



SEVENTH FRAMEWORK PROGRAMME THEME 7 Transport including Aeronautics



Multi vendor selection

Project acronym: **SMART-CM**
Project full title: **SMART Container Chain Management**

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Revision History

Version No.	Date	Details
1.0.0	23/11/09	First draft after internal review
1.0.1	12/10/10	Processed results of review

List of abbreviations

- CSD Container security device
- GUI Graphical User Interface
- RFID Radio frequency identification
- STL Secure trade lane

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1 Executive summary

This document reports on the selection of additional CSD providers used to demonstrate their technology in the Smart-CM demonstrators. It also reports on the outcome of this selection process. Besides project partner EDC, the two selected providers are Raytheon/SPC and CIMC.

2 Input information

We make reference to the following documents:

- **PROJ-EC7SEC-RE-D2_3_2 Reference manual for container security devices-E1:**
An overview of CSD technologies identified with their main characteristics.
- **SMART-WP9-Agenda of CSD providers meeting 160709:**
The agenda for the CSD providers meeting held 16th July 2009
- **SMART-WP9-Minutes of CSD providers meeting 160709:**
The agenda for the CSD providers meeting held 16th July 2009
- **Letter to selected external CSD providers dd 6-10-2009:**
Letter in which selected CSD providers are invited to acts as 2nd and 3rd provider of CSD devices
- **Letter from Raytheon dd 20-11-2009:**
Letter from Raytheon confirming their commitment to the project

3 Selection process

The selection process followed the following steps:

- 1) Based on the reference model for container security devices (deliverable D2.3.2), two CSD providers or CSD service providers were selected based on the maturity of their offering. These were SPC (distributed and integrated by Raytheon) and Impeva (distributed and integrated by Arviem).
- 2) An additional CSD provider was selected who has been active in a previous demonstration project between China and the EU, involving close cooperation with Chinese customs authorities. This was CIMC.
- 3) These three CSD providers were invited in a CSD providers workshop held 16th July 2009 at the offices of EIA in Brussels. Of these three, two CSD providers were able and willing to attend the workshops: Raython/SPC and CIMC. The following people attended that workshop:

No	Partner	Name	Initials	Role
1	HIT	Mrs. Georgia Aifadopoulou	GA	Project coordinator
2	DHL	Mr. David Block	AB	Technical manager
3	K+N	Mrs. Alexandra Mayr	AM	Quality manager
4	Porthus	Mr. Jean Verheyen	JV	
5	Porthus	Mr. Bernard van Hoorde	BVH	
6	EIA	Mr. Peter Wolters	PW	
7	Raytheon	Mr. Powell e.a.	P	
8	CIMC	Mr. He Zhenwei	HZ	
9	ICSO	Mr. Frank Knoors	FK	

Both providers were granted half a day to address the following issues:

Date		
Time	Topic	Presenter
9:00-11:00	Presentation of CIMC technology: 1) Short introduction of the project and how we aim to involve additional CSD providers 2) Presentation of the technology & services offered by the CSD provider* 3) Discussion on further collaboration	CIMS Mr. Zhenwei (no participation by Raytheon/Siemens)
11:00-13:00	Presentation of Raytheon/SPC technology: 1) Short introduction of the project and how we aim to involve additional CSD providers 2) Presentation of the technology & services offered by the CSD provider* 3) Discussion on further collaboration	Raytheon Mr. Powell (no participation by CIMC)

- 4) As a preparation to the workshop, the CSD providers were asked to address a number of questions that were identified by the industrial partners. See «Appendix: Questions for clarification by CSD providers». Further clarification of some of these issues was given during the workshop. Both CSD providers have afterwards issued their presentations and a user guide to the participants of the workshop, and these were included in the workshop (sub)website. Both CSD providers indicated that they could supply a limited number of devices (5-10) at very limited costs, only covering for some operational expenses – not for the depreciation of the devices themselves.
- 5) The conclusion after the workshop, formalized in a subsequent steering group meeting, was that both of these CSD providers should be invited to provide their technologies for use in the 2nd phase demonstrator. Summarized the basis for this selection was as follows:
 - The Raytheon/SPC technology was satellite based and seemed to be relatively matured.
 - The CIMC technology was RFID based and, even though this could exhibit some shortcomings in supporting STLs based on the fundamental characteristics of this technology, it was considered as beneficial to directly compare both alternatives – satellite versus RFID.
 - As a result the three technologies used (EDC from EU, Raytheon/SPC from US, CIMC from China) would reflect public and private requirements met in their respective home markets.
- 6) A formal invitation letter dd 6th October 2009 was sent to them in which these selected CSD providers were invited to act as 2nd and 3rd provider of CSD devices in the Smart-CM project.
- 7) Both CSD providers subsequently indicated that they were willing to participate in the 2nd phase demonstrator.
- 8) On 19th October the preparation and planning activities began for involving these CSD providers in the 2nd phase demonstrator (starting 2nd November). Project partner Sequoyah NV was assigned as single point of contact between the consortium and the CSD providers during this preparatory phase. This is being reported in deliverable D2.3.4 «Installation plan».

4 Open issues

The lead partner needs to finalize the contractual matters with these additional CSD providers. Raytheon did send a formal letter 20th November (while already engaged in activities for the 2nd phase demonstrator) expressing their commitment to the project and stating some conditions that they would like to see resolved as part of the mentioned contractual arrangement.

5 Appendix: Questions for clarification by CSD providers¹

5.1 Functional/performance requirements

Is support given for 6 identified security events (Activation, Update, Authorised opening, Breach, Close, Deactivate).

Support for security and logistics information within status message.

Support for authorized opening and authorized closing.

Support required identifiers: STL id, container nr, geolocation.

Test platform available.

Device must be able to be mounted securely to container doors (both for general and reefer containers).

Battery life with deployment in the field of at least 100 days (with minimum 5 'messages' a day).

Activation of device can be performed remotely via web platform (i.e. no hand-held device required).

Device must have functionality options of sensory conditions (temperature, humidity and shock) in addition to location and security.

Alert parameters for monitoring temperature, humidity and shock can be set remotely via web platform (i.e. no hand-held device required).

Support for authorized opening and authorized closing (by Customs for e.g.) to be performed remotely via web site (i.e. no hand-held device required).

Full set of paperwork (telecommunications licenses, certificate of origin with full product/harmonised codes, etc.) to support Customs declaration worldwide.

CSD provider's platform to have fully-functional GUI that can set-up email notifications of trips started/ended, exception alerts, etc.

CSD provider's platform to have fully-functional reporting tools.

¹ These questions were answered in three ways: Informally during the presentations in the workshops, through provision of standard product documentation and, sometimes, specific responses to the questionnaires. However in the latter case informal clarifications were often required afterwards.

5.2 Other questions

Can additional fields be added in the CSD status messages in a flexible way to provide e.g. additional logistics information.

Overview of communication mechanism (satellite, GPS, intercommunication of devices,...).

Transmission mechanism (retry mechanism in case of no network coverage, sleep/waking up of device).

Use of failsafe detectors.

Demo of device registration application.

When and how many devices will be ready for trial deployments coming 1 Sep?

How many devices have been tested and deployed in the Ocean freight industry today?

Solution for device communication even for containers stowed below deck?

Ability for device to utilize or switch between satellite and GSM communication networks?

Ability for device to be set-up to communicate more messages on land versus on sea.

Who to bear costs of forward and reverse logistics of CSDs during Smart-CM trials?