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# STRATEGIC ACTION PLAN FOR UIC MIDDLE-EAST RAILWAYS

↗ 2018-2020

UPDATED VERSION / NOVEMBER 2018



INTERNATIONAL UNION  
OF RAILWAYS

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ISBN 978-2-7461-2768-5

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# INTRODUCTION

**T**he Middle-East, composed of countries/regions of Southwest Asia and parts of Northern Africa, is a geographical region connected to the land areas of Africa, Asia and Europe. The Middle-East is also connected to maritime areas, where the major trade routes between Asia and Europe operate, including the Indian Ocean, Caspian Sea, Mediterranean Sea and Black Sea.

The Middle-East Railways in this Strategic Action Plan imply the UIC Middle-East Regional Assembly member railways. The Regional Assembly for Middle-East (RAME) was established as one of the six regions of UIC, as part of the global dimension in 2007. This region is included in the new UIC statutes adopted in 2009 and officially began its activity from then onwards. The Middle-East Railways include railways from Turkey (TCDD as Chair railway, & TCDD Taşımacılık A.Ş.), Iran (RAI, Rail Pardaz Seir Co.), Saudi Arabia (SRO), Jordan (ARC, JHR, Ma'an Development Area), Iraq (IRR), Qatar (QRC), Sultanate of Oman (Oman Rail), United Arab Emirates UAE (FTA), Syria (CFS, CFH/SHR), Afghanistan (ARA). The UIC Regional Office for the Middle-East is managed by RAI and located in Tehran.

The goal behind this Strategic Action Plan is a move towards an integrated and competitive railway system in the Middle-East region. Presenting the priorities and guidelines of the 15 members of RAME based on three defined strategies of UIC i.e. **innovation, integration and involvement of members**, this action plan intends to show coherently and concisely the future activities and performances of the Middle-East with a focus on the regional rail projects and expected achievements for the Middle-East Railways.

This strategic document may be followed and evaluated annually, and undergoes certain corrections and revisions taking into account actual situations and conditions.

## MIDDLE-EAST, A STRATEGIC BRIDGE FOR THE EAST-WEST AND NORTH-SOUTH CORRIDORS

**THE STRATEGIC ACTION PLAN 2018-2020 IS  
PREPARED BY UIC MIDDLE-EAST OFFICE ON BEHALF  
OF THE UIC MIDDLE-EAST REGION**



## ECONOMIC AND DEMOGRAPHIC OVERVIEW OF THE REGION

The Middle-East region is considered as one of the earliest cradles of civilization in the world. From the second mid of the 20<sup>th</sup> Century, the region had been the centre of global focus and in perhaps the most sensitive area of the world in terms of strategy, economy, politics, and culture. The region is of high strategic importance in the world's equations due to its geographical situation bridging Africa, Asia and Europe together and as well possessing waterways and more significantly accessibility to the vast energy resources.

The Middle-East is endowed with the world's largest oil and gas resources; about 60% of the world's proven resources of oil and 35% of gas resources exist in this region. The Middle-East retain enormous mines and mineral resources with some of the most complicated and variable geological textures, iron, copper, coal, cement and other mineral.

Resources and precious stones together with other metals like manganese, chromate, gold, lead and copper that are amongst mineral resources found abundantly in the Middle-East, the exploitation and export of which are main part of the region's economic activity.

Likewise, agricultural products such as grains, fruits and vegetables contribute a lot to the NDP and transit growth of the region thanks to the farmlands fertility, modern watering systems and state of the art technology.

Mass reservoirs of mineral resources, chemical, agricultural and animal products, textiles, metals different types and artefacts, manufactured products, foodstuff with other ever-increasing products of the region, have all turned the Middle-East economy into a boosting economy where need to freight transport in particular rail transport as one of the cost effective and effective mode is deeply felt.

COUNTRY	POPULATION (MILLION), 2017	ANNUAL MEAN RELATIVE GROWTH RATE %
Afghanistan	35,530,081	2.52
Iran	81,162,788	1.10
Iraq	38,274,618	2.88
Jordan	9,702,353	2.61
Qatar	2,639,211	2.70
Saudi Arabia	32,938,213	2.05
Syria	18,269,868	-0.87
Turkey	80,745,020	1.55
United Arab Emirates	9,400,145	1.41

**Source:** World Population Prospects (2017 Revision) - United Nations population estimates and projections

## POPULATION

The region has around 411 million people living in 17 countries. The urban population in Middle-East stays higher than the global average by dwelling of 70-90% of the population of these countries in the cities. It is expected that the population of the Middle-East with 31% growth will reach 500 million people by 2025. Population growth in the Middle-East has impelled the governments to develop all sectors of the economy, especially transportation.



Damascus-Anman by Jordan Hejaz Railways (JHR)

## VISION

The main objective for preparation of a strategic document for the Middle-East region is to lay down a policy for short and mid-term development of rail transport networks within the region, as well as connection with Asia and Europe based on a formulated action plan; this would facilitate transportation, gain greater share of the trade market, together with economic growth and social cohesion in the countries of the region. This document aims to meet the needs of the railway sector in Middle-East and to create an integrated network, which will lead to competitiveness of passenger and freight rail transportation, turning it into one of the best transport modes for its customers in the region.

## OUR MISSION

Our mission is to realize and sustain the rail transport potentials of the Middle-East countries and shape a reliable and efficient future for the railway sector. To achieve this, **priorities** of the RAME member countries concerning development of rail transportation followed by the **guidelines**, are addressed respectively.



Modern CFS Passenger Train, hauled by General Electric Glass U17C, north of Aleppo



High Speed train of Madinah-Makkah in Saudi Railways Organization (SRO)



High Speed train of Madinah-Makkah in Saudi Railways Organization (SRO)

## PRIORITIES OF THE REGION

The Middle-East has based its priorities on main principles of: **Railway Infrastructure; Improvement of technology; Promotion of rail transport; Cooperation with international organizations; environment; Training and Membership expansion.**

### RAILWAY INFRASTRUCTURE

Infrastructure is one of the most important and necessities of the rail transport. Integrated rail connections within the countries, along regional transit corridors and between the regions are made possible through interconnected rail lines and physical installations and facilities. Therefore, construction of rail infrastructures and their improvement along with missing links removal are vital for development of competitive rail routes and corridors and shall make the international corridors operational.

Infrastructure is one of the most capital intensive sections in the railway industry, the establishment, maintenance and upgrading of which require non-stop financial support.

Thus, involvement and support of this sector, especially in the Middle-East, mainly depends on the states and their decisions; in the meantime, development of rail infrastructure itself may be one of the most revenue making sectors of the economy. Therefore, completing rail lines and increasing required fixed installations are crucially important to develop rail transport.

### IMPROVEMENT OF TECHNOLOGY

Railway has increasingly experienced continuous innovations and technical improvements. Currently, fleet travel speeds are increased, signalling applications are facilitated and more safety is provided thanks to the rail modern technologies. New technologies give more emphasis on clean energies technologies and put priority on environment protection. They make feasible running of trains through border crossings with break of gauge while diminishing heavy costs of initial technologies. Each modern tool has made easy railway operations and improved capacity and productivity of rail industry. Taking benefit from these technologies, the rail sector is now highly capable of competing with road and building up its transport share in the market. Employing new technologies shall be seriously looked at, besides expansion of rail infrastructure.

COUNTRY	AREA (KM <sup>2</sup> )	RAILWAY ABBREVIATION	TOTAL LENGTH OF LINES (KM)
Afghanistan	652,000	ARA	85
Iran	1,648,195	RAI	11,000
Iraq	437,072	IRR	2,000
Jordan	89,341	ARC JHR	294 212
Oman	309,500	Oman Rail	Under study & construction
Qatar	11,586	QRC	Under study & construction
Saudi Arabia	2,149,690	SRO	1400
Syria	185,180	CFS SHR	1,801 338
Turkey	783,356	TCDD	12,608
United Arab Emirates	83,600	FTA	Under study & construction

**Source:** UIC Synopsis 2016

TCDD Statistics  
(end of January 2018)

RAI Statistics  
(end of January 2018)

SRO Vision 2030

IRR Powerpoint Presentation

Turkish Statistical Institute

World Development  
Indicators, World Bank

## PROMOTION OF RAIL TRANSPORT

Bulk cargos are mainly moved by railways, highways and waterways. Some cargos like mineral reservoirs are by tradition carried via rail, but still, forecasting the market future needs is a prerequisite for attracting more freight and passenger.

In this respect development of rail transport networks in proportion to the needs of domestic and international markets is crucial. Foreseeing market future needs and meeting the needs, identifying main commercial routes, connection of important industrial and agricultural centres to the target markets together with providing railway potential customers needs all play significant role in attracting cargo. More accessibility with more infrastructure and using new technologies shall double rail network potential power. Besides, connection of population important centres and giving consideration to smooth movement with increased speed contribute largely in demand augmentation. Application of consistent uniform rules, close and coordinated cooperation and customs procedures facilitations are initiatives of Middle-East Railways for attracting confidence of rail sector potential markets and make possible ensured and continued movement of passengers and cargos. The Middle-East Railways consider passenger and cargo increase as a priority and take it into account in their rail development policies.

## COOPERATION WITH REGIONAL/INTERNATIONAL ORGANIZATIONS

In the era of opening international cooperation, the regional and international rail organizations mainly target at formulating international cooperation through developing procedures, methods, standards, rules and regulations related to rail transport and help the railways to implement them. They deal with common rail issues and are considered the major sources of development and dissemination of information and knowledge at the world level.

They efficiently prepare the international standards and regulations and probe into the execution of international rules. The international organizations can influence decisions and understanding of the politicians and their effective functions are to the benefit all countries national interest.

The nature, qualifications and powers of these organizations are relatively different, covering specific expertise areas; meanwhile, the major activity of these organizations is to coordinate the measures of the governments in certain fields of railway issues.

The RAME members, as part of UIC, the biggest international railway organization, intend to reinforce their cooperation with the regional and international rail organizations and consequently contribute to the development of a common knowledge, application of uniform rules and facilitation of reciprocal cooperation.

## ENVIRONMENT

The transport is one of the major energy consumers particularly, oil products, in the world and air pollution, and global warming it causes, have a destructive impact on the environment. But energy consumption and pollution emission differ from one mode to another mode of transport. Road and air transports with congested traffic are main factors causing environment pollution, noise pollution and emission of green house gases. Therefore shifting railway transportation as the most environmentally friendly mode of transport is recommended. Protection of environment is amongst the priorities of Middle-East Railways; the realisation of which will be made possible through comprehensive policy-making and formulating common environmental goals and developing national and regional green transport plans.

To enjoy healthier world, RAME members commit themselves to use international environmental standards and development of green transport.

## TRAINING

Training and updating the career knowledge of managers, engineers, staff and all those dealing with the railway.

Providing comprehensive training programs and raising the knowledge level in railway specific fields and as well as informing the employees about their tasks and responsibilities. The Middle-East Railways are aware of the integral relation between knowledge, skill and efficiency with career development as well as issues that are vital for gaining success in the development and operation of railways.

Progress of their rail activities, and in this line, pursue the needs of the region in terms of scope and content.

Jobs will considerably improve the quality of railway services, and optimum use of sources. The railways of the Middle-East region also do their best to train young managers and senior experts by continuing training activities and transferring former experiences to them for the bright future of the region.

## MEMBERSHIP EXPANSION

Membership expansion in the Middle-East region provides a ground for other region's countries to contribute to the planning and developing rail networks of the Middle-East as well as sharing experiences and best practices among the concerned railways. Contribution of more members in the region's planning shall strengthen the activities of the UIC Middle-East region and promote efficiency of the regional plans. Adhesion of new members to UIC and RAME and expansion of membership in the region is assigned as one of the priorities helping the region from a steering, technical and financial viewpoint.



Siemens Passenger Train in RAI



High speed train in TCDD

## ORIENTATIONS OF THE REGION

### RAILWAY INFRASTRUCTURE

Rail infrastructure encompassing all physical facilities and equipment (lines, terminals, stations, bridges, tunnels, border crossings, signalling and telecommunications and other fixed facilities) is one of the main necessities for rail transport. Missing links in the infrastructure networks impede largely integration of rail network in the Middle-East and a challenge ahead of international transit and transport corridors.

The construction of efficient transport infrastructure, eliminating missing links and restoration of the infrastructure are essential for the development of corridors and competitive rail routes and ensures operations of international corridors. Presently more than 20 000 km of lines are under construction with many lines in the planning stage in the Middle-East.

The Middle-East is crossroad of numerous corridors along western-eastern and northern-southern directions: Asia International Corridor starting from China and stretching

to Europe passes through the Middle-East via different alternative routes; International North-South Corridor links Persian Gulf and Indian Ocean to the Caspian Sea via Iran and continues the way to the Northern Europe via territory of Russia and Saint Petersburg; and Southern Corridor of Asia connects the Middle-East to south and east of Asia as well as south of China and southeast of Asia (Myanmar, Thailand, Malaysia, ...) to Europe through India, Pakistan, Iran and Turkey. Various corridors could be created and become operational when the countries are interconnected to each other by rail.

Being aware of the main role of infrastructure in rail transport development, RAME members are moving to expand their rail infrastructures, complete the lines, remove the missing links, and develop their fixed installations. In this line, absorption of new investment and marketing for the existing corridors for flourishing rail transport is necessary.

### MISSING LINKS IN MIDDLE-EAST

INVOLVED COUNTRIES	INTERCONNECTIONS
Turkey – Iran	One missing link (Lake Van): 2 ferries crosses on a 24-hour basis
Turkey – Syria	Two connections for combined operation–Meydan Ekboş which is commonly used, and Qamishli/Nusaybin
Turkey – Iraq	No rail connection (only through Syria)
Syria – Iraq	One link at Yaarubiah. Second link to be established at Al Bou Kamal
Syria – Lebanon	No current connections due to severely damaged network of Lebanon
Iraq – Iran	No current rail connection. Two missing links: 1) Khoramshahr – Shalamchah – Basra 2 ) Arak – Kermanshah – Qasr e Shirin – Khosravi
Syria – Jordan	No rail connection to Jordan border
Jordan – Iraq	No rail connection between Iraq – Jordan
Saudi Arabia – Iraq	No rail connection between Iraq – Saudi Arabia
Saudi Arabia – Jordan	No rail connection between Saudi Arabia – Jordan
Qatar – Saudi Arabia	No rail connection
UAE- Saudi Arabia	No rail connection



Marmaray

## IMPROVEMENT OF TECHNOLOGY

Rail transportation has brought fundamental changes in freight and passenger traffic. Rail advanced technologies including electrification, use of high speed systems, state of the art signaling and telecommunications systems, control systems, safety build-up system at the border crossings, modern bogie changing facilities and other new technologies each of which serve to facilitate railway operations.

**Electrification** of rail lines protects the environment thanks to fuel consumption saving and energy efficiency. Additionally **high speed systems** evidently increase rail sector competitive capability by improving travel time. Presently, Middle-East Railways including Railways of Turkey, Iran, Saudi Arabia, Qatar and Emirates have started design and construction of High speed lines. Railways of Turkey is now leading in high speed systems in the region where some high speed projects have been put into operation with others being under way.

Installing signaling on the routes and equipping them with an **ATC** system is step for optimum and safe steering and full control of the train during the movement. Utilizing the standard system of **GSMR** radio network, **ETCS**- automatic control of train, **GPS** utilization, and Information Technology (IT) systems are among necessities making possible safe and smooth movement of trains. Operational systems should be promoted to make use of infrastructure investments to the utmost.

Using advanced technologies ensures continued existence of the rail sector and a foundation for planning other economic activities like production and distribution.

## PROMOTION OF RAIL TRANSPORT

Adequate transit routes, expansion of the rail networks and capability for mass cargo traffic, compared to road and waterways, have marked up railways capacity and flexibility to carry agricultural products, oil products and mineral resources and made possible access to the concerned markets. However railways could survive if more cargos and passengers could be attracted. Meanwhile identification of main commercial routes and anticipation of future capacity of freight transport and accordingly expanding rail networks will ensure the availability and continuation of freight traffic. Highly expanded rail networks, launching scheduled and regular trains, respecting punctuality and accurate timetable with commitment to safety and security, uniform customs procedures, standardized documents, cost cutting and appropriate services are, inter-alia, among the factors paving the ground for the railways to compete with other modes of transportation and attract passengers and cargo.

The last two decades experienced international transport of cargos along the two continents of Europe and Asia in particular from/to China using different modes of transportation. When the missing links are eliminated and physical barriers removed rail traffic from Central Asia and Europe to the Middle-East and vice versa shall be increased to create an integrated rail network and by this means railway could even be considered as the main mode of transport. In addition, the Middle-East region has huge oil resources and mineral reservoirs, as a benefit for the RAME members to boost their rail share from this potential market.

Being aware of the cargo absorption importance in promoting rail transport, the region railways expand their rail networks taking into account the domestic and international market needs and follow to make rail freight traffic competitive through punctuality and improving trains speed and rail services quality.

### COOPERATION WITH INTERNATIONAL AND REGIONAL ORGANIZATIONS

The existence of transport rules and regulations respected and applied regulations and harmonized rules and uniformity of the rules among the countries are in fact the tools functioning to promote rail efficient performances. Adhesion of countries to regional/international rail organizations and consequently to their rules and observing unified rules practically shall facilitate interoperability and thus train traffic ben-

efits from harmonized transport; this surely eliminates the need to re-issue the consignment note at the borders with a time and cost saving and make feasible the smooth running of trains.

Uniform rules in line with standardized rolling stock, procedures and infrastructure are a must for the Middle-East to facilitate the complicated border crossing procedures. In order to realize and make operational rail routes and interconnecting the countries, regulations and agreements are prepared by the regional/international organizations to cover technical, operational and commercial issues. International transportation is a medium that enables free transfer of goods and people and can be achieved only in an open environment. Maybe all the countries are not prepared for this issue simultaneously but international tools (conventions, agreements, etc.) are the most effective legal instruments for coordination of legal systems that facilitate trade and transportation within or between regions. Therefore, international legal tools can play roles in the facilitation of intra-regional trade by required frameworks, activities, standards and rules. The Middle-East Railways' international activities could be co-directed when joined to the rail-related international organizations and consequently to the respected international regulations.



RAI



Freight train in Afghanistan Railways (ARA)



Syrian Railways (CFS)

## ENVIRONMENT

Railway transportation is recognized as the most environmentally friendly mode of transport, having less impact on climate and environment in comparison to the other modes. Railways can help diminish air pollution by reducing road traffic congestion. Hence, shifting more traffic from road to rail is an important step in fighting against air pollution.

Reducing road and air transport will have considerable and positive effects on the earth's air quality improvement, acid rains diminution and climate changes. In the area of railways, using less polluting energies, like electrification, hybrid train, as well as energy efficiency could highly help in the reduction of pollutants caused by transportation. The railways in Middle-East region have other under-way environment-related measures to trim down noise and other negative factors taking into account both operational aspects and installations utilizations such as stations, workshops, offices, etc.

The members of RAME are committed to protect and maintain the environment for the next generations. They apply preventive and precautionary measures to cope with environmental challenges and take also supportive measures for the projects and the new technologies for a better environmental performance.

## TRAINING

Among the region's strategies is a more serious focus on the rail-oriented global researches and training activities, promotion of information level and exchange of technical knowledge. These initiatives shall be followed by organizing training seminars and workshops. For this, some events were held on an alternating base in the member countries. The initiatives were followed by the establishment of the Middle-East Railway Training Centre (MERTCe) in 2012 in Turkey aiming to survey the training needs and encourage participation, build cooperative relationships with other training centres, organize services and international training activities for all the RAME members and create a database among the members for sharing knowledge and experience through regular and intensive courses.

So far International Railway Business, High Speed and Safety Courses have been held by the Centre under the auspices of UIC.

The main targets of the training centre are: preparation of future generation of railway management and staff for new rail challenges, development of technical knowledge, finding the best working practices and encouraging interoperability in the region. Middle-East Railways are decisive in taking part in training programs and development and exchange of knowledge and updating their knowledge by participating in different training programs planned for safety, security, infrastructure and high speed.

The Middle-East Railways make effort to develop the technical knowledge, standardization, unification and optimising procedures and systems by holding training courses and workshops under the support of UIC that is leading on the rail modern systems.

## AMMAN STATEMENT

Amman statement was issued and endorsed during the High Level Conference on the Middle-East Region Rail Projects and Perspectives - Towards an Integrated Competitive Rail Transportation System in November 2012 in Amman, Jordan. The statement has an eye on the enhancement of rail transport



development in the Middle- East as a sustainable transport system in proportion to social and economic needs of the region and a way to cooperate with governments, international organizations and financial institutions to help the strategic prospects of rail transport in the region. These initiatives shall be met through international conventions and agreements and investment policies that can be a magnet for new commercial opportunities and persuade investors, trade partners and multimodal transport

actors to contribute to the Middle-East projects.

The statement also expects to strengthen regional cooperation among the members in particular in the fields of technology, operation, trade and training aiming to improve rail system interoperability and commence multi regional cooperation projects to help the members under the support of UIC. The statement objectives are the cornerstone of the present strategic action plan.



## UIC RAME ACTION PLAN

- Follow-up of Railway Vision and Strategic Action Plan for the Middle-East
- Regular updating the Map of UIC Middle East Railways;
- Updating 2016-2020 Strategic Action Plan of the Middle-East Railways;
- Follow-up of “Amman Declaration” through planning and performing the following tasks:
  - Collecting important national and regional projects of the Middle-East Railways along with enough details in order to present to international organizations and financial institutions,
  - Holding the investors’ forum of the Middle-East with the presence of international/ regional banks and financial institutions and also decision makers from the governments.
- Setting up different working groups on rail safety, infrastructure, interoperability, standardization, etc.
- Holding training seminars and workshops with the cooperation of UIC and also the rail training center of the Middle-East Railways concerning issues in connection with working groups and other necessary matters;
- Defining common regional projects with the cooperation of UIC technical departments and solid partnership with members;
- Developing cooperation with international organizations and using their current capacities in line with RAME plans.



Railway track on Veresk Bridge. RAJ

A detailed presentation of all existing and planned railway networks in the Middle-East is included in the report entitled "Regional and Supra Regional Rail Transportation Linkages - Middle-East".

This report was prepared by the UIC Regional Office for the Middle-East in close cooperation with all Member Railways from the Region.

This document offers detailed descriptions of railway developments in the Middle-East and focuses on:

- Existing transport networks,
- Freight and transit flows in the region,
- Map of UIC Middle-East Railways,
- Middle-East corridors, connections with other regions' corridors,
- Recommendations and conclusions,
- Description of railway development plans country by country, with maps and figures.

This report can be obtained from the UIC Middle-East Regional Office ([rameuic@gmail.com](mailto:rameuic@gmail.com)) or from UIC ([wisniewski@uic.org](mailto:wisniewski@uic.org)).

Published by: International Union of Railways (UIC) - Railway Technical Publications (ETF)

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- Publisher: Marie Plaud-Lombard, UIC Communications Director
- English version: Helen Slaney
- Design and edition: Ludovic Wattignies (Design), Cécile Gendrot (Edition)
- Printer: ACINNOV'

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ISBN 978-2-7461-2768-5



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