INARMERA-ICT: Straightening Computational Science Capacity in Armenia

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Abstract. As a leading ICT research and technology development institute of Armenia, the Institute for Informatics and Automation Problems of the National Academy of Sciences of Armenia (IIAP) [1] operates a complex national e-infrastructure [2]. Recent developments of such infrastructures in Armenia allow to satisfy not only the needs of scientific communities, but also to tackle the societal challenges. The main aim of the poster is to introduce the approach and the activities of the INARMERA-ICT [3] Project that aims at reinforcing the cooperation capacity of IIAP in computational science.

Keywords: INARMERA-ICT, e-infrastructures, computational science.

1 Introduction

In 2000 the growing importance of IT industry led the Government of Armenia to declare ICT as one of the priority sectors of Armenian economy, for example the software and services segment grow about 27% per annum. In this context the crucial developments of state-of-the-art e-infrastructures in Armenia, deployed and operated by IIAP since 1994, make possible to satisfy the local scientific community requirements and addressing to the scientific (physics, life sciences, earth sciences, informatics, etc.) and societal challenges. The e-infrastructure is interconnected with the GEANT and EGI pan-European facilities. IIAP plays an active role in the scientific cooperation between EU and Armenia (24% of all EC funded projects in Armenia), which might create additional opportunities to increase the visibility of Armenia in computational science and information technologies.

2 INARMERA-ICT Approaches

One of the key missions of INARMERA-ICT is to straighten the position of IIAP and to develop e-infrastructures and services required by the knowledge-based

information society with the support of well-known European research centers. In the Project IRIT [3], as a one of the main French national and European research centers in ICT gathering together around 700 members, and SZTAKI [4], as a leading Hungarian research center in computer science, engineering, information technology, support and create additional opportunities in computational science and straighten it's integration to the ERA. The overall aim of reinforcing the cooperation capacity of IIAP in Armenia is achieved in this Project by implementing support actions on the research, policy and education levels.

3 Impact of INARMERA-ICT

The computational science is one of the key scientific directions of IIAP according to the Strategic Plan of IIAP for 2015-2020 developed by the consortium of INARMERA-ICT. It is decided to develop several topics within the computational science, such scientific computations, HPC, green and cloud computing due to the following started activities to increase the effectiveness of the existing scientific potential of IIAP by integrating the research teams into the research clusters and to reinforce collaboration with the local key organizations; to establish an international virtual laboratory in computational science and a national HPC center to satisfy the research needs and to tackle the societal challenges.

Series events have been started to took place to establish new user communities to master such e-infrastructure and to develop e-contents of computational science via several EU projects. As an example of projects developed within the INARMERA-ICT cooperation, in [6], we describe the services of an integrated portal based on the P-Grade portal that enables the solution of large-scale linear systems of equations using direct solvers, makes easier the use of parallel block iterative algorithm and provides an interface for parallel decision making algorithms. The goal is to develop a single sign on integrated multi-service environment providing an easy access to different kind of mathematical calculations and algorithms to be performed on hybrid distributed computing infrastructures.

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