



WP5 – SPD Middleware and Overlay (Progress)

Additional Review

Kjeller (Oslo), 30th September 2011

ARTEMIS Call 2009 – SP6100204



WP5 – Objectives and Information Flow

From pSHIELD Technical Annex, the objectives of WP5 are:

- Define a common **semantic** to describe the SPD interfaces and functionalities

INVOLVED ACTIVITIES:

- *Task 5.1 SPD driven Semantics*
- *Task 5.2 Core SPD Services*
- *Task 5.3 Policy-based management*

- Introduce the **Overlay** concepts and functionalities

INVOLVED ACTIVITIES:

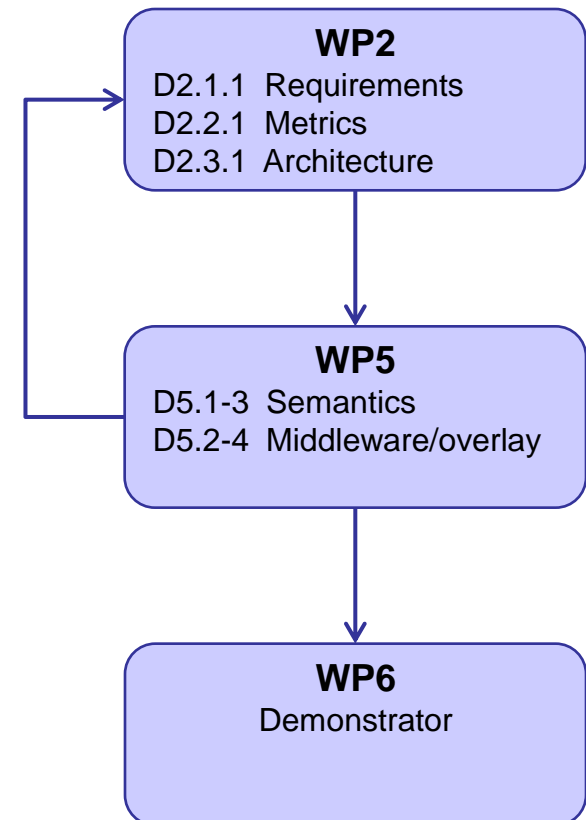
- *Task 5.4 Overlay monitoring and reacting system by security agents*

- Develop a **prototype** to be integrated in the demonstrators

INVOLVED ACTIVITIES:

- *All Tasks*

WP5 Information Flow



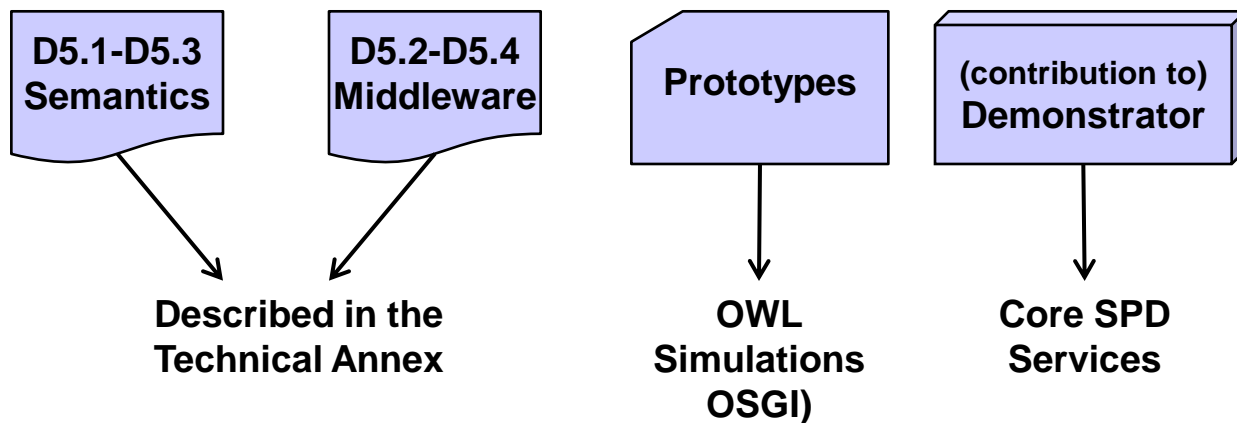
WP5 – Output

From pSHIELD Technical Annex, the outputs of WP5 are:

TASKS vs OUTPUT → ↓	D5.1-D5.3 Semantics	D5.2-D5.4 Middleware	Prototypes	Demonstrator
Task 5.1 Semantics	X		X	
Task 5.2 Core Services		X	X	X
Task 5.3 Policy-based		X		
Task 5.4 Overlay		X	X	

The nature of prototypes is “heterogeneous”, i.e. they could be hardware or software modules, simulation results, high level design documents and so on.

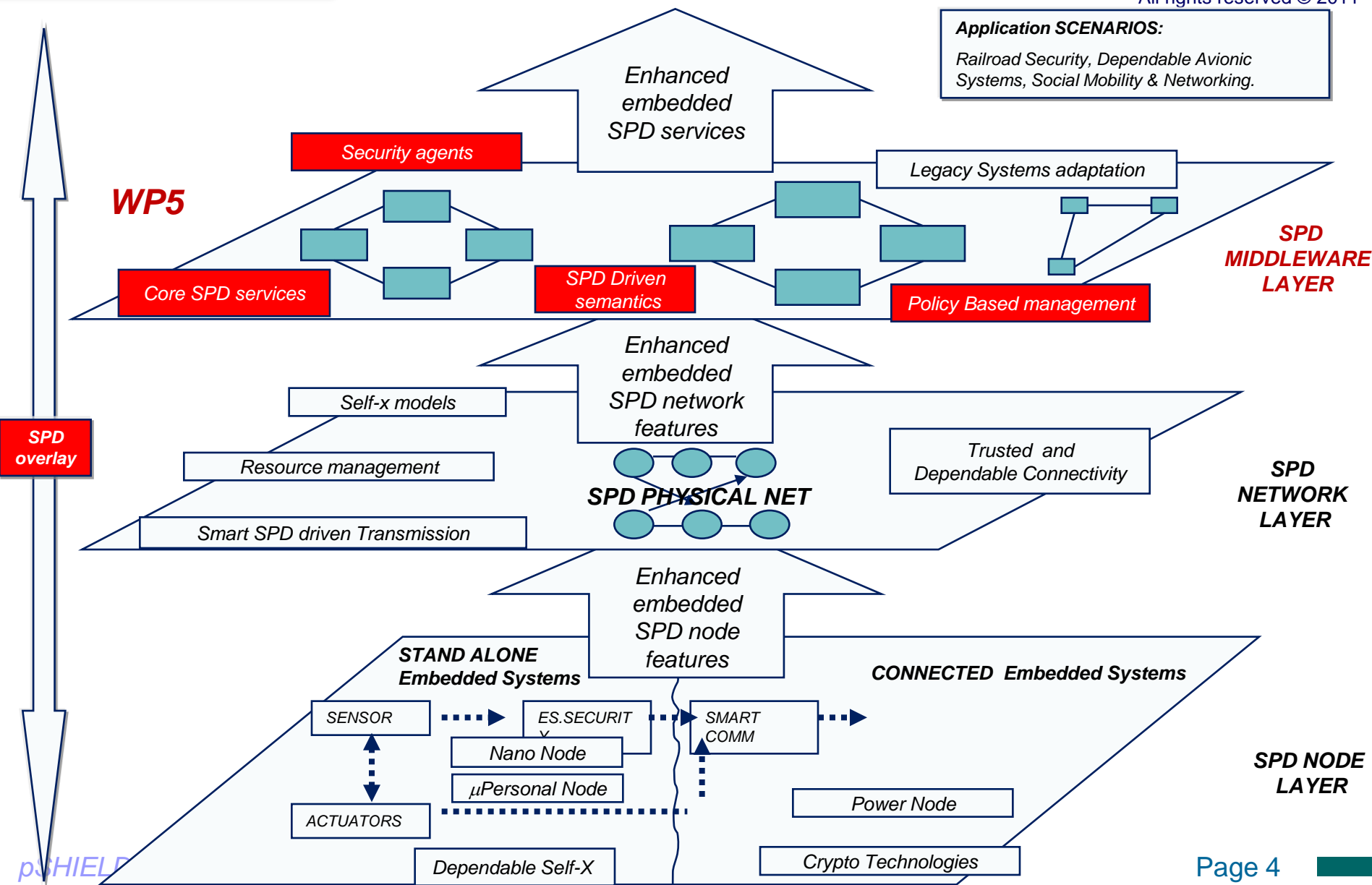
They are included as Annex in D5.x deliverables



WP5 – Contextualization with respect to pSHIELD

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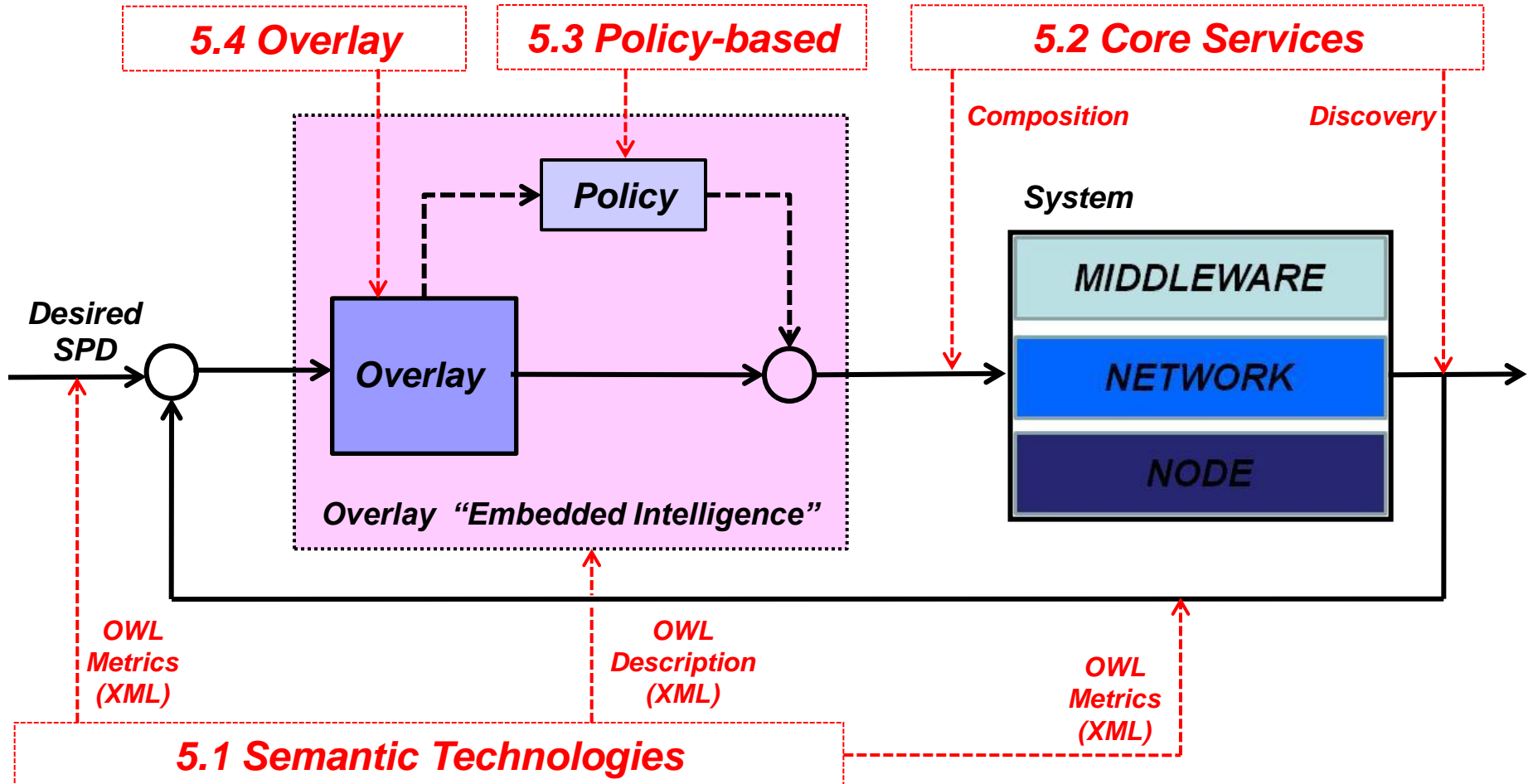
Application SCENARIOS:
 Railroad Security, Dependable Avionic Systems, Social Mobility & Networking.



WP5 – Synoptic Representation

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In order to realize the pSHIELD key concepts, the tasks are mapped and justified in this way:



WP5 – Achievements

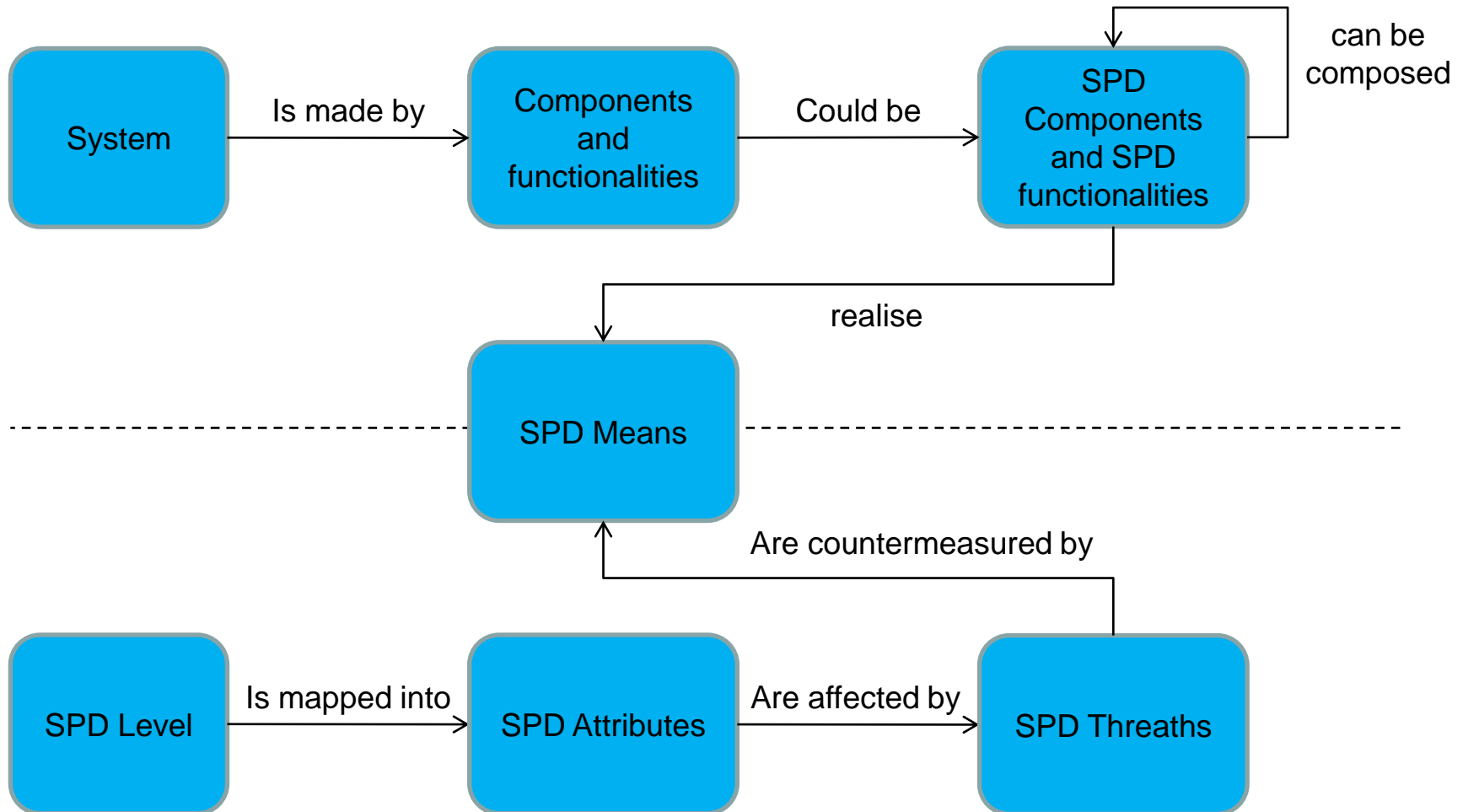
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- Drawing of an original ontological model of ESs, including the semantic characterization of the system and inferential engine features (based on specific metrics) to face the SPD composability problem
- Design and implementation of a reduced but significant “working” example of the pSHIELD Middleware and Overlay. This Middleware is able to discover and compose SPD functionalities to achieve the desired SPD level.
- Technological Assessment of the Policy Based Management for Security applications and preliminary feasibility analysis with respect to pSHIELD
- Formulation of an innovative model to represent (composable) Embedded Systems based on the theory of Hybrid Automata. Thanks to this formulation it has possible to apply some closed-loop control algorithms (like MPC) to optimize the SPD composability in a context-aware way.

WP5 – Semantic in a nutshell (see prototype)

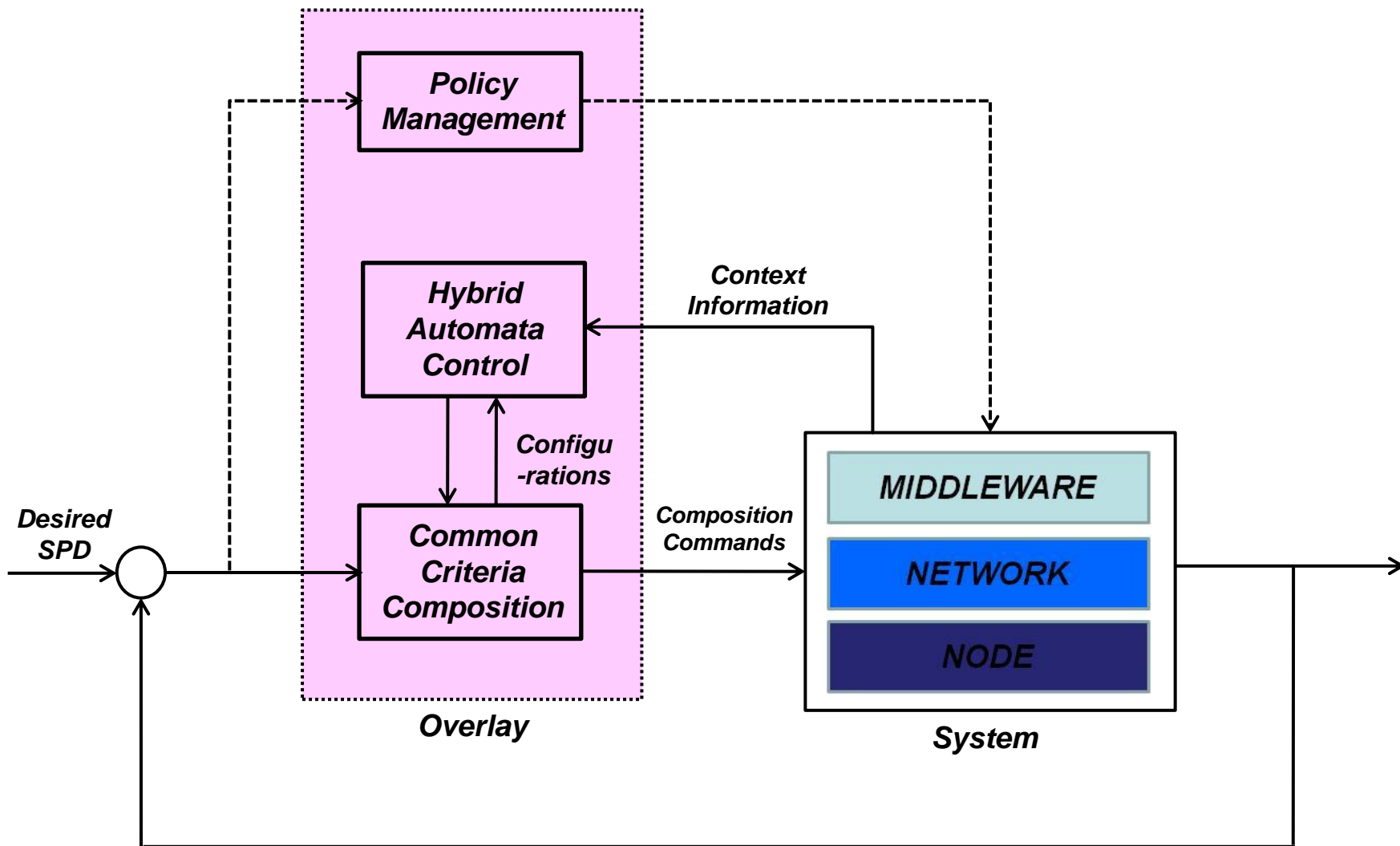
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Ontology logical representation: each concept is modelled and the relations are identified in order to have the logical chains that enables the SPD-aware composability



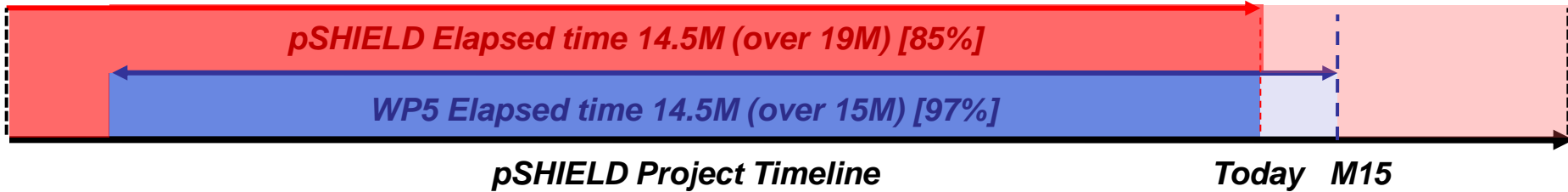
WP5 – Middleware and Overlay in a nutshell (see prototype)

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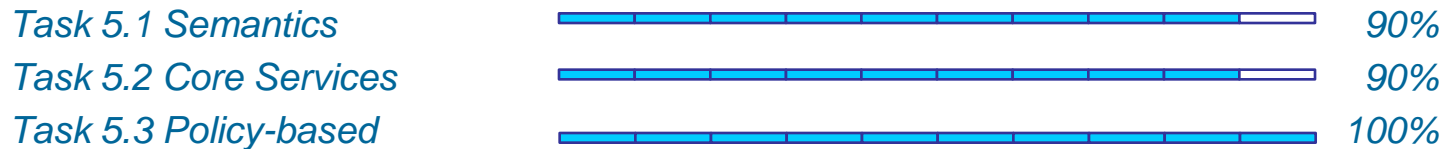


WP5 – Progress status

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Define a common semantic to describe the SPD interfaces and functionalities (93%) 😊



Introduce the Overlay concepts and functionalities (90%) 😊



Develop prototypes (to be presented with the demonstrator) (100%) 😊



Measurable Outputs:



WP5 – Next Steps

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-Finalization of Deliverable D5.3 and 5.4

-A little delay in this activity is expected since the last weeks have been spent to the preparation of the review meeting. However this is not a problem, since it would be better to produce these documents after the evaluation of D5.1 and D5.2 (if possible) so that the answer to potential issues can be included.

-Inputs to demonstrator

-Liaisons with WP6 have been already established and some discussion are going on