Project No. : 16006
Core Institution in Japan: National Astronomical Observatory of Japan, NINS

JSPS Core-to-Core Program
FY2006 Implementation Plan (Project No. : 16006)

Research Theme Establishment of Japanese Virtual Observatory in relation with International Virtual Observatory by utilizing state-of-the-art information technology

Duration of Project 2006 / 4 / 1 – 2009 / 3 / 31 (36 months)

Core Institution in Japan (Co-Chair) National Astronomical Observatory of Japan
(Assoc. Prof. Masatoshi Ohishi)

Implementing Organizations

○ **Japan**

Japan	Core Institution	National Astronomical Observatory of Japan	
	Co-Chair (name and title)	Masatoshi Ohishi / Associate Professor	
	Cooperating Institutions	Ochanomizu university, Tokyo Institute of Technology, University of Tokyo, JAXA/ISAS, Tokyo Gakugei university, Ibaraki university	Number of Cooperating Institutions: 6

○ **Partner Countries**

Germany	Core Institution	European Southern Observatory	
	Co-Chair (name and title)	Peter Joseph Quinn / Head・Data Management Division	
	Cooperating Institutions	Strasbourg Data Centre	Number of Cooperating Institutions: 1

U.K.	Core Institution	Cambridge University	
	Co-Chair (name and title)	Nicholas Andrew Walton / AstroGrid Project Scientist	
	Cooperating Institutions	Jodrell Bank Observatory, University of Edinburgh, Rutherford Appleton Laboratory, The University of Manchester, Mullard Space Science Laboratory, University of Leicester, The Queen's University of Belfast	Number of Cooperating Institutions: 7

U.S.A.	Core Institution	Space Telescope Science Institute	
	Co-Chair (name and title)	Robert James Hanisch / Project Manager	
	Cooperating Institutions	The Johns Hopkins University, California Institute of Technology, National Center for Supercomputing Applications, National Radio Astronomy Observatory, National Optical Astronomy Observatories, San Diego Supercomputing Center, Smithsonian Astrophysical Observatory, NASA Goddard Space Flight Center, Dominion Astrophysical Observatory	Number of Cooperating Institutions: 9

Objectives of Research Exchange (including the five years after the project finishes)

It has been requested to understand the formation of the universe and galaxies, and the origin of the life by statistically treating high sensitivity and large-scale multi wavelength data acquired with the latest telescopes. It was difficult immediately to exchange and to use these observational data because the network was slow to exchange such data to each other. However, the progress of recent network technology is remarkable, and current impossibility is becoming possible. Therefore we aim to construct in Japan a new research environment through a high-speed network in order to exchange observational data to clarify the previous problems, and to provide immediately with research results to the society.

Results to the present

Japanese Virtual Observatory implemented standardized VO interfaces defined through the IVOA seminars, joint researches, etc., and succeeded to interoperate with VOs in Germany, the United Kingdom and the United States since December, 2004. In 2005 JVO implemented a Work Flow Description Language and a Work Flow execution mechanism, in order to utilize not only astronomical databases but data analysis servers that are distributed in the world. The Work flow system has been upgraded through collaboration with the UK.

Summary of FY 2006 Exchange Plan

Joint Research

Some JVO members plan to visit and stay for a while at the CDS, Strasburg, France, and Cambridge, UK, to develop a work flow execution management system. France takes a roll to develop a GUI, and Japan and UK will develop execution system jointly. Japan and USA will upgrade data access protocols.

Seminar

It is planned to hold two major seminars to discuss and define VO interfaces. One meeting will be in Victoria, Canada, in May 2006, and the second meeting will be held in Moscow in September 2006, hosted jointly by the ESO and Russian VO group. The majority of VO researchers participates these standardization meetings which are good occasions to disseminate VO technologies among the astronomy community in the world.

Researcher Exchanges

It is expected to visit to each other and exchange researchers to discuss science use cases and functionalities that are required to the international VO activities. We plan to encourage young researchers to visit Europe and/or the US to establish “human network” not only for the VO activity but their own research activities.