



# MAPPING OF APTA CERTIFICATE OF ORIGIN DATA TO THE WCO DATA MODEL

2021.11.17

Kerri Ahn, ESCAP Consultant



# CONTENTS

---

<b>I. Mapping data to WCO DM using</b>	<b>3</b>
--	----------

## **UNNExT eMessage Guide**

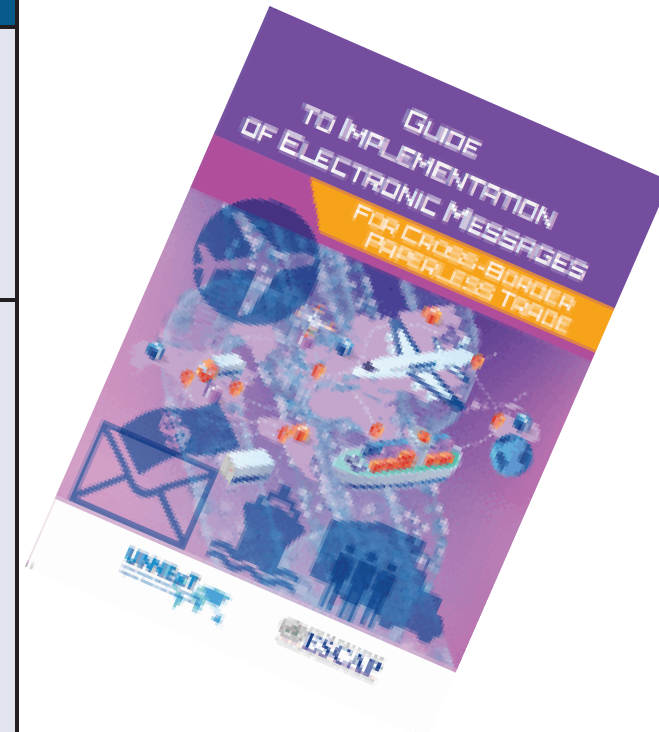
<b>II. Mapping data to WCO IP</b>	<b>12</b>
-----------------------------------	-----------

# 1. Steps for mapping to WCO DM



## Structural approach on harmonizing data elements of APTA Form to WCO DM

	Step 1	Step 2	Step 3	Step 4
<b>Purpose</b>	<ul style="list-style-type: none"> <li>• Capture business processes.</li> <li>• Identify documents and basic data requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a precise definition for and relationship between data elements.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop conceptual data model.</li> <li>• Harmonize data with a reference data model.</li> <li>• Obtain a data model.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop an e-message.</li> </ul>
<b>Activity</b>	<ul style="list-style-type: none"> <li>• Model business process.</li> <li>• Collect a list of documents and basic data requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Analyse each electronic or paper document in order to extract data definition, type, format and constraints.</li> <li>• Organize the analysed data elements in a comparable way.</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct information modelling.</li> <li>• Map the data elements to a reference data model (e.g. WCO DM, UN/CEFACT OCL, ISO/UN TDED).</li> </ul>	<ul style="list-style-type: none"> <li>• Design the structure of an XML Schema file.</li> <li>• Develop components of XML Schemas, such as Root XML Schema, Business Information Entity/ Code List/Identifier Scheme XML Schemas etc.</li> </ul>



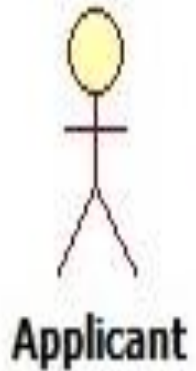
Source: UNNExT eMessage Guide

# Step 1

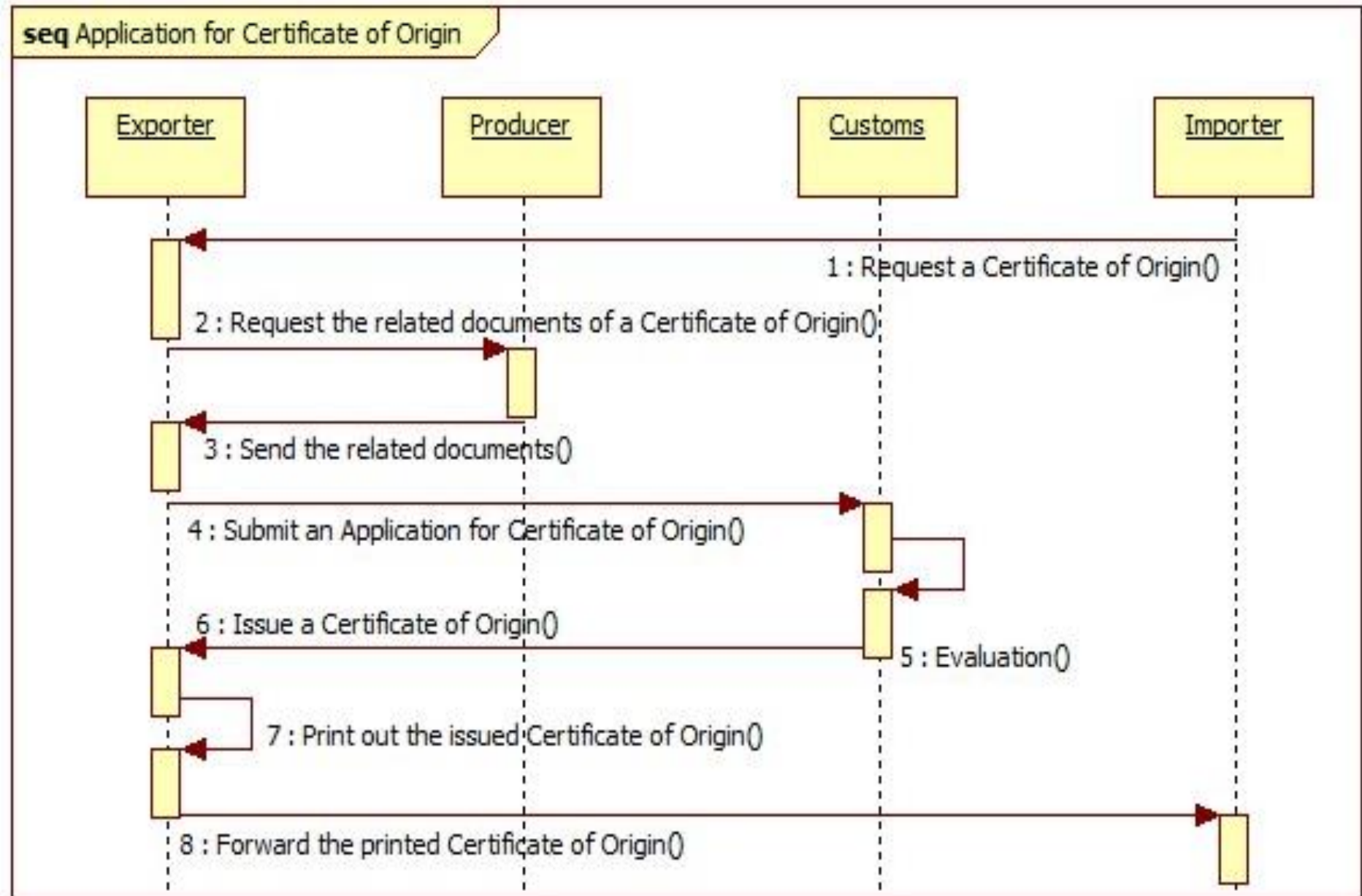


## Capture Business Process

- Business Process for Certificate of Origin
- After receiving Certificate of Origin



Applicant



# Step 2. Define Data



## Define data

- Purpose : obtain a precise description of the data requirements
- In identifying the exact meaning of the data and extracting data type, representation format, and constraints

- **Document/form**, with sample filled-in data and/or box completion guideline if available

### **APTA Form and notes for completing Certificate of Origin**

- EDI Message Implementation Guide
- User Interface (Data Entry Screens), with its data dictionary, if available
- Interviews with users of the document
- **Internationally-accepted standard repository for the semantic of data elements used in international trade**, such as the United Nations Trade Data Elements Directory (UNTD 2005 ISO 7372:2005), **World Customs Organization Data Model (WCO DM)**

# Step 2. Define Data



## Define data

### ■ APTA Certificate of Origin

Box	Elements
1. Goods consigned from	(Exporter's business name, address, country)
2. Goods consigned to:	(Consignee's name, address, country)
3. For Official use	Reserved for use by certifying authority
4. Means of transport and route:	State in detail the means of transport and route for the products exported.
5. Tariff Item Number	6-digit HS heading of the individual items.
6. Marks and Numbers of Packages	Type the marks and numbers of the packages covered by the Certificate.
7 Number and Kind of Packages; Description of Goods	
8. Origin criterion	
9. Gross weight or other quantity:	
10. Number and date of invoices:	
11. Declaration by the exporter:	Country, Importing Country, place and date, signature
12. Certificate	Place and date, signature and Stamp of Certifying Authority

# Step 2. Define Data



## Define data

### ■ Data Dictionary

- Document title and Document purpose
- Name of document owner
- Identification number for each data element name (e.g. Box Number in the document)
- Data element name from the document to be modeled
- Data element definition in local language and/or English as given by the document owner and/or relevant standards (e.g. WCO Data Set, UNTDED, UN/CEFACT CCL)
- Data format (alpha, numeric) and size (length of a data element, value in terms of digit or characters)
- Constraint on the occurrence of each data element (MinOccurs, MaxOccurs)
- Code lists & subsets of code lists

# Step 2. Define Data

## Data Elements in a data dictionary compilation

### SAMPLE CERTIFICATE OF ORIGIN

Asia-Pacific Trade Agreement  
(Combined declaration and certificate)

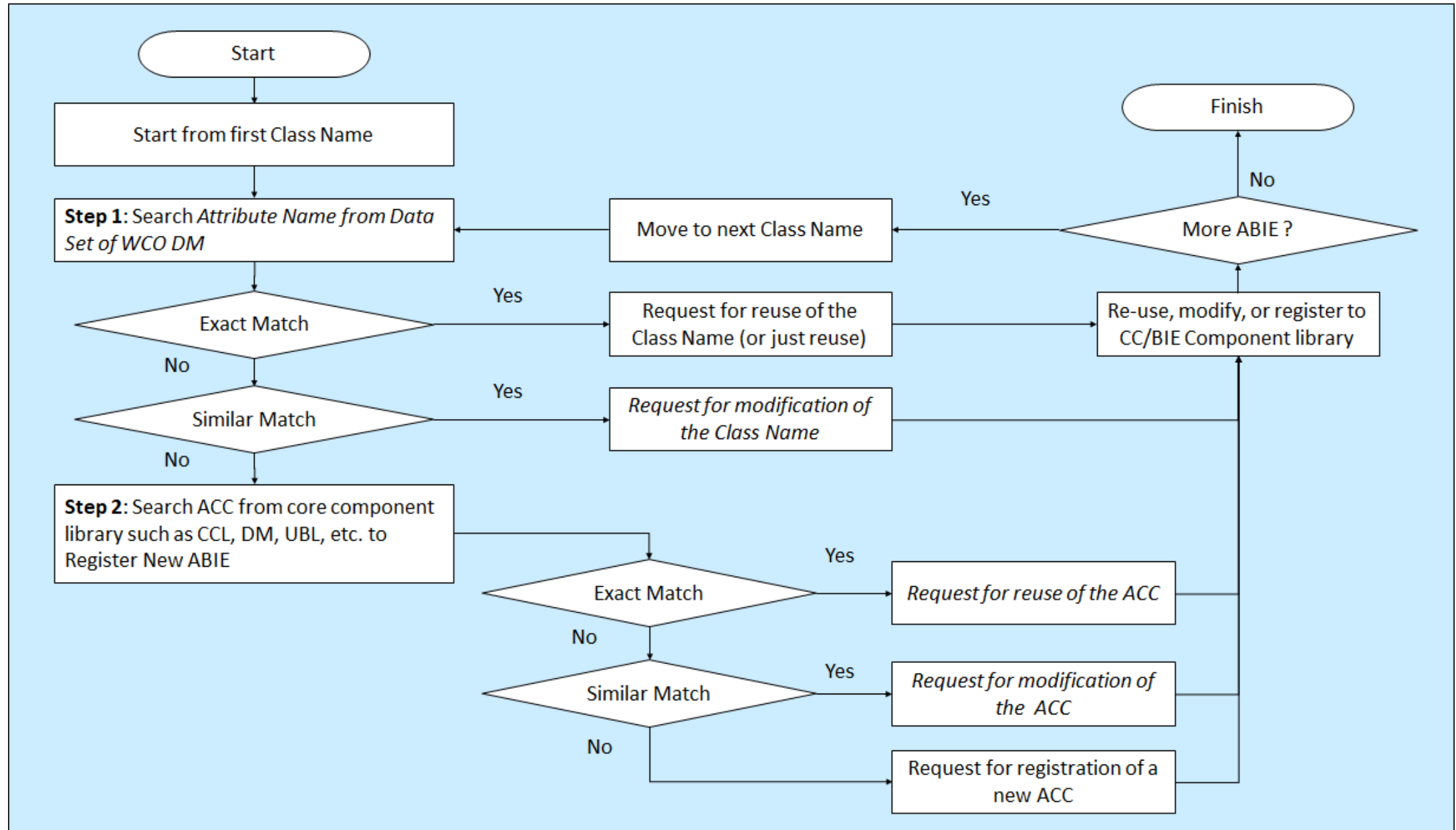
Head of Box	Detailed elements of Box	Description	Type	Length
Box 1 Goods Consigned from	Type the name, address and country of the exporter. The name must be the same as the exporter described in the invoice.			
	Name	Exporter's Business Name, Address and Country. The Name must be the same as the exporter described in the Invoice	AN	70
	Address		AN	9
	Country		A	2



# Step 3. Map to a reference data model (WCO DM V3.7)



## Step for finding a data class in WCO DM V3.7



# Step 3. Map to a reference data model (WCO DM V3.7)

WCO DM V3.7.0\_DataSet\_Final - Microsoft Excel

FILE   HOME   INSERT   PAGE LAYOUT   FORMULAS   DATA   REVIEW   VIEW   DEVELOPER									
Clipboard		Font		Alignment		Number		Styles	
L922   X   ✓   fx									
Head of Box		Detailed elements of Box		Description		Type	Length		
Reference Number		Reference Number	Reference number identifying a Certificate of Origin		AN	70			
		Country	Issued Country		AN	5			
Goods Consinged from		Name	Exporter's Business Name, Address and Country. The Name must be the same as the exporter described in the Invoice		AN	70	ext		
		Address			AN	9			
		Country			A	2			
775	Exporter	R032	Exporter, coded	the owner of the goods or has similar rights of disposal over them at the time when the declaration is accepted	an..17		Exporter. Identification. Identifier		

# Step 3. Map to a reference data model (WCO DM V3.7)

Head of Box	Detailed elements of Box	ID	Data Model Class	WCO Definition	WCO Dictionary Entry Name	Code
Reference Number	Reference Number	D014	Declaration	Reference number identifying a specific document	Declaration. Identification. Identifier	
	Country	D012	Declaration	Place at which a document was issued and when appropriate, signed or otherwise authenticated	Declaration. Issue Location. Identifier	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code or User codes
Goods Consinged from	Name	R031	Exporter	Name of the person who makes - or on whose behalf - the export declaration - is made - and who is the owner of the goods or has similar right of disposal over them at the time when the declaration is accepted	Exporter. Name. Text	
	ID	R032	Exporter	To identify the party who makes , or on whose behalf the export declaration is made, and who is the owner of the goods or has similar rights of disposal over them at the time when the declaration is accepted	Exporter. Identification. Identifier	
	Address	245	Address	Code specifying a postal zone or address	Address. Postcode. Identifier	User Code
		239	Address	Specification of the postal delivery point such as street and number or post office box	Address. Line. Text	
		244	Address	Code specifying the name of a country subdivision	Address. Country Sub Division. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code or User codes
		410	Address	To identify the type of an address	Address. Type. Code	EDIFACT codes (3131)
		412	Address	Name of the country or other geographical entity	Address. Country Name. Text	
		241	Address	Name of a city	Address. City. Text	
	Country	242	Address	Identification of the name of the country or other geographical entity as specified in ISO 3166 and UN/ECE Rec 3	Address. Country. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code or User codes



## **II. Mapping to WCO IP**

## 2. Mapping to WCO IP



### Step for mapping data elements to WCO IP

- Search a data element in LPCO Base IP
  - Search a semantically identical data element in the WCO IP (LPCO base IP)
    - ✓ Exact match
    - ✓ Similar match
    - ✓ Fail to find out a suitable class
  - Way for finding a match
    - ✓ Search with WCO ID
    - ✓ If you find one more class/attribute, then check class path or class/attribute definition

## 2. Mapping to WCO IP



### Exactly match case

Head of Box	Detailed elements of Box	ID	Data Model Class	WCO Definition	WCO Dictionary Entry Name	Code
Reference Number	Reference Number	D014	Declaration	Reference number identifying a specific document	Declaration. Identification. Identifier	
	Country	D012	Declaration	Place at which a document was issued and when appropriate, signed or otherwise authenticated	Declaration. Issue Location. Identifier	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code or User codes
	Name	R031	Exporter	Name of the person who makes - or on whose behalf - the export declaration - is made - and who is the owner of the goods or has similar right of disposal over them at the time when the declaration is accepted	Exporter. Name. Text	

	ID	Class Path/Attribute Name	GOVCBR Mapping Path	XML Tag Name	Class	Attribute
1						
2	74B	LPCO			0001L	
3	D014	Document reference number	BGM.C106.1004(0020:020:01)	ID	0001L	336
4	D011 D029	Document issuing date Response issuing date	DTM[C507\2005="137"].C507.2380(0030:010:02)	IssueDateTime	0001L	335
5	D012	Document issuing place, coded	SG1[LOC\3227="91"].LOC.C517.3225(0130:020:01)	IssueLocationID	0001L	310
		241	Address	Name of a city	Address. City. Text	
	Country	242	Address	Identification of the name of the country or other geographical entity as specified in ISO 3166 and UN/ECE Rec 3	Address. Country. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code

## 2. Mapping to WCO IP



### Exactly match case

Head of Box	Detailed elements of Box	ID	Data Model Class	WCO Definition	WCO Dictionary Entry Name	Code	Class Unique Pos. ID	Attribute Unique Pos. ID	WCO-ID	
Reference Number	Reference Number	D014	Declaration	Reference number identifying a specific document	Declaration. Identification. Identifier		0001L	336	D014	
	Country	D012	Declaration	Place at which a document was issued and when appropriate, signed or otherwise authenticated	Declaration. Issue Location. Identifier	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code or User codes	0001L	310	D012	
	Name	R031	Exporter	Name of the person who makes - or on whose behalf - the export declaration - is made - and who is the owner of the goods or has similar right of disposal over them at the time when the declaration is accepted	Exporter. Name. Text		0961L	146	R031	
	ID	Class Path/Attribute Name			GOVCBR Mapping Path		XML Tag Name		Class	Attribute
1										
2	74B	LPCO							0001L	
3	D014	Document reference number			BGM.C106.1004(0020:020:01)		ID		0001L	336
4	D011 D029	Document issuing date Response issuing date			DTM[C507\2005="137"].C507.2380(0030:010:02)		IssueDateTime		0001L	335
5	D012	Document issuing place, coded			SG1[LOC\3227="91"].LOC.C517.3225(0130:020:01)		IssueLocationID		0001L	310
		241	Address	Name of a city	Address. City. Text		0963L	148	241	
	Country	242	Address	Identification of the name of the country or other geographical entity as specified in ISO 3166 and UN/ECE Rec 3	Address. Country. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code	0963L	149	242	



## 2. Mapping to WCO myIP



### Similar match case

	Detailed	Data Model	WCO ID	WCO Name	Class	Attribute	WCO ID
04A	LPCO/Exporter/Address	Details relating to an address				0963L	
241	City name	Name of a city	SG7[NAD\3035="EX"].NAD.3164(0360:060)	City	0963L	148	
242	Country, coded	Identification of the name of the country or other geographical	SG7[NAD\3035="EX"].NAD.3207(0360:090)	CountryCode	0963L	149	
412	Country name	Name of the country or other geographical entity	SG7[NAD\3035="EX"].NAD.C058.3124(0360:030:01)	CountryName	0963L	6019	
244	Country sub-entity identification	Code specifying the name of a country subdivision	SG7[NAD\3035="EX"].NAD.C819.3229(0360:070:01)	CountrySubDivisionCo	0963L	150	
239	Street and number/P.O. Box	Specification of the postal delivery point such as street and	SG7[NAD\3035="EX"].NAD.C059.3042(0360:050:01)	Line	0963L	152	
245	Postcode identification	Code specifying a postal zone or address	SG7[NAD\3035="EX"].NAD.3251(0360:080)	PostcodeID	0963L	153	

Goods Consinged from	ID	R032	Exporter	To identify the party who makes , or on whose behalf the export declaration is made, and who is the owner of the goods or has similar			0961L	147	R032
		245	Address				0963L	153	245
		239	Address				0963L	152	239
		244	Address	Code specifying the name of a country subdivision	Address. Country Sub Division. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code or User codes	0963L	150	244
	Address	410	Address	To identify the type of an address	Address. Type. Code	EDIFACT codes (3131)			not mapped
		412	Address	Name of the country or other geographical entity	Address. Country Name. Text		0963L	6019	412
		241	Address	Name of a city	Address. City. Text		0963L	148	241
	Country	242	Address	Identification of the name of the country or other geographical entity as specified in ISO 3166 and UN/ECE Rec 3	Address. Country. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code	0963L	149	242

WCO ID 410 is not part of the LPCO/Exporter/Address.



## 2. Mapping to WCO IP



### Similar match case

Head of Box	Detailed elements of Box	ID	Data Model Class	WCO Definition	WCO Dictionary Entry Name	Code
Reference Number	Reference Number	D014	Declaration	Reference number identifying a specific document	Declaration. Identification. Identifier	
	Country	D012	Declaration	Place at which a document was issued and when appropriate, signed or otherwise authenticated	Declaration. Issue Location. Identifier	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code or User codes
				Name of the person who makes - or on whose behalf - the export declaration - is made - and who is the owner of the goods or has		

04A	LPCO/Consignment/Consignee/Address	Details relating to an address				0271L	
410	Type of address	To identify the type of an address			SG164.SG165[NAD\3035="CN"].IFD.C009.4149(8090:020:01)	TypeCode	0271L 4733

Goods Consinged from				accepted		
		245	Address	Code specifying a postal zone or address	Address. Postcode. Identifier	User Code
		239	Address	Specification of the postal delivery point such as street and number or post office box	Address. Line. Text	
		244	Address	Code specifying the name of a country subdivision	Address. Country Sub Division. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code or User codes

	Address	410	Address	To identify the type of an address	Address. Type. Code	EDIFACT codes (3131)
--	---------	-----	---------	------------------------------------	---------------------	----------------------

		412	Address	Name of the country or other geographical entity	Address. Country Name. Text	
		241	Address	Name of a city	Address. City. Text	
	Country	242	Address	Identification of the name of the country or other geographical entity as specified in ISO 3166 and UN/ECE Rec 3	Address. Country. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code

## 2. Mapping to WCO IP



### Similar match case

UN	ED	Detailed	UN	Data Model	WCO IP	WCO IP	Class	Attribute	UN
04A		LPCO/Exporter/Address		Details relating to an address				0963L	
241		City name		Name of a city	SG7[NAD\3035="EX"].NAD.3164(0360:060)		City	0963L	148
242		Country, coded		Identification of the name of the country or other geographical	SG7[NAD\3035="EX"].NAD.3207(0360:090)		CountryCode	0963L	149
412		Country name		Name of the country or other geographical entity	SG7[NAD\3035="EX"].NAD.C058.3124(0360:030:01)		CountryName	0963L	6019
244		Country sub-entity identification		Code specifying the name of a country subdivision	SG7[NAD\3035="EX"].NAD.C819.3229(0360:070:01)		CountrySubDivisionCo	0963L	150
239		Street and number/P.O. Box		Specification of the postal delivery point such as street and	SG7[NAD\3035="EX"].NAD.C059.3042(0360:050:01)		Line	0963L	152
245		Postcode identification		Code specifying a postal zone or address	SG7[NAD\3035="EX"].NAD.3251(0360:080)		PostcodeID	0963L	153
Goods Consinged from	ID	R032	Exporter	accepted To identify the party who makes , or on whose behalf the export declaration is made, and who is the owner of the goods or has similar rights of disposal over them at the time when the declaration is	Exporter. Identification. Identifier		0961L	147	R032
		245	Address				0963L	153	245
		239	Address				0963L	152	239
		244	Address	Code specifying the name of a country subdivision	Address. Country Sub Division. Code	Codes (3229) = ISO 3166-2-alpha code or User codes	0963L	150	244
	Address	410	Address	To identify the type of an address	Address. Type. Code	EDIFACT codes (3131)			not mapped
		412	Address	Name of the country or other geographical entity	Address. Country Name. Text		0963L	6019	412
		241	Address	Name of a city	Address. City. Text		0963L	148	241
	Country	242	Address	Identification of the name of the country or other geographical entity as specified in ISO 3166 and UN/ECE Rec 3	Address. Country. Code	Country Code uses EDIFACT codes (3229) = ISO 3166-2 2-alpha code	0963L	149	242

Therefore, Data Maintenance Request (DMR) may be required.

## 2. Mapping to WCO IP



### Fail to match case

Means of transport and route	Mode of transport	T021	BorderTransportMeans	Mode of transport used for crossing the border, coded	Border Transport Means. Mode. Code	es (8067) / UN/Recom			not mapped
Means of transport and route	Transit place(s)	L087	TransitDeparture	Identification of the place at which the goods depart under Customs control of transit procedure	Transit Departure. Identification. Identifier	UN LOCODE			not mapped
Means of transport and route	Transit place(s)	L007	TransitDestination	Name of the place at which the goods are destined under Customs control of transit procedure	Transit Destination. Identification. Identifier	UN LOCODE			not mapped

Transit Place (destination) is not mapped to LPCO base IP.

- Under LPCO/Consignment/DepartureTransportMeans, only "Mode of transport at departure, coded".
- Needs "mode of transport at border"

Therefore, DMR may be required.



감사합니다.

Thank you



**Contact: Dr. Ahn, Kerri**  
**- The K Consulting -**

***Full Name: Kyeongrim Ahn***

***Email address: [ahn.kyeongrim@gmail.com](mailto:ahn.kyeongrim@gmail.com)***

