Platform for safety-critical applications
TAS Platform
TAS Platform provides common fault tolerance architectures, communication interfaces, operating system services and hardware components for safety-critical applications. It enables a common safety and security strategy for all safety-critical railway products within Thales and provides a solid technological basis for the next decades.

**Description**

Electronic railway control systems share common requirements concerning safety, security, dependability, and real-time responsiveness. The TAS Platform is a vital computing platform which has been designed to meet these stringent requirements. It separates the specific railway applications from hardware and system software technology.

As a result, the lifetime of complex railway applications is ensured while exploiting the fast progress of state-of-the-art computer technology. This guarantees that electronic railway systems meet the long product lifetime typical of the market (at least twenty years).

**Advanced Technology**

The TAS Platform incorporates the most advanced technology in the railway industry. Thales uses this common technology platform for all types of vital railway systems – for both urban rail and main line applications. Innovative Thales railway control systems, such as electronic interlockings, axle counters, automatic train control systems (ETCS), rail onboard systems, field elements and more are based on the TAS Platform.

The platform’s use of the same core functions for a large variety of applications results in higher quality, reliability, safety and security. This, in turn, leads to increased customer satisfaction.

**Main Functions**

The TAS Platform is based on state-of-the-art software technologies. It uses an open, scalable software architecture based on well-established industrial computing standards and supports real-time multi-tasking applications in a computing environment.

The platform uses off-the-shelf components supplemented by elements designed specifically for railway control systems, as well as COTS server hardware for high power applications. The core of TAS Platform contains a set of software components including the operating system, the communication system and the fault tolerance system. The TAS Platform’s communication system provides various standard services with extended semantics for safety applications, as well as safety relevant protocols consistent with CENELEC standards. The fault tolerance system offers several different redundancy configurations and also provides fault management services.

The TAS Platform provides tools for common computing infrastructure with well-established interfaces for development, testing, documentation and problem reporting.

The platform meets stringent dependability requirements and provides application transparent redundancy handling and fault management service enablers for safety-critical, real-time applications up to CENELEC safety integrity level SIL4. The TAS Platform has been assessed according to safety and security standards by independent assessors and federal assessment institutes (EBA, BAV, etc.).

The TAS Platform’s modular architecture, standard application programming interface and well-defined adaptation layers ensure that the platform will keep pace with technological advances in hardware components and system software components in a controlled manner.

**Key Facts**

- Safety certified according to CENELEC EN 50129 SIL4
- Security Certification according to IEC 62443 SL3
- Hardware independent
- Ready for the Cluster / Cloud
- TAS Platform will enable TransVital™