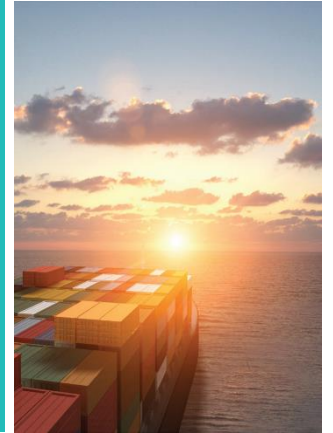




The Global Language of Business

Smart Containers need global data standards to thrive

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Introducing GS1



GS1 is a global standards organisation

Neutral and
not-for-profit

User-driven
and governed

Global
and local

Open and
collaborative



1.5 million companies use GS1 standards
100 million products carry GS1 barcodes
10+ billion GS1 barcodes are scanned every day



GS1 standards high level overview



IDENTIFY: GS1 Standards for Identification

GLN Global Location Number **GTIN** Global Trade Item Number **SSCC** Serial Shipping Container Code **GSIN** Global Shipment Identification Number **GINC** Global Identification Number for Consignments



CAPTURE: GS1 Standards for Barcodes & EPC/RFID

GS1 BARCODES

GS1-128



GS1 Logistics Label



GS1 EPC/RFID

EPC HF Gen 2



EPC UHF Gen 2



SHARE: GS1 Standards for Data Exchange

MASTER DATA Global Data Synchronisation Network (GDSN) **TRANSACTIONAL DATA** eCom (EDI) **EVENT DATA** EPC Information Services (EPCIS)



Introduction UN/CEFACT



- Global standardisation organisation
- Subsidiary of intergovernmental body of the United Nations Economic Commission for Europe (UNECE)
- Decades of experience developing global standards
- Members are experts from intergovernmental organizations, individual countries' authorities and also from the business community
- Best known products are UN/EDIFACT EDI message standards used by many organizations all over the world
- There are many more

Smart Container – a Collaborative Effort



- Smart Container project combined expertise from many experts who are active in a wide range of standardisation organisations such as UN/CEFACT, GS1, IMO, BIC, ISO, WCO and IATA
- Contributions from well known organisations like FedEx, Hapag-Lloyd, Traxens, Nexxiot, GlobeTracker, Marine Traffic,
- Contributions also from representatives from cross border agencies e.g. Brazil, USA, Australia, Italy



Recent results:

Business Requirements Specification “Smart Containers”

White Paper “Smart Containers”

What is this Smart Container BRS?



- A smart container is “a container equipped with an IoT” device.
- An IoT device in this context is any device that takes measurements that may be used determine the condition of the cargo or the environment around the cargo
- The BRS focusses on the intermodal container but the concepts and processes described will also largely apply for any type of container e.g. ULD in Air cargo
- The BRS describes 22 Use Cases that may benefit from using smart container standards
- The BRS is the basis for information exchange standards to be used for smart container data
- These future standards build on existing standards; some are indicated in the BRS, to be further defined in next step (Data Modelling).

Why should you care?



- Containers are used to transport nearly every type of cargo.
- **ALL industries** that rely on transportation of physical goods, **rely on containerized transportation** somewhere in their Value Chain.
- **Customer Experience** is becoming more and more important in **BOTH B2C AND B2B**.
- **You need to know where your Goods are and the condition that they are in.**

Smart Containers are the answer

What are the smart container Use Cases?



- Asset management:
Empty Gate In/Out; Depot reconciliation;
Container daily status message; PTI on demand for reefer;
- Transportation Planning and execution
ETA update; Actual executed Transit Time;
Trip tracking inland haulage; Shipment identification; Intermodal transfer;
- Transport Execution Exceptions
Schedule deviation alert; Unexpected door opening; Missing container on board vessel; Short-shipped container; Overlanded container;
- Cargo Condition monitoring
Unexpected change in e.g. Temperature or Humidity ; Unexpected container movement e.g. vibration or shock; Dry container temperature monitoring;
- Security, Compliance and Cross-Border
Contract compliance container routing;
Cross border fast lane enabling;
- Other
Port infrastructure monitoring; Additional sensors ad-hoc or fixed

What are the smart container Use Cases?



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- Transportation Planning and
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Moisture
Shock; Dry
Weight
Cross-Border
Computing;
Structure monitoring; Additional
sensors ad-hoc or fixed

This also applies
to your network

Why adopt common global standards?



- Containers travel across global networks
- Global networks consist of large numbers of very diverse players
- **We need standards independent from solution provider, shipper, shipping line or any other stakeholder**
- Common unambiguous identification keys across players eliminate confusion and need for remarking
- Common standards for “marking” the ID Keys enable easily reading the ID Key from the smart container
- Common Data Sharing standards ensure
- **easy access to information for all relevant stakeholders to enable situational awareness and data driven decision making**



Global standards are a pre-condition to fully realizing benefits of Smart Containers

- Use the UN/CEFACT BRS when considering a smart container project
- Check UN/CEFACT and GS1 sites for further information on global standards that may be applicable in your project
- **Experts from global standards organizations are keen to help you design and implement your smart container projects**



For further enquiries

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