

ePIC Management Plan, Coordinator Nominations, and Collaboration Status

Collaboration Council Meeting Presentation

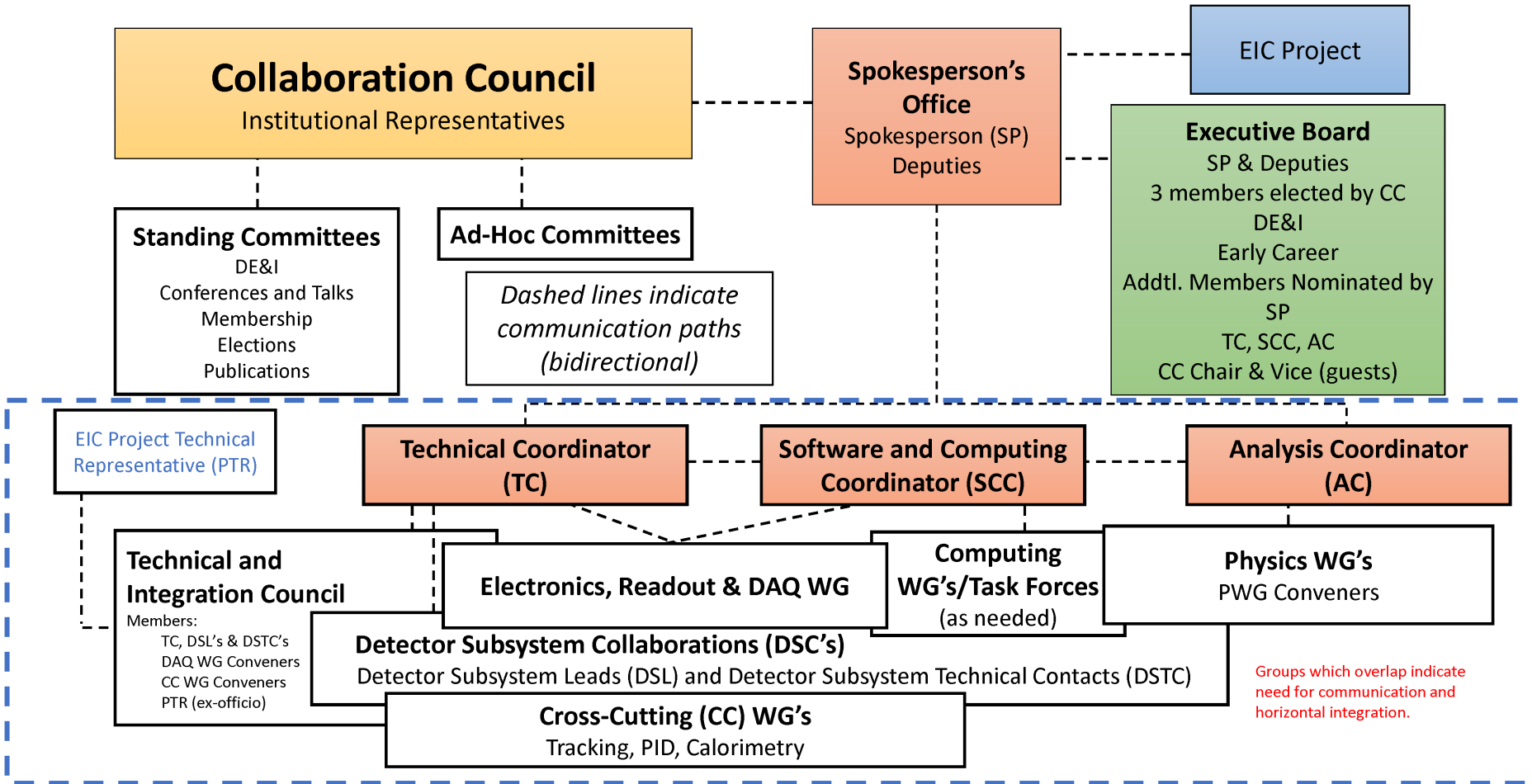
John Lajoie and Silvia Dalla Torre

3/24/2023

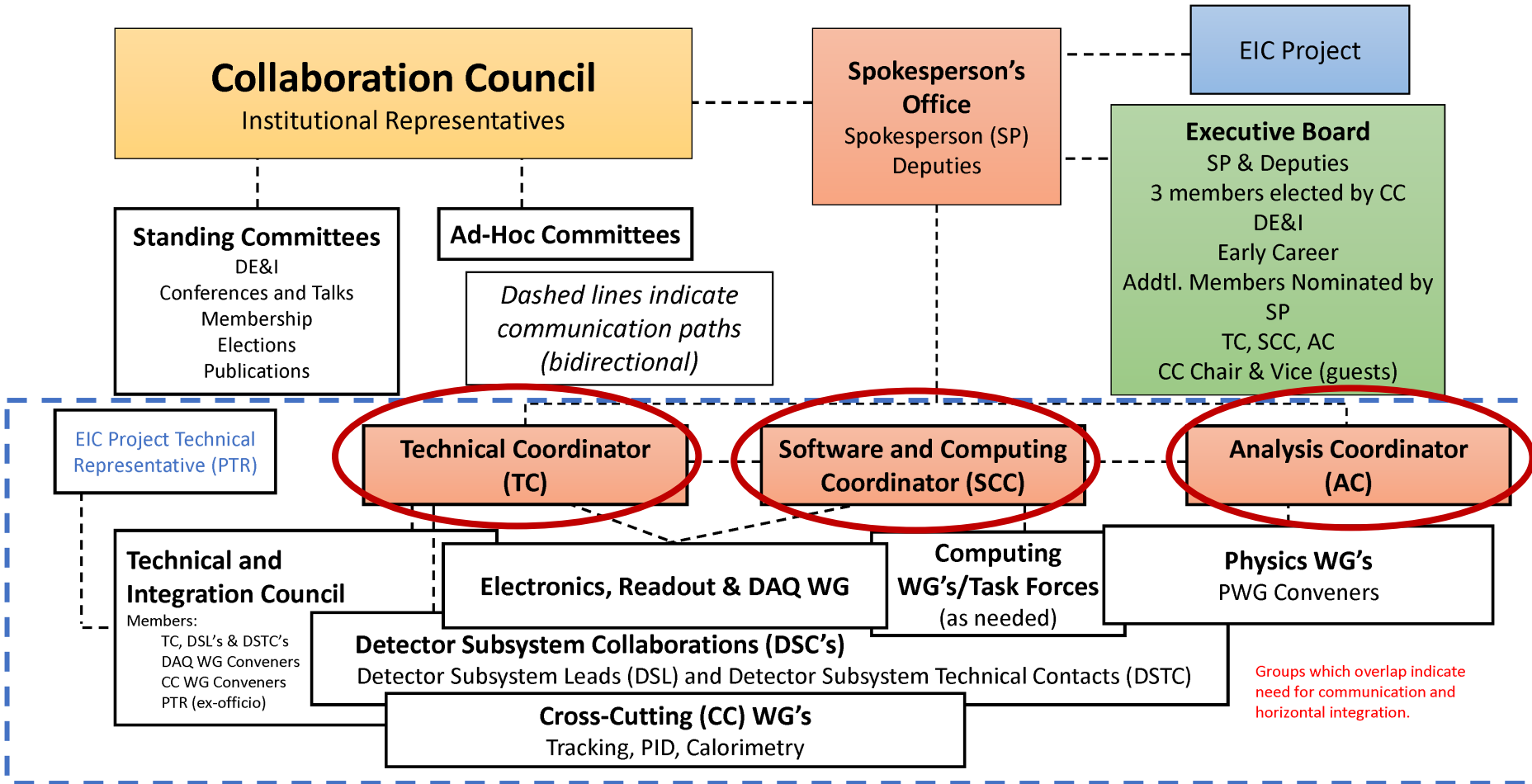
Management Plan Meetings/Timeline

- Comp/SW and DWG/PWG Conveners
 - Wednesday, Feb. 15th and Friday, Feb. 17th
- Collaboration Discussion on Detector Subsystem Collaborations:
 - Friday February 24th, 10:30AM EST - <https://indico.bnl.gov/event/18482/>
- Collaboration Discussion on Detector Subsystem Collaborations and Physics Working Group Organization:
 - Thursday March 2nd, 9:30PM EST - <https://indico.bnl.gov/event/18484/>
- Collaboration Discussion on Physics Working Group Organization:
 - Friday March 3rd, 10:30AM EST - <https://indico.bnl.gov/event/18483/>
- WG Meetings:
 - Tracking (March 9th), Cerenkov PID (March 17th), Calorimetry (March 22nd), lots of email communication
- CC Meeting March 24th
 - Ratification of management plan and endorsement of Coordinators

ePIC Collaboration Structure

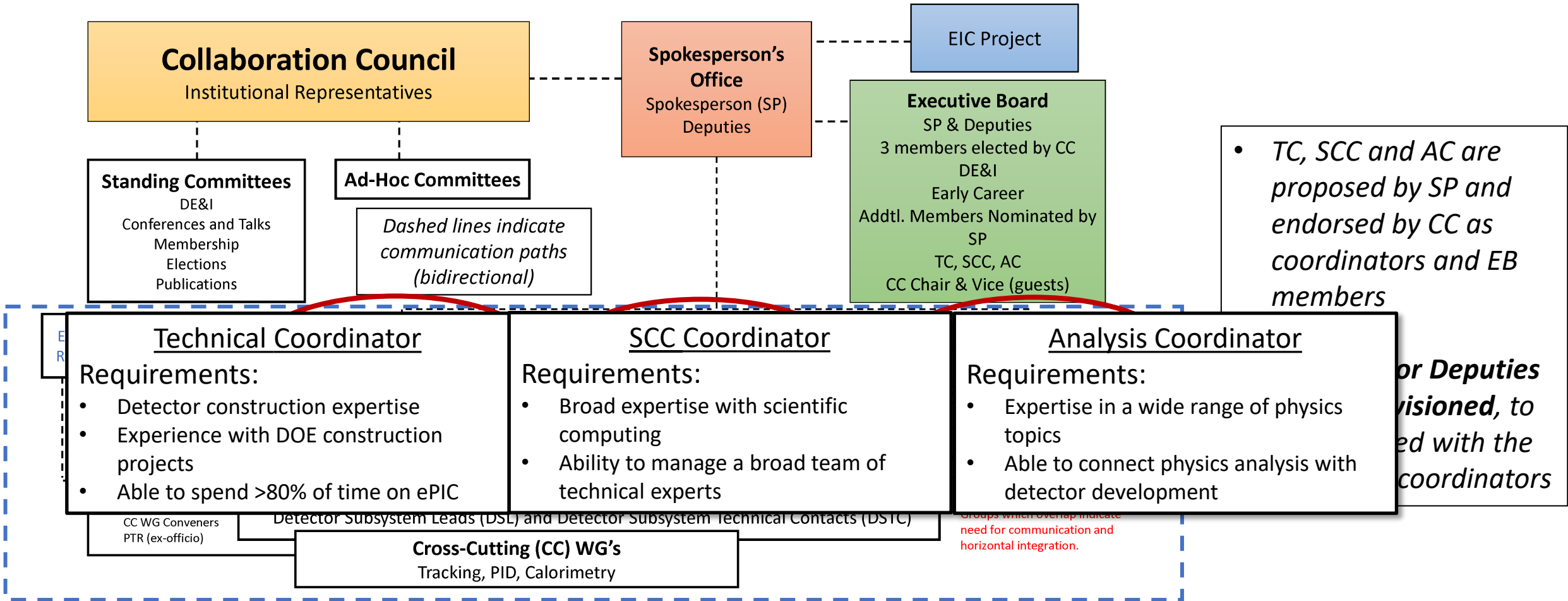


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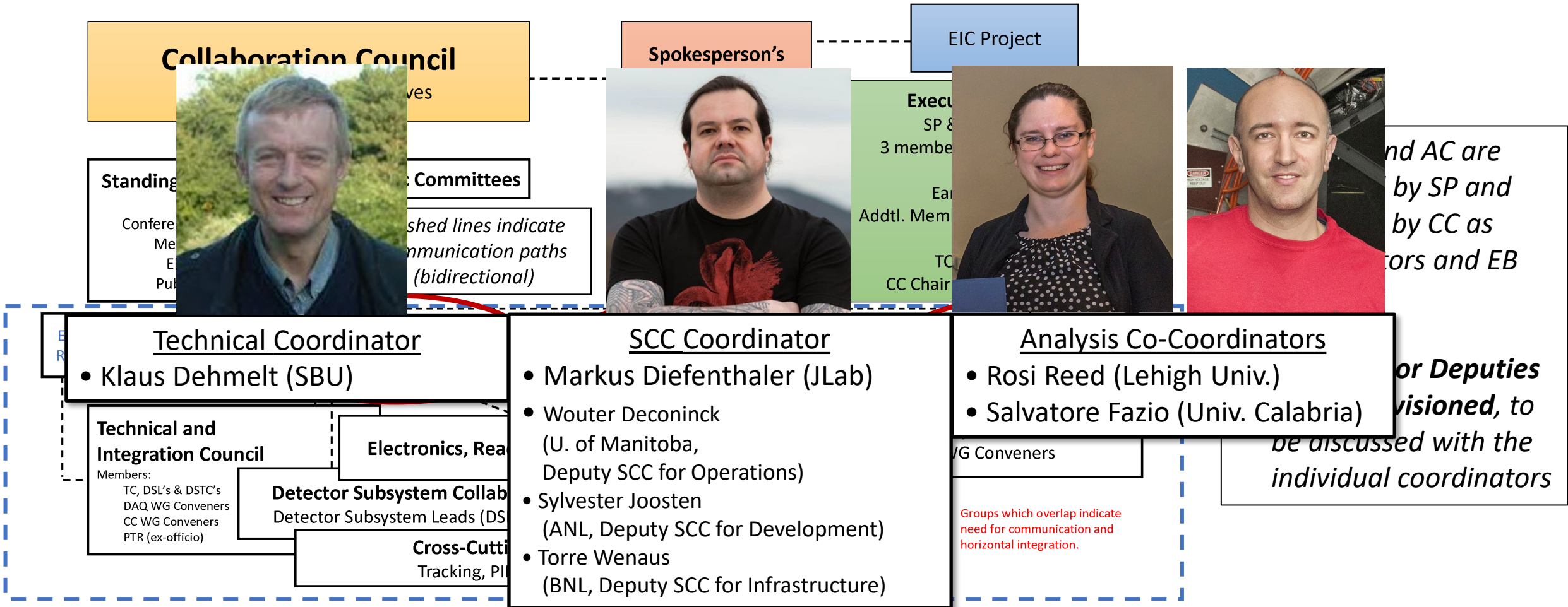


- *TC, SCC and AC are proposed by SP and endorsed by CC as coordinators and EB members*
- *Coordinator Deputies can be envisioned, to be discussed with the individual coordinators*

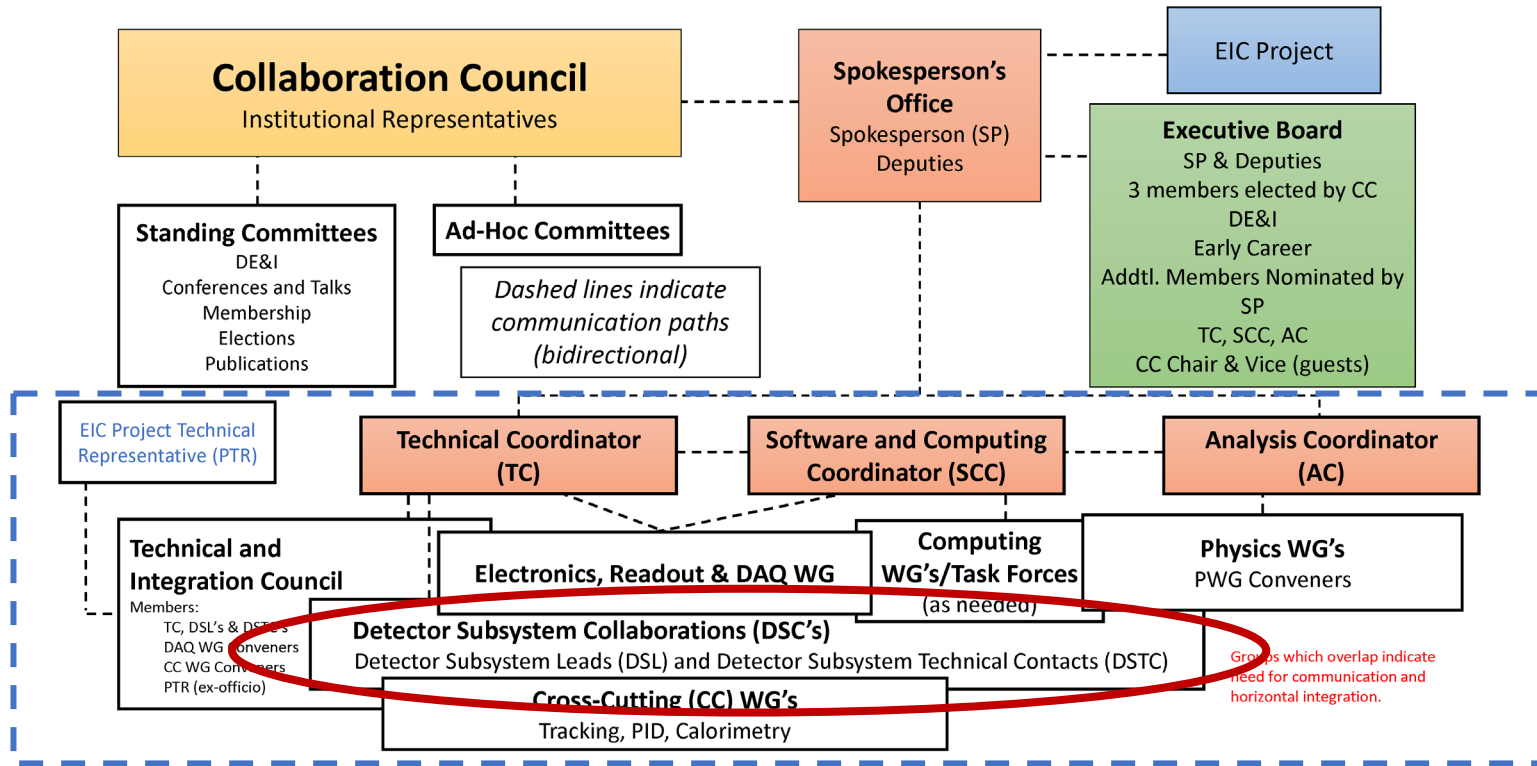
ePIC Collaboration Structure



ePIC Collaboration Structure



Collaboration Structure Including the Scientific Structure for the Next Two-Year Term

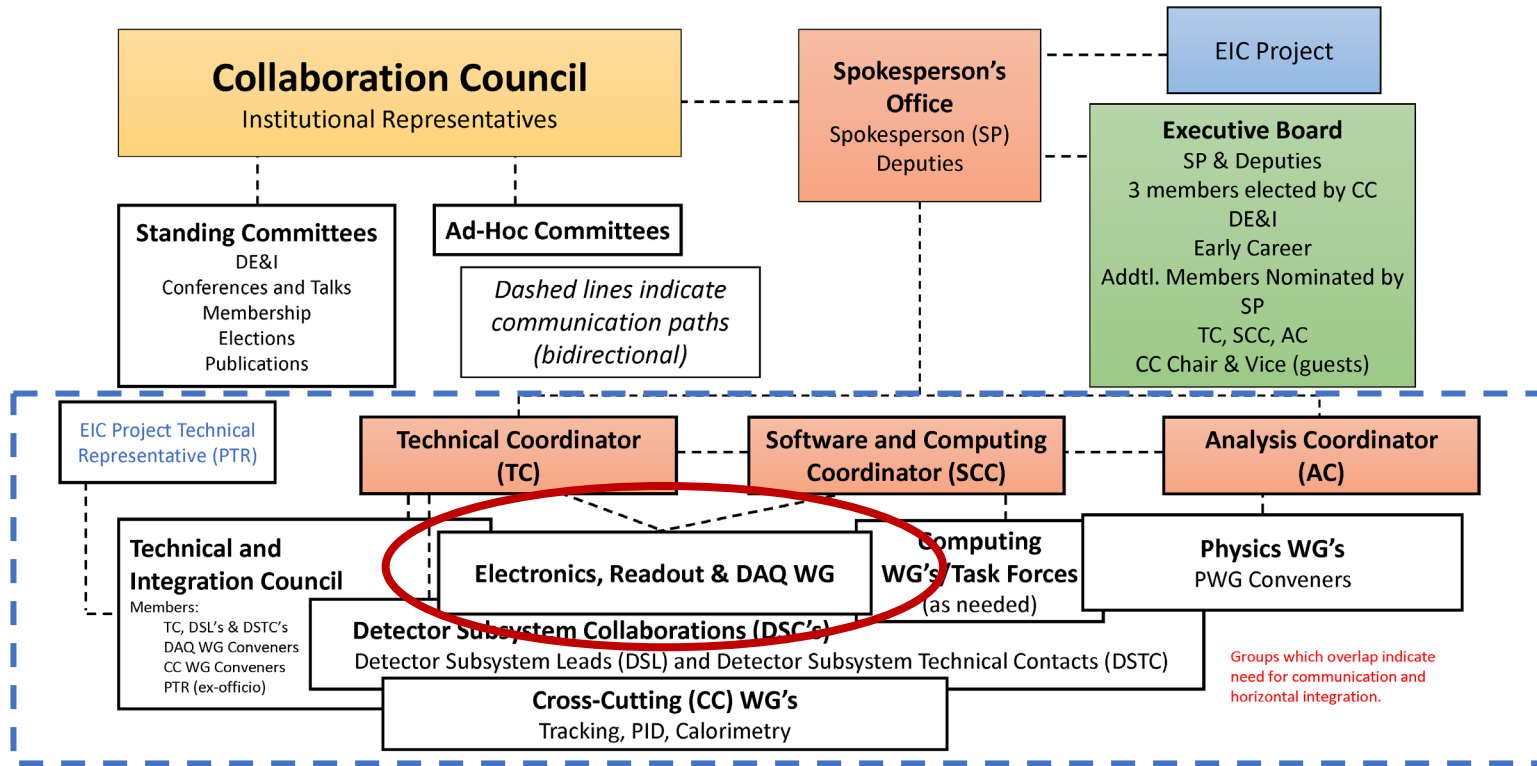


- Need to **evolve DWGs** to a structure more appropriate to the (pre-)TDR/construction phase: **WGs → Detector Subsystems**
- Each project corresponds to a subdetector built by a **Detector Subsystem Collaboration (DSC)** of the groups and institutions contributing to it
- Each DSC will choose its **Detector Subsystem Lead (DSL)** and **Detector Subsystem Technical Contact (DSTC)**
- DSL/DSTC (Collab.) <-> L4 Tech. Contacts (Project)

DSC scheme (*under development*)

DWG (now)	DSC (in management plan)	Notes
Tracking	Si Tracker (barrel and discs) Gaseous Trackers	build on EICSC
Calorimetry	Backwards ECAL Backwards HCAL Barrel ECAL Barrel HCAL Forward ECAL Forward HCAL For. HCAL insert	build on EEMCal consortium (currently not in reference)
Cherenkov PID	Backward RICH hpDIRC dRICH	
TOF	Barrel AC-LGAD Forward AC-LGAD	
FFWD	RP's + OMD B0 Tracker ZDC	
FBWD	Lumi. Pair Spectrometer Calorimeters Low-Q ² tracker	some DSL/DSTC overlap to start

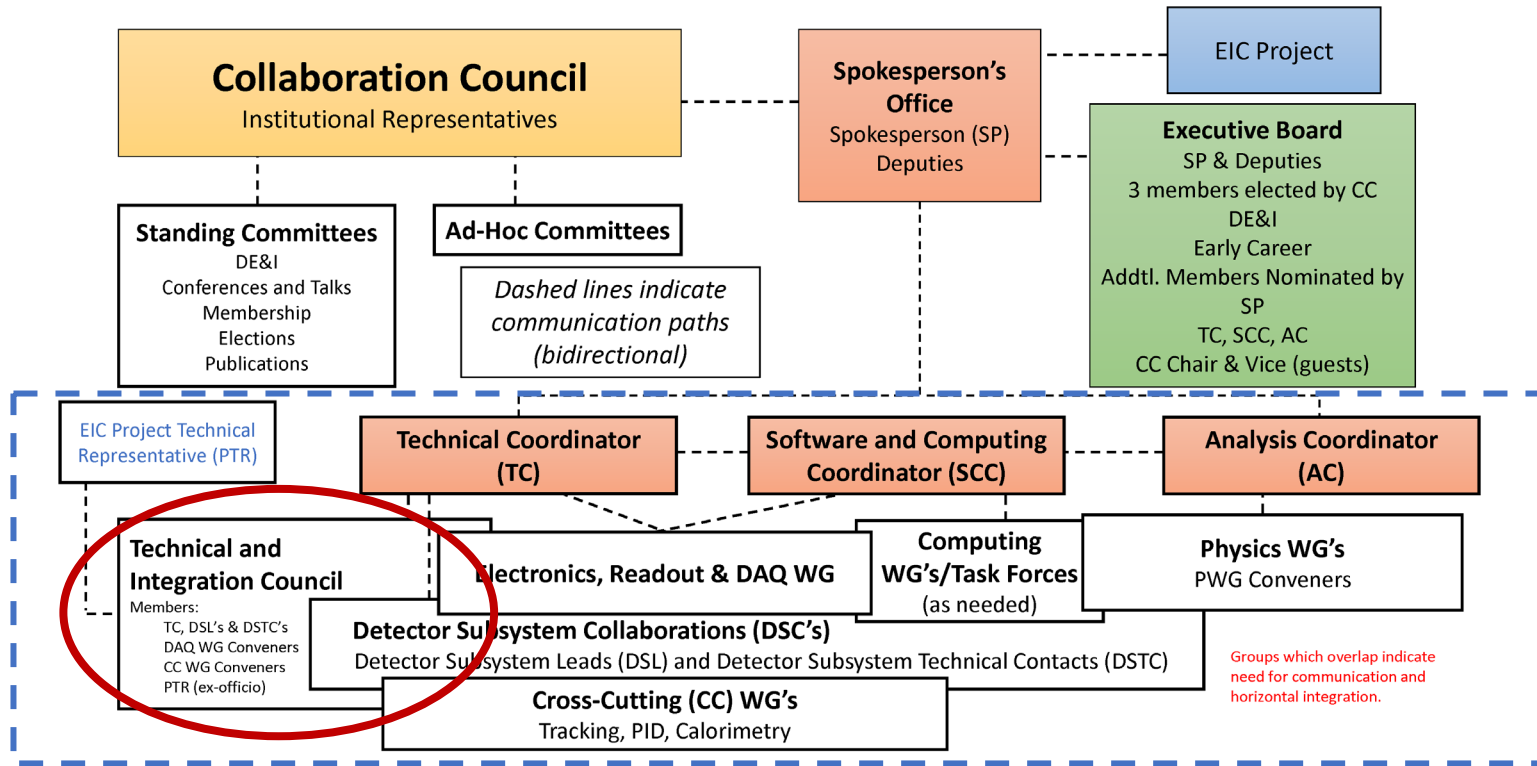
Collaboration Structure Including the Scientific Structure for the Next Two-Year Term



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- **RO and DAQ**, which is cross-cutting to sub-detectors, remains a separate WG with ~3 conveners

Collaboration Structure Including the Scientific Structure for the Next Two-Year Term



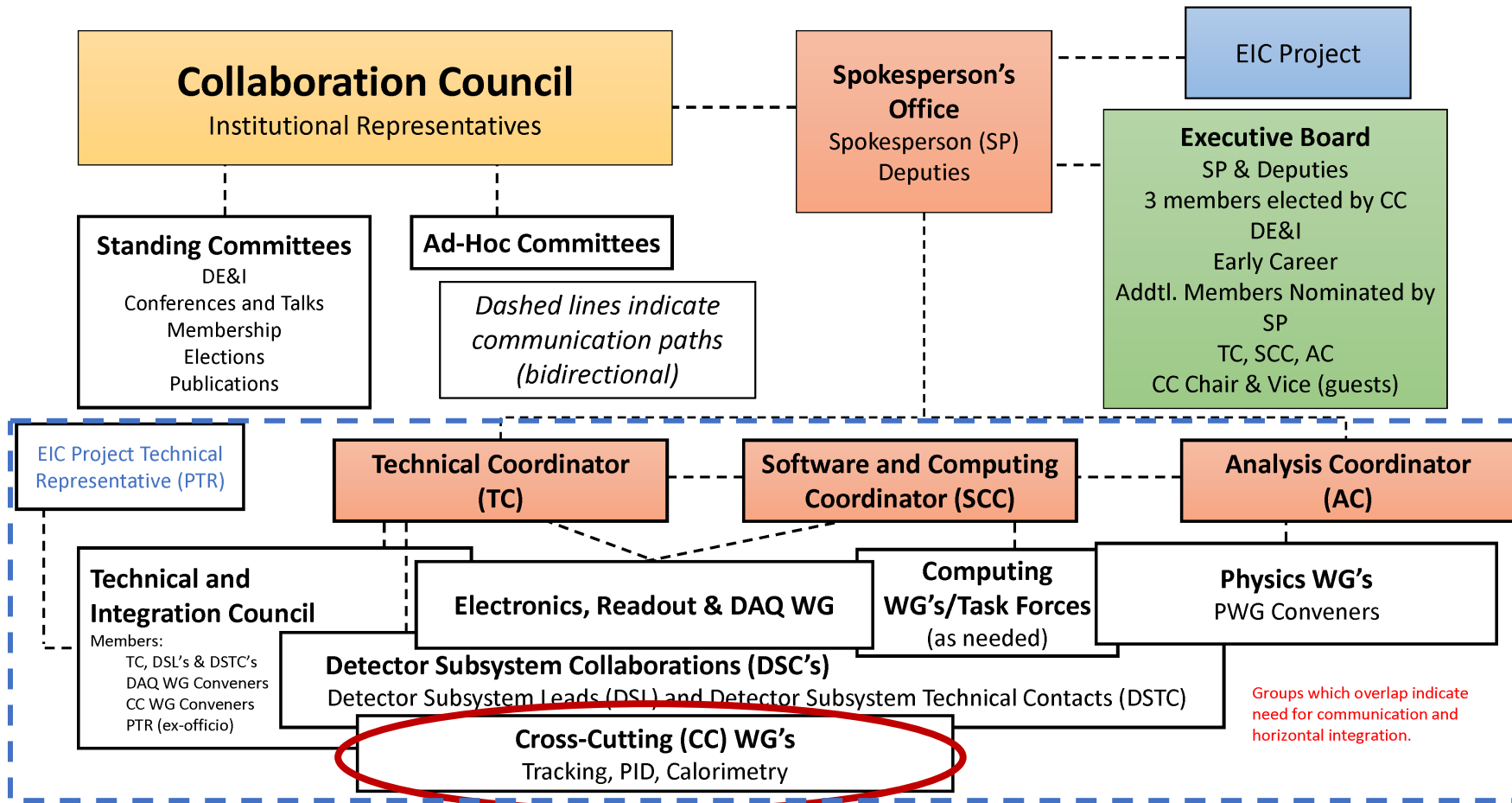
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Technical and Integration Council is formed by

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

- **RO and DAQ**, which is cross-cutting to sub-detectors, remains a separate WG with ~3 conveners

Collaboration Structure Including the Scientific Structure for the Next Two-Year Term



- *Cross-Cutting WG's (CCWG's) preserve a forum to complete the design of integrated systems and evolve the analysis software and techniques.*
- *2 Conveners per CCWG*
- *Task Forces as necessary*

ePIC Collaboration and the EIC Project

- The success of the EIC scientific enterprise relies on the Collaboration and the project working together.
- Each has a structure that is appropriate to their role:
 - The EIC project is at its heart a construction project, responsible to the DOE for ensuring the efficient use of resources
 - The ePIC Collaboration is a scientific collaboration, working to design, build and commission the ePIC detector to realize the EIC science program
- While they have different roles and structures, cooperation is essential!
 - Weekly meeting with SP Office and Rolf, Elke every Tuesday

Implementation

- Expect ~1 week for CC voting
 - Planning for success, the SP Office will work with the coordinators to complete the process of filling the various WG convener positions
 - Coordinator meetings with SP Office taking place to structure WG's
 - Transition to the new WG structure in early April
 - Transition to new WG meetings
 - Replace GD/I meeting with meetings of the Technical Integration Council
- Executive Board
 - The Spokesperson's Office foresees the need to convene the Executive Board in the near future to discuss key issues facing ePIC. However, the EB membership is not complete. Nevertheless, we would like to convene this proto-EB to aid the Spokesperson's Office.

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- We have the utmost confidence in our Coordinators.

- We ask for the support of the Collaboration to implement the management plan and to get to the important work we have to do.

Our Request

- The Spokesperson's office requests that the Collaboration Council ratify the Management Plan.
- The Spokesperson's office requests that the Collaboration Council endorse the following team of Coordinators:
 - **Klaus Dehmelt** – Technical Coordinator
 - **Markus Diefenthaler** – Software and Computing Coordinator
 - **Rosi Reed** and **Salvatore Fazio** – Analysis Coordinators
- The request to add Coordinators to Executive Board will follow at a later date when the composition of the Executive Board is addressed by the CC

ePIC Collaboration Status – A Busy March!

- It has been an incredibly busy month for ePIC!
 - March 13-14th – BECAL review
 - March 16-18th – EIC-Asia Meeting
 - March 20-21st – Backwards PID review
 - ... and of course, the usual schedule of WG meetings every week!
- Talks at upcoming conferences:
 - HP: Friederike Bock
 - DIS: Richard Milner, Alex Jentsch
 - Plus ePIC contributed talks!
- EIC Resource Review Board April 3-4th

March 2023

Mon	Tue	Wed	Thu	Fri
27	28	1	2	3
09:00 GD/I WG: dRICH layout; restrict 11:30 Detector 1 TOF-PID WG Week 12:00 Exclusive/Diffractive/Tagging 12:00 Inclusive reactions (EPIC) 12:00 Modular Reconstruction	09:00 ePIC Far-Forward Weekly Me 12:00 EIC Project - ePIC Leadership 12:30 EW&BSM - WG meeting 15:00 Jet Reconstruction Meeting	10:00 ePIC pFRICH weekly meeting 11:00 ePIC Computing & Software 12:30 ePIC calorimetry weekly mee	09:00 ePIC DAQ WG meeting 09:55 ePIC Track reconstruction me 10:00 Far Backward weekly meeting 13:00 Clustering Task Force Meetin +2 more	08:30 EIC Project Detector - Cheren 10:30 Management Plan Discussio
6	7	8	9	10
09:00 GD/I WG: bRICH Validation 10:00 EICrecon Task Force 11:00 EICROC ASIC evaluation for E 12:00 Modular Reconstruction	09:00 ePIC Far-Forward Weekly Me 12:00 EIC Project - ePIC Leadership 13:00 Background Taskforce Meetin 14:00 ePIC Tutorial Series 2: Analyz	08:00 EEEMCAL and barrel homoge 10:00 ePIC pFRICH weekly meeting 12:30 ePIC calorimetry weekly mee	09:00 ePIC DAQ WG meeting 10:00 Far Backward weekly meeting 10:00 ePIC Track reconstruction me 11:00 ePIC Tracking Working Group +3 more	08:00 ePIC Tutorial Series 2: Analyz
13	14	15	16	17
08:00 March 20-21 review pFRICH talks rehearsal 08:00 dRICH Simulation Meeting - N 10:00 Barrel ECAL Review 11:30 Detector 1 TOF-PID WG Week	08:30 SIDIS WG meeting 12:30 EW&BSM - WG meeting +3 more	08:00 ePIC Tutorial Series 2: Runnin 11:00 ePIC Software & Computing 12:30 ePIC calorimetry weekly mee	08:00 March 20-21 review pFRICH talks rehearsal 09:00 ePIC DAQ WG meeting 10:00 Far Backward weekly meeting 10:30 ePIC Track reconstruction me +2 more	08:30 EIC Project Detector - Cheren
20	21	22	23	24
05:30 GD/I Backwards RICH Review 12:00 Exclusive/Diffractive/Tagging 12:00 Modular Reconstruction 13:00 Inclusive reactions (EPIC) 14:00 Software & Computing Coord	09:00 ePIC Far-Forward Weekly Me 12:00 EIC Project - ePIC Leadership 13:00 eA Study Group Meeting +2 more	10:00 ePIC pFRICH weekly meeting 11:00 ePIC Software & Computing 12:30 ePIC calorimetry weekly mee	09:00 ePIC DAQ WG meeting 10:00 Far Backward weekly meeting 10:00 ePIC Track reconstruction me 11:00 ePIC Tracking Working Group +2 more	10:30 ePIC Collaboration Council M

ePIC Timeline for GD/I Review Decisions

- March 13-14th – BECAL review (COMPLETED)
- March 20-21st – Backwards PID review (COMPLETED)
- March 24th – Target date for BECAL written report
 - Report will go to the proponents for fact-checking before release
- March 24th – CC Meeting
 - Endorse management plan, coordinator teams
 - Voting open for one week (March 31st)
- March 31st – Target date for Backwards PID written report
 - Again, will need to go to the proponents for fact-checking before release
- March 27-31st – DIS/Hard Probes/Travel to RRB
- April 3rd-4th – RRB meeting at BNL
- April 7th – First meeting of proto-EB to discuss recommendations
 - Only a partial EB at this point
- April 14th - General Meeting:
 - **Announce recommendations from the SP Office based on review reports and EB discussion**
 - **Update on formation of DSC's**
 - **Project update, RRB meeting, etc.**
- On or about April 21st – CC Meeting
 - Request to endorse SP recommendations for BECAL and Backwards PID
 - Full agenda of additional CC business

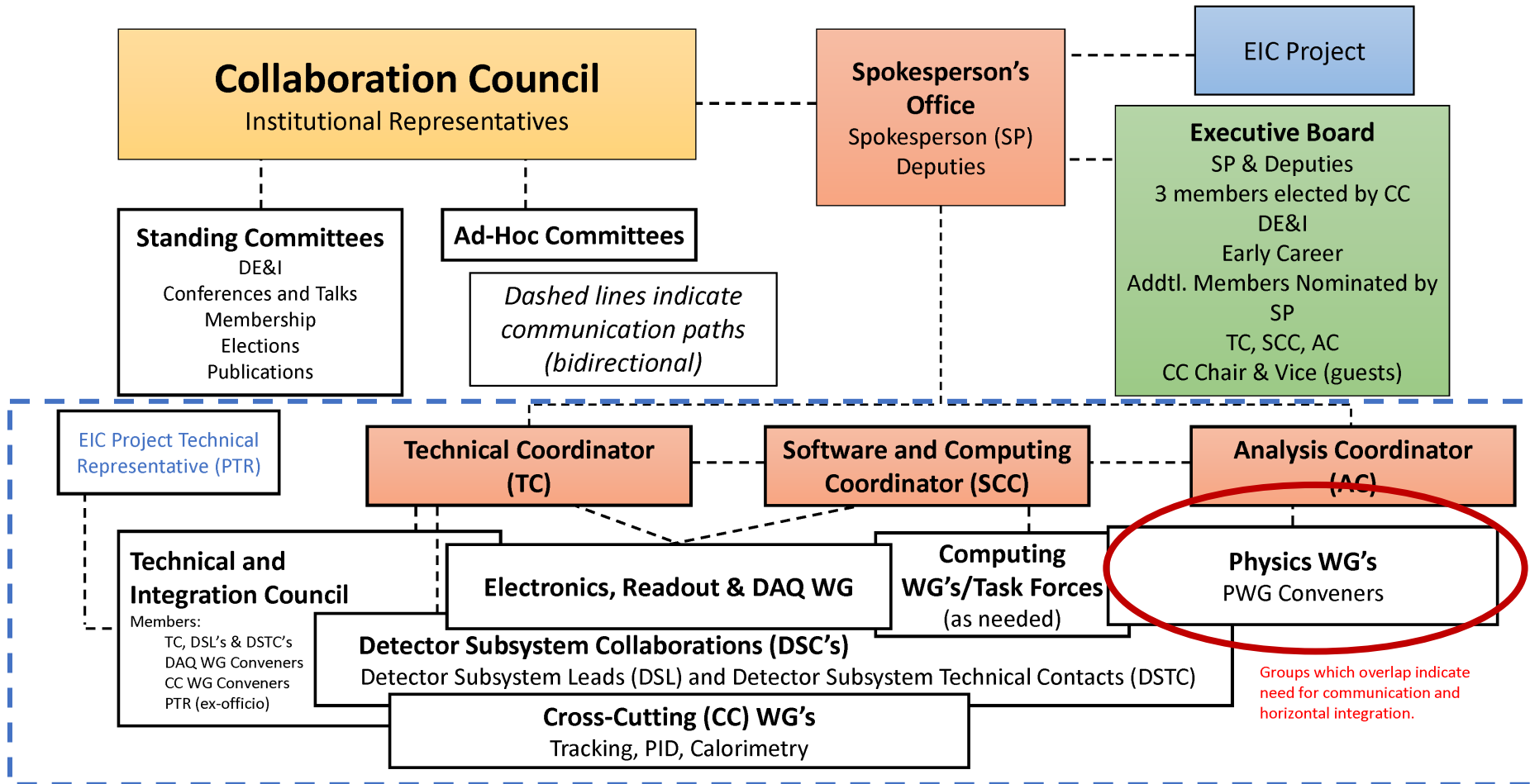


ePIC Priorities for the Coming Months

- It is essential that we mobilize the use of simulation studies to aid in the technical design of ePIC!
 - This has been sorely missing!
 - Working with Coordinators to establish priorities:
 - **High-level priorities**
 - Key technical design issues to be addressed
 - **Simulation priorities**
 - What level of detector description is required?
 - Other simulation requirements, like background embedding, ...
 - **Analysis priorities**
 - What analysis tools are required to achieve the high-level priorities?
 - Tracking, clustering, analysis tools, etc.
- Establishing priorities sets the goals/timescale for the second simulation campaign

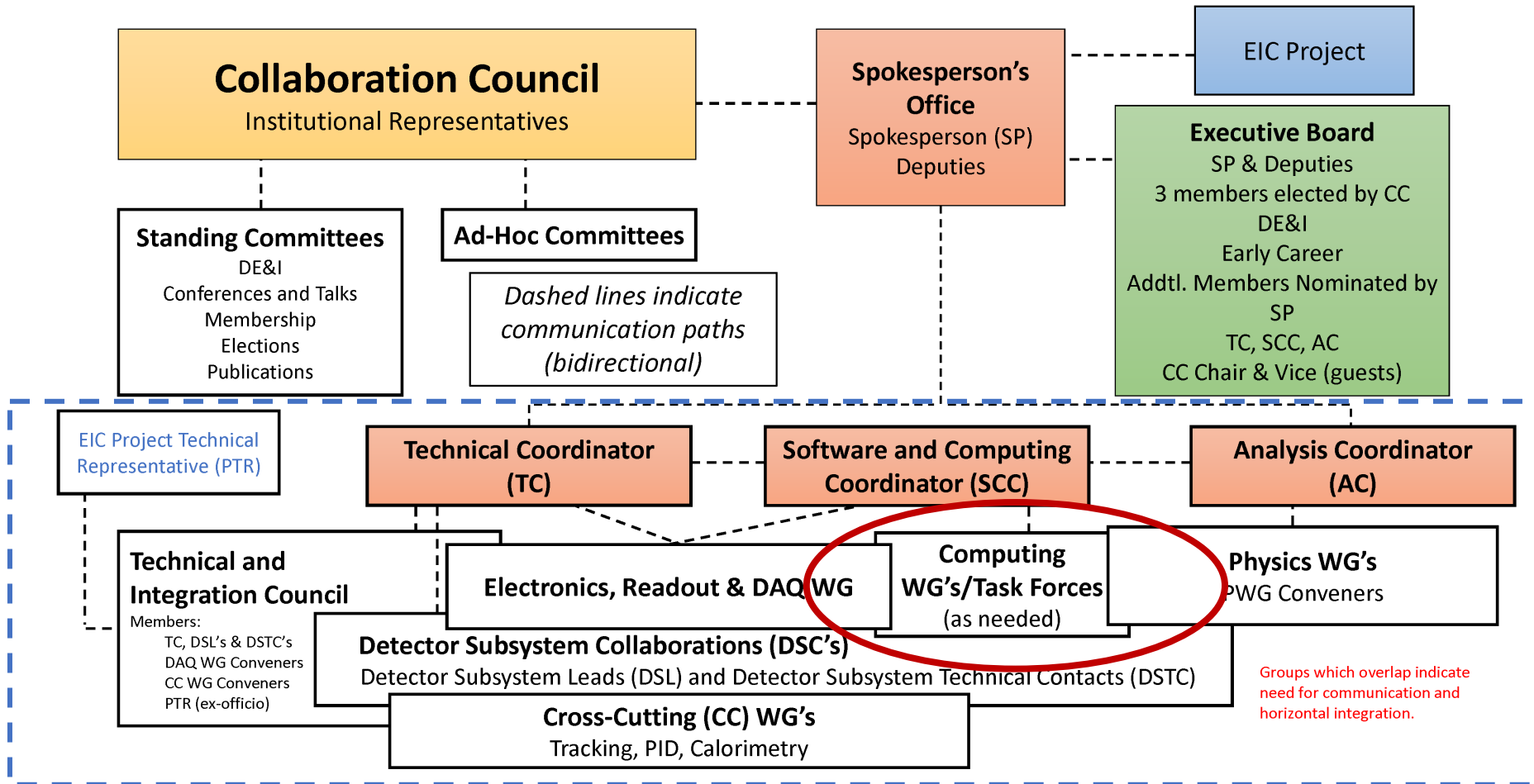


Collaboration Structure Including the Scientific Structure for the Next Two-Year Term



- **Primary Goal:** To use physics performance as a tool to guide the technical design
- WG structure provides a clear entry point for new collaborators
- Physics WGs with ~ 2 conveners
- Number and domain of WGs to be discussed with coordinators
- Enhance flexibility and communication with short-term task forces

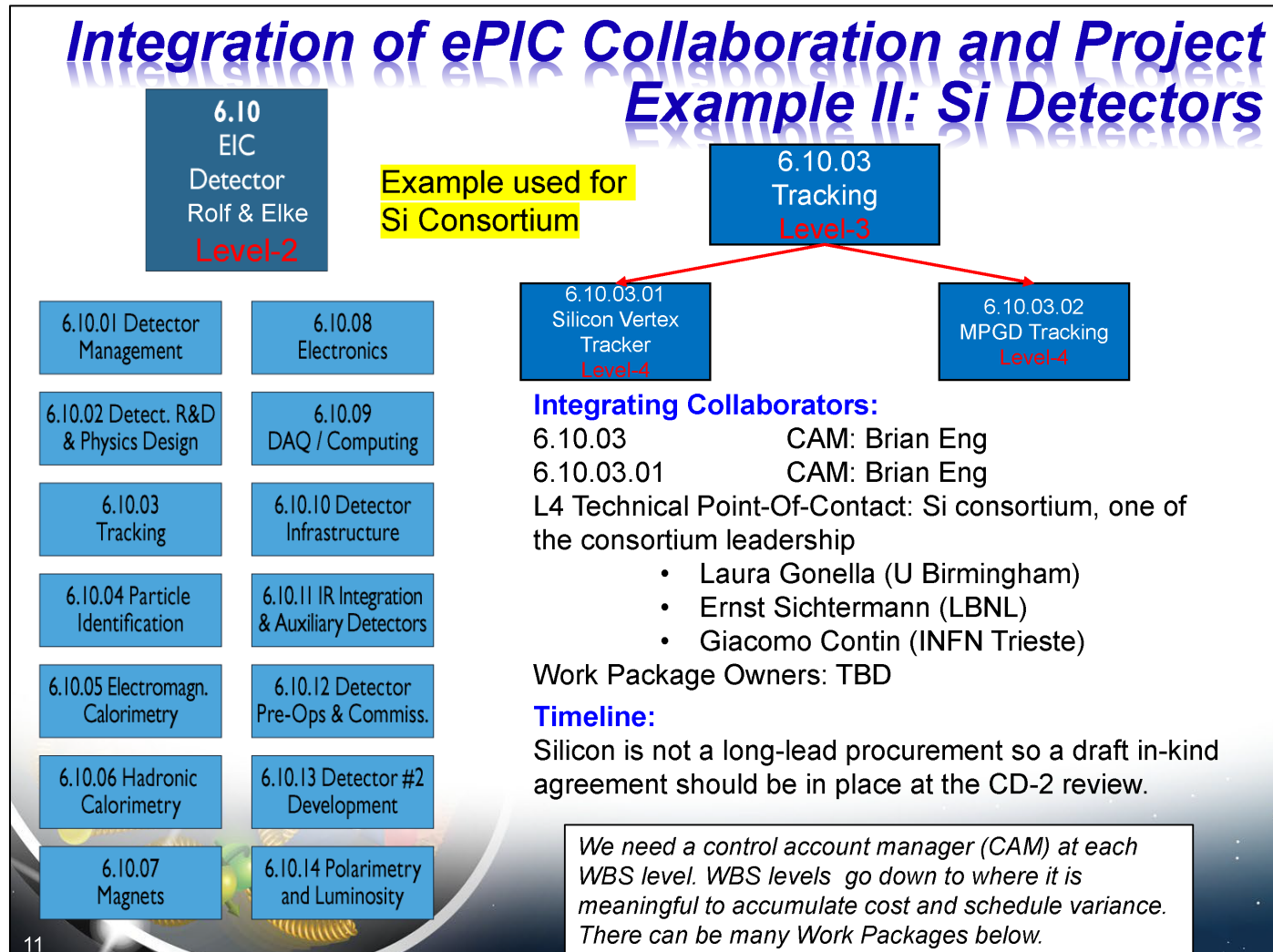
Collaboration Structure Including the Scientific Structure for the Next Two-Year Term



- *Software and Computing Coordinator*
 - *Interface with host labs*
 - *Coordinates collaboration activity*
- *Computing WG/Task Forces:*
 - *Software architecture*
 - *Simulations*
 - *Computing resources*
 - *Advanced algorithms & AI*
 - *Documentation and User Support*
 - ...
- *A dedicated WG and flexible structure of subgroups*

Integration with EIC Project (I)

Slide from Elke and Rolf



For Si Tracker, seems logical that DSL/DSTC can be drawn from EICSC, and overlap with L4 Technical Contacts

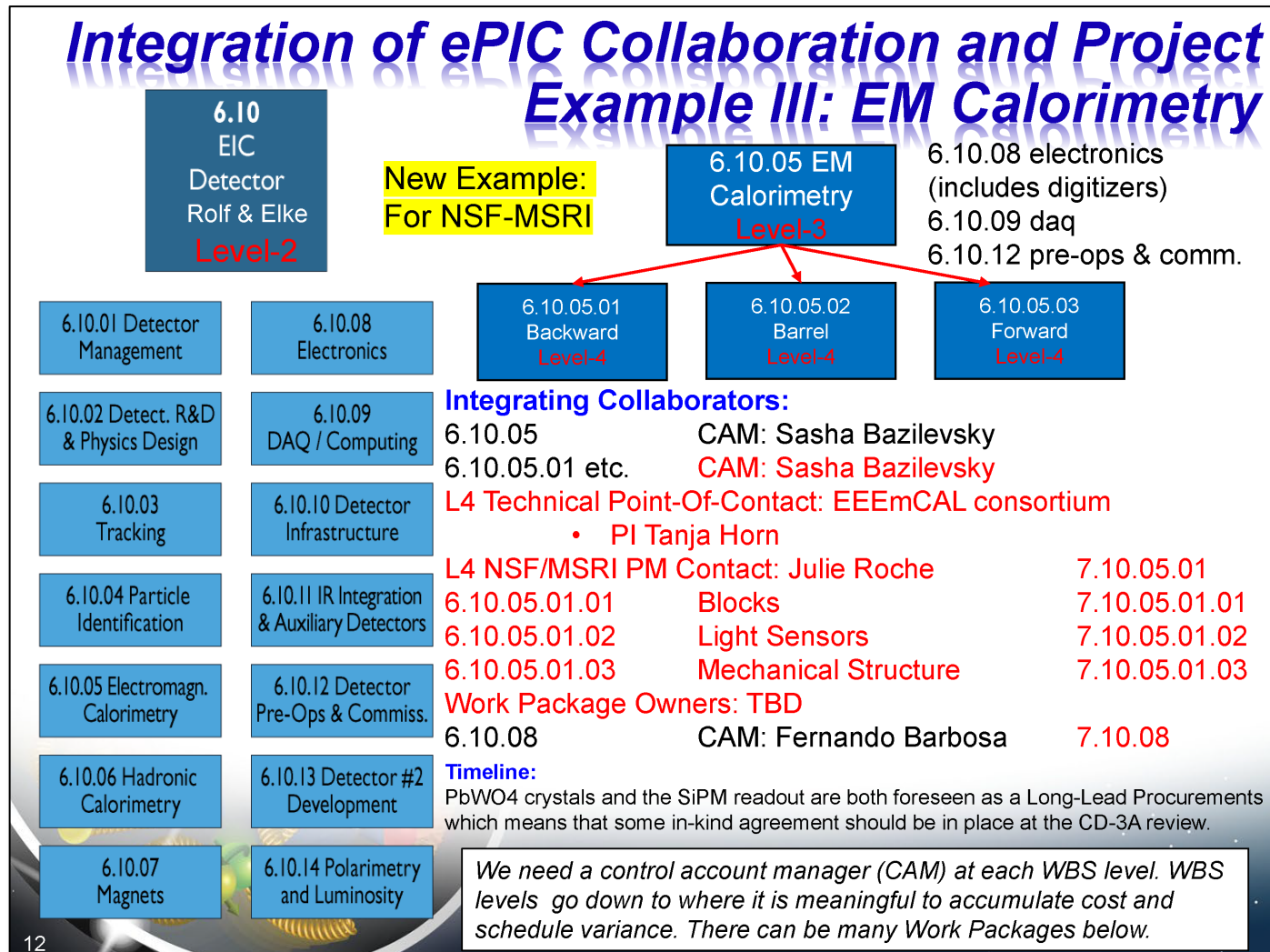
MPGD tracking may be broken down further to μ RWell and μ Megas at the DSL/DSTC level.

Work Package Owners can also be drawn from the collaboration.

The goal is a tight integration between the project and the collaboration at a technical level.

Integration with EIC Project (II)

Slide from Elke and Rolf

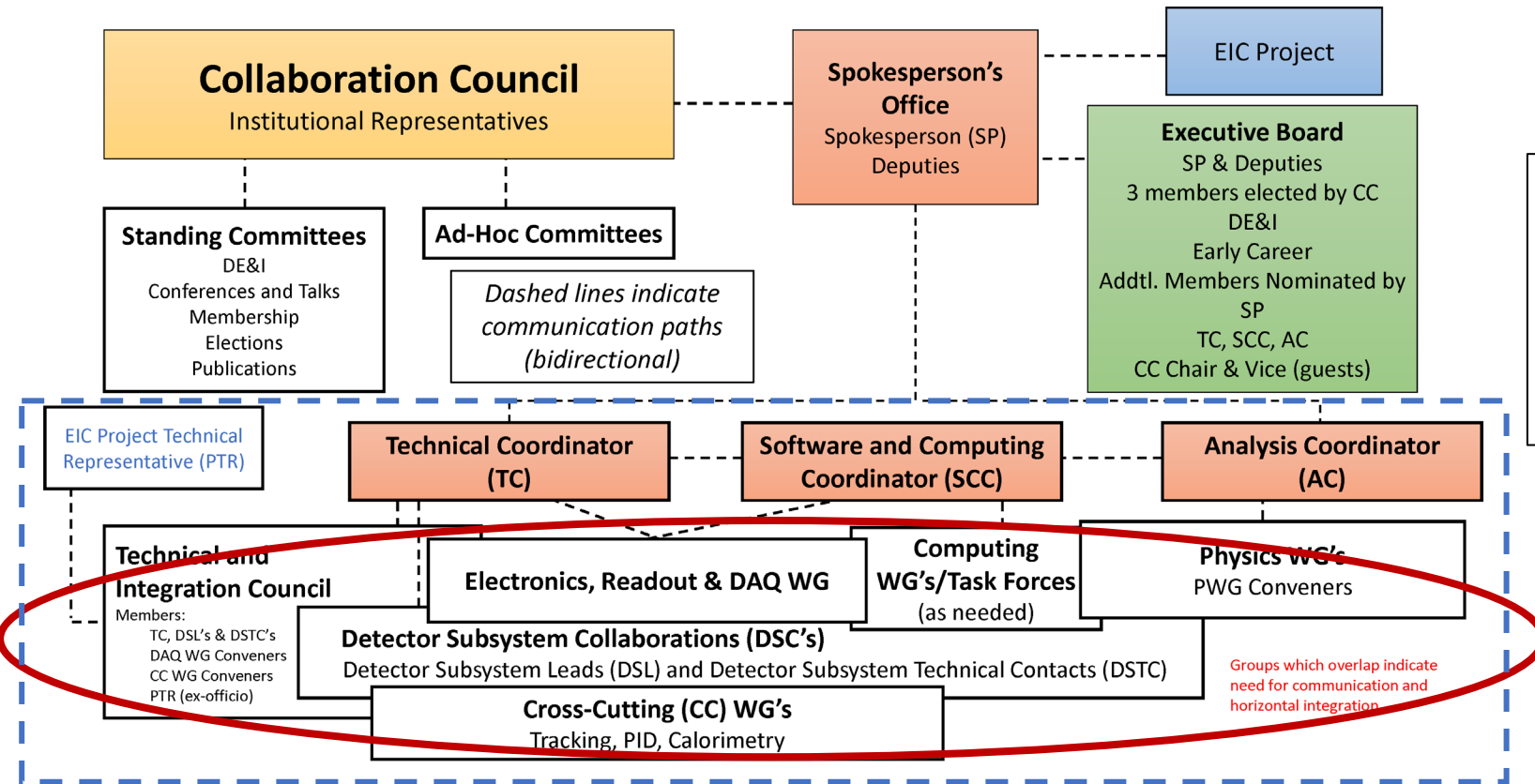


This example looks at how things might be structured for a potential in-kind contribution.

Again, DSL/DSTC connected with project as L4 Technical Contact. Work Package Owners can also be drawn from the collaboration (examples shown).

The goal is a tight integration between the project and the collaboration at a technical level.

Collaboration Structure Including the Scientific Structure for the Next Two-Year Term



Task Forces

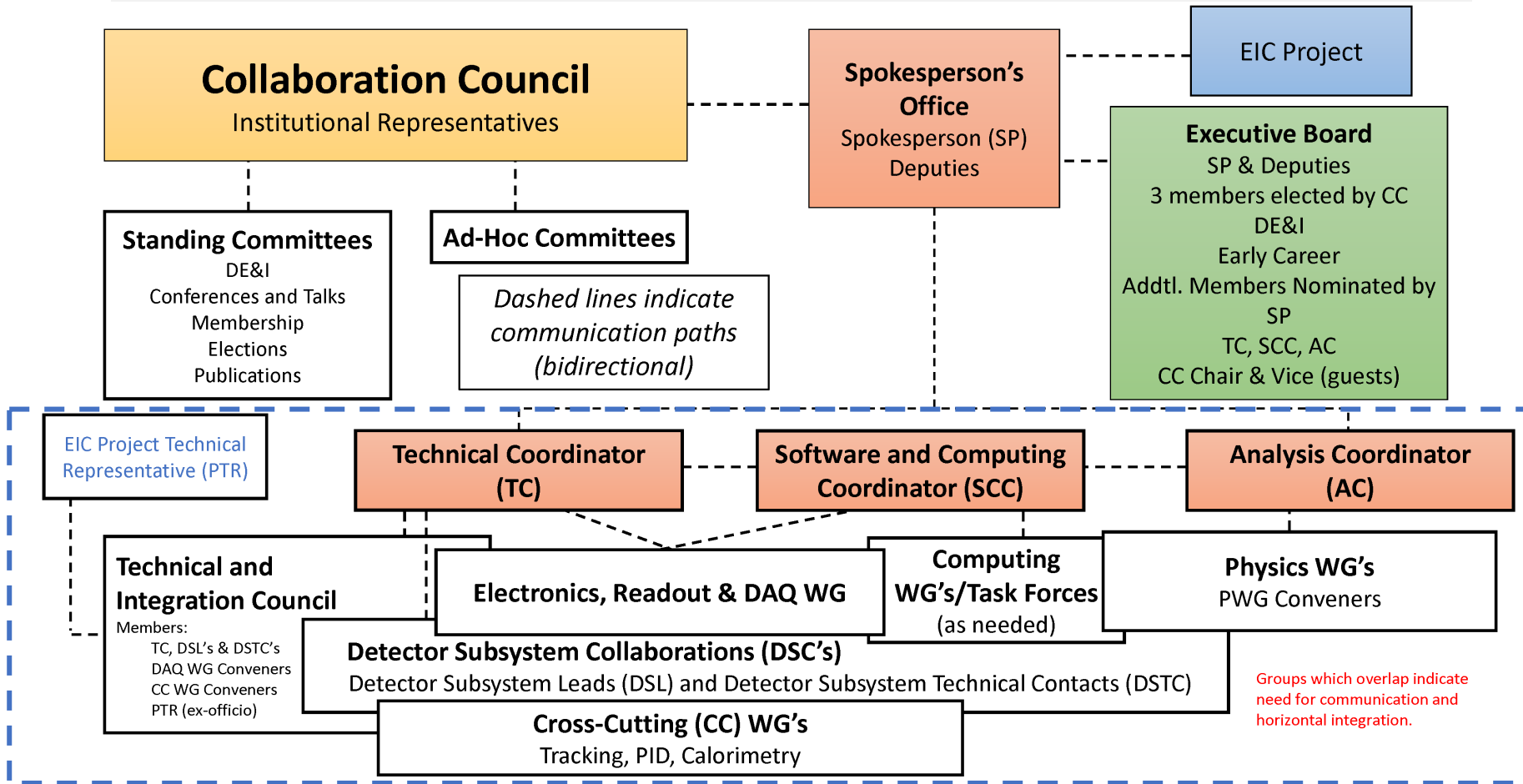
- *Proposed by coordinators (TC, SCC, AC)*
- *Formed as needed to address critical issues, or issues that require coordination between efforts*

Task forces and Cross-Cutting WG's provide the bridge between disparate efforts!

Examples:

- *Background Task Force (formed by Project)*
- *Potential TF's: ACTS/Tracking TF, Global Event Kinematics, etc.*

Detector Decision Flow



- *Review, analysis and report by TIC*
- *Recommendation formulated by SP Office in consultation with EB*
- *SP Office ensures communication with EIC Project and CC, consistent with ePIC charter*

ePIC Charter lines 66-70:

"Whenever unforeseen constraints identified by the EIC Project require substantial modifications to the detector design, the Collaboration will work with the EIC Project on related technical proposals, will assess the impact on physics capabilities of EPIC and will report their findings to the EIC project. In cases of particular relevance, this may even necessitate the Spokesperson to call for a Collaboration Council vote on the proposed changes."

The SP-Office and Responsibilities

SP:

- Represents the Collaboration in all circumstances
- Overall responsibility for ePIC scientific management
- Relationship and communication with EB, PM, CC and its Committees
- Relationship with BNL, JLab and laboratory user groups, university groups
- Raising the visibility of ePIC/EIC worldwide

Deputy SP:

- Communication with the coordinators (TC, PC, CoC) and the corresponding board (TIC)
- Managing the detector technology and integration decision process
- Relationship with RRB
- Relationships with Institutes/Groups concerning effective FTE and in-kind

Joint Responsibilities:

- We plan to work as a collegial team. The areas above are intended as guidelines to make the work efficient.

Increasing International Engagement

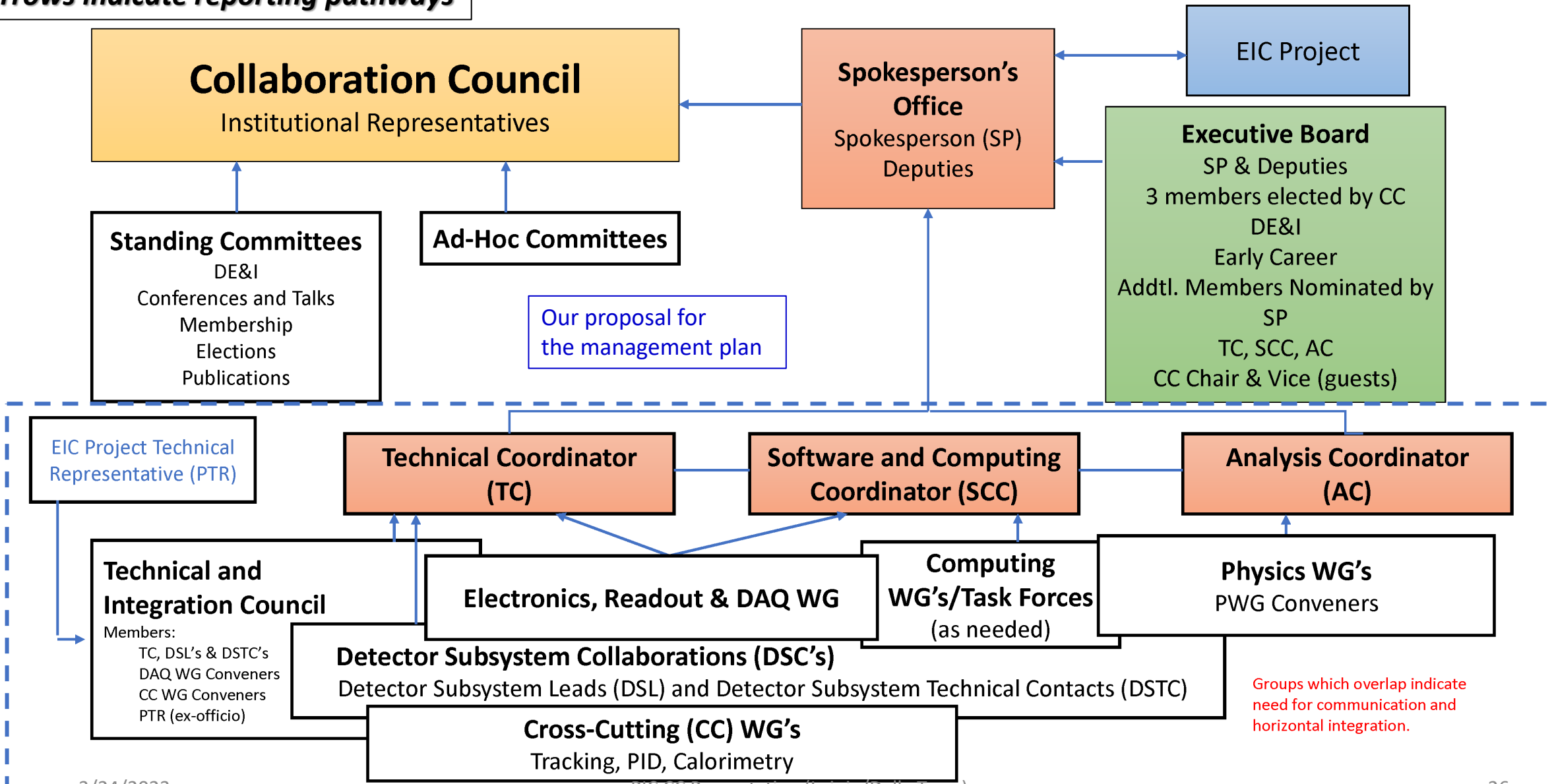
- ePIC will need strong international engagement in order to succeed!
- Role of the Spokesperson's Office:
 - Outreach/encourage participation in ePIC
 - Help nuclear physics communities raise EIC visibility in their home countries
 - Support international groups by helping them engage with ePIC, match their talents and capabilities to work that need to be done
 - Provide assistance/training to students and postdocs integrating into WG's
 - Help with laboratory appointments, access to resources
 - Assist Project with coordinating planning for international contributions
 - Especially workforce in international groups
 - Support the efforts of the Project in the RRB

Community

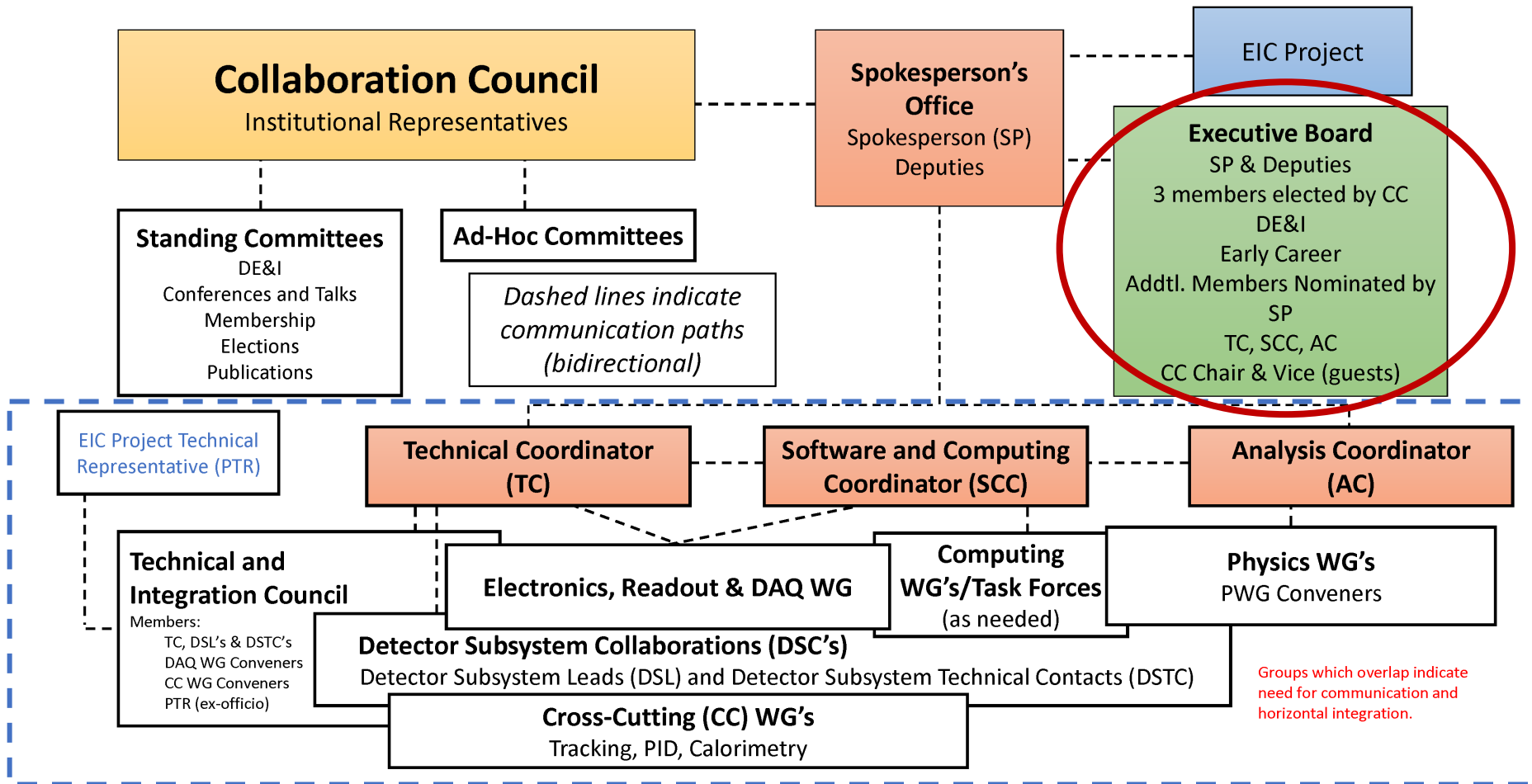
- To be successful we will not only need to grow the ePIC Collaboration but take full advantage of the skills, talents, and capabilities of all our collaborators
 - Silvia and I are dedicated to making ePIC a collegial, friendly, safe, and welcoming environment for everyone
 - It is critical to build this into ePIC culture from the very beginning!
- Support the CC in developing a strong Code of Conduct
 - The ePIC charter includes concrete provisions to address misconduct
 - Code of Conduct should be developed quickly as a policy document
- Support the CC in appointing a Talks Committee
 - Track assignment of talks, ensure an equitable distribution across all groups
- Support the professional development of junior scientists
 - Provide opportunities for leadership and recognition
- Facilitate participation in ePIC
 - While some can dedicate all their time to ePIC, many will have to balance ongoing commitments. Make sure that everyone can contribute to the best of their ability.

Collaboration Structure Including the Scientific Structure for the Next Two-Year Term

Arrows indicate reporting pathways



Collaboration Structure Including the Scientific Structure for the Next Two-Year Term



- *EB members advise the SP Office and provide needed input from collaboration stakeholders*
- *CC Chair and Vice Chair standing guests*
- *SP Office provides clear direction and accountability*