

# 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.

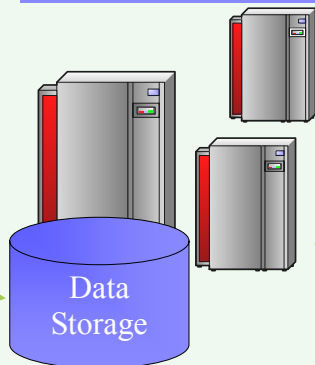
## Purpose

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**.

## Measurement Device MEG



## Computing Resources



## Priority-based Queuing Mechanism

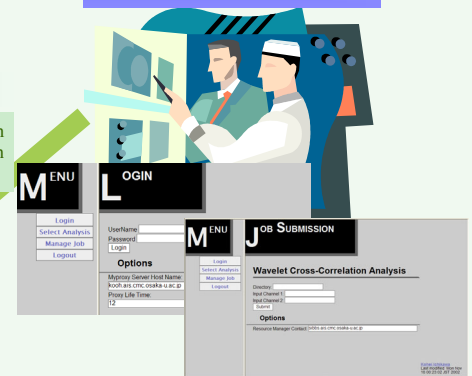
We have developed a mechanism that controls flows from submitting jobs to downloading results based on priority each user specify at the job submission.

*Request for Analysis*

## Grid Portal

*Result of Analysis*

## Client



## Convenience

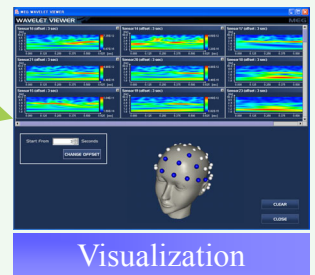
The web interface hides the complexity of the Grid. User can access transparently to the Grid.

## 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.



## Visualization

## Researchers

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