

## IMPAC-T Information Server System

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## Status Report

- Our group is discussing the framework of IMPAC-T Information Server System and specification of each server.
- However, most of specification are depend on the requirements from other group
- Now, we are investigating the market of server and storage, preparing the procurement, and discussing the possibility of installation servers and connection via network.



## What is important point? For IMPAC-T Server System

Observation, recording data, archiving data.... are of course very important.

However,

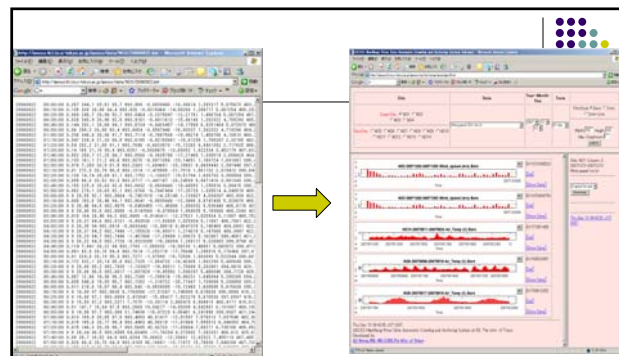
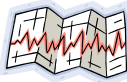
**Data should be changed to Information.**

Any data which cannot be used is not information.  
Data should be used.

Archiving system should provide **Information**.

And, with easy operation and easy feeling.

**ETL=Extract, Transform, Loading**



Data

Information

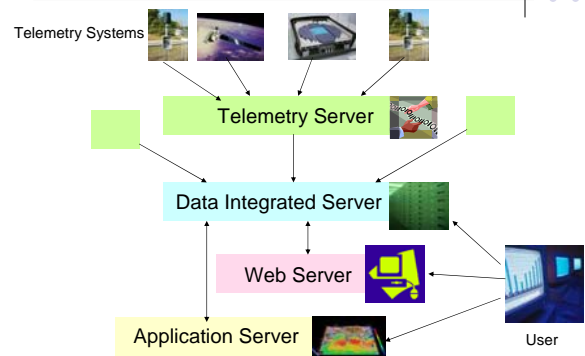
**Need ETL as Information!!**

## Mission of our group

- Telemetry Data
- Archiving Data
- Integrating Data and Managing Information
- Running application
- Data Download/Visualization



## Flow of Data



## What type of servers are required?

- Telemetry Server
  - Collecting data from telemetry systems
- Data Archive Server
  - Archiving data loading from Telemetry servers
- Data Integrated Server
  - Integrate data from Archive servers and manage
- Application Server
  - Running application using integrated data
- Web Server
  - Interface for Download, Visualization



## Requirements for each server

- Telemetry Server
  - Stable running (once lost, never get again)
- Data Archive Server
  - Never lose data
- Data Integrated Server
  - Integrated Management as "Information"
- Application Server
  - CPU and I/O power
- Web Server
  - Easy and useful Interface

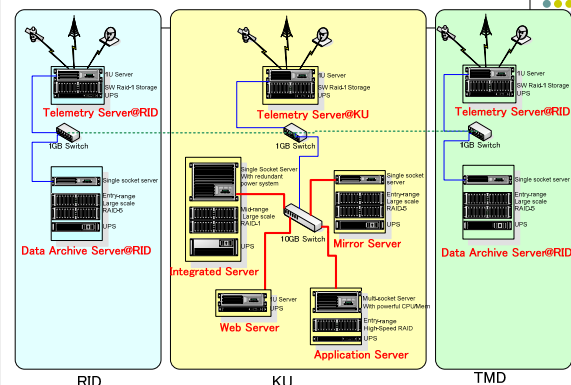


## Server Plan for IMPAC-T

- KU
  - Telemetry Server
  - Data Integrated Server
  - Mirror of Data Integrated Server
  - Application Server
  - Web Server
- RID
  - Telemetry Server
  - Data Archive Server
- TMD
  - Telemetry Server
  - Data Archive Server



## Server Structure



## Requirements for KU servers

- Telemetry Server
  - For Flux etc... data collecting and archiving server.
  - Stable system (non-stop) and mid-range storage (sw-raid 1)
  - GPRS I/O Card
- Data Integrated Server
  - Main Data "archive" Server
  - Redundant system with high speed large scale storage (mid-range raid-1)
  - Dual network IF for Mirror Server
- Mirror of Data Integrated Server
  - Sub Data archive Server
  - Normal system with stable large scale storage (entry-range raid-5/6)
- Application Server
  - For Model Processing Server
  - Powerful CPU and Memory, high speed storage
  - High-speed Connection to Data Integrated Server
- Web Server
  - For data download and visualization
  - High-speed network connection to Data Integrated Server

## Requirements for RID/TMD servers

- Telemetry Server
  - For telemetry data collecting and archiving server.
  - Stable system (non-stop) and mid-range storage (sw-raid 1)
  - GPRS I/O Card
- Data Archive Server
  - Data Storage for telemetry system(s)
  - Stable system with mid-range storage (entry-range raid-5/6)
  - Dual Network IF (for Intra/Internet)

## Discussion About Priority

- Telemetry server for KU,RID,TMD will be necessary soon.
  - If so, and environment is ready, how about introducing "small" data archiving server for RID?
- = to prepare the methods for sending data to KU on the technical and political aspects.
- Web Server should be prepared soon.
  - X3650(supplied in 2010) has multi-purpose specification (mid-range CPU, mid-level memory, powerful UPS, redundant powersupply..) → before procurement of other server, X3650 can work and run for software development.
  - However, to build up the framework of telem-archive-mirror-app. servers, purchasing small servers is also one idea for practice.
  - KU's big servers(Integ. and App.) is necessary to discuss deeply.

## Plan of server installation

		2011				2012				2013			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
KU	Data Integrated Server												
	Mirror Server												
	Application Server												
	Telemetry Server												
RID	Data Integrated Server												
	Telemetry Server												
TMD	Data Integrated Server												
	Telemetry Server												

- X3650 run as Data Integ. Mirror, App. Server before installation of each server.
- Data Integrated Server @ KU will move to Mirror Server on 2012 4Q.
- Proc.= Procurement, Inst. = Installation
- To supply Additional Storage for X3650 is required on 2011.
- Before installation of Data Integrated Server@RID/TMD, Telemetry Server will run as data integrated server.
- Before installation of Mirror Server, Application Server @KU, the proposal which introduces a small server is also considered.

## Costs of each server

- Data Integrated Server@KU  
4-6 mil. JPY x 2 times
- App. Server @KU  
3-5 mil. JPY
- Data Integrated Server@RID,TMD  
2-3 mil. JPY
- Telemetry Servers  
1-2mil. JPY(total)
- Web Server, Network Switch, UPS  
1-2 mil JPY(total)
- (Storage for X3650)  
1-2mil. JPY



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total: 16-25mil. JPY + small servers??