

1. Project status

- Questions
 - o Korea University missing in the list of institutes
 - o Responsibilities
 - o Total project cost

1. Dataflow - General 20' (Iosif-Charles Legrand)

- Topologies studies:
 - o Normal structure FLPs-EPNs
 - o Super-EPNs
 - o Local switches
 - Sw must be topology dependent
- Simulation of IO processes
 - o Omnet++: packet/frame level simulation. Lon
 - o Monarc simulation
- Network topologies
 - o Size and scalability
 - o Prize
 - o Transport layer: UDP, TCP, RDMA
- High speed network
 - o 40 GbE requires special tuning
- Calibration data traffic
- Q
 - o **How to conclude on FLP-EPN ?**

2. Dataflow - Dataflow simulation (Rifki Sadikin)

- Simulation setup in LIPI
- Network simulation
 - o Simulation time too long: 1 hour for 4 FLPs and 4 EPNs
 - o **Need to reduce simulation time. Maybe not full TCP/IP?**
 - o **Verify the simulation results with prototype measurements.**
- Storage simulation
 - o Ready for new simulation ? Yes.
 - o **Detector input ? Include detector data in the simulation framework ?**

3. Computing Platforms - GPU Computing platforms (Joohyung SUN)

- Benchmarking Kepler and Maxwell GPUs
- Using the online event reconstruction
- Kepler: 32 work queues fully scheduled independently
- Work in progress
 - o Previous work ~1
- New work
 - o Using Hyper-Q
 - o Tesla K20c has only 2 copy engines
 - o Outlook: Maxwell GPU
- **Measurements in conditions comparable as previous work**

4. Computing Platforms - Computing Platform Benchmarking (Boonyarit Changaival)

- Platforms benchmarking for ITS cluster finder hardware and software
- GPU, MIC, APU
- ITS cluster finder:
 - o GPU ~OM(100) Hz. Not appropriate for this application.

5. Computing Platforms - Opportunistic use of CPU cycles from mobile devices (Tirane ACHALAKUL)

- White Rabbit
- Application to get CPU cycles and make PR for Android devices
- **Number of donators for other large scientific projects ?**
- **Provide more precise parameters about the TOF calibration.**

6. Computing Platforms - Data processing on the Grid (KISTI)

- No presentations

7. Control - Status and plans for the Control, Configuration and Monitoring (Vasco Chibante Barroso)

- Presentation of the current system and the O2 CCM
- Control
 - o Possibly with Petri-net
 - o KMUTT: investigation on the tools
 - o CERN: investigation for the TDR
- Configuration
 - o System
 - o Application

8. Control - Control and Configuration and Monitoring (Khanasin YAMNUAL)

- Test of tools for
 - o Control
 - o Configuration
 - o Monitoring

9. Calibration and reconstruction - Plans for the TPC reconstruction (LIPI)

- Modelling the space charge in the TPC volume
- What is the input ?
 - o Geometry cannot be the only input for Run 3.
 - o Time is an essential ingredient.
 - o Consider the work done before for the Space distortion during Run 1.

10. Tools and software process - Tools and Procedure (Vasco Chibante Barroso (CERN))

- Summary of tools and procedure selected by CWG2
- Coding guidelines

11. Tools and software process - Continuous testing tool (LIPI)

- Test with Jenkins.

12. Architecture and Hardware – Storage systems (P. Vande Vyvre)

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13. DCS general overview (Peter Chochula)

- How different will be the system after the upgrade?
 - o DDL3 to transfer the data
 - o DCS data to O2 updated every 100 ms. Strategy: read all conditions and store them in a memory block. Update only values which changed. Inject them in the physics data.
 - o DCS data transfer to O2 ? Media ?
- Interest by the Technical University and Academy of Sciences to participate to the ITS project.

14. General discussion and O2 workshop wrap-up

- O2 issues
- **ITS needs from O2 ?**
- **ITS needs from DCS ?**