A brief portrait of the Human Brain Project

The Human Brain Project will provide new tools to help understand the brain and its fundamental mechanisms and to apply this knowledge in future medicine and computing.

Central to the Human Brain Project is Information and Computing Technology (ICT). The project will develop ICT platforms for neuroinformatics, brain simulation and supercomputing that will make it possible to federate neuroscience data from all over the world, to integrate the data in unifying models and simulations of the brain, to check the models against data from biology and to make them available to the world scientific community. The ultimate goal is to allow neuroscientists to connect the dots leading from genes, molecules and cells to human cognition and behavior.

A novel medical informatics platform will federate clinical data from around the world, allowing medical researchers to unlock the clinically valuable information they contain and to incorporate it in computer models of disease. The goal is to develop techniques for the objective diagnosis of the brain’s diseases, to understand their underlying mechanisms and to speed up the search for new treatments.

Finally, the HBP will build new platforms for “neuromorphic computing” and “neurorobotics”, allowing researchers to develop new computing systems and robots based on the architecture and circuitry of the brain. The new systems will use detailed knowledge of the brain to address critical problems facing future computing technology: energy efficiency, reliability, the huge difficulties involved in programming very complex computing systems.

The HBP will fund independent scientists to use the new platforms for their own research, reserving a substantial part of its budget for this purpose. In brief, the HBP will create a CERN for the brain.

Website: [http://www.humanbrainproject.eu/index.html](http://www.humanbrainproject.eu/index.html)