



# nSHIELD

*new embedded Systems archItecturE for multi-Layer Dependable solutions*

## PROJECT description

nSHIELD is the architectural framework project for security, privacy and dependability (SPD) in Embedded Systems (ES). The project will develop new built-in SPD functionalities and will demonstrate the modularity and the composability of them in four different strategic scenarios: Railways Security, Voice/Face Recognition, Dependable Avionic Systems and Social Mobility and Networking.

## RELEVANCE to call

Answering the ARTEMIS Call 2010-1, nSHIELD ensures that Security, Privacy and dependability can be ensured in the context of integrated and interoperating heterogeneous services, applications, systems and devices. Regardless the domain of the embedded system, nSHIELD will ensure the highest SPD level. This project will develop a flexible SPD architecture and a related set of advanced SPD functionalities which could be used with minimal engineering effort and adapted to many application domains.

## MARKET innovation

It is expected that the results obtained with nSHIELD, applied to systems for monitoring and protection (railway and urban transport infrastructure, voice and facial recognition, social mobility and surveillance avionic system), will allow a reduction of costs and development time and an improvement in meeting the requirements of the SPD and the level of integration between heterogeneous elements. In addition, the project will boost system reliability and a reduce time to market compared with rival products, with a consequent increase in sales. Finally, nSHIELD will define a standard to result in a generic embedded system with a potential "SHIELD compliant" certification.

## TECHNICAL innovation

nSHIELD will approach SPD at four different levels: node, network, middleware and overlay. For each level, the state of the art in SPD of individual technologies and solutions will be improved and integrated. The SPD technologies will be then enhanced with the composability functionality.

At the same time, the integrated use of SPD metrics in the framework will have impact on the development cycles of SPD in embedded systems because the qualification, (re-)certification and (re-)validation process of a SHIELD framework will be faster, easier and widely accepted.

With the creation of this innovative, modular, composable, expandable and highly dependable architectural framework, and with the use of common SPD metrics, nSHIELD will be capable of improving the overall SPD level in any specific application domain with minimum engineering effort. Also the whole ESs lifecycle will be supported to provide the highest cross-layer and cross-domain levels of SPD, guaranteeing their maintenance and evolution in time.



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<b>INSTITUTION</b> SELEX ES a Finmeccanica Company	<b>DURATION</b> 40 months
<b>EMAIL</b> cecilia.coveri@selex-es.com	<b>TOTAL INVESTMENT</b> €13.4 M
<b>WEBSITE</b> www.newshield.eu	<b>PARTICIPATING ORGANISATIONS</b> 23
	<b>NUMBER OF COUNTRIES</b> 7

