

REPORT FROM THE TC

- Klaus Dehmelt
- EICUG 2023 Meeting
- July-26-2023



Stony Brook University

The State University of New York



WHAT IS THE TECHNICAL COORDINATOR?

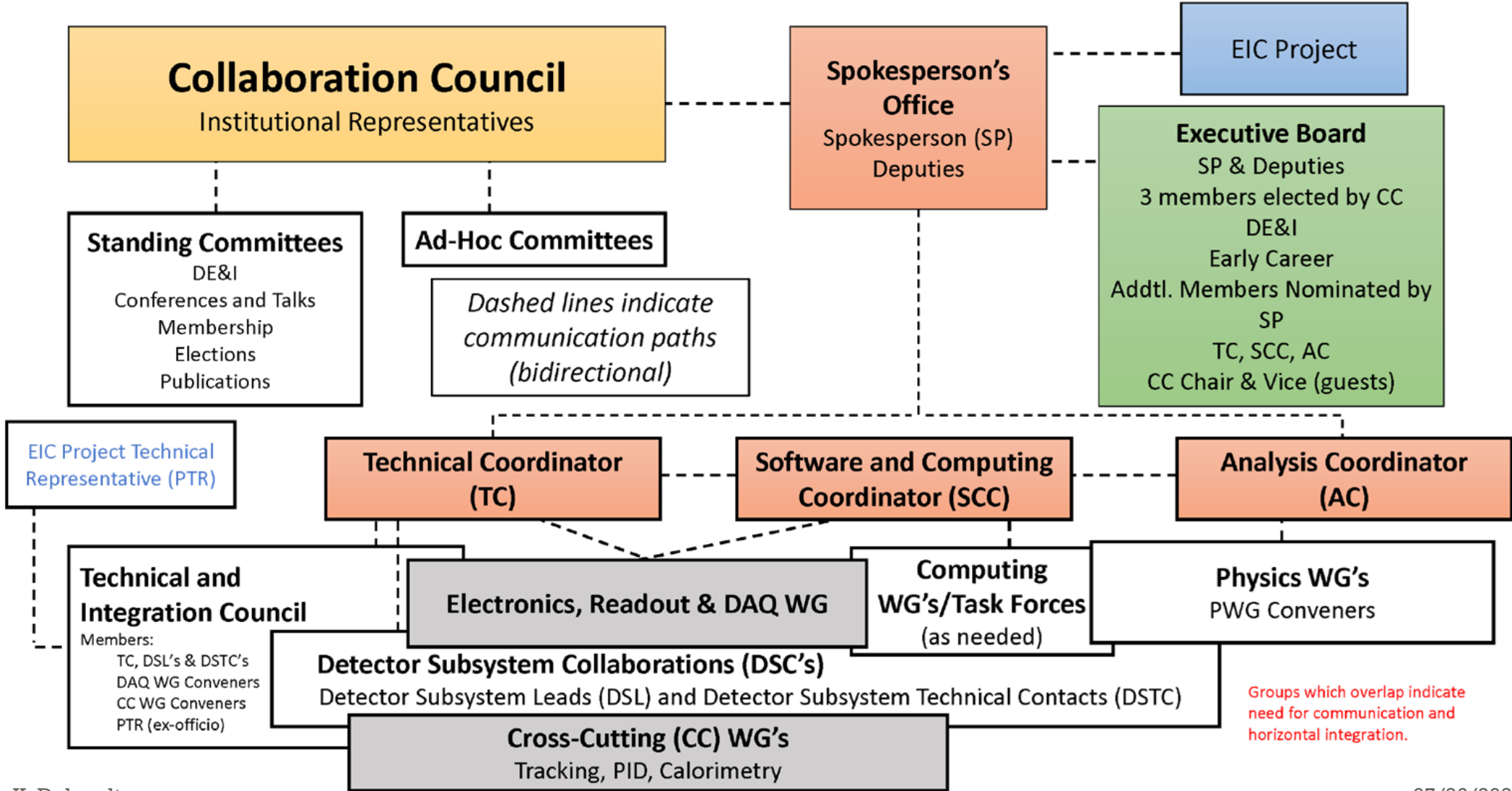
2

- My understanding
 - Taking on tasks in coordinating
 - ✦ Planning and developing of detector components
 - ✦ Assembling them into a functioning detector
 - ✦ Integrating them into the IR6 environment → specific for ePIC
 - Communicate closely with Software and Computing Coordinators
 - Communicate closely with Electronics, Readout, and DAQ working group
 - Communicate with Cross-Cutting Working Groups
 - Communicate with Detector Subsystem Collaborations DSC
 - Communicate with ePIC Collaboration Management
 - Work closely with Project Management

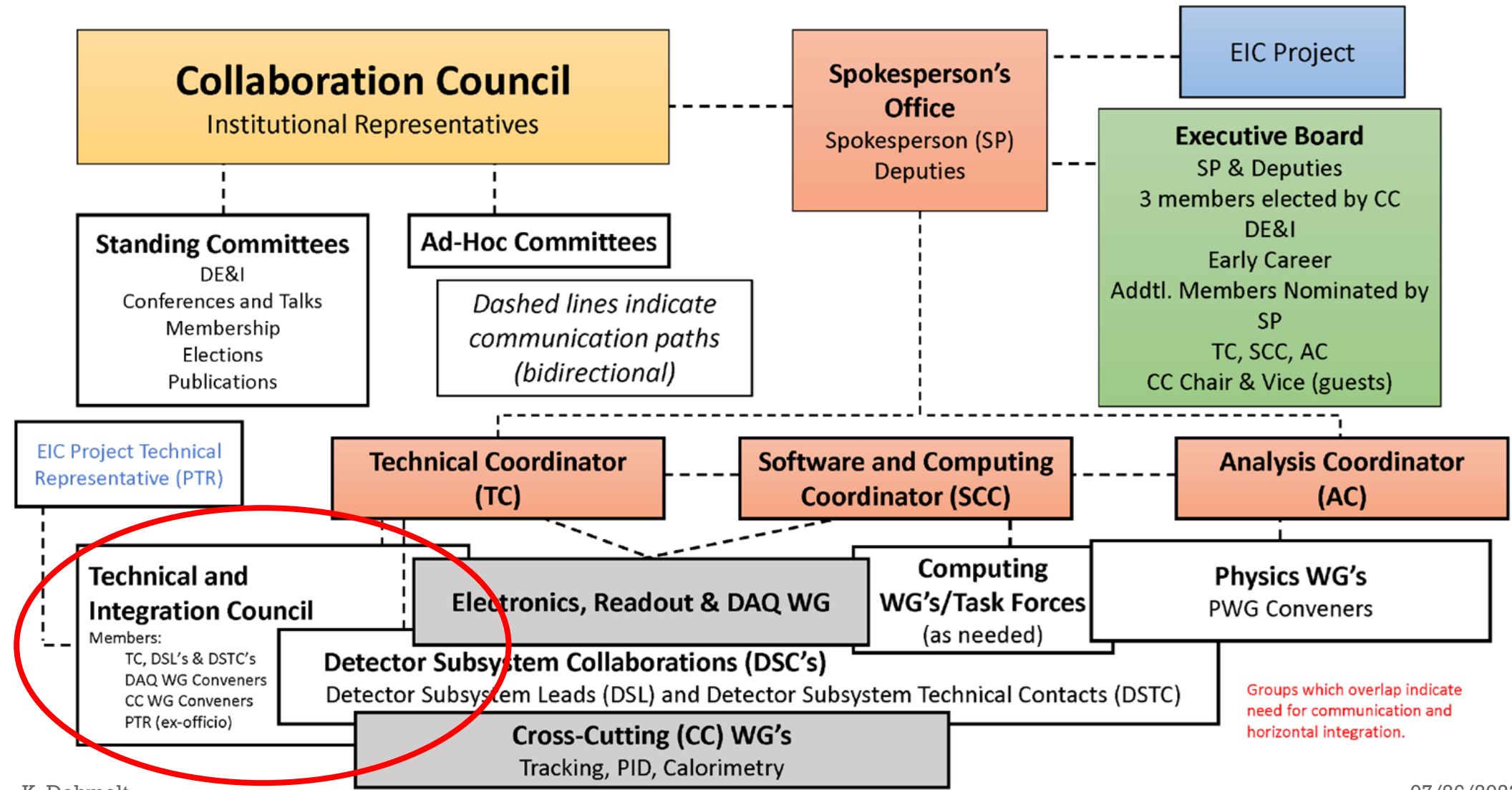
WHAT IS THE TECHNICAL COORDINATOR?

- **Start-up phase**
 - Collect information
 - ✦ Status of planning the detector components
 - Support formation of Detector Subsystem Collaborations
- **Continuation phase**
 - Communicate and coordinate DSC and CC working group activities
 - Support DSC in planning detector components
- **Instrumental**
 - Technical and Integration Council TIC

TECHNICAL AND INTEGRATION COUNCIL



TECHNICAL AND INTEGRATION COUNCIL



TECHNICAL AND INTEGRATION COUNCIL

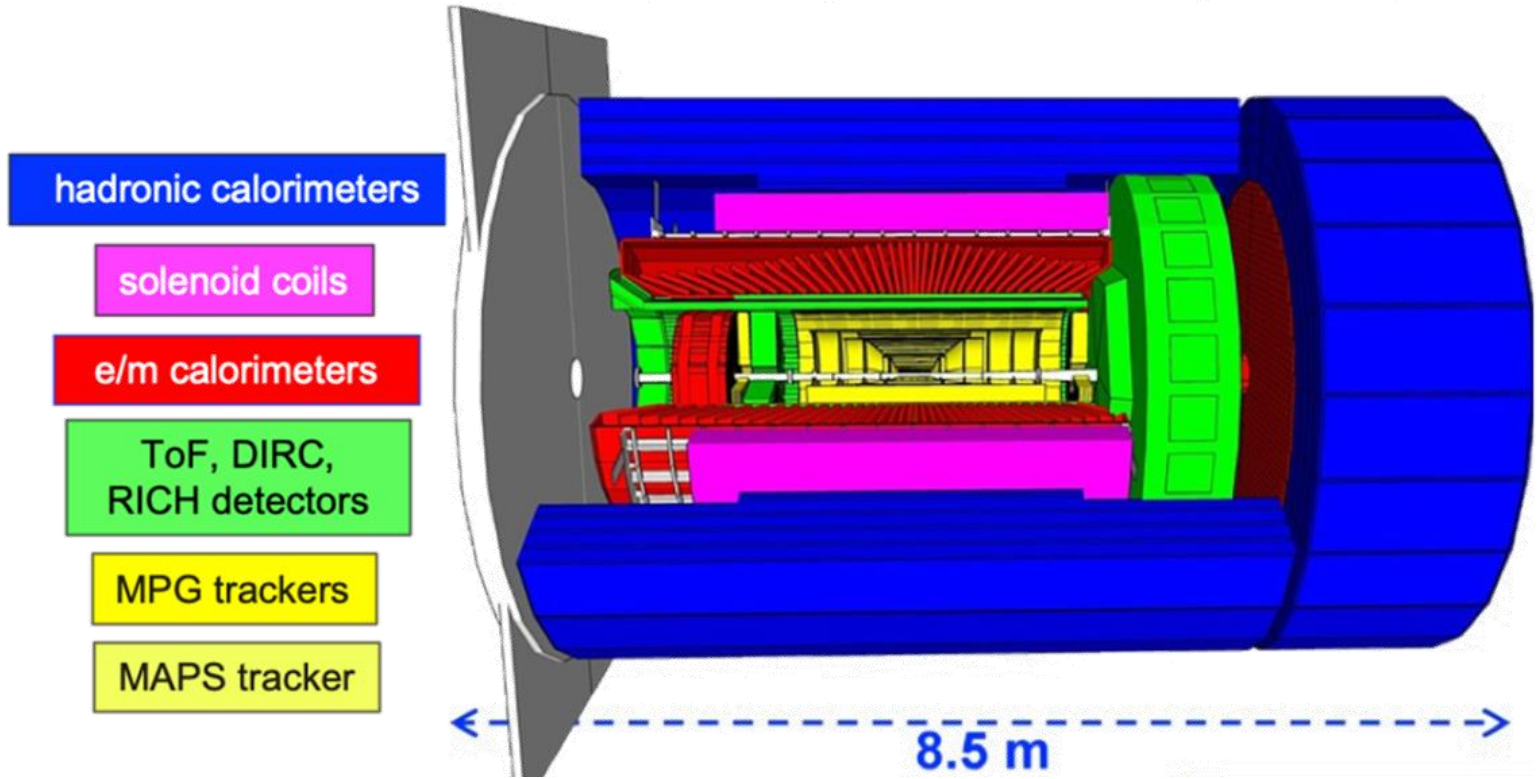
5

- Technical Integration Council TIC → succeeds GD/I entity
- Meeting frequency → weekly, took over Monday's GD/I spot
- Indico category: <https://indico.bnl.gov/category/480/>
 - Recordings and chat posted on Indico
- Ten (10) meetings so far
- Open meetings → everyone welcome

Technical and Integration Council is formed by

- *TC (chair)*
- *DSL's and DSTC's*
- *RO&DAQ WG conveners*
- *CC WG conveners*
- *EIC PTR (ex-officio)*

DETECTOR SUBSYSTEM COLLABORATIONS

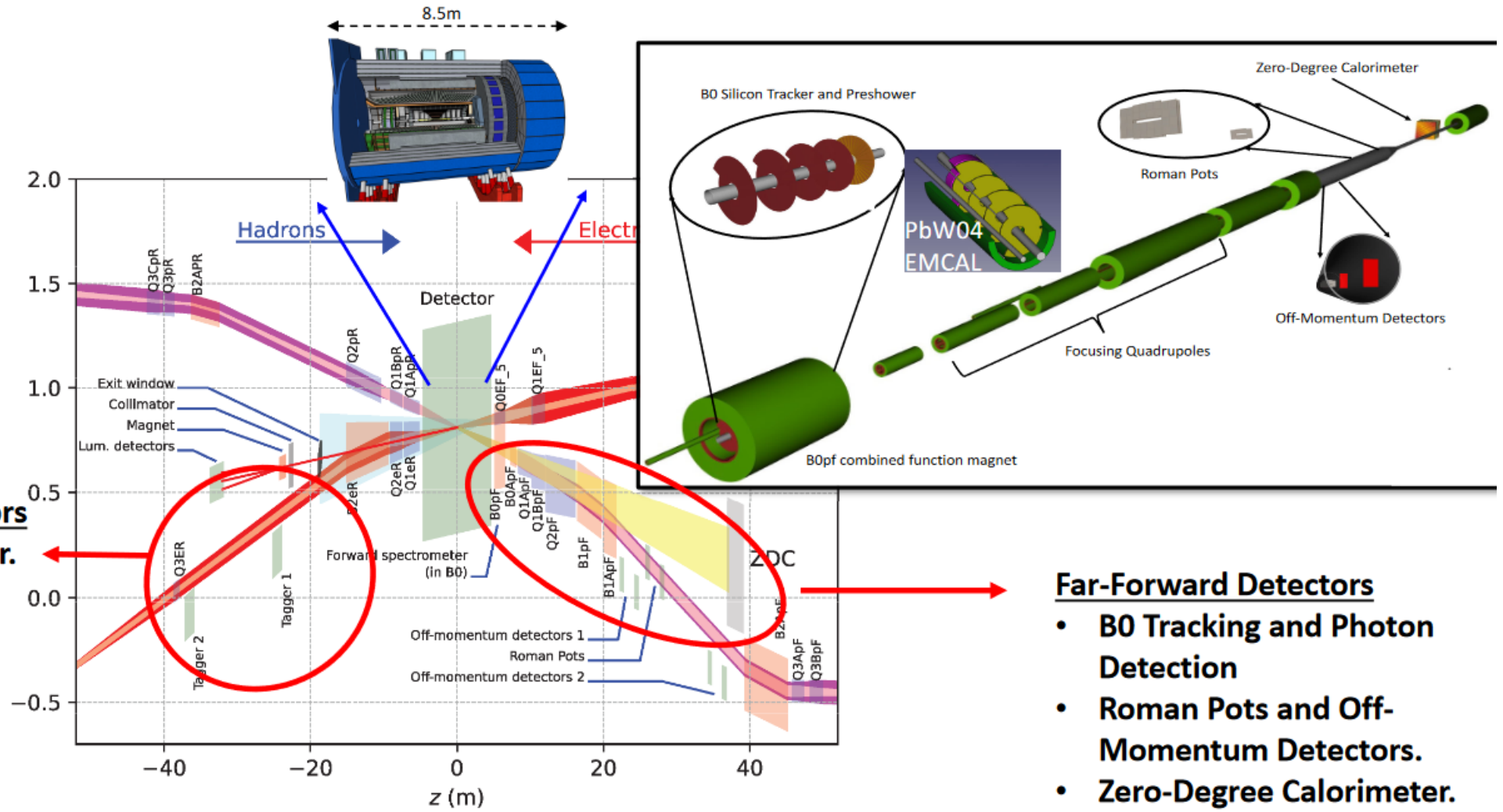
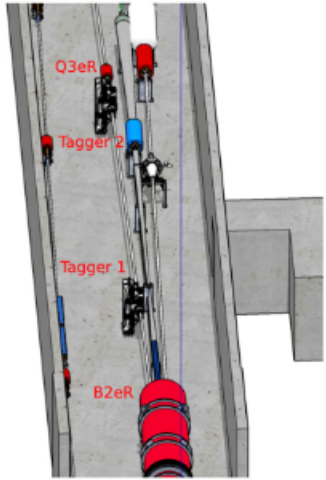


K. Dehmelt



07/26/2023

DETECTOR SUBSYSTEM COLLABORATIONS



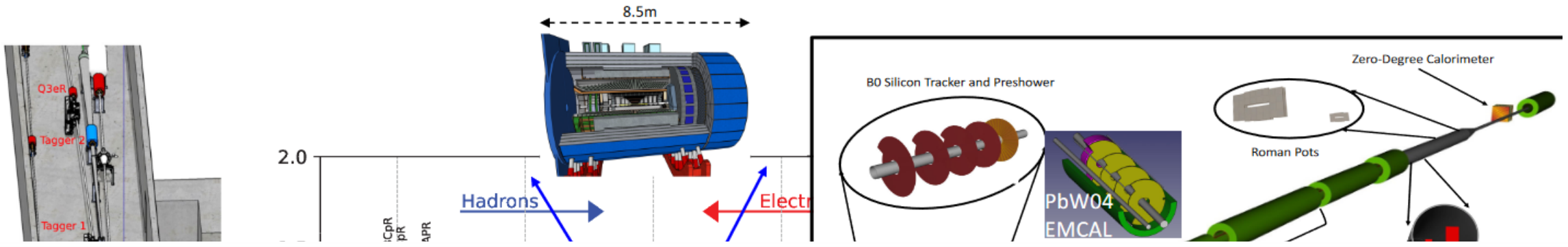
Far-Backward Detectors

- Luminosity monitor.
- Low- Q^2 Tagging Detectors

Far-Forward Detectors

- B0 Tracking and Photon Detection
- Roman Pots and Off-Momentum Detectors.
- Zero-Degree Calorimeter.

DETECTOR SUBSYSTEM COLLABORATIONS

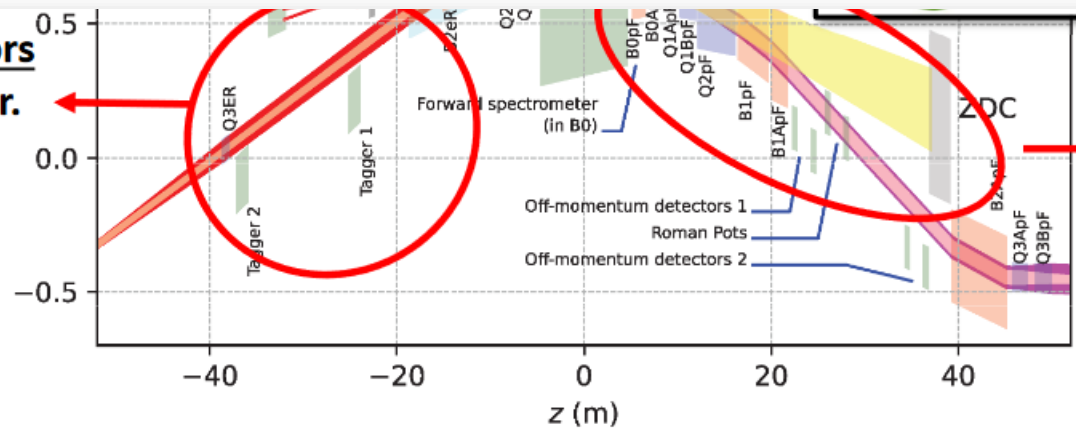


Status of the ePIC Collaboration Silvia Dalla Torre

0.03, Faculty of Physics, University of Warsaw 05:40 - 06:05

Far-Backward Detectors

- Luminosity monitor.
- Low- Q^2 Tagging Detectors



Far-Forward Detectors

- B0 Tracking and Photon Detection
- Roman Pots and Off-Momentum Detectors.
- Zero-Degree Calorimeter.

DETECTOR SUBSYSTEM COLLABORATIONS

- Identified 17 DSC at this time
- Started discussions about DSC status
 - Technical status
- Introduction of new simulation campaign
 - Status for new simulation campaign
- Engineering support
- Moving toward focus meetings
 - Discussed subsystem status → various
- Moving toward workshop-like meetings

dRICH
hpDIRC
backward RICH (pfRICH)
FFWD
FBKWD - Pair Spectrometer
FBKWD - High-Rate Calorimetry
FBKWD - High-Rate Tracker
Si Trackers
Gaseous Trackers
Backward ECal
Backward HCal
Barrel ECal (Pb/Sci)
Barrel HCal
Forward ECal
Forward HCal
Forward HCal Insert
AC-LGAD TOF (Barrel + Forward)

DETECTOR SUBSYSTEM COLLABORATIONS

- Identified 17 DSC at this time
- Started discussions about DSC status
 - Technical status
- Introduction of new simulation campaign
 - Status for new simulation campaign
- Engineering support
- Moving toward focus meetings
 - Discussed subsystem status → various
- Moving toward workshop-like meetings

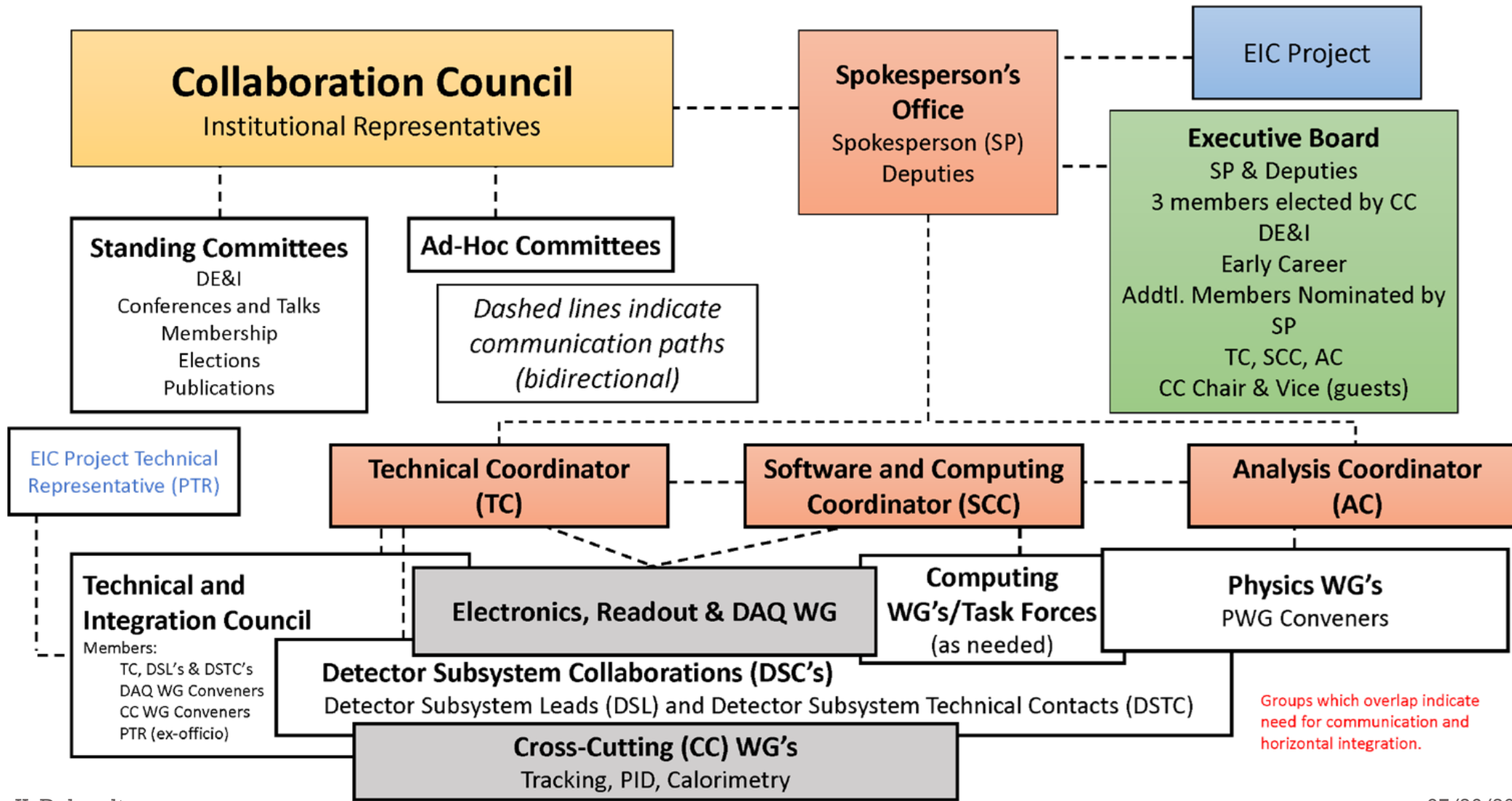
dRICH
hpDIRC
backward RICH (pfRICH)
FFWD
FBKWD - Pair Spectrometer
FBKWD - High Energy Primetry
FBKWD - Rate Tracker
Trackers
Stochastic Trackers
Backward ECal
Backward HCal
Barrel ECal (Pb/Sci)
Barrel HCal
Forward ECal
Forward HCal
Forward HCal Insert
AC-LGAD TOF (Barrel + Forward)

Naming convention underway

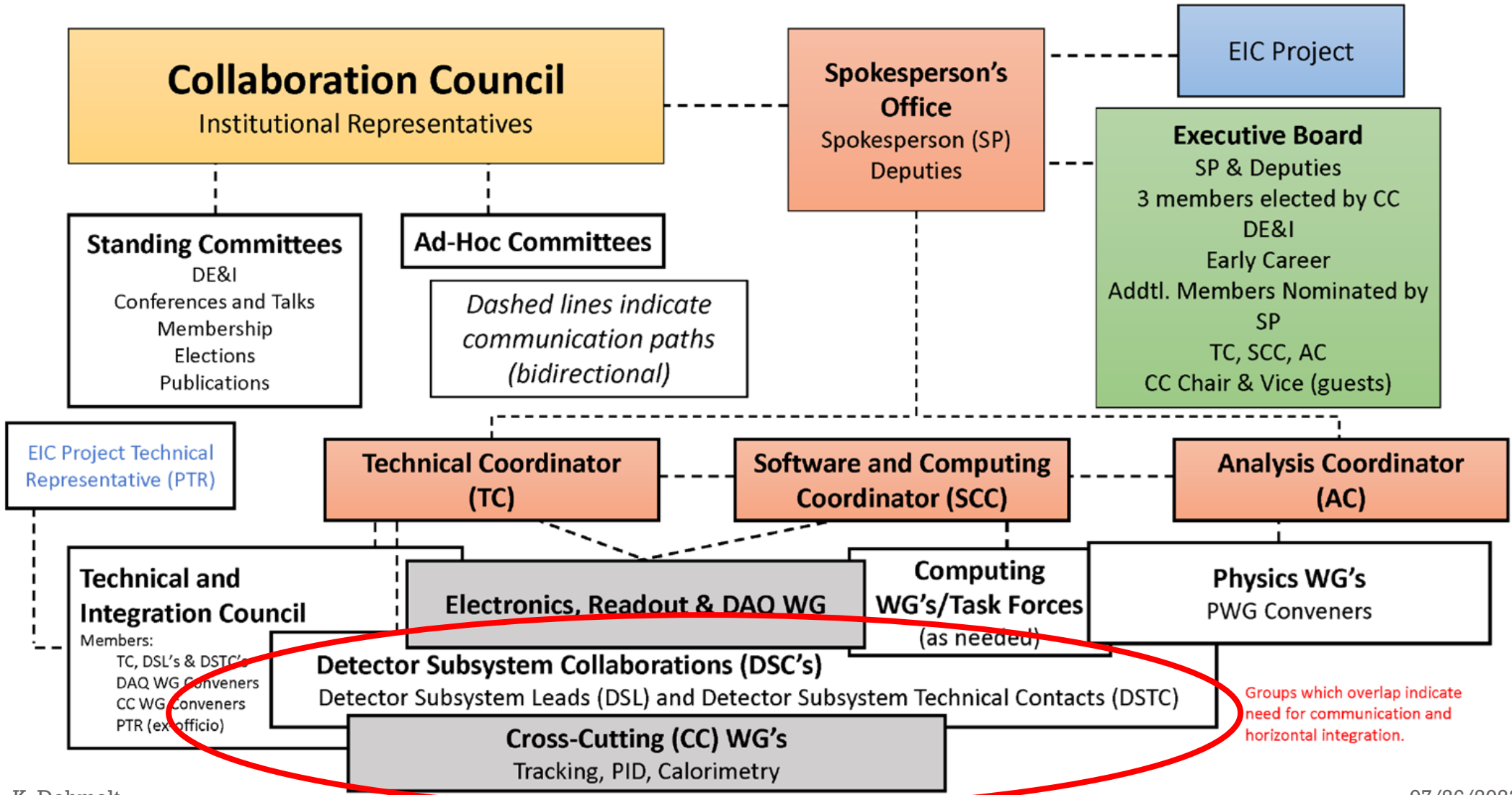
TIC MEETINGS

- TIC meetings will have presentations/discussions with focus on specific topics
- Emphasis will be on technical and workforce issues
 - Status of the design/layout of subsystems
 - Is technical design ready
 - Integration in ePIC design
 - Services
 - Personnel working on issues
 - Readiness for reviews
 - ...
- Cross-cutting working groups and/or DSC will be asked to present

TECHNICAL AND INTEGRATION COUNCIL



TECHNICAL AND INTEGRATION COUNCIL



TIC MEETINGS

- **Focuses so far**

- Engineering support → Integration support: ePIC constraints for PID
- PID DSC → Integration status (incomplete yet)
- Tracker update
- DAQ
- Barrel calorimeters
- FBKWD & FFWD
- HGCROC
- EICROC

- **Next focus**

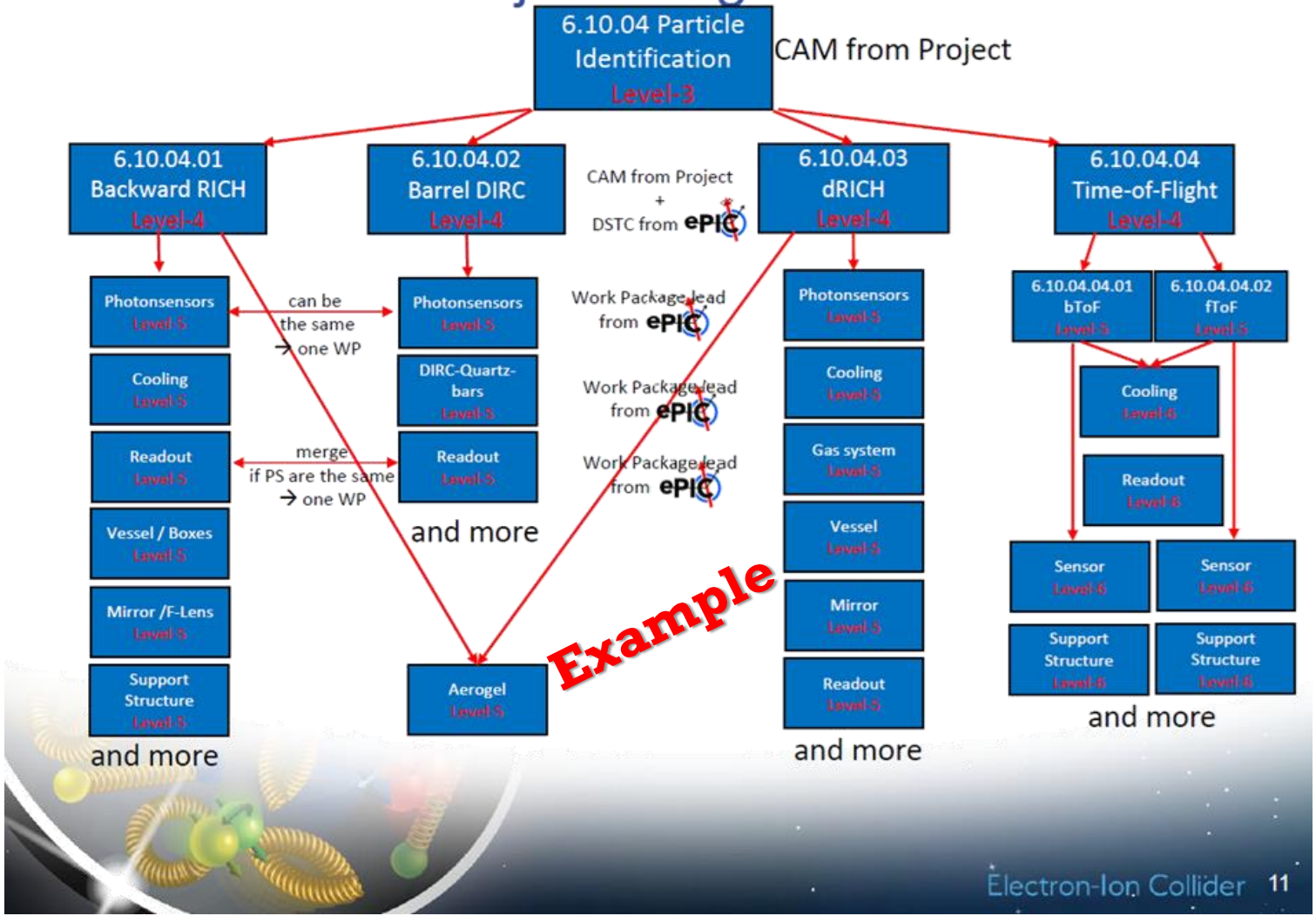
- ASIC discussion → after Warsaw meeting August 07

INTEGRATION – DSC AND PROJECT

- **Approached DSC to initiate the work packages**
 - Scope of WP
 - ✦ WP define a set of activities that need to be completed to realize an aspect of that subsystem
 - ✦ Collection of all WP for a subsystem encompasses all the work that needs to be done
 - Identify group(s) – if any - to be associated with WP
 - Identify individuals – if any – as WP leads

INTEGRATION – DSC AND PROJECT

Collaboration – Project integration



INTRODUCTION OF NEW SIMULATION CAMPAIGN

13

- Simulation campaign goals
 - Evolution of the ePIC tracker design
 - Optimization of forward calorimetry design
 - Optimization of the backwards EMCAL acceptance
 - Acceptance in Q^2
 - Integrate PID in full dd4hep simulations
 - Quantify the effect of cabling and services

REPORT FROM PID DSC

- Integration status of PID DSC

- System integration with the overall ePIC design, i.e., what is the envelope occupied, is there possibly overlap with other subsystems, is the design consolidated, ...
- Integration of services, i.e., readout, cooling, support structure, etc?
- Present technical design and implementation → fulfill the YR requirements?

REPORT FROM TRACKING DSC

- Integration status of Tracker DSC
 - Status of design and layout
 - ✦ Si tracker
 - ✦ Gaseous tracker (MPGD)
 - Advancement between then to August?
 - Does present technical design and implementation fulfill the YR requirements?

START FOCUS MEETING

- Focus

- Overview and status of DAQ in ePIC
- Specifics for the various DSC - if any, like
 - ✦ Issues with hardware/design/performance
 - ✦ Issues with the workforce
 - ✦ Long lead time issues
 - ✦ Supply shortages

FOCUS MEETING

- **Focus: Overview and status of Barrel Calorimetry in ePIC**
 - System integration within the overall ePIC design
 - Services integration
 - Does technical design and implementation fulfill the YR requirements?
- **SVT DSC Kick-Off meeting on June 09**
 - Brief report given
- **Update on the plan for tracking detectors**

FOCUS MEETING

- **Focus: Overview and status of FFWD/FBKWD in ePIC**
 - System integration within the overall ePIC design
 - Services integration
 - Does technical design and implementation fulfill the YR requirements?
- **DAQ**
 - Brief introduction toward HGCROC/EICROC focus

FOCUS MEETING

- **Focus: Overview and status of HGCROC in ePIC**
 - Are the requirements of the ePIC calorimetry detectors sufficiently understood → decision making process to using HGCROC as common solution
 - Are specifications of HGCROC a good match to ePIC requirements?
 - What modifications required/preferred for adapting HCGROC to needs of ePIC?

FOCUS MEETING

- **Focus: Overview and status of EICROC in ePIC**
 - Are the **requirements** of the ePIC subsystems detectors that make use of the EICROC sufficiently understood so that a decision can be made to pursue the EICROC as a common solution?
 - Are the **specifications** of the EICROC a good match to the ePIC requirements? What modifications would be required and/or preferred to adapt the EICROC to the needs of ePIC?
 - Application in
 - ✦ AC-LGAD ToF → Barrel – Forward (Central detector)
 - ✦ Fine pixel AC-LGAD in FF subsystems
 - ✦ HRPPDs for pFRICH, hpDIRC (as backup)

TIC MEETINGS

That was it so far ...

TIC MEETINGS

That was it so far ...

... and this brings me to ...

SUMMARY & CONCLUSION -I-

- We booted efforts for a technical coordination within the ePIC collaboration
- Established Detector Subsystem Collaborations and identified their leadership
- Ramping up the communication efforts
- Transition into to workshop-like structure
- Integration of the DSC into the Work (package) Breakdown Structure WBS → crucial to get successfully through reviews and monetary mapping
 - Last tweaks underway

SUMMARY & CONCLUSION -II-

- I am the outgoing Technical Coordinator
- During my very short tenure – could only touch upon tasks assigned to a TC
- Announcement of new TC during the Warsaw meeting (?)

SUMMARY & CONCLUSION -II-

- I am the outgoing Technical Coordinator
- During my very short tenure – could only touch upon tasks assigned to a TC
- Announcement of new TC during the Warsaw meeting (?)

Thank you for your trust and support!