HADES project develops automated chip-level testing for safer, more reliable IoT systems at lower cost

A project within the EUREKA PENTA programme

Paris, Thursday 28 February 2019 - Increased safety, reliability and cost-control for Internet of Things (IoT) devices are the focus for HADES, a EUREKA PENTA Cluster project, managed by Industry Association AENEAS. Vast numbers of devices are becoming connected via the IoT, from smart phones and smart home systems to safety-critical systems in airplanes and road vehicles. Indeed, every household could contain 500 connected IoT devices by 2022. This ever-increasing complexity calls for a new generation of miniature electronics test instruments that can be built into devices and systems to keep them operating safely, dependably and with optimal performance. HADES's next-generation test facilities will go beyond current solutions, leading to systems that are more robust and safer over the complete product lifetime. They will also help avoid dangerous and costly system breakdowns due to integrated circuit (IC) failures.

The market potential for HADES test facilities is huge covering IoT, automation and consumer devices. By 2020, the global automated test equipment (ATE) market is expected to be worth US$4.48 billion[1]. Specifically, the project will address machine-to-machine and connected systems, remote-controlled systems, smart homes and mobile phones, safety-critical systems (typically found in the automotive and avionics sectors) and mission-critical systems (such as in space and security applications). For IC and systems manufacturers, test is becoming a key enabler to create products at the quality and cost-levels demanded by the market. By offering system developers greater robustness and dependability, HADES will help make European products more competitive and attractive though improved quality.

The test capabilities delivered by HADES will be based on existing standards and provide a standardized framework for numerous embedded test instruments (ETIs) at the electronic control system (ECS) level. These will be versatile and reusable throughout the product lifecycle, which is key to reduced test and design costs – an important advantage for high-volume, low-cost IoT devices. They will also allow for online monitoring for prognostics, diagnostics and power-management, which means devices will operate more dependably and with greater energy efficiency.

The HADES project consortium is pan-European, comprising five large companies, four small and medium-sized enterprises (SMEs), four academic and research institutions, and several OEMS. This mix of project partners and expertise will ensure that the project addresses relevant industrial problems and stays at the cutting-edge of R&D throughout the project and beyond.

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[1] Source: Radiant Insights Oct 2015 https://www.radiantinsights.com/press-release/global-ate-market
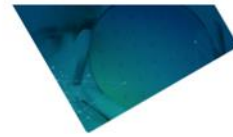
About the PENTA programme (managed by the AENEAS Industrial Association)

PENTA is a EUREKA cluster whose purpose is to catalyse research, development and innovation in areas of micro and nanoelectronics enabled systems and applications - where there is shared national and industrial interest. Based on the Electronic Components & Systems (ECS) Strategic Research Agenda (SRA) key areas and essential capabilities, PENTA programme contributes to the development of electronic solutions with the opportunity for rapid competitive exploitation and a strong impact on European societal challenges. The PENTA project team is supporting SMEs, large corporations, research organisations and universities by facilitating access to funding, fostering collaborative work and creating consortia.

PENTA is managed by AENEAS.
More on PENTA: http://www.penta-eureka.eu
More on AENEAS: https://aeneas-office.org

About HADES

HADES is a RD&I project consortium involving 14 partners from 2 countries. The project partners are: CEA, CNRS-LIRMM, D4T Systems, IROC, INVIA-ISSM, JTAG Technologies, NXP Semiconductors (France and Netherlands), STMicroelectronics, TEMENTO Systems, Thales, TIMA Laboratory, University of Twente and UPMC. National funding support is provided by France and The Netherlands.

More on HADES: https://www.project-hades.eu/