit an the package insi container or the unit)					
	70 Tunnel safety and access control information	S	O	O	O		O			S		S		O			Monitoring of vehicles approaching and traversing the tunnel	Before entering and throughout the tunnel	Link between ve infrastructure management sy					

COOPERATION STEP BY STEP: DANGEROUS GOODS DATA MODEL




DangerousGoodsTransportDocument::DGConsignmentDescriptionOtherRegulations
DangerousGoodsTransportDocument::DGBulkContainerApproval
DangerousGoodsTransportDocument::DGTDocumentClass1
DangerousGoodsTransportDocument::DGTDocumentClass7
DangerousGoodsTransportDocument::DGConsignmentDescriptionStaticClass1
DangerousGoodsTransportDocument::DGConsignmentDescriptionStaticClass2
DangerousGoodsTransportDocument::DGOverpackUsed
DangerousGoodsTransportDocument::DGConsignmentDescriptionStaticClasses41And52
DangerousGoodsTransportDocument::DGConsignmentDescriptionStaticClass7
DangerousGoodsTransportDocument::Consignor
DangerousGoodsTransportDocument::Consignee
DangerousGoodsTransportDocument::Address
DangerousGoodsTransportDocument::ConsigneeClass62
DangerousGoodsTransportDocument::QuantitiesPerShipment
DangerousGoodsTransportDocument::DGTDocumentEntry
DangerousGoodsTransportDocument::NonDG
DangerousGoodsTransportDocument::DGConsignmentDescriptionStatic
DGTEmptyUncleanedContainments::EmptyUncleanedContainments
DGTEmptyUncleanedContainments::EmptyPackaging
DGTEmptyUncleanedContainments::EmptyPackagingClass1
DGTEmptyUncleanedContainments::EmptyPackagingClass2
DGTEmptyUncleanedContainments::EmptyPackagingClass3To6
DGTEmptyUncleanedContainments::EmptyUncleaned
DGTEmptyUncleanedContainments::EmptyUncleanedReturn
DGTEmptyUncleanedContainments::EmptyNonPackaging
ClassDetails::DGDescription
ClassDetails::DGDescriptionClass1
ClassDetails::DGDescriptionClass7
ClassDetails::RadioactiveContent
ClassDetails::DGDescriptionRID
ClassDetails::DGDescriptionADR
SubDivisions::Class1DivisionEnum
SubDivisions::Class1CompatibilityGroupEnum
DgEnumerations::PackageCategoryEnum
DangerousGoodsDynamicInformation::RawDataMessage
DangerousGoodsDynamicInformation::TrackedSatellite
DangerousGoodsDynamicInformation::PointCoordinatesExtended
GroupOfLocations::PointCoordinates
DataValue::SpeedValue
Quantity may be ommited if emptyUncleaned is set only for empty means of containment according to ADN/ADR/RID 5.4.1.1.6.1.
Consignee may be omitted if deliverySale is set in accordance to ADR 5.4.1.1.1(h)
Coordinates defined according to the European Terrestrial Reference System 1989 (ETRS89) which was coincident with ITRS in 1989.
This is the European implementation of ITRS, but unlike ITRS and WGS84 it is centred on Europe. ETRS89 is the EU recommended frame of reference for geodata in Europe.
hazardIdentificationNumber is conditional and not used for class 1 only according to RID 5.3.2.3.1
According to ADR 5.4.1.1.1 (k) the tunnel restriction code need not be added in the transport document where the carriage is known beforehand not to pass through a tunnel with restrictions for carriage of dangerous goods.

DATA FORMAT TO ACCESS TO INFORMATION

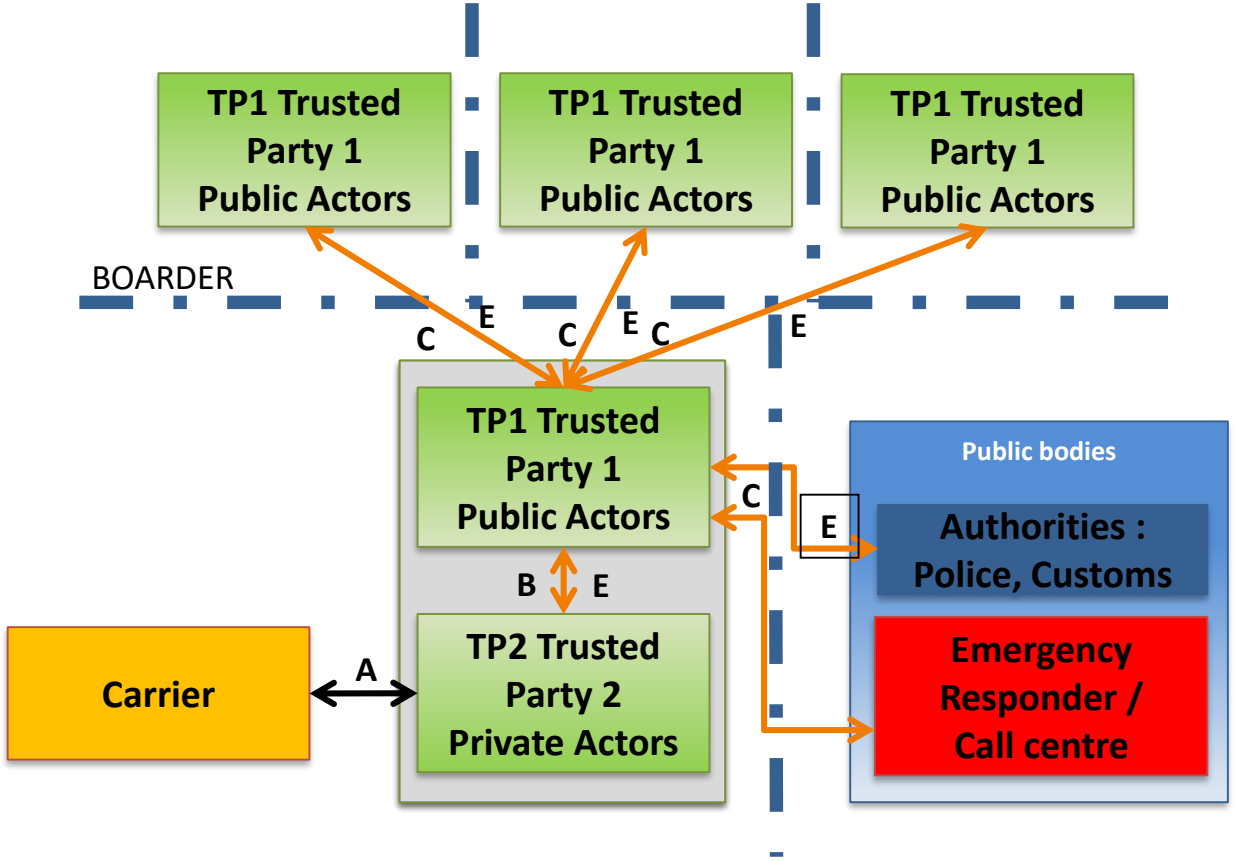
A. Carrier registers start of transport onTP2, giving documents and ID of transport unit

B. TP2 declares transport unit to TP1

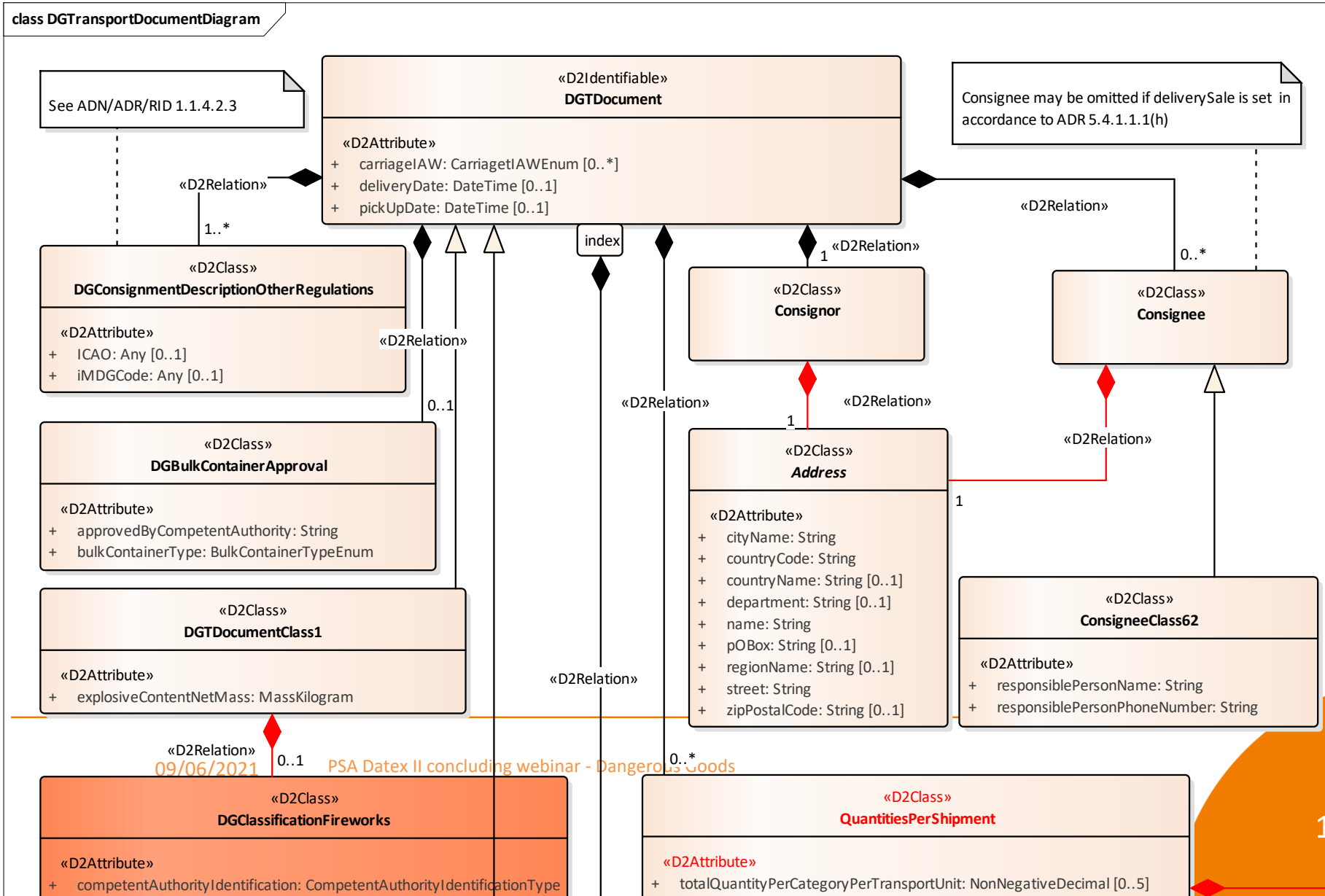
C. Public body contact TP1 with the vehicle ID

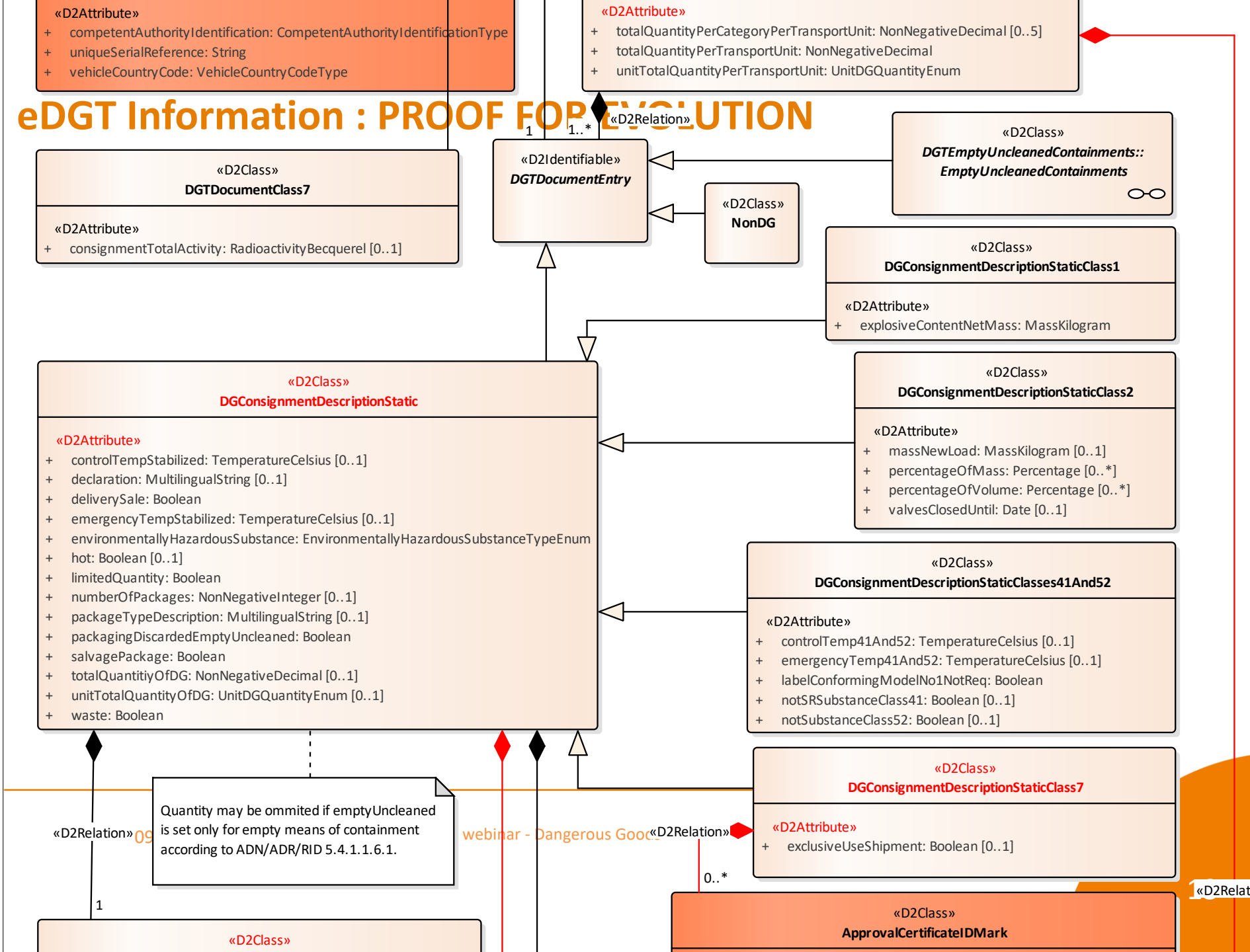
D. If TP1 does not find the ID, it queries the other TP1s

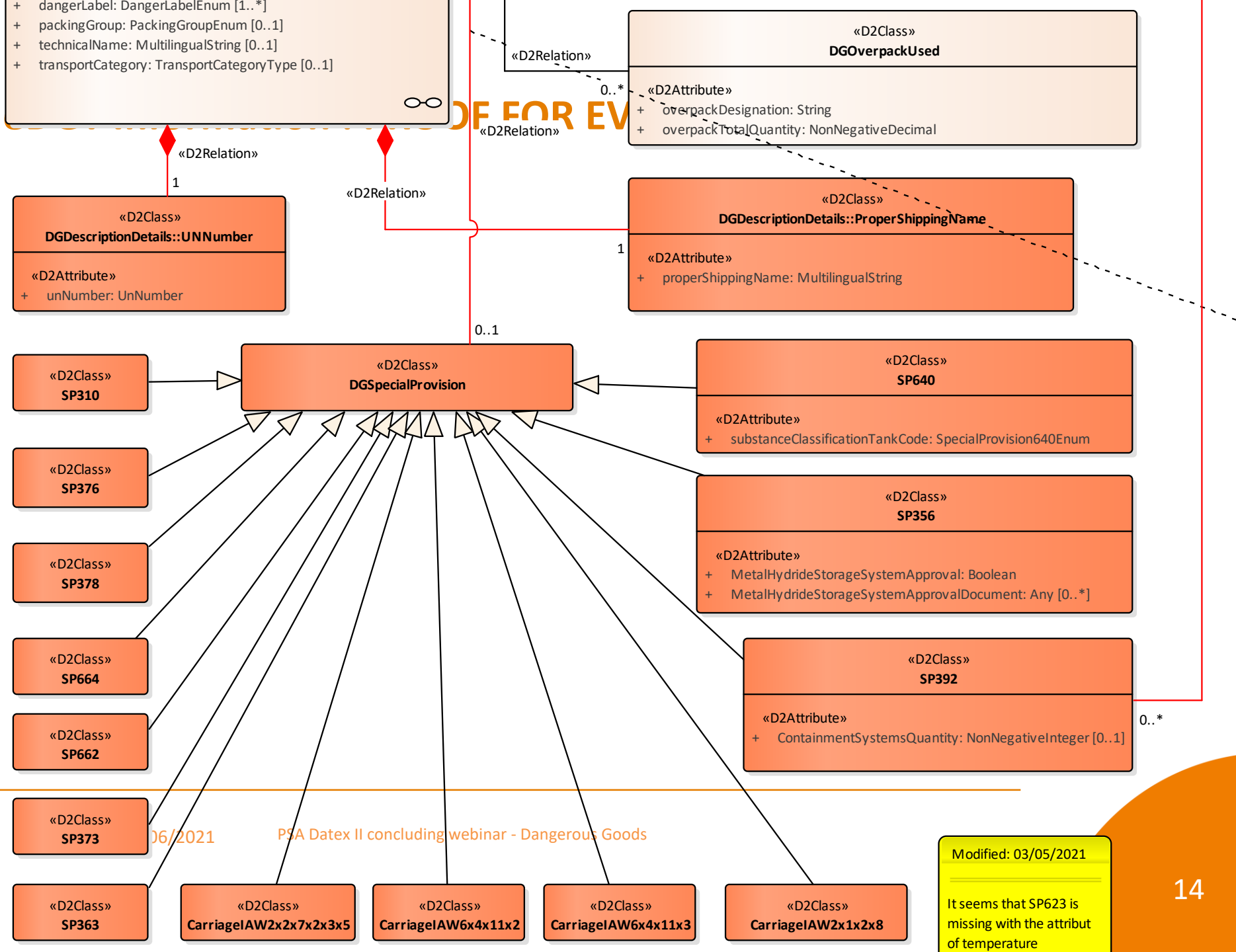
E. Response form TP2 through TP1 to Public body



eDGT Information : PROOF FOR EVOLUTION




«D2Attribute»
+ competentAuthorityIdentification: CompetentAuthorityIdentificationType
+ uniqueSerialReference: String
+ vehicleCountryCode: VehicleCountryCodeType
«D2Attribute»
+ totalQuantityPerCategoryPerTransportUnit: NonNegativeDecimal [0..5]
+ totalQuantityPerTransportUnit: NonNegativeDecimal
+ unitTotalQuantityPerTransportUnit: UnitDGQuantityEnum
eDGT Information : PROOF FOR EVOLUTION
«D2Relation»
1
1..*
«D2Class»
DGTDocumentClass7
«D2Attribute»
+ consignmentTotalActivity: RadioactivityBecquerel [0..1]
«D2Identifiable»
DGTDocumentEntry
«D2Class»
DGTEmptyUncleanedContainments::
EmptyUncleanedContainments
«D2Class»
NonDG
«D2Class»
DGConsignmentDescriptionStaticClass1
«D2Attribute»
+ explosiveContentNetMass: MassKilogram
«D2Class»
DGConsignmentDescriptionStatic
«D2Attribute»
+ controlTempStabilized: TemperatureCelsius [0..1]
+ declaration: MultilingualString [0..1]
+ deliverySale: Boolean
+ emergencyTempStabilized: TemperatureCelsius [0..1]
+ environmentallyHazardousSubstance: EnvironmentallyHazardousSubstanceTypeEnum
+ hot: Boolean [0..1]
+ limitedQuantity: Boolean
+ numberOfPackages: NonNegativeInteger [0..1]
+ packageTypeDescription: MultilingualString [0..1]
+ packagingDiscardedEmptyUncleaned: Boolean
+ salvagePackage: Boolean
+ totalQuantitiyOfDG: NonNegativeDecimal [0..1]
+ unitTotalQuantityOfDG: UnitDGQuantityEnum [0..1]
+ waste: Boolean
«D2Class»
DGConsignmentDescriptionStaticClass2
«D2Attribute»
+ massNewLoad: MassKilogram [0..1]
+ percentageOfMass: Percentage [0..*]
+ percentageOfVolume: Percentage [0..*]
+ valvesClosedUntil: Date [0..1]
«D2Class»
DGConsignmentDescriptionStaticClasses41And52
«D2Attribute»
+ controlTemp41And52: TemperatureCelsius [0..1]
+ emergencyTemp41And52: TemperatureCelsius [0..1]
+ labelConformingModelNo1NotReq: Boolean
+ notSRSubstanceClass41: Boolean [0..1]
+ notSubstanceClass52: Boolean [0..1]
Quantity may be ommited if emptyUncleaned is set only for empty means of containment according to ADN/ADR/RID 5.4.1.1.6.1.
«D2Relation»
webinar - Dangerous Good
«D2Class»
DGConsignmentDescriptionStaticClass7
«D2Attribute»
+ exclusiveUseShipment: Boolean [0..1]
0..*
«D2Class»
ApprovalCertificateIDMark
«D2Class»



Modified: 03/05/2021

It seems that SP623 is missing with the attribut of temperature

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THANK YOU FOR YOUR ATTENTION

claude.pfauvadel@developpement-durable.gouv.fr
jean-philippe.mechin@cerema.fr