

Harmonized digital multimodal and cross sectoral data sharing for safer and efficient trade and more resilient supply chains in times of COVID-19 (concept note)

We at UNECE are currently working on a multi-agency United Nations Development Account project of the five Regional Commissions and UNCTAD on the immediate UN response to the COVID19 challenges to international trade and transport. UNECE has a segment in this project focused on the harmonization and standardization of electronic equivalents of documents and data exchanged in cross-border transport and trade. It focuses on the need to limit person-to-person contacts in international transport, logistics and trade supply chains. Please find in the first attachment the UNDA project document. In the conditions imposed by the COVID-19 infection, it is important to use the global UN standards for data and document exchange in the digitalization of trade and transport operations.

The standards developed or supported during the project will be made available to all stakeholders for implementation. We request at this point cooperation with relevant national authorities and regional organizations to work on practical implementation pilot projects.

What we suggest to the countries, their business community and relevant regulatory agencies is to use the UN/CEFACT standards in possible pilot implementation cases. This is not done as a stand-alone project, but as part of the advisory services of the UNECE, based on the Regular Programme for Technical Cooperation. Agencies, research institutions and the business community have a well-documented interest in the implementation of the UN/CEFACT standards. What we expect is that the relevant agencies are informed of the development of new standards for the digitalization of multimodal data and document exchange, so that they implement them in their work. Paradoxically, the COVID-19 crisis has given us an opportunity to prove that there is a need for global harmonization of standards for digital information exchange, overcoming the division of institutional, organizational, sectorial and corporate interests. The crisis has proven how easily global supply chains can be broken and harmonized standards can contribute in making them more resilient.

Since June 2020 until the end of the year, UN/CEFACT experts are working on the development of standards for multimodal digital document and data exchange. More and more stakeholders stressed the need to carry out pilot testing of the standards. Initial enquiries with the business community (freight forwarders and others) indicated a business need for such standardization of data exchange along multimodal digital corridors. We analysed further the state of affairs and noted the advancing work of experts on the digitalization of documents accompanying goods, without much knowledge and use of the global (UN/CEFACT) standards. This would lead to inefficient solutions. For this reason we suggested pilot implementation of the UN/CEFACT standards for multimodal digital corridor development. We are open to cooperate on pilot implementation along various corridors.

The time frame of the second phase of the project (by the end of 2020) only a limited part of the work can be accomplished: finalization of the development of the standards and of some end solutions (electronic documents) as test samples. A simple test of interoperability may be carried out for 2-3 modes of transport at the end of this phase. The results can be then presented to the relevant Government regulatory bodies for further implementation work. However, establishing interest and cooperation with the relevant stakeholders on this stage

will be important. In compliance with the United Nations rules, we will work with all relevant stakeholders who are interested in the advancement of the UN/CEFACT standards.

Some more information on the technicalities of the initiative:

The UN Centre for Trade Facilitation and Electronic Business (UN/CEFACT), a UNECE subsidiary body, is the UN hub for semantic standards for trade and transport information exchange. It has worked for years on the establishment of cross-industry semantic standards and reference data models (RDM). On this basis, experts are working now on filling in the gaps in standards for electronic document and data exchange for cross-border multimodal transport and trade. The goal is to map and align the standards for document-equivalents to such underlying global standards as the UN/CEFACT Core Component Library (CCL) and the UN/CEFACT Multimodal Transport Reference Data Model (MMTRDM), so that data can seamlessly be exchanged between documents and modes of transport.

In the first phase of the project (June –July 2020) experts have prepared standards (executive guides; business requirement specifications; business name structures; data subsets; CCL structures; XLS guideline structures; XSD schemas; UML diagrams; HTML indexes), using as a model the e-CMR standard (see www.unece.org/uncefact/mainstandards.html). These will be added to the already prepared standards (e.g. those for the road consignment note eCMR and the cross-industry Invoice). A guideline on how solution providers should use these standards to develop electronic documents. In the second phase (July-December 2020) we will focus on the further development of standards for other basic documents accompanying goods in different modes of transport, including railway consignment notes and additional documents, maritime waybill and other documents. Please find in the table at the end of this message information on the list of documents for which (a) there already exist standards; (b) standards are being prepared; and (c) standard development will be covered in the second phase of the project, by the end of 2020.

Industry experts have expressed great interest in using the standards and other deliverables of UN/CEFACT as a central semantic hub for the provision of state-of-the art technologies such as JSON/YAML with regard to the development and if possible auto-generation of internet orientated API and blockchains, thus allowing for different individual solutions in a competitive space. In addition, the UN/CEFACT Reference Data Models guarantee the consistency and interoperability of standards as international public goods.

Consultants are currently working on the standards for the railway consignment notes (CIM/SMGS; SMGS) and additional documents, such as the CIM/SMGS Wagon List (Appendix 7.2 to point 20, and for specific accompanying certificates (the Certificate of Origin and the Phytosanitary Certificate). The UN/CEFACT Core Components Library (CCL) will be updated to accommodate the data sets and data structures in the CIM/SMGS, SMGS and additional documents. This work covers the development of the standards on the modelling level and not on the level of developing solutions (the final electronic document equivalents). It does not touch the legal regimes underlying the documentary procedures either. The key point is to use the UN/CEFACT semantic standards and Reference Data Models as a form of a “common denominator” to allow for seamless data exchange between different modes of transport and sectors.

The current implementation of the UNDA project has indicated a need for pilot testing (pilot implementations) of the standards: possibly of a package of transport and logistics electronic

document-equivalents, for example by freight forwarders and business partners along a corridor, and test interoperability among two or three modes of transport. This is not a separate project with its budget, but regional advisory support for activities in the countries for the implementation of UN/CEFACT standards, reference data models and tools. Implementers in the countries will build their solutions, using the UN/CEFACT standards and tools, most often than ever using their own resources, and UNECE will help wherever possible. It is expected that relevant agencies in the countries, as well as international sectorial organizations, will customize the standards in their area. We have developed a concept note on a Multimodal Digital Corridor based on the UN/CEFACT standards and reference data models.

We are very much in favour of implementing this concept of a multimodal digital corridor with various countries and corridors. In May 2020, we carried out a brainstorming with several departments of the Eurasian Economic Commission on data sharing during the COVID-19 pandemic, using the UN/CEFACT standards and reference data models, exactly from this point of view. Our Belarussian colleagues are interested in testing and proving the concept in trade and transport between Belarus and Russia, so, why not in the whole EAEU?

UNECE is planning the following activities with support from the UN Regular Programme for Technical Cooperation:

With a view to strengthen harmonization and standardization of data exchange in international transport and trade in the face of the COVID-19 crisis and in the post-pandemic recovery, consultants with knowledge of business processes and IT will:

- describe and analyse merchandise and information flows along pilot corridors. Identify strategic export and import products that can be the basis for a test to prove the concept at the end of the “pilot implementation”.
- Prepare electronic messages (electronic document equivalents) based on the UN/CEFACT standards and Reference Data Models, using XML and JSON formats, collaborating with UN/CEFACT experts and using the guidelines on how to implement the UN/CEFACT standards:
 - Packing List;
 - SMGS Consignment Note;
 - CIM/SMGS Consignment Note;
 - CIM/SMGS Wagon List (Appendix 7.2 to point 20);
 - Invoice for Customs;
 - eCMR;
 - maritime waybill;
 - inland water transport documents.
- Time and resources permitting, develop electronic document equivalents for the following railway documents:
 - Container List (Appendix 7.4 to point 20);
 - Handover sheet (Appendix 3 to SI to SMGS) <https://www.cit-rail.org/en/freight-traffic/manuals/> and
 - CIM/SMGS Commercial Act.as well as:
 - Certificate of Origin (in a specific area)
 - An agricultural certificate under the eCERT standards (e.g. a phytosanitary certificate) with reference to a specific traded product.
- Carry out a survey/analysis on what is needed for a complete conversion of data between maritime, road and railway transport.

- Perform a test of the conversion of data between the maritime, road and railway transport sectors.
- Advance an informal group of technical experts from UN/CEFACT, the business and research communities in the transition economies, notably working on the:
 - practical aspects of preparing electronic standards for data exchange and new message structure subsets contextualized to the specific transport modes, using UN/CEFACT standards that would best service digital multimodal corridors and support modern technologies, including XML and JSON
 - development and implementation of a Data Model for a specific digital corridor, combining the data for the key accompanying documents as described above and identified in the project and based on the UN/CEFACT Multimodal Transport Reference Data Model.

The aim is to foster the harmonization of electronic data sharing using global (UN/CEFACT) standards for transport, trade and logistics, and to prepare standards for electronic document equivalents based on the UN/CEFACT semantic standards and reference data models.

Please see below standards which UN/CEFACT experts have prepared, are working on or will be working on (the left column) and solutions which will be prepared for pilot implementation the right column.

Ready standards or standards under preparation	Documents on which to work in a pilot project
1. Standards (executive guide; business requirement specification; business name structure; subset; CCL structure; XLS guideline structure; XSD schema; UML diagram; HTML index, using as a model the e-CMR standard) www.unece.org/unecefact/mainstandards.html , already prepared for the following documents:	
<ul style="list-style-type: none"> • eCMR • Cross Industry Invoice • Cross Industry Delivery • Cross Industry Catalogue • Cross Industry Quotation • Cross Industry Remittance Advice • Cross Industry Scheduling • Cross Industry Ordering Process • Material Safety Data Sheet Details (MSDS) • Contract Financial Execution Management • Market Research Information • Verified Gross Mass (VERMAS) documents • International Forwarding and Transfer documents • Smart container information • A number of agricultural certificates, accounting and other documents 	<ul style="list-style-type: none"> • eCMR

These standards you can find at www.unece.org/unecefact/mainstandards.html	
2. Standards that are being finalized in Oct. 2020	
<ul style="list-style-type: none"> • Provisional booking • Firm booking • Booking confirmation • Shipping instructions • Waybill • Status report • Status request • Packing list • RASFF (Rapid Alert for Security of Food and Feed) 	<ul style="list-style-type: none"> • Bill of Lading (BoL) / maritime waybill) • Packing list
3. Standards to be finalized by the end of 2020	
<ul style="list-style-type: none"> • Inland water transport contract document • Maritime waybill. • CIM/SMGS Consignment Note; • SMGS Consignment Note; • CIM/SMGS Wagon List (freight manifest) (Appendix 7.2 to point 20, see https://www.cit-rail.org/en/freight-traffic/manuals/) • Invoice for Customs • eCERT (sanitary-phytosanitary certificates and basis for other certificates): Revise implementation guidelines (+ schema, subset) for the different certificates, aligned to the Buy-Ship-Pay Reference Data Model 	<ul style="list-style-type: none"> • BoL / maritime waybill • Invoice for Customs • SMGS, CIM/SMGS or CIM Consignment Note • CIM / SMGS Wagon List (Appendix 7.2 to point 20) • Container List (Appendix 7.4 to point 20) • Handover sheet (Appendix 3 to SI to SMGS) https://www.cit-rail.org/en/freight-traffic/manuals/ https://osjd.org/api/media/resources/1603431 • Inland water transport documents • IMO-FAL docs • CO, C/O (preferential or non-preferential)

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