ENABLE-S3

European Initiative to Enable Validation for Highly Automated Safe and Secure Systems

**Funding:** European (Horizon 2020)
**Duration:** May 2016 - Apr 2019
**Status:** Complete

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**Background & policy context:**

ENABLE-S3 is industry-driven and aspires to substitute today's cost-intensive verification & validation efforts by more advanced and efficient methods to pave the way for the commercialization of highly automated cyber physical systems (ACPS). Pure simulation cannot cover physics in detail due to its limitations in modelling and computation. Real-world tests are too expensive, too time consuming and potentially dangerous. Thus, ENABLE-S3 aims at developing an innovative solution capable of combining both worlds in an optimized manner.

**Objectives:**

The technical objectives addressed are:
1. Provision of a test and validation framework that proves the functionality, safety and security of ACPS with at least 50% less test effort than required in classical testing.
2. Promotion of a new technique for testing of automated systems with physical sensor signal stimuli generators, which will be demonstrated for at least 3 physical stimuli generators.
3. Raising significantly the level of dependability of automated systems due to provision of a holistic test and validation platform and systematic coverage measures, which will reduce the probability of malfunction behavior of automated systems to 10E-9/h.
4. Provision of a validation environment for rapid re-qualification, which will allow reuse of validation scenarios in at least 3 development stages.
5. Establish open standards to speed up the adoption of the new validation tools and methods for ACPS.
7. Creation of an eco-system for the validation and verification of automated systems in the European industry. ENABLE-S3 is strongly industry-driven. Realistic and relevant industrial use-cases from smart mobility and smart health will define the requirements to be addressed and assess the benefits of the technological progress.

**Parent Programmes:**
Horizon2020 - Horizon2020 - The EU Framework Programme for Research and Innovation

**Funding type:** Public (EU)

**Other countries:** Austria, Denmark, Germany, Finland, Czech Republic, Italy, Spain, Portugal, Poland, Ireland, Belgium, France, Netherlands, United Kingdom, Slovakia, Norway.

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STRIA Roadmaps: Cooperative, connected and automated transport
Transport mode: Multimodal transport
Transport sectors: Passenger transport, Freight transport
Transport policies: Deployment planning/Financing/Market roll-out
Geo-spatial type: Other