

Tracking and Tracing of Dangerous Goods in the Medical Sector



IAP - Project



DG-TRAC

Tracking & Tracing of
Dangerous Goods
in the Medical Sector



- HITEC Luxembourg (prime contractor)
- Subcontractors
 - EPT Luxembourg
 - SnT, University of Luxembourg
 - CRP Henri Tudor
 - CTIE
 - T&E Gefahrgutlogistik



APSIA

Applied Security
and Information
Assurance



SnT – Security Reliability and Trust

Industrial
Partnership-Progr.

Interdisciplinary
Research Program

Doctoral Program

Enterprise Security

Services and Content

Communication and Network Infrastructures



SVV

Software
Validation and
Verification



A & C

Automation
and Control



NETLAB

Networking
Laboratory



RNES

Reliable
Networked
Energy
Systems



SERVAL

Security and
Validation of
Services and
Networks



SIGCOM

Signal
Processing &
Satellite
Communications

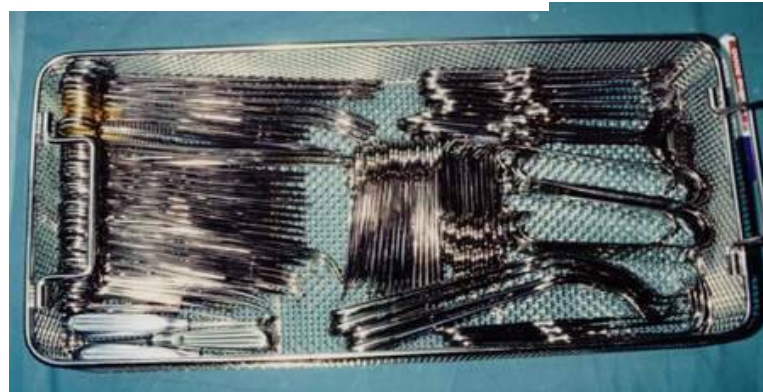
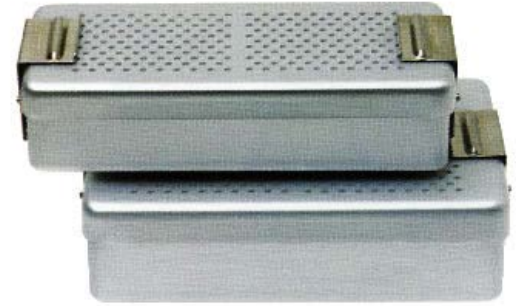
+ Faculty Research Groups

DG-Trac:

Tracking and Tracing of Dangerous Goods in the medical sector

- ESA feasibility study (12 months duration)
Started February 2012
 - user requirements, user interfaces etc.
 - financial viability via business case
 - creation of a proof of concept
- Project End: March, 31st, 2013
- Follow-up demonstration project with field trial(s) in prep.
Klinikum Region Hannover - Germany
NOVARTIS – Basel/Marburg – Germany/ Switzerland

Transport of Surgical Instruments



- More and more dangerous goods transports in the medical sector
- Centralisation of Services e.g.
 - Central Laboratories
 - Central Sterilisation
- Consequences
 - Potentially Infectious blood samples transported between hospitals and laboratories
 - Used surgical instruments transported between hospitals and Sterilisation Centre

UN Regulation:

ADR 2013 – (“Accord européen relatif au transport international des marchandises dangereuses par route”)

ADR provides rules how to

- to classify DGs
- to pack DGs for transport purposes and
- to label DGs

E.g. UN2814

the substance may inflict permanent hazards to the health of a person/animal (i.e. a disability) or a potentially fatal disease in case of contact

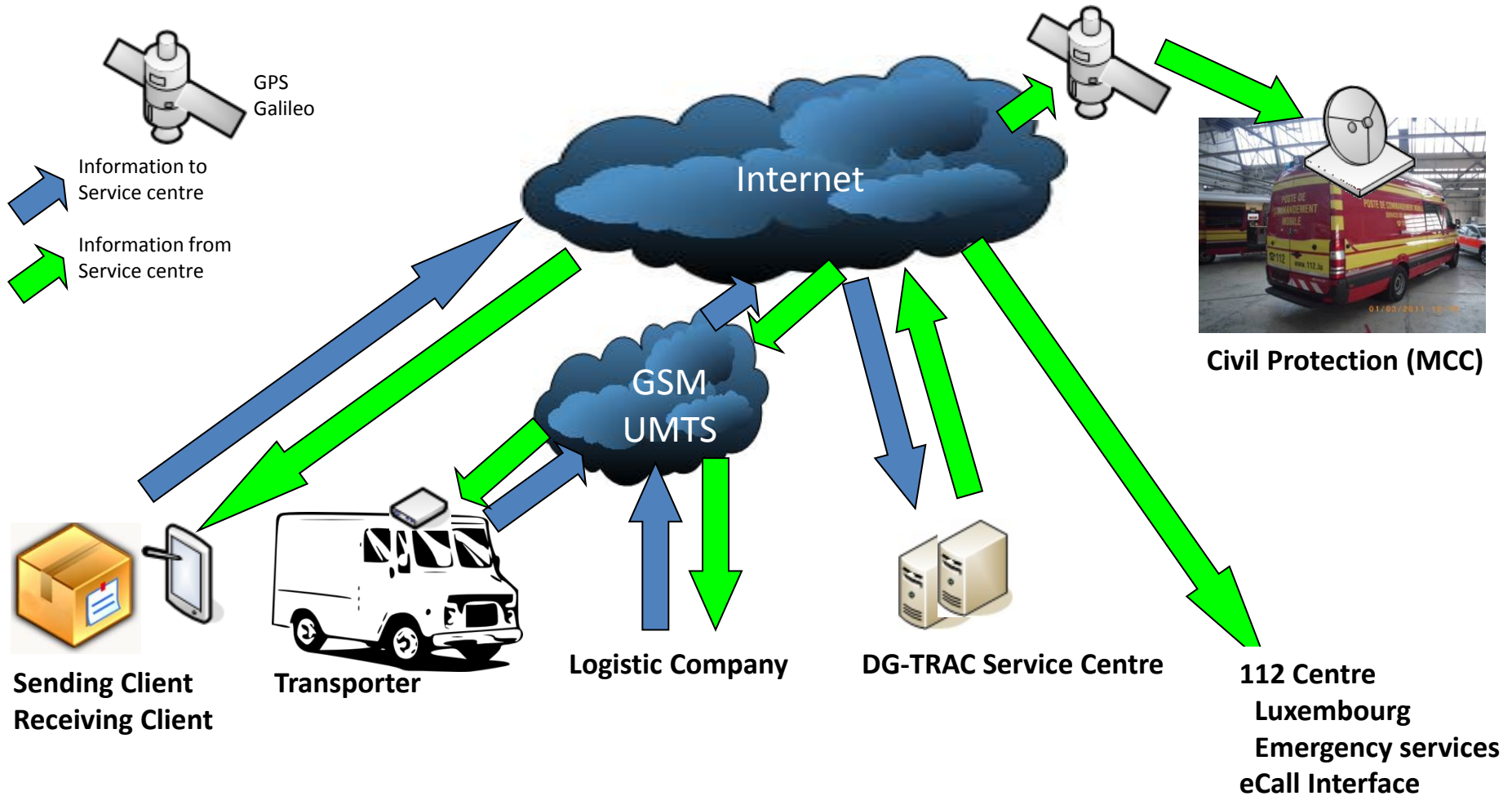
Important rules from ADR:

- The **sender** of a dangerous goods transport is responsible that the transport is executed in conformance with the legal requirements
- All **personnel** handling the dangerous goods and those involved in the transport have to be trained and certified how to handle the specific dangerous goods

- The DG-TRAC Service shall:
 - ensure and document all steps of a dangerous goods transport by tracking that the transport is executed in conformance with the legal rules
 - allow public safety services to access the transport location and documentation in the case of an incident
 - support the automatic alerting of the 112 centre in the case of an accident and access to location information in mobile command centers. (eCall support)

- The DG-TRAC Service offers a:
 - Continuous real-time tracking of the dangerous good from the sender to the receiver
 - Provision of all necessary information how to handle dangerous goods
 - Check of the certifications of all involved persons
 - Secured Hand-over (with legally proven electronic signatures)

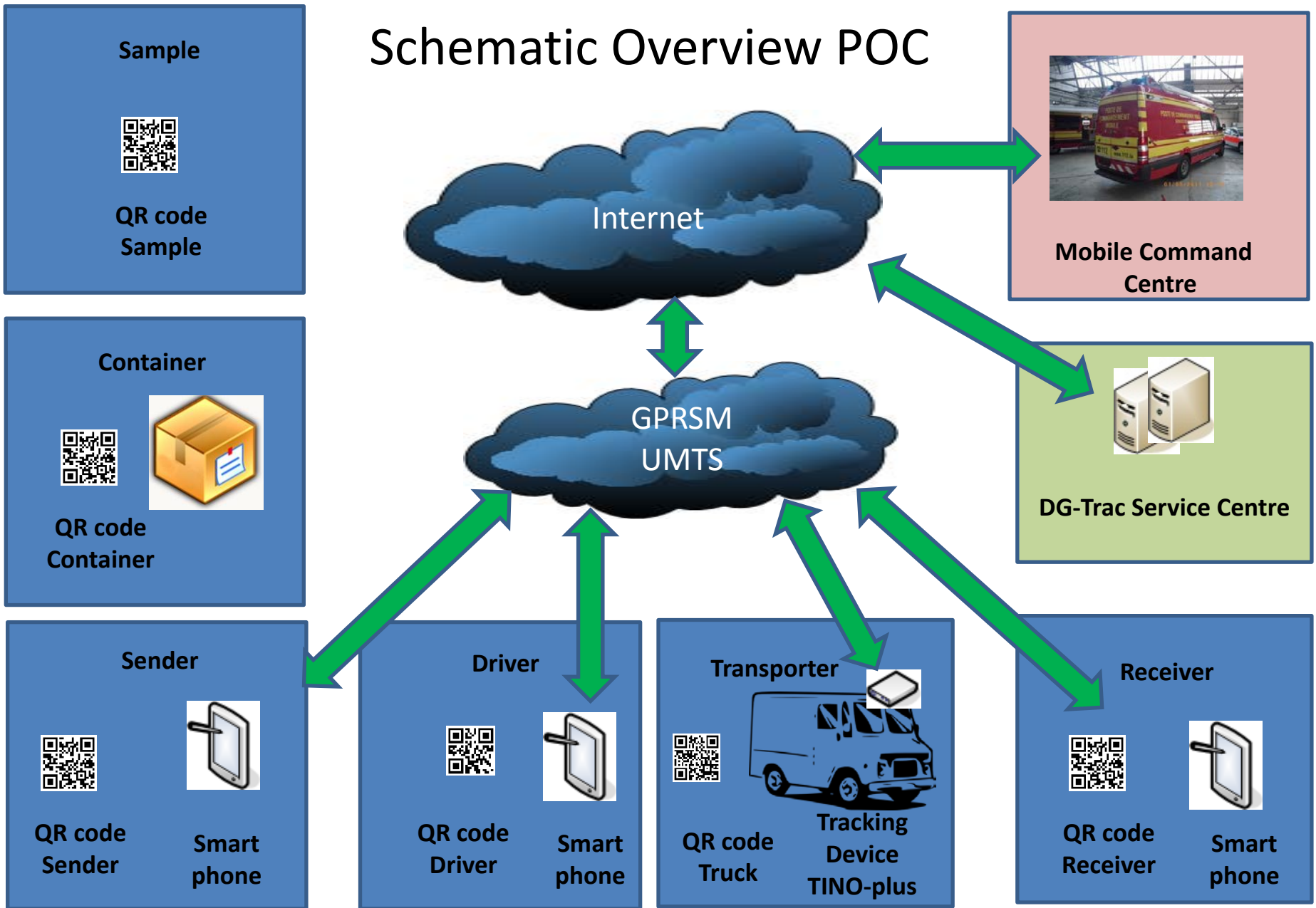
- Creation of all necessary transport documentation in electronic form or for printing and a final reporting
- Access to transport information for public safety services in case of an incident
- Conformance to data privacy and security rules
- Interfaces for public safety services (eCall support)

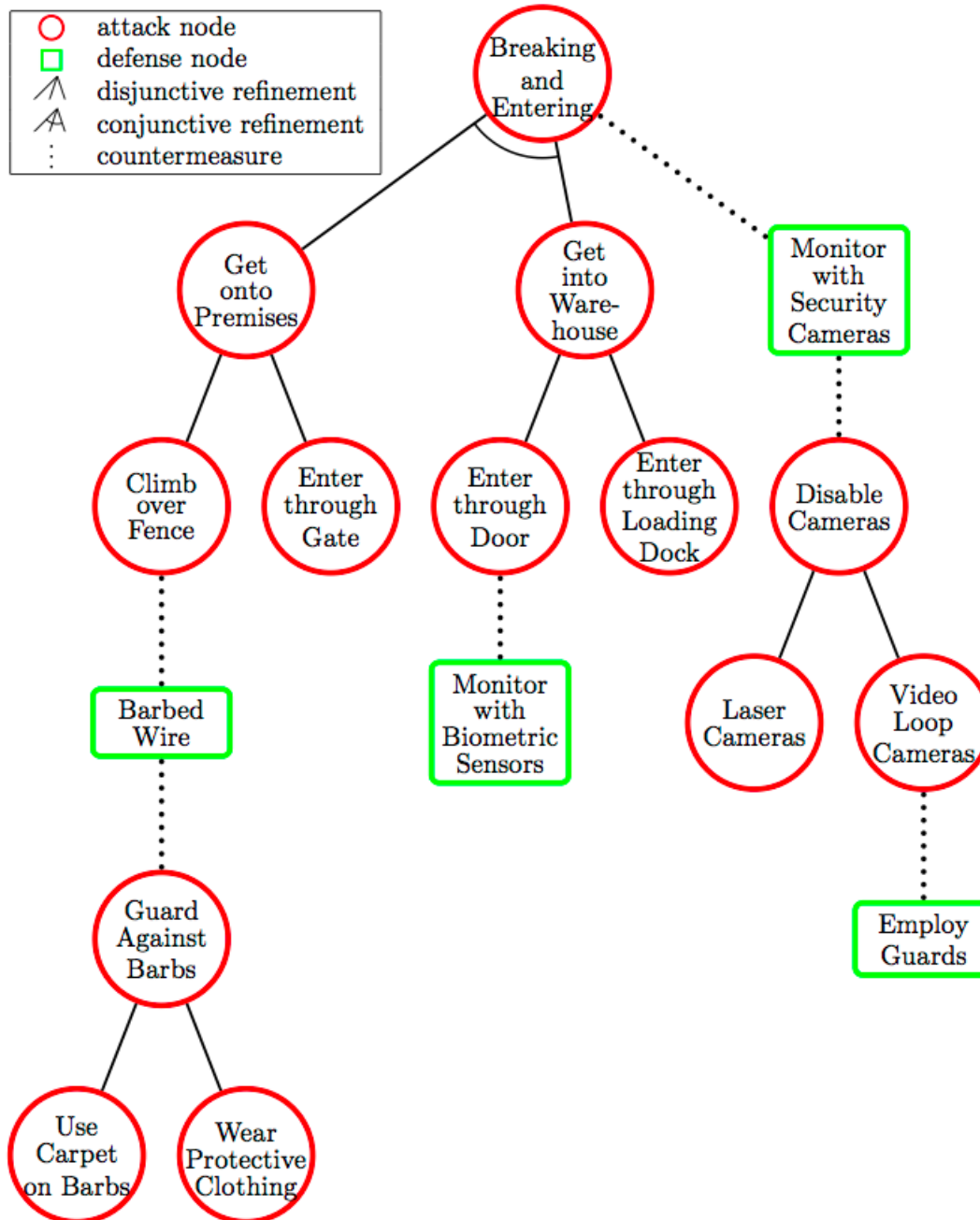


Mobile Command Centre

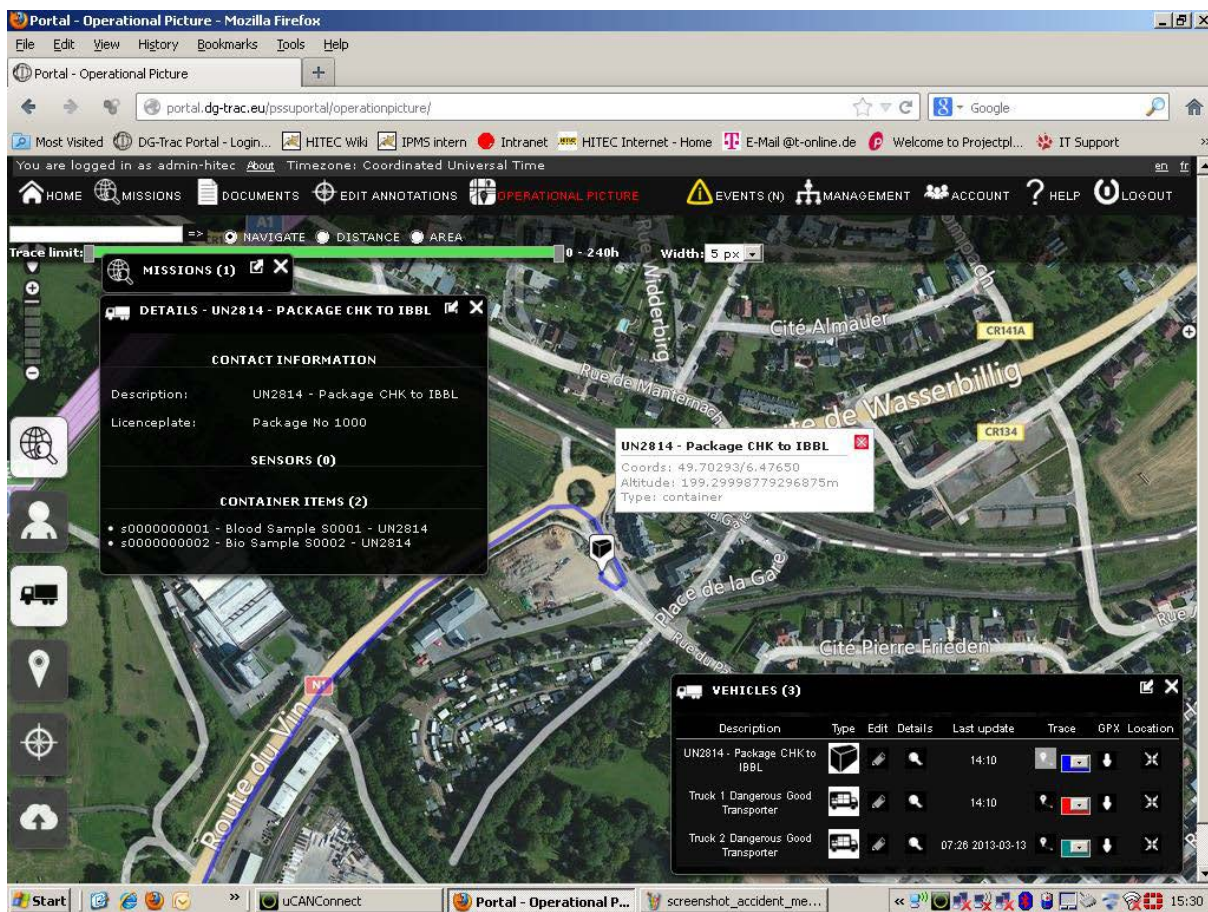


Schematic Overview POC





Mobile Command Centre Screenshot PoC



Portal - Operational Picture - Mozilla Firefox

portal.dg-trac.eu/pssupportal/operationpicture/

You are logged in as admin-hitec

MISSIONS (1)

DETAILS - UN2814 - PACKAGE CHK to IBBL

CONTACT INFORMATION

Description: UN2814 - Package CHK to IBBL
Licenceplate: Package No 1000

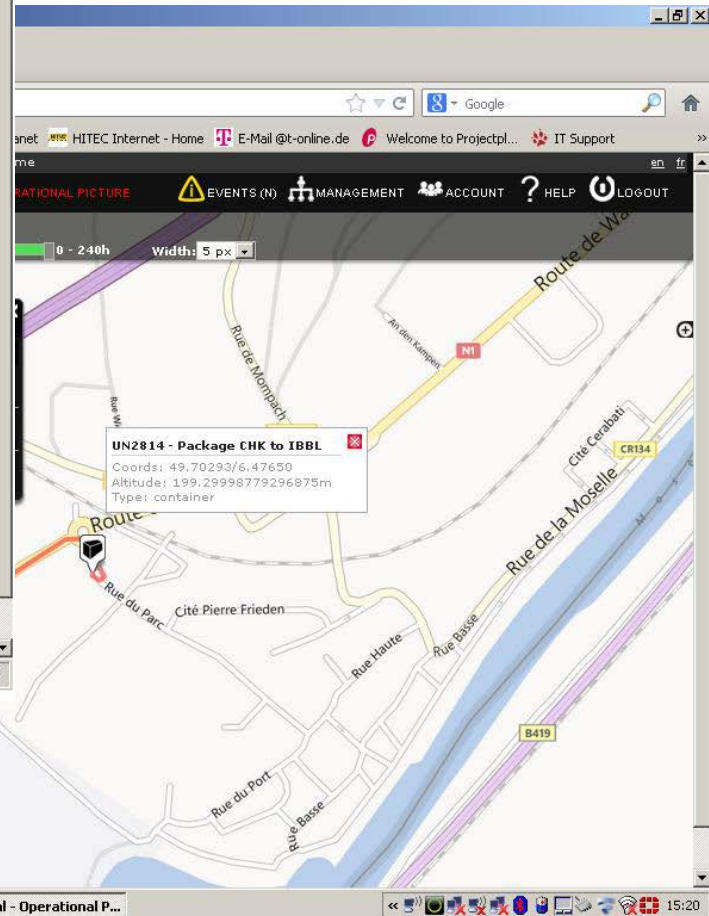
SENSORS (0)

CONTAINER ITEMS (2)

- s0000000001 - Blood Sample S0001 - UN2814
- s0000000002 - Bio Sample S0002 - UN2814

VEHICLES (3)

Description	Type	Edit	Details	Last update	Trace	GPX	Location
UN2814 - Package CHK to IBBL				14:10			
Truck 1 Dangerous Good Transporter				14:10			
Truck 2 Dangerous Good Transporter				07:26 2013-03-13			



UN2814 - Package CHK to IBBL

Coords: 49.70293/6.47650
Altitude: 199.29998779296875m
Type: container

- DG-TRAC benefits
 - Correct execution of dangerous goods transports in the medical sector
 - Documentation of all checks done and steps executed for the transport
 - Tracking of the transport in real-time
 - Alerting of public safety service (112 centre) in case of an accident, including the provision of the necessary information
 - Very low CAPEX
 - Reasonable OPEX
- Follow-on:
 - Demonstration Project to implement the DG-Trac Service

Space for Med builds upon ESA's Integrated **Applications Promotion** (IAP) programme

1. identify potential innovative services through awareness raising activities assessed via feasibility studies
2. create demonstration projects for first operating experience
3. deploy the professionally designed service to the market

S4M's focus is mainly on (1) but also considers where possible (2). Hereby it aims to support SMEs in predefined areas of interest located in the countries according to the EIB-project "**Facility for Euro-Mediterranean Investment and Partnership**" (FEMIP)

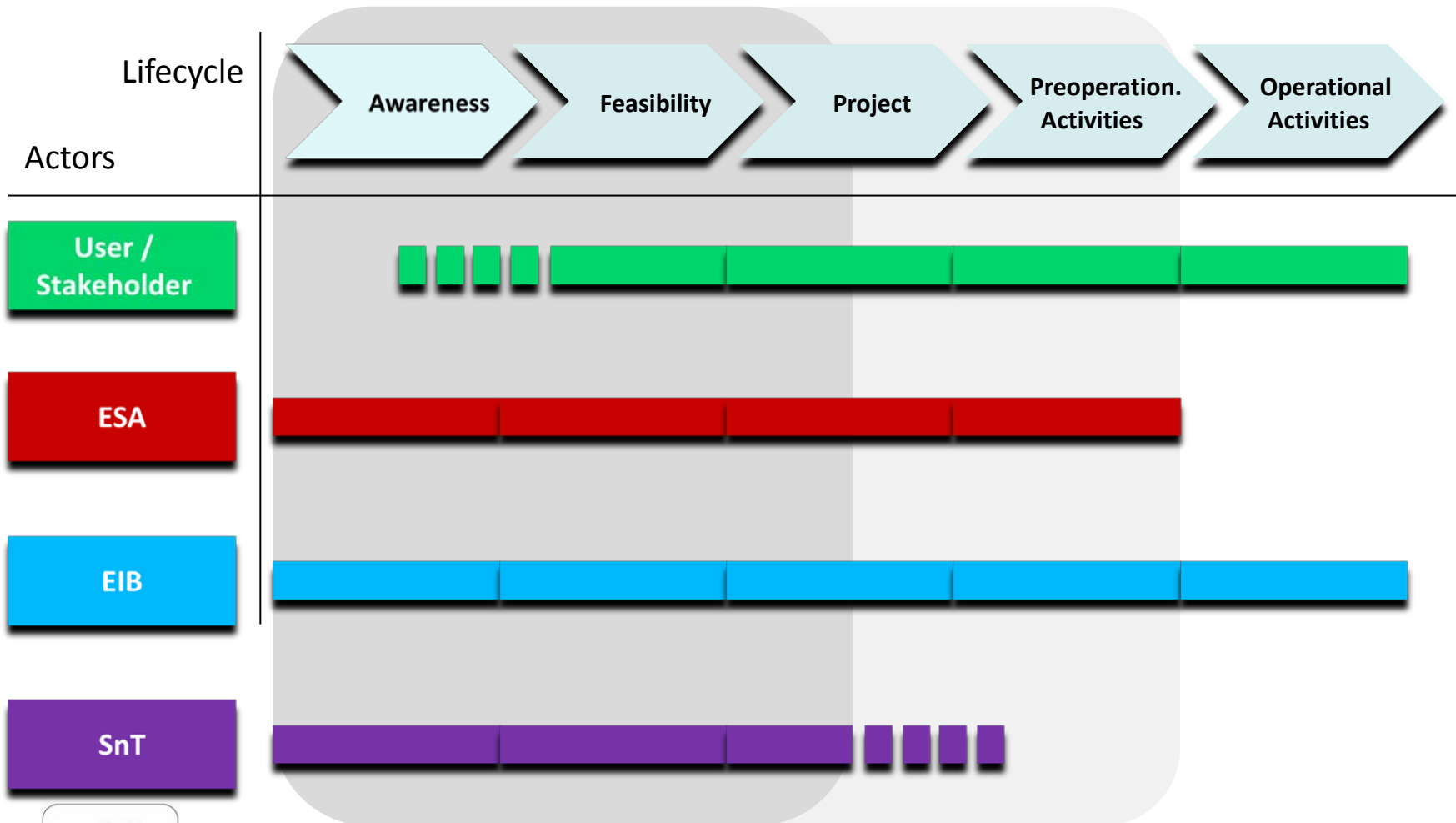
Field of interest: Energy, Transport & Water Management and...

FEMIP Countries



- 1 Following EU sanctions in November 2011, the EIB has suspended all loan disbursements and technical assistance contracts for projects with the Syrian state.
- 2 Libya will become a country in which EIB-FEMIP operates; once a Framework Agreement is signed with the EIB.

S4M life-cycle schematic



Thank you for your attention

Questions - Discussion