News

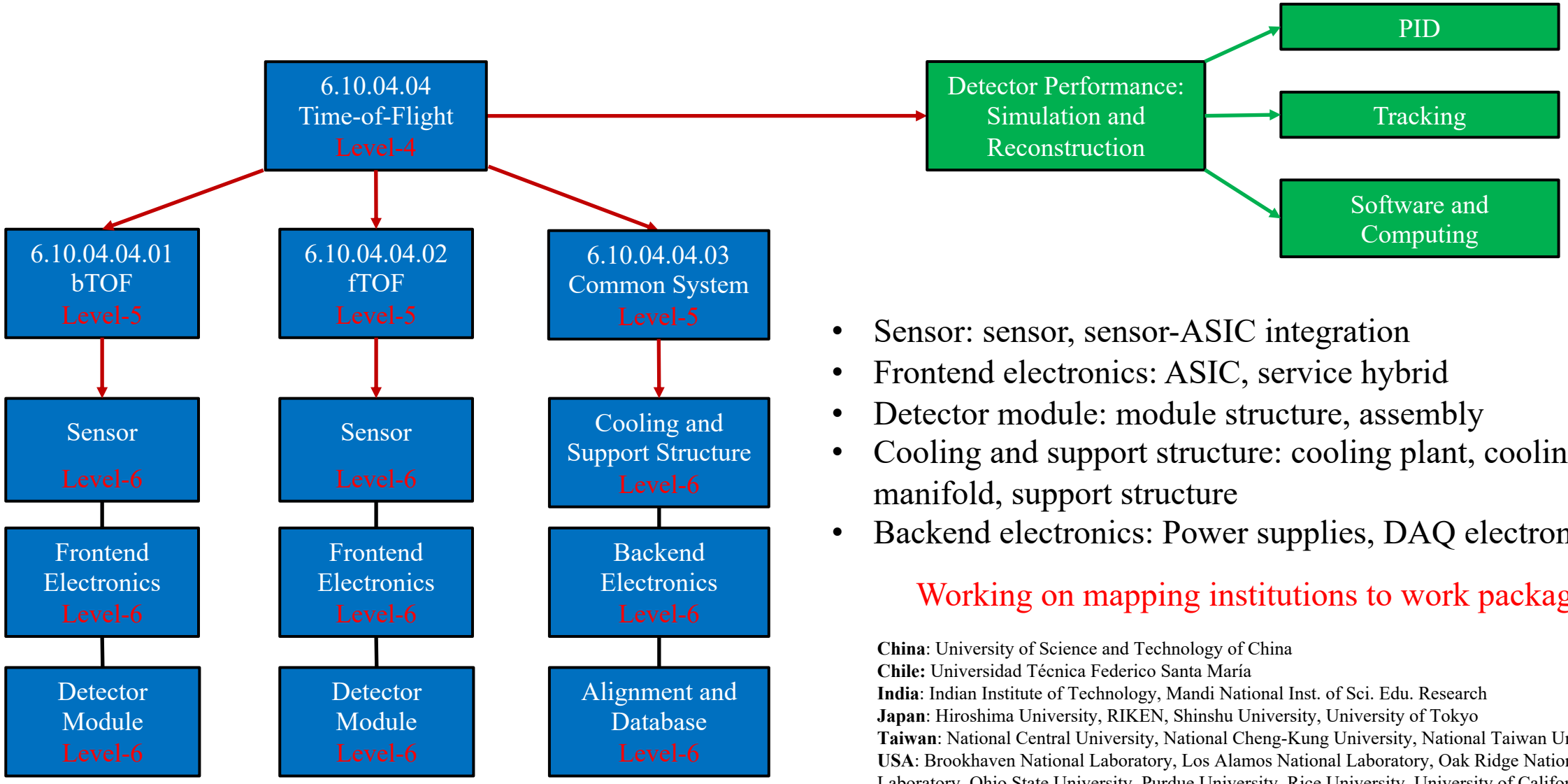
- **Incremental Design and Safety Review on ePIC PID detectors conducted on July 5-6:** Review presentations; Final review report
- **EIC Project Detector R&D Review on Aug 28/31:** FY23 report and FY24 proposals; Review presentations; Close-out slides
- **ePIC TOF Project Engineering Design**
  - **Mechanical engineering :** support structure and cooling submitted on **June 27**: Mechanical PED
  - **Electrical engineering :** Low-jitter clock in DAQ, TOF RDO included in eRD109 FY24 proposal, input requested on 10/9 (next page)
- **ePIC TOF DSC**
  - Working on schedule and cost, identify institutional responsibilities and L5/L6 contacts (discussions on individual subsystem on 10/17)
  - BTOF: Mathew Gignac/Satoshi Yano/Zhenyu Ye, FTOF: Mathieu Benoit/Wei Li, Common System: Andreas Jung/Zhangbu Xu
- **ePIC TOF Simulation**
  - Updated geometry database September 29: consistency check with DD4Hep by Software & Computing Group ongoing
  - TOF in tracking – Nicolas: fixed the tracking issue with full forward TOF geometry; re-evaluate the TOF impact on tracking (10/17)
  - TOF PID reconstruction – Oskar/Zhenyu: reconstruction, validation plots
  - TOF digitization – Zhenyu: updated digitization parameters (see page 2); Adam/Souvik: charge sharing and detector noise
  - TOF service in simulation – TBD: implement the missing material for mechanical support structure, cooling and cabling
- **ePIC Collaboration meeting at ANL on January 9-13, 2024**
  - Parallel sessions on 9-11 would include AC-LGAD, PID, tracking …
  - AC-LGAD parallel session survey: https://forms.gle/LcLjyFq7ThfasYdJ9

Inputs to Electronics & DAQ Requested by Fernando (10/9)

Requesting input in three areas of the Electronics & DAQ (these are in one file for simplicity):

a. **Q_{min}/Q_{max}**: this is the minimum signal of interest and the expected maximum signal presented to the FE electronics. This information will supplement the current ASIC specifications and as requested by the designers.
b. **VTRX+**: there is urgency in determining the number of VTRX+ modules needed and in starting the procurement process with CERN. Updated specifications show that the Tx is over 10 Gbps and the Rx is over 5 Gbps.
c. **Development responsibility assignments**: As we approach CD-2/CD-3 we need to have institutions/groups committed to developing the various RO chain elements per sub-detector: Adapters, FEBs, RDOs, GTU, DAM. It is understood that we will maximize synergies in these developments, conforming to the ePIC architecture, and that there will be single developments of the GTU and DAM.

Proposed Working Package Structure



- Sensor: sensor, sensor-ASIC integration
- Frontend electronics: ASIC, service hybrid
- Detector module: module structure, assembly
- Cooling and support structure: cooling plant, cooling manifold, support structure
- Backend electronics: Power supplies, DAQ electronics

Working on mapping institutions to work packages

China: University of Science and Technology of China
Chile: Universidad Técnica Federico Santa María
India: Indian Institute of Technology, Mandi National Inst. of Sci. Edu. Research
Japan: Hiroshima University, RIKEN, Shinshu University, University of Tokyo
Taiwan: National Central University, National Cheng-Kung University, National Taiwan University
USA: Brookhaven National Laboratory, Los Alamos National Laboratory, Oak Ridge National Laboratory, Ohio State University, Purdue University, Rice University, University of California - Santa Cruz, University of Illinois at Chicago

Institution	Contact	R&D Interest
Brookhaven National Laboratory	Alessandro/Zhangbu	Sensor prototyping, ASIC testing, Electronics development
Fermi National Accelerator Laboratory	Artur Apresyan	Sensor testing, ASIC prototyping
Los Alamos National Laboratory	Xuan Li	Sensor testing, simulation
Rice University	Wei Li	Sensor testing, Electronics development
Oak Ridge National Laboratory	Oskar Hartbrich	Sensor testing, ASIC testing, Electronics development, Simulation
Ohio State University	Daniel Brandenburg	Electronics testing, Simulation
Purdue University	Andreas Jung	Mechanical structure and cooling system prototyping
University of California, Santa Cruz	Matthew Gignac	Sensor testing, ASIC testing
University of Illinois at Chicago	Zhenyu Ye	Sensor testing, sensor-ASIC integration, ASIC testing, Simulation
Hiroshima University	Kenta Shigaki	Sensor prototyping and testing, Simulation
RIKEN	Yuji Goto	
Shinshu University	Kentaro Kawaide	
University of Tokyo	Taku Gunji	Online data reconstruction
South China Normal University	Shuai Yang	Simulation
Univ of Science and Technology of China	Yanwen Liu	Sensor prototyping, Electronics development, Simulation
Indian Institute of Technology, Mandi	Prabhakar Palni	Sensor testing, Simulation
National Inst. of Sci. Education Research	Ganesh Tambave	Sensor prototyping and testing
National Cheng-Kung University	Yi Yang	Mechanical structure prototyping
National Taiwan University	Rong-Shyang Lu	Sensor prototyping, ASIC testing, Electronics testing

Institution	Working Group and Tasks
Brookhaven National Laboratory	**BTOF:** sensor, sensor-ASIC integration, module assembly; **CS**: backend electronics; **DP**: simulation and reco.
Fermi National Accelerator	
Los Alamos National Laboratory	**FTOF**: sensor, module assembly; **CS**: cooling system and support structure; **DP**: simulation and reco.
Rice University	**BTOF/FTOF**: Front-end electronics; **CS**: backend electronics; **DP**: simulation and reconstruction
Oak Ridge National Laboratory	**BTOF/FTOF: s**ensor, sensor-ASIC integration, frontend electronics, module assembly
Ohio State University	**BTOF/FTOF:** module assembly; **CS**: backend electronics, alignment; **DP**: simulation and reco.
Purdue University	**BTOF/FTOF**: module structure; **CS:** cooling system and support structure
Univ. of California, Santa Cruz	**BTOF**: sensor, sensor-ASIC integration, module assembly
University of Illinois at Chicago	**BTOF/FTOF**: sensor, sensor-ASIC integration, module assembly; **DP**: simulation and reconstruction
Hiroshima University	**BTOF/FTOF**: sensor, module assembly; **DP**: simulation and reconstruction
RIKEN	**BTOF/FTOF:** module assembly
Shinshu University	**BTOF/FTOF:** sensor
University of Tokyo	**CS:** streaming readout; **DP**: online reconstruction
South China Normal University	
Univ of Sci. and Tech. of China	
Indian Institute of Tech., Mandi	**DP**: simulation and reconstruction
National Inst. of Sci. Edu. Res.	
National Central University	**DP:** simulation
National Cheng-Kung University	**BTOF/FTOF**: module structure; **CS**: cooling system and support structure
National Taiwan University	**BTOF**: sensor-ASIC integration, frontend electronics, module assembly
Univ. Técnica Federico Santa María	**FTOF:** module assembly; **DP:** simulation and reconstruction

Schedule and Timeline