

ERTMS system goes far beyond European borders

Over the last two decades, the Maghreb region has emerged into a growth region and a very dynamic market with a high accent put on the development of rail transport. An efficient and effective transport system is essential to the success of any economy and Africa is no exception. From freight to passenger, the African railway systems hold the key to the continent's development.

Africa's railways are in a state of much needed upgrade and African governments are giving the green light to fundamental railway projects. With railway lines that have become too old to operate, gauge railways which need to be upgraded, and outdated signaling systems, railway operators and transport ministries are making huge changes to their rail networks right now.

by Elena Ilie

The Maghreb plays a leading role in the transport sector, stemming from its strategic situation as a bridge between the African and European continents and between the Mediterranean in the East and the Atlantic Ocean in the West.

Not long ago, three Maghreb states, Tunisia, Algeria and Morocco, signed an agreement aimed at promoting the mobility of people and cargoes and consolidating trade between these countries. The agreement falls within the framework of the promotion of the commercial sector as a fundamental pillar for the Maghreb integration process. A 1,200km planned railway will connect Tunisia, Algeria and Morocco. Under this agreement, Maghreb countries will strive to connect rail networks in the region and unify the measures and techniques used in the construction of railway infrastructure, in accordance with international standards of the International Union of Railways.

It also aims to ensure the consistency of projects at the technical and organizational levels between rail networks and the integration of the achievement of the Maghreb high-speed train in national projects.

The African Development Bank Group has agreed to offer Tunisia a grant amounting to USD 1.7 million to fund a feasibility study in Tunisia's section of a planned transnational railway, the Arab Maghreb Union (AMU). The share of the transportation business in Maghreb countries' GDP remains relatively limited (6 to 7%) compared to European countries (10%) and particularly some countries such as France (14%).

According to EuroMed transport study on rail transport in Maghreb Countries (Actions of the Regional Transport Action Plan) all three countries, Tunisia, Algeria and Morocco, launched programs to reform the railway sector and redefine its economic role. The objective is to reduce costs, increase the sector's competitiveness with regard to the road and increase the attractiveness of the railway transport. Also, Maghreb countries worked on identifying a freight corridor (Trans-Maghreb) and its connection to the European network. International railway corridor Casablanca –Tunis (Trans-Maghreb) is on a good technical status (track renewal and signalling and telecommunication modernisation are already done,

under implementation or scheduled).

The three Maghreb countries elaborated investment plans and programs for the rehabilitation, reinforcement, and extension of infrastructures, and the development of the very high speed trains and the urban rapid network.

Ambitious programs for the renovation and extension of the rolling stock have been finalized in order to improve the quality of service and to reduce travel time.

Investment plans for rolling stock, electrification and signalling have already been or are in the process of being drawn up, working to common standards and with a longer term view of raising standards and achieving interoperability not only from an operational point of view but also from a safety view point. The plans address both passenger and freight services.

Growing external demand for natural occurring minerals and energy resources has attracted investment interest from both Europe and Far East all over the region. These investments have been done on a Government to Government basis and by direct Government investment in railway companies in order to support the extraction and transport of minerals to suitable (upgraded) ports and international shipping thereafter. Investment is also provided for new intercity and urban services for cities with double digit population growth.

Such a situation with respect to the railways allows the incumbent railway companies to plan dramatic steps in adopting the latest, proven technology to provide a safe



Photo: ONCF

backbone transport system that will provide life improving functionality to the local populations by opening up passenger and freight links into their neighbouring countries and open routes into the less populated interior territories.

ERTMS is evolving outside the European borders

Political and strategic vision for the ERTMS train and traffic control system goes far beyond European countries and reaches to Asia, the Americas and Africa.

ERTMS system, as an universal and compatible signaling system, is an innovative solution designed to deal with a growing transport demand and also to improve the capacity on railway lines.

With more than 76,000 kilometers of contracted railway tracks, out of which nearly 50% outside Europe, ERTMS has now established itself as a global standard.

Thus, according to the European Rail Industry Association (UNIFE), Africa and Middle East region account for 14% of worldwide trackside contracts and steady increase is foreseen. Significant investments plans have been contracted especially in Maghreb countries.

Algeria is the second largest country in Africa and has a rail network of 4,300 km (of which 394 km are double track and 283 km of electrified track). Algeria has embarked on an ambitious Railway Network Development plan introducing new signalling and telecommunications systems including the doubling of some lines, providing the capability to operate at speeds of 160km/h on others and building new lines and electrifying existing lines.

SNTF (Algerian National Railways) and ANESRIF (Algeria's National Railway Investment Agency) are responsible for the execution of the investment. Algeria had seen a decline in the transport of both passengers and freight which made the development of the railways a national priority. Increasing line speeds and electrifying lines, introducing GSM-R radio communications and introducing ETCS positions Algeria in the best place to enjoyfull interoperability with its neighbours.

The Rode Nord passenger and freight route includes the deployment of ETCS Level 1 and 2. This double track route will run 96km between Annaba and Ramdane Djamel in the east of the country, 226km from Bordj Bou Arreridj to El Gourzi and 104km from El Khemis to Oued Sly.

Other plans are underway within Algeria for new high speed lines.

The SNTF has a very impressive investment programme of line rehabilitation and network extension.

Morocco currently benefits from a railway network of 1,907km length (of which 1,537km single track, 370 km double track). The Moroccan railway network, managed and operated by the National Railways office ONCF, has undertaken significant investment and development steps to raise the performance of its network. There are ambitious plans for the railway which has seen a restructuring phase, a performance consolidation phase and a development and extension phase. ONCF is also a keen supporter of the Maghreb-Europe freight corridor

plan that will see a freight connection from Tangier to Tunis on a corridor 2,337 km long - which will depend heavily on the Moroccan railway being suitably prepared. Routes to be improved deploying ERTMS level 1 include the Casablanca - Rabat route, a distance of 80km with double track.

A very high speed line operating at 320 km/h is planned to link the cities of Tangiers and Casablanca, which should be ready for operation before 2020. The first phase of this line, almost 200km of double track from Tangiers to Kenitra are already under construction, with commissioning scheduled for 2018. ERTMS level 2 has been the chosen signalling system.

Tunisia has a rail network of 2,218 km (1,991 km in operation, 673 km of which are reserved for freight services). The network operated by SNCFT - the Tunisian Railways National Company - has yet to commit to the introduction of ERTMS/ETCS in its network but located, as it is, between two ERTMS-equipped countries - Libya and Algeria - Tunisia will surely start to feel the need to adopt ERTMS into its network if only to support the introduction of interoperability for the North African Link and enhance interoperability.



Although in Tunisia the national railways will remain a monopolistic company (regarding the infrastructure management and the operation activities), private sector operators will be allowed to operate some suburban and tourist passenger and freight services.

ERTMS, as the globally accepted international signalling system with its advanced technology and safety features is present in the Maghreb railway development plans providing a significant long term planning of the region's international network.

The development, availability and the introduction of ERTMS has provided the useful mechanism for railway operators across the Globe to find an easy way to interconnect their networks. The railway companies of the Maghreb could look forward to potential simplified cross border operations, introduction of high speed services with greater levels of safety and the ability to mix traffic on their lines with much greater capacity thanks to the advanced features of ERTMS.