Recommendations, standards, and deliverables supporting implementation: UN/CCL (Core Component Library) & Reference Data Models

• The UN Core Component Library (CCL) is a library of business semantics in a data model which is harmonised, audited and published by UN/CEFACT. The CCL uses Core component Technical Specifications (CCTS) to ensure consistency and interoperability. The library has contributions from many organizations including government and business and deals with Cross Border Trade for messages for Buy, Ship and Pay business processes.

✓ In several pilot projects, experts analysed the transformative capacity of UN/CEFACT standards and MMT RDM: e.g., digital twin exercises of exports of wood materials from Belarus to Serbia and bitumen and meat between Azerbaijan and Ukraine. Experts are now working on a blueprint for a converter between solutions for railway cargo and multimodal transport between countries in Asia, Eurasia, and Western Europe. It will facilitate exchange of data between UN/EDIFACT, SMGS, CIM/SMGS, and other technologies, using MMT RDM as a common foundation. The European Commission is working now on the implementation of the Electronic Freight Transport Information Regulation (eFTI), considering the use of the MMT RDM as the common interface for multimodal data exchange.
Recommendations, standards, and deliverables supporting implementation: UN/CCL (Core Component Library) & Reference Data Models

“The UNCEFACT Cross-Industry-Invoice (CII) is very important and is one of the proposed Syntax bindings for implementation of the eInvoice (EN 16931-1). The syntax binding of CII is specified in CEN/TS 16931-3-3. See "Published standards" section on the website of the responsible CEN/TC 434: https://standards.cencenelec.eu/dyn/www/f?p=205:32:0:::FSP_ORG_ID,FSP_LANG_ID:1883209,25&cs=18F2559A05E966F8D6BA2CD11622D2977
CEN/TS 16931-3-3 is adopted (like all EN and CEN/TS) in all of the 34 CEN members (countries).”

Gregor Roschkowski
DIN
Recommendations, standards, and deliverables supporting implementation: UN/EDIFACT


**UN/EDIFACT** is a cornerstone international standard for the electronic exchange of data that is widely used in international supply chains, transport and logistics. It is used by 100,000 traders in the retail sector alone.

"Explained how the use of the UN/EDIFACT standard could significantly optimize both communication and efficiencies within a large and complex network such as that of the maritime industry. The company sends over 250 million messages per year using the UN/EDIFACT standard, with 113,000 messages being sent from one ship alone when entering a port."

Claudio Bozzo of MSC Mediterranean Shipping S.A.

"GS1 believes that the digitalization of trade processes helps to meaningfully impact supply chain efficiencies by strengthening the links between the physical and the digital world. In the data sharing domain, GS1 provides standards for the exchange of master data, transactional data and event data. Over many years, our collaboration with UN/CEFACT has been strategically important because it has allowed both organizations to further our common objectives of harmonization and interoperability (for example, with the implementation of the EANCOM standard, entirely based on EDIFACT). We are looking forward to continued collaboration into the future and expect that we will find new synergies that serve to increase global digitalization."

Piergiorgio Licciardello, Director, EDI GS1
The UNECE introduced in 1981 the United Nations Code for Trade and Transport Locations (UN/LOCODE). As specified in UNECE Recommendation No. 16, UN/LOCODE is a five-character code system to identify locations related to international trade and transport. Today UN/LOCODE is widely used by government agencies and private sector entities around the world. It contains over 115,000 entries in 249 countries, territories and special areas.

**Column “SubDiv” (Subdivision)**
- state, province, department, etc
- Based contain the ISO 3166-2

<table>
<thead>
<tr>
<th>Ch</th>
<th>LOCODE</th>
<th>Name</th>
<th>NameWOdiacritics</th>
<th>SubDiv</th>
<th>Function</th>
<th>Status</th>
<th>Date</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE</td>
<td>BWZ</td>
<td>Bad Wurzach</td>
<td>Bad Wurzach</td>
<td>BW</td>
<td>-23–6–</td>
<td>RL</td>
<td>0901</td>
<td>4754N 00954E</td>
</tr>
<tr>
<td>+</td>
<td>FR AC6</td>
<td>Arçonnay</td>
<td>Arçonnay</td>
<td>72</td>
<td>-3-----</td>
<td>RL</td>
<td>1301</td>
<td>4824N 00050E</td>
</tr>
<tr>
<td>†</td>
<td>IN DMA</td>
<td>Dhamara</td>
<td>Dhamara</td>
<td>OR</td>
<td>123-----</td>
<td>RL</td>
<td>1301</td>
<td>2048N 08654E</td>
</tr>
<tr>
<td>#</td>
<td>US PFT</td>
<td>Pfafftown</td>
<td>Pfafftown</td>
<td>NC</td>
<td>-3-----</td>
<td>RL</td>
<td>1301</td>
<td>3609N 08021W</td>
</tr>
<tr>
<td>X</td>
<td>AU GNO</td>
<td>Geelong</td>
<td>Geelong North</td>
<td>VIC</td>
<td>-3-----</td>
<td>XX</td>
<td>1301</td>
<td>38066 14420E</td>
</tr>
</tbody>
</table>
Recommendations, standards, and deliverables supporting implementation: UN/LOCODE

- IMO sub-committee on Safety of Navigation agreed on guidance on the use of the UN/LOCODE in the destination field in AIS messages with circular SN.1/Circ.244/Rev.1 of 4th November 2016.

- The FAO Global Record Informal Open-Ended Technical and Advisory Working Group (GRWG) made a recommendation at its sixth meeting on 12 December 2022 regarding UN/LOCODE as an identifier for the port of registry of fishing vessels uploaded on the Global Record.

- The FAO Technical Working Group on Information Exchange (TWG-IE) made a recommendation at its third meeting on 13-14 December 2022 concerning the use of UN/LOCODE for identifying designated ports (DPs) under the Agreement on Port State Measures (PSMA).

It is fair to say that the UN/CEFACT standards are the backbone of any electronic communication in the maritime industry. These standards are used by all actors in the international logistics network: Shipping lines, forwarders, customers, truck/rail/barge operators, container leasing companies, depots, repair shops, port authorities, customs, etc. irrespective of their size or different backgrounds they may have.

UN/LOCODE is the leading global standard for identification of geographic locations in global trade, for an administrative or economic area, such as cities, towns, etc. Whenever along the supply chains it is required to identify where an event has occurred or will occur, it will be based on the UN/LOCODE.

All stakeholders are using the UN/LOCODE to identify any location along the supply chain: Place of origin and destination, ports of call, but also place of document issuance, and place of invoice receiver; the complete list would be lengthy. Plus of course, all vessel schedules, published by the line operators are based on UN/LOCODE. In that sense, UN/LOCODE describes the container movements and the means of transport movements (truck, rail, vessel) and also the handling chain for all shipping documents along the routing.

Subsets of a location, for example, inland terminals, sea terminals, and depots are identified by separate code lists, so-called UN/LOCODE Child Codes, which are again based on the UN/LOCODE.

UN/LOCODE is technology agnostic. It is used in any communication format, such as UN/EDIFACT, ANSI, XML, or in the latest API in just the same way.

UN/LOCODE is accurately maintained by the central UN/CEFACT bodies, following the clear guidelines of UNECE Recommendation No. 16.

Michael Schröder, Project Manager
Hapag-Lloyd AG
Recommendations, standards, and deliverables supporting implementation: UN/LOCODE

UN/LOCODE
Implementation in Air Cargo and Maritime

Air Cargo Report View
Air Waybill No: D0112345677
Flight No: QF001, Original Loading Port Code: USLAX
Discharge Destination: AUSYD

AIS TRACK:
Name: HANIG LMGS
Callsign: 9Z1452, Ship Type: Passenger Ship, Destination: MX ACU > PE CTA
Nav Status: Under way sailing, Latitude: -5.641691, Longitude: -90.667179
Recommendations, standards, and deliverables supporting implementation: UN/LOCODE

- The current UN/LOCODE system, including its IT web interface, was developed almost two decades ago. Since then, IT systems, including cyber security needs have evolved considerably. This resulted in a situation where the UN/LOCODE web interface (i.e., the web-based online Data Maintenance Request application), was flagged by the Office of Information and Communications Technology (OICT) as non-compliant with UN cyber security requirements, and the rest of the system has not been audited. This was reflected in the UNECE Executive Secretary Compact assessment for 2021 as well as in para. 24 of UN/LOCODE-AG/2022/INF.2.

- To date the following progress has been made:
  - 3/3 of the critical cyber security vulnerabilities have been remediated.
  - Testing of the implemented changes on the UNECE testing platform.
  - In-progress: implementation of additional OICT cybersecurity recommendations.
  - In-progress: field validations, data quality, and user-friendliness improvements.

Challenges

- Complexity in the source code and legacy software development pattern
- Cost of third-party services for mapping platforms, ext. i.e., API quotas QPM (request per day)
- Availability of reference data i.e., sub-division geographical data
- Data integration between the subsystems

Need for further funding

- Implementation of additional OICT cybersecurity recommendations
- User support on technical issues
- Re-engineering of subsystems 2 – 3 to ensure data integration and quality
- Other technical fixes, data validation, features, and data maintenance procedures expressed by the user community that are too complex to complete in 3 months
Recommendations, standards, and deliverables supporting implementation: UN/FLUX

- The United Nations Fisheries Language for Universal Exchange (UN/FLUX) is a way for fishing industry operators to exchange information in a single and globally standardised way. It can be used in all phases of fisheries operations – from catch to sale. UN/FLUX gives automatic access to the electronic data needed for fish stock management. The data includes information on:
  - vessels and their fishing trips;
  - fishing operations (logbook data);
  - catches (area, species, quantity, etc.);
  - landing and sales;
  - fishing authorisations and permits;
  - inspection reports.

- The UN/FLUX standard is directly linked to Sustainable Development Goal (SDG) 14 of the 2030 Agenda on Sustainable Development. It supports the achievement of Target 14.4, which focuses on ending illegal and unreported fishing and overfishing, and destructive fishing practices and implementing science-based management plans by 2030. UN/FLUX also contributes to ensuring sustainable production (SDG 12) in the fishing industry through fisheries management based on reliable fishing data, which will help efforts to preserve biodiversity and support the sustainable use of fish stocks and overall fishing practices.

The UN/FLUX is a priority in the EU’s fisheries data management strategy and has been promoted as a global standard for data exchange in fisheries.