Announcement Letter

EURO-MILS: Secure European Virtualisation for Trustworthy Applications in Critical Domains

28 November 2012 – Based on embedded systems, cyber-physical networks are part of our society, and gain wider spread and importance. Next generations of aircraft and cars will be tightly interconnected with each other, with the internet, and other infrastructures. The same holds for many industries and areas of our life. Ubiquitous, highly critical systems go online and create a domain of mixed-criticalities, where security and safety requirements of different levels mix. However, state of the art technologies do not provide today secure and safe trustworthiness to achieve this interconnection and mixing.

Co-financed by the European Commission under EU Framework Programme 7, and taking a multi-disciplinary perspective, the EURO-MILS project aims at achieving this required trustworthiness:

- by design, using virtualisation to combine heterogeneous domains (e.g. applications of different trustworthiness, different networks) and to set up trustworthy communication.

- by high assurance, in developing an assurance methodology based on the "Common Criteria" security standard and its highest levels of assurance and using formal verification engineering to achieve the highest degree of trustworthiness.

- by business, legal and social acceptance in ensuring that project activities are market-driven and carried out in the pan-European context, involving government certification authorities (BSI in Germany and ANSSI in France) and sharing EURO-MILS evaluation methodology with the community.

The EURO-MILS project will use MILS (Multiple Independent Level of Security), a high-assurance security architecture that supports both untrusted and trustworthy components, based on separation mechanisms and controlled information flows. It will leverage a small virtualisation platform, to develop two working prototypes in avionics and automotive.

The main outcomes of the EURO-MILS project are to develop market relevant technologies and concepts for virtualisation of heterogeneous embedded systems and the formal verification for those systems as part of rigorous cross-European security certification:

- Trustworthy foundations by the MILS approach, architecture, and applications.

- A European MILS virtualisation platform and its usage

- High assurance backed by the "Common Criteria for Information Technology Security" standard

- A true cross-European certification

The EURO-MILS project expects to deliver results beyond the state of the art:

- First MILS certification in Europe (third world-wide)

- First world-wide study on business, social, and legal foundations of MILS that is not limited to one single deployment

- First world-wide cross domain implementation of MILS demonstrators

- First world-wide public linkage of Common Criteria artefacts beyond EAL5 to published models
- First world-wide cross-country guidance on the use of formal methods, vulnerability analysis and compositional certification for MILS and generic operating systems

The EURO-MILS consortium is well-positioned to achieve its objectives by bringing together a team of eight leading industrial companies, one leading Research Company, two research oriented SME, and three universities from five European countries to form a complete chain stretching from basic research and service design, via applied research, up to end-user oriented service providers. The EURO-MILS partners are:

- TECHNIKON Forschungsgesellschaft mbH, Austria

- SYSGO AG, Germany

- Deutsches Forschungszentrum für Künstliche Intelligenz GmbH, Germany

- Universiteit Gent, Belgium

- Airbus Operations SAS, France

- EADS – Innovation Works (EADS Deutschland GmbH), Germany

- OpenSynergy GmbH, Germany

- European Aeronautic Defence and Space Company EADS France SAS, France

- University of Paris-Sud 11 / LRI, France

- Thales Communications & Security , France

- Open Universiteit Nederland, The Netherlands

- T-Systems International GmbH, Germany

- SYSGO SAS, France

- JEMM Research, France

For more information visit http://www.euromils.eu

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