ERTMS DEPLOYMENT IN THE MAGHREB COUNTRIES
ERTMS TO PROMOTE ECONOMIC GROWTH IN NORTH AFRICA COUNTRIES

Three of the Maghreb countries (Algeria, Tunisia and Morocco) have been working together since 2005 on a common regional development plan to promote and accelerate economic growth and integration which naturally includes investment in infrastructure, including rail transport. Investment plans for rolling stock, electrification and signalling have already been or are in the process of being drawn up, working on 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 aspect. The plans address both passenger and freight services. A fourth country of the Maghreb, Libya, also with a coast line on the Mediterranean, has embarked on a wave of railway investment commencing from the unusual position of having no operational railways at all since 1964.

How can ERTMS increase the competitiveness of the Maghreb countries?

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 public investment in railway companies in order to support the extraction and transportation 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 allows the incumbent railway companies to plan dramatic steps in adopting the latest, proven technology to provide a safe backbone transportation 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 areas within the countries.

ERTMS, as the globally accepted international signalling system with its advanced technology and safety features is fully part of the Maghreb railway development plans providing a significant long term planning of the region’s international network.
**ALGERIA**, with a population of 34.1M, it is the second largest country in Africa and has a rail network of 4,300 km (3,200 km UIC track, 1,100 km of narrow gauge track, 394 km 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. The goal is to reach over 12500km of lines by 2025.

SNTF and ANESRIF are responsible for the execution of the investment. Algeria had seen a decline in the transportation 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 enjoy full interoperability with its neighbours.

The Rocade 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 the territory for new high speed lines.

**THE KINGDOM OF MOROCCO** has a population of 31.7M. Railways in Morocco currently count 1,907km (1,537km single track, 370 km double track and some other smaller special connections to industrial sites).

The Moroccan railway network, managed and operated by the National Railways Office ONCF, has undertaken giant investment and development steps to improve 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. There was an urgent need to reduce costs which led to the railway manpower count drop from 14,000 down to 8,900 between 1995 and 2005.

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, cutting traveling time by more than half. The first phase of this line, almost 200km of double track from Tangiers to Kenitra will be operative by the end of 2018. ERTMS level 2 has been the chosen signalling system with ERTMS level 1 as fall-back.

The strategy of ONCF in his plan “Plan Rail Maroc 2040” is to deploy 1500km of High Speed Lines and new 2743km of conventional railways. For conventional the idea is to have a total network of 5960km by 2040. Railway deployment will improve the life and connect with green transport the 80% of the Morocco population.
LIBYA, with a population of 6.6M has very recently embarked on a railway investment programme for a country that surprisingly in this day, has had no national railway lines since 1964. A line still exists for only freight services into Egypt.

A plan is being pursued to build 3,170 km of standard gauge track eventually forming a part of a line running parallel to the Mediterranean Coast as part of the North African Link, linking Tunisia to Egypt. This line is much needed to boost economic activity and foster growth. The route to Misrata will promote the export of iron ore as well as delivering it to the steel plant located there.

A section of 450km double track from Ras Ejder via Tripoli to Sirt is slowly under construction which will benefit from ERTMS Level 1/2. A further section of 352km from Sirt to Al Khum is also being constructed A single track line will run 800km from iron ore deposits at Wadi Sahti to the steel works and port of Misrata having ERTMS Level 1 and 2 cab signalling installed.

Looking further ahead, plans are being developed in Libya for a Trans-Sahara railway line to run down to Niger – which may mirror the plans of the Saudi Railway company in their aim to build a North-South line down to the Arabian Peninsula. ERTMS would certainly appear to be a logical choice.

This “build from new” opportunity provides the Libyan Railway Authorities with a unique and ideal chance to adopt the most advanced rail technology. Indeed, ERTMS is being introduced as part of the solutions being provided.

TUNISIA, with a population of 10.2M has a rail network of 2,218 km (1,991 km in operation, 673 km of which are reserved for freight services with a mix of standard and metric gauge lines.

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.

There is an additional need to vastly improve the links into the interior to increase the competitiveness of the Phosphate mining industry. All eyes are on Tunisia now to introduce ERTMS.

Indeed, as a first step, a small project has already been contracted which includes the introduction of ERTMS in the country as of 2018.

### SUMMARY

The development, availability and introduction of ERTMS has provided the ideal mechanism for railway operators across the Globe to find an easy way to interconnect their networks. The railways of the Maghreb can 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 brought by ERTMS. Bringing increased safety and capacity, ERTMS is ideally positioned to provide the core signalling technology for many years to come in the Maghreb and beyond.