Newsletter

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Main Project Information

The EURO-MILS project has received funding from the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement number ICT-318353.

The project aims to develop a solution for virtualisation of heterogeneous resources and provide strong guarantees for isolation of resources by means of Common Criteria certification with usage of formal methods.

Key Data:

Start date:	1st October 2012
End date:	30th September 2015
Duration:	36 months
Project reference:	318353
Project cost:	€ 8.447.558
Project funding:	€ 6.000.000

Message from the Coordinator

The first quarter of the EURO-MILS project has already passed. Work within the different EURO-MILS work packages has successfully started and is in full swing. The next few month will be busy ones: Several Deliverables and major Milestones will be due until the end of the first project year and first preparations for the first EURO-MILS Review Meeting have already started. The EURO-MILS coordination team will be happy to support partners in their various endeavours in order to ensure clear communication, cooperation and the smooth running of the project.

Through this first EURO-MILS newsletter, it is our intention to start an information channel in order to provide news and discuss ongoing topics relevant to EURO-MILS for internal and external project partners. Therefore we are proud to present first project results as well as the presence of EURO-MILS at several international events within that first issue.

EURO-MILS present at several Events

20th- 21st of February, Avionics Europe, Munich/Germany:
EURO-MILS was featured in a talk on "MILS-related information flow control in the avionic domain" by SYSGO.

10th- 11th of April 2013, rts Embedded Systems, Paris/France:
EURO-MILS was presented at rts Embedded Systems at the SYSGO booth.

14th of April 2013, EuroSec 2013, Prague/Czech Republic:
EADS presented a paper on "Decreasing System Availability on an Avionic Multicore Processor Using Directly Assigned PCI Express Devices".

18th- 19th of June 2013, TAP 2013, Budapest/Hungary:
PSUD presented a paper on „Test Program Generation for a Microprocessor".

One of the EURO-MILS goals is to discover the business, legal and social acceptance of trustworthy technology in several key markets (e.g. Healthcare, Finances, Transports, etc.). **As a key representative of your industry, you want to participate and tell us your opinion? Send a message to: interview@euromils.eu and we will contact you to participate in the EURO-MILS Industry Panel.**

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Internal Project Meetings

EURO-MILS Kick-Off Meeting — Ghent

The two-day EURO-MILS Kick-Off meeting was held in Ghent on the 18th and 19th of October 2012. The main aims of the meeting for the EURO-MILS partners were to get to know each other, clarify and reach consensus about the project's main objectives as well as to set-up and arrive at a more detailed work plan. The meeting was attended by representatives from all partners with a total of 26 participants.

The Kick-Off took place in a good mood and everybody was pleased to know that the rest of the partners of the consortium are interested in establishing a strong collaboration among partners from the beginning, as especially the first project period is crucial for fine-tuning the work and for setting a proper communication flow among the different Work Packages.

PikeOS hands-on workshop — Mainz

On the 24th and 25th of January SYSGO gave a workshop on PikeOS for the EURO-MILS project partners. The workshop had 25 participants from T-Systems, Airbus, Thales Communications & Security SA, EADS Germany, EADS France, OpenSynergy, Univ Ghent, Univ Paris-Sud, DFKI GmbH, Open Universiteit Nederland at the Intercity Hotel Mainz on how to develop with PikeOS and especially security aspects. Participants already had PikeOS and Codeo installed when starting the workshop (x86/qemu). What we did was to start with checking installations and explaining Codeo based on a hello world, then progress to time partitioning, and the second day featured nice examples of multithreaded applications and the pitfalls of development of multithreaded applications. We finished with an example by Kevin Mueller of the EADS, where it was shown what the use of one of the more versatile interfaces of a PikeOS (external file providers) implies in terms of security obligations. Penetration testers already had PikeOS exposed to some of their own testbenches before the end of the workshop. A tasty culinary highlight was Frankfurter Schnitzel mit Grüner Soße, Spundekaes, Handkaes mit Musik etc at the Kurfuerst in the Mainz Neustadt.

Formal methods workshop — Paris

The first formal methods workshop on the 13th and 14th of February was to introduce all formal methods stakeholders, with special emphasis on Common Criteria expertise in France and Germany. Our host was Univerisity of Paris. Talks included "Formal methods in EURO-MILS" (SYSGO), "Isabelle training: Modeling, Code-Generations, Formal Documents, Formal Proofs" (Univ of Paris-Sud), "Preliminary study of machine-oriented test generation" (Univ of Paris-Sud), "Evaluation Methodology and the Formal Security Policy Model" (T-Systems), Presentation of a formalization of Rushby non-interference (SYSGO) and a review by DFKI ("PikeOS Formal Model - Approaches, Status, Problems"), "Common Criteria Evaluation of a formal model - Strategy and Feedback" (Thales Communication & Security"), and a discussion on the derivation of GWV from Rushby (Open Universiteit), followed by a round-table on the approach to follow. The workshop revealed a wealth of expertise in the field, discussed the desirable scope and aim of the model and identified future activities, both on the more technical formal modelling side as well as the liaison with Common Criteria in France and Germany. The workshop was at La Coupole, with a culinary evening excursion to L'Ambassade d'Auvergne (we recommend the aligot and the lentils).

Formal methods: Isabelle users' session — Mainz

Sparked by an initial suggestion by Open Universiteit, this workshop held at the SYSGO head-quarters on the 15th and 16th of May, brought together Isabelle/HOL users from DFKI, Open Universiteit, SYSGO and University of Paris. Isabelle/HOL, a higher-order logic interactive theorem prover, that has strong roots in Europe (Cambridge, Munich, Paris) for over 20 years and it is the main tool we use for formal methods in the EURO-MILS project. The focus was on reviewing Isabelle theory files implemented by different project partners, and agreeing on core data structures, and identifying feasible high-level properties that allow to add more implementation detail later. Especially we discussed concurrency features of a core base model, as well as how to handle control-based flow (both syntactical and semantical approaches were discussed and chosen to be evaluated). By the joint hands-on session, with the project repository acting as a rapid synchronization tool, we also improved our Isabelle coding style.

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Creation of a Draft Security Target for high-assurance operating system PikeOS

Project partners have created a draft of a security target (i.e. a Common Criteria specific description of the security policy for the Target of Evaluation (TOE)) for high-assurance operating system PikeOS. The PikeOS security target (ST) draft has already been presented to BSI (German Information Security Agency) and is characterized by the following:

- a slim, but technically sound choice of assets and their security properties to be protected and maintained by the security policy,
- a definition of {threats, OSPs and assumptions} directly derived from and exactly aligned with the assets, their security properties, subjects and external entities,
- a precise alignment of Security Objectives and Security Requirements with the assets, their security properties, subjects and external entities,
- as with every ST, a CC-specific constraint language is used to express functional and assurance security requirements in the TOE Statement of Security Requirements. However the wealth of information this part provides is sometimes hard to read due to lack of structure. We apply a logical, clear and comprehensive grouping of single SFRs in Security Functional Groups, which have been used for orientation while developing the TOE Summary Specification.
- the attack potential to be withstood by the TOE is at least a high one.

The TOE Summary Specification finally describes security services to be provided by the TOE and enforcing the protection of the assets.

First EURO-MILS Deliverables have been submitted

D41.1 — Project Website

The EURO-MILS project website has been established at the beginning of the project and provides a user-friendly platform for EURO-MILS partners as well as for interested people joining the website. The structure of the site as well as its functions are clearly described within D41.1. Link to the project website: http://www.euromils.eu/

D42.1 — Project internal and external IT communication infrastructure

This deliverable provides an overview of the EURO-MILS project IT infrastructure and the whole set of tools that foster the cooperation within the project, coordination and dissemination to the public.

D11.1 — Project Requirements: Classification, Cross-domain analysis and High-Level Architecture

The objective of the first submitted technical Deliverable of the EURO-MILS project was to collect a set of industrial requirements for virtualisation of resources.

One of the focuses within that working paper is to clearly define requirements, characteristics and the scope of the virtualisation platform needed for the automotive and avionics use-cases studied within the project, which is to provide assurance, integrity and security as the base for the trustworthiness for critical embedded systems with scarce resources. In addition to that, the document eases formal specifications for the project. Overall, the elaborated requirements will help to define a high-level architecture for our two planned prototypes in avionics and automotive.

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