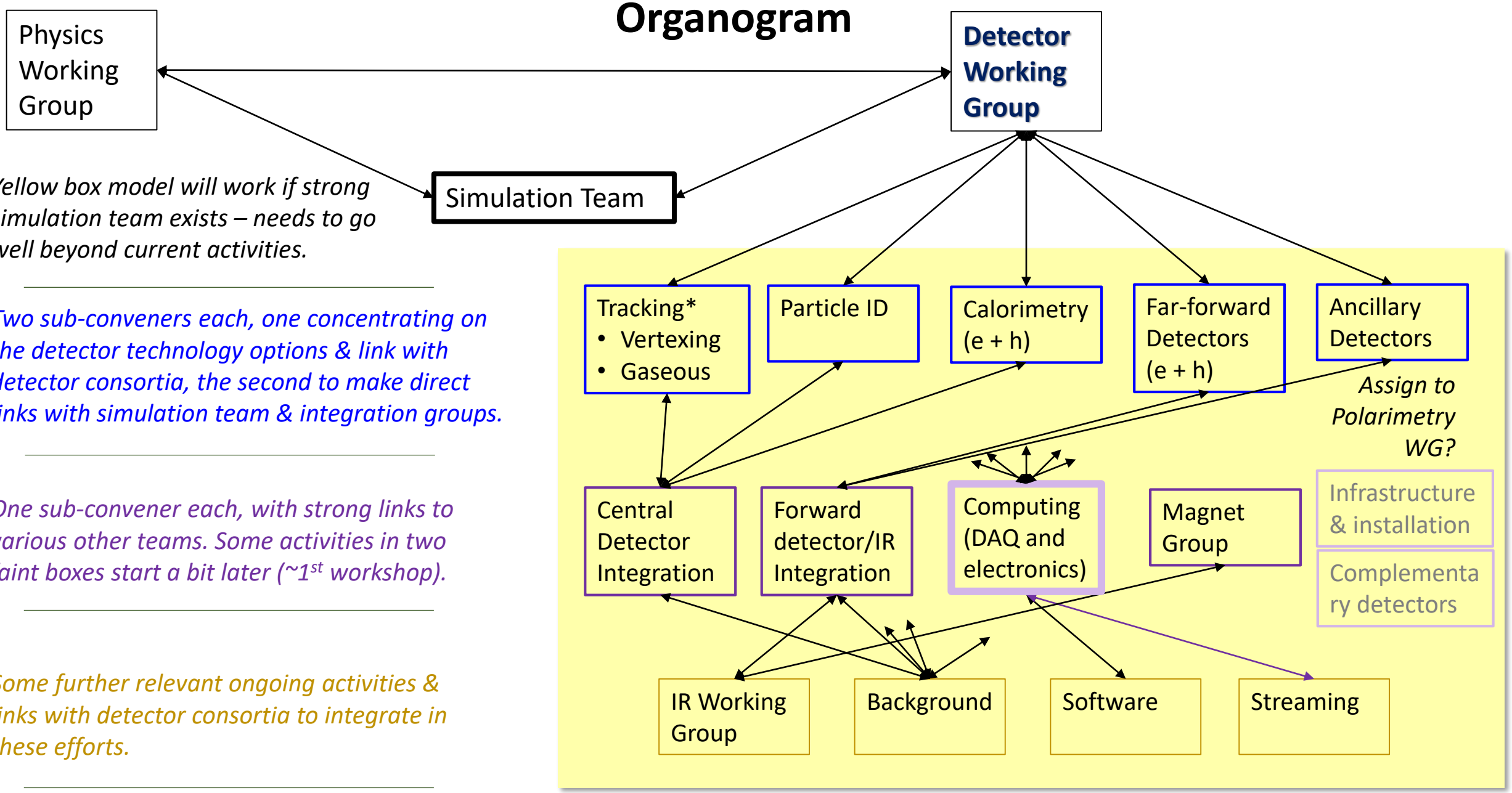
Detector Working Group – Introductory Remarks

- Organization should be an organically grown structure – open to all groups (new or already well-known in EIC efforts)
- Anticipate that this structure will evolve with time – effectiveness has to be checked as the work begins
- The model assumes a strong simulation team that needs to go well beyond current activities
- Need to engage strong electronics groups from the start

Organogram



Yellow box model will work if strong simulation team exists – needs to go well beyond current activities.

Two sub-conveners each, one concentrating on the detector technology options & link with detector consortia, the second to make direct links with simulation team & integration groups.

One sub-convener each, with strong links to various other teams. Some activities in two faint boxes start a bit later (~1st workshop).

Some further relevant ongoing activities & links with detector consortia to integrate in these efforts.

**One additional sub-convener (to cover each of these distinct and evolving detector technologies)*

Organizational Structure (I)

- Assume a separate strong simulation team efforts working together with both Physics and Detector WGs
- The organization starts from the references given:
  - science as from EIC white paper,
  - known detector requirements,
  - listed introductory documents,
  - detector-consortia related papers
- The Central Detector here includes the central detector itself and both electron and proton/ion endcaps
- The convention follows that of the EIC handbook, i.e., the p/ion (electron) direction is forward (backward)
- The far-forward (and far-backward) region is defined as that after the final-focus quads
- The Ancillary Detectors here includes both polarimeters and luminosity monitors. We hope the Polarimetry WG is willing to include the luminosity monitor scope.

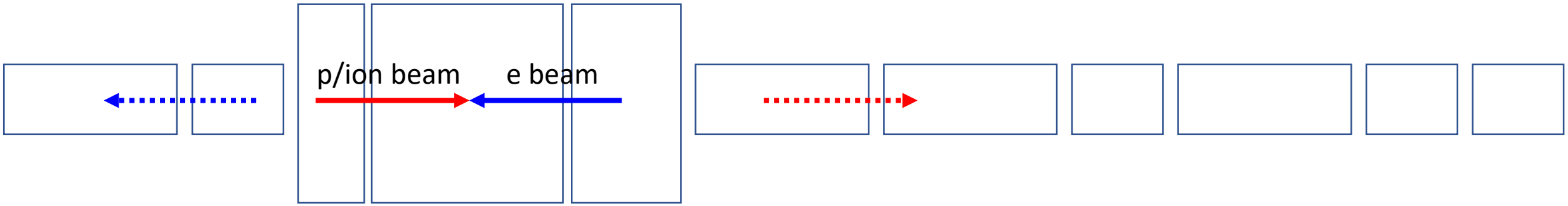
Organizational Structure (II)

- We assume ***two sub-conveners*** each for particle identification detectors, calorimetry, and far-for/backward detectors (including tracking, Roman Pots, ZDCs, etc.). We assume ***one additional sub-convener*** for tracking detectors to cover the two technologies (vertexing and gaseous).
  - One of these sub-conveners concentrates more on the detector technology options and link with detector consortia, the second sub-convener on coordination with simulation team & integration groups.
  - ***As first task, we would ask each of these groups to first start with listing pros and cons of possible detector technologies, and a general set of parameters associated with each linking to simulations.***

- We assume ***one sub-convener each for various overarching activities***: the central detector integration, the forward detector/IR integration, the readout- and computing-related activities, and the magnet field choice.
  - We have indicated several further ongoing activities to integrate in such overarching activities.
  - ***As first task, we would ask these sub-conveners to list what integration activities are required over the next 6-12 months, what questions remain to be answered, and to initiate integration tasks.***

- We assume the Infrastructure & Installation and the Complementarity of two detectors activities ***start later, at the first workshop.*** These logically pick up from the first tasks, e.g., the detector technologies option task may naturally lead to the Complementarity of two detectors (Detector WG conveners initially pick up scope).

Organizational Cartoon/Model of the Extended Detector and IR



far-backward e detection	e final-focus quads	"Central detector", includes e endcap, central, and p/ion endcap detectors	Ion final-focus quads	far-forward h detection	forward dipole	far-forward h detection	forward dipole	far-forward h detection
Low-Q^2 spectroscopy		Inclusive Structure Functions, TMDs, heavy flavors and jets, electrons for GPDs		Baryon decay π/K structure evaporated n		GPDs/DVCS, tagging, diffraction		lowest-t, diffraction
GEMs Diamond detectors?		Vertex and Tracking detectors, particle identification detectors, calorimetry detectors, muon detectors, etc.		GEMs ZDCs e/γ calorim.		GEMs Roman pots e/γ calorim.		Roman pots GEMs?

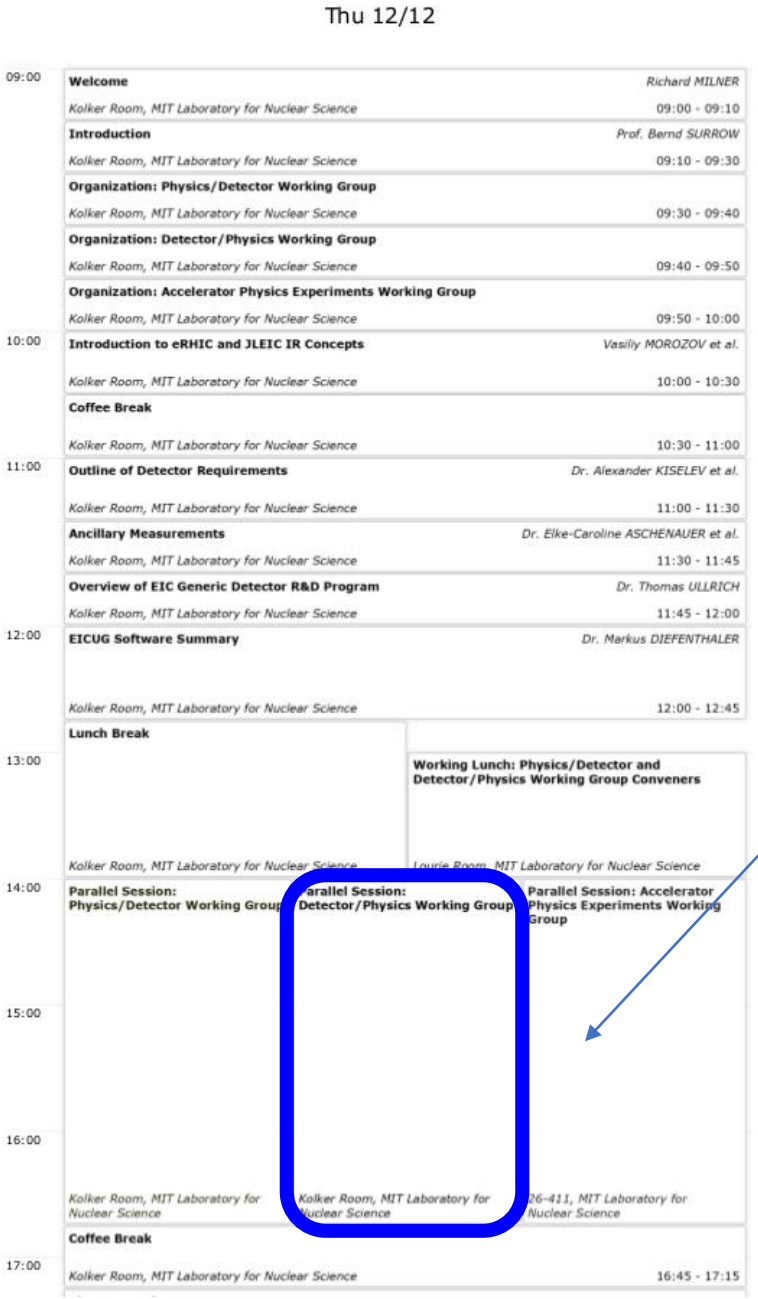
physics examples

detector examples

Detector WG Sub-conveners

System	Sub-convener names	Sub-convener task	Convener name
Tracking	1. 2. 3.	(vertex) detector technologies (gaseous) detector technologies simulation, integration coordination	(for oversight and coordination)
Particle Identification	1. 2.	detector technologies simulation, integration coordination	
Calorimetry (e + h)	1. 2.	detector technologies simulation, integration coordination	
Far-forward detectors	1. 2.	detector technologies Simulation, integration coordination	
Ancillary detectors	Polarimetry WG?	detector technologies	
Central detector integration	1.	integration tasks	
Forward detector/IR integration	1.	integration tasks	
Readout and Computing	1.	list of activities/tasks needed	
Magnet(s)	1.	field strength need, pros and cons	
Infrastructure and Installation	NA yet/conveners	NA yet	
Detector Complementarity	NA yet/conveners	NA yet	
Simulations (shared w. Physics WG)	1. – n.	work w. both WGs central to progress	

Detector WG Parallel Sessions



- ❑ Initial time of parallel session (14:00-15:45) to gather input from attendants on proposed structure/organization and iterate.
- ❑ Last hour (15:45-16:45) on Thursday will be a closed session for WG conveners only to settle on sub-convener names in face-to-face meeting.