

BarrelTOF/SciTil Next Steps

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09.12.2016 PANDA LIX. Collaboration Meeting, GSI

Topics

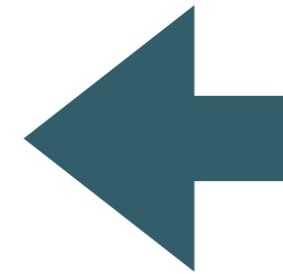
- TDR review process (plan)
- Next steps
- Disseminations

TDR Review Process

- (provided CB approves..)
- Review committee will be formed. Review begins early next year.
 - together with FTOF
 - 2(?) internal referees and 2(?) external referees
 - from MEG experiment?
 - ~3 months?
- Submission to FAIR
 - another ~3 months for review
- Acceptance (hopefully without major revision)

Brief history

2012 xx	K. Goetzen et al., Proposal for a scintillator barrel hodoscope for \bar{P} ANDA
2014 xx	System coordinator Carsten Schwarz (GSI) → Ken Suzuki (SMI, Vienna)
2016 03	SciTil included in the start up version
2016 12	TDR delivery to collaboration
2017 1-3	Internal review
2017 4	Submission to FAIR
2017 4-6	Review by FAIR
2017 6	TDR acceptance by FAIR



Next Steps

“SciTil Group”

List of institutions participating in the \bar{P} ANDA Barrel TOF group is

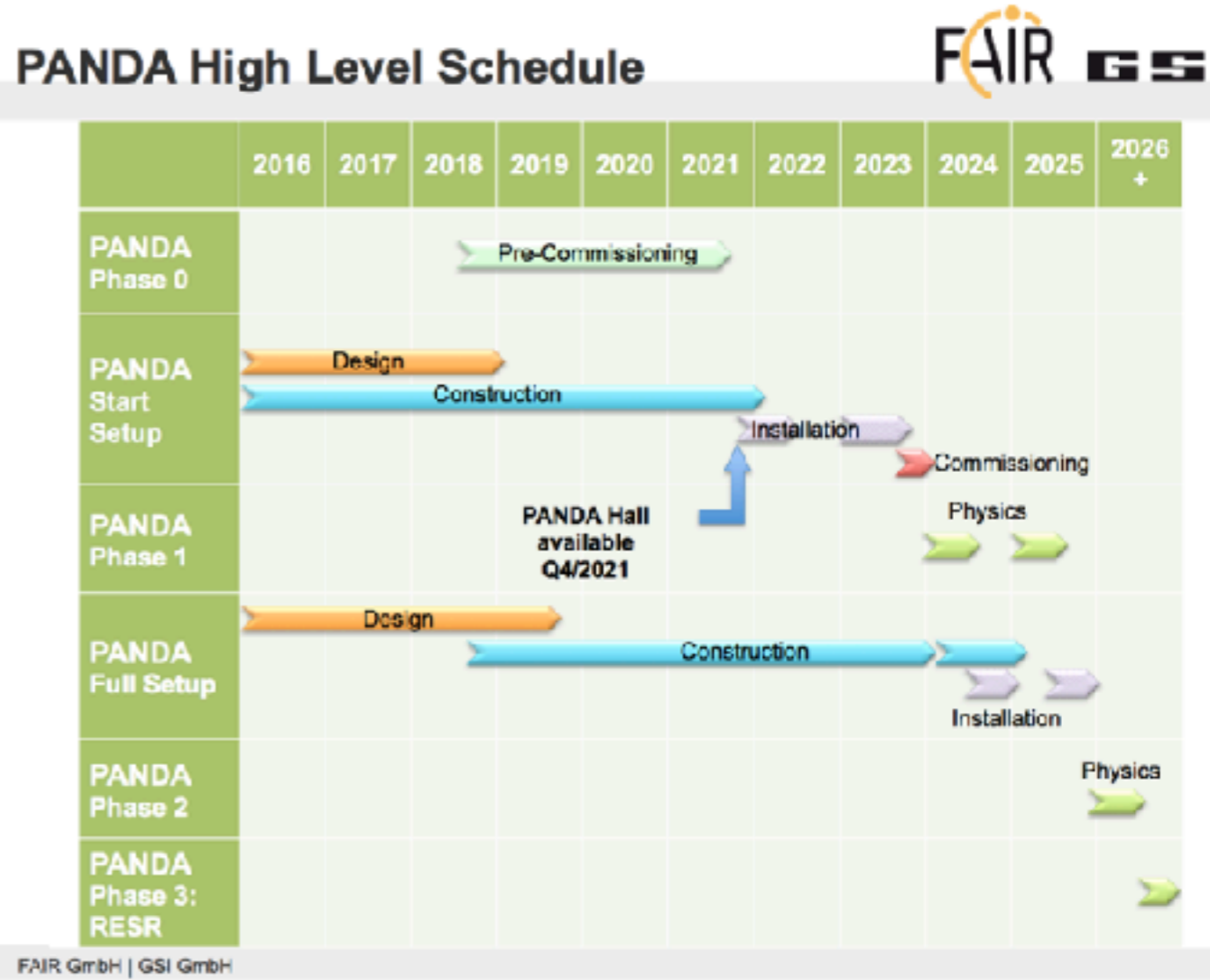
- Stefan-Meyer-Institut für Subatomare Physik (SMI) der Österreichischen Akademie der Wissenschaften, Vienna, Austria
- GSI Helmholtzzentrum für Schwerionenforschung GmbH, Darmstadt, Germany
- II. Physikalisches Institut, Justus Liebig-Universität Gießen, Gießen, Germany
- Friedrich Alexander Universität Erlangen-Nürnberg, Erlangen-Nürnberg, Germany
- Gauhati University, Assam, India

These institutions share the responsibilities for the Barrel TOF detector as following. SMI, Vienna serves a coordination role of the project and is responsible for the whole R&D. Design work will be lead by SMI. SMI contributes to further optimisations of hardware as well as software development. Erlangen-Nürnberg shares the task of hardware optimisations. GSI, Darmstadt is responsible for the mechanical structure, which holds the Barrel TOF super-modules. Front-end electronics and DCS will be developed jointly with SMI and Gießen. Quality assessment of photosensors and scintillator tiles, assembly of the super-module and its quality control will be shared with SMI, Erlangen and GSI. Assam will contribute to a physics simulation study using the Barrel TOF detector.

7.2 Schedule

The project can be divided into six phases:

1. 2017: Submission of the TDR to FAIR.
2. 2017-2018: Radiation hardness test of SiPM and other components. Development of front-end electronics and final beam test of the Barrel TOF prototype.
3. 2019: Industrial fabrication of components.
4. 2020: Assembly of super-modules and mechanical components as well as quality assurance test.
5. 2021: Installation into \bar{P} ANDA when hall is available and \bar{P} ANDA detector is ready for installation.
6. 2022: Commissioning with cosmic rays and/or beam.



Front-End Electronics

- w/ TOF-PET(2) ASIC
- SMI, Vienna will be responsible
 - H. Schneider (electronic technician)
- Helps from
 - Gießen (K. Brinkmann)
 - “Gießen (M. Düren)”
 - GSI (xxx group, EE department)?
- Temperature sensors (Pt1000?)
- LED calibration system?

Radiation Hardness Test

- When?
 - 1st/2nd quarter 2017??
- Who?
 - Vienna - Gießen
 - ?
 - ALICE FIT group??
- Where?
 - PSI

Test Beamtime?

- CERN T10, Parasitic data taking to the ALICE FIT group possible
 - June 2017, Oct 2017
- Together with Barrel DIRC?
- Together with EMC?
- First we should understand well the prototype

Software

- Pattern matching
 - Gianluigi has time during this week
 - Get a macro and learn how to run it
- SciTil software in good shape
 - anything missing?
 - \bar{P} ANDA-wide functions
 - encourage people to use SciTil
 - Dominik will visit Uppsala 2.2017-7.2017 (6 months)

Physics Simulation with SciTil

- $\bar{p}+A$ reactions
 - colour transparency measurement
 - short-range correlations
 - ..
- Kamal Dutta
- Help by Albrecht
- “ \bar{P} ANDA Day-1 Physics Book” in ~1 year

Dissemination, Conferences

Conferences

- DPG (HuK 2017, Münster)
 - abstract submission deadline: next week?
 - gruppenvortrag?
- Scint2017
 - abstract submission deadline: 15.3.2017
- NDIP2017
 - abstract submission deadline: 01.3.2017
- INSTR2017
 - abstract submission deadline: 17.1.2017
- Else?

Backup