



## LockTrac 6151 L90 5 Electronic Interlocking System

### Main References

Major projects in:

- Spain
- Finland
- Croatia
- Bosnia-Herzegovina
- Latvia
- Poland

LockTrac 6151 L90 5 is a modular electronic interlocking system which combines high reliability and cost efficiency.

Connected over standardised interfaces, the system can be configured for obtaining the optimum system configuration to satisfy all customer needs. Various types of indoor and outdoor equipment components can be connected.

The vital or non-vital integrated Human-Machine Interface (HMI) can be connected locally or remotely. Full-automatic operation is possible.

The interlocking offers a modern, economical and compact system for small and medium stations without restrictions of the system functionality.

Due to its integrated new diagnosis and station design tools, the system is easy to maintain.

### Main Functions

LockTrac 6151 L90 5 includes interlocking functions such as monitoring, protection and release of routes, including block lines.

A highly generic system software leads to standard interlocking libraries and clearly defined software interfaces within the application software. The software interfaces facilitate system adaptation to special customer needs.



## > LockTrac 6151 L90 5

The hardware of the interlocking module consists of standard industry computer boards based on state-of-the-art Intel processors.

Great importance is attached to the support of modern communication facilities. For communication between the interlocking module and the field element controllers, as well as for the communication between the interlocking and other systems such as Centralised Traffic Control (CTC) Centres, axle counters or train facilities, all current standards are supported. The system is also prepared for radio based transmission systems.

### Technical Features and Configuration

In order to ensure maximum availability, the product is configured as a 2-out-of-3 computer system. It is based on Thales' TAS platform operating system and works together with the safe communication protocol Open Communication Server (OCS), developed by Thales for safety related components. TAS platform as well as OCS are developed according to CENELEC SIL 4 and approved by the German railway authority (EBA).

The safety of the operating system is based on a special procedure with time-equivalent operation within all computer channels. Thereby an exchange of messages and a comparison of the results of these computers is performed. At least two of three computers must have the same result to guarantee the correct function of the product. In the case of any irregular result in one of the computers a safety reaction is performed which stops this computer.

During start and normal operation, phase hardware tests are performed to detect any malfunction. In the case of failures, a safety reaction – depending on the kind of failure – is performed.

For operating and controlling the LockTrac 6151 L90 5 the HMI NetTrac 6655 SOC/VCC product can be used without any adaptation. For connection to other HMIs from Thales or other companies a safe adaptation module is available.

### Key Benefits

- Scalable and maintenance-free hardware
- Long product lifecycle through future-oriented technology
- Easy to adapt to customer functionality by generic software kernel
- Operates with or without transmission system
- High availability
- Designed for centralised and local operation
- Easy to adapt to different HMI systems
- Compatible with existing trackside equipment
- Developed according to CENELEC standards SIL 4

Field elements like signals, points, and track circuits are controlled by the field element controller LockTrac 6191 FEC. Depending on the amount of elements, several of these components can be configured.

In addition, a connection to axle counter FieldTrac 6315 Az LM is available as well as a connection to speed supervision systems.

For non-vital information, a programmable logic control is used.

Adaptations to neighbour interlockings, either relay-based or electronic, are also available.

