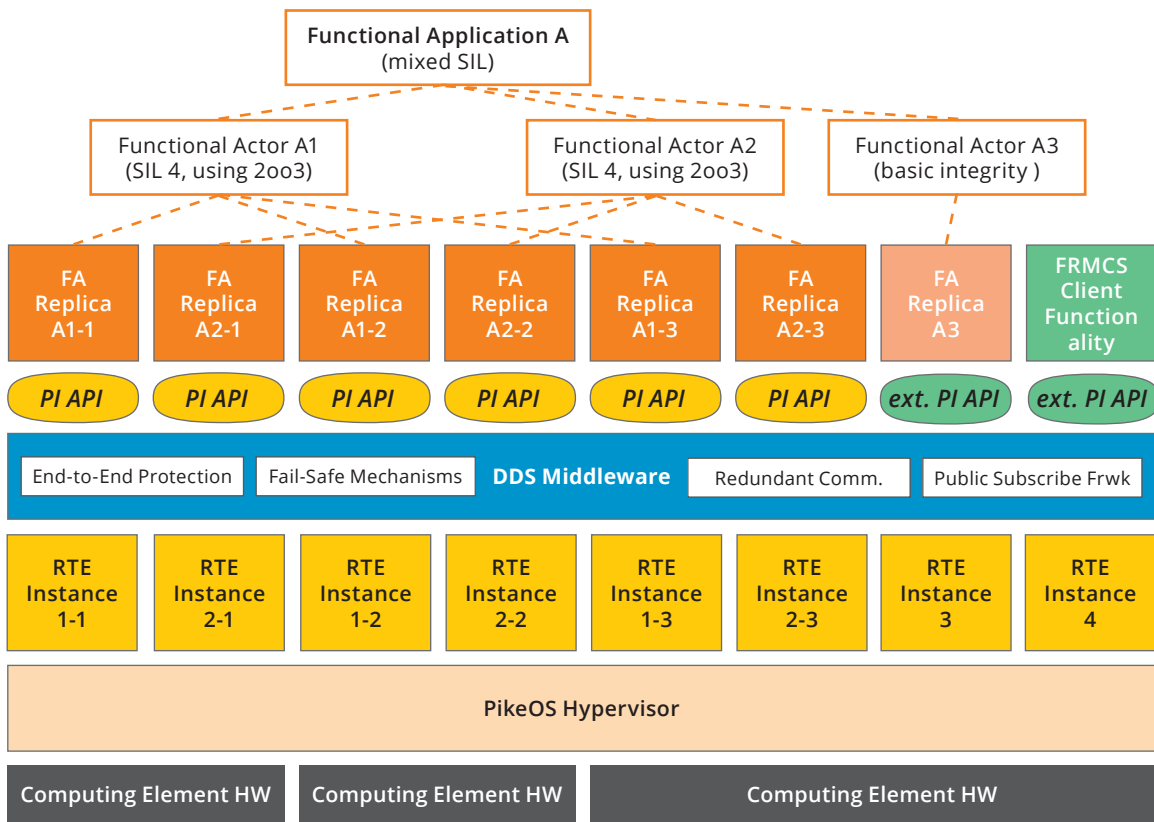


The Reference Control Command & Signalling Architecture (RCA) and Open Control Command and Signalling Onboard Reference Architecture (OCORA) have developed a functional architecture for future trackside and onboard functions. The RCA OCORA open Control Command Signalling (CCS) on-board reference architecture introduces a standardized separation of safety-relevant and non-safety-relevant railway applications and the underlying IT platforms. SYSGO and RTI (among other industry partners) have contributed in consecutive specification work to refine and detail a Safe Computing Platform specification.

**RCA OCORA: SAFE COMPUTING PLATFORM USING OPEN STANDARDS**

Based on a Safe Computing Platform (SCP), the architecture accommodates a Platform Independent Application Programming Interface (PI API) between safety-relevant railway applications and IT platforms. This approach supports the portability of railway applications among IT platform realisations from different vendors.

RTI & SYSGO are discussing the RCA OCORA architecture with emphasis on its safe computing framework, reviewing the required operating system standards and the newly-released DDS Reference Implementation for Safe Computing Platform Messaging. While designed for rail, this architecture has also elements of interest for other industries.



**SYSGO PikeOS - RTOS & Hypervisor (up to SIL 4)**

- Safe and secure virtualization (HW & Para)
- Mixed criticality with multiple guest OS
- Broad CPU architecture support
- Certifiable according to highest Safety & Security standards
- CertKits for Railway & Transportation, Aerospace & Defense, Automotive, Industrial and Medical
- Multi-core performance

**RTI Connex<sup>®</sup> - Data Distribution Service (DDS<sup>™</sup>)**

- Based on the OMG<sup>®</sup> Standard ([www.omg.org](http://www.omg.org))
  - APIs for portability
  - Wire protocol for interoperability
- Data-centric publish subscribe
- Specifically designed for mission-critical systems
- Enables high-performance in distributed systems
- Advanced debug and development tools

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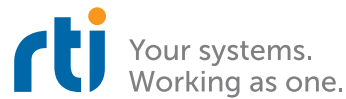
PARTNER COLLABORATION

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SYSGO is the leading European manufacturer of embedded software solutions with its 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 on highest industry levels. For security certifications PikeOS also meets the Common Criteria EAL 3+ level. SYSGO is part of the European Thales Group.

[www.sysgo.com](http://www.sysgo.com)



Real-Time Innovations (RTI) is the largest software framework provider for smart machines and real-world systems. The company's RTI Connex@ product enables intelligent architecture by sharing information in real time, making large applications work together as one. With over 1,500 deployments, RTI software runs the largest power plants in North America, connects perception to control in vehicles, coordinates combat management on US Navy ships, drives a new generation of medical robotics, controls hyperloop and flying cars, and provides 24/7 medical intelligence for hospital patients and emergency victims.

[www.rti.com](http://www.rti.com)

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PRESENTATION & DOWNLOAD

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You can download the joint presentation soon: [www.sysgo.com/blog](http://www.sysgo.com/blog)

Download the "OMG DDS Reference Implementation for Safe Computing Platform Messaging":  
<https://github.com/OCORA-Public/Publication>

