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Parallel Session
Generic vs. Disciplinary Grids

Introduction + "Notebook"

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- It is stated that the work on this section generated "considerable discussions" and that therefore the contents have "overlapping" definitions

- A discussion and diagrams of various "Grid paradigms" is presented

- A "politically correct" conclusion is drawn

- 2.4.2. General purpose vs. disciplinary Grids

This section examines whether the way forward should be towards "general purpose grid infrastructures and services", i.e. serving multiple applications and sciences, or "disciplinary ones", i.e. serving a single application or even a single experiment.

Editor's note: The contributions to this section from the eIRG members have spawned several interesting discussions on the definitions of Grids and a debate on the role of disciplinary and general purpose Grids. The ambition has been to reflect this discussion in the text and there may thus be inconsistent comments and overlapping definitions in the section. The conclusions drawn from the discussions will be used to as a starting point for a continued discussion on the topic to be included in the 2005 eIRG white papers.
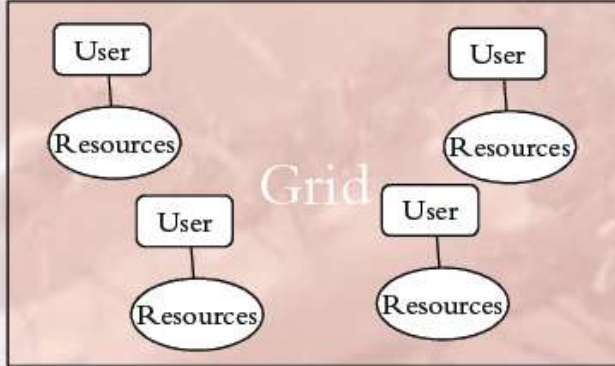
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Figure 2.2: Flat Grid

Figure 2.3: Collaborative Grid

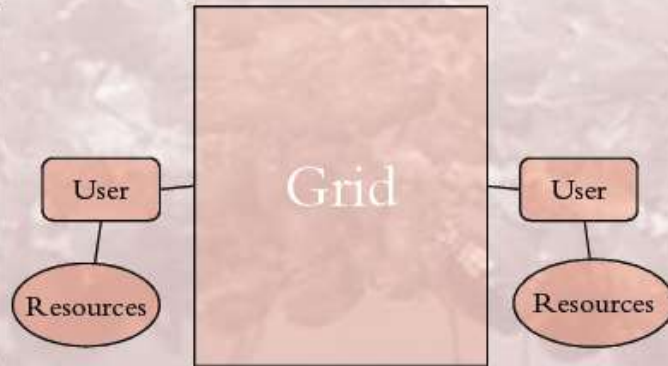Figure 2–2.4: Power Plant Grid of High-Performance Computing Centres

Figure 2–2.5: Hierarchical Grid

Open issues for the Luxembourg presidency

Further input needed: a list of issues that arose but were not covered in this white paper.

2.4.2 Fig 25:
The figure ignores multirooted (Mallee) trees (e.g. GridIreland nationally root plus
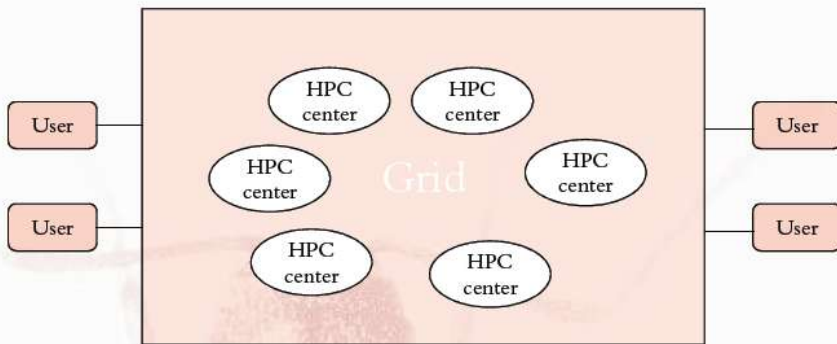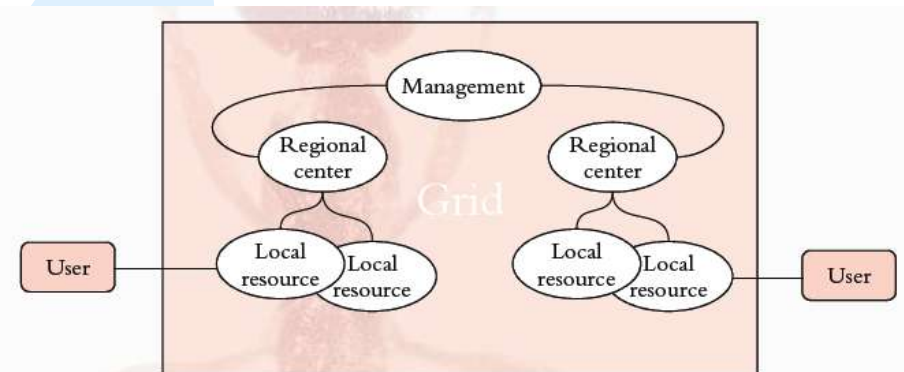EGEE international root)

2.4.2.6. Conclusions

The conclusion is that the long-term vision is a general purpose international production Grid complemented with very special Grids for strong collaborations often involving large scale equipment. It is noted that available technology and especially policy is not yet ready for realization of this vision and there is currently an emphasis on disciplinary and in some cases multidisciplinary Grids with user communities of manageable size and disciplinary width. Many aspects of the underlying technology (middleware and some other elements of the policy architecture) are common between disciplinary and general purpose Grids, and it is important not to duplicate efforts in different disciplinary efforts. At the same time it is important not prevent the bottom up development that has shown to be very successful in several cases. Standardization efforts are thus needed but should not be premature

The conclusion is thus that there is a strong need for technical and policy co-ordination in between disciplinary Grids. The e-IRG thus suggest that:

> "*A forum dedicated to the co-ordination and exchange of technology and policy for disciplinary Grids should be formed. The task of the forum is to minimize duplication of efforts but still recognize and pronounce unique demands from disciplinary user communities.*" It is also recommended that the e-IRG is given the responsibility to establish this forum.

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- One possible simplification to three vectors (non-orthogonal)

  – Abundance or Scarcity of "whatever"

  – Time profile of useage

  – "Mass" and "Density" of user communities

What drives "perceptions" of "Grid Paradigm" vectors ?

- Abundance or Scarcity of "whatever"
  - Cost _and_ Funding Source (funded by someone else = "free" !!)
  - Suppy vs. Demand (particularly if impact of peaks is "visible")

- Time profile of useage
  - Most perceptions heavily influenced by "supercomputer thinking"
  - but...Capacity Computing can involve month-like timescales
  - but...Data Curation can involve decade-like timescales

- "Mass" and "Density" of user communities
  - A large community may find "private resources" more desirable or not...if community is very "spread out" or "low density"
  - A small community may find "utility resources" more desirable or not...if community is very "concentrated" or "high density"

+ Completely "irrational" human behaviour

"...because you're special, so special, just like everybody else..." (de-phazz)