New Project Proposal

Container Tracking and Monitoring Device as a Fast Lane Enabler

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The Coming of Age of Smart Containers

- What exactly are they?
- Why now?
- What for?
- How are they used?
- How do they work?
- How will they change the way we do Business?
Smart Container

- Automatically generate data
  - Position
  - Door Open/Close status
  - Temperature
  - Movement
  - Impact
  - + extensions
- Communicate near real-time
  - From (nearly) anywhere
  - Economically
- Permanently attached
- Built-in or back-fitted
Why Now?
A | Early Containerships (1956-) 500 - 800 TEU
   Fully Cellular (1970-) 1,000 - 2,500 TEU

B | Panamax (1980-) 3,000 - 3,400 TEU
   Panamax Max (1985-) 3,400 - 4,500 TEU

C | Post Panamax (1988-) 4,000 - 5,000 TEU
   Post Panamax Plus (2000-) 6,000 - 8,000 TEU

D | New Panamax (2014-) 12,500 TEU

E | Post New Panamax (2006-) 15,000 TEU
   Triple E (2013-) 18,000 TEU
Development of container ship size

Source: The International Transport Forum
George Youroukos, CEO of Athens-based containership owner Poseidon Containers has said cost savings are not being offered by the mega-ships that are being ordered and deployed and that economies of scale are not being realised, according to the Journal of Commerce.
The Missing Link in the Digitalization of the Supply Chain

Awareness of the value of digital in logistics/SC/Transport
Smart Container Deployment Forecast (Millions)
What for?
Alerts & Notifications

- Significant events
  - Arrival at warehouse
  - >1 hour stop on truck
  - Door open
  - >8°C
  - Running late
  - Etc.

- Delivered to the right person at the right time
  - Web interface
  - Email
  - SMS
Dashboard (Per trip + All trips)

Journey Duration

Activity Split

Road Pre  POL  Ship  POD  Road Post  Ramp  Rail Post

Not Moving  Moving
How will they transform the way we do business?
Smart Container as a Data Sharing Enabler

- Smart containers offer an **end-to-end visibility of shipment execution**

**Stakeholders:** shipping lines, freight forwarders, Beneficial Cargo Owners, cross-border agencies and port authorities, etc.

- Smart containers are capable of sensing and communicating real time information for multimodal transport and logistics improvement.

- What could containers tell us about their **planned trip** versus their **real journey**, their surrounding **physical parameters** and all their related **declarations and certificates**, and what could the benefits be?
Cross-Border Agencies

- Cross-border agencies include:
  - Plant and veterinary agencies,
  - Hazardous, pharmaceutical and illegal goods control,
  - Customs and regulatory authorities

- Cross-border agencies face increased pressure to make decisions in short period of time, continually growing volumes of traffic and with increasingly limited resources.

- Cross-border agencies could gain advantage from, and harness the power of real-time smart container data, to assist border clearance processes Fast Lane implementations etc.
The aim of the project

What Data to be shared:

⇒ Define the information that can support the decision making process of the cross-border agencies: open door detection, physical parameters monitoring and documents sharing (secure element)

How can data support the cross border agencies processes:

⇒ “reality” versus “declarations” matching (Provenance traceability), transport quality and integrity, transit time, security breach, cold chain (Reefer alerts), dangerous goods management, etc.
What is the Role of the UN/CEFACT T&L Domain?

- Capture the Business Requirements Specification (BRS) of the exchanges between smart containers and cross-border agencies.

- Develop a Requirements Message Specification (RSM) and standardized message(s) structures based on the MMT Reference Data Model.

The project deliverables are:
- Business Requirements Specifications (BRS) as defined during the business requirements gathering
- Requirements Message Specification (RSM)
- EDIFACT messages (to be defined or updated)
- XML schema of the required messages
Initial Contributions

- T&L's Multi-Modal Transport Reference Data Model (project p1023)
- BRS IFTM International Forwarding and Transport
- UN/CEFACT Modelling Methodology (CEFACT/TMG/N093)
- UN/CEFACT ebXML Core Components Technical Specification Version 2.01
- UN/EDIFACT Data element directory D.16A
- Recommendations from ITIGG ((International Transport Implementation Guidelines Group)
- Guide to the UN/EDIFACT containers messages (SMDG/TBG3/ITIGG)
- UN EDIFACT messages: IFTSTA and IFTSTQ
- BRS and RSM Cargo Tracing and Tracking
Thank You

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