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ETCS – EUROPEAN MARKET OUTLOOK

Wayside and on-board new installations

2024

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Wayside and on-board new installations

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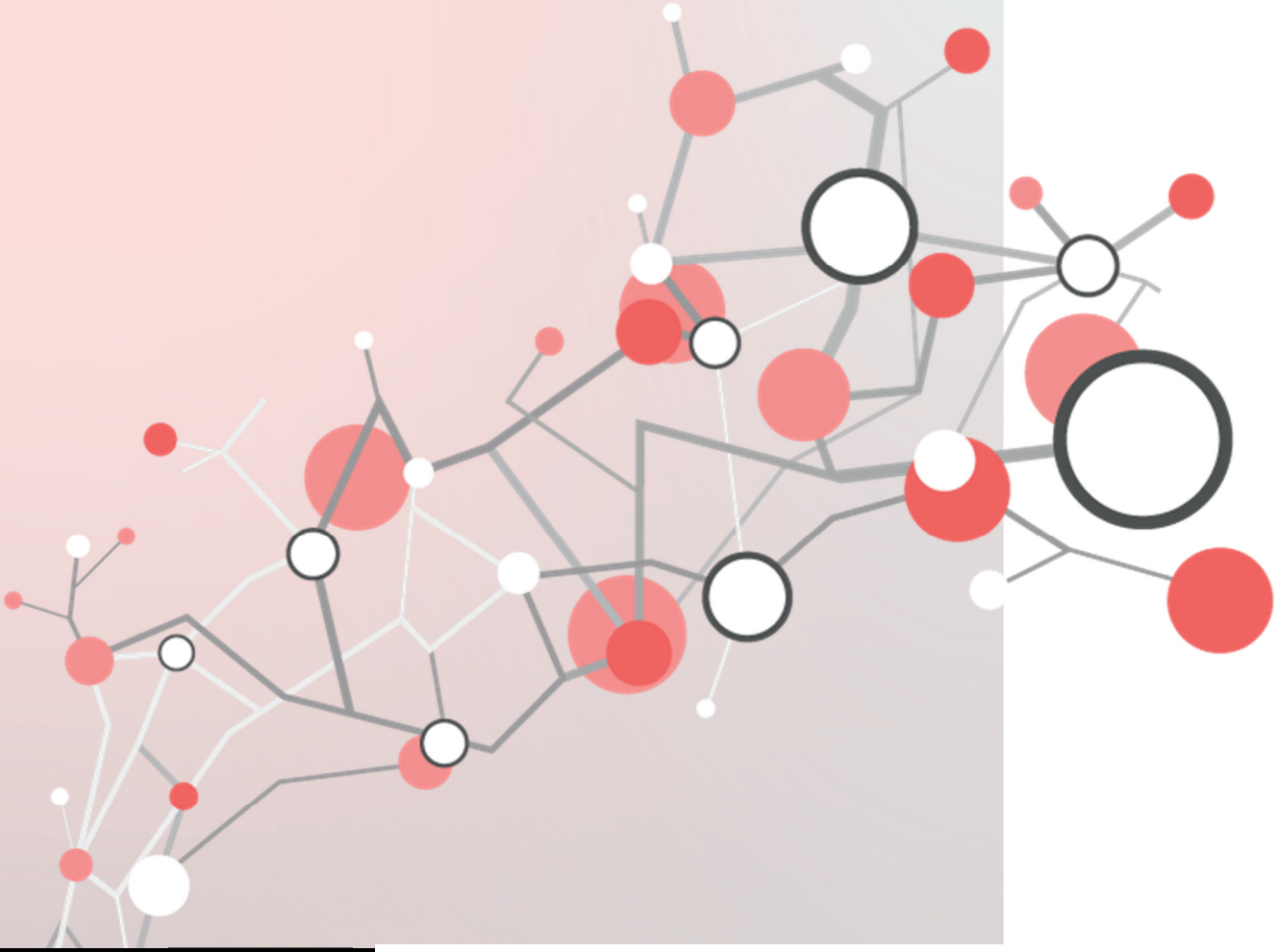


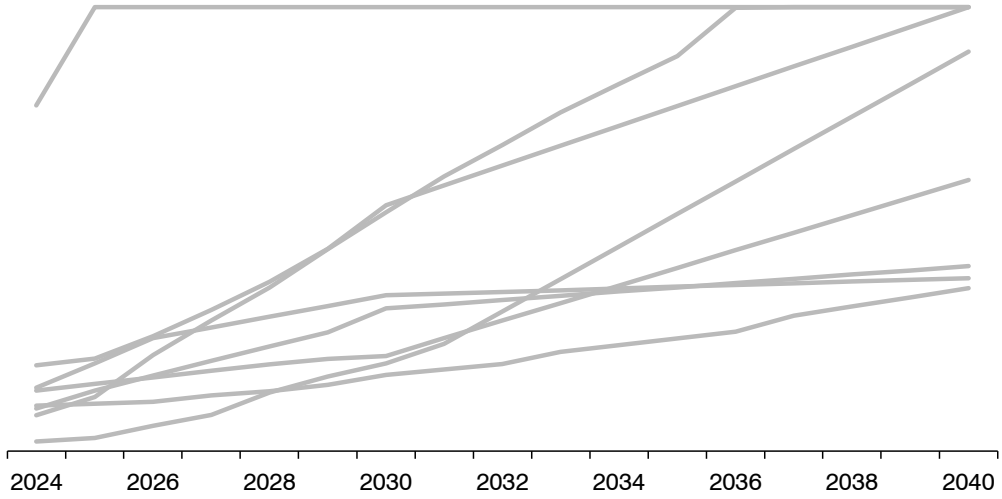
1 Executive Summary

Executive Summary

The sluggish deployment of ETCS and the stagnation of capacity expansion are holding back the digitisation of Europe's rail network

At present, only about xx km or x% of the European rail network is equipped with ETCS. At the same time, the current level of equipment, as well as the deployment and decommissioning plans for the national Class B signalling system, varies greatly from country to country. Although all member states of the European Union are obliged to implement ETCS on the Trans-European Transport Networks (TEN-T) by 2030 and on the extended core network by 2040, there are significant differences between them. Many countries have set themselves the target of fully equipping their rail freight corridors (RFC) by 2030 or at least a few years later. Belgium will have its entire network fully equipped by xxxx and will phase out its Class B system by the end of that year. The Czech Republic and Italy aim to be fully equipped by xxxx, while the RFCs will be equipped earlier. However, it is unlikely that the big countries, namely France, Germany and Poland, will meet the target of implementing ETCS on their core networks.

Forecasted ETCS wayside equipment per selected country until 2040
(Kilometer of equipped wayside as share of the relevant railway network in %)



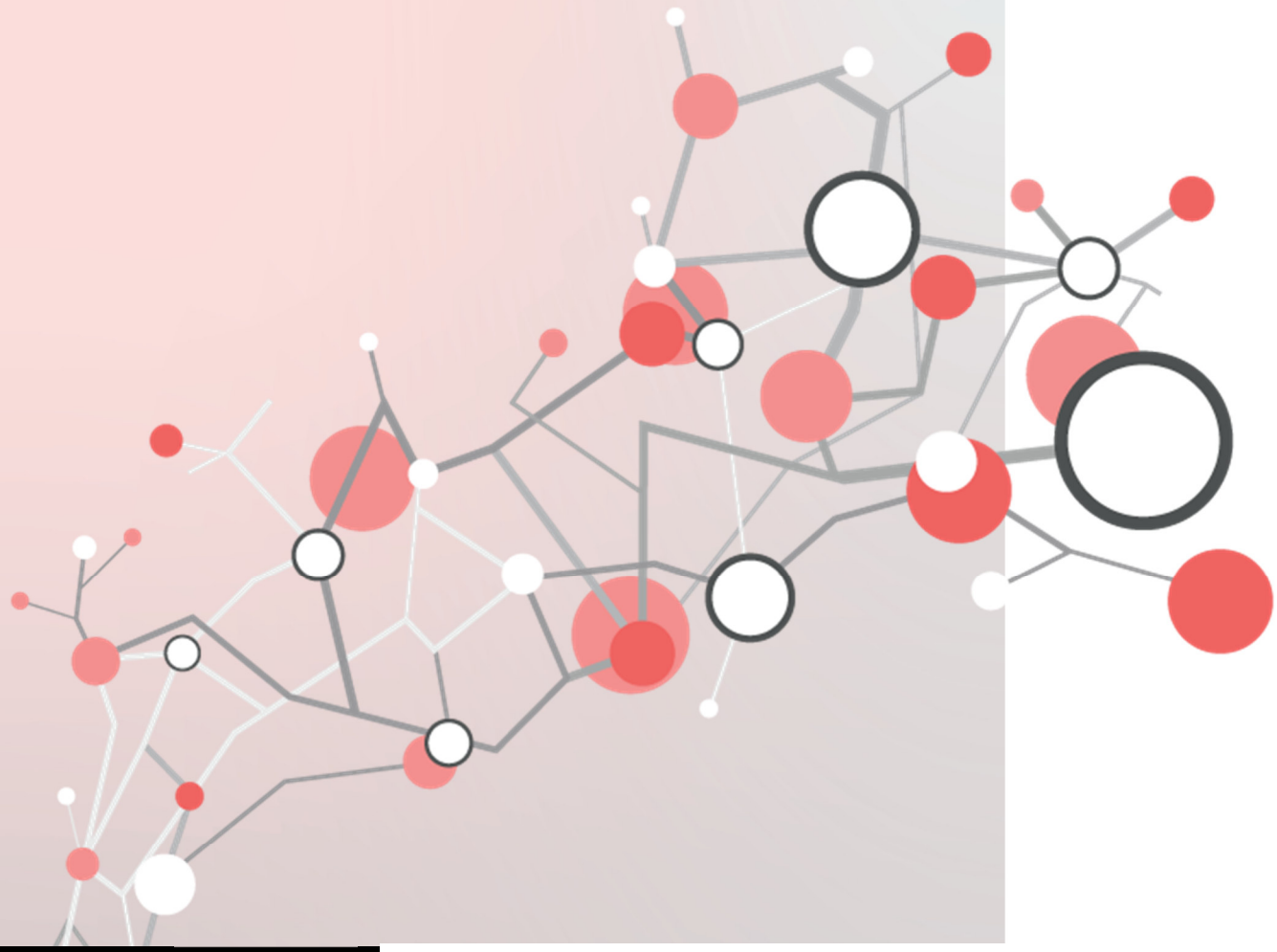
Note: All values indexed

Figure 1: Forecasted ETCS wayside equipment per country until 2040

The promises and benefits that full implementation of ETCS in Europe would bring in terms of interoperability, increased capacity, improved punctuality and increased safety on the rail network are being pushed further into the future by the slow pace of implementation. Moreover, improving the competitiveness of rail transport is essential to achieve the European goals of modal shift and decarbonisation of the transport sector. In the long term, the digitalisation of the railways is without alternative to keep pace with the increasing flow of passengers and goods. Digitalising railway signalling systems can maximise capacity of railway lines and increase availability without the need to build new infrastructure. Furthermore, the decommissioning of Class-B conventional signalling systems will result in maintenance savings for infrastructure managers, due to ETCS Level 2 eliminating the need for lineside signalling and cabling. As ETCS is an essential pillar of railway digitisation, countries will need to step up their efforts.

To increase their implementation efforts, countries and their respective railway infrastructure managers must construct and fulfil comprehensive wayside equipment strategies. Regarding current strategies, countries can be grouped by their implementation status and strategy as follows:

	Full wayside equipment reached	**Full wayside equipment**			**Comprehensive strategy but no full wayside equipment planned**	**Low current wayside equipment and missing comprehensive strategy**	**Focus on TEN-T corridors**
		by 2030 at latest	**by 2040 at latest**	**by 2050 at latest**			
Focus countries	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Non-focus countries	xxx	xxx	xxx	xxx	xxx	xxx	xxx



4 Market for ETCS Installations in Focus Countries

4 Market for ETCS New Installations in Focus Countries

4.1 Austria

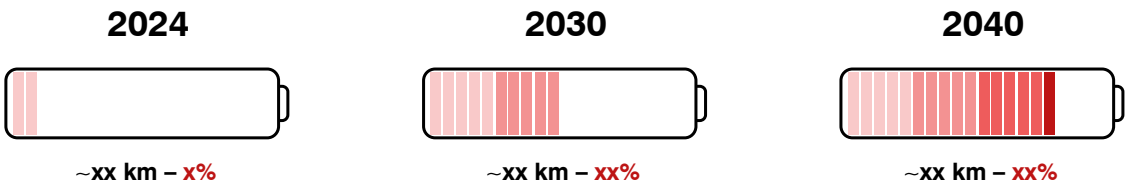
4.1.1 Summary

SCI Verkehr expects a total market volume of ETCS new installations in Austria of EUR xx billion, of which EUR xxx million are earmarked for the infrastructure and EUR xxx million for rolling stock. Additional xxx km of the network should be equipped with ETCS until 2038, with ETCS-only operation covering all equipped lines by 2038. Until 2034, additional xxx units will be equipped, bringing the ETCS on-board share from currently x% to x%.

Infrastructure

Consideration of ETCS deployment in Austria is limited to infrastructure owned by ÖBB-Infrastruktur AG. The respective network has a length of ~xxx km of which around xxx km are equipped with ETCS (L2) as of late 2024. Due to the comprehensive plans by ÖBB-Infrastruktur AG and the Austrian government, (…)

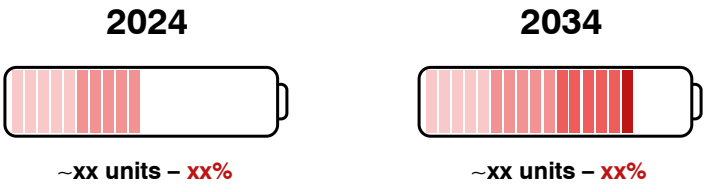
ETCS wayside equipment Austria [km]



Rolling Stock

As of 2024, (…)

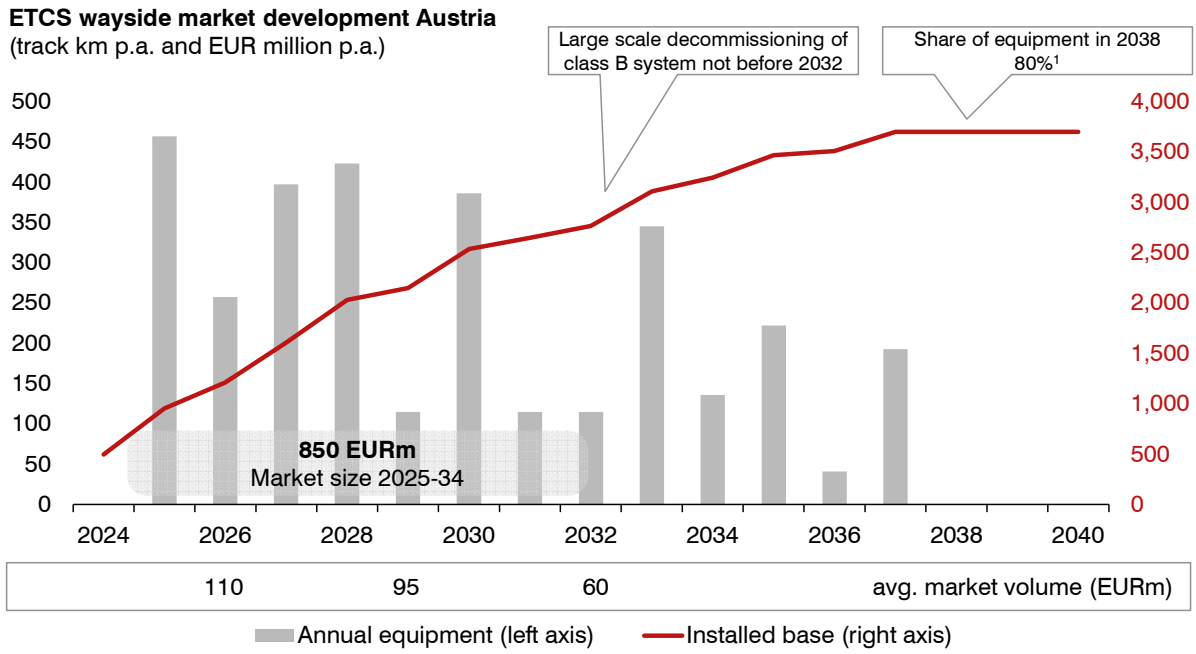
ETCS on-board equipment Austria [km]



4.1.2 Infrastructure

ETCS implementation plan / Market size and outlook
According to the Austrian government and ÖBB-Infrastruktur AG, around 3,900 km (~80%) of the rail network should be equipped with ETCS level 2 by the end of 2038. This goal is already backed by a comprehensive strategy. There are several milestones until 2038:

– By the end of 2030:
  – (…)



Remark: All numbers rounded. [1] Incumbent network only.

Figure 2: ETCS wayside market development Austria

ETCS installations
According to network operator ÖBB-Infrastruktur AG, ETCS level 2 is installed on around xxx km by late 2024. The focus is on (…).

Section	Level	Baseline	Route length [km]	Implementation finalized	Supplier	Remark
xx	xx	xx	xx	xx	xx	xx
(…)						
Total			**xxx**			

European corridors
Because of its strong industrial economy, Austria is an important origin / destination of freight transport in Europe. Due to its geographic location, it is also an important transit country to / from Southeast Europe. Thus, there are five RFCs running through Austria.

(…)

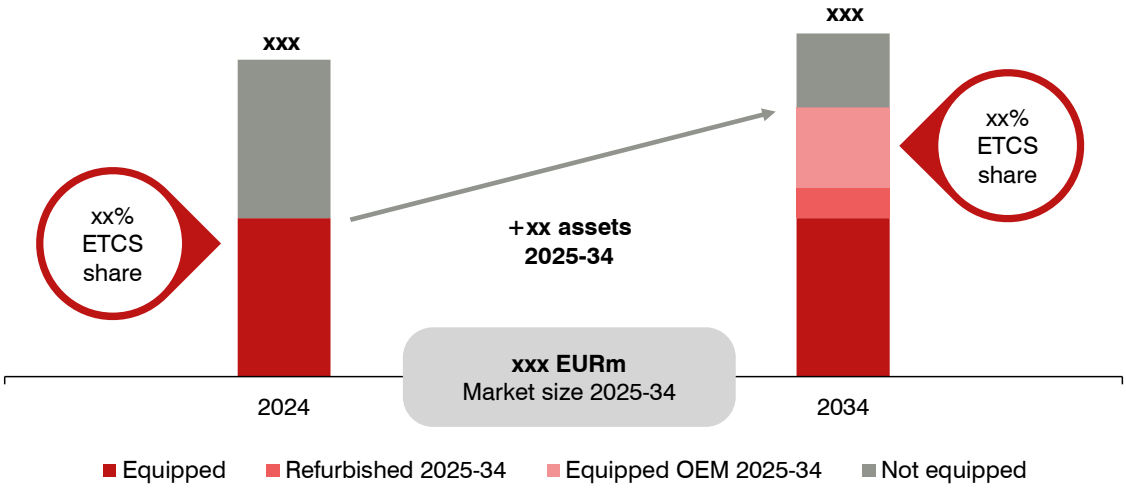
RFC	Status of ETCS installation	Rationale
RFC 3 Scandinavian - Mediterranean		– (...)
RFC 5 Baltic - Adriatic		– (…)
RFC 7 Orient / East-Med		– (…)
RFC 9 Rhine - Danube		– (…)
RFC 10 Alpine - Western Balkan		– (…)

Class B system(s)
(…)

4.1.3 Rolling Stock

State of equipment and outlook
The considered rolling stock fleet in Austria encompasses ~1,800 vehicles of which 50% are already equipped with ETCS. By taking a deeper look, it becomes obvious that there are great differences between the vehicle types…

ETCS on-board market development Austria
(units and EUR million)



Remark: All numbers rounded.

Figure 3: ETCS on-board market development Austria

As listed in the National Implementation Plan for ERTMS in Austria, the decommissioning of the Class-B system will start on a large scale (…).

SCI Verkehr expects that the ETCS share is going to rise from xx% today to xx% in 2034. This is in line with the planned equipment of an additional xx units, comprising xx retrofitted units and xx new deliveries equipped with ETCS. As ETCS deployment is limited to infrastructure owned by ÖBB-Infrastruktur, rolling stock that is deployed on networks from other owners will not be equipped. The respective market volume amounts to EUR xxx million in total.

Public funding
(…)

Market size and outlook for single vehicle types
(…)