

Research and Education Networks in the Arab World

MENOG 10

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What are Research & Education Networks?

- Research and education networks are **dedicated** networks connecting the Universities, Schools, Research Centers, Hospitals, Museums and any other institution that may have research and education activities.
- National Research and Education Networks (**NRENs**) are established to provide connectivity and communications services for the research and education communities at the national level
- Regional Research and Education Networks (**RRENs**) are connecting the NRENs to provide connectivity and services to researchers and educators across the borders.

Main Drivers for Research Networks

- **Technological:** Satisfy high demand *eScience* initiatives, **Multimedia Collaboration**, Distributed High Performance Computing (**HPC, GRIDs**) for **Earth Sciences, High Energy Physics** (CERN, LHC...), **Bioinformatics, Computational Chemistry, Radio-astronomy, Engineering Planning** (computations, emulations & simulations), **Cultural** (archiving, collaborative digital access & processing) ...
- **Social:** Common culture of R&E community, Virtual Organizations VOs, collaborative research, tele-education, Smoothing the Digital Divides, affordable high bandwidth linkage to the Global R&E community
- **Economic:** Demand aggregators: University & school staff, students, researchers. Consolidation & control of diverse public expenditures. Promotion of Information Society (e-Government, e-Business, e-Health). Stimulation of technological & telecom markets → Competitiveness

Major Objectives for R & E Networks

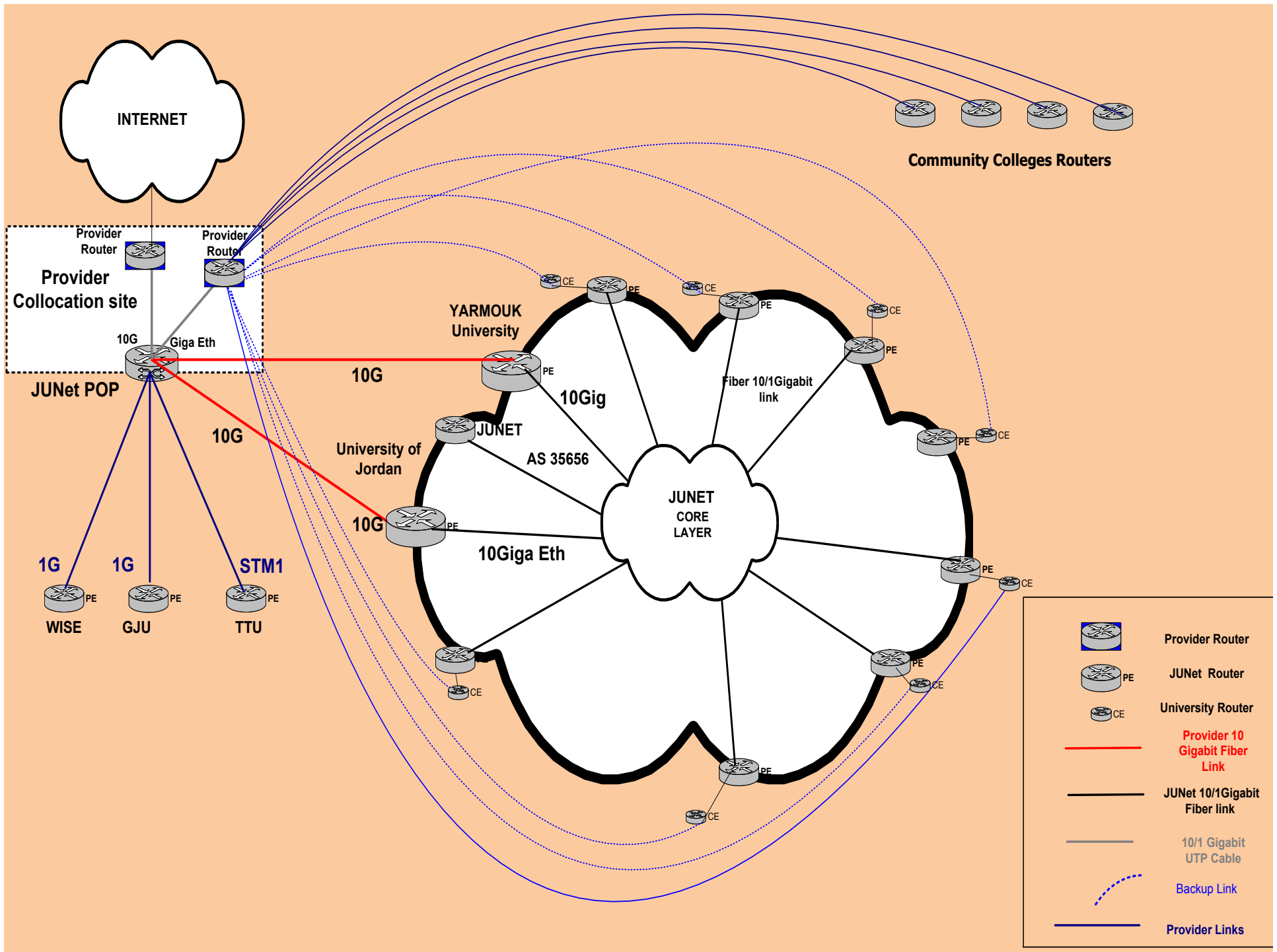
- Provide scientific research and education institutions with reliable means of communication in order to facilitate ease of cooperation and coordination
- Strengthen the notion of partnership and encourage joint scientific research among communities.
- Minimize cost of research by using diversified academic and technical resources to be made available for use on the network with no need for duplicating investment.
- The fact that students, teaching staff, and researchers use such dedicated networks would eventually uplift efficiency and productivity and would boost the concept of creativity and innovation.

NRENs: Major Services

- Unified connectivity to all research and education
- Consolidated Internet services
- Connectivity to regional research networks,.
- Access to content, common repositories, and library resources of all universities with a unified subscription.
- Video conferencing services, media streaming, IP telephony....
- Consolidated agreements with software vendors.
- Common caching, filtering and anti-spam and anti-virus protection services provided by NRENs to all connected institutions.
- NREN can be eligible to create and manage a national Internet Exchange, domain name services and networking consultancy.

National Efforts (*Jordan*)

- **The Jordanian National Broadband Network NBN is a national program to use dark fiber to connect around 3200 schools, 10 Universities and around 110 Public Access Sites**
- **The Jordanian Universities Network (JUNet) is the official NREN of Jordan, currently connecting 15 University sites via optical fiber, with 1Gbps each**
- **18 Community Colleges are also using this network at lower speeds using the operators circuits**
- **14 Private Universities and 6 research institutes are planned to be connected to JUNet this year**
- **JUNet is working on promoting the use of technology for research and collaborative research.**



JUNet Services and Activities

- Consolidation of Internet service
- License Consolidation through signing one agreement with software and services providers on behalf of all Universities
- Integrated Library Management system to serve all libraries in all Universities through one center and one unified system: the
- Consolidated Access to Journals and Periodicals by having one subscription for all Universities
- Video Conferencing Network and services
- Connection to the Pan European Network GEANT under the EUMEDCONNECT Project
- Unified email service for all Universities' students
- Conducting specialized workshops, seminars and training sessions
- Promoting the use of technology in research and encourage research collaboration and joint research projects.
- Partnering with EC projects: EUMEDGRID, EPIKH, LinkSCEEM, CHAIN...

NRENs around the world

Africa

D.R. Congo (Eb@le)
KENET (Kenya)
MAREN (Malawi)
MoRENet (Mozambique)
RwEdNet (Rwanda)
South Africa (TENET)
SUIN (Sudan)
RENU (Uganda)
ZAMREN (Zambia)

East Asia & Pacific

Asia (APAN)
South&East Asia (TEIN2)
Australia (AARNET)
China (CERNET,CSTNET,NSFCNET)
Fiji (USP-SUVA)
Hong Kong (HARNET)
Indonesia (ITB)
Japan (SINET, WIDE, JGN2)
Korea (KOREN, KREONET2)
Malaysia (MYREN)
New Zealand (KAREN)
Philippines (PREGINET)
Singapore (SingAREN)
Taiwan (TANet2, ASNet)
Thailand (UNINET, ThaiSARN)
Vietnam (VINAREN)

Europe & Central Asia

Europe (GEANT2)
Armenia (ARENA)
Austria (ACOnet)
Belgium (BELNET)
Croatia (CARNet)
Czech Rep. (CESNET)
Cyprus (CYNET)
Denmark
(Forskningsnettet)
Estonia (EENet)
Finland (Funet)
France (Renater)
Georgia (GRENA)
Germany (G-WIN)
Greece (GRNET)
Hungary (HUNGARNET)
Iceland (RHnet)
Ireland (HEAnet)
Italy (GARR)
Kazakhstan (KAZRENA)
Latvia (LATNET)
Lithuania (LITNET)
Luxembourg (RESTENA)
Malta (Univ. Malta)
Netherlands (SURFnet)
Norway (UNINETT)

Poland (PIONIER)
Portugal (RCTS2)
Romania (RoEduNet)
Russia (RBnet, RUNNET)
Slovakia (SANET)
Slovenia (ARNES)
Spain (RedIRIS)
Sweden (SUNET)
Switzerland (SWITCH)
United Kingdom
(JANET)
Tajikistan (TARENA)
Turkey (ULAKBIM)
Uzbekistan (UZSCI)

Mid-East & N.Africa

Algeria (ARN)
Egypt (EUN/ENSTINET)
Jordan (JUNET)
Lebanon (NCSR)
Morocco (MARWAN)
Palestinian Terr. (PadI2)
Qatar (Qatar FN)
Syria (HIAST)
Tunisia (MRST)
U.A.E. (ANKABUT)

Americas

Latin America (redCLARA)
Argentina (RETINA)
Bolivia (ADSIB)
Brazil (RNP2/ANSP)
Canada (CA*net)
Chile (REUNA)
Colombia (RENATA)
Costa Rica (CR2Net)
Ecuador (CEDIA)
El Salvador (RAICES)
Guatemala (RAGIE)
Honduras (UNITEC)
Mexico (Red-CUDI)
Nicaragua (RENIA)
Panama (RedCyT)
Paraguay (ARANDU)
Peru (RAAP)
Uruguay (RAU2)
Venezuela (REACCIUN2)

South Asia

India (ERNET)
Nepal (NREN)
Pakistan (PERN)
Sri Lanka (LEARN)

The only regional network in the Arab Mediterranean Countries

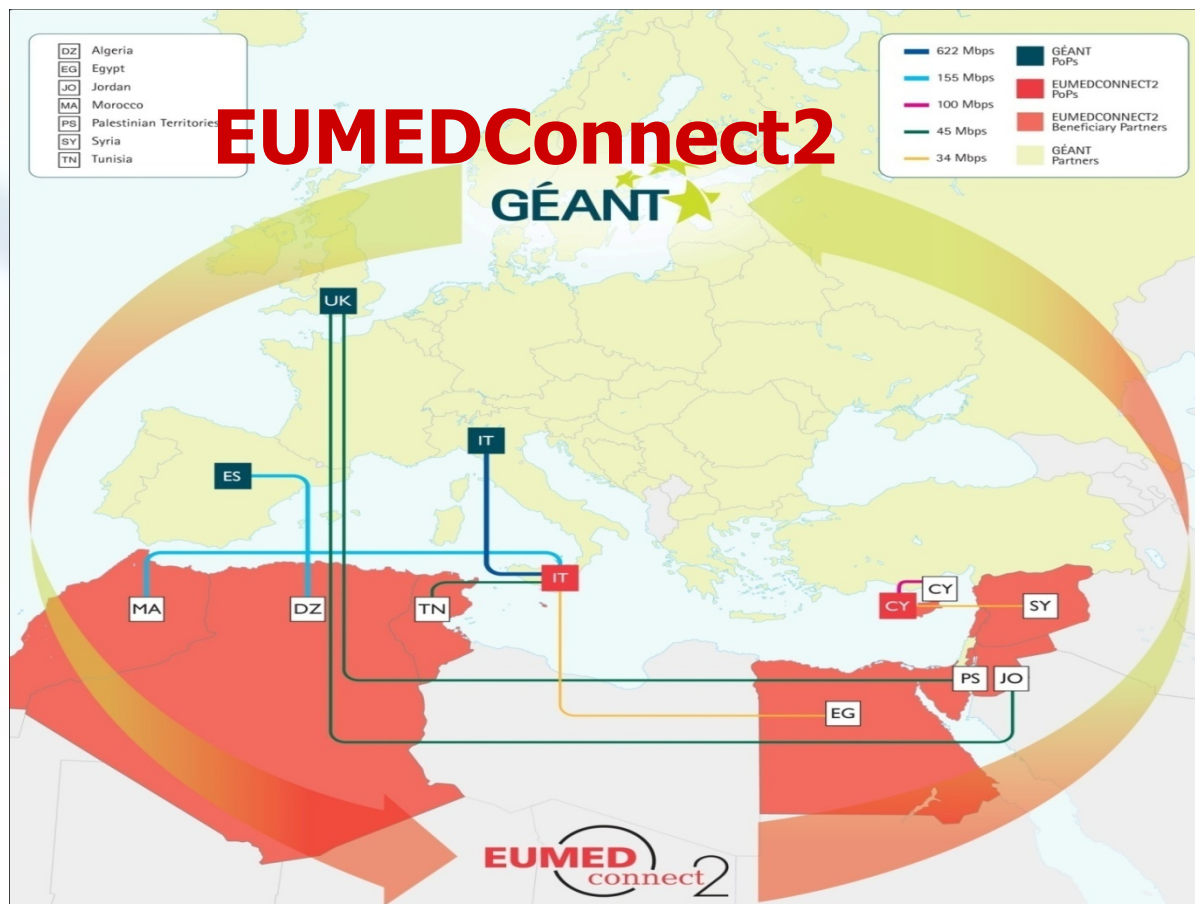
A Euro-Med success story

Connects ~2m users at ~700 institutions among each other and with their peers in Europe and beyond

Directly connecting Algeria, Egypt, Jordan, Morocco, Palestine, Syria and Tunisia

Linking Mediterranean and European partners via GÉANT

Jointly funded by the EC and the MED partners to reduce the digital divide



EUMEDConnect3
Will be further (Partially)
funded by the EC for
additional 3 years



The EUMEDGRID Support Project



Coordination and Harmonization
of Advanced e-Infrastructures



Exchange Programme to advance
e-Infrastructure Know-How



Linking Scientific Computing
in Europe and the Eastern
Mediterranean

Regional Efforts, historical background

- **PAN Arab Network, 2005**
 - Initiated by MoICT of Jordan to study the feasibility of using the power distribution grid network to build a PAN Arab network. The study was sent to the League of Arab States.....
- **Rome Declaration 2006**
 - The Arab MED NREN managers signed a declaration in Rome to work on establishing a consortium to take the responsibility of creating an Arab Med Network...
- **NAP, the Network Access Points 2007**
 - A business initiative to build Internet exchange points for the Arab region....
- **CAMREN 200?**
 - Was proposed as an action for the Rome Declaration....

Arab States Research and Education Network



المنظمة العربية لشبكات البحث العلمي والتعليم

- **Arab States Research and Education Network (ASREN) is the association of the Arab region NRENs and strategic partners.**
- **Promoting world-class Pan-Arab e-Infrastructures and E-services for the Research and Education communities to boost Scientific Research and regional Cooperation**

“The ASREN initiative will connect our researchers and scholars allowing them to share knowledge and to collaborate. It is a unifying network for the Arab region, and I commend it.”

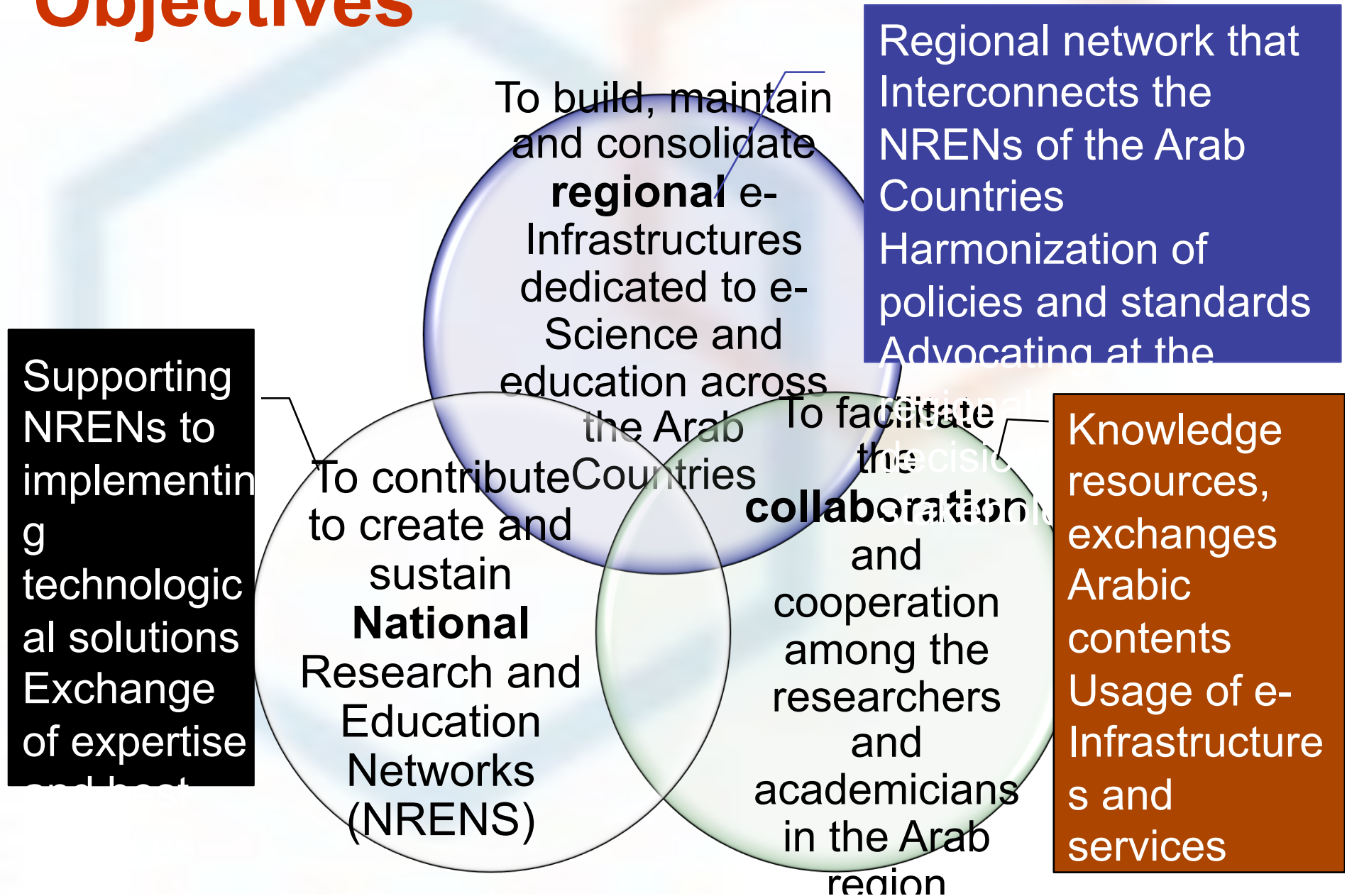
H.E. Amro Moussa, Secretary General of the Arab League



ASREN: Vision and Mission

- **Vision Statement:** Pan-Arab collaborative research and education projects and activities, contribute to boost the scientific research, innovation and education levels in the Arab countries by uplifting efficiency and productivity of research and education communities.
- **Mission statement:** To implement, manage and extend sustainable Pan-Arab e-Infrastructures dedicated for the Research and Education communities and to boost scientific research and cooperation in member countries through the provision of world-class e-Infrastructures and E-services.

Objectives



ASREN is now an official legal entity

ASREN now is officially registered in Dusseldorf, Germany as non-profit company with 3 Shareholders:

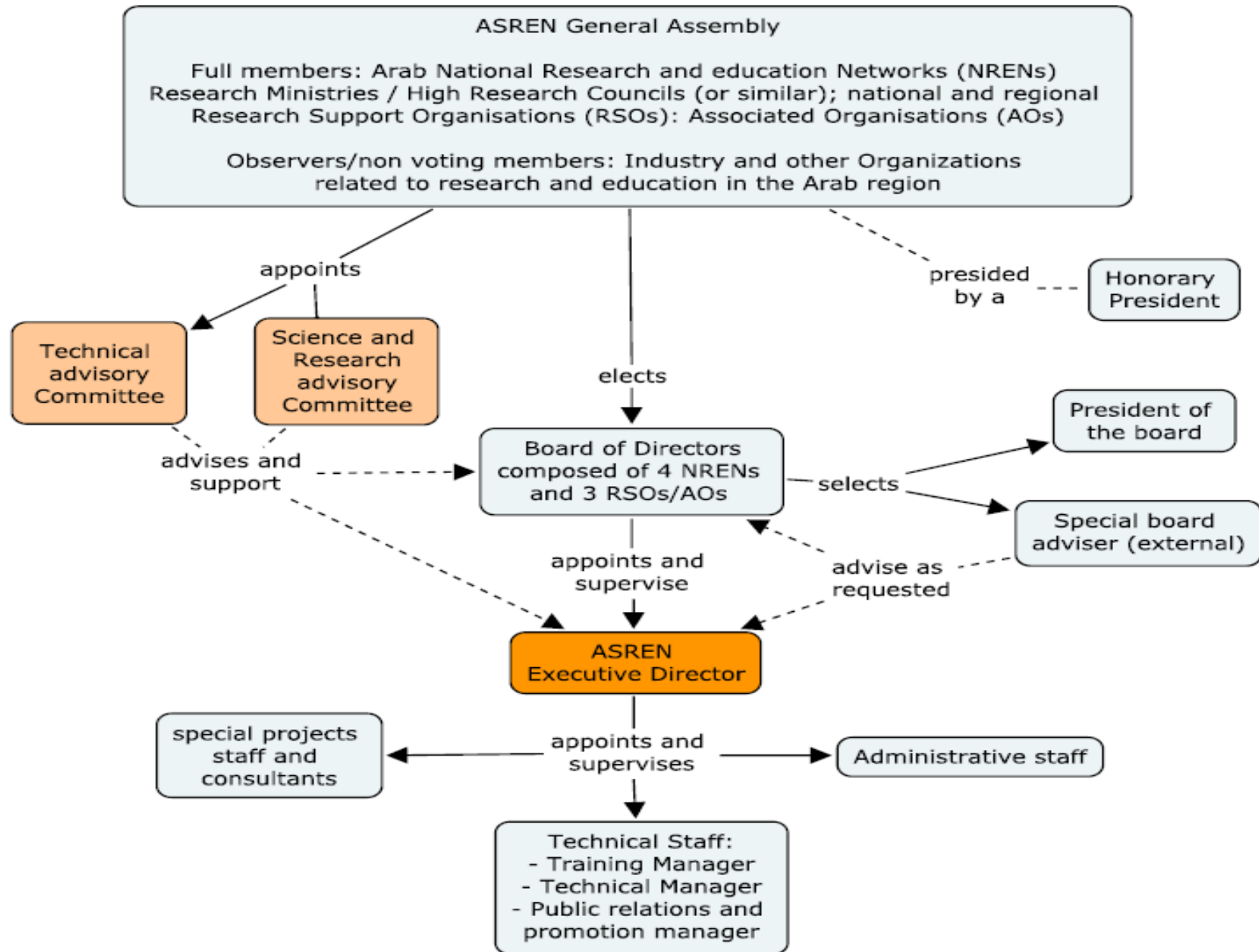
Jordanian Universities Network, JUNet

Moroccan Research and Education Network, MARWAN

Abu-Ghazaleh & Co. Consulting GmbH

Sudanese, Somali and Tunisian Research Network joined recently as a shareholder

The Secretary General of the League of Arab States was elected as Honorary Chairman



ASREN Functions

Core Functions

Interconnection

(NRENs interconnection, Network operations center, technical/ financial resources)

Network Management

design topology, tendering and managing NRENs interconnection, monitoring traffic and providing technical support and training to member (NRENs)

Commercial Management

Managing contracts/ agreements with network suppliers/ NRENs funds , funding agencies and conducting advocacy

Interoperability

Guidelines for security policy/ interoperability of services and protocols for supporting applications

Support Functions

Cloud computing, Content, elearning resources, eLibrary, Research,

One Year of History (2010)

- ASREN was proposed in Cairo, January 2010, by Arab NRENs during the EUMEDCONNECT2/EUMEDGRID Support Meetings.
- Announced in Brussels March 2010 During the 3rd EUMEDEVENT.
- Planning meetings were conducted during the EUMEDCONNECT2/EUMEDGRID Support meetings in Algeria (July 2010) and Rome (November 2010)
- Launched in the League of Arab States in Cairo under the Patronage of HE Amre Moussa, December 2010. and Chaired by HE Talal Abu Ghazaleh

Another year of achievements (2011)

- ASREN was present in many activities and events around the world addressing the research and education communities, specially the Arab World.
- ASREN became official partner in the EUMEDCONNECT3 project which aims to provide connectivity to the Arab-Med countries to GEANT
- ASREN is partner with CHAIN project which aims to coordinate and harmonize the e-Infrastructures around.
- ASREN conducted workshops in Lebanon and UAE
- ASREN conducted the eAGE2011 in December 2011 under the Royal Patronage with more than 250 attendees from 32 countries.

Another year of Challenges (2012)

- Increasing the number of partners
 - NRENs of Sudan, Somali, Tunisia and Palestine to be partners in 2012
- ASREN to provide assistance to the development of NRENs in the Arab World.
 - Lebanon, Tunisia, Jordan, Bahrain and Kuwait
- Together with DANTE to connect Arab NRENs to GEANT
 - Palestine and Algeria are connected
- To cooperate with world wide organizations and regional communities
 - EC, World Bank, ISESCO, ISOC, MENOG, ITU, QF
- eAGE2012
 - December 2012, UAE

Another year of Achievements

- ASREN is now official partner in the EUMEDCONNECT3 project
- ASREN is a partner in the CHAIN Project
- ASREN was present in many events and activities around the region
- ASREN supported the startup of NREN in Lebanon
- ASREN is working with EUMEDGRID Support and CHAIN projects to operate the Regional Operation Services “ARABIA ROC” and associated services



Thank You

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