The performance and durability of the on-board system is day out of service. We can carry out updates in around one hour.”

“Dismantle the EVC,” says Mr Mindel. “Normally, this would mean a from one source, using one interface and there is no need to “Our solution allows you to carry out a complete software update from one source, using one interface and there is no need to dismantle the EVC,” says Mr Mindel. “Normally, this would mean a day out of service or if a balise was passed without receiving a message,” explains Klaus Mindel, ETCS On-board Business Manager, Thales. “The application pinpoints where and when it happened.”

“Minimising the size of the system was a key consideration. This is particularly important for rail-bus where space is limited,” says Mr Mindel. “We have the capability to split the EVC into two parts if the customer requires it.”

The launch of its new ETCS Level 2 on-board system consolidates Thales’ leadership in main line signalling

The European Train Control System – ETCS – is fundamental to railway interoperability. Developed to promote easy cross-border operations in Europe, ETCS is rapidly becoming established as a global train control standard. As well as offering interoperability and safety benefits, ETCS improves energy efficiency and reduces life cycle costs.

Customer needs

The expansion of ETCS presents train manufacturers and railway undertakings with a number of challenges. First, there’s the need to equip or re-equip existing fleets with new ETCS equipment and to provide ETCS on-board systems for newly-manufactured trains.

In tandem with this, there’s the requirement to integrate legacy train control systems. ETCS on-board systems must also be interoperable with RBCs (Radio Block Centres) produced by different manufacturers. To ensure that new on-board systems will work seamlessly with trackside equipment, there’s a need for interoperability testing as well.

Thales’ ETCS Level 2 on-board system

Thales’ new on-board system takes all of these needs into account and incorporates enhancements that ensure the solution is reliable, cost-effective and easy to integrate.

One of these is Thales’ browser-based diagnostics application. This allows staff to carry out a range of checks and interventions, from routine status monitoring to complex system modifications, such as wheel diameter configurations.

These tasks can be conducted safely and easily using a tablet computer or laptop linked to the train’s EVC (European Vital Computer) – the nerve centre of the on-board system. The application is to a great extent language independent thanks to the use of icons for access to key functions.

The application also provides insights into the condition of trackside equipment. “The system can tell you that a GSM-R channel was out of service or if a balise was passed without receiving a message,” explains Klaus Mindel, ETCS On-board Business Manager, Thales. “The application pinpoints where and when it happened.”

Optimising life cycle costs

Because locomotives and rolling stock are long-lived – typically lasting 25 years or more – operators need ways to upgrade on-board systems without incurring costs and disruption.

“Our solution allows you to carry out a complete software update from one source, using one interface and there is no need to dismantle the EVC,” says Mr Mindel. “Normally, this would mean a day out of service or if a balise was passed without receiving a message.”

Thales’ ETCS Level 2 on-board system profits from our computing. “Our ETCS Level 2 on-board system profits from our continuing support of the TAS platform,” says Mr Mindel. “It means we can change the underlying hardware and operating system while retaining the application software.”

The on-board solution also incorporates Thales’ SDMU (speed and distance measurement unit) – a service-proven subsystem that allows the train to determine its precise position. “We have 400 units already in operation,” says Mr Mindel. “Our leadership here is a clear differentiator.”

Thales backs up its product and systems expertise with services to support ETCS deployment. These include interoperability testing to ensure trackside and on-board systems are compatible.

Meeting business needs

Thales’ entry into the ETCS Level 2 on-board market adds a new competitive dimension. And the company’s position as a signalling specialist, rather than a rolling stock supplier, helps to create a more open market.

“This makes us a more natural partner for some customers,” says Mr Mindel. “Our ETCS Level 2 solution means greater choice for rolling stock manufacturers, particularly ones who do not have signalling systems in their portfolio.”

Thales has been involved in the development of ETCS from the beginning and continues to play an active role in the formulation of specifications through its close relationship with ERA, UNIFE and UNISIG.

Thales expertise in on-board equipment stretches back over 80 years. Today, more than 20,000 trains and locomotives worldwide are equipped with Thales’ systems, including ETCS Level 1, Indusi, LZB and TPWS. The addition of the ETCS Level 2 on-board system completes the portfolio and confirms Thales’ number-one position in the main line signalling arena.

ETCS LEVEL 2 ON-BOARD SYSTEM AT A GLANCE

• Maintenance efficiency – browser-based diagnostics interface
• Compact – space-saving on-board design
• Easy upgrades – for optimised through-life costs
• Future-proof – swap hardware and software with minimal

Today, more than 20,000 trains and locomotives worldwide are equipped with Thales’ systems.