European Commission

Electronic Tools in support of IWT

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Joint Research Centre (JRC)

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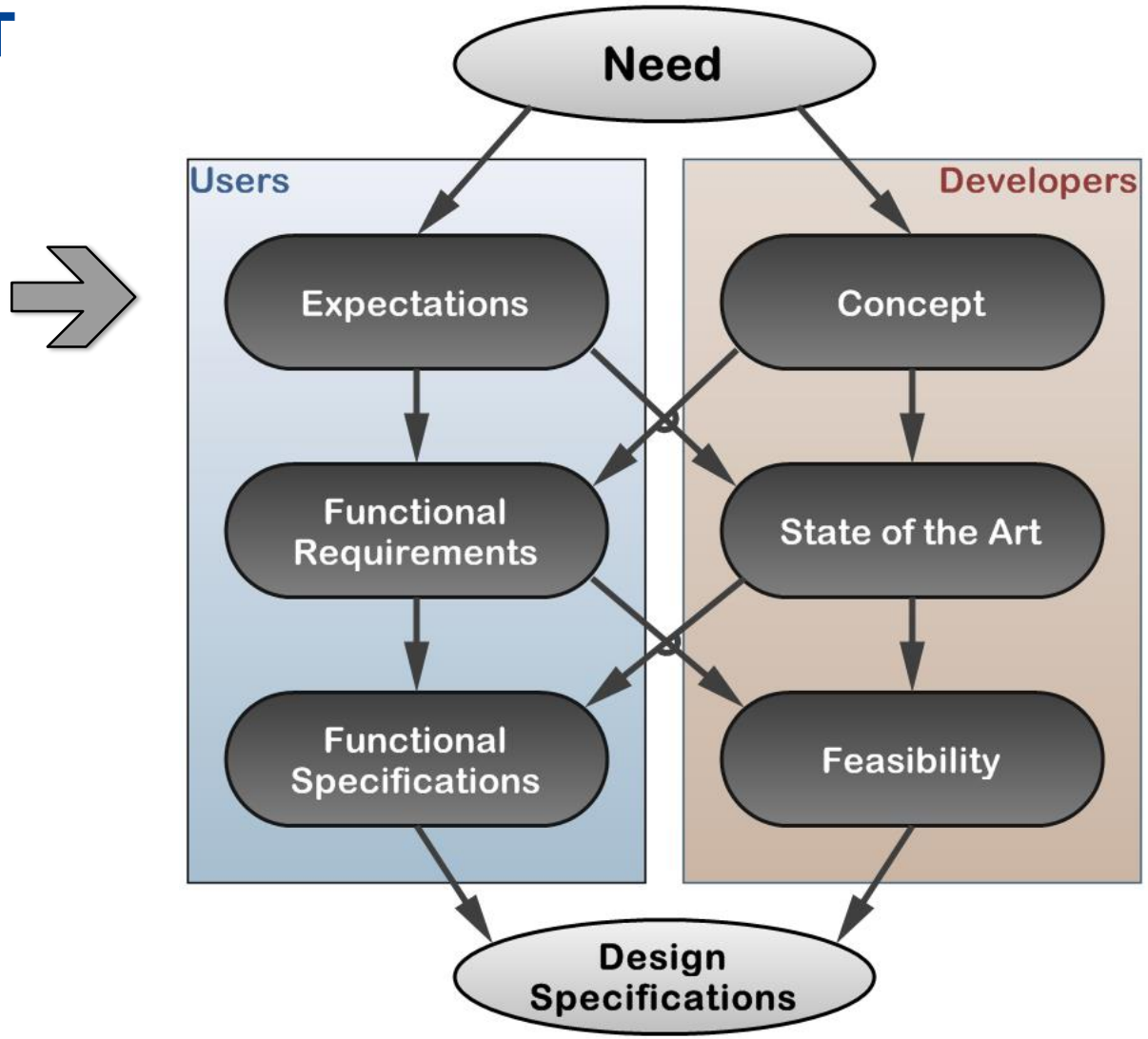
eIWT

- **Generic electronic toolkit supporting IWT**
- **Initial implementation: eSRB and eLBK**

- Eventual additional functions:
  - security
  - navigation,
  - crew qualifications,
  - freight logistics
  - …….

Towards eIWT



High level objective

The high-level objective of an activity of an electronic tool in support of the professional qualifications (ESRB – electronic service record book) can be:

To ease cross border fluvial transport while improving safety, security, fair competition and good working standards, leading to seamless and secure international goods transportation on inland waters, beneficial for growth and jobs in EU.

- **Efficiency**
- **Fair competition**
- **Descent working conditions**
- **Safety**

Functional objectives

- **Regulatory level: simple, effective, harmonized IWT regulations, etc.**
- **Operational level: efficiency, fairness, safety and security of IWT operations, good working standards, etc.**
- **Technical level: technical effectiveness and efficiency, interoperability, availability, security, cost, etc.**

Process model

- **Harmonization and mutual recognition measures**
- **Organizational provisions: authorities and sub-authorities, empowerment for enforcement, equivalences, prevention, repression, evidences, records and traceability**
- **Implementation agenda: timing, transition phases, obligations, …**
- **Implementation costs: development, equipment acquisition, training, regulatory and enforcement authorities set up and operation, transitory phase operational overheads etc.**
- **Benefits: quantification of the impact of the set objectives**
- **What if cases ….**

Business case

- **Procurement of cards, readers & communication equipment,**
- **Installation and maintenance of systems and equipment,**
- **Accreditation and certification activities,**
- **…….**

Possible eIWT architecture

Two basic building blocks:

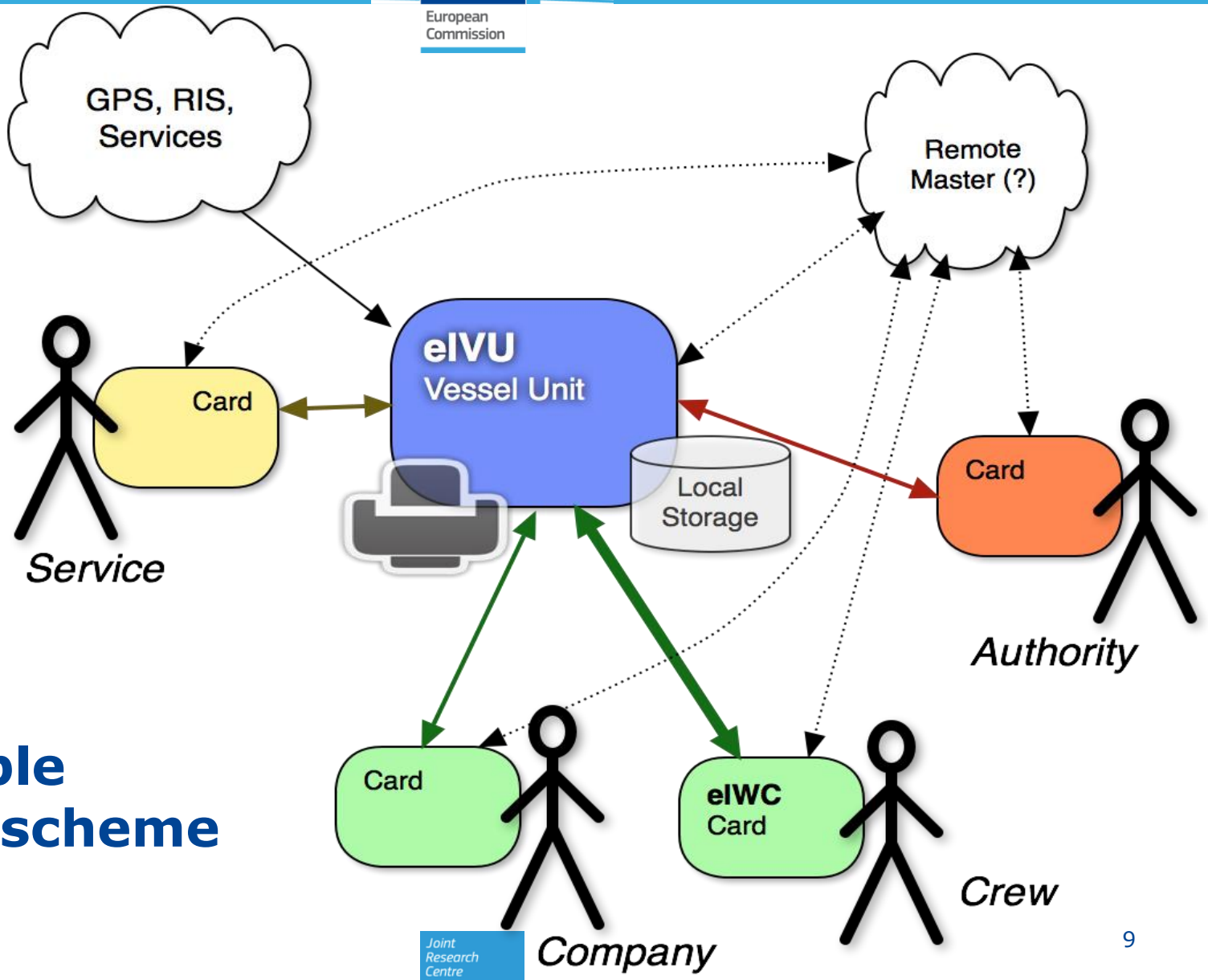
1. An **electronic Inland Vessel Unit** (eIVU), uniquely associated to a particular IWT vessel.

2. An **electronic Inland Worker's Card** (eIWC), uniquely associated to each IWT worker. It would have two main functions:

   a. Professional ID card: it should be based on some biometric or other features (i.e. picture, PIN, etc.) permitting the identification of the bearer, together with his/her professional qualifications

   b. Electronic service record book (eSRB): it should be based on a non-volatile on-chip memory, where the acquired information would be stored for later use.

Possible eIWT scheme



3 indicative scenarios

1. **Back-office**: produce semi-automatically papers, which are then used in the same way as the paper-based LBKs and SRBs. The prime benefit lies in the necessary harmonization of the reporting and the terminology and, to a lesser extent, to the accuracy and efficiency of the document compilation. Such system is not critical for IWT operations; therefore it needs no high availability or reliability. Authentication, certification or security functions are also paper-based.
2. Added capacity to **transmit duplicates to a central service**. Signed paper documents would still make proof of everything, some centralised procedures, like the issuing or update of certificates could be facilitated. Such system could offer additional benefits in what regards the policing, detection of fraud or just the gathering of statistical data.
3. Completely replace the paper SRBs and LBKs by **eIWC cards** and **eIVU units**. High requirements for certification, authentication, security and availability. A significant infrastructure for issuing and maintaining the certified cards / units, very similar to the road transport digital tachograph, would be needed.

Way forward: detailed use-cases

1. **Vessel initialisation & scrapping**
2. **Crew card initialisation**
3. **Voyage initialisation & end**
4. **Crew embarking & disembarking (sailing tracking)**
5. **Control / inspection by the competent authorities**
6. **Qualification upgrade**
7. **Professional qualification revocation**
8. **Vessel community certificate revocation**

9. ***Working time (optional? corporate?)***

For each use-case

1. Identify the **actors**
2. Describe the **current procedures** (manual)
3. Define the **eIWT assisted procedures**
4. Define the necessary **information content** (name, position, photo, document, qualification
5. Define the **information placeholders** (card, vessel unit, cloud)
6. Derive the **information flows**
7. Derive the **functional requirements** for 4 and 5, including availability, security, privacy etc.
8. Propose some **technical options**
9. Elaborate on possible **standards** to be adopted

Templates

Use case *Choose between use-cases 1 to 9 above*			
Notes *Any optional remarks on the use-case*			
Actors *Add table rows as necessary*	Name *i.e. boatmaster, boatman, IT technician, etc.*	Category *Choose between: crew, company, authority, service*	Note *Any optional notes on the actor*
Manual procedures *Add as many rows as necessary*	*Break down the use-case in elementary procedures/functions, specially those relevant to SRB and LBK (i.e. in UC #4: Identification of the embarking crew, checking of their professional qualifications, registering the embarkation date/time etc.).* *Assign a NAME at each procedure (left column) and describe it as briefly and accurately as possible (right column).*		
eIWT procedures	*How do you imagine the use-case in the case of a fully functional eIWT system? eIWT functions should cover completely the current (manual) procedures. Additional procedures/functions can be envisaged.* *Assign a NAME at each procedure (left column) and describe it as briefly and accurately as possible (right column).*		

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