

A Grid-enabled System for Analysis of Brain Function

Introduction

Brain science is seen as an important science of the 21st century in both fields of clinical and research. In fact, in most advanced countries, the number of brain diseases increases due to the shift to aged society. Therefore the people now expect the improvement in quality of medical care by the advancement of brain science. In reality, however, collaborative works between medical researchers and IT researchers towards the improvement are rarely performed due to geographical distribution problem of human and computational resources. Importantly, we establish an research environment that integrates advanced measurement devices and large-scale computing resources for seamless and efficient analysis, that is, a **Grid environment** for dramatic advancement of brain science.

Purpose

We establish an infrastructure allowing doctors and researchers to analyze brain function with high efficiency in clinical use by using the Grid technology. Moreover, we aim to contribute to **the development of the brain science**.

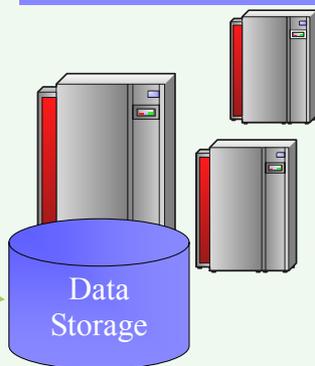
Priority-based Queuing Mechanism

We have developed a mechanism that controls flows from submitting jobs to downloading results based on priority each user specify at the job submission.

Measurement Device MEG



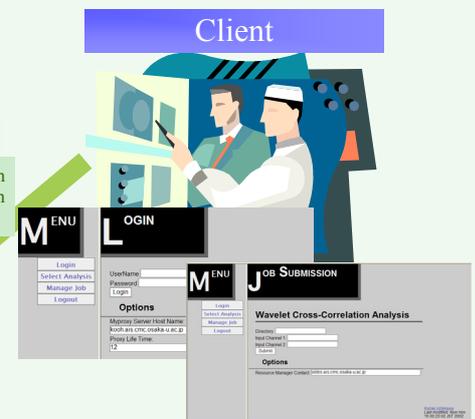
Computing Resources



Request for Analysis

Grid Portal

Result of Analysis



Convenience

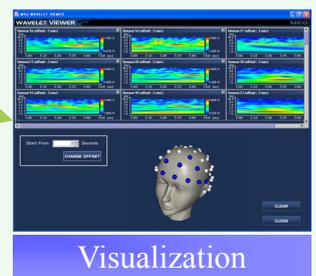
The web interface hides the complexity of the Grid. User can access transparently to the Grid.

Conclusion

The system seamlessly integrates components for the analysis of brain function on the Grid, and helps doctors and researchers to perform the analysis of brain function. As a result, the system has potential to dramatically improve the efficiency in the analysis of brain function.

Intuitive Understanding

Intuitive understanding is delivered through the visualization software.



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Acknowledgment

This work was supported in part by a Grant-in-Aid for Scientific Research on the Priority Area, "Informatics Studies for the Foundation of IT Evolution" (13224059) by the Ministry of Education, Culture, Sports, Science and technology of Japan, and the IT-program (Construction of Supercomputer Network) of the Ministry of Education, Culture, Sports, Science and Technology.

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Supported By

PRAGMA <http://www.pragma-grid.org/>
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