

Newsletter / September 2019
Issue 5

Compositional security certification for medium- to high-assurance COTS-based systems in environments with emerging threats

Consortium

11 partners (5 countries)

Project Coordinator

Dr. Klaus-Michael KOCH
coordination@certmils.eu

Technical Leader

Dr. Sergey TVERDYSHEV
sergey.tverdyshev@sysgo.com

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Project website: www.certmils.eu

Project start: 1st January, 2017

Duration: 48 Months

Total cost: EUR 5,616,543.75

EC contribution: EUR 3,999,055.63

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Message from the Coordinator

Since our previous newsletter in March 2019, the certMILS project made significant progress, especially with regard to its three pilots: smart grid, railway and subway. A three-day technical meeting in Austria in spring provided the basis for this progress, helping partners exchange their expertise with each other. After this, four deliverables were submitted to the European Commission.

Upcoming Conferences

ESREL 29th European Safety and Reliability Conference
22nd - 26th September 2019
@Hannover, Germany

International Common Criteria Conference (ICCC)
1st - 3rd October 2019
@Singapore

TOOLS 50+1: Technology of Object-Oriented Languages and Systems
14th - 19th October 2019
@Kazan, Russia

Intelligent Transportation Systems Conference (IEEE ITSC)
27th - 30th October 2019
@Auckland, New Zealand



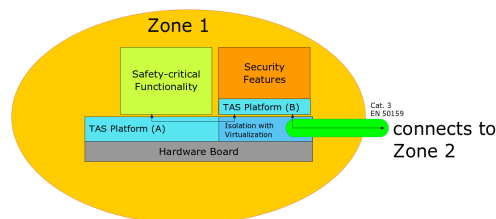
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731456.

Project Progress/ Highlights

- In Spring/Summer 2019 the certMILS consortium worked hard on the implementation of the three project pilots. Also, security testing in WP4 - to enhance the MILS platform - was successfully completed..
- Towards the end of WP4, (June 2019) partner University of Rostock refined the implementation of the kernel fuzz-testing tool-chain. Trials and performance evaluations were executed on the kernel-AFL approach and the gcc-plugin approach.
The effectiveness was tested on an intentionally defective driver. Some issues arose addressing larger aspects of the Kernel API. In addition, some extra work concerning adaptation of the fuzz-testing framework to better-fit SYSGO's hardware testing lab-environment was done. The testing framework can now execute tests on remote systems. This is of particular interest, if a special or dedicated hardware is analyzed, which is not available for simulation in the QEMU environment.
- Partner, Schneider Electric from Spain, successfully implemented the high-assurance pilot. Schneider is now working on the document about ATE class needed for the evaluation of the medium-assurance pilot and teaming up with partner Epoche & Espri in the scope of an IEC 62443 certification of the pilot.
- Regarding the railway pilot, partner Thales presented a first prototype during the technical meeting in Austria in Spring. The report about the final implementation was submitted soon after. Thales then started to implement a secure boot strategy and to plan the collaboration with Epoche & Espri on penetration testing.
- Q-media, from the Czech Republic – with the support of Prague Public Transport (DPP) – worked on the implementation of the subway pilot, which is planned to be shown live to the consortium during the next technical meeting in Prague this November.



certMILS Smart grid Pilot



certMILS Railway Pilot

MILS Community

If you want to

- **learn more on the MILS Community,**
- **participate in it,**
- **be informed about its status,**

then send an e-mail to community@mils.community or subscribe to the MILS mailing list mils@lists.technikon.com

The MILS mailing list is a public mailing list for discussions of Multiple Independent Levels of Security (MILS) architectural approach for security and safety, MILS components, MILS implementations, MILS research, MILS use-cases, real-time separation kernels, MILS evaluation and certification, MILS testing and vulnerability, and analysis of MILS systems.



MILS Workshop 2019

The MILS workshop focuses on bringing industry and research stakeholders together to advance methods, tools, approaches, and use-case on creating compositional assurance and trustworthiness for safety, security, and mixed-critical connected systems.

Date: December 6,

@ESE Kongress >>

Location: Congress Center Sindelfingen, Stuttgart, Germany

The workshop will cover the following topics:

- MILS Introduction, Sergey Tverdyshev, SYSGO
- ML/AI in Embedded Applications: Challenges and Chances, Paul Lukowicz, DFKI
- Towards Automated Integration of Security Monitors in E/E Architectures, Daniel Schreckling, BMW
- Cyber-security evaluation of a vehicle tracker, Juan Sanchez Jesus, DEKRA
- Hardening your embedded system with Secure Element, Pierre Girard, GEMALTO
- Fundamentals of Security in Safety Critical Systems, Todd Ouska, WolfSS

Past conferences

In order to disseminate information regarding the certMILS project, several partners presented at significant conferences throughout Europe.



20th IS2 Conference on Information Security 29th-30th May 2019.

@Prague, Cyech Republic

Jan Rollo (SRO), Michal Hager (EZU) and Tomás Kertis (QMA) gave a speech about cyber security presenting the MILS architecture.

RRSRail 2019 5th June 2019.

@Lille, France

University of Rostock presented "Integration Approach for Communications-based Train Control Applications in a High Assurance Security Architecture" and an updated project poster. The architecture explanation and the implementation approach of their demonstrator had been published to the RSRail conference and was acknowledged with the Best Student Paper Award to Thorsten Schulz.

ITS European Congress 2019 3rd-6th June 2019.

@Eindhoven, Netherlands

During the session "SIS35 – Trust And Security – Enablers For Digital Infrastructure And Cooperative Systems In Europe" slides about the certMILS project (prepared by SYSGO) were shown by the session chair Sandro Berndt-Tolmann.