PRESS RELEASE

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S2OPC now operates with PikeOS for even greater security

With cybersecurity becoming one of the most critical challenges of Industry 4.0, S2OPC — the safe and secure implementation of OPC UA — now offers even more secure features thanks to its integration with PikeOS.

OPC UA is now available on PikeOS RTOS

S2OPC, the open-source OPC UA implementation developed by Systerel, can now run from a PikeOS native API. Systerel is a long-time partner of SYSGO, manufacturer of PikeOS, a real-time operating system based on a separation kernel, acting as a hypervisor and designed for the highest levels of Safety & Security. Thanks to this deployment on native API, PikeOS applications no longer need a general guest operating system, such as Linux, to benefit from OPC UA technology. Therefore, they will be more resource efficient, be able to use PikeOS real-time capabilities and reduce their exposure to cybersecurity threats.

OPC UA, the standard for Industry 4.0

OPC UA is a machine-to-machine communication technology, which is spreading in many fields, especially in industry. Indeed, its key assets include advanced information modeling capabilities, a rich set of services and native cybersecurity features (encryption, signature, authorization, authentication, etc.). These mechanisms are regularly analyzed by the German Federal Office for Information Security[1] (BSI). S2OPC is, as of today, the only open-source OPC UA implementation designed for certification for real-time communication. A first level security certification with the French National Agency for the Security of Information Systems (ANSSI) is in progress. Developed in C99, its portability and limited footprint make it particularly compatible with embedded devices. This OPC UA implementation includes both Client/Server for supervision and PubSub for real-time communication.

A highly interoperable and cross-platform data-exchange

Together with PikeOS separation kernel (version 5.1.3), which is security-certified against Common Criteria at the EAL 5+ level, S2OPC allows embedded applications to benefit from a highly interoperable and cross-platform data-exchange solution while being protected by security mechanisms. As part of the reduction of the boundary between IT and OT, this solution can be used in predictive maintenance to monitor equipment health and optimize their availability rate. Areas of applications of this combination naturally comprise the automation domain where OPC UA is widely adopted and IEC 62443 conformity for cybersecurity is frequently requested, but it also includes other domains, such as railway. Indeed, OPC UA is included in the EULYNX railway standard and equipment manufacturers are ordinarily required to be compliant to EN 50701 as well. This technology is therefore of interest in many areas.

[1] « Sicherheitsanalyse (2021) Open Platform Communications Unified Architecture (OPC UA) ». BSI - Bundesamt für Sicherheit in der Informationstechnik. 03 March 2022

Future developments of OPC UA

The OPC Foundation is currently issuing an extension of the OPC UA standard, named OPC UA Safety, to address functional safety communication. "*In a near future, the combination of OPC UA technology with PikeOS will form a safe and secure architecture. As a result, it will be able to address a new range of products communicating with OPC UA, which are required to be compliant to both safety and security standards*," says Vincent Lacroix, S2OPC Product Manager at Systerel.

About:

Systerel is an independent engineering company specialized in development, validation, and evaluation of safety critical real-time systems. Through several implementations of the OPC UA technology in an industrial context, Systerel developed a significant expertise on the OPC UA standard. Systerel is a member of the OPC Foundation. To find out more, please check: www.s2opc.com

SYSGO is the leading European manufacturer of embedded software solutions such as the real-time operating system and hypervisor PikeOS and the embedded industrial-grade Linux ELinOS. Since 1991, SYSGO has been supporting customers in the Aerospace, Automotive, Railway and IIoT industries in the development of Safety-critical applications. To find out more, please check: www.sysgo.com

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