

RFID in the Port of Göteborg:

Railcars and SECU in the NETSS concept. (StoraEnso)

Gate security in the Oil terminal

AIS

Trailer identification in the Ro/Ro-terminal; Chalmers. 2 studies

Smart Seals – Pre Study 2004

Secure Trade Lanes – Project with IBM and others

World Shipping Council

Us Dept of Homeland Security



RFID in the Port of Göteborg

- Focus:
- Intermodal and international transport of unitised cargo!

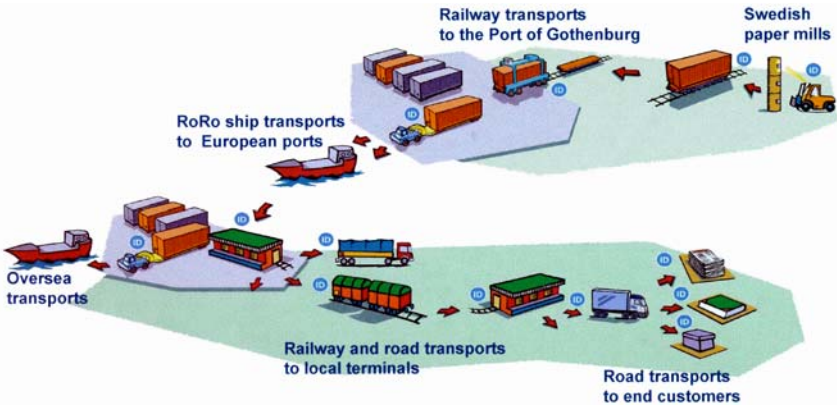


The SECU box



THE PORT OF SCANDINAVIA

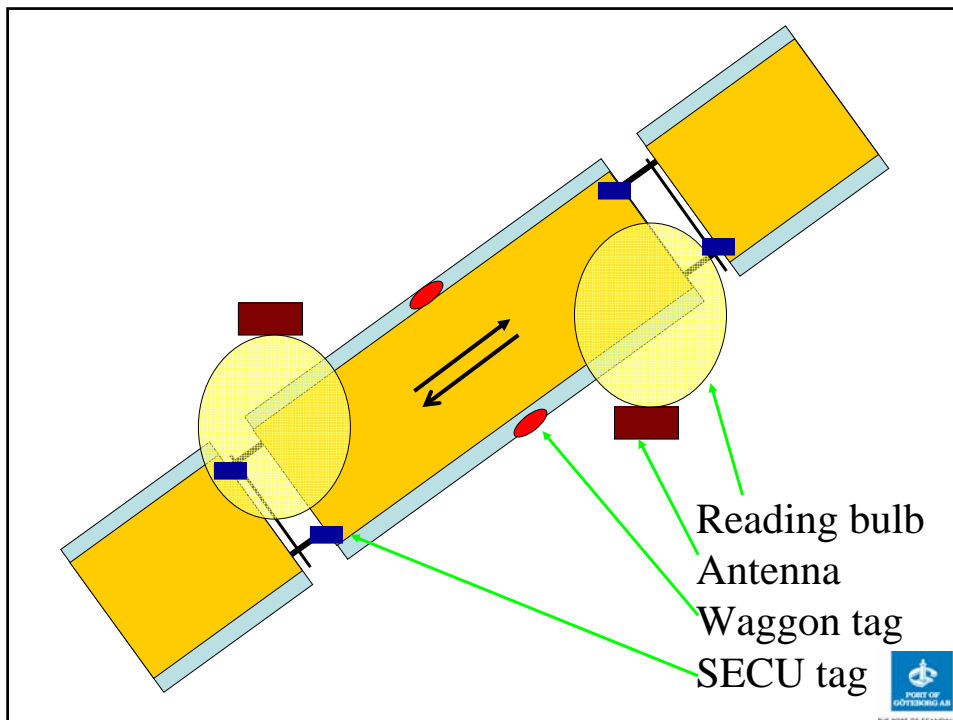
StoraEnso – the baseport concept



THE PORT OF SCANDINAVIA

Purpose

- Provide the customer with information about incoming and outgoing SECU-boxes and waggons.
 - SECU id
 - Waggon id
 - In/out
 - Date
 - Time



The Normal Case

```
:1:SEPL1000622D..
:2:317445510884..
:1:317445510447..
:2:SEPL1001059...
:1:SEPL1000793D..
:2:317445510447..
:1:317445511056..
:2:SEPL1000622...
:1:SEPL1001228D..
:2:317445511056..
```

Previous waggon
& SECU

Next waggon
& SECU



Problems

- Missing or broken Tags
- Tags with the wrong information
- Tags read by both antennas simultaneously
- Train reverses without tags being read by antenna no. 2.
- ...

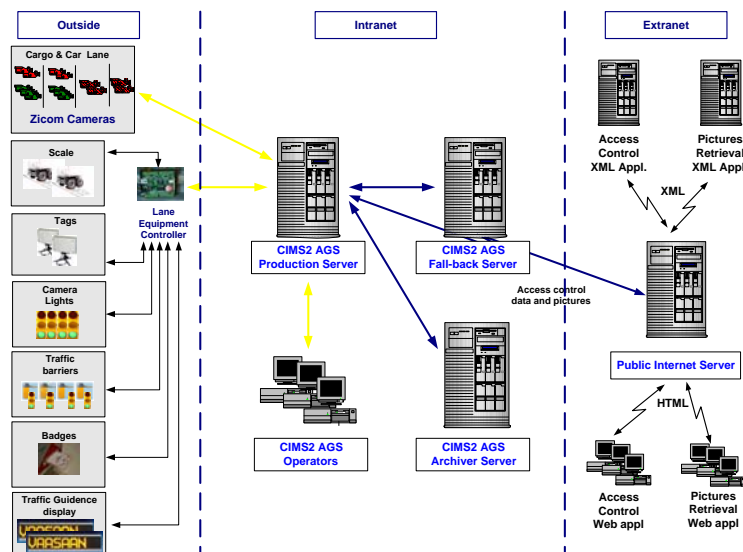


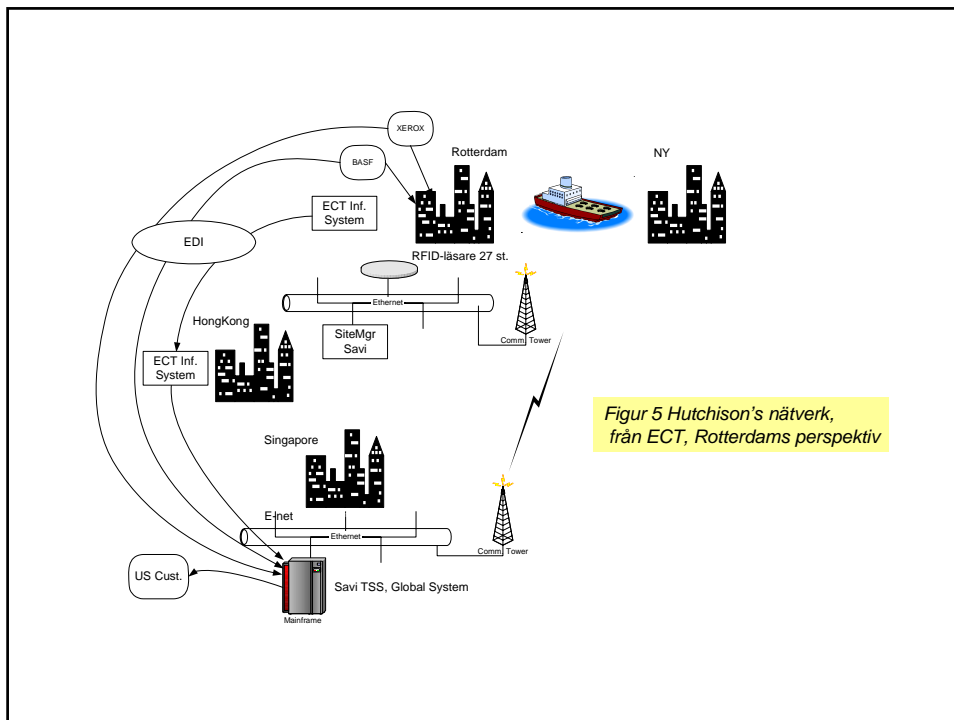
20 possible cases

- Correct recorded waggon and SECU
- Correct recorded empty waggon
- Railcar with SECU with waggon tags missing or broken
- 6 cases where two tags are missing or broken
- 4 cases where one tag is missing or broken
- 4 cases where one tag has the wrong information
- 2 cases where one SECU tag is read by both antennas
- Train reverses before both antennas have read all tags on waggon and SECU



CIMS2 AGS Architecture





ISO standards

- ISO 10374 Permanent Container Tag
- ISO 17363 e-Seal Supply Chain Tag
- ISO 18185 e-Seal Shipping-Line Tag

ISO 10374 Permanent Container Tag

Tag to be fixed on:

- All existing containers W.W.
- New built containers

Tag is a RFID readable Tag: 433 mhZ

ISO 17363 e-Seal Supply Chain Tag

- Frequency 433 mhZ
- Will be used for the total supply chain, from shipper/manufacturer to receiver of the goods/container

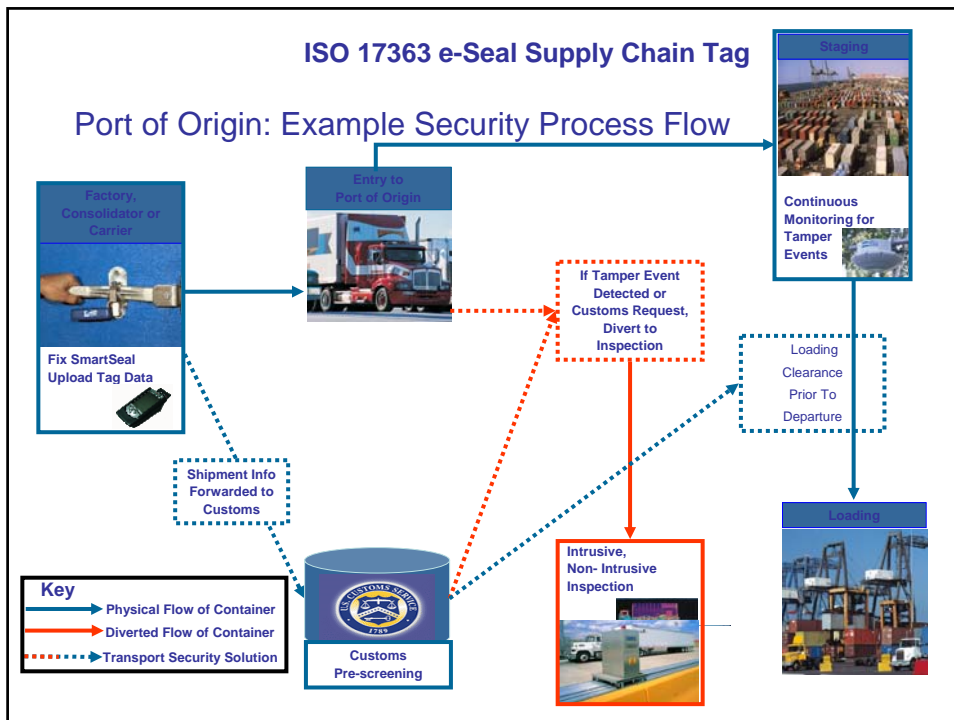
RFID in transport

- 3 types of tags
- 1 frequency 433.92 mHz
 - » =
 - 1 reader

RFID in transport

World Shipping Council will ask for:

- Gate-in and gate-out confirmation
- Based on ISO 10374 and ISO 18185



Homeland Security

Advanced Container Security Device
Broad Agency Announcement 04-06
(BAA04-06)

Department of Homeland Security
Homeland Security Advanced Research Projects Agency (HSARPA)
May 7, 2004

For Questions Regarding This Solicitation:
BAA04-06@dhs.gov



Schedule

The schedule and periods of effort given are considered the maximum times allowed for development and initial fielding of systems for test and evaluation. Accelerated efforts, that compress the time schedule to prototype field testing will be considered consistent with the development objectives and requirements. With that caveat, the schedule and approximate milestone dates are as follows:

Phase I

Kick-off	September 2004
System Requirements Review (SRR)	October 2004
System Architecture Review (SAR)	December 2004
Preliminary Design Review (PDR)	February 2005

Phase II

Award	March 2005
Critical Design Review (CDR)	April 2005
Prototype Testing Review	September 2005
Test and Evaluation Review	February 2006

Phase III

Award	March 2006
Final Report	March 2007