



Hanane BECHA, PhD in Computer Science
h.becha@TRAXENS.com

Smart Containers for better Borders Management
WCO IT 2018 Conference & Exhibition
6-8 June, Lima, Peru



2 Roles:

1- Innovation & Standards Senior Manager, TRAXENS

2- UN CEFAC T&L Domain Smart Containers Project Leader



UN/CEFACT



All the stakeholders of logistic chain might reap maximum benefits from the Smart Container Visibility!

Smart containers

- Taking the digital age of shipping one step further beyond paperless processes by embracing the Internet of Things (IoT) to support **enhanced decision-making by the various sectoral stakeholders**.
- How Importers and Exporters Benefit from Smart Containers?
<https://vimeo.com/155658816?autoplay=1> (video 2:43)
- Smart containers for Cross-borders agencies, namely customs !

Smart containers for Customs

Current situation

- Limited visibility
- Increased pressure to make decisions in short period of time,
- Continually growing volumes of traffic,
- Increasingly limited resources.

Opportunity: gain advantage from, and harness the power of real-time smart container data, to assist border clearance processes green lane implementations!

Advantages of Smart containers for Customs



- ✓ Enhanced revenue collection
- ✓ Better optimization of processes and human resources
- ✓ Enhanced Safety for agents: Hazardous conditions monitoring
- ✓ Auto-declarative containers: T1 form automation
- ✓ Reinforce the WCO Authorized Economical Operator (AEO) Requirements
- ✓ Real container data availability (i.e., based on physical sensors)
- ✓ Door-to-door Visibility: Route deviation alert, unscheduled stops, door opening

Perfect IoT solution

- Cost-effective solution enabling massive deployment
- No reverse logistics: Devices are permanently attached
- Secure reliable physical data
- Data governance respecting the competitiveness of all the stakeholders
- Easy integration with existing systems (Cloud platform and API)
- Trusted third party enabling sharing benefits and costs
- Convergence of physical, financial, documentary and legal flows.
- Standards to ensure interoperability
- Etc.

Smart Containers



Containers with added electronics

- Dry or reefer
- Permanently attached
- Built-in or back-fitted

A Smart Container knows a lot!

- Position
- Door Open/Close status
- Temperature
- Movement
- Impact
- + extensions
- Communicate near real-time from (nearly) anywhere
- Economically thanks to IoT technology



Sensors



Location



Motion



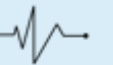
Door status



Temperature



Humidity



Vibration

***And many
more...***

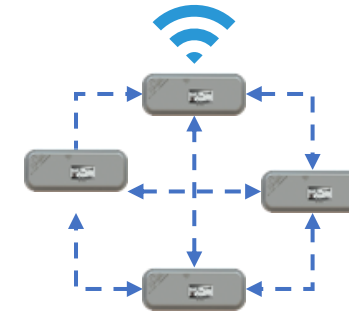
Technology is mature!



- The only visibility platform running in push-pull mode with Carriers Booking Orders
- Single window for in transit cargo visibility
- Adaptive to your needs → manage a single container to thousands or regular bookings
- Highly configurable, easy to use, and easy to integrate into your information systems

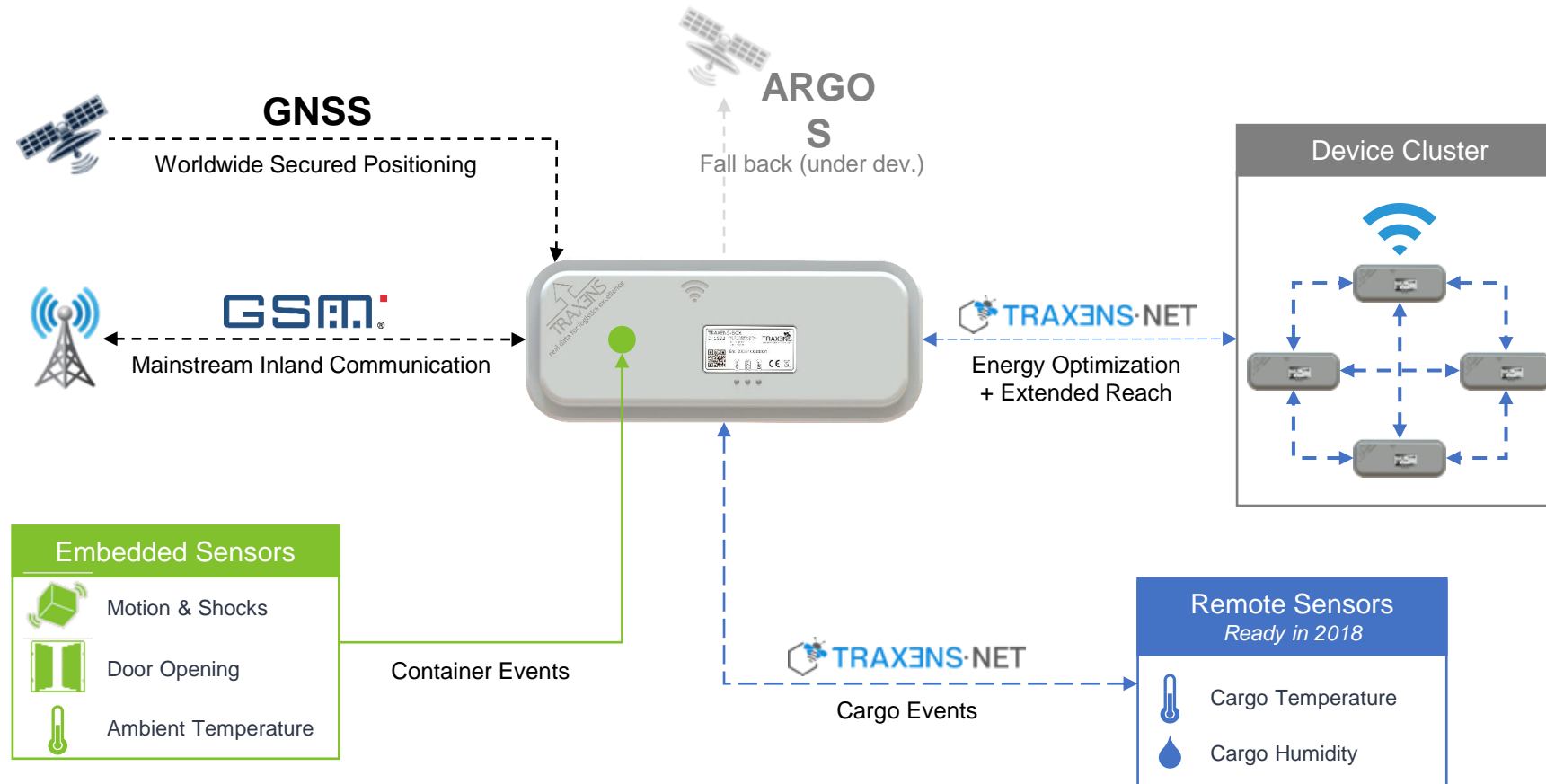


- No reverse logistics required → permanently attached to the container
- Lowest cost of ownership for high performance everywhere in the world
- Limitless range of remote sensors in addition to embedded technology
- One box for all kind of moving assets : Dry & Reefer Containers, Trailers, Wagons, etc.



- Smart self adaptive radio meshed network
- Global energy optimization
- Extended reach
- Bidirectional
- High bandwidth performance
- Cyphered communications

Reliable Real Data, Data Science, and Contextualization for high-value-added services



IoT connectivity offers the most economical solution by optimizing device battery life

WCO Conventions

Container Security Device (CSD)

- The Customs Convention on Containers, 1972: 39 contracting parties,
- The Convention on Temporary Admission done at Istanbul in 1990: 69 contracting parties
- The Convention on the A.T.A. Carnet for the Temporary Admission of Goods: 63 contracting parties
- Encourage the granting of temporary admission to accessories and equipment of and for temporarily admitted or not temporarily admitted containers, which are either imported with a container to be re-exported separately or with another container, or imported separately to be re-exported with a container.

Container Security Device (CSD)

- CSD shall be considered as part of the “**smart**” container
- The WCO Recommendation on CSDs was adopted in June 2013.
Acceptance by WCO Members of Recommendation on CSDs?
- CSD Validation
 - Process to obtain status of CSD
 - Recognition of CSDs by Customs Officers
- Simple and Tax-Free CSD management
 - Before & after assembly on containers
 - For maintenance / repair / analysis
 - Special temporary import conditions
 - Shipping Line or 3rd party ownership



UN CEFAC T&L Domain Smart Containers

UN/CEFACT

United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

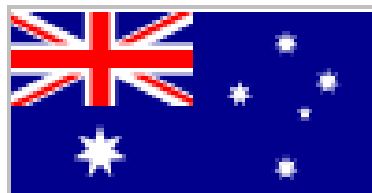
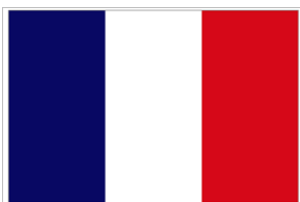
UN/CEFACT

Serves as the focal point for trade facilitation recommendations and electronic business standards, covering both commercial and government business processes that can foster growth in international trade and related services.

UN/CEFACT's goal is, "Simple, Transparent and Effective Processes for Global Commerce."

3 October 2017: UN/CEFACT is pleased to announce the launch of a project on [Smart Containers](#). This project will look at the business processes and potential data to be exchanged between smart containers and the rest of the supply chain actors, notably in view of expediting border clearance. If you are interest in joining this project, please contact the project lead, [Hanane Becha](#).

HOD SUPPORT



UN/CEFACT

UN/CEFACT Transport & Logistics Domain Smart Container Project

Goal: define smart container data elements (information) and the message structure

Smart Containers Project Deliverables:

- White paper
- Business Requirements Specification (BRS)
- Requirements Message Specification (RSM) and
- Standardized message structure based on the MMT Reference Data Model

Today 18 use cases are identified... **Fast Lane** one of the key use cases

Smart devices data to be shared with customs in support of decision making processes

Call for Participation

UN/CEFACT

UN/CEFACT is open to representatives of all UN Member States and all organisations recognized by the United Nations Economic and Social Council ([ECOSOC](#)).

UN/CEFACT deliverables are available to everyone, free of charge on the UN webpages.

Two forum meetings per year + interim meetings when deemed necessary
Monthly conference call for Smart Container Project

In order to participate in UN/CEFACT meeting fill out the expert registration form at:
<https://uncefact.unece.org/display/uncefactpublic/UNCEFACT+Expert+Registration>

No obligations to participate and no fees involved, but acceptance of the UN/CEFACT Code of Conduct and IPR policy

- Governments
- Private companies
- Intergovernmental organizations
- Industry associations (representing large collective groups of private-sector companies)
- Academia



Thanks,
Hanane BECHA
h.becha@TRAXENS.com