

INFRADEV – Work package 2

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ETPP meeting, Barcelona

July 19, 2022; jo@nikhef.nl



WP2 Organization, Governance and Legal Aspects

This work package focuses on issues related to organization, governance and legal aspects. The activity tries to reconcile international, national and regional political and financial priorities

This includes

- the framework related to the definition of ET as a **legal entity**
- and to facilitate the **geographic enlargement** of the ET consortium

INFRADEV Proposal, page 145

WP2 will contribute to the political convergence across stakeholders on critical decisions affecting the main aspects of the research infrastructure like, for example,

- the final ET RI layout
- site selection
- total cost

In addition, WP2 has the mandate to define the formal connections with other GW observatories and scientific communities

Co-coordinators: J. O'Byrne (STFC UKRI), F. Ferroni (INFN) and J. van den Brand (Nikhef)

Job de Kleuver (BGR secretary) was added on March 29, 2022 as interface to BGR

WP2 Objective

WP2 has a relatively low amount of 24.8 person months allocated. A budget of k€ 55 is available to involve a professional organization in the preparation of the legal documents

Work package number	2	Lead beneficiary			NIKHEF		
Work package title	Organization, Governance and Legal Aspects						
Participant number	3	6	14				
Short name of participant	INFN	NIKHEF	UKRI				
Person months per participant:	10	10 +15 (EC)	4,8				
Start month	1			End month	48		

INFRADEV page 145

Total 24.8 pm
Relatively small number

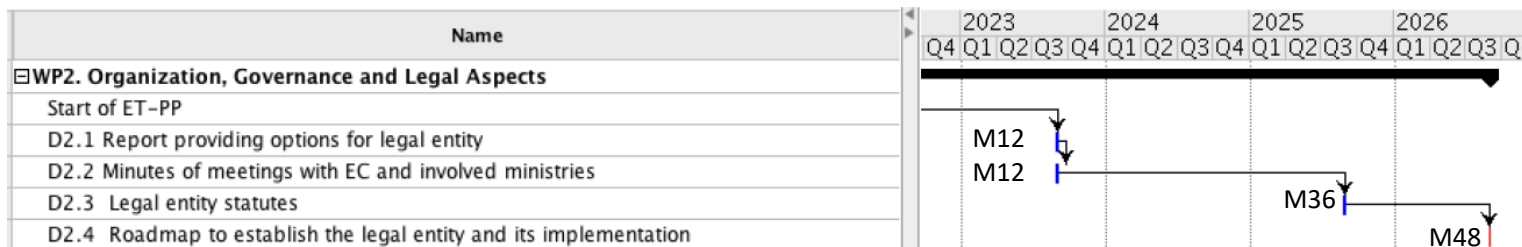
Participant Number/Short Name NIKHEF		
	Cost (€)	Description of tasks and justification
Subcontracting	155000	Review of civil construction costs by professional organization (100k€) Preparation of ET legal documents by professional organization (55k€)

WP2 Description of the work

The main goal of this work package is to provide all necessary input for the political processes related to site selection, legal entity and governance

The main deliverables

- Preparation of the required legal forms and these include the governance model documents
- Main principle will be that structure follows function and this requires close cooperation between scientific, technical, legal and financial experts in order to allow a stable and fruitful long term operation of the facility
- The activity includes the development of options on scientific and user related legal form requirements, development of options on scientific and user related governance model requirements
- The preparation of legal form and governance model documents
 - Based on consensus requirements
 - Align as temporal funding profiles in Europe
 - Perform financial engineering for the construction phase
- Finally a **business plan** will be set up for the operation phase



Note: WP2
has no
milestones

ESFRI lifecycle approach

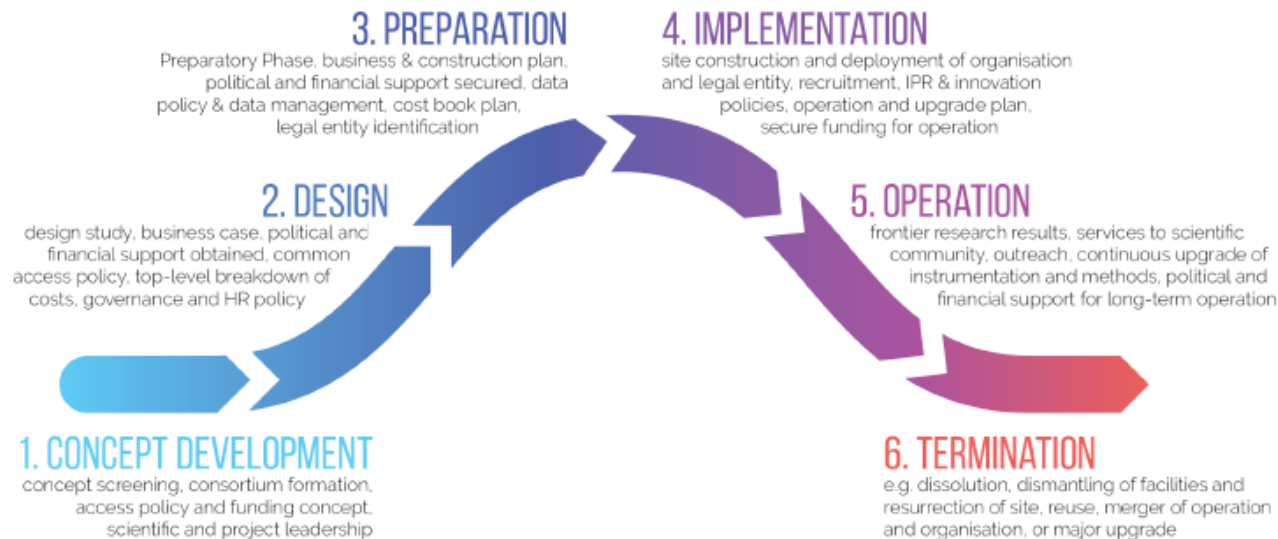
ESFRI requires additional deliverables for the Preparatory phase. In this phase the RI is developed as a fully-edged organization

ESFRI Preparatory Phase

- Business & construction plan
- Political and financial support secured
- Data policy & data management
- Cost book plan
- Legal entity identification

The **PREPARATION** – carried out at institutional, national, European or international level – is directed towards developing the RI as a fully-edged organisation. Completion of preparation for the RIs in the Roadmap is often carried out through a Preparatory Phase contract under FP resulting in a business plan, a legal entity, an agreed role for the RI also in the context of the landscape of existing RIs at European and global level, and secured funding safeguarding the financial sustainability for the Implementation Phase and extending also for the Operation Phase. Some projects face a gap of funding between the end of their Preparatory Phase contract and the final decisions for implementation – legal, funding and construction – which can lead to the establishment of *ad hoc* interim legal entities and governance to assure appropriate funding to complete the preparation and start construction.

ESFRI Roadmap 2021 Public Guide



Timeline must be set

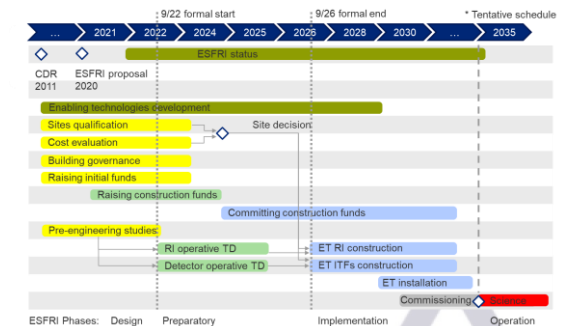


FIGURE 1: LIFECYCLE APPROACH OF A RESEARCH INFRASTRUCTURE

Organization

ETIC – Einstein Telescope Infrastructure Consortium

Next Generation EU investment proposed of 100 M€ focused on ET enabling technology and Sardinian site candidature support

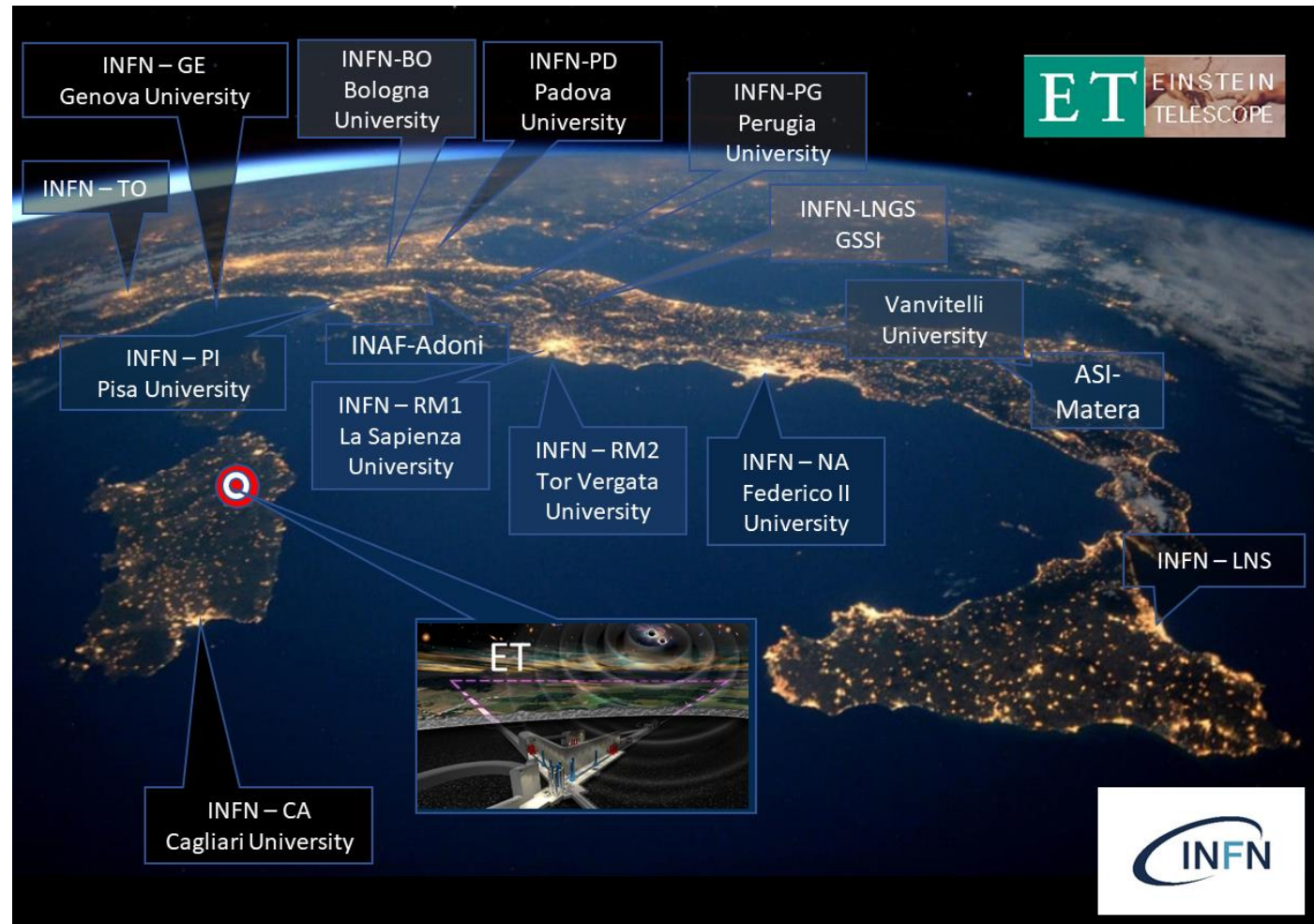
Support for

- 8% Human resources
- 30% Scientific apparatuses
- 12% Distributed infrastructures
- 28% ET design
- 12% Training

Additional 5 M€ funding on the same framework for the site characterization

Feedback expected soon

Discussion ongoing on an Italian share toward ET realization



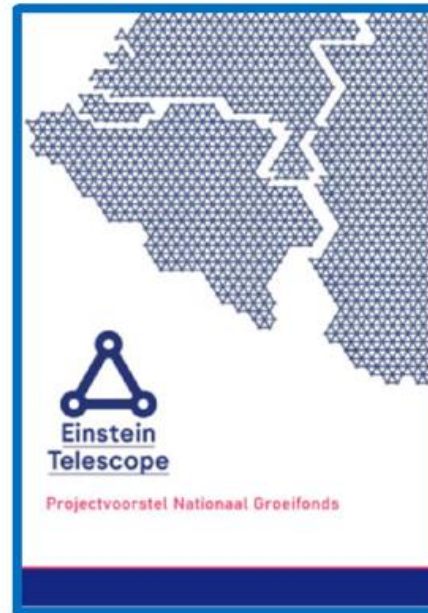
Einstein Telescope in Euregio Meuse-Rhine (EMR)

Einstein Telescope approved by Dutch National Growth Fund on April 14, 2022. Development funds of M€ 42 available to prepare bid book, while M€ 870 available in case EMR region hosts ET



**Connected institutions in:
Belgium,
Germany &
the Netherlands**

Nationaal Groeifonds (the Netherlands)



***Emphasis on
potential
socio-economic
Impact***

***Submitted by
OCW Ministry
(EZK Ministry support)***

***Supported by ~70
Dutch
Industries/institutions***

In October 2021 the Netherlands submitted large funding proposal within context of the 'Nationaal Groeifonds'. Decision in April 2022.

Includes 42 M€ for geology, R&D & organization as well as possible Dutch share towards ET realization

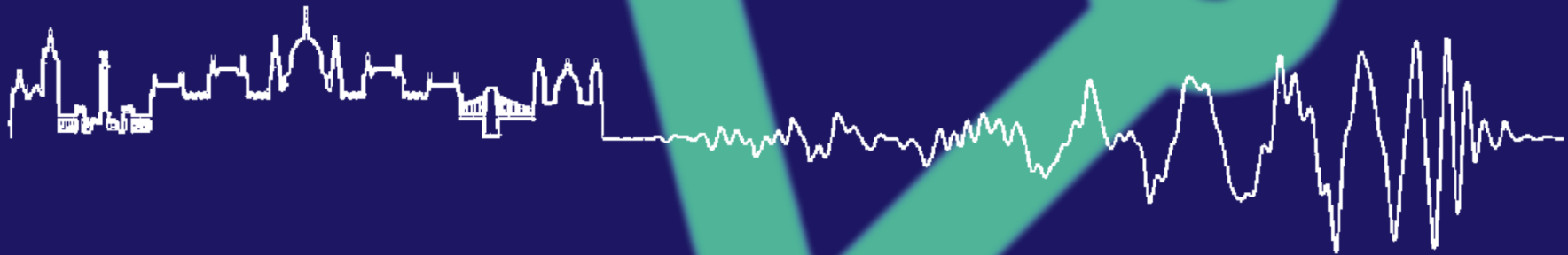
Formal birth of the Einstein Telescope Collaboration

XII Einstein Telescope Symposium, Budapest June 7-8, 2022

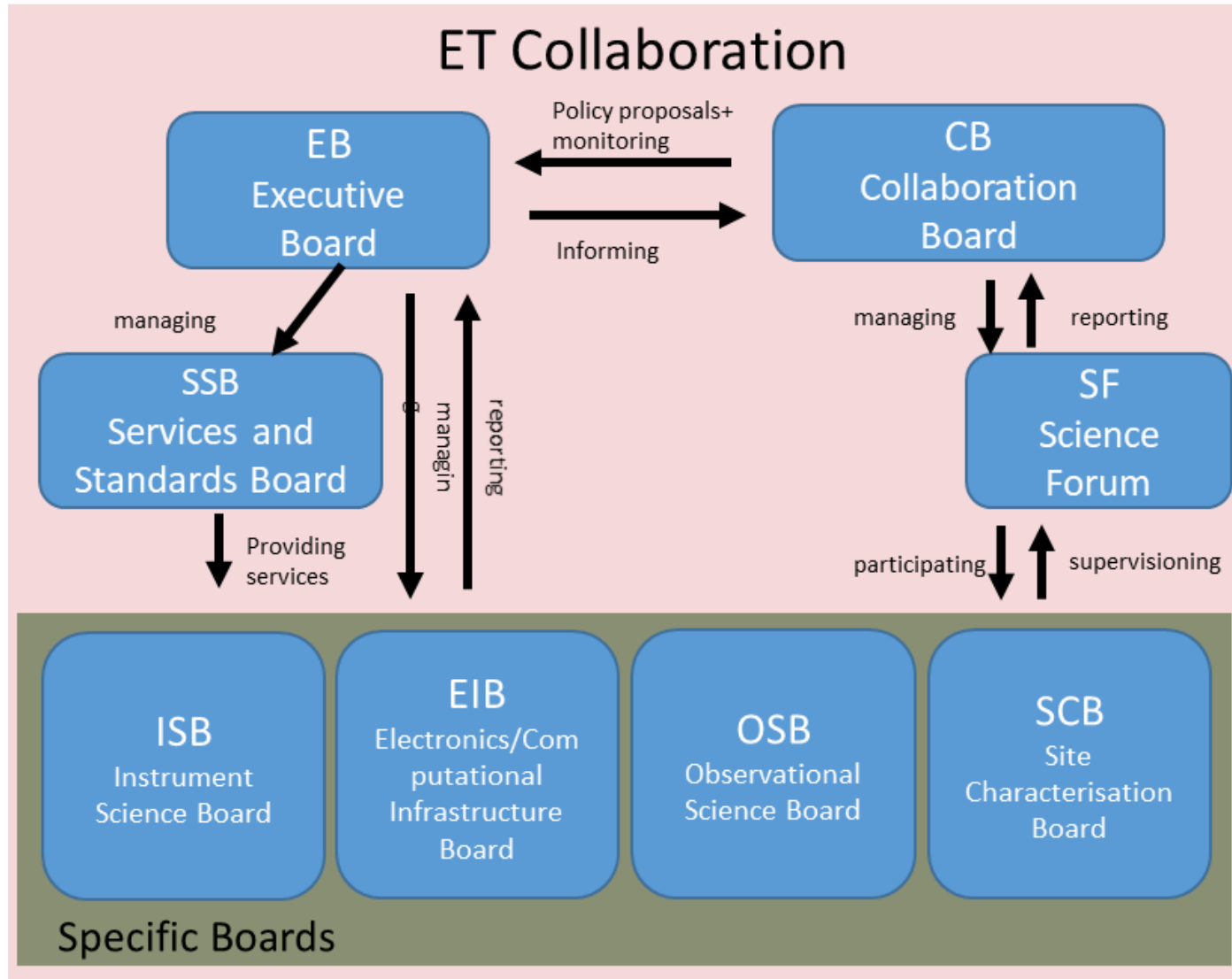
See <https://indico.ego-gw.it/event/411/>

ET
EINSTEIN
TELESCOPE

XII Einstein Telescope
Symposium



Einstein Telescope Collaboration



Governance in evolution

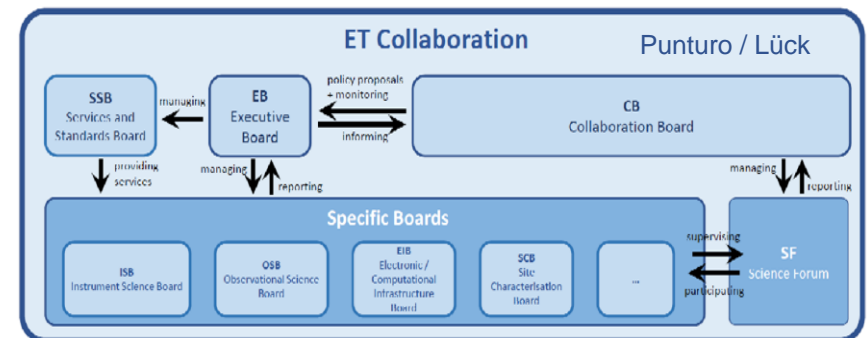
Entities enclosed in solid boxes have been instantiated. Dashed boxes represent work in progress
Large part of activities is now covered by ET Collaboration. Focus on build-up of ET Observatory

What services do we want the ET Observatory to be responsible for?

- ET Project activities, procurement, legal office, ...
- Design office and Engineering Department
- Communications
- ...

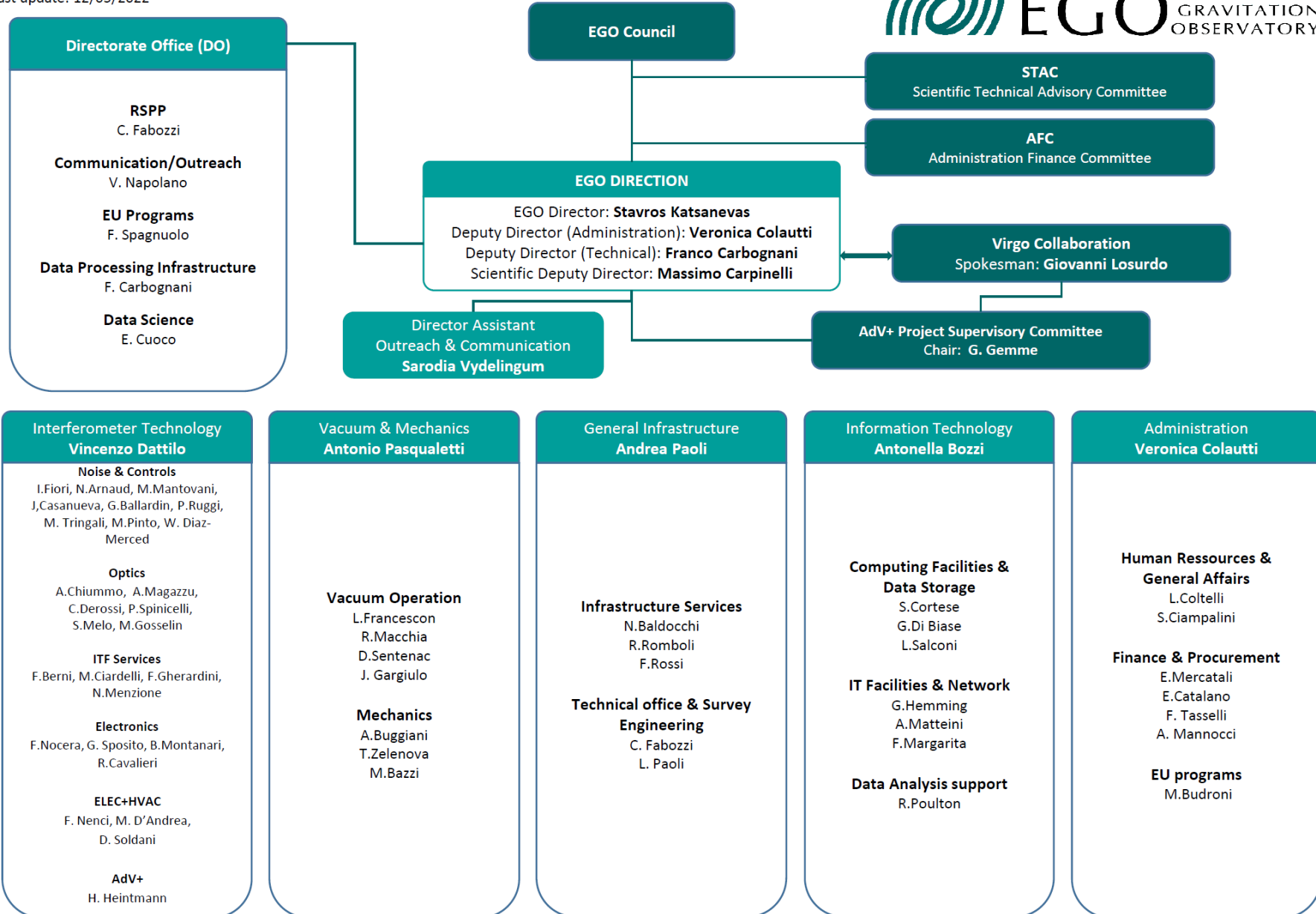


Let's compare to EGO/Virgo and LIGO/LSC



EGO organization chart

Last update: 12/05/2022

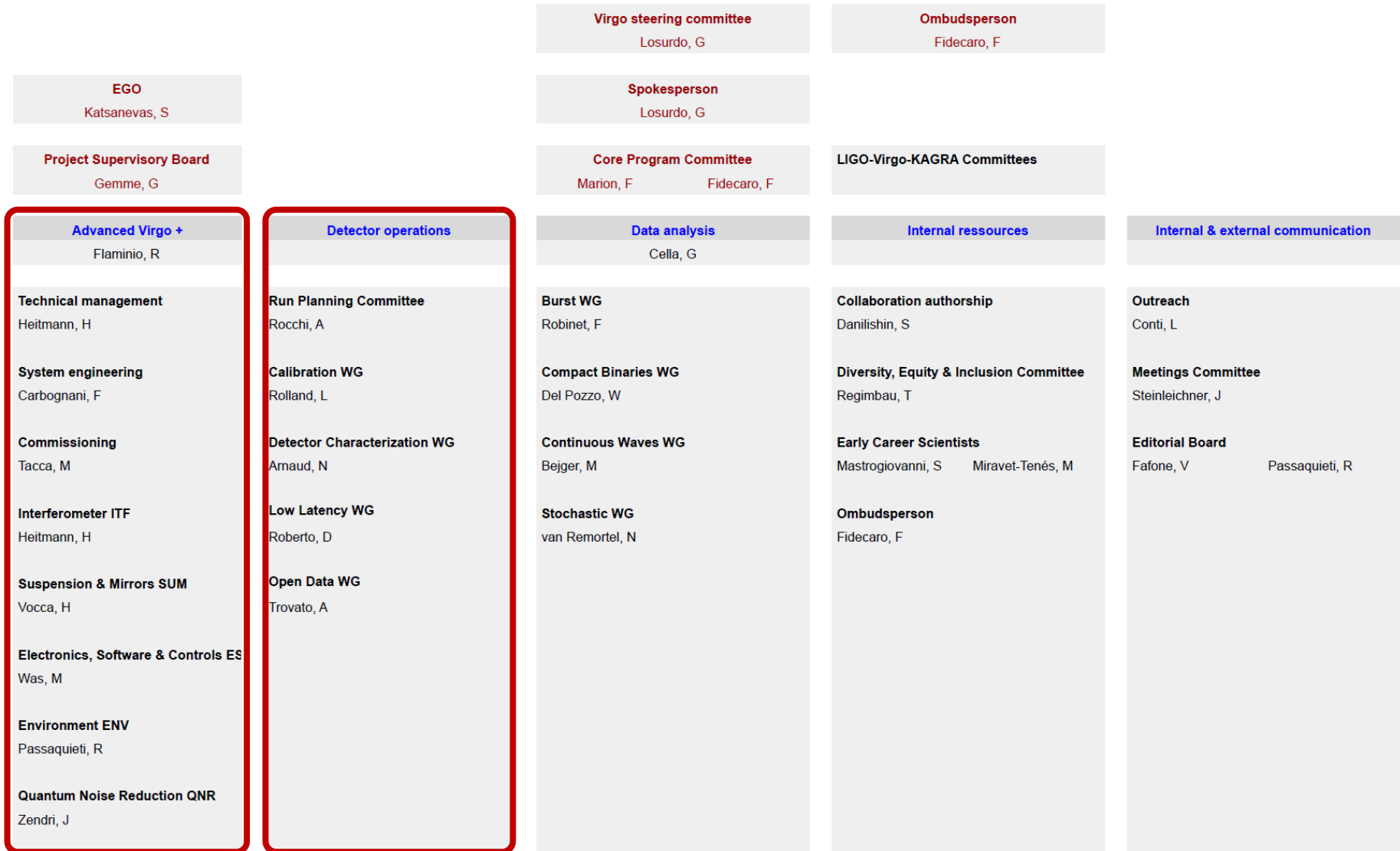


Virgo organization chart

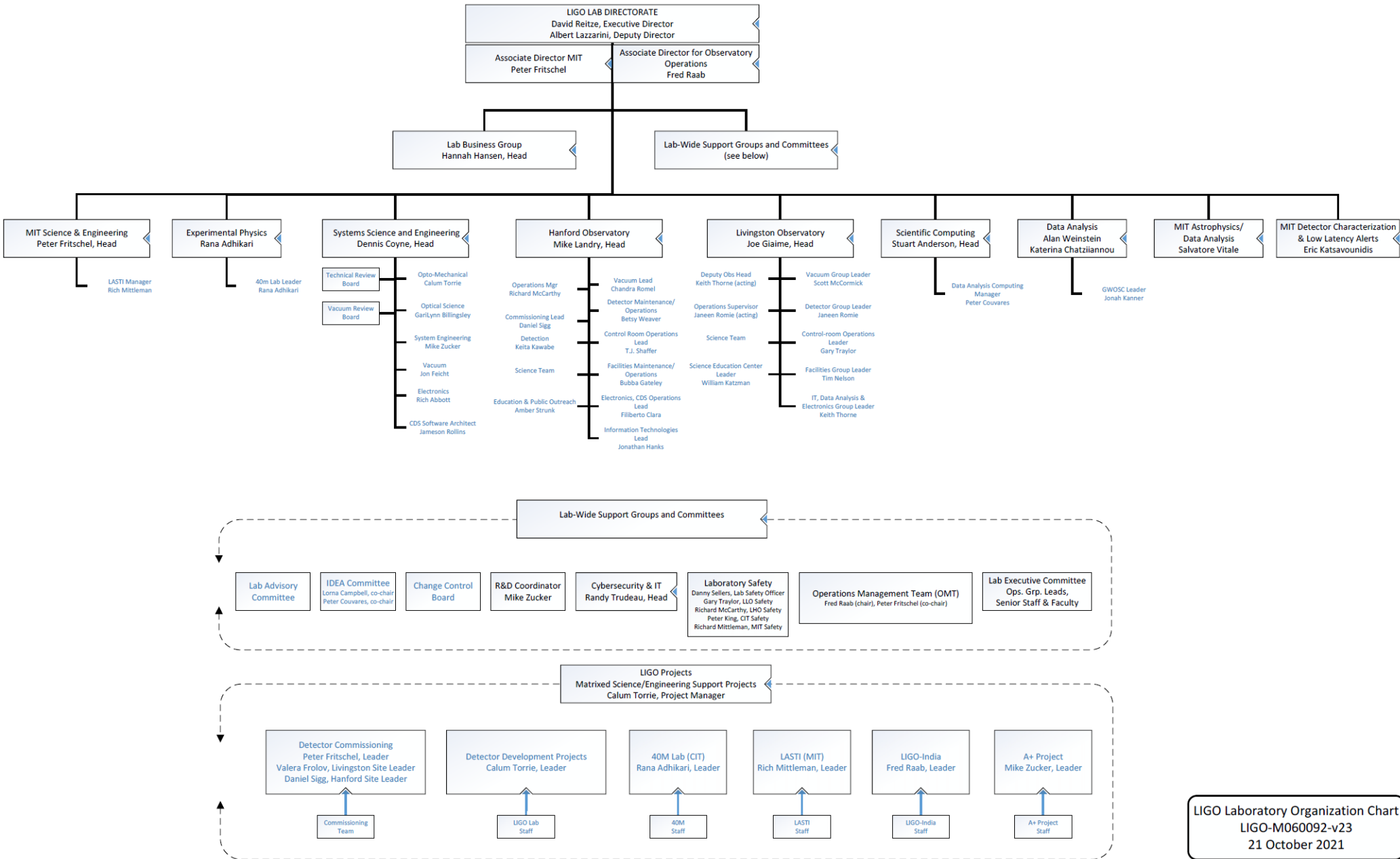
Virgo roles and responsibilities

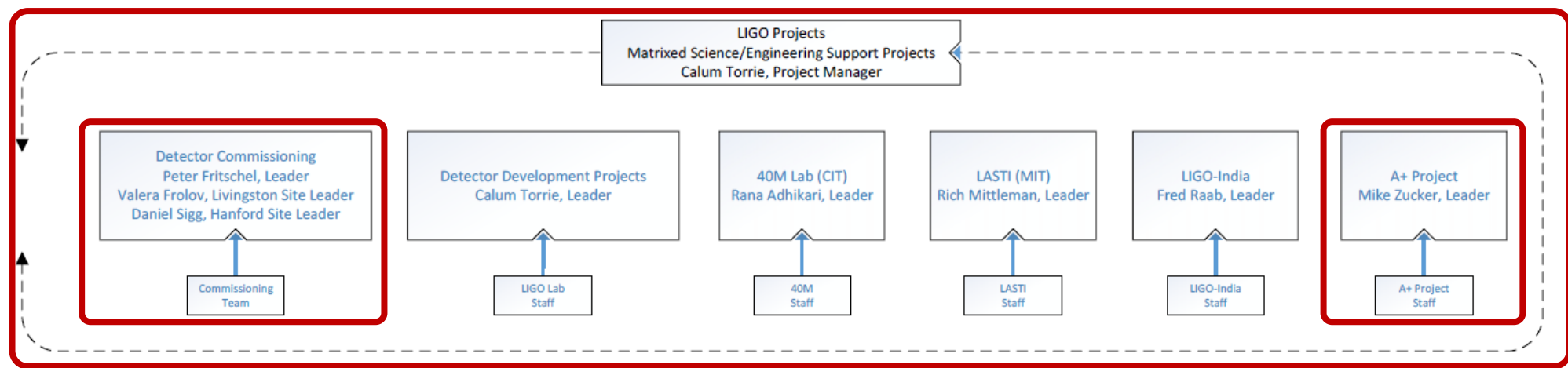
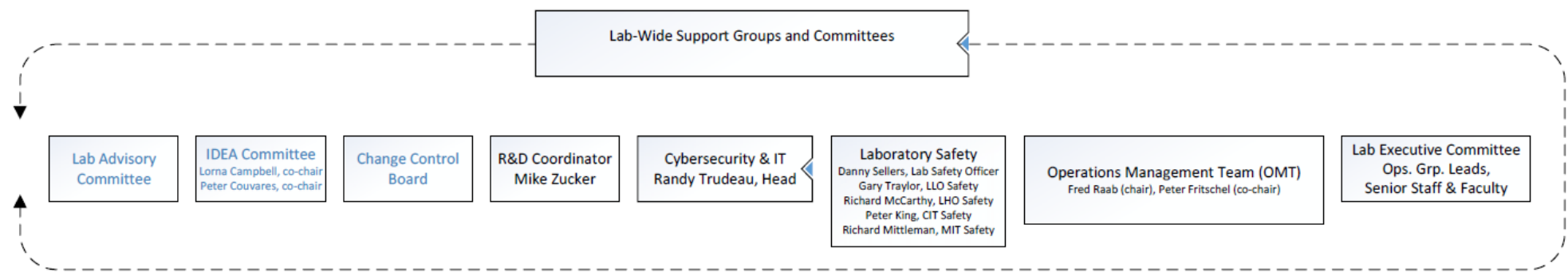
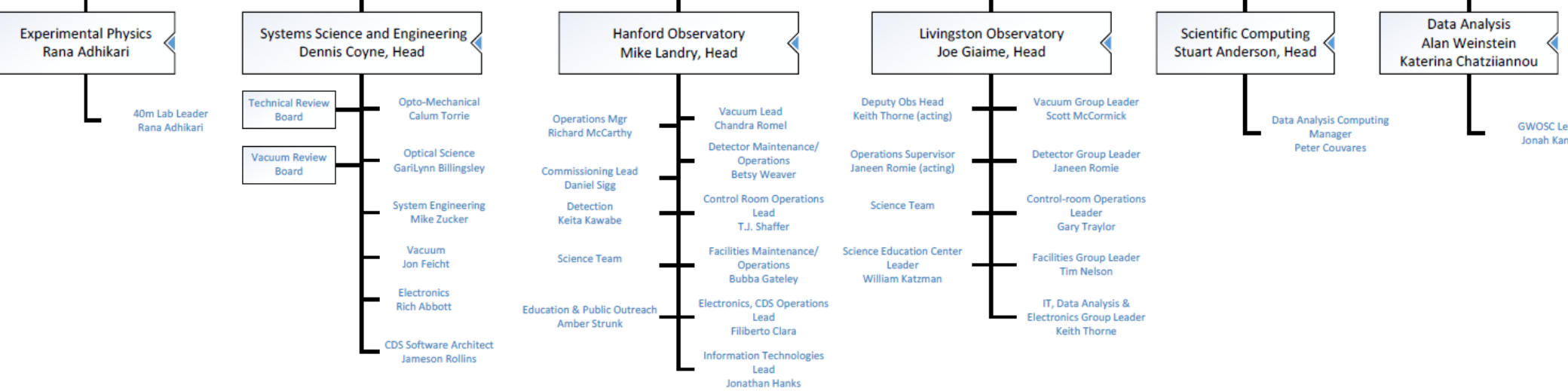
Date: 5/12/2022

Source: <https://docs.google.com/spreadsheets/d/1skVL7hsmc13axxrSfez0N9ureCJiQhDZkQxvvozAUl0/edit?usp=sharing>



LIGO Laboratory organization chart





LIGO Scientific Collaboration organization chart



LIGO-Virgo-KAGRA Committees

Council
Penn, S [MT]

Ombudsperson
Tanner, D

Spokesperson
Brady, P [MT]

Management Team
Brady, P [MT]

Program Committee
Ballmer, S [MT] Mandic, V

Observational Science Division
Sutton, P [MT]

Instrument Science Division
Fritschel, P [MT]

Quantum Noise WG
McCuller, L

Lasers & Auxilliary Optics WG
Quetschke, V

Optics WG
Reid, S Steinlechner, J

Seismic Isolation & Suspensions WG
Hammond, G

Adv. Interferometer Configurations WG
Brown, D

Control Systems WG
Vajente, G

Operations Division
O'Reilly, B [MT]

Calibration WG
Rollins, J Sun, L

Detector Characterization WG
Davis, D Hughey, B [MT]

Low-latency WG
Ghosh, S

Run Planning Committee
Shoemaker, D

Computing & Software WG
Couvares, P MacLeod, D [MT]

Support of Observatories Committee
Effler, A Savage, R

Open Data WG
Kanner, J

Communications Division
Hendry, M [MT]

Formal Education Committee
Cominsky, L Strunk, A

Informal Education & Outreach Committee
Stuver, A

Web Committee
Favata, M

LIGO Magazine
Green, A [Deputy] Middleton, H

Standards & Services Division
Cadonati, L [MT]

Diversity, Equity & Inclusion Committee
Frey, R

Meetings Committee
Heng, I

Elections & Membership Committee
Hammond, G Whelan, J

Academic Advisory Committee
Fulda, P Ohme, F

Speakers & Awards Committee
Gonzalez, G

Editorial Board
O'Shaughnessy, R Riles, K [MT]

Standards & Conduct Committee
Bailes, M

Governance in evolution

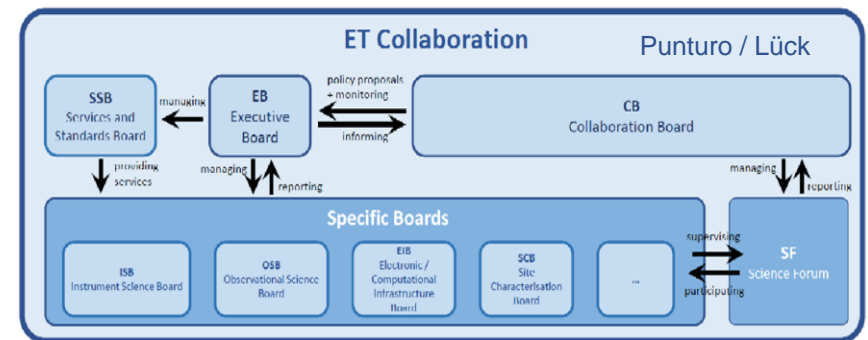
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Large part of activities is now covered by ET Collaboration. Focus on build-up of ET Observatory

Intergovernmental Organization (IGO), European Research Infrastructure Consortium (ERIC),
International non-profit member company

Note that all three governance models contain a strong central management

The final selection must be made by the Ministries, project leaders and funding agencies

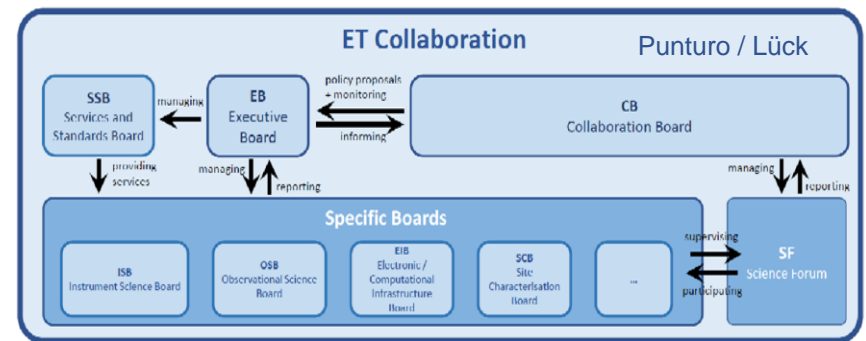
The path to the governance structure is similar no matter which of these three is chosen



Governance in evolution

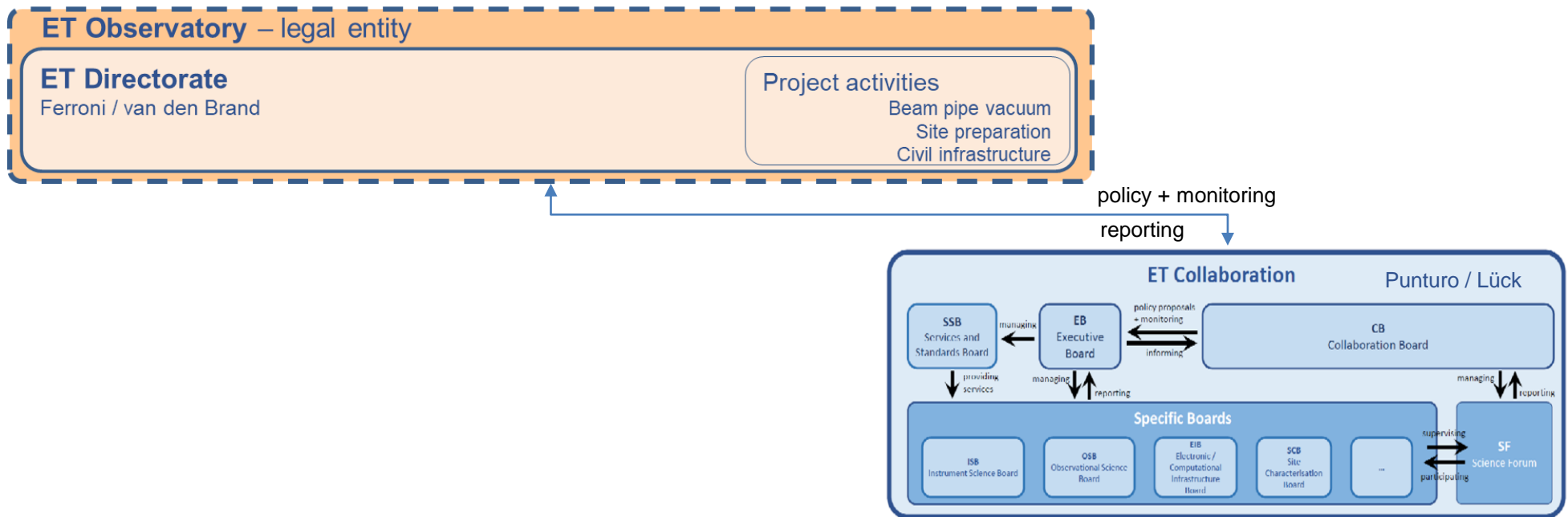
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The boxes are not to scale with respect to the number of persons involved ...



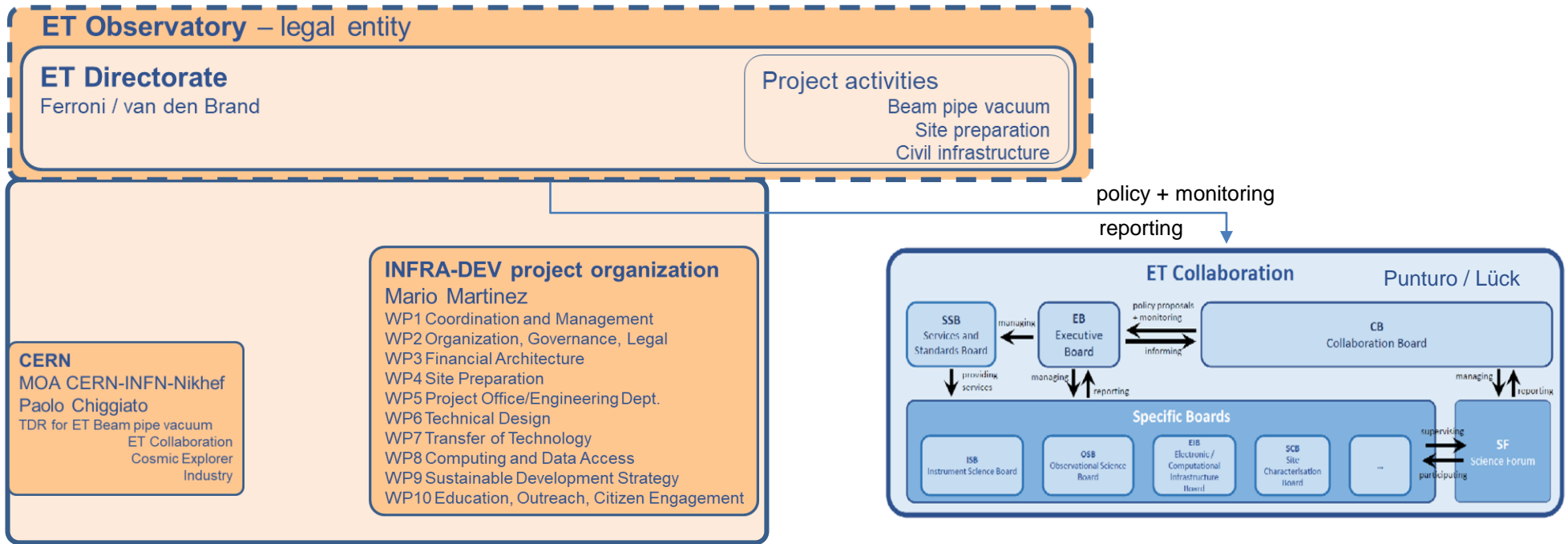
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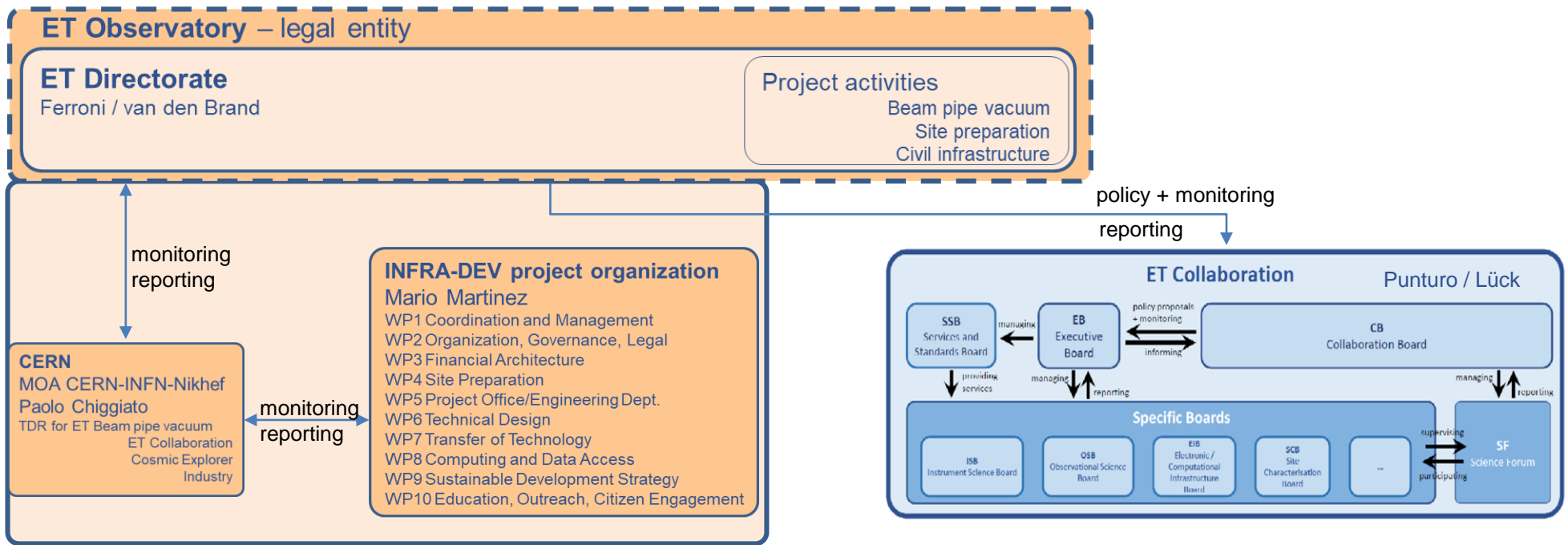
ET Project is a temporary activity

INFRA-DEV is a tool to implement organization

WP9 presents a unique opportunity

Governance in evolution

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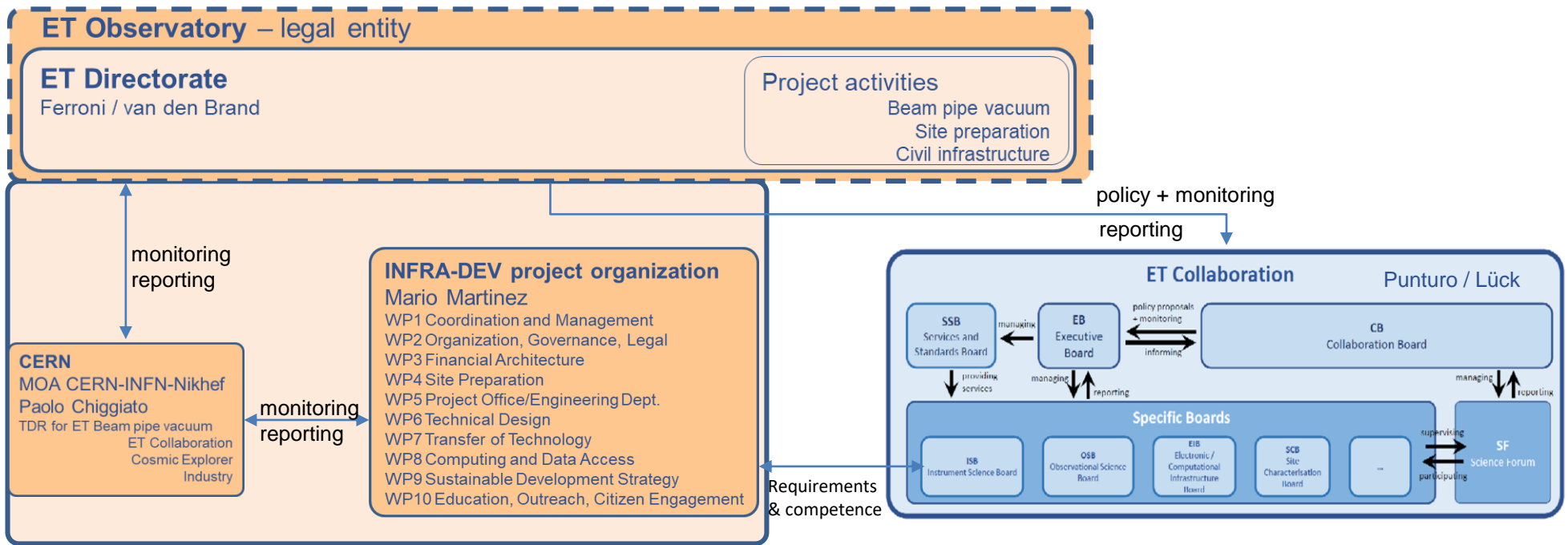


ET Project is a temporary activity

Suggestion: expand CERN MOA with additional ET member countries

Governance in evolution

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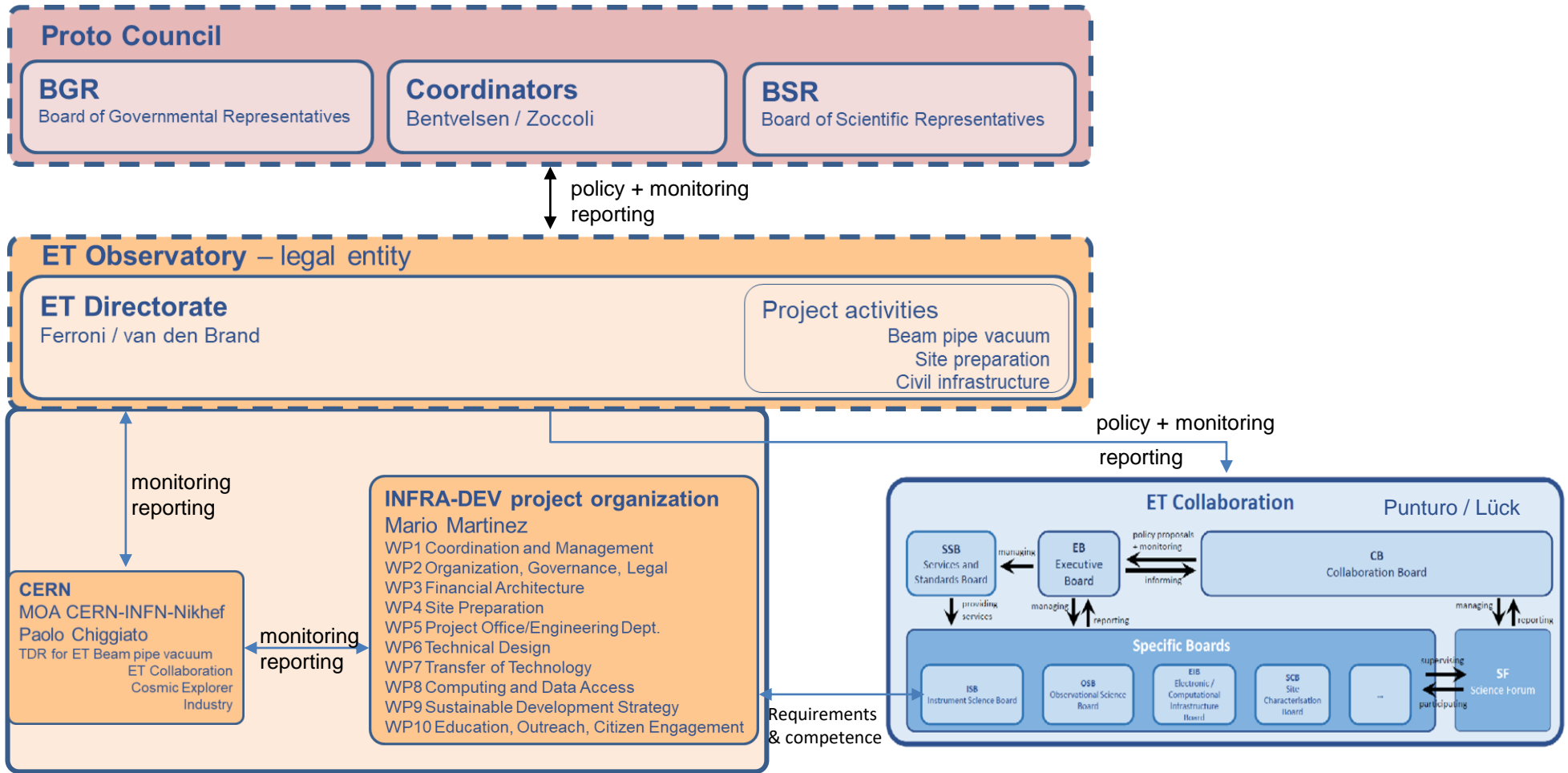


ET Project is a temporary activity

Suggestion: absorb INFRA-DEV coordinator in ET Observatory

Governance in evolution

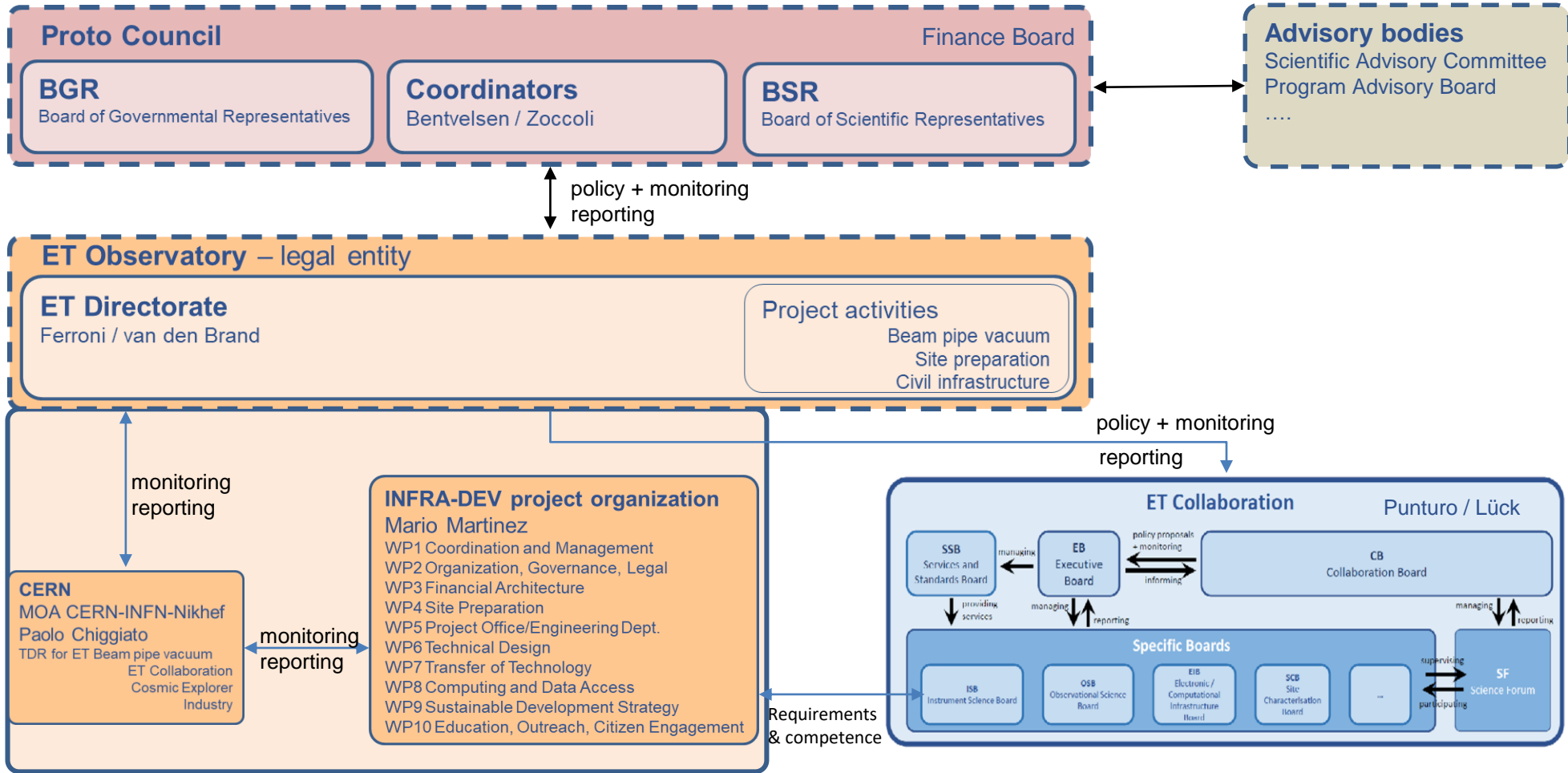
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ET Project is a temporary activity

Summary

How to proceed

Conclusions and next steps

- Define a WP2 preparatory working committee that consists of a relatively small group of people with adequate expertise on science policy
- Proposed composition: Miriam Roelofs (successor of Jo van den Brand), Nando Ferroni and Justin O'Byrne
- This committee should have effective interaction with the BGR in order to determine what is important for countries to have arranged. The liaison is Job de Kleuver
- This committee should propose what activities are most important to have worked out. Also it should define what activities we want to have directly managed by the legal entity. Then the governance model should follow from these considerations
- At a later stage a working group of legal experts will be involved for writing statutes
- The structure of the legal entity will mirror (part of) the CERN organization
- For the coordination of the INFRADEV project it should be considered to have Mario Martinez interact closely with the ET Project Directorate. Obviously such a decision should be taken by the Coordinators in consultation with BGR

Miriam Roelofs

Netherlands Science Organisation

Background

- Senior legal counsel/senior policy advisor

Experience

- 2008 – 2015 SKA governance development: pre-construction (ltd liability company) and long-term (IGO)
- 2015 JIVE ERIC
- 2017 – 2021 KM3NeT INFRADEV, work package leader
- 2020 – 2021 LOFAR in transition to ERIC

Current policy portfolio

- Knowledge, safety/security
- Open science, data management
- Knowledge transfer
- Public private partnerships

