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The Open Science Grid –Support for Multi-Disciplinary Team Science –the Adolescent Years

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As it enters adolescence the Open Science Grid (OSG) is bringing a maturing fabric of Distributed High Throughput Computing (DHTC) services that supports an expanding HEP community to an increasingly diverse spectrum of domain scientists. Working closely with researchers on campuses throughout the US and in collaboration with national cyberinfrastructure initiatives, we transform their computing environment through new concepts, advanced tools and deep experience. We discuss examples of these including: the pilot-job overlay concepts and technologies now in use throughout OSG and delivering 1.4 Million CPU hours/day; the role of campus infrastructures- built out from concepts of sharing across multiple local faculty clusters (made good use of already by many of the HEP Tier-2 sites in the US); the work towards the use of clouds and access to high throughput parallel (multi-core and GPU) compute resources; and the progress we are making towards meeting the data management and access needs of non-HEP communities with general tools derived from the experience of the pariochial tools in HEP (integration of Globus Online, prototyping with IRODS, investigations into Wide Area Lustre).

We will also review our activities and experiences as HTC Service Provider to the recently awarded NSF XD XSEDE project, the evolution of the US NSF TeraGrid project, and how we are extending the reach of HTC through this activity to the increasingly broad national cyberinfrastructure. We believe that a coordinated view of the HPC and HTC resources in the US will further expand their impact on scientific discovery.

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