Introducing the vision of a safe and secure networked automotive future
SYSGO and Candera present hypervisor based automotive HMI solution

Klein-Winternheim, Germany / Linz, Austria – October 1, 2020 – SYSGO and Candera have built a comprehensive automotive platform which fulfills the demands of a modern car IT architecture. The platform is based on Candera's Human-Machine-Interface (HMI) design tool CGI Studio and SYSGO's Secure Automotive Connectivity Platform (SACoP). It provides solutions for safety critical applications such as digital cockpits as well as convenience functionality like vehicle infotainment systems. The internal car infrastructure is protected by means of the secure and extendible gateway which involves the surveillance of connectivity channels as for instance LTE, Ethernet, Wi-fi and CAN.

Cluster & IVI created
with Candera CGI Studio

Innovative Hypervisor based HMI solution realized with SYSGO's PikeOS and Candera's CGI Studio
https://youtu.be/i_mcvdidgXM

The reference implementation is built upon two boards, one with an R-CAR H3 board from Renesas and another one with an STMicroelectronics Telemaco3P processor.
The digital cockpit and an in-vehicle infotainment system (IVI) run on the Renesas board. These applications were created with the fully scalable and hardware independent CGI Studio. Both displays (cluster & IVI) smoothly communicate with each other. This is possible due to Candera's powerful messaging and data binding tool Courier Interaction Framework for smooth interaction between the HMI application and external data sources. Flexible, interacting scenes, stunning 3D animations and multi-language support are only a few more features that have been realized with Candera's CGI Studio.

The Telemaco 3P processor is the link to the outside world and is the hardware basis for the secure gateway functionality of SACoP. It is also used to supply passengers' tablets and smartphones with internet access. The software is based on SYSGO's Automotive Connectivity Platform. SACoP takes advantage of the real-time operating system and hypervisor PikeOS. It allows critical and non-critical tasks to be operated simultaneously on one system and guarantees information security by protecting data transfers through strict encapsulation and separation of all communication channels. The

partitioning mechanism is complemented by a secure boot process, an integrated intrusion detection system and a firewall, thus satisfying demanding cybersecurity needs. The feature rich intrusion detection system is executed within ELinOS, SYSGO's robust industrial Linux distribution, long term supported and suitable for automobiles. ELinOS itself is running as a guest operating system on top of PikeOS. The development environment provides a flexible software framework that helps customers design their software architecture.
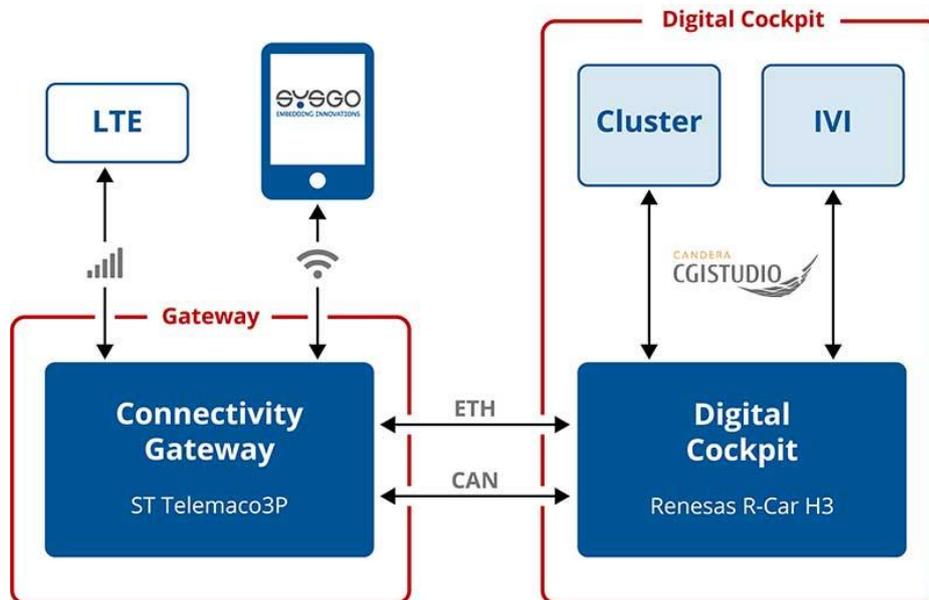
Structure of SYSGO's / Candera's demonstrator based on ST Telemaco 3P and Renesas R-Car H3

Based on our 20 years of experience in the embedded software development together with our broad customer base we have created a mature feature-rich and customizable product. In fact, CGI Studio today covers all aspects of automotive GUI development and beyond. Furthermore, we're closely working together with our customers and industry partners to provide solutions for present and future HMI needs.

Candera providing HMI solutions with 50 million units installed https://www.artspark.co.jp/en/candera_interview/

About SYSGO
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. SYSGO was the first company worldwide to achieve the safety requirement level SIL 4 for its multi-core capable real-time operating system and hypervisor PikeOS®. PikeOS® version 4.2.3 Build S5577 meets the Common Criteria at the EAL 3+ level and is also certified according to the strictest safety standards such as IEC 61508, EN 50128, EN 50657 and ISO 26262, thus enabling application development according to the "Safe & Secure by Design" principle. For industrial embedded systems, SYSGO also offers ELinOS, a Linux distribution with real-time extensions for embedded systems. Furthermore, solutions such as the railway development platform (SAFe-VX) and the Secure Automotive Connectivity Platform (SACoP) for secure data transfer in, with and between automobiles are available.
SYSGO works closely with its customers such as Samsung, Airbus, Thales, Continental, etc., throughout the entire product life cycle and supports them in the formal certification of software according to international standards for functional and IT security. SYSGO is headquartered in Klein-Winternheim near Frankfurt, has subsidiaries in France and the Czech Republic and maintains a worldwide sales network. The company is ISO 9001:2015 and ISO27001:2013 certified and part of the European Thales Group.

For further information visit https://www.sysgo.com/

About Candera

Candera, is a leading HMI tool provider and development partner for worldwide automotive and industrial customers. Candera supports its customers with the CGI Studio tool environment as well as provision of software services mainly in the areas of HMI development and embedded software.
Candera GmbH in Linz/ Austria and Candera Japan Inc. in Shinjuku-ku, Tokyo / Japan are both part of the ArtSpark Group situated in Shinjuku-ku, Tokyo / Japan.

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Candera Japan site：https://www.canderajp.co.jp/
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