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**Combination of Collaborative Project and Coordination and Support
Actions (CP- CSA)**



LinkSCEEM-2
**Linking Scientific Computing in Europe and the Eastern
Mediterranean – Phase 2**

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Report on Tenders documentation, request, evaluation, acceptance

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References and Applicable Documents

[R1]	Project LinkSCEEM– RI-222904– Annex I – Description of Work
[R2]	LinkSCEEM WP2 D3: “Assessment report”
[R3]	The EUMEDCONNECT project www.eumedconnect.net
[R4]	CYTA, www.cytaglobal.com
[R5]	Pan Arab Network Study
[R6]	www.telegeography.com
[R7]	LinkSCEEM WP5 D11: “Network Study”

List of Acronyms and Abbreviations

CREF-CyI	The Cyprus Research and Educational Foundation (Cyprus Institute)
CaSToRC	Computation-based Science and Technology Research Centre
EC	European Commission
EU	European Union
GA	General Assembly; The LinkSCEEM governing body
GRNET	Greek Research and Technology Network; The Greek NREN
HPC	High Performance Computing; Computing at a high performance level at any given time; Often synonymous with Supercomputing
ICT	Information and Communication Technologies

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IUCC	Inter University Computation Center, Israel; Israel's NREN
NREN	National Research and Education Network
WP	Work Package
SARA	Stichting Academisch Rekencentrum Amsterdam
HIASST	Higher Institute of Applied Science and Technology
JUNet	Jordanian Universities Network

1 EXECUTIVE SUMMARY

The overarching objective of the first LinkSCEEM was to ensure that in its planning and early development phases the Computation-based Science and Technology Research Centre (CaSToRC) of the Cyprus Institute (CyI) develops strong anchors in both the European ICT infrastructure and the Eastern Mediterranean scientific community, and thereby helps to build scientific and technological bridges between Europe and the Middle East, thus narrowing the digital gap between the Eastern Mediterranean and the Western World. LinkSCEEM-2, a follow-up and implementation phase to LinkSCEEM, has as its main objectives the linking of e-resources into an integrated simulation platform, and the build-up and engagement of regional scientific communities in the fields of climate science, digital cultural heritage and synchrotron research.

LinkSCEEM-2 contains a connectivity component that aims at contributing towards the improvement of regional connectivity in the Eastern Mediterranean. WP7, the network connectivity work package of LinkSCEEM-2, undertakes the upgrade of the link between Jordan and Cyprus, an improvement in connectivity that is closely related to the collaboration with SESAME and research in the field of Synchrotron Radiation.

The need for improvement of the regional network connectivity is a central issue in ensuring transparent access to HPC resources and in allowing large datasets to be transferred to computing facilities where they can be analysed and processed. Thus, the execution of a feasibility study for the creation of a regional high-speed research network is deemed essential in the aim of interconnecting the Eastern Mediterranean countries with each other and with Cyprus. The first LinkSCEEM project conducted a study that addressed the following:

- The exploration of several possible solutions for providing regional interconnection of the Middle East countries and their linking to Cyprus.
- The execution of a comparative analysis among the different solutions, addressing the major components of their feasibility, in particular in terms of technical, financial and political aspects.
- Coordination with the studies concerning the assessment of needs for computing resources, so as to maximise the impact of the network study, by bringing more emphasis on countries and areas where obvious major users can or do exist
- The investigation of potential funding sources for the regional network, in coordination with the local EUMEDCONNECT partners (mostly the NRENs in the region).

The study concluded that the practicality of upgrading the regional network connectivity of RENs is subject to financial and political concerns. On the other hand, the assessment of user needs, performed during LinkSCEEM and ongoing in LinkSCEEM-2, shows that a great deal of interest and need within the Eastern Mediterranean countries for computational and networking resources remains. Network connectivity of scientific communities continues to be a serious concern and obstacle to regional development due to the high pricing and low level of supply competition.

The present document updates on the work performed in LinkSCEEM-2 WP7 in relation to the connectivity upgrade between Jordan and Cyprus, the connectivity case undertaken by the LinkSCEEM-2 project.

2 INTRODUCTION

2.1 PURPOSE OF THE DOCUMENT

This document presents an update on the work that has been carried out so as to achieve the objectives of task 7.4 in WP7. This task deals with the preparation of the tender documents along with the required procedures that will lead to the announcement of the tender for upgrading the connectivity between the Cyprus and Jordan. A lot of preliminary work has been carried out as described in the deliverables already submitted:

- D.7.1 Report on services and bandwidth requirements
- D.7.2 Report on connectivity options

However the announcement in 2011 from SESAME that the Synchrotron radiation facility in Jordan will not be operational until 2015 has led to significant changes in the scope of WP7. Because of the confirmed delays in the completion of the SESAME project, WP7 has been forced to re-evaluate its plan and deliverables. There is an on-going discussion and investigation of options regarding the new objectives of WP7.

3 WORK PERFORMED UNDER WP7

A study of the services and bandwidth requirements of the HPC community in the Eastern Mediterranean region was undertaken by the WP7 partners, led by JUNet and supported by all partners. The study focused on investigating active research fields and service requirements at Universities in Jordan through interviews conducted with Deans of research at these institutions. Additionally the study reviewed the Jordanian government research priorities, as well as the computing requirements of the researchers at SESAME. A report summarizing the findings of the study was submitted to the EC as D7.1.

According to the DoW of the project, WP7 aims at supporting the case for the improvement of regional network inter-connectivity, with the establishment of a link from Jordan to Cyprus by the third year of the project being the targeted connectivity improvement in the framework of LinkSCEEM-2. Given that EUMEDCONNECT3, also an EU-funded project focuses on network connectivity in the same geographical region, a close co-ordination with EUMEDCONNECT3 activities is necessary to avoid duplication and overlaps. Furthermore, it is desirable to draw on DANTE's experience in dealing with international circuits and achieve a close collaboration with DANTE and the recently launched ASREN, during the tendering and design phases of the work. As a result, WP7 partners are in close communication with DANTE and have included the Cyprus-Jordan link in the EUMEDCONNECT3 tender for the purpose of getting some initial insights on pricing and options. After the completion of the tender the project manager of EUMEDCONNECT3 has given WP7 lots of information like the huge drop of prices from the last tender, over 35%. Prices into Nicosia, were a lot better than previously, though circuit prices for Jordan, Egypt and Palestine remain lower still to GEANT PoPs (especially London) - typically 15 - 40% lower. Syria continued to be the only MED country for which Nicosia was the most cost effective location. There were no offers to Nicosia from Tunisia, Morocco or Algeria.

Work on the connectivity options task of WP7 has also been performed during the last year. IUCC led this work by drafting and distributing to regional ISPs a Request for Information (RFI) on connectivity options for the link between JUNET and CYNET. Replies have already been received and posted on the online collaboration platform of the project. The information gathered will be used as input to the design of the best connectivity scenario for the link

between Cyprus and Jordan. A report summarizing the findings of the study was submitted to the EC as D7.2. The study concluded that the practicality of upgrading the regional network connectivity of RENs is subject to financial and political concerns. On the other hand, the assessment of user needs, performed during LinkSCEEM and ongoing in LinkSCEEM-2, shows that a great deal of interest and need within the Eastern Mediterranean countries for computational and networking resources remains. Network connectivity of scientific communities continues to be a serious concern and obstacle to regional development due to the high pricing and low level of supply competition. It has been noted that the unstable political situation is having an effect on the objectives of the project.

The connectivity component included in LinkSCEEM-2, aimed at an upgrade of the Cyprus-Jordan link to 155 Mb/s, and was closely related to the collaboration with SESAME, one of the LinkSCEEM-2 partners and the field of Synchrotron Radiation and one of the thematic research areas of the project. Focusing on preliminary results obtained from the RFI released by LinkSCEEM-2 WP7 in February 2011, and the specific connectivity scenario between Cyprus and Jordan, the impact of increased competition has already been reflected in lower prices relative to 2009. Based on information provided by EUMEDCONNECT, the price of international connections between the countries in the Eastern Mediterranean region have dropped.

During the Steering Committee meeting in November 2011, the announcement that the SESAME project will not be available on schedule was confirmed. As such the project and specifically the WP7 group started to investigate links from Cyprus to other areas in the region as well. The WP7 team started to work on a new Work Plan for the next period of the project, taking into account the new developments concerning SESAME time schedule problems. New applications in the region that are in need of HPC usages have been exploited. The current volatile situation in the region has forced the countries in the region to be conservative in their research and development programs.

Because of the confirmed delays in the completion of the SESAME project, WP7 has been forced to re-evaluate its plan and deliverables. There is an on-going discussion and investigation of options regarding the new objectives of WP7. Significant amount of work has been performed to come up with alternative activities to use the resources available under WP7 in a way that are in line with the objectives of the project.

Because of the situation at Sesame none of the actions related to Task 7.4 were performed. According to the DoW, Task 7.4 deals with the preparation of the tender documents along with the required procedures that will lead to the announcement of the tender. The following actions should have been performed:

- Documents preparation
- Public announcement of the tender
- Clarifications on the tender's documents to the candidates during the competition period
- Submission of proposals from renderers
- Expert committee will be formed to evaluate the offers. The committee will be comprised of four representatives from CYNET, JUNET, IUCC and DANTE.
- Expert committee will evaluate the proposals based on the tender criteria and propose the successful candidate.
- Expert committee will inform the coordinator of the project about its decision and the successful candidate will be informed by the coordinator.
- Preparation of required agreements to be signed.
- Beginning of implementation period.

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- During all the above process should be ensured that the tender will be in accordance with EU laws for public competitions

4 CONCLUSIONS

While good progress was made in WP7 during the first year, year2 was mainly focused on re-evaluating the main objectives of the work package. Due to the delays at SESAME, WP7 has reinvestigated the use case for a connectivity upgrade between Cyprus and Jordan. The absence of data from SESAME and the still relatively low request for HPC resources from Jordan do, at this stage, not justify the expenses for an upgrade of the connectivity to Jordan. Furthermore, alternative connectivity upgrades in the region were discussed also in cooperation with DANTE. Unfortunately, the currently challenging political and economical situation in the region did not enable the project consortium to find a realistic alternative for the remaining 2 years of the project. Since the relatively low connectivity in the region was already identified as limiting factor for the development of an HPC ecosystem, the consortium started to evaluate alternative activities, which do partly address bandwidth shortcomings without actually increasing regional connectivity. The discussions have yielded a number of proposals and a discussion with the project officer regarding the implementation within LinkSCEEM has been initiated.