

EUMED CONNECT 3 PROJECT IN LEBANON

THE CASE OF THE LEBANESE NATIONAL RESEARCH &
EDUCATION NETWORK (NREN), TECHCARE

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I. Background

Lebanon's partnership in the EUMedConnect3 project provided the foundation for the setup of the Lebanese National Research and Education Network (NREN). The support from GÉANT and ASREN accelerated the process of formalizing the Lebanese NREN by availing the subsidized connectivity for interested Lebanese institutions to join. Eight major Lebanese universities eventually joined the Technology Cooperation Agreement for Research and Education (TechCARE) to date and more are yet to join.

Securing the connectivity, opened the doors for putting the focus on building the NREN community in Lebanon and on providing the needed shared services. Member universities are now able to integrate seamlessly with advanced computing facilities, resources, and repositories available in many member research institutions countrywide and in other affiliated networks across the globe.

This document sheds the light on how the value chain started by funding connectivity led to the foundation of an NREN in Lebanon. It also highlights examples on how this connectivity materialized in advancing research and education in Lebanon.

II. The Value Chain

The Lebanese NREN is a direct result of the EUMedConnect funding that initially subsidized the research network connectivity between AUB, ASREN and GEANT.

Within a short period, the subsidized connectivity for research by the EUMedConnect3 project, attracted four additional universities, thus establishing Technology Cooperation Agreement for Research and Education (TechCARE), the Lebanese NREN.

Funding the bandwidth through EUMedConnect 3 allowed the universities to buy the bandwidth jointly, enabling the TechCARE universities to reach a unified agreement with a single ISP. This in turn, allowed the TechCARE consortium to negotiate free peering between universities which resulted in having a local peered network between universities for free.

The EUMedConnect3 funding for research computing in Lebanon enabled the establishment of a Lebanese NREN, which, which in turn led to building an inter-university network backbone for free.

III. Impact

By securing a significant part of the bandwidth burden, the EUMedConnect project helped establish the Lebanese NREN, and more universities were able to join. Today TechCARE brings together the following eight leading higher education institutions in Lebanon:

1. American University of Beirut (AUB)
2. Beirut Arab University (BAU)
3. Lebanese American University (LAU)
4. Notre Dame University (NDU)
5. University Antonine
6. University Saint-Esprit de Kaslik (USEK)

7. Université Saint-Joseph de Beyrouth (USJ)
8. University of Balamand

With the enhanced connectivity and cooperation agreement, member universities are able to benefit from significant shared services, access more international gateways and to offer virtual operability which played a key role in the survival of education in Lebanon, in light of the national crisis and the COVID-19 pandemic.

The emergency response was fundamentally supported by the co-funding provided by the EUMedConnect. project. This funding helped TechCARE members provide online teaching and learning which rescued the academic year 2019-2020 for thousands of students at member universities in Lebanon, collaboration through video conferencing, online resources and capacity building activities to support the urgent need for digital transformation, cloud services, access to virtual labs to reach high computing power and software's as well as operating the enterprise financial and student systems remotely. Enhancing online education was also an opportunity to remove many barriers to education and to enable inclusive delivery methods that are accessible for students with or without disabilities.

The research and education capacity in Lebanon is now geared with access to international research networks and collaboration platforms, cross-organizational resources, facilities, and shared services. While eduroam secured connectivity for scholars in any member organization around the country and the globe, cloud services enabled virtual operability and optimized efficiencies comprising modernized solutions and cloud migration of major enterprise and academic systems. Also access to High-Performance Computing (HPC) allowed for advanced and uninterrupted research.

The EU co-funding also enabled many national and international engagements on several fronts such as CERN's collaboration agreement with multiple TechCARE members to provide a national HPC project and technology transfer project.

Healthcare was also leveraged with the internet connectivity, highlights include the COVID19 research portal, augmented reality operations, collaboration with international experts for virtual surgical support, the launching of Telehealth where patients could connect with their doctor and conduct their medical visits safely from home, in addition to maintaining international designations through virtual meetings and remote assessment visits.

IV. Steps Forward:

TechCARE is now working on expanding its community, building an online platform and designated team, conducting more awareness and capacity building activities to enhance the Lebanese NREN capacity, reach and impact.

On the other hand, while universities are increasingly moving towards online teaching and learning, collaboration, and virtual operability, the TechCARE community is working on identifying the key services in demand to prioritize delivery and optimize affordability as well as accessibility. Members are also working on engaging with more international networks and on developing a financial model that will support development and sustainability.