Supercomputing and Grid Harmonizing Policies

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Topics

- **Europe should establish a two-tiered e-Infrastructure of supercomputing centres: the existing national centres, e.g. those that are currently engaged in the DEISA project, will form the Tier-2 centres. Tier-1, the tip of the new resource pyramid, is constituted by a few sites that will host shared European petascale supercomputers. The two tiers should be strongly integrated together into a global infrastructure "à la DEISA" with a unique operational and service providing model**

- **HPC requires a specific eInfrastructure in Europe "à la DEISA" because of the specific profile of this activity, its specific requirements and its specific operational model for service provision.**

- **Europe needs a very restricted number (2, 3?) of high end petascale systems in the next few years to substantially enhance capability computing and to match the planned evolution in the US and in Japan. Supercomputing Grid infrastructures "à la DEISA" are not a substitute for high end petascale supercomputers, as they are complementary.**

Topics

- In a distributed supercomputing environment, high performance access to remote data is a key ingredient to comply with the HPC requirements
- How, and in which way, existing e-infrastructures are paving the way towards the implementation of this vision?
- Are these exceptional computing systems reachable in the absence of shared investments from the member nations?
- Portals and community allocations are a very efficient way of transparently plugging supercomputing resources behind existing traditional or discipline oriented Grid infrastructures.
- Reinforcement in research of new programming models, new algorithms, new methods … is necessary for the better utilization of petascale supercomputers.

Topics

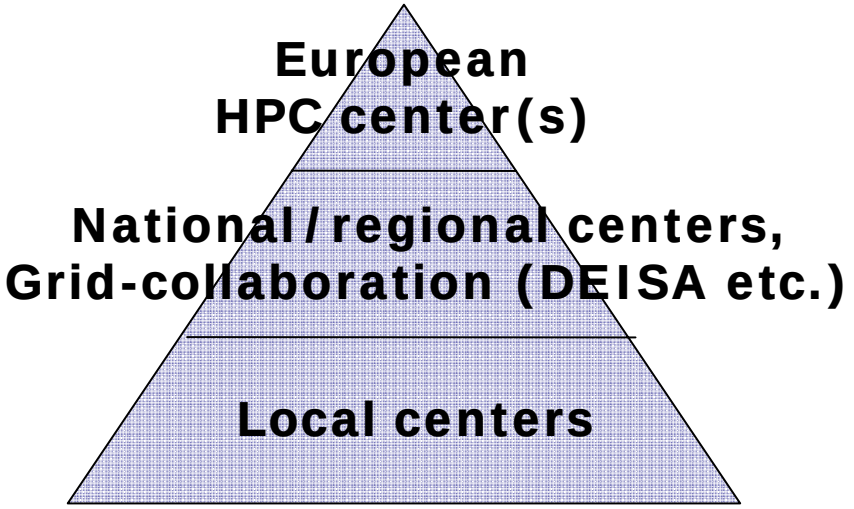
- **Subject to the technical development, a variety of leadership-architectures should be available at the European Tier-1 centres. This is needed because of the diversity of the architectural requirements of the different scientific communities. This requirement may lead to European procurements where more that one computing platform is requested.**

- **Lightweight, flexible, open, cluster based, more traditional Grid environments have a high intrinsic value of their own for capacity computing and they are therefore complementary to the capability oriented supercomputing environments.**

- **Discuss the strategy of the GIN (Grid Interoperability Now) world initiative among the major Grid projects. The "Now" means immediate interoperability, without waiting for the standards that are taking their time to show up.**

Summary Report (1)

- T1, T2 organization
  - Building on existing national infrastructures
  - Use T2, efficiently. T2 ramp up/down for T1.
  - Existing Supercomputing Grid infrastructures are not a substitute for high end petascale supercomputers, as they are complementary.
  - Number of T1?
  - T1 should be multidisciplinary
  - Utilization of T1 dedicated to grand challenge applications



Summary Report (2)

- Who decides scientific policy? Pay per use? Usage policy?
- Architecture issues
- In a distributed supercomputing environment, high performance access to remote data is a key ingredient to comply with the HPC requirements
- Reinforcement in research of new programming models, new algorithms, new methods … is necessary for the better utilization of petascale supercomputers