N4U: expansion of neuGRID services and outreach to new user communities

www.neugrid.eu

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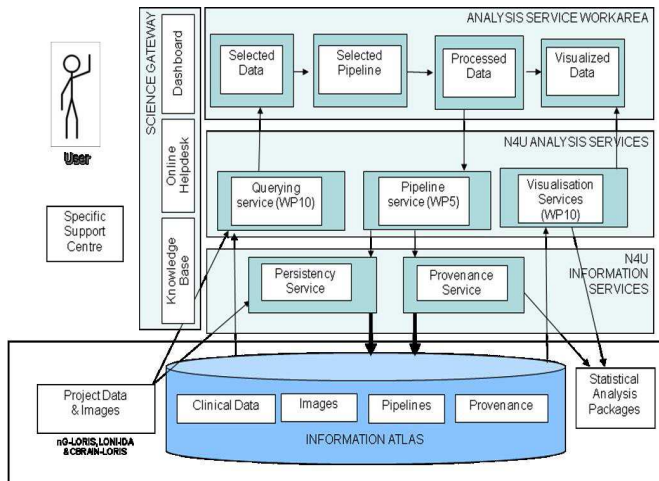
N4U will develop a complete environment to carry out the computational neuroscience experiments that will become commonplace shortly. N4U will offer a user friendly environment where neuroscientists can find all the building blocks to optimally exploit large image datasets e.g. the data themselves, sophisticated algorithm pipelines, adequate computational power, appropriate imaging services, statistical and visualization tools, and help and support centre. This will lead to empowering the neuroscientists, who will be in full command of the carrying out and interpretation of scientific experiments.

The Virtual Laboratory to be delivered by N4U

N4U will provide an e-Science environment by further developing and deploying the neuGRID infrastructure. This is the first and only European effort aiming to offer a distributed working environment to neuroscientists.

N4U will provide a Virtual Laboratory comprising:
- ❖ dashboard to present the underlying system
- ❖ set of integrated data resources
- ❖ set of services enabling access to the underlying neuGRID infrastructure
- ❖ user analysis workbench to define/configure pipelines and inspect analysis output

Infrastructural Pillars of neuGRID

NeuGRID paved the way to establishing an European neuroscience facility leveraging on two robust Information and Communication Technology legacy pillars:
- ❖ the European Grid Initiative (EGI, www.egi.eu) which, through the cooperation of the LSGC (Life-Science Grid Community), forms the backbone of its computing resources.
- ❖ the pan-European Internet network for Education and Research (GÉANT, www.geant.net), providing high-capacity network lines between clinical and technical partners
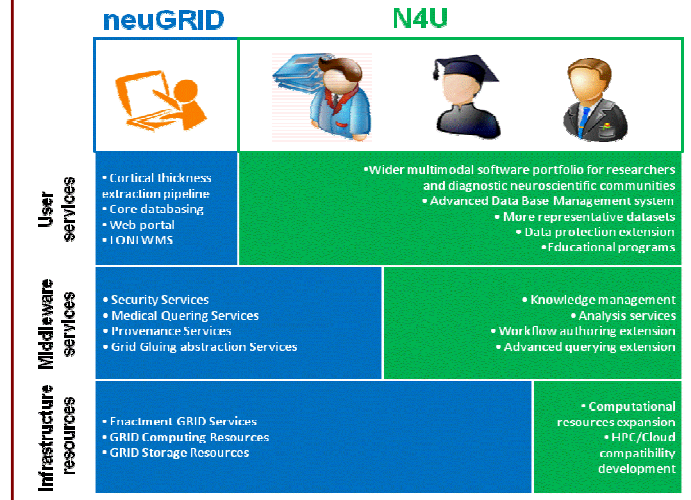
Complementarity between neuGRID and N4U

NeuGRID pioneered the lower infrastructural layers addressing aged-related neurodegenerative diseases research community (*e.g.* Alzheimer's disease).

N4U will:
- ❖ harness the infrastructure and further develop to satisfy the needs of broader user communities
- ❖ focus on white matter diseases (*e.g.* multiple sclerosis) and psychiatric diseases, due to their high impact on society