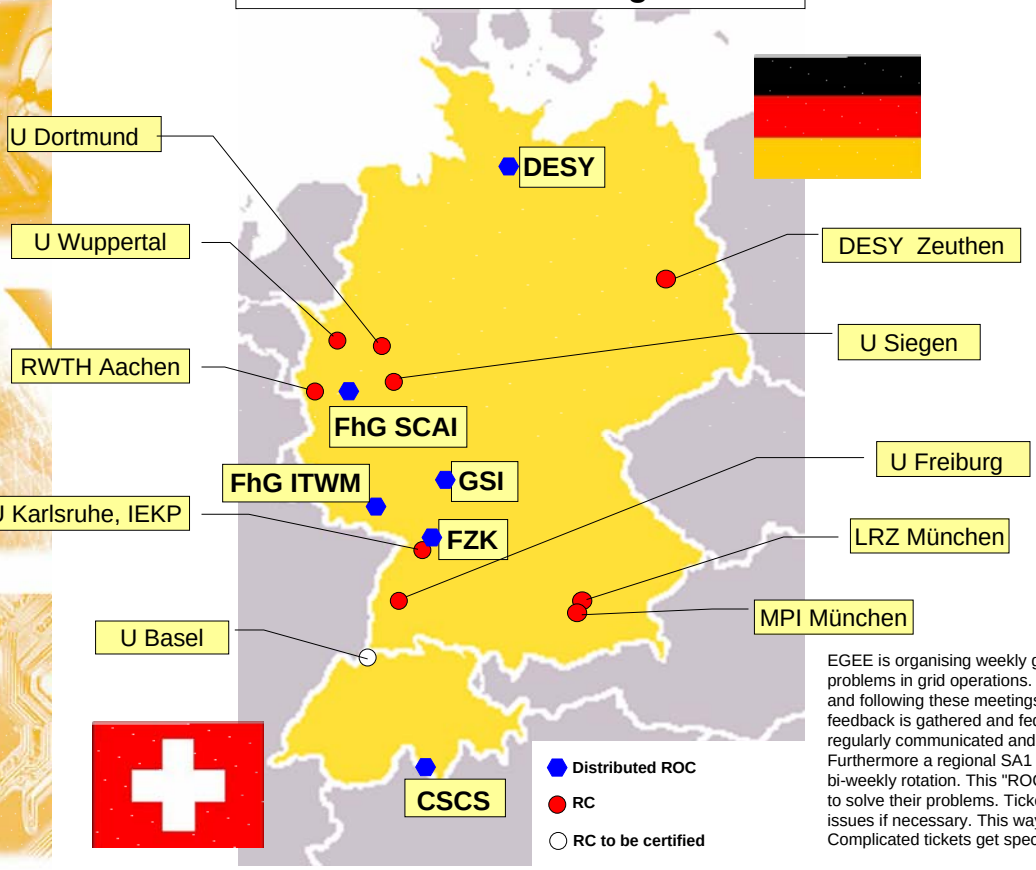
A distributed approach for a regional grid operation centre

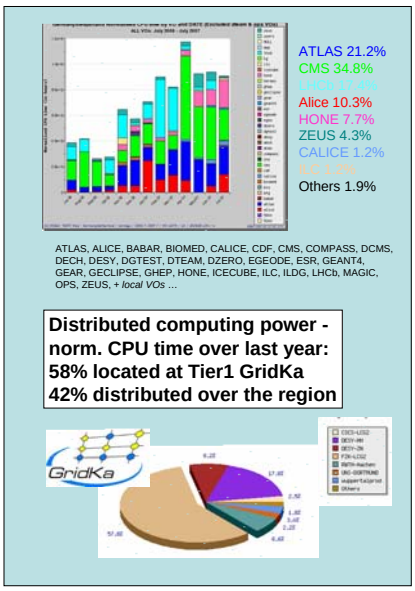
Enabling Grids for E-sciencE

The EGEE project has successfully coordinated and supported the build-up of a production infra structure based on the grid middleware gLite 3. The recent middleware release (currently gLite 3.1 being deployed) again improves the reliability of grid services inside the EGEE grid and introduces SL4 support. As part of the SA1 activity operations inside the EGEE project are organised into 12 regions. One of these regions is the German Swiss Region, shown in the figure below. Currently this region consists of 16 sites (one of them only uncertified). All together these sites are operating more than 3800 CPUs, more than 2300 TB disk space and three mass storage systems. Six large resource centres (⬢) are forming the distributed German Swiss ROC (Regional Operation Centre) as funded EGEE partners inside the project. A main team at the LCG Tier 1 centre GridKa at Forschungszentrum Karlsruhe is managing and coordinating the work inside this ROC.

Through its distributed structure, the German Swiss ROC encourages a broad grid knowledge through a larger user community and more use cases and science communities, then it would be in a central approach. About 30 regional and global virtual organizations (VO) are using the German Swiss production grid infra structure for their computations, though of course the LHC VOs span the largest fraction (with about 80% of CPU usage). In addition there are many local user groups either from HEP or from very different scientific areas, which will once be important for a common regional grid structure. Collaboration with Swiss Grid and D-Grid has started also in terms of new regional VOs who start using gLite as part of their middleware setup. Apart from this large variety of VOs, there's also a variety of linux flavours used in production: 11 out of 16 sites are using Scientific Linux, but Debian, CENT OS and SUSE play a well-established role in the regional grid structure.

German Swiss Region



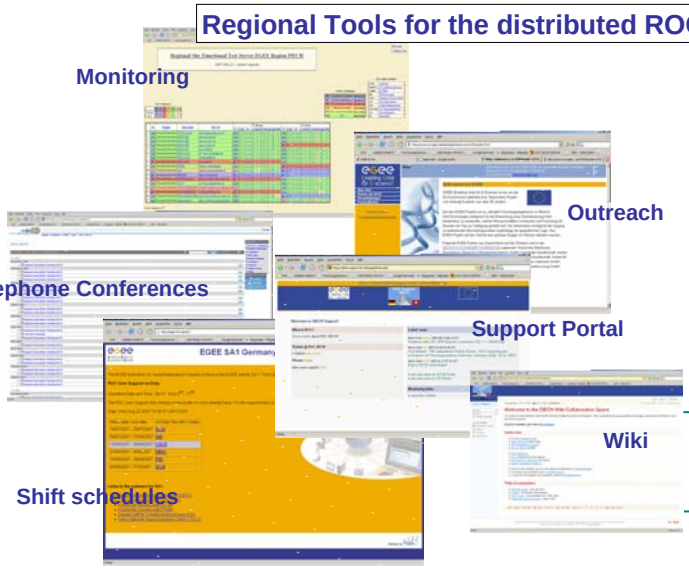


EGEE is organising weekly global telephone conferences to discuss and work on actual problems in grid operations. A team of SA1 Germany-Switzerland is steadily contributing to and following these meetings. Information relevant for the regional sites is forwarded, and feedback is gathered and fed into the discussions. Regional operational problems are also regularly communicated and discussed in bi-weekly regional telephone meetings. Furthermore a regional SA1 support team (distributed over five partners) is taking shifts in a bi-weekly rotation. This "ROC DECH On Duty" team is following up tickets and helping sites to solve their problems. Tickets are forwarded to global support units e.g. for middleware issues if necessary. This way the SA1 team keeps an overview of the situation in the region. Complicated tickets get special attention in the team meetings.

The grid communication channels are working well. Scalable core structure services like GOC-DB, SAM Monitoring, CIC- and GGUS Portal are in place and working in production mode. The GGUS portal and the overall user support is coordinated for the whole EGEE project as part of the DECH SA1 activity. Each region has its own regional support platform. For region DECH this is https://dech-support.fzk.de All connected resource centres follow up regional or local site problems reported to the system by users, administrators or the global **COD** Team (**C**IC **O**n **D**uty). SA1 DECH is contributing to COD with a distributed team. Six partners call up their experts in two distributed regional teams, using chatclients, email and telephone to keep in touch and spot recent problems on a global scope.

Another example for a broader experience in grid technology are different approaches of fabric management (like e.g.Quattor and cfengine) at the sites. All German ROC partners are using the PPS (pre-production system) to test new gLite releases for their local environment and to offer the VOs an opportunity to test their software carefully in terms of middleware issues before a release goes to production. In a similar way as the preproduction is distributed, today's regional CPU resources are distributed, too: about 40% are distributed amongst the partners of Tier1 GridKa. The most important benefit of the distributed ROC and the broad coordination structure for grid operations in the German Swiss region is an intensive way of exchanging experiences in a steadily growing grid computing infra structure.

Regional Tools for the distributed ROC



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