

Collaborative Infrastructures to enable eScience

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We currently observe dramatic changes with respect to the methods applied in all scientific disciplines which is driven by the continuous innovation in information and communication technology. John Taylor summarized these developments by introducing the term “eScience”: *eScience is about global collaboration in key areas of science and the next generation of infrastructures that will enable it.* Actually he relates the vague definition of eScience to the term “infrastructure” to make clear that exploiting the full power of eScience capabilities will depend widely on the existence of improved ways of integrating various technologies and resources, making them much more interoperable and offering the corresponding services permanently. As a consequence many countries worldwide are investing now in “research infrastructures”. In Europe alone the ESFRI process involving all member countries resulted in funding more than 40 such infrastructure initiatives ranging from natural sciences to the humanities. These infrastructures have been working hard for 3 years now and partly have shown the potential for letting researchers carrying out advanced projects. It is also obvious that these infrastructures partly work on solutions for the same common problems such as long-term data preservation and service execution environments. Therefore in parallel we can observe that there is an increasing awareness about the need to work out basic principles for an eco-system of infrastructures. In Europe several such research infrastructure initiatives from various scientific domains and a number of the major European data centers agreed to collaborate for example on a Collaborative Data Infrastructure, i.e. finding a solution that on the one hand offers the researchers all benefits from centers deeply involved in the domain specific aspects of data processing and on the other hand find out how common data processing related tasks can be based on shared services. Exactly the two issues mentioned (data preservation, service execution) are in the core of the intended collaboration. The work on a Collaborative Data Infrastructure is in line with the recent report of EC’s High-Level-Expert-Group on scientific data called “Riding the Wave”. The talk will address and explain the mentioned topics.