SEVENTH FRAMEWORK PROGRAMME
THEME 7
Transport including Aeronautics

SMART-CM
SMART Container Chain Management

A win-win situation between global logistics industry and customs to forge a strong commitment for intermodal door-to-door container transport

1. Publishable Summary

SMART-CM aims to advance technology implementation and research in order the global container door-to-door transport chains become more efficient, secure and competitive. The work focuses on the development, demonstration and the after project robustness and operation of the "SMART-CM platform" which will support secured and non biased critical information exchange among actors of the global logistic chains (B2B) and between the logistics actors and the Customs authorities (B2C) for achieving quick customs clearance of the containers and better chain visibility and control by the logistics actors.

The goal of the first 18 months of the project was to develop the core functionalities of the platform and make proof of three main project concepts:

- "Interoperable Single Window platform solution" enabling all logistics actors and customs authorities to monitor the container security status independently of the Container Security Device (CSD) technology applied in a trade lane. No bias towards specific CSD technology providers & No bias towards customs or businesses.
- "Neutral information administering organization" Managing the platform, guaranteeing data integrity along the whole process of security related container info gathering and provisioning information from the platform to the stakeholders.
- "Industry Added Value creation" on the basis of the information the technology and the trusted environment of a neutral platform enable to be made available in order to create direct business benefit. Thus the "burden" of the security regulation compliance may be transformed to an added value for the transport industry.

During the first 18 Months the project main achievements may be summarized as following:

1. Common understanding & trusted environment build among actors of different sectors.

- Customs authorities & transport & logistics industrial actors reached an agreement on common and sector specific requirements for the platform core functionality & information administration process.
- In the very competing and fragmented environment of global transport, big actors achieved minimum consensus on information sharing and cooperation during project solutions implementation.
- The CSD technology providers and the platform solution providers agreed on platform design specifications & CSD technology enhancement for efficiently addressing the business and the customs requirements.

2. Project Technology development was made operationally available.

- The interoperable Single Window Platform (Neutral layer of SMART-CM platform abstract architecture) reached its 3rd software release and was made available to actors for validation in real world environment.
- Container authorised opening service was specified, developed and tested by the customs.
- Logistics visibility layer of the platform and 6 Added Value Services (VAS) was specified, developed & made available for validation through simulation by the industrial actors.

They mainly deal with the monitor of the chain execution against initial plan and the provision of customised, by industrial actors, notifications & alerts on deviations. (Container ETA update/Container prior-to-arrival notification/Container delay alert generation/Container idle time alert at terminals/ Container geo-fencing alerts on regions/ E-mail notification alert handling for all VAS)

- CSD technology functionality, sensors, power and communication infrastructure was enhanced and its 2nd release was tested in real world demonstrations. New generation devices are expected to be tested during the last phase of the project.
- Two Advanced Added Value Services, stimulating the research dimension of the project, were specified & confirmed regarding their feasibility for full operation in the future. They will reach the level of a prototype development and validation through simulation within the project life cycle. Entitled "Strategic routing scenario planning" & "Dynamic intermodal (re)routing of containers" they guarantee that the SMART-CM work efficiently takes into account the state of the art technological research performed in other projects and could act in the future as new technology/solutions enabler.
- Platform information exchange interfaces with additional sources of information (such as Vessel trackers), Customs, 3PL, Shipping lines & terminal operators Internal systems and other service platforms were studied in detail also considering current applied or proposed standards by competent organisations. First level specification of information exchange protocols was achieved and in some cases implemented. In the next project phase finalization of this activity is expected also in line with the CEN standardisation workshop the project will initiate.

3. **The Project solutions were demonstrated in real world environment**

- Two phase of demonstration activities were concluded in this period. The first for actors' familiarization to the basic project technology and early validation of basic platform functionalities. The second for proving the full operation of the Interoperability Single window platform.
- The project issued a call to external CSD providers who would like to test their technologies. From the companies expressed their interests two have been selected for participating in real global demonstration corridor. Together with the project partner EDC (Belgium -EU), the new comers RAYTHON (USA) & CIMC (China) completed a good representation of the CSD technology providers around the globe contributing to project solutions development.
- The demonstration corridors operated by the project partners DHL, K&N, COSCON involved major ports around the globe: Antwerp, Rotterdam, Singapore, Ningbo, Dubai, Nhava Sheva (India).
- The results of the real world tests concluded already a concrete project outcome towards industry: "List of Key performance indicators of CSDs for security". Minimum requirements the CSD technology providers should fulfil in order to meet the customs and industry actors expectations for container security.

4. **The project supported the Green Lane Concept implementation for secured Trade Lanes.**

- The in depth analysis of the processes involved to the project technology implementation, highlighted the need for process standardization among customs (i.e. authorized opening of containers). SMART-CM proposal for standardized process and

technological supporting solution is now available with testing results for being further discussed among customs during the next phase of the project.

- The demonstration activities created the basis for direct interface between EU & non EU customs involved in the corridors & enabled the detailed discussions on the concept implementation. A minimum agreement list on mutual recognition was developed that will constitute the basis for the involvement of the non EU customs in the project demonstration & evaluation activities in the next project phase.

5. **The Neutral Organization mission and business model was defined on the basis of project** partner's justifications and input from selected limited number of external stakeholders. During the next period the marketing of the Organization & the enhancement of business model will be performed.

6. **Cooperation with other projects**

- The clustering activities with INTEGRITY was performed successfully and leaded to Common deliverables (State of the art analysis, common requirements, common evaluation framework, Platforms' interoperability concept, activity on common demonstrator specification was also launched) and good level of cooperation among the two consortia.
- The SMART-CM & INTEGRITY Joint Advisory Board performed its first assembly and provided valuable input to both projects regarding solutions' objectives and current initiatives.
- The project organized in common with EURIDICE, INTEGRITY & FREIGHWISE the 2nd conference on ICT implementation in logistics and launched permanent dialog with the technology providers and the industrial actors of these projects. SMART-CM migrated outcomes of these projects to the internal activities for standards implementation and advanced added value services specification from this cooperation.

The next project phase activities will focus on:
- Expanding the "single window" approach of the project by developing and demonstrating a new platform service entitled "ICS SEAP". The service will offer the carriers the possibility to create one ENS declaration and to send it to the different involved EU customs in the required format (according to national specs) and communication channel. With the integration of the Neutral Layer and Porthus.net ICS SEAP solution, Smart-CM becomes a spear point project that gives a better answer to the current EU Customs regulations.
- Demonstrating all platform services in the third phase demonstration to global; chains with the direct involvement of consignees, road/rail operators & customs in the global chains
- Assessing the impact of the SMART-CM to business and security
- Marketing the Neutral Organization
- SMART-CM Standardization proposal consolidation through CEN-Workshop execution
- Defining the exploitation potential of each SMART-CM platform component.
- Substantiating dissemination activities to make project solutions know and widely assessed.