In the broader scope of the EGI era, a major operational and scientific challenge is a better understanding of the e-science requirements and infrastructure usage. This information is the condition for a sound design of the roadmaps in dimensioning and capacity planning, as well as technology solutions for better reliability, increased and greenest performance, and finally a more self-operated production. Similarly, the exciting and new area of convergence between Grid and Cloud Computing needs to explore the similarities and discrepancies of e-science and business applications.

Extensive grid monitoring facilities have already been developed in the various niches of the grid ecosystem and at various levels from core middleware to user-level. The session focus is on their operational or research usages and challenges.

The first goal of the session is to provide a transversal view of these developments. The contributions cover the whole range of High Performance Infrastructures, from the Peta-Scale world to Cloud European and industry project, as well as the monitoring and interpretation tools created by the EGEE user communities. Interactive visualization is an essential component of high-level monitoring. The session will present some important examples in this area.

The second goal of the session is to demonstrate further some of the advances in the interpretation, for instance for performance evaluation or the design of self-regulation and self-maintenance policies. The talks will also some analysis challenges, which are of immediate operational impact, but remain complex to address.

The final goal of the session is to fostering collaboration between information providers and users. The insights on the EMI technology roadmap will be an important contribution to this goal.