Report : Data Analysis Sub-group

Recent progress and discussions :

(1) design of data storage system

- LCGT data amount : ~700 TByte/year
- + sharing data, simulation data.
  --> 3 PByte for five years operation ----> at Kashiwa
- pre-processor (calibration and frame data packing) and temporary storage at Kamioka

An initial cost and five years running cost including maintenances and support are estimated *roughly 400 million yen* totally.

(2) design of analysis system

- We need fix and sum-up the requirements of computing (calculation) power.
  ---> 'Blue print of LCGT data analysis'

(3) time schedule of systems, software

'Blue Print'

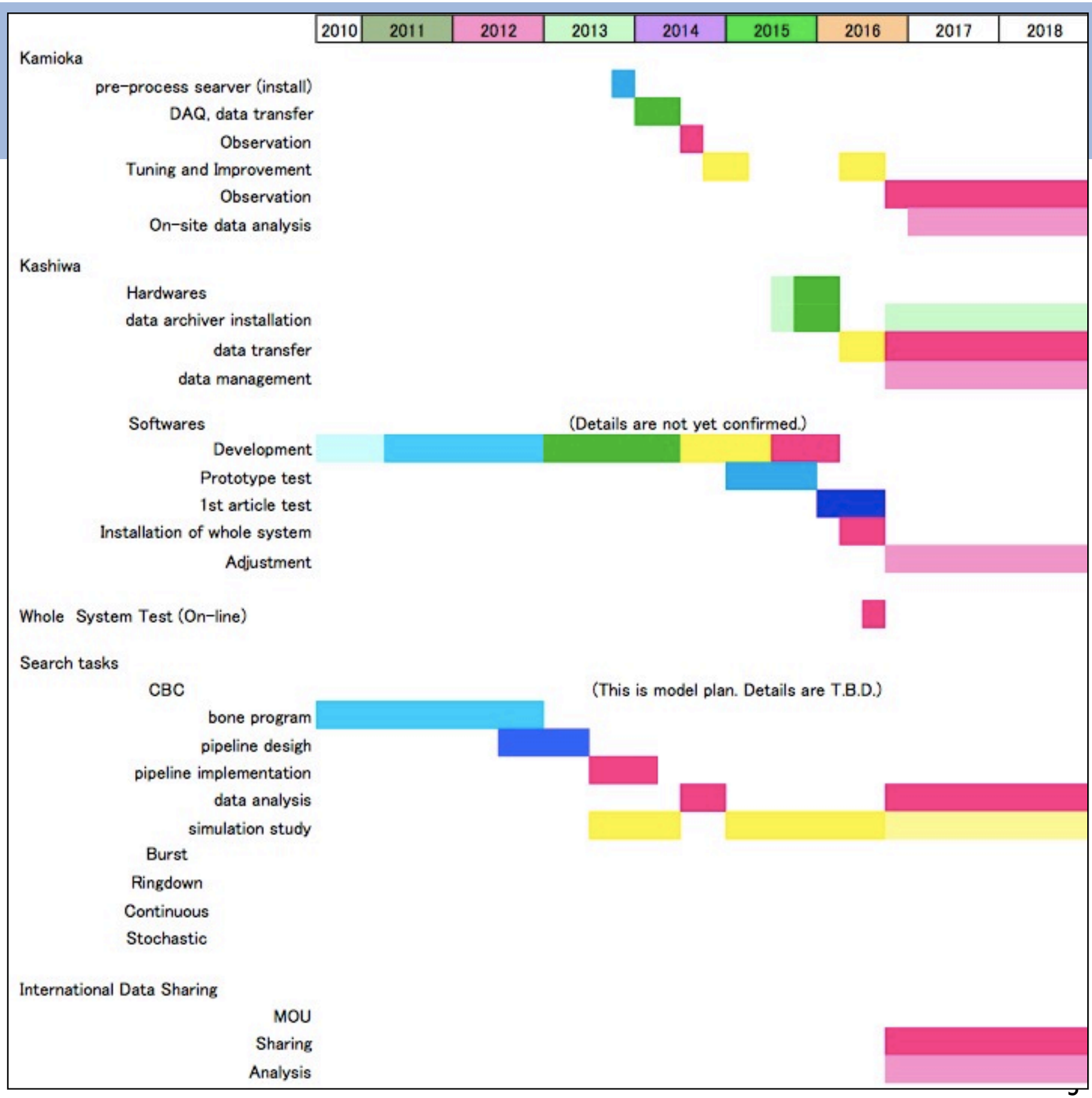
- Study on each GW sources, including computing power estimation; Compact Binary, Burst, Continuous Wave, Stochastic.
- Design and Estimation on 'Data Characterization'
- Design for computing (hardware, software)

  We would like to summarize studies during half year.

重力波源（連続波）								
解析手法	データ処理内容	必要な計算機資源			必要なソフトウェア			Sensitivity
		計算能力	ディスクスプール容量	その他	環境	一般的ライブラリ	LSC, VIRGO 等のライブラリ	
2 step incoherent all-Sky 1kHz old pulsar search. 55days integration	Stack-Slide	1TFLOPS	10GB の数倍。	-	分散可能	GSL etc.	有、移植可	$\Theta_{\rm rel} = 0.1$.
2 step incoherent all-Sky 200Hz young pulsar search. 64days integration.	Stack-Slide	1TFLOPS	2GB の数倍。	-	分散可能	GSL etc.	有、移植可	$\Theta_{\rm rel} = 0.23$.
Einstein@Home	-	200TFLOPS	1TB の数倍。	-	分散	GSL etc.	有、移植可	-

(example of computing of one GW source)

Schedule


2010
2011
2012
2013
2014
2015
2016
2017
2018
Kamioka
pre-process searver (install)
DAQ, data transfer
Observation
Tuning and Improvement
Observation
On-site data analysis
Kashiwa
Hardwares
data archiver installation
data transfer
data management
Softwares
(Details are not yet confirmed.)
Development
Prototype test
1st article test
Installation of whole system
Adjustment
Whole System Test (On-line)
Search tasks
CBC
(This is model plan. Details are T.B.D.)
bone program
pipeline desigh
pipeline implementation
data analysis
simulation study
Burst
Ringdown
Continuous
Stochastic
International Data Sharing
MOU
Sharing
Analysis