

## The Need for a Tool to Support Users of E-Science Infrastructures in a Virtual Laboratory Environment

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**Abstract :** Support processes play an important role to facilitate researchers (users) to accomplish their research activities with the help of cyber-infrastructure(s). However, the current user-support process in cyber-infrastructure needs a feasible tool to support users. This tool must enable the users of a cyber-infrastructure to communicate efficiently with the staffs of a cyber-infrastructure in order to get technical and scientific assistance, whilst saving resources at the same time. This research paper narrates the real story of employing various forms of tools to support the user and staff communication. In addition, this paper projects the lessons learned from an exploration of the help-desk tools in the current state of user support process in Earth System Grid Federation (ESGF) from support staffs' perspective. ESGF is a climate cyber-infrastructure that facilitates Earth System Modeling (ESM) and is taken as a case study in this paper. Finally, this study proposes a need for a tool, a framework or a platform that not only improves the user support process to address support servicing needs of end-users of e-Science infrastructures but also eases the life of staffs in providing assistance to the users. With the help of such a tool; the collaboration between users and the staffs of cyber-infrastructures is made easier. Consequently, the research activities of the users of e-Science infrastructure will thrive as the scientific and technical support will be available to users. Finally, this results into painless and productive e-Research.

**Keywords :** e-Science User Services, e-Research in Earth Sciences, Information Technology Services Management (ITSM), user support process, service desk, management of support activities, help desk tools, application of social media

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