Astronomy and Big Data Science – The actual big challenges of the Chilean NREN, REUNA

Sandra Jaque, sjaque@reuna.cl, +56223370340, Red Universitaria Nacional REUNA, Canadá #239 Providencia Santiago.

Keywords: NREN, Network, Astronomy, EVALSO, ALMA, LSST, DWDM, photonic network, high performance network, high capacity network, high speed network.

Session format: regular presentations

Chile is a privileged country in many aspects; for the great possibilities of research in biosphere and Antarctic resources in the extreme south and none of the least for its crystal clear skies in the north, which has helped the country to turn into a leader in astronomy. As a result, 70% of the world´s telescopes for astronomy will be located in Chile in the next few years. On the other hand there are still significant challenges in national network connectivity for many reasons; because of the geographically long and thin territory, lack of the appropriate conditions of connectivity for the challenging demands of the national and international academic and research community. . Even today, there are still areas with poor or nonexistent network infrastructure as in the desert and the southern furthest. In this context, the Chilean NREN – REUNA has defined its long term vision in the construction of national photonic network, which aims to integrate and connect the continental territory of over 4000 kilometers. The aim is to build not only upon the history of the present NREN but over important cooperation in synergy with projects as EVALSO[1] (cofounded by FP7), ALMA[2] connectivity (photonic at the altitude of 5000 meters) and the very recent responsibility in the national connection of the LSST[3] telescope that not only will demand 100Gbps connection when fully operating but also integration to scientific computing projects as NLHPC and of course to the scientific community. These mega constructions located in Chile require data transport inside and outside the country, among others to Europe, Asia and USA, so the national infrastructure has to be on line with the other regional networks like Geant to benefit the whole research community. In brief the paper will describe the strategic plan of the network infrastructure development of the Chilean NREN, with emphasis on the journey along the above projects, considering technological details of its solutions and how these are integrated regionally and globally to infrastructures as RedCLARA and Geant.

Proposed speakers: Sandra Jaque, sjaque@reuna.cl

References:
[1] http://www.evalso.eu/evalso/
[2] http://www.almaobservatory.org/
[3] http://www.lsst.org/lsst/

Vitae: Sandra Jaque, REUNA´s CTO, Electronical Engineer has been involved for more than 15 years in the technological development of the research network, participating as network engineer at the beginning and nowadays in the strategic definition of the institution. Has participated not only in national infrastructure projects, also in many international initiatives the most present EVALSO and LSST.