



THE DEPLOYMENT OF ERTMS IN LATIN AMERICA

The lack of investment policies and the very low priority for maintenance of the railway network in this important area of the world, as a whole, has caused a paralysis of the railway activity of both passengers and cargo. It is significant to note that among the 50 countries with the largest rail network in the world, only 5 are located in Latin America, in this order: Argentina (8), Brazil (10), Mexico (11), Chile (30) and Cuba (35).

Nowadays in the different Latin American countries they have realized that to be competitive in the export of their regional products, they must improve the internal transport cost structure, and therefore the railway reactivation justifies the investment plans that are being carried out. There is a wave of reawakening in the different railway networks. Naturally, in terms of passenger transport, suburban railways have become a priority in the larger large cities, as a feeder arm for metro networks, in order to reduce the dependence on cars and acquire great improvements in environmental impact.

Within this wave of expansion and modernization, three countries have stood out and continue to invest in the introduction of ERTMS in their Networks: namely Brazil, Chile and Mexico.



BRASIL

Brazil has been the first Latin-American country to implement ERTMS technology in Supervia railway infrastructure but in a limited manner.

The project is part of an overall upgrade program being undertaken to improve services on the five-line Rio commuter network by 2015. The aim was to be transporting one million passengers every day – safely, swiftly, reliably and happily on the 225 kilometres of line and between the 89 stations. The new system will enable a s three-minute headway in the densest sections of the network, between the Central and the Deodoro stations, foreseen to start service in November 2012.

ERTMS Level 1 technology allows automatic management of the time between trains, with the system automatically stopping the train even if a driver ignores a signal instruction to stop the train or a speed limit. The ATP solution, when associated with the traffic management system, reduces headways and optimizes the speed, therefore increasing the capacity of the line whilst placing safety at a top level.



CHILE

CHILEAN State Railways (EFE) has decided to implement and install ETCS Level 1 on the 22km Santiago Alameda – Nός line, the first commercial deployment of ERTMS in Chile and only the second in South America. The line connects further south to Rancagua (85 km) and then to Chillán (400 km).

The contract also includes on-board equipment and five year's maintenance plus the supply of computer based interlocking, control centre and track detection systems.

The installation of ERTMS together with other infrastructure enhancements has allowed the introduction of high-frequency MetroTren suburban services between Santiago and Nός, with trains running at four-minute interval at peak times. This project is supplemented by an enhanced Rancagua Xpress, which will operate at 15-minute intervals in peak periods, running non-stop from Santiago to Nός, and calling at all remaining stations to Rancagua.

Due to the implementation of ERTMS technology improvements to suburban rail services in Santiago to increase MetroTren ridership from around 7.5 million passengers to 18 million passengers.

This automatic train protection (ATP), when associated with the traffic management system, reduces headways and optimizes speed. This results in increased line capacity with safety as a top priority.



MEXICO

Even if Mexico is the third one to implement ERTMS in this area, Mexico is the only one with two ERTMS projects: Cuautitlan – Buenavista Suburban Line, running since 2009, and Toluca – Mexico, under execution with expected first phase delivered before end of 2018.

Cuautitlan – Buenavista Suburban Line is the first ETCS Level 1 in the world to be implemented in a high density line. The line, which links Mexico City with four surrounding municipalities, has the capacity to serve 300,000 passengers per day, with an estimated number of 100 million passengers per year, in an area of high and growing density demographic and important economic activity for the region.

This first North America ETCS technology application allows 3 minute headways with 25 km of double track line (70 km in total) serving 7 stations – 5 municipalities and a total of 4.8 million inhabitants. Total trip time: 23 minutes and a maximum speed of 130 km

Mexico – Toluca interurban line is the first ERTMS Level 2 project in North America with the incorporation of ATO (Automatic Train Operation) over ERTMS.

Toluca, capital of the State of Mexico, is a city of great growth industrial area with a population of 1.8 million habitants, making the Mexico–Toluca highway one of the busiest. The new connection of 57 km l will reduce the saturated system of local roads of approximately 200.000 vehicles, contributing to the significant decrease in CO2 emissions. It is also expected that this route will be used for around 270.000 passengers daily, with trains that will reach 160 km / h, in a 39 minutes trip. It is worth mentioning that the Mexico-Toluca interurban train, It is the first passenger train that will link two cities of different states of the country.



CONCLUSIONS

Latin America is truly at a «turning point» and needs to «do much more» to take advantage of ERTMS and other technological advances, because «success or failure» in this field depends on the speed and enthusiasm applied to deployment.

The ERTMS system is undoubtedly the most powerful train control system in the world and provides important advantages in terms of savings in maintenance costs, safety, reliability, punctuality and traffic capacity. This explains why the ERTMS is increasingly successful and countries like Mexico commit to this technology to address their mass transit needs of taxpayers in highly populated areas but additional effort is required to address the more remote communities as well as give support to freight movement.

Considering the growth of the area as well as the reawakening of the railroad in many of the countries in the area, ERTMS technology, due to its characteristics (security, efficient management and interoperability) By adopting a more efficient and secure management system and its being an interoperable system, ERTMS can be the solution in this area for future large and strategic projects. The success of the three countries mentioned can show the way to others for an integrated network in the region.

SUPPLIERS

