

First Detector-1 General Meeting: Introduction and Overview

Silvia Dalla Torre, Or Hen, Tanja Horn, John Lajoie, Bernd Surrow



Agenda for Today

Detector 1 General Meeting

Friday Apr 29, 2022, 9:00 AM → 12:00 PM US/Central

Description Connection Information:

To join please click on the link below:
https://urldefense.proofpoint.com/v2/url?u=https-3A__bnl.zoomgov.com_j_1600427691-3Fpwd-3DTy9LMEpCZXFyWVd3VnlzenZZTXVsZz09&d=DwlCaQ&c=CJqEzB1piLOyyvZjb8YUQw&r=-Tb2XmleNRFhaaEFnTB6zQ&m=Ur5MXKgbnm8BMALLb0U9etHyGUceLoU2_AezusrqQdbPxKH8vEW1KEmHlNe47xUn&s=il-ThZNWytQeNR7KEPolt2G10RF722Dz4iJMyGRgPI&e=

Meeting ID: 160 042 7691
Passcode: 012079

9:00 AM → 10:15 AM Introduction, Updates, Goals, Next Steps

Conveners: Bernd Surrow (Temple University), John Lajoie (Iowa State University), Or Hen (MIT), Silvia Dalla Torre (INFN, Trieste), Tanja Horn (Cath)

9:00 AM Introduction and Overview

- General welcome and introduction
- Goals for the next months and beyond ... towards pre-TDR/TDR
- Steps towards collaboration formation (timeline, preparations, etc.)

Speaker: John Lajoie (Iowa State University)

9:30 AM EIC Project update

Speakers: Dr E. C. Aschenauer (BNL), Rolf Ent (Jefferson Lab)

9:45 AM Geometry database and updates of ECCE as reference detector in CAD and Sketchup

Speaker: Tanja Horn (Cath)

10:15 AM → 11:25 AM Joint Working Group Updates

Conveners: Silvia Dalla Torre (INFN, Trieste)

10:15 AM Tracking

10:20 AM Calorimetry

10:25 AM Cherenkov PID

10:30 AM TOF PID (AC-LGADs)

10:35 AM Far Forward

10:40 AM Far Backward

10:45 AM DAQ/Electronics/Readout

10:50 AM Computing and Software

10:55 AM Global Integration

11:00 AM Simulation Production and QA

11:05 AM Inclusive

11:10 AM Semi-Inclusive

11:15 AM Exclusive, Diffraction, and Tagging

11:20 AM Jets and Heavy Flavor

11:25 AM → 11:40 AM Status of project detector R&D and prospect for generic detector R&D

Conveners: Patrizia Rossi (Jefferson Lab), Thomas Ullrich (BNL)

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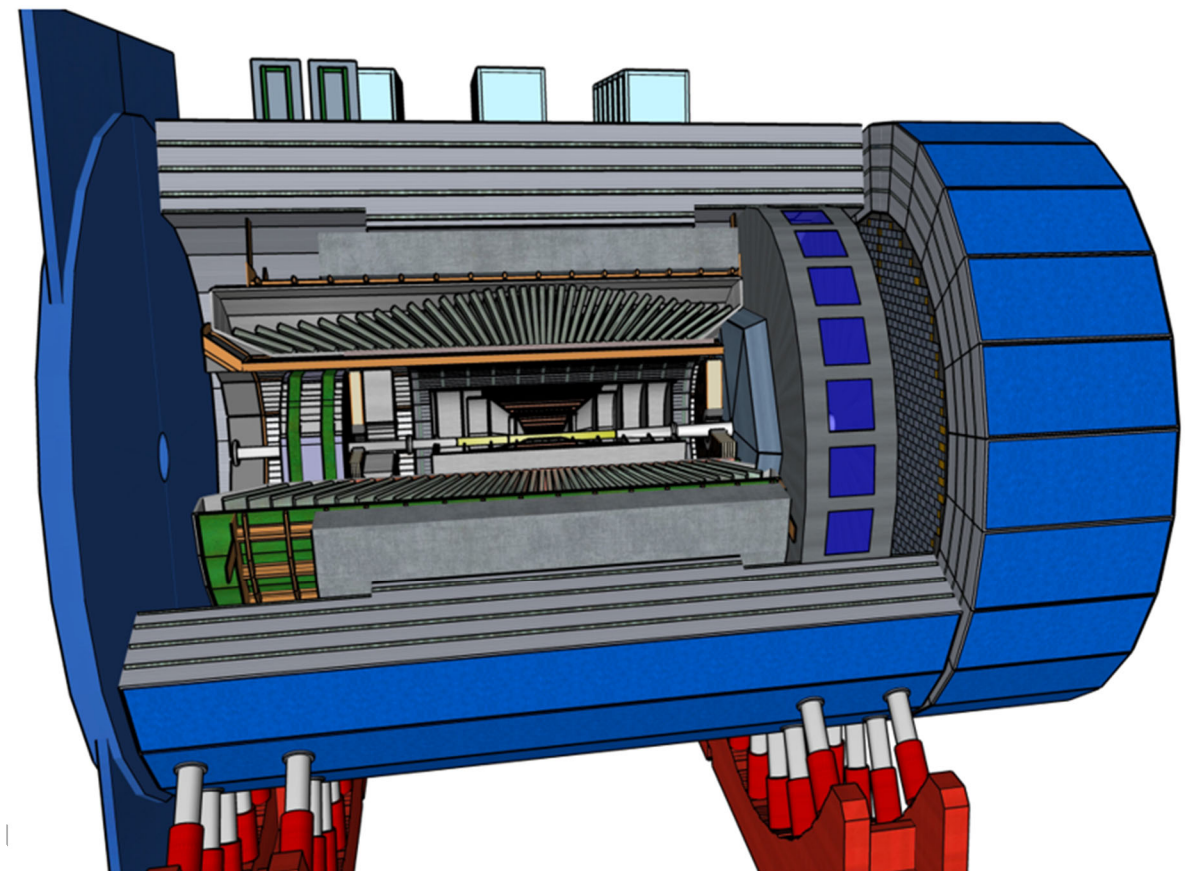
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11:40 AM → 12:00 PM Q&A/Discussion

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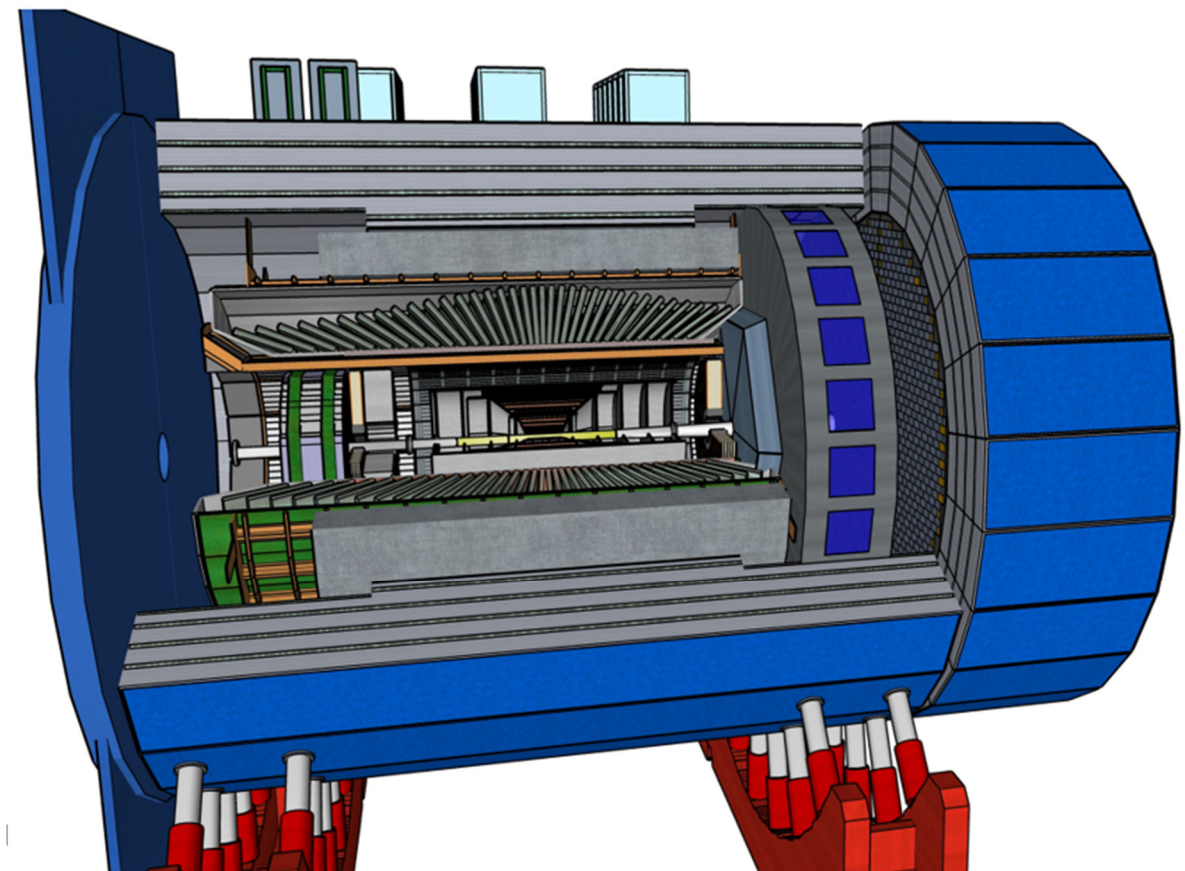
Moving Towards a Collaboration

- The long-term goal of these meetings is the formation of a new scientific collaboration for the first EIC detector.



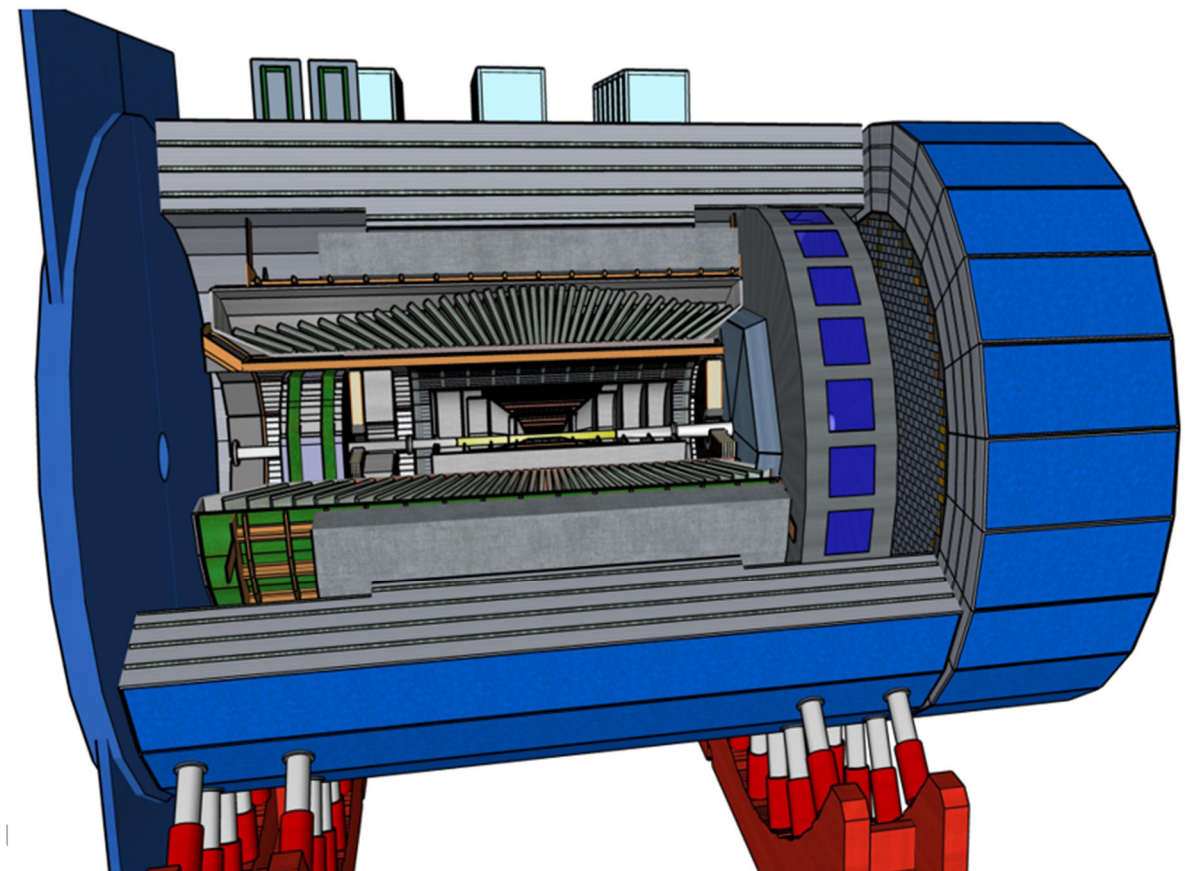
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 - Evolution of the ECCE reference design to a Detector-1 technical design
 - Prepare for CD-2/3A



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 - Evolution of the ECCE reference design to a Detector-1 technical design
 - Prepare for CD-2/3A
- First steps:
 - This meeting
 - Formation of joint Working Groups
 - Take advantage of the strength in both the ATHENA and ECCE collaborations



Joint Detector Working Groups

Tracking:

Xuan Li xuanli@lanl.gov
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Far Backward:

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Jaroslaw Adam jaroslavadam299@gmail.com

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David Lawrence davidl@jlab.org
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Andrea Bressan Andrea.Bressan@cern.ch

Global/Integration:

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Jin Huang jhuang@bnl.gov
Thomas Ullrich thomas.ullrich@bnl.gov
Silvia Dalla Torre Silvia.DallaTorre@cern.ch

Joint Detector WG Global Charge

- The overall goal of the detector WG's is to optimize the ECCE reference design towards a technical design within the constraints of performance, cost and risk. In working towards this goal, the DWG's should collaborate with existing detector consortia (EICSC, EEEMCAL, MPGD, DIRC, DRICH, AC-LGADs, etc.), all detector R&D efforts relevant for Detector-1, and any additional efforts within the EIC scientific community.

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- The WG conveners will lead a discussion to identify any non-trivial differences and/or aspects in need of further optimization.
- For each non-trivial difference working groups will then prepare a pro/con list accounting for technical performance, risk and cost. The resolution of non-trivial differences should be discussed in close consultation with the Global detector/integration WG, physics working groups, the EIC project, relevant detector consortia and R&D efforts.

Joint Physics Working Groups

Simulation Production and QA:

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Zhoudunming (Kong) Tu zhoudunming@bnl.gov

Wouter Deconinck wouter.deconinck@umanitoba.ca

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Paul Newman paul.richard.newman@cern.ch

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Charlotte Van Hulse cvanhuls@mail.cern.ch

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Ciprian Gal ciprian@jlab.org

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- Over time, extend the existing scope of physics processes being studied, with an emphasis on those processes called out by the DPAP as being significant for the science program and yet not studied by the proto-collaborations.

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- We have asked these two groups to work together to address the issue of software and analysis frameworks, both in the short- and long-term.

Global/Integration

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- The global charge to the Global/Integration WG is as:
 - Work with the project and the joint working group to develop a detailed, integrated technical design of the project detector. This includes the integration of various detector systems, the necessary supports and services, and the requirements imposed by the ability to service the detector between EIC running periods.
 - Work with the detector and physics working groups, as well as project management, to ensure that the integrated project detector remains capable of the full science program outlined in the EIC Whitepaper and NAS report. Where compromises need to be made in the integration of the project detector, ensure that the proper simulations studies are completed to ensure they do not unduly compromise the EIC science program.

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- Work to provide input to the Global/Integration WG on the reference design has already started (geometry DB, CAD, Sketchup)
 - See talk by Tanja Horn

Detector-1 Resources

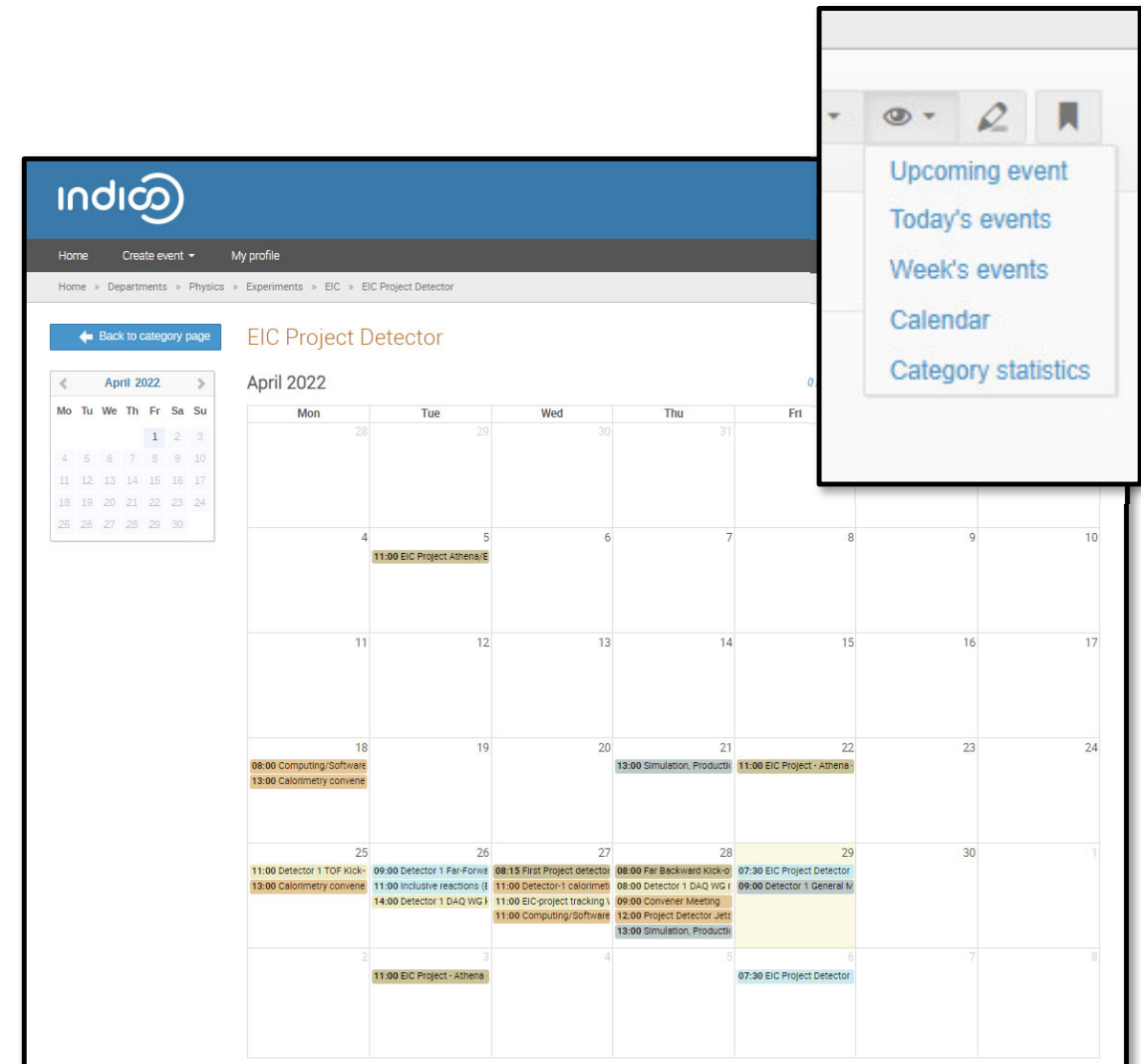
- New Indico section for Detector-1 WG's:
 - <https://indico.bnl.gov/category/402/>
- New mailing lists (lists.bnl.gov)

eic-projdet-SimQA-l@lists.bnl.gov
eic-projdet-FarBack-l@lists.bnl.gov
eic-projdet-daq-l@lists.bnl.gov
eic-projdet-FarForw-l@lists.bnl.gov
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eic-projdet-CPID-l@lists.bnl.gov
eic-projdet-tracking-l@lists.bnl.gov

- Wiki available, addtl. resources can be made available as needed
 - Slack/Mattermost channels, etc.
 - Need to be efficient during interim period

Indico calendar for all Detector-1 meetings can be connected to your calendar (View->Calendar)



Towards CD-2/3A

- CD-2 establishes a baseline for scope, cost and schedule
 - Must convince a panel of experts that our preliminary design is feasible from a technical, cost and schedule standpoint.
 - This includes a Pre-Technical Design Report
- Timescale is ~Fall 2023
- More in the talk from Elke/Rolf

CD-2 – Approve Performance Baseline

What is the function of CD-2?

CD-2 is an approval of the preliminary design of the project and the baseline scope, cost, and schedule. The baseline is the definitive plan that the project will be measured against using Earned Value metrics for cost and schedule and Key Performance Parameters (KPPs) for technical performance.

What is a project expected to prepare for CD-2 approval?

- A complete and independently reviewed preliminary design with a definitive scope, cost, and schedule. Cost and schedule information is supported by a resource loaded schedule that is of a quality that lends itself to measuring Earned Value.
- Update of the documents initially submitted at CD-1 such as the Acquisition Strategy and Project Execution Plan.
- Demonstration that EVMS has been fully implemented through measuring performance against a fixed baseline, formally processing changes, analyzing cost and schedule variances, and producing the metrics required for DOE's project reporting system (PARS-II).
- Final Environmental Impact Statement or Environmental Assessment and Finding of No Significant Impact (FONSI).

What impacts does CD-2 approval have on a project?

CD-2 serves as an approval of the project's plan and provides some additional justification for receiving timely funds, thereby avoiding funding induced performance problems. The project begins reporting Earned Value cost and schedule performance metrics to DOE.

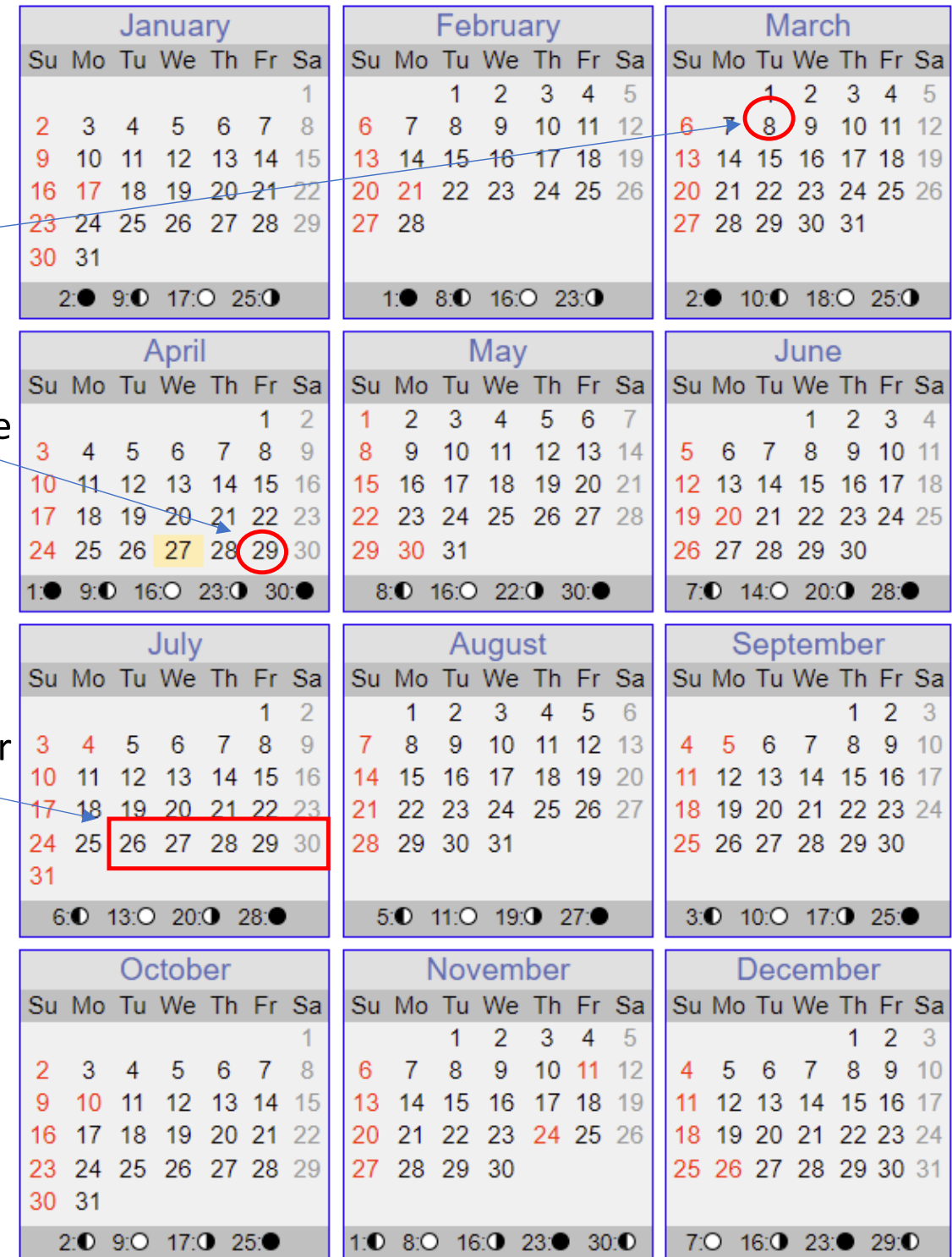
Path to a Collaboration

- Joint Detector-1/WG meetings now through July
 - Gradually phase out ECCE and ATHENA specific meetings
- Survey institutions interested in being involved in Detector-1
 - Confirm intent of ATHENA/ECCE institutions, solicit new members
 - Verify in-kind contributions
- Collaboration formation meeting right before/after EICUG summer meeting:
 - Establish Institutional Board
 - Set up committee to draft bylaws, collaboration name, etc.
 - Establish procedures for leadership elections ***later in 2022***

DPAP
Closeout

You are here

EICUG Summer
Meeting



Concluding Remarks

- First steps towards the formation of a new scientific collaboration
- Expect Detector-1 meetings on a roughly bi-weekly schedule
 - We will adopt a rotating schedule to try to accommodate all regions as best as we possibly can
 - Meetings will be recorded and posted for those that cannot attend
- The “action” will be in the WG meetings
 - Join the mailing lists, follow Indico
 - Kick-off meetings continue, WG’s will further refine their focus
 - **Everyone is welcome!!**
- **This is a very exciting time!**

ANY
QUESTIONS?



BACKUP