Informal meeting on Code of Practice for Packing of Cargo Transport Units

at the request of the United Nations Economic Commission for Europe Working Party on Intermodal Transport and Logistics

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CTU Code – Mobile App Framework

This document was prepared by ETS Consulting in collaboration with the UNECE secretariat

Introduction

Any mobile application must be simple to use and provide the required information in as few "clicks" as possible, therefore, the Framework diagram attempts to lead the user to their required information in four or less clicks. However, in cases where access to more detailed or clarifying information be required, more clicks may be necessary.

Entry to the system can be by using a QR code (e.g. affixed to the inside of the CTU's doors) or by a web address. The App opening screen, if appropriate, could ask for some information about the user if collection of statistical information by the App is found useful.

Thereafter four entry / search methods are proposed:

1. Function roles – Screen 01-00 - "What are my roles and responsibilities." This will lead onto more detail and ultimately to the specific section or paragraph in the CTU Code (for example screen 01-011).

2. Cargo types – Screen 02-000 – "How do I pack". An example of a cargo with individual packages which are not all the same (screen 02-054). The App will lead the packer onto the specific packing sections in the CTU code (screen 02-0541).

3. Transport mode – Screen 03-000 – "What special packing requirements are needed by mode?" This section would lead onto screens that would identify the specific securing requirements if the transport chain involves some, but not all transport modes. The Diagram does not show any sub-screens at this stage.

4. Checklist entry – Screen 04-000 – "What do I need to do when packing a CTU?", The Checklist provided follows the packing sequence and the App would lead the Packer through all stages (for example Packing the CTU screen 04-030). These sections would lead onto the appropriate section of the CTU or, as shown in an example "Has heavier cargo been packed below lighter cargo" a link is made to screen 02-0541) in the Cargo Type section.

The App will ensure that those involved in functional roles are able to access all the relevant and pertinent information in the CTU Code (and elsewhere – perhaps with links).
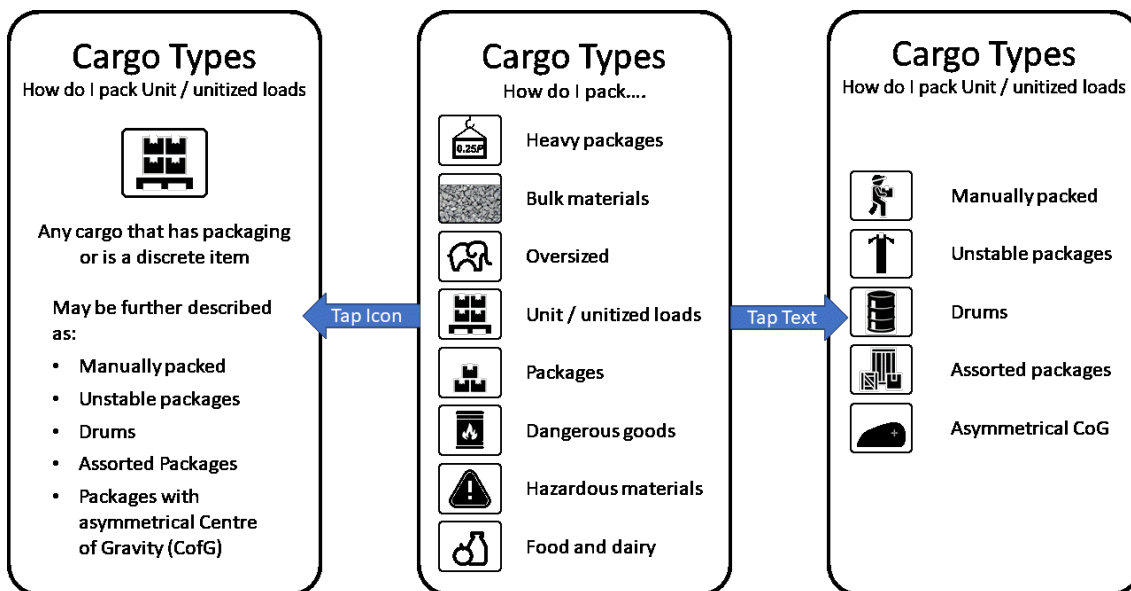
Ease of access

The App must be easily understood by persons whose mother language is not English, therefore the whole App should be translated. In addition, icons could be used to make understanding the contents easier. In annex, there is a proposal for icons, as follows:

1. Functional Role Icons – these could be accessed by tapping on the Functional role on Screen 01-000. The text included would identify the relevant section of the CTU code and provide easily translatable text that briefing describes what the Role is and how it fits into the transport chain.

2. Cargo Type Icons – these would be accessed from screen 02-000 and again provide easily translatable text.

3. Packing Instruction Icons – these would be linked to both the functional roles and cargo type sections, so that the party can access the information using easily translatable text.
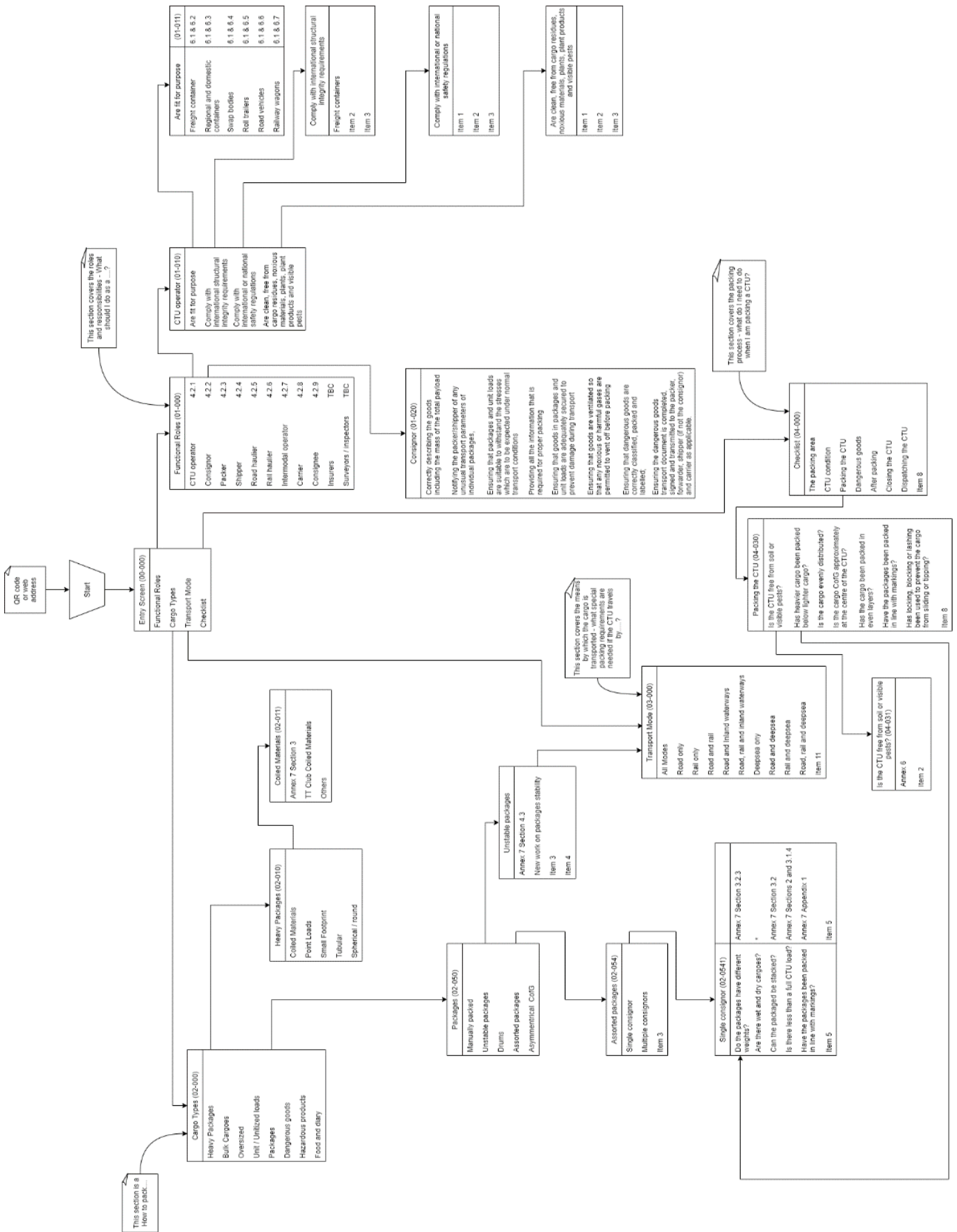
The following diagram shows an example screen for Cargo Types (centre) and the user would Tap on either the Icon which could lead them to a brief description of the Icon and any subcategories, Tapping on the text in the central screen would lead directly to the sub-categories of the cargo type.

Each Icon shown in the three accompanying documents could have their own description screen or Pop-up.

Framework diagram

The following diagram makes an initial proposal for the basic framework of the App – each box representing a screen with the appropriate links to take the user to their destination.

Are fit for purpose (01-011)

Freight container	6.1 & 6.2
Regional and domestic containers	6.1 & 6.3
Swap bodies	6.1 & 6.4
Roll trailers	6.1 & 6.5
Road vehicles	6.1 & 6.6
Railway wagons	6.1 & 6.7

Comply with international structural integrity requirements

Freight containers

Item 1

Item 2

Item 3

Comply with international or national safety regulations

Item 1

Item 2

Item 3

Are clean, free from cargo residues, noxious materials, plants, plant products and visible pests

Item 1

Item 2

Item 3

This section covers the roles and responsibilities - What should I do as a ...?

CTU operator (01-010)

Are fit for purpose

Comply with international structural integrity requirements

Comply with international or national safety regulations

Are clean, free from cargo residues, noxious materials, plants, plant products and visible pests

This section covers the packing process - what do I need to do when I am packing a CTU?

Functional Roles (01-000)

CTU operator	4.2.1
Consignor	4.2.2
Packer	4.2.3
Shipper	4.2.4
Road haulier	4.2.5
Rail haulier	4.2.6
Intermodal operator	4.2.7
Carrier	4.2.8
Consignee	4.2.9
Insurers	TBC
Surveyors / inspectors	TBC

Consignor (01-020)

Correctly describing the goods including the mass of the total payload

Notifying the packer/shipper of any unusual transport parameters of individual packages.

Ensuring that packages and unit loads are suitable to withstand the stresses which are to be expected under normal transport conditions

Providing all the information that is required for proper packing

Ensuring that goods in packages and unit loads are adequately secured to prevent damage during transport

Ensuring that goods are ventilated so that any noxious or harmful gases are permitted to vent off before packing

Ensuring that dangerous goods are correctly classified, packed and labelled.

Ensuring the dangerous goods transport document is completed, signed and transmitted to the packer, forwarder, shipper (if not the consignor) and carrier as applicable.

Checklist (04-000)

The packing area

CTU condition

Packing the CTU

Dangerous goods

After packing

Closing the CTU

Dispatching the CTU

Item 8

QR code or web address

Start

Entry Screen (00-000)

Functional Roles

Cargo Types

Transport Mode

Checklist

Packing the CTU (04-030)

Is the CTU free from soil or visible pests?

Has heavier cargo been packed below lighter cargo?

Is the cargo evenly distributed?

Is the cargo CofG approximately at the centre of the CTU?

Has the cargo been packed in even layers?

Have the packages been packed in line with markings?

Has lacking, blocking or lashing been used to prevent the cargo from sliding or tipping?

Item 8

This section covers the means by which the cargo is transported - what special packing requirements are needed if the CTU travels by....?

Transport Mode (03-000)

All Modes

Road only

Rail only

Road and rail

Road and Inland waterways

Road, rail and inland waterways

Deepsea only

Road and deepsea

Rail and deepsea

Road, rail and deepsea

Item 11

Is the CTU free from soil or visible pests? (04-031)

Annex. 6

Item 2

Coiled Materials (02-011)

Annex. 7 Section 3

TT Club Coiled Materials

Others

Unstable packages

Annex. 7 Section 4.3

New work on packages stability

Item 3

Item 4

Cargo Types (02-000)

Heavy Packages

Bulk Cargoes

Oversized

Unit / Unitized loads

Packages

Dangerous goods

Hazardous products

Food and diary

This section is a How to pack....

Heavy Packages (02-010)

Coiled Materials

Point Loads

Small Footprint

Tubular

Spherical / round

Packages (02-050)

Manually packed

Unstable packages

Drums

Assorted packages

Asymmetrical CofG

Assorted packages (02-054)

Single consignor

Multiple consignors

Item 3

Single consignor (02-0541)

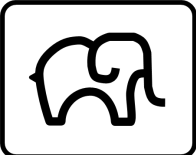|	
Do the packages have different weights?	Annex. 7 Section 3.2.3
Are there wet and dry cargoes?	*
Can the packaged be stacked?	Annex. 7 Section 3.2
Is there less than a full CTU load?	Annex. 7 Sections 2 and 3.1.4
Have the packages been packed in line with markings?	Annex. 7 Appendix 1
Item 5	Item 5

Note: this simple diagram does not show all links. Such will be developed and cross-referenced if this approached is accepted for the project to proceed.

Annex 1 - Functional Role Icons

Functional Roles			
Symbol	Description	Examples	CTU Code Reference
	CTU Operator		
	Manufacturing Plant		
	Shipper		
	Consignor		
	Freight Forwarder		
	Packer		
	Consolidator		
	Inland carrier		
	Road haulier		
	Rail operator		
	Barge operator		
	Intermodal operator		
	Transhipment hub		
	Feeder port		

Annex 2 - Cargo Type Icons

	Cargo Types		
Symbol	Description	Examples	CTU Code Reference
	Heavy Package	Any single cargo item with a mass greater than 25% of the maximum permitted payload	
	Coiled Material	Hot /cold rolled steel Wire rope in coils Split steel coils	• Annex 7 Section 3 • TT Club Coiled Materials
	Point Load	Heavy item with two or more small feet	
	Small footprint	Heavy item with a single footprint e.g. Marble block	• Annex 7 Section 3 • Annex 7 Section 4.3 Individually secured packages
	Tubular	Any cast, formed or extruded cargo item e.g. cast compressor cylinder	• Annex 7 paragraph 3 • TT Club Coiled Materials
	Spherical / round	Any cast, formed or extruded cargo item e.g. granite ball	
	Bulk Cargo	Bulk cargos that are carried CTUs, which may be lined, but without primary packaging	
	Scrap	Steel Paper Plastic	• Annex 7 Section 5.3 Non-regulated bulk solid cargos
	Dry bulk	Grains Granules Aggregate	• Annex 7 Section 5.3 Non-regulated bulk solid cargos
	Liquid	Wine Oil Water	• Annex 7 Section 5.1 Liquids in tanks • Annex 7 Section 5.2 Liquids in flexitanks • ICHCA BP 38
	Oversized	Road Tyres Glass Panels	

Annex 3 - Packing Instruction Icons

Instruction Icons			
Symbol	Description	Examples	CTU Code Reference
	Select appropriate CTU		
	Working environment	Keep clean and clear	
	Wear Personal Protective Equipment		
	Do not smoke		
	Do not eat		
	Inspect CTU		
	Check CTU Codes		
	Ensure no visible pest contamination		
	Prepare packing plan		