

Annual review Florence 2013



Overview

What nSHIELD aims to offer

The **nSHIELD** project aims to offer a new methodology to boost the design process and to ease the “composability” of ESs enhancing the **Security, Privacy and Dependability (SPD)** aspects.

nSHIELD addresses **SPD** in the context of Embedded Systems (ESs) as “**built in**” rather than as “add-on” functionalities, proposing and perceiving the first step toward SPD certification for future ES.



1

SHIELD leading concept **Composability** of SPD technologies.

Dynamic composition of state of the art of SPD technologies and new SPD technologies depending on different scenarios.

nSHIELD will be the reference milestone for a new generation of “SPD-ready” ESs



Great impact on the system design costs and time to market of new SPD solutions in ESs.

In order to verify these important achievements, the project will validate the nSHIELD integrated system by means of relevant scenarios: (i) Railways Security, (ii) Voice/facial recognition, (iii) Dependable Avionic Systems, and (iv) Social Mobility and Networking.

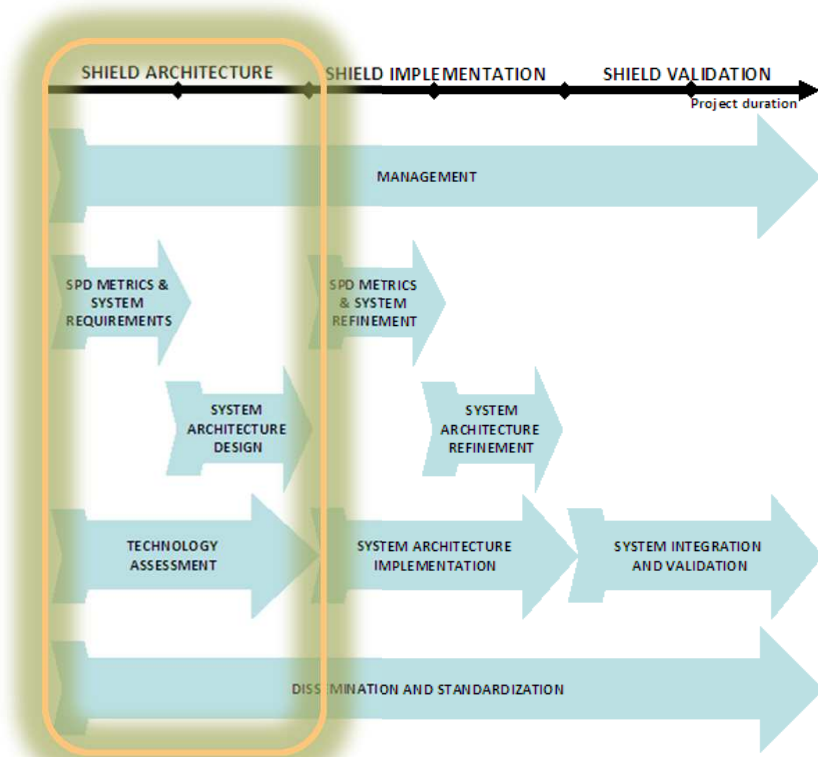
2

SHIELD integrated use of **SPD metrics**



Great impact on the development cycles of SPD in ES: Process as qualification, (re-) certification and (re-) validation of the framework could be faster, easier and widely accepted.

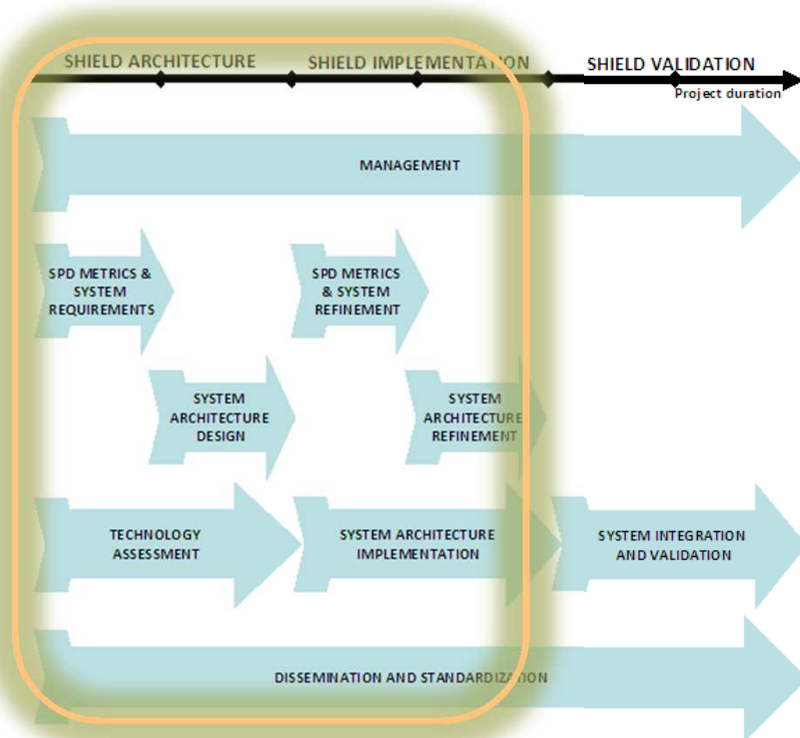
Work strategy: where we were at the end of the 1st year



- Identification of the process of requirements definition
- **Requirement and specification** of the overall nSHIELD system, including high level requirements for scenarios, node, network, middleware, overlay
- **Preliminary SPD metrics definition**, oriented to define the correct procedures to define metrics to be applied in all nSHIELD system functional layers. Identification of different solutions for metric compositions.
- Preliminary nSHIELD **system architecture** design encompassing requirements, metrics and scenarios;
- Analysis of services, capabilities and structuring of each nSHIELD functional layer based on architectural views
- Identification of the SPD layers functionalities, their intra and inter layer interfaces and relationships.

- Assessment and improvement of **SDP technologies** matching requirements, specifications and design at node level, middleware and overlay
- Planning of **dissemination** activities
 - Web Site
- Planning of **standardization** activities
- Quality Control guideline definition

Work strategy: where we are at the end of the 2nd year (1/2)



- **Final system requirements and specifications**

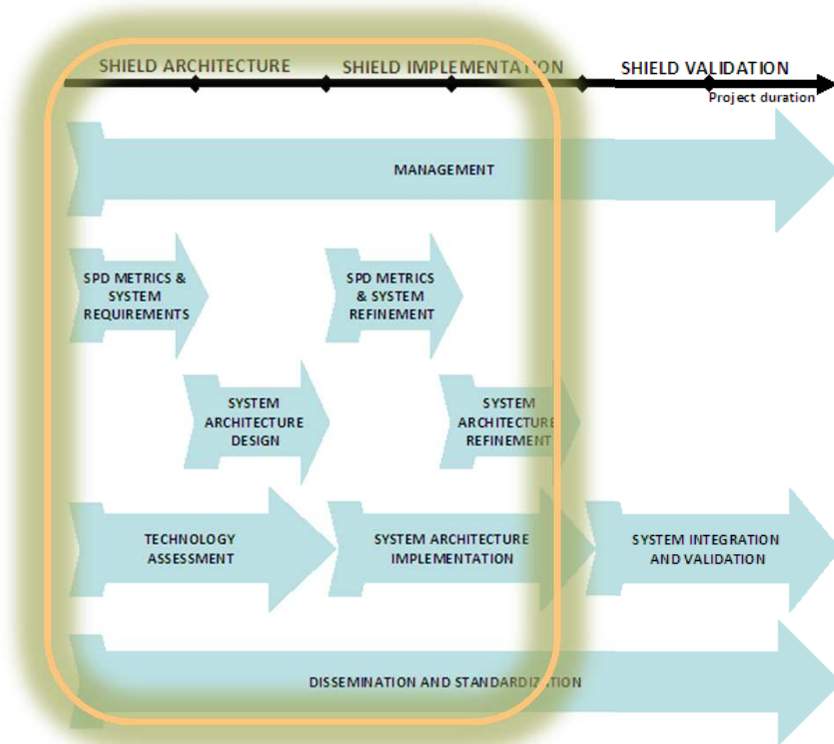
- Mapping of the requirements to the proposed scenarios and to each prototypes
- Update of the requirements specific for one scenario or common to all scenarios

- **SPD technology prototypes**

- Definition of the preliminary Middleware & Overlay prototypes with the objective of providing the building blocks for the common platform and the demonstrator.
- Definition of the **architecture** and behaviour of the SHIELD Middlewar & Overlay including:
 - Common Middleware functionalities
 - Innovative SPD oriented Middleware functionalities
 - Mechanisms to compose SPD functionalities to satisfy security needs

- Exploration of system composability based on different prototypes developed for node, network and middleware layers
- Identification and concentration of the prototypes needed for each nSHIELD application
- Exploration the interoperability and interdependencies among prototypes and proceed in a first stage of prototypes integration

Work strategy: where we are at the end of the 2nd year (2/2)



- **SPD application scenarios**

- Definition of the **architecture** of the demonstrator
- Definition of the prototypes involved in the demonstrator scenario
- Demonstrator **SPD features**
- Description of plan and methodologies driving the integration, the validation and verification activities
- Description of each preliminary scenario for the demonstration

- Definition of **SPD lifecycle methodology** of nSHIELD and **SPD support plan** principle
- Planning of **exploitation** activities

The END



Thank You!