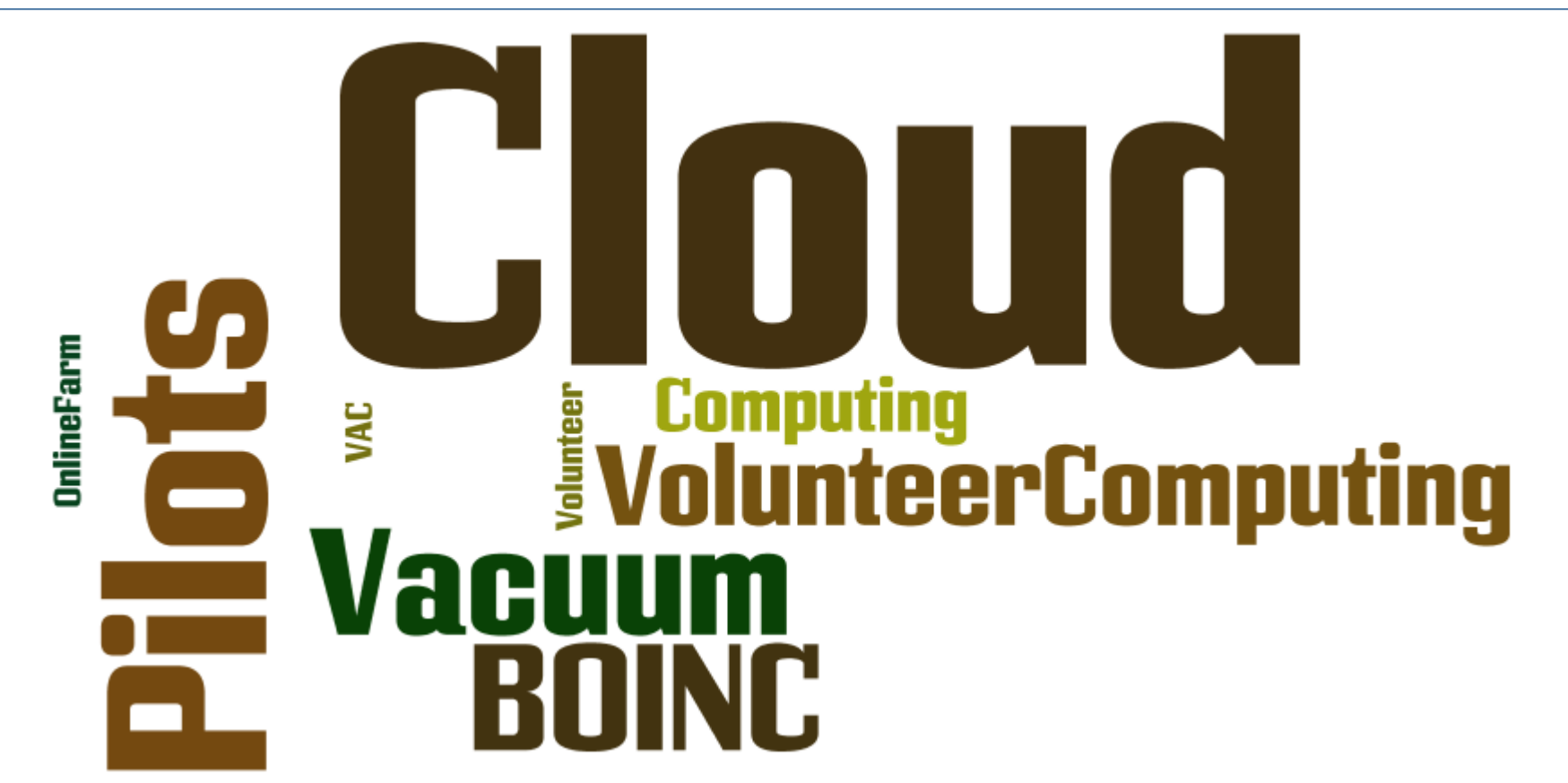


Today's community Grids have resources outside of the Grid!

Your community needs more computing and storage...

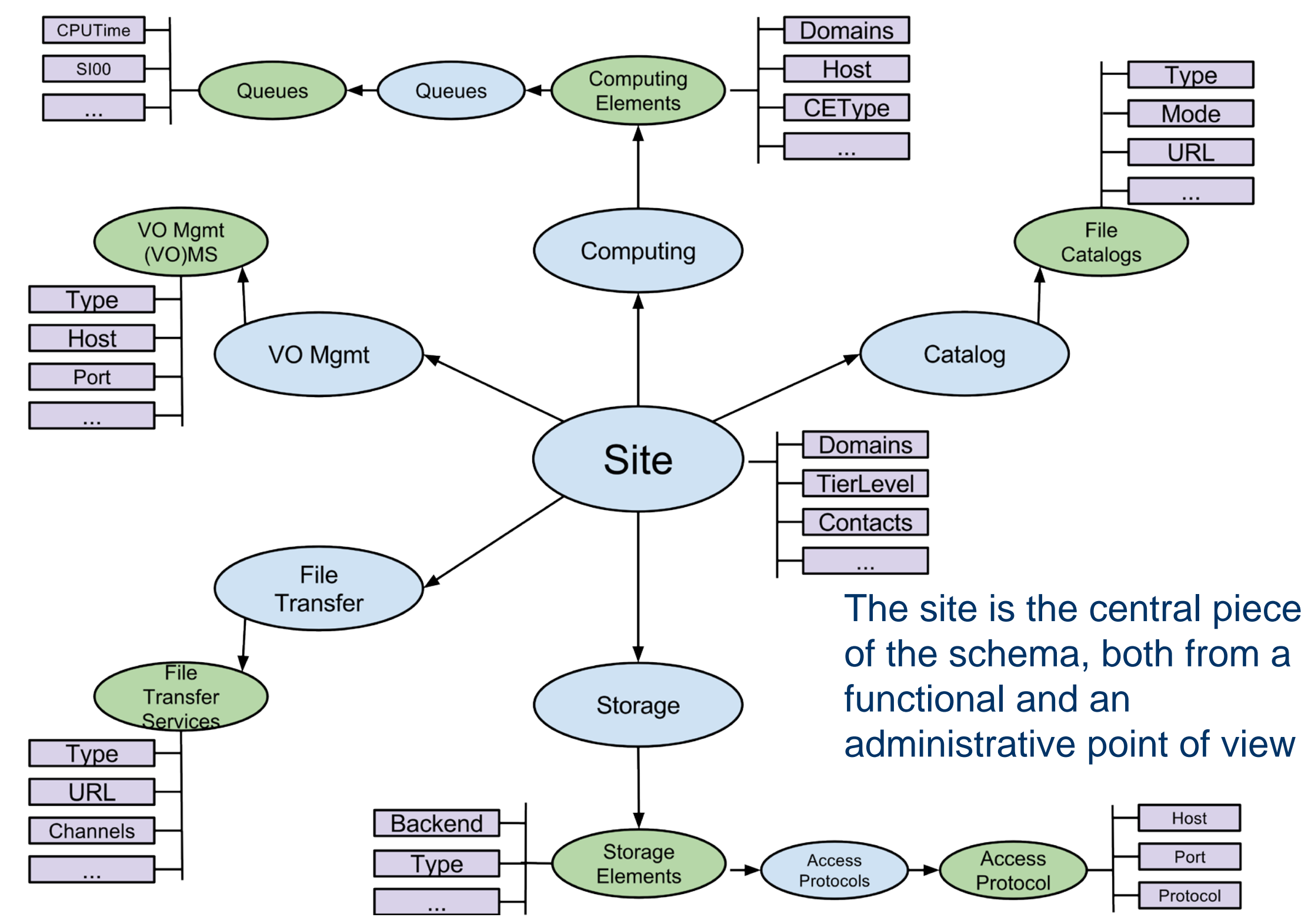
- Your usual providers won't add much more
- No problem, there are those cool new stuff everyone's buzzing about!
 - Ok, so now you have to manage ALL of them
 - ...fancy something AUTOMATIC?



In DIRAC, all the Grid Resources, independently of their types, are abstracted in a single, generic ontology

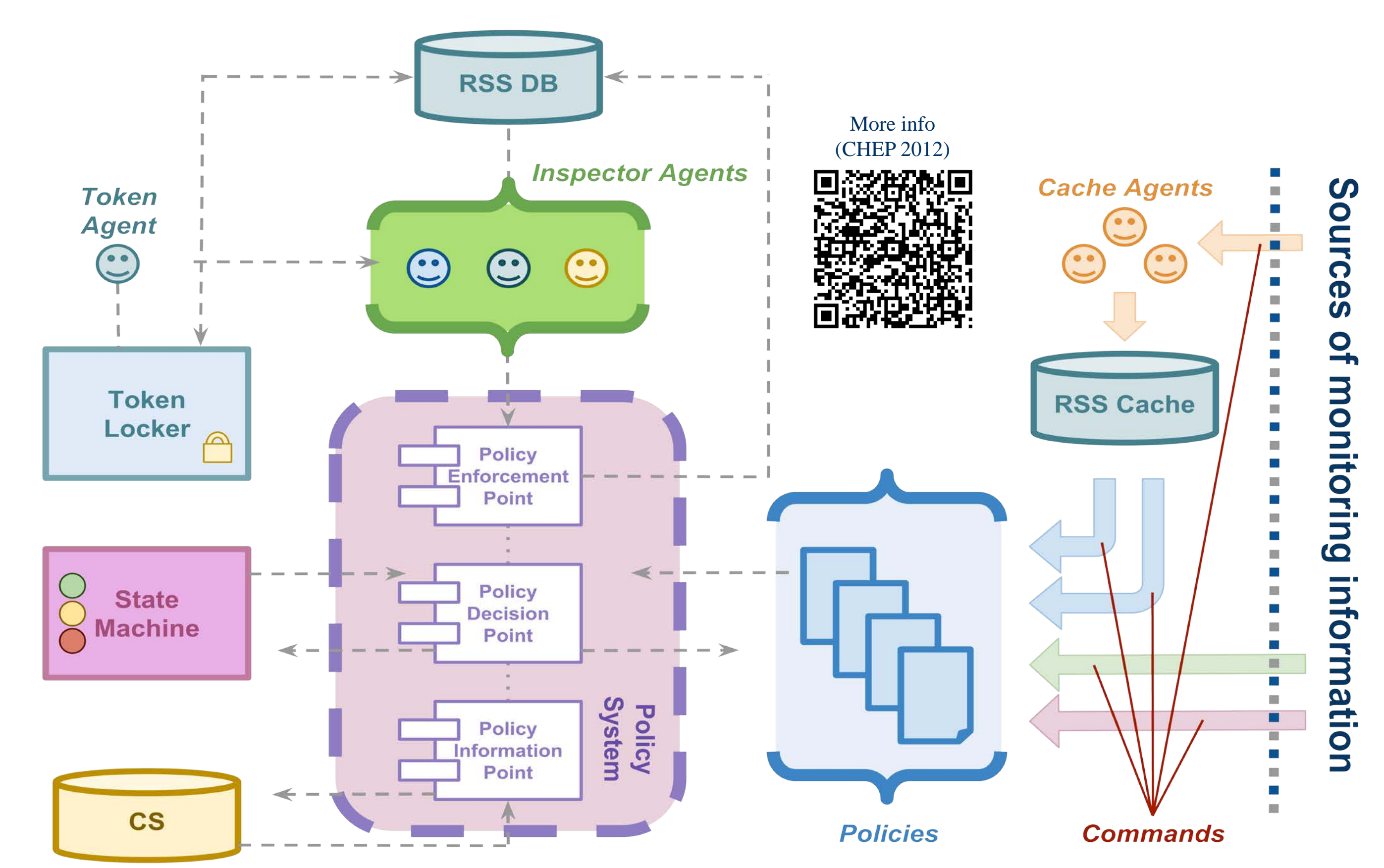
Key concepts:

- **Community:** Virtual Organizations
- **Site:** container of resources, holds the "locality" concept
- **Domain:** supra-site organization (e.g. funding agency)
- Types of resources:
 - Computing
 - Storage
 - Catalog
 - File Transfer
 - Databases
 - Community Management



The resources description is persisted in the DIRAC Configuration Service

A policy system machinery is used to assess the resources' status



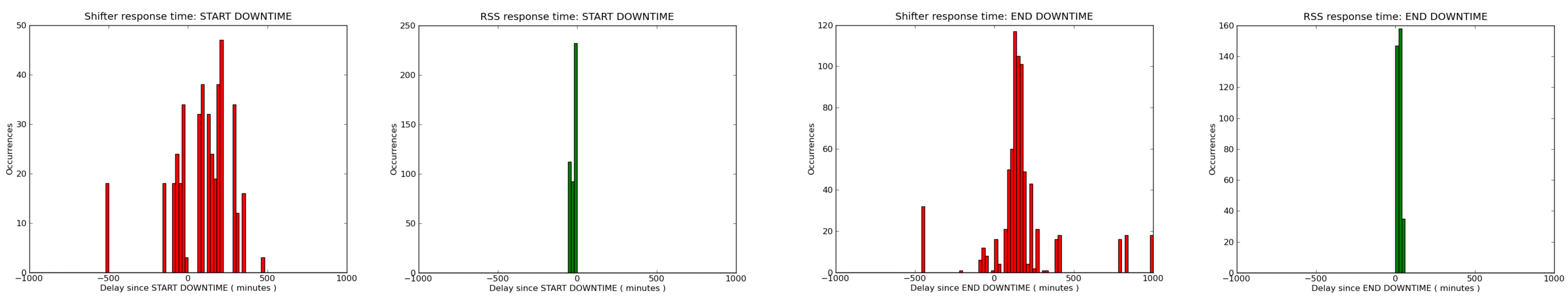
Key concepts:

- The DIRAC Resource Status System (RSS) caches dispersed monitoring information, depending on the type and nature of the resources
- We apply data mining techniques
- The Grid administrators define which policies to apply, depending on their type
- With the collected info, given the current status, the policies are evaluated, and a status is assessed

Examples of policies:

- A WLCG site announces a DownTime (DT) in the GOC DB: the site is banned *n* hours in advance.
- That same site exits from the DT: tests jobs are sent to the site. In case tests are positive, the site is unbanned.
- A Storage Element (SE) runs out of space: the SE is banned for writing.
- There are certain SEs from which you are not allowed to remove any data.

Policies are enforced automatically, removing the need for a human's interaction, and clearly enhancing the reaction time



Comparison of the reaction times from the official start and end of a DownTime, and ban/unban of Storage Elements. The 3 different peaks registered for RSS are due to changes in the policy conditions over its application period.