

2nd Annual review

Florence 15 November 2013



WP5 – SPD Middleware & Overlay

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Presenter: Andrea Fiaschetti – Univ. “La Sapienza”

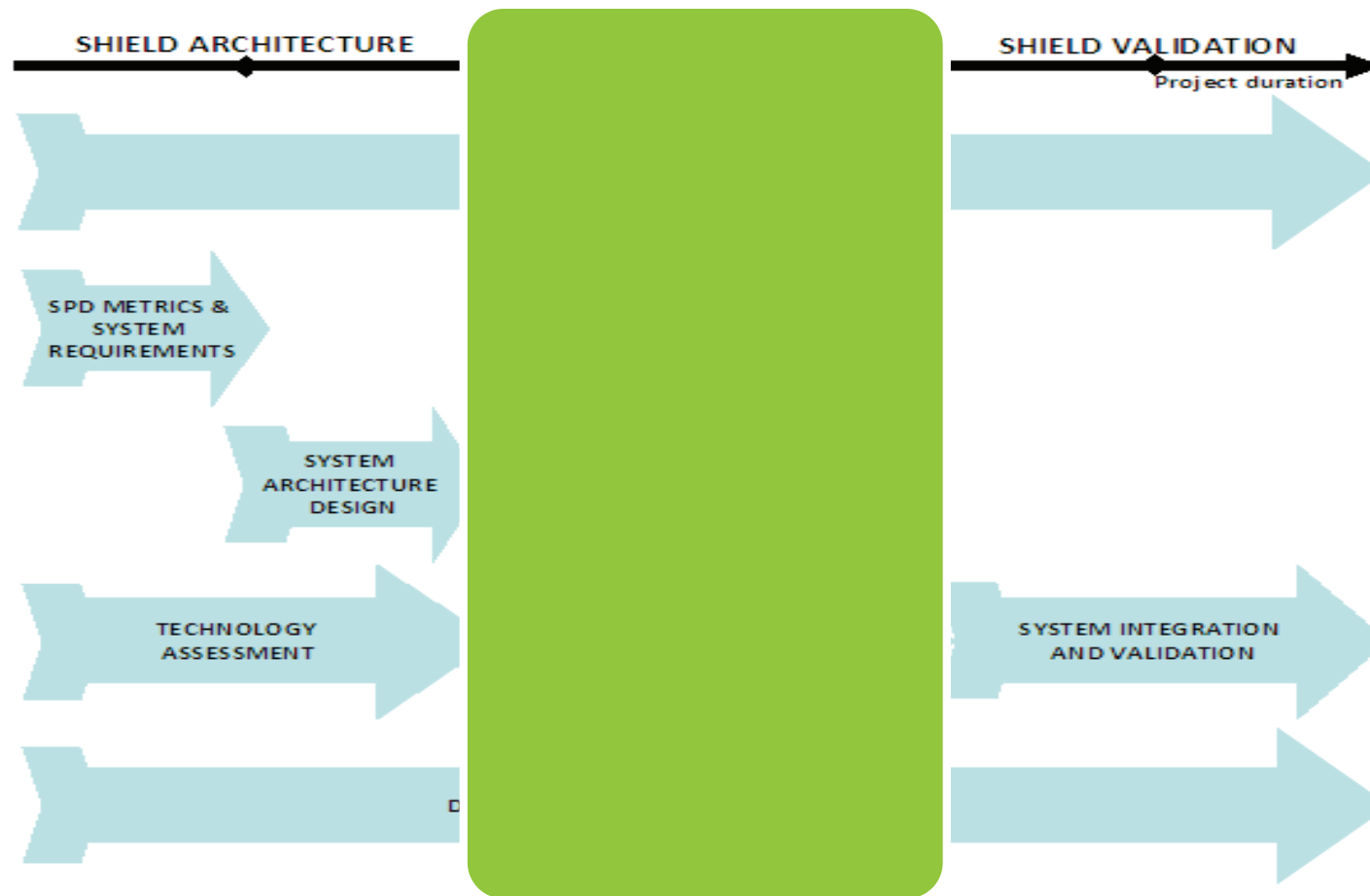


Introduction: WP5 - SPD Middleware & Overlay

- **WP5 aims at**
 - ✓ Providing innovative SPD functionalities to the SHIELD Middleware
 - ✓ Defining the SHIELD semantic models
 - ✓ Designing and developing the nSHIELD overlay (for SPD composability)
 - ✓ Defining the SHIELD Policy Management
- **The WP is driven by scenarios and is responsible for the:**
 - ✓ SPD technology assessment,
 - ✓ Research and development
 - ✓ Prototyping and demonstrating
required by nSHIELD scenarios at middleware level.
- **Outcomes:**
 - ✓ Five deliverables on three main topics: technology assessment, technology design, prototypes development, and two milestones (at M18 and M30).
 - ✓ Deliverable D5.1, "SPD middleware and overlay technologies assessment", submitted at M10.
 - ✓ Deliverable D5.2-D5.3 "SPD middleware & overlay technologies prototypes/report" submitted at M22
 - ✓ 9 Prototypes (Simulations/Software code/Models) delivered for the 2nd erview







WP5: Progress

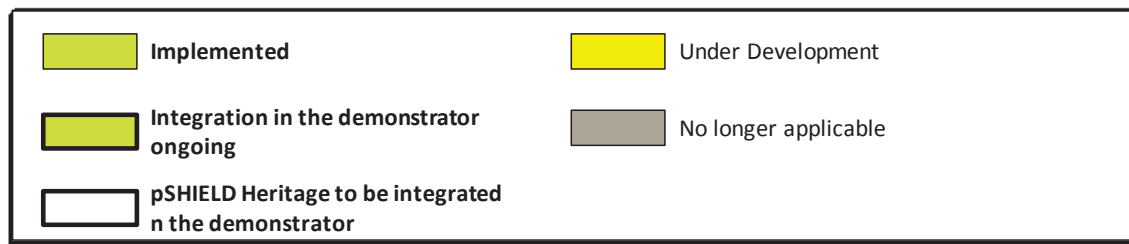
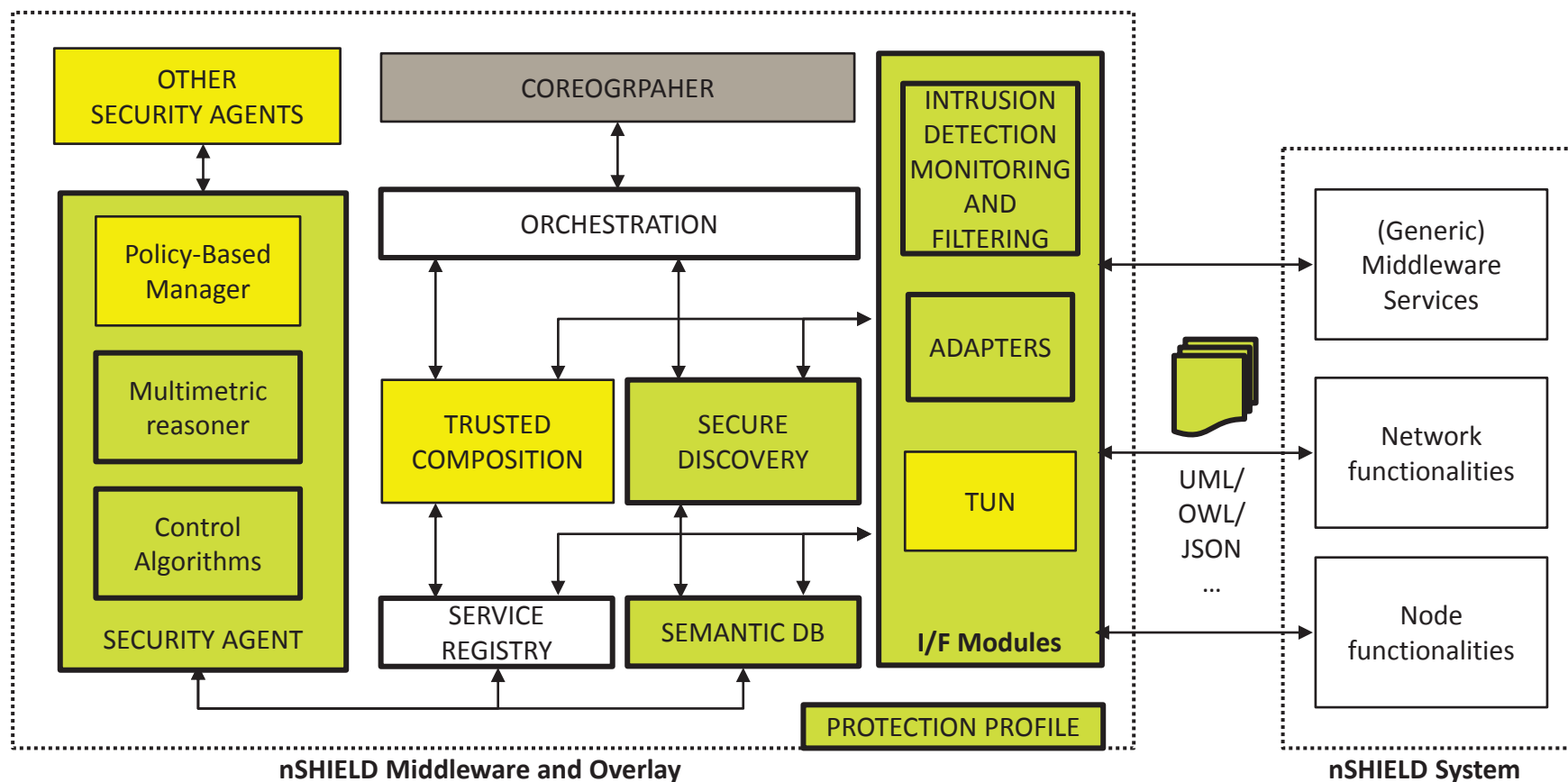


- 12 Months of work performed since the last review

WP5: Management status

- WP5 Managed by Selex-ES
- Duration: M5-M30.
- Effort: 232 MM.
- Status: ongoing
 - 3 of 5 deliverables submitted
 - 150 of 232 MM, 65% of total planned activities
- Tasks Status:
 - T5.1 – 65% 
 - T5.2 – 65% 
 - T5.3 – 65% 
 - T5.4 – 65% 
- Effective and efficient harmonization with new partners: acceleration to project outcome
- Successful development basing on common framework and common understanding
- Preliminary analysis of integration between Middleware technologies (no criticalities envisaged)

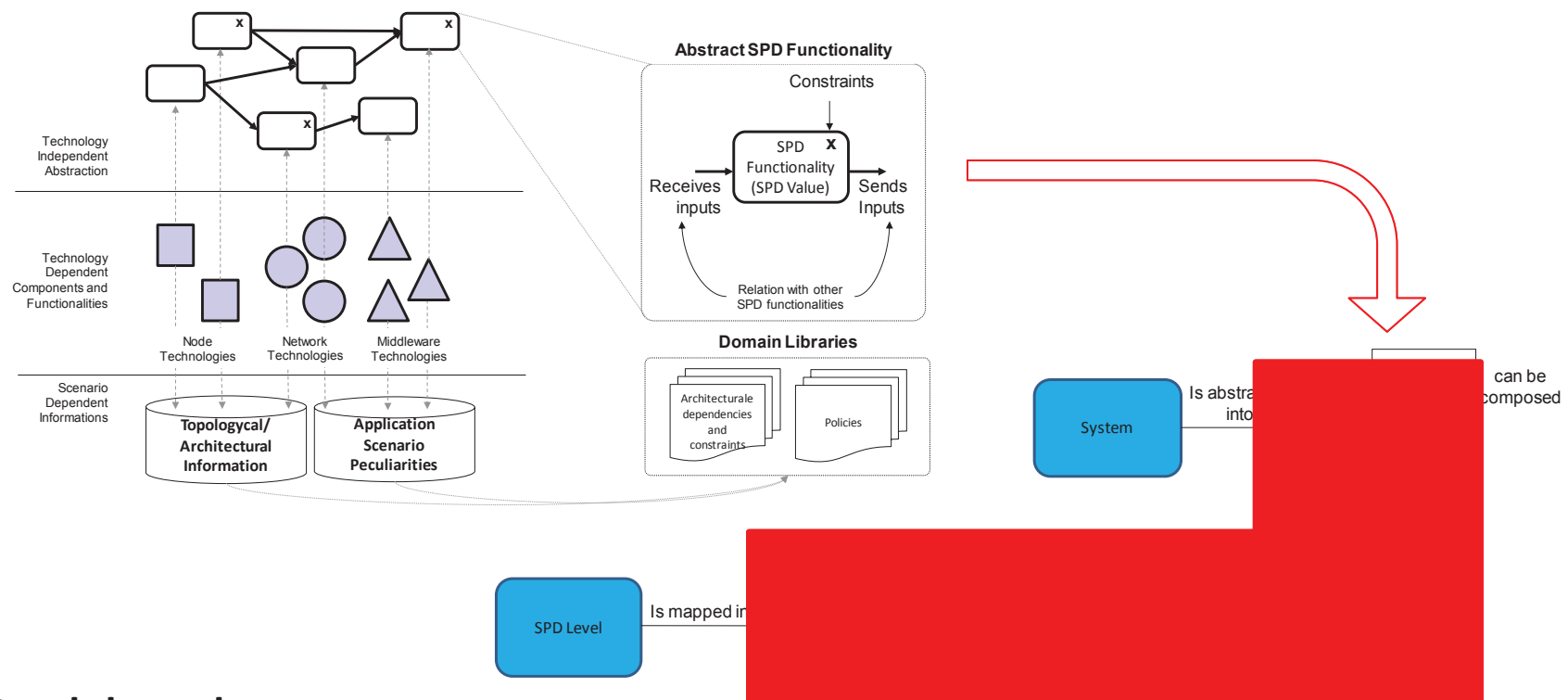
WP5 Progress in Nutshell



Task 5.1 Main achievements and breakthrough

- **Achievements**

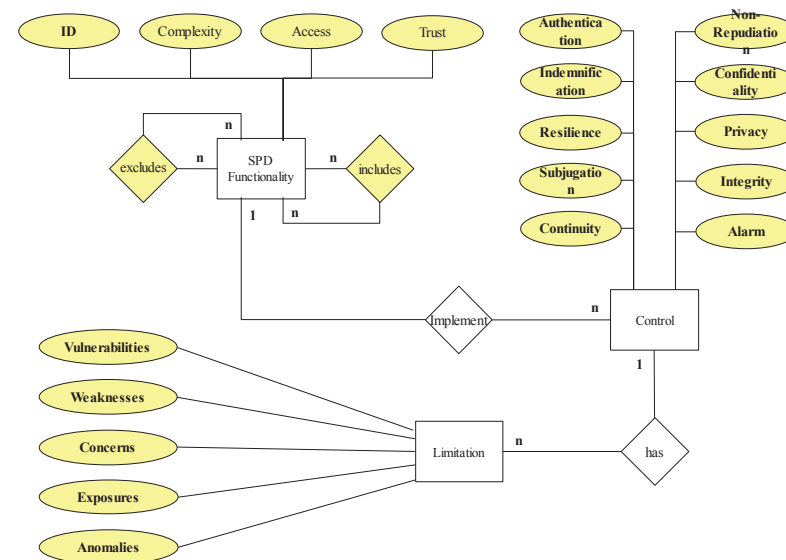
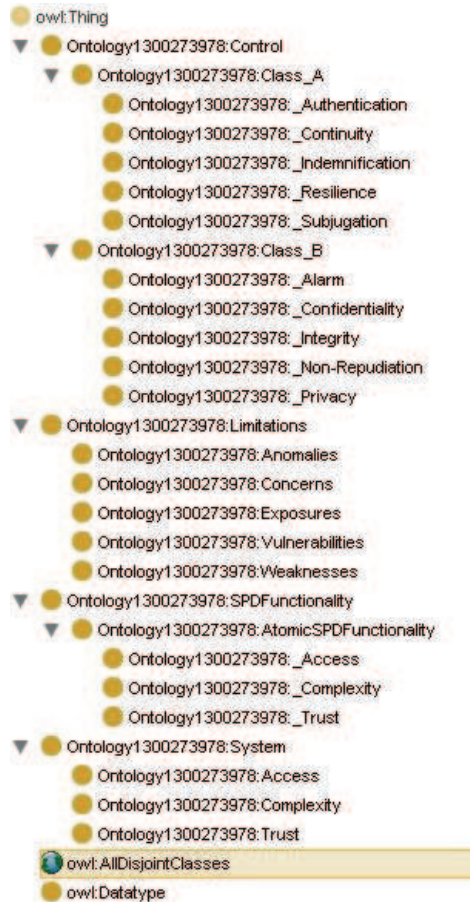
- New semantic approach 100% compliant with metrics and control
- Machine readable and executable



- **Breakthrough**

- Highest level of abstraction and integration

Task 5.1 Prototypes



Semantic (Knowledge) Models



Task 5.2 Main achievements and breakthrough

- **Achievements**

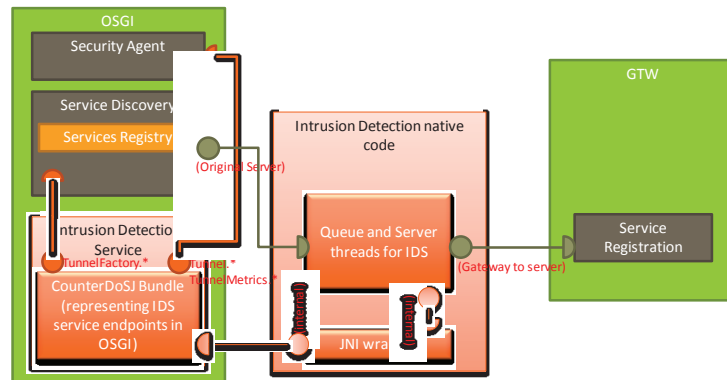
- SHIELD secure service discovery and delivery
- SHIELD trusted service composition
- SHIELD monitoring, filtering and intrusion detection service for interface protection
- Adaptation of legacy systems
- ~~SHIELD service orchestration and choreography~~

- **Breakthroughs**

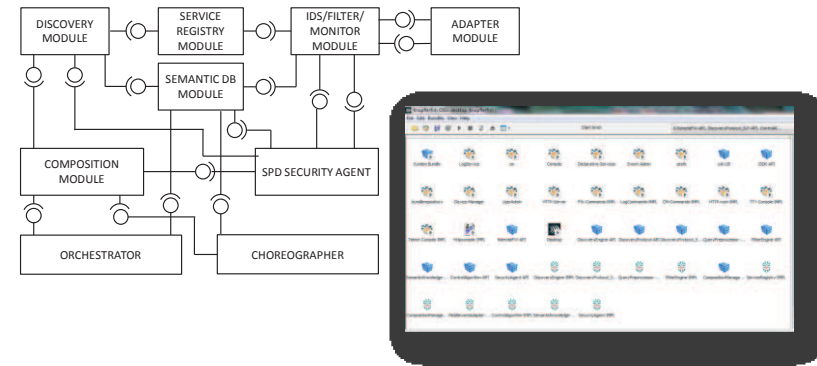
- SHIELD middleware protection profile definition & certification




Task 5.2 Prototypes



**Intrusion
Detection
System**



**Secure
Discovery**

SPD Middleware and Orchestration Architecture		1/15/17
Project no:	260317	
		
new embedded Systems architecture for multi-Layer Dependable solutions		
Instrument type: Capability Project		
Priority name: Embedded Systems		
nSHIELD Middleware Protection Profile		
For the nSHIELD-project		
Deliverables PP01		
Partners that have contributed to the work:		
Selen-Elap, Italy University of Rome "La Sapienza", Italy		
Project co-funded by the European Commission within the Seventh Framework Programme (2007-2013)		
Dissemination Level		
PU	Public	1
FP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
PD	Confidential, restricted to members of the consortium (including the Commission Services)	

**Protection
Profile**

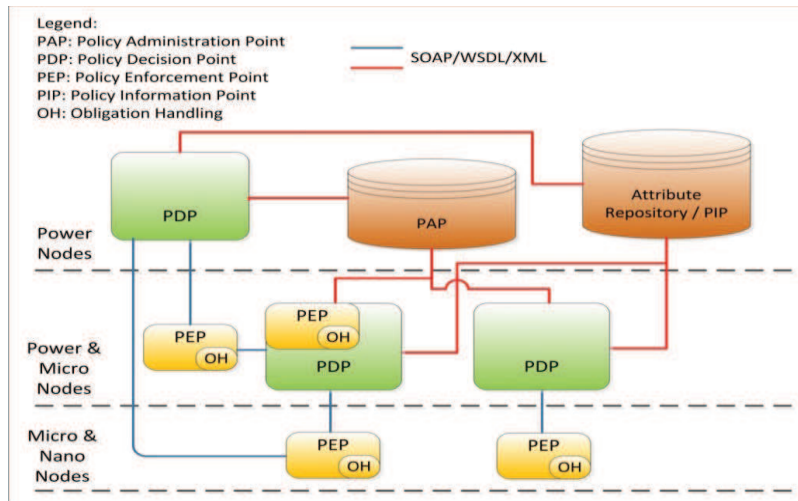


Task 5.3 Main achievements and breakthrough

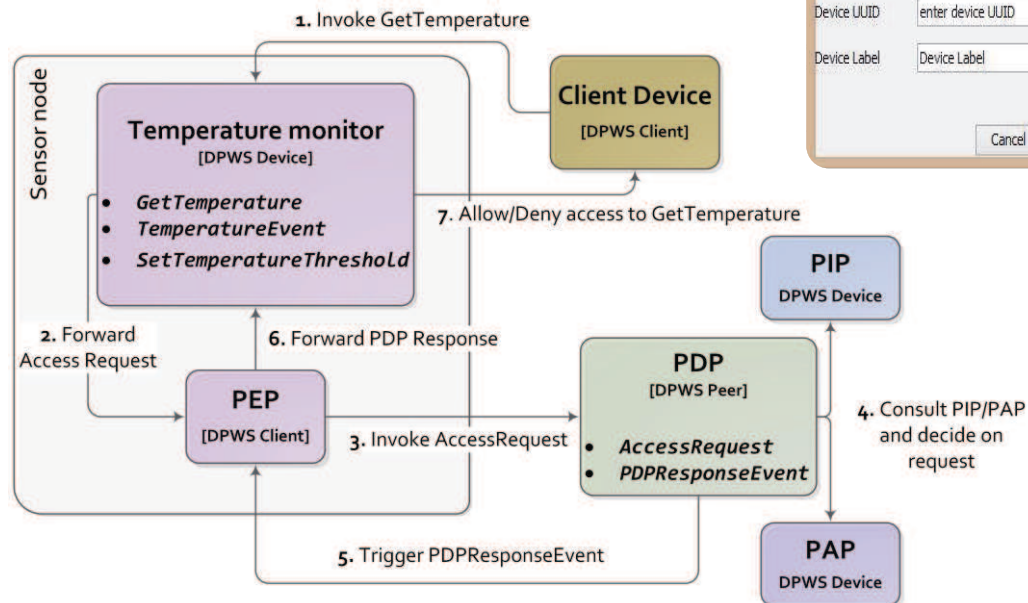
- **Achievements**
 - Deep analysis/implementation of PBM and decoupling between:
 - Policy Framework
 - Policy Framework for Intrusion Detection
 - Policy syntax
- **Breakthroughs**
 - Instantiation of the PBM architecture into the SHIELD nodes



Task 5.3 Prototypes



PBM Framework



PBM Access Control



Task 5.4 Main achievements and breakthrough

- **Achievements**

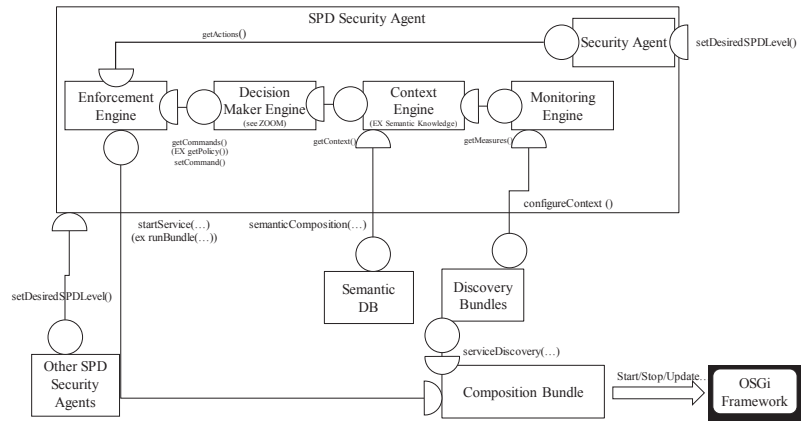
- Security Agent Architecture implemented in the OSGI
- Composition algorithms (CPN) fully based on abstract SPD functionalities
- Relation between functionalities modelled through CPN as well

- **Breakthroughs**

- Harmonization with the metrics approach
- Implementability-oriented

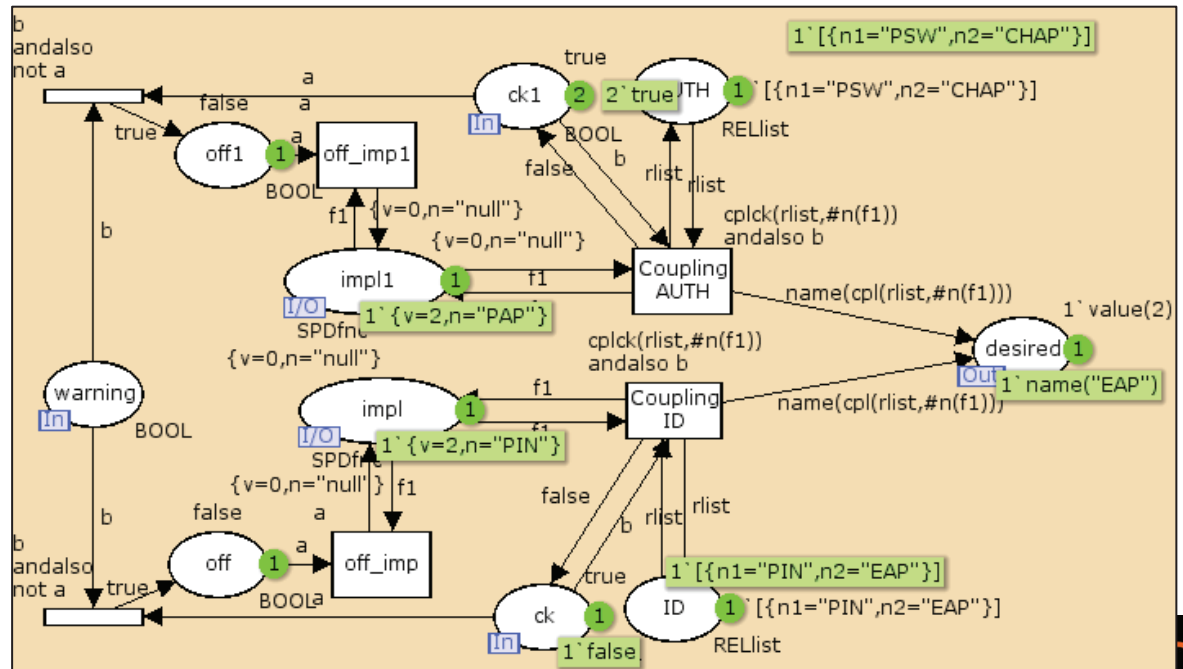


Task 5.4 Prototypes



CPN Control Algorithms

Security Agent Implementation



Remark from WP5 leader

New challenging results achieved in year 2: they were possible thanks to the help of the enriched WP5 team that provided the consortium with many innovative ideas, experience and solutions, as well as the effort of the old ones

Many thanks to ALL WP5 participants for the work done so far.



Thanks for your attention



Any questions?

Andrea Fiaschetti

