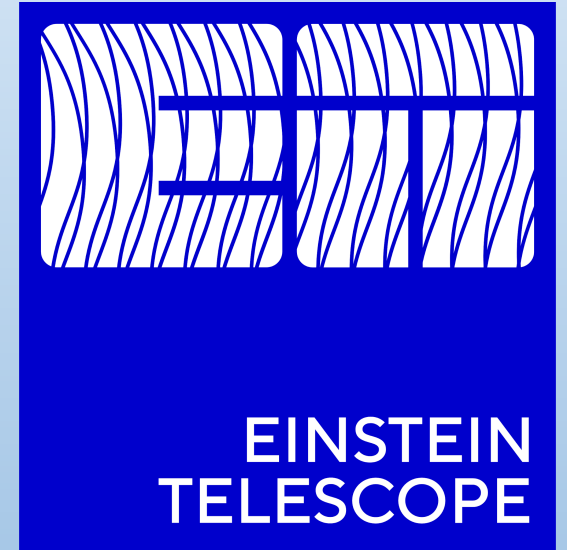




Horizon Europe:
Coordination and Support Actions



ET-PP Overview

Coordinators Report

2nd review meeting (RP2)

15/05/2025
Grant agreement: N° 101079696

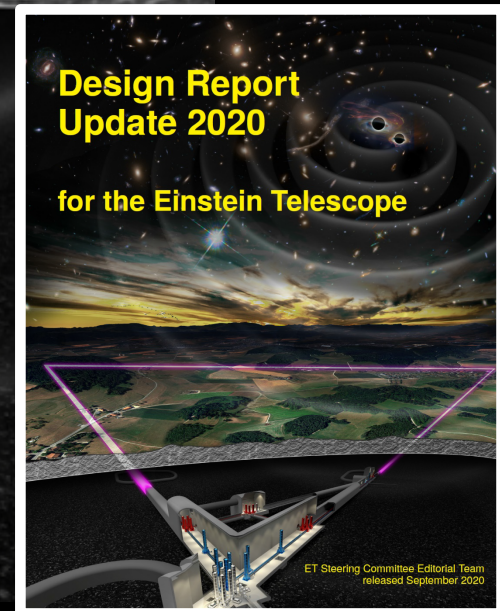
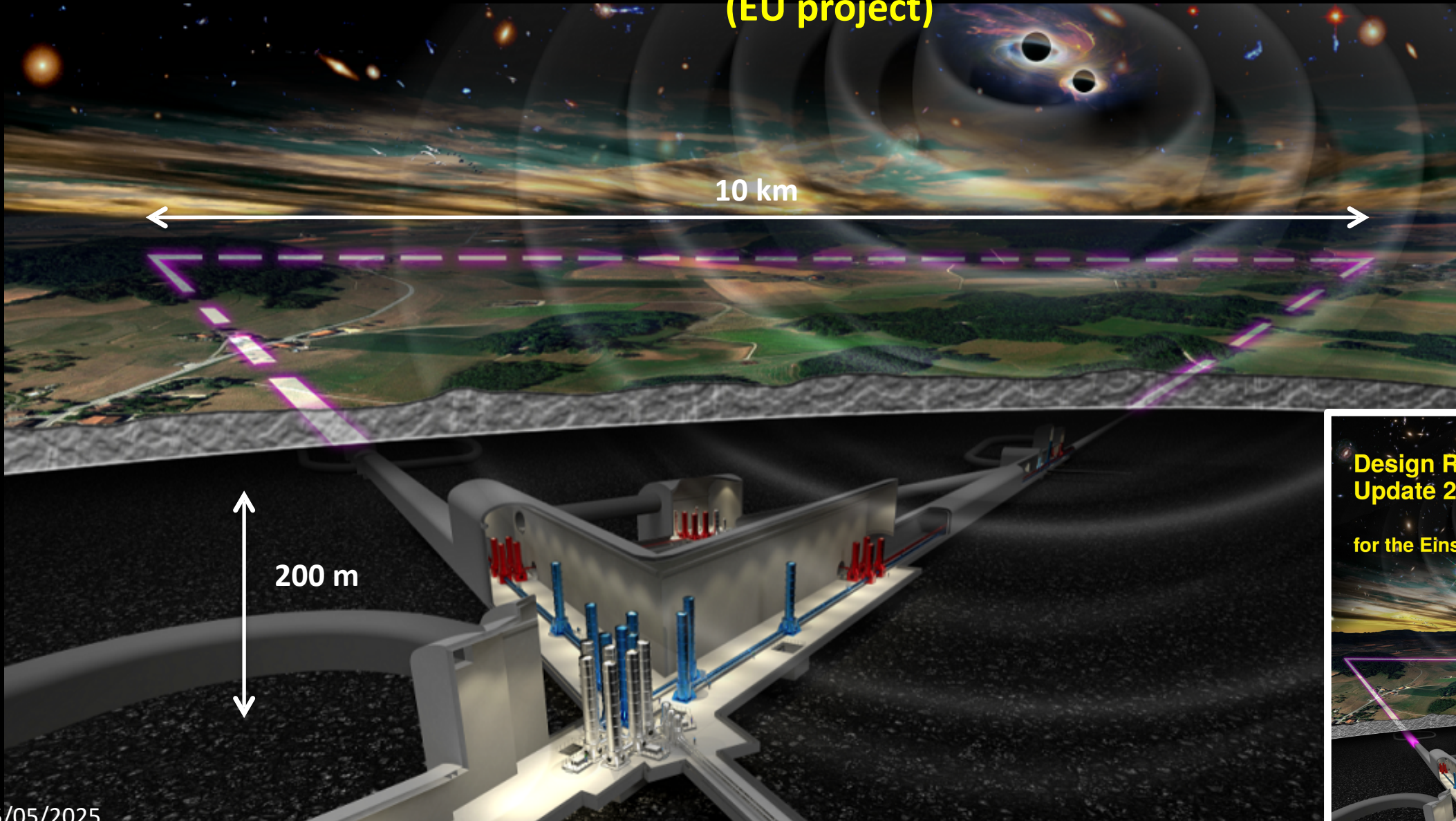
Outline

- Short introduction to ET experiment
- ET Organization
- ET-PP Consortium
- ET-PP Work packages
- ET-PP Coordination activities & Website
- RP2 Deliverables and Milestones
- Notes on resources & PMs
- Summary and next steps

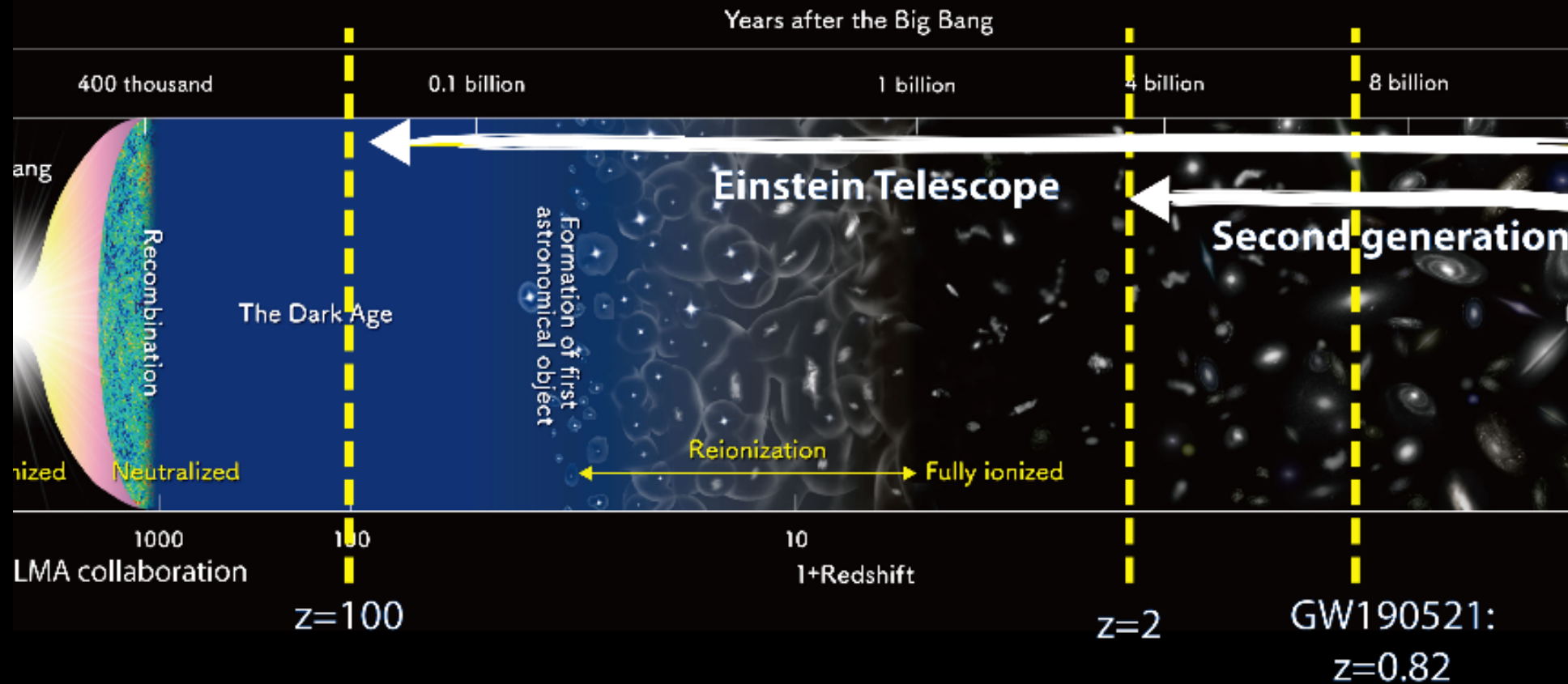


<https://einsteintelelescope.eu> **The Einstein Telescope**

(EU project)



Detection horizon for black-hole binaries



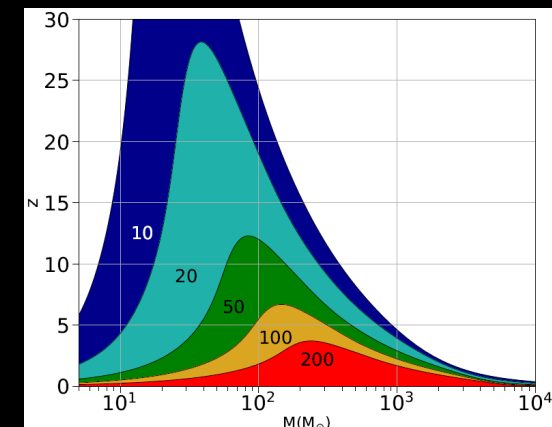
Huge rate of detections (about 1 per minute)

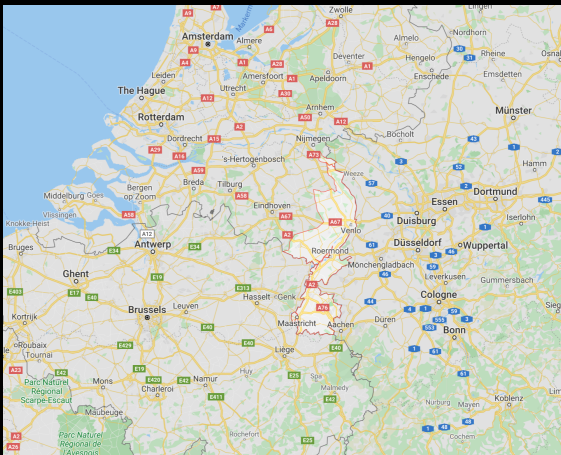
Extended redshift coverage up to the Dark Age

- Test for primordial BH origin
- Cosmology & Cosmography

Many events with very large Signal-to-Noise ratios

- Precision tests of GR predictions and detailed BH studies





@ Limburg area (border NL-B-D)

→ Promoted by Nikhef



@ Germany is very present in ET and ETpathfinders
They foresee a large investment in the following years

→ Exploring Saxony as a possibility

→ Ongoing geological characterization of the site

Locations ?

Intensive studies

@ Limburg,

@ Sardinia

@ Saxony [now integrated in ET-PP]

For characterize seismic,
environmental noise, etc ...



@ Sardinia

→ Promoted by INFN

What is currently happening in Lusatia
Extensive investigations for the DZA's Low Seismic Lab

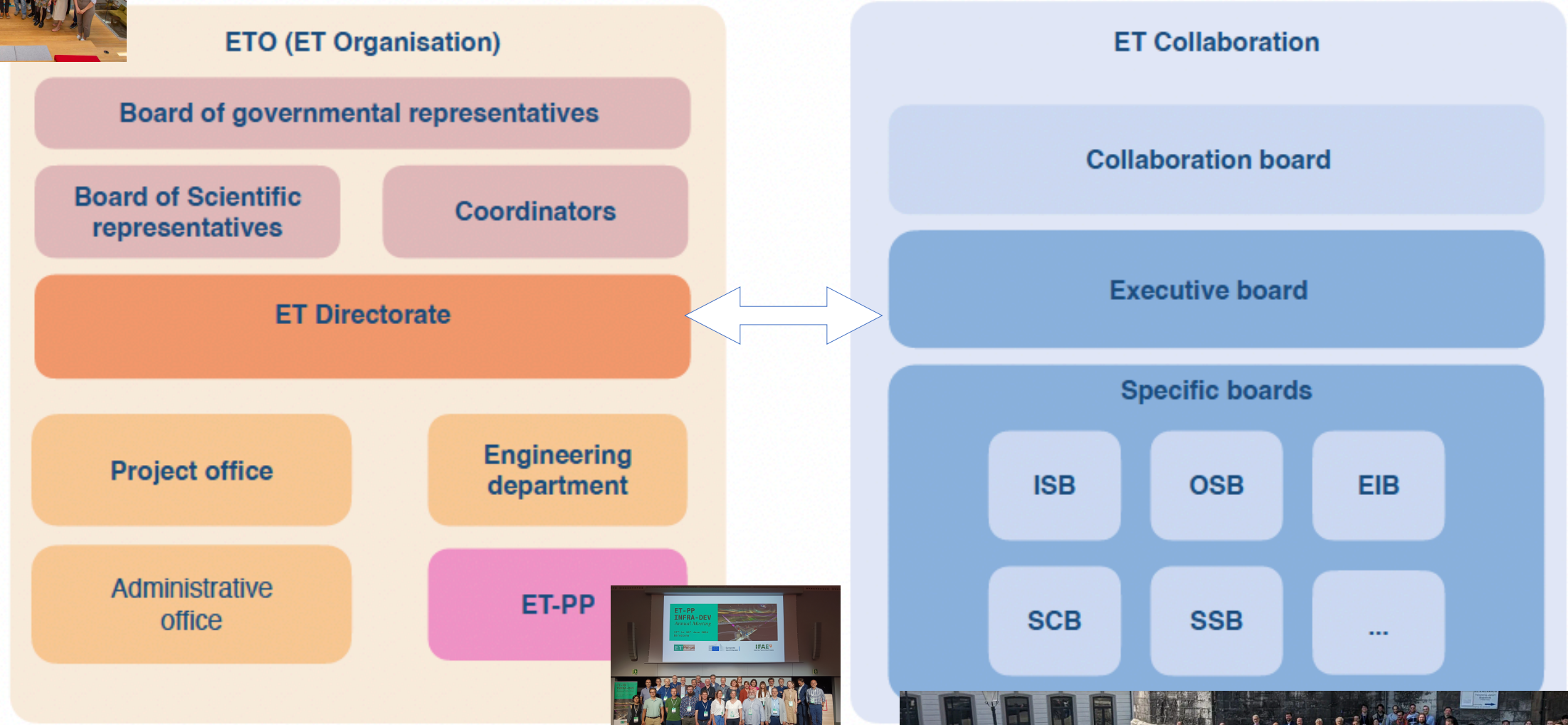
- Passive seismological experiment for the determination of the 3D shear wave model
- Deploy 100 seismic stations to measure the temporal variation of seismic noise and operated for at least 1 year.
- Conduct high-resolution 2D reflection seismic surveys of geological structures
- Acquire 2 km long reflection seismic profiles and intersecting near the drilling location DZA-01 for calibration. Perform detailed studies at future drilling locations.
- Analysis of the physical parameters of the drill cores
 - focusing on the Lusatian granodiorite and tectonic structures.
- Update the geological/hydrological map of the granite stock
- Develop a geological/tectonic model using data from the archive from the Lusatian Geological Survey.
- Measurement of seismic noise at three additional boreholes
 - to qualify the spatial and temporal noise level in Lusatia.
- Integrated Lusatian subsurface model and characterization of seismic noise

DESY | ET-PP INFRA-DEV Annual Meeting | Lussetia | Christian Stegmann, Barcelona, 17. June 2024

@ Lusatia

→ Promoted by DESY

ET experiment and ET Organization



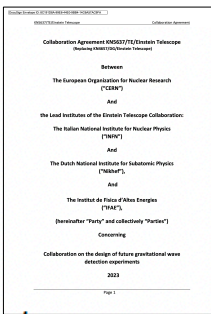
ET-PP is naturally framed inside ETO chart

ET research infrastructure, services, and vacuum system under ETO supervision

ET Scientific Collaboration dedicated to experiment design & scientific exploitation



Working with CERN

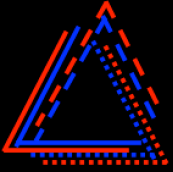


The Einstein Telescope is a 'recognised experiment' at CERN. We can access support provided it is cost neutral to CERN.

- **Vacuum pipe:** governed by an MOU between CERN, INFN, Nikhef and IFAE, CERN has started a dedicated activity to deliver the technical design report for the vacuum pipe in 2025. Currently a prototyp station is being built at CERN, supported by a large and efficient team.
- **Civil engineering:** an extension to the MOU has been agreed: CERN will provide consultancy and technical support towards the creation of the TDR for the civil engineering and technical infrastructure for 2026.
- **Document management:** project management requires specific tools, we are investigating the use of the CERN tool EDMS. CERN is providing support for a pilot study which has now started.
- **Engineering support:** technical designs at CERN are usually done by a large interdisciplinary team, including for example the safety group. We have organised several discussions with the relevant teams and are now formulating a plan for dedicated support for the design of the technical infrastructure.

Ongoing layout discussion

Branchesi, Maggiore et al. 2023

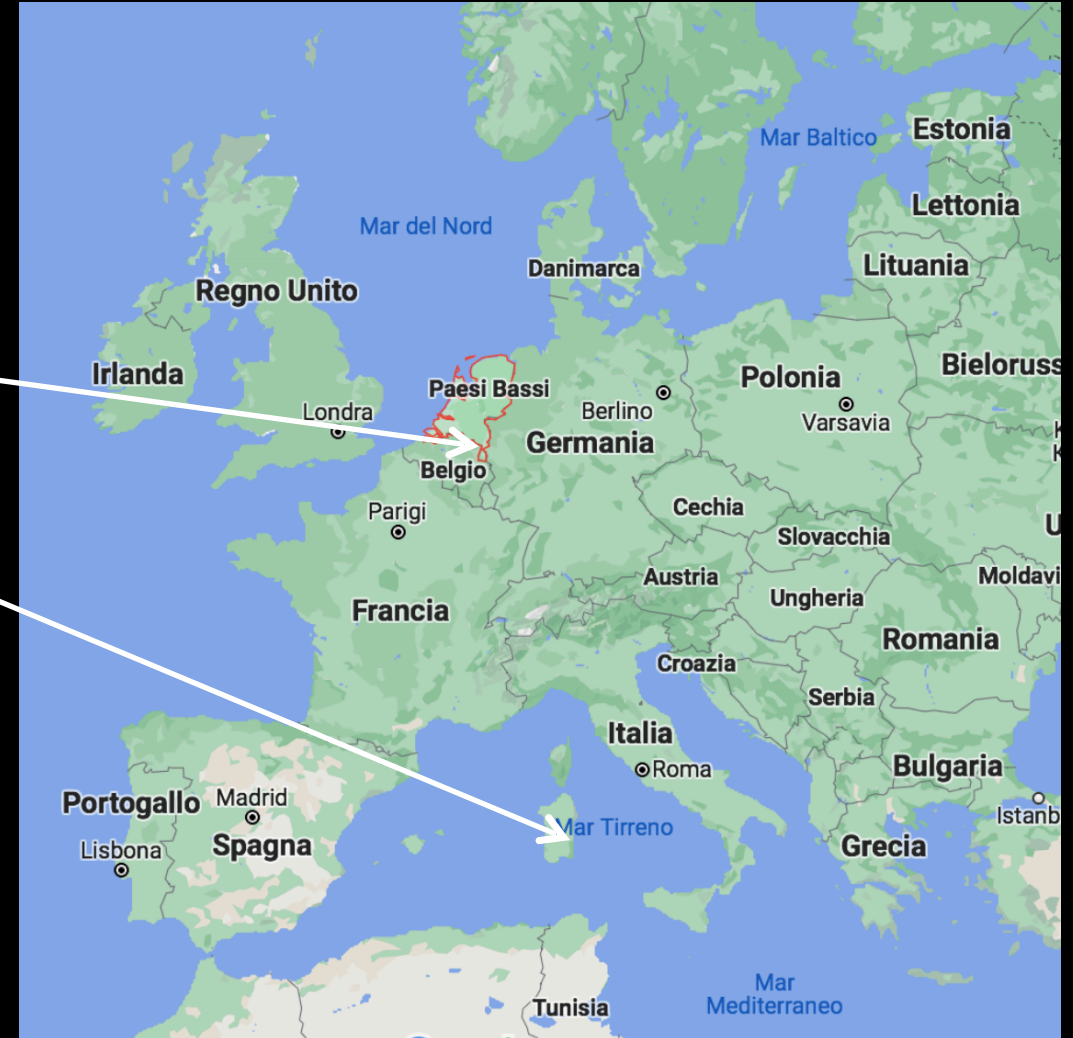
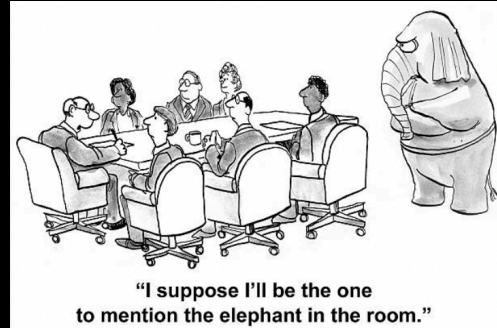


Triangle 10 km



2L of 15 km

2L misaligned of 45°



Full sensitivity: HF+LF

Only HF

Always underground

Scientific community made a study of physics potential comparing ET-baseline (triangle) vs 2L configurations

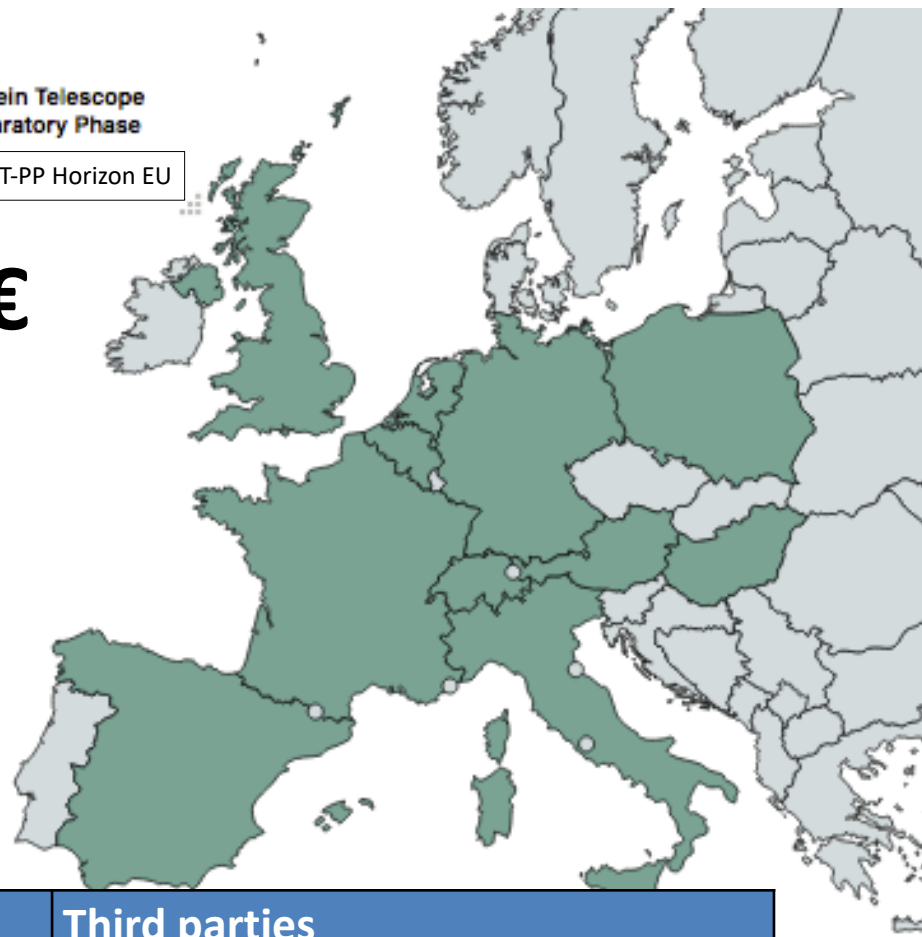
—> ETO received the mandate to present full cost of risk analysis

—> Will compare underground 10 km ET triangle vs underground 2L 15km


INFRA-DEV ET-PP (Preparatory Phase)

3.45M€

12M€
(total value)



COUNTRY	Third parties
BELGIUM	KU Leuven
GERMANY	RWTH (Aachen), AEI (MPI), LUH (Hannover)
THE NETHERLANDS	VU (AMSTERDAM), UM (MAASTRICHT)
SPAIN	ICCUB (Barcelona), UV (Valencia), UIB (Mallorca) CDTI (Madrid)
POLAND	NCBJ, CAMK, Cyfronet, IMPAN



European Commission

Funding & tender opportunities

Single Electronic Procurement

SEARCH FUNDING & TENDERS

HOW TO

Preparatory phase of new ES

TOPIC ID: HORIZON-INFRA-2021-DEV-

Grant

General information

Topic description

Destination

Conditions and documents

Partner search

Submission service

Topic related FAQ

Get support

Go back to search results

General information

Programme

Horizon Europe Fr

Call

Developing and co leadership (2021)

Type of action

HORIZON-CSA HO

Deadline model

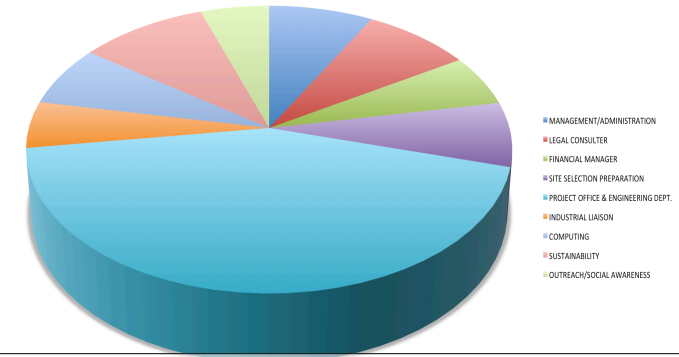
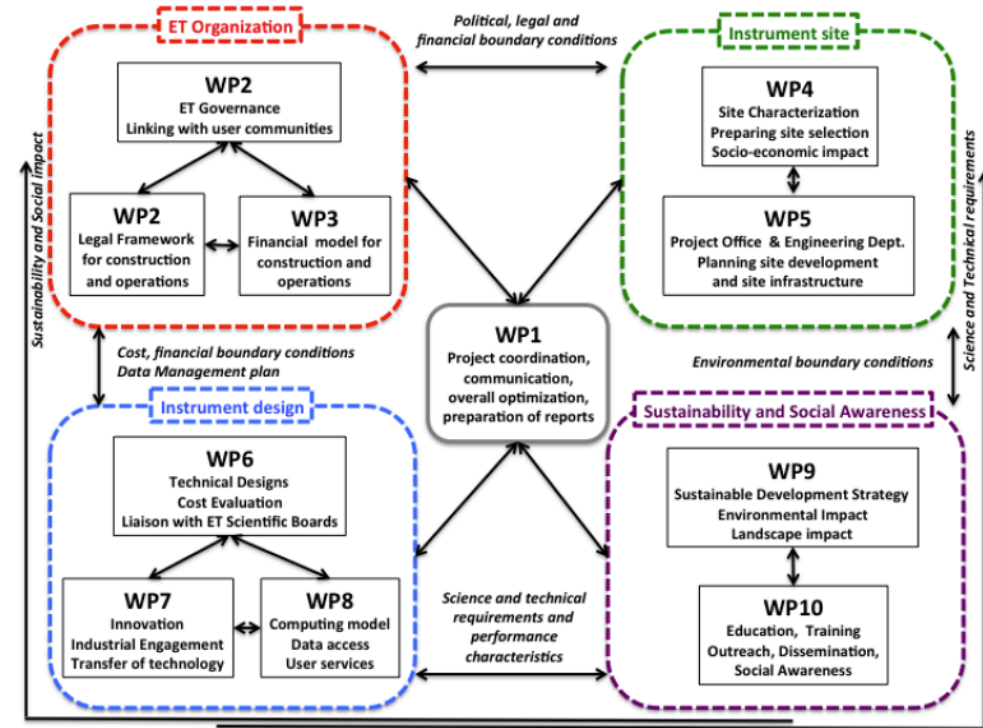
single-stage

COUNTRY	Partners
AUSTRIA	U. LEOBEN
BELGIUM	U. ANTWERPEN
BELGIUM	U. LOUVAIN
EGO	EGO
FRANCE	CNRS
GERMANY	DESY
HUNGARY	WIGNER RCP
ITALY	INFN
THE NETHERLANDS	NIKHEF
POLAND	U. WARSAW
SPAIN	IFAE BSC-CNS (affiliated)
SWITZERLAND (associated partner)	U. GENEVA
UK (associated partner)	UKRI CARDIFF GLASGOW

Einstein Telescope Preparatory Phase (ET-PP) in 2022 – 2026
HORIZON-INFRA-DEV EU Project coordinated by IFAE
→ <https://etpp.ifaes.es>

Work Packages (WPs)

- WP1 Coordination and Management
- WP2 Organization, Governance and Legal Aspects
- WP3 Financial Architecture
- WP4 Site Preparation
- WP5 ETO - Project Office / Engineering Dept.
- WP6 Technical Design
- WP7 Transfer of Technology
- WP8 Computing and Data Access
- WP9 Sustainable Development Strategy
- WP10 Education, Outreach and Citizen Engagement



A large fraction devoted to the creating of the Project Office/ Engineering Department (44%)

Funding for expert consulting on legal and financial aspects, socio-economic impacts, site selection related studies

Significant funding for sustainability studies

Funding for ET-PP management, KTT, Computing model, and Outreach/Communication

ET-PP web
<https://etpp.ifae.es>



WP 6: Technical Design

Work package led by INFN

Objectives


WP6 - Technical Design [led by INFN]- has the mandate to provide the ET-PP project management with a refined scientific case, the Technical Design Report (TDR) of the RI hosting the ET interferometers, and the TDR of the set of detectors (interferometers) and facilities (vacuum and cryogenic apparatuses and plants) composing ET.

Furthermore WP6 has the duty to elaborate a data management plan (DMP) and a Data Access Policy in synergy with WP8 (see below) and WP2. The activities in WP6 take place inside the ET Collaboration and will take full advantage of the existing technical and scientific boards inside the experiment.


The chairs of the ET Steering Committee: H. Lück (LUH and AEI) and M. Punturo (INFN) act, together with P. Chiggiato (CERN), as co-coordinators of WP6. P. Chiggiato coordinates the R&D and technical design of the ET pipe-arm vacuum system.

Deliverables


- D6.1 Refined Science Case
- D6.2 Vacuum pipe Design
- D6.3 Preliminary RI TDR
- D6.4 Preliminary DET TDR
- D6.5 RI TDR
- D6.6 DMP and Data Access Policy



Harald Lück
Albert Einstein Institut & Institut für Gravitationsphysik der Leibniz Universität Hannover



Paolo Chiggiato
European Organization for Nuclear Research (CERN)



Michele Punturo
Istituto Nazionale Di Fisica Nucleare (INFN)

WP 5: Project Office and Engineering Department

Work package led by CNRS

Objectives

WP5 - Project Office and Engineering Department [led by CNRS]- has the mission to establish the ET RI Project Office and the corresponding Engineering Department. The role of this WP is to set-up a project management environment for the ET construction project.


This environment will be supported by consultative and executive bodies equipped with means to monitor, control, coordinate and report on the technical design, the engineering, the technical specifications, the risks, the budget and the schedule.

These activities are project-wide and make use of methodologies and tools which are the same across the whole of the ET construction project.


C. Olivetto (SACLAY), P. Werneke (NIKHEF) and A. Variola (INFN) act as co-coordinators of WP5 in this proposal.

Deliverables


- D5.1 Structure and the mandate of the Project Office.
- D5.2 Functionalities required from the tools in support of the project management.
- D5.3 Structure and the mandate of the Engineering Department.
- D5.4 Functional Engineering Department.
- D5.5 Functional Project Office.



Christian Olivetto
Université Paris-Saclay



Patrick Werneke
Nikhef



Alessandro Variola
Istituto Nazionale Di Fisica Nucleare (INFN)

ET-PP Work Package Leaders



Mario Martínez
Institut de Física d'Altes Energies (IFAE)



Fernando Ferroni
Istituto Nazionale Di Fisica Nucleare (INFN)



Justin O'Byrne
United Kingdom Research And Innovation (UKRI)



Miriam E.H. Roelofs
Nikhef



Dorota Rosinska
Uniwersytet Warszawski (UW)



Domenico D'Urso
University of Sassari & INFN Laboratori Nazionali del Sud



Massimo Carpinelli
European Gravitational Observatory (EGO)



Wim Walk
Nikhef



Christian Olivetto
Université Paris-Saclay



Patrick Werneke
Nikhef



Alessandro Variola
Istituto Nazionale Di Fisica Nucleare (INFN)



Harald Lück
Albert Einstein Institut & Institut für Gravitationsphysik der Leibniz Universität Hannover



Paolo Chiggiato
European Organization for Nuclear Research (CERN)



Michele Punturo
Istituto Nazionale Di Fisica Nucleare (INFN)



Mauro Morandin
Istituto Nazionale Di Fisica Nucleare (INFN)



Rob van der Meer
Nikhef



Nadia Tonello
Barcelona Supercomputing Center (BSC)



Achim Stahl
Deutsches Elektronen-Synchrotron (DESY)



Thomas Berghoefer
Deutsches Elektronen-Synchrotron (DESY)



Chiara Arina
Université Catholique De Louvain (UCL)



Maria Antonietta Marsella
Istituto Nazionale Di Fisica Nucleare (INFN)



Nicolas Arnaud
Centre National de la Recherche Scientifique (CNRS)



Veronica Buccheri
Istituto Nazionale Di Fisica Nucleare (INFN)



Vincenzo Napolano
European Gravitational Observatory (EGO)



Robert Galler
Montanuniversität Leoben

Latest developments in ET-PP consortium

- Following developments in Germany and Lusatia there is an increasing interest of DESY to have deeper involvement in ET-PP
- Conversations with DESY progressing very well for an enhanced German involvement in ET-PP
 - New WP4 co-coordinator already appointed and integrated in activities & acting as Lusatia liaison
 - New expert from DESY on sustainability will assist WP9 efforts
 - Planning for enhanced participation in WP3 (DESY already co-coordinating WP3)



Andreas RietBrock (KIT)

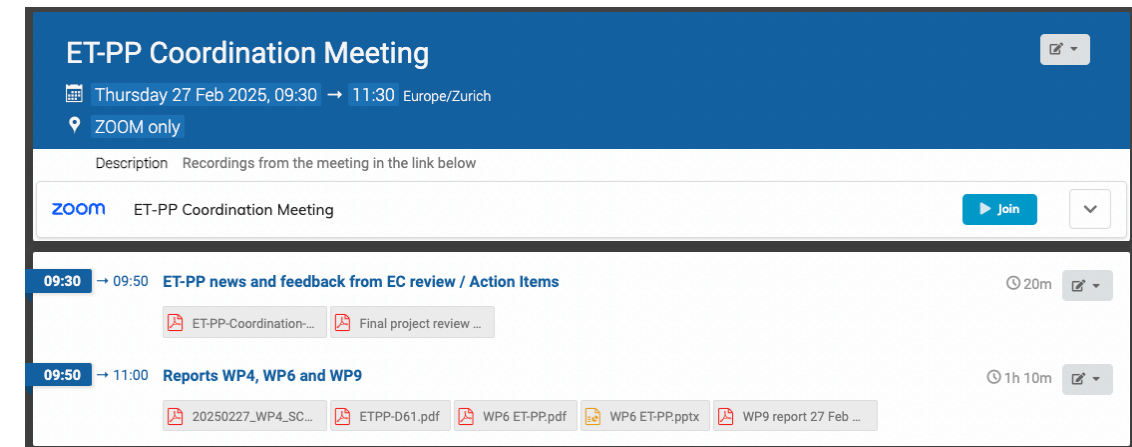
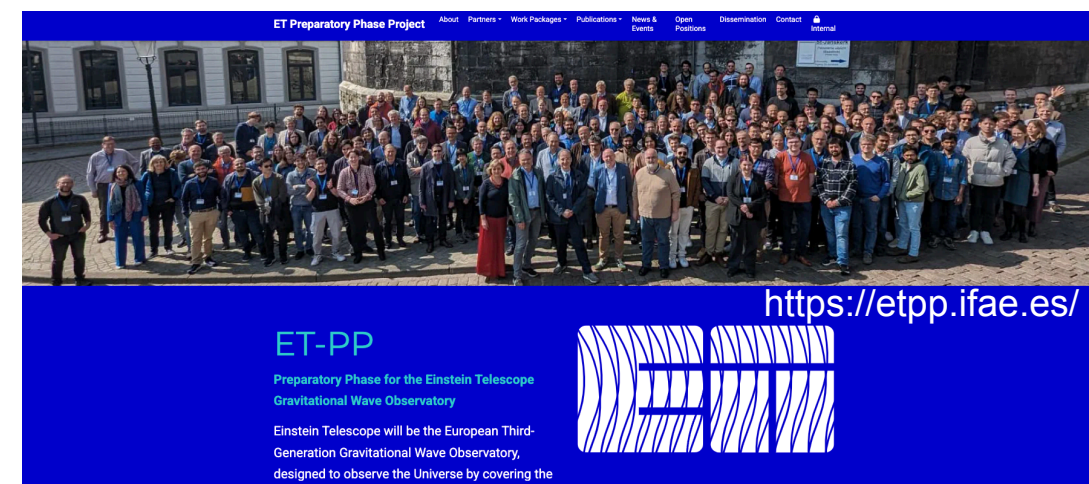


Denise Voelker (DESY)

Overall Coordination

Strong coordination of ET-PP project

- Web page in place with all relevant information
- Biweekly meetings reporting WP activities
- Annual in-person meetings in Barcelona
- Ad hoc in-person meetings preparing EC Reviews
 - December 2023 —> RP1 preparation meeting
 - June 2024 —> RP2 preparation & ET-PP timeline
- Ad hoc meetings to analyse EC reports
- Next annual meetings planned for 22nd - 24th July



ET-PP INFRA-DEV Annual Meeting

17-19 June 2024
UPF Barcelona School of Management - Barcelona
Europe/Madrid timezone

<https://indico.ifaef.es/event/1930/timetable/?view=standard>



The [ET-PP INFRA-DEV](#) Annual Meeting will be held from 17th to 18th June 2024 in Barcelona, hosted by the the Institut de Física d'Altes Energies (IFAE). [The venue](#) is the UPF (School of Management) Campus in Barcelona city centre.



Information repositories

- ET-PP deliverables are documents that are made open access
 - ET TDS system at EGO
 - ET-PP web server at IFAE
- ET-PP GoogleDrive
- CERN EDMS used by ETO
- INDICO servers at IFAE & CERN
- INDICO servers at beneficiaries
- Publication with direct ET-PP support as the result of ET-PP — ETC collaborative efforts (WP6)

ET Preparatory Phase Project

About Partners Work Packages Publications News & Events Open Positions Dissemination Contact Internal

Deliverables & Milestones

Deliverables

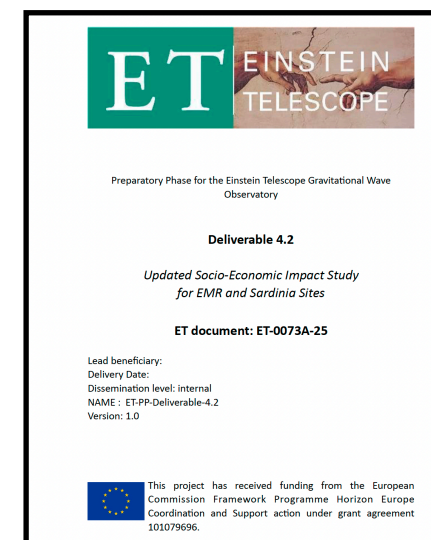
#	Deliverable	WP	Status
D1	D1.1: Dissemination and Exploitation (D&E) Plan	1	EC approved
D2	D1.2: Data Management Plan (DMP)	1	EC approved
D3	D2.1: Report providing options for legal entity	2	EC approved
D4	D2.2: Minutes of meetings with EC and involved ministries	2	EC approved
D10	D4.1: Scan of legal procedures, permitting and land acquisitions	4	EC approved
D11	D4.2: Updated socio-economic impact studies	4	in EC portal
D15	D5.1: Structure and mandate of the Project Office	5	EC approved
D16	D5.2: Functionalities required from the tools in support of the project management	5	EC approved
D17	D5.3: Structure and mandate of the Engineering Department	5	EC approved
D18	D5.4: Funcional Engineering Department	5	in EC portal
D19	D5.5: Funcional Project Office	5	in EC portal
D20	D6.1: Refined Science Case	6	in EC portal
D21	D6.2: Vacuum pipe Design	6	in EC portal
D26	D7.1: Innovation plan	7	EC approved
D30	D8.1: Computing and Data Requirements	8	in EC portal
D36	D10.1: Initiate strategic media and communications plan	10	EC approved
D37	D10.2: Launch consortium website and social media accounts	10	in EC portal
D38	D10.3: Formulate strategic media and communications plan	10	in EC portal

Adrian Abac et al., (ET Collaboration);
The Science of the Einstein Telescope (March 2025)
<https://doi.org/10.48550/arXiv.2503.12263>

Deliverables & Milestones for RP2

- D4.2: Updated socio-economic impact studies
- D5.4: Functional Engineering Department
- D5.5: Functional Project Office
- D6.1: Refined Science Case
- D6.2: Vacuum pipe Design
- D8.1: Computing and Data Requirements
- D10.2: Launch consortium website and social media accounts
- D10.3: Formulate strategic media and communications plan
- M3: Common methodology to estimate impact of site characteristics on ET sensitivity and operation
- M6: The Engineering Department as a functional unit complete
- M7: The Project Office as a functional unit complete
- M17: Preliminary Sustainability Plan

	Met	Delayed & to be met	On track	To be redefined
Deliverables	18	8	12	2
Milestones	16		6	



WP1 & WP2 & WP3

- The decision on a preferred legal framework is a prerequisite for the development of legal documents and content for statutes.
- Noting the current state of discussion in the BGR it is not expected that sufficient consensus on a preferred legal framework will be reached soon.
- Experience in other Research Infrastructures highlights that the complexity of the negotiations towards the constitutional documents for the legal entity, should not be underestimated.
- The preference of the legal framework also depends on the final geometry (and the selected site). According to the current timeline in the ETO roadmap this will not be known before August 2025.
- **Considering all this, it is not feasible that WP2 is able to deliver legal documents and contents of statutes in 2025.**

#	Details	WP	Status	Due by
D1	D1.1: Dissemination and Exploitation (D&E) Plan	1	EC approved	Done
D2	D1.2: Data Management Plan (DMP)	1	EC approved	Done
D3	D2.1: Report providing options for legal entity	2	EC approved	Done
D4	D2.2: Minutes of meetings with EC and involved ministries	2	EC approved	Done
D5	D2.3: Legal entity statutes	2	TBD	Aug 2025
D6	D2.4: Roadmap to establish the legal entity and its implementation	2	On track	Aug 2026
D7	D3.1: Handbook for design and construction phase	3	On track	Aug 2025
D8	D3.2: Handbook for operating phase	3	On track	Feb 2026
D9	D3.3: Financial plan and Scenario analysis	3	On track	July 2026
M1	Constitution / first meeting of the resource board	3	On track	May 2025

* Extension of the deadline until July 2026; with the note that a request for a content change request may be needed in the future, depending on how discussions progress in terms of the geometry, site selection and legal framework.

* **This has triggered further ongoing discussions with the EC officer**

WP3 activity in 2025 (Financial Model) closely linked with Legal/ Governance and Project Office Discussions

WP4

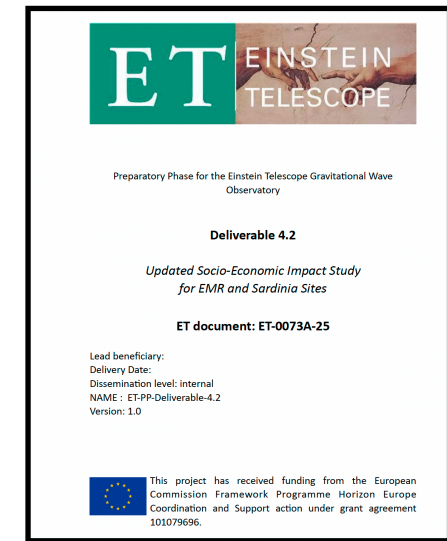
#	Details	WP	Status	Due by	Delivered	Comment
D10	D4.1: Scan of legal procedures, permitting and land acquisitions	4	EC approved	Done		
D11	D4.2: Updated socio-economic impact studies	4	Delayed	Nov 2023	March 2025	Submitted to EC portal
D12	D4.3: Complete quantification of all the aspects impacting the ET performance	4	Delayed	Dec 2024	July 2026	Check in Jan 2026
D13	D4.4: Report on 3D geology, hydrology, etc. model with localisation of the ET infrastructure	4	Delayed	Jan 2025	Feb 2026	Check in Jan 2026
D14	D4.5: Updated cost and schedule estimates of the excavations	4	Delayed	Feb 2026	July 2026	Check in Jan 2026
M2	Document detailing the site-specific characteristics that impact ET sensitivity and its duty cycle.	4	Delayed	Nov 2022	Jan 2023 / Oct 2024	New version submitted to EC
M3	Common methodology to estimate impact of site characteristics on ET sensitivity and operation	4	Delayed	June 2023	March 2024/ March 2025	Submitted to EC portal

The difficulties in meeting ET-PP WP4 deliverables and milestones is a reflection of the complexity of the activities involved in the sites, well beyond what was originally anticipated in the definition of the ET-PP timeline. Alternative geometries (triangle vs 2L) translates into more work

Close discussions between ETO and local teams taking place
Intensified coordination among ETO, Local teams & ETC boards

Lusatia now being integrated in the discussions

Very good progress now: Socio-Economic impact delivered !

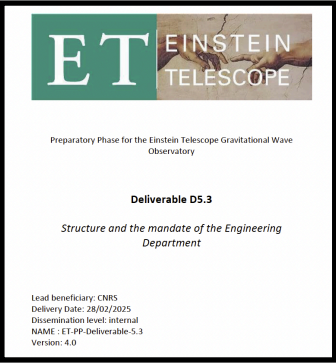
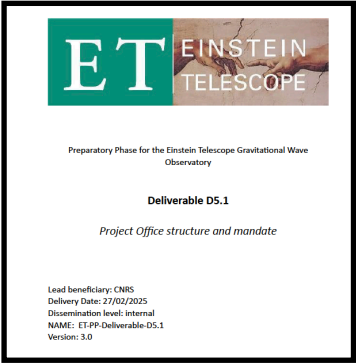


WP5 — ETO - Project office / Engineering Dept.

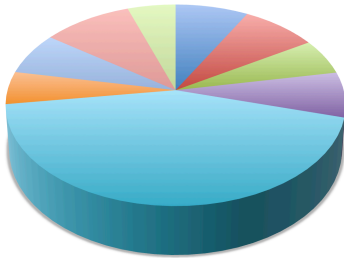
More than 40% of the ET-PP funds devoted to this WP as seed money

Mission accomplished — ETO now with a solid operating team beyond ET-PP target

#	Details	WP	Status	Due by	Delivered	Comment
D15	D5.1: Structure and mandate of the Project Office	5	Approved by EC	Sept 2024	Sept 2024	Done
D16	D5.2: Functionalities required from the tools in support of the project management	5	Approved by EC	Done		Done
D17	D53: .Structure and mandate of the Engineering Department	5	Approved by EC	Sept 2024	Sept 2024	Done
D18	D5.4: Funcional Engineering Department	5		Dec 2024	March 2025	Submitted to EC
D19	D5.5: Funcional Project Office	5		Dec 2024	March 2025	Submitted to EC
M4	The recruitment of the Project Office team is completed	5		Nov 2023	Nov 2023	Done
M5	All three documents (WP5-D5.1, D5.2 and D5.3) are published	5		Sept 2024	Sept 2024	Done
M6	The Engineering Department as a functional unit complete	5		Nov 2024	March 2025	Submitted to EC
M7	The Project Office as a functional unit complete	5		Nov 2024	March 2025	Submitted to EC



Position	Institute	Status
System engineer	NIKHEF (in-kind)	Hired
Parameter, Layout & Risks	CNRS	Hired
Software engineer	CNRS	Hired
Vacuum engineer	CNRS	Hired
Civil engineer	NIKHEF	Hired
Technical infrastructure engineer	INFN	Hired




MANAGEMENT/ADMINISTRATION
FINANCIAL CONSULTING
FINANCIAL MANAGER
POST-RECEPTION PREPARATION
PROJECT OFFICE & ENGINEERING DEPT.
INDUSTRIAL LIAISON
COMPUTING
SUSTAINABILITY
CONTRACTED PERSONNEL SERVICES

WP6 — TDRs and Physics Case

Liasion with ET Collaboration providing Science Case and Detector TDR Vacuum and RI TDRs under direct ETO supervision

#	Details	WP	Status	Due by	Delivered	Comment
D20	D6.1: Refined Science Case	6	Submitted to EC	Feb 2024	Feb 2025	
D21	D6.2: Vacuum pipe Design	6	Submitted to EC	Aug 2024	Dec 2024	
D22	D6.3: Preliminary RI TDR	6	Delayed	Aug 2024	July 2026	
D23	D6.4: Preliminary DET TDR	6	Delayed	Aug 2024	July 2025	
D24	D6.5: RI TDR	6	Delayed	Dec 2025	TBD	Maybe not within ET-PP time
D25	D6.6: DMP and Data Access Policy	6		Jun 2026		Expected to be on track
M8	ET Collaboration in place	6		July 2023	June 2022	Done

Alternative geometries (triangle vs 2L) translates into more work —> more time needed



Preparatory Phase for the Einstein Telescope Gravitational Wave Observatory


Deliverable D6.1

Refined Science Case

Lead beneficiary: UNIGE
Delivery Date: 26/02/2025
Dissemination level: internal
NAME : ET-PP-Deliverable-D6.1
Version: 1.0

A > 870 pages document summarising the ET Science Case

A great success of the ET Collaboration and a central ET-PP deliverable



Preparatory Phase for the Einstein Telescope Gravitational Wave Observatory

Deliverable 6.2

The Vacuum Pipe of ET

Lead beneficiary:
Delivery Date:
Dissemination level: internal
NAME : ET-PP-Deliverable-6.2 [ET-0005A-25]
Version: 1.0

A 70 pages document presenting v0 of Vacuum Pipe TDR

A central deliverable of ET-PP as provided by CERN and closely supervised by ETO

Documents were peer-reviewed by an international panel of experts including external members from LIGO in USA

ETO Engineering & CERN



Civil Engineering activity for ET in Phase 1 – MOU CERN



Deliverable	Description of civil engineering documents to be produced by ETO and reviewed and supported by CERN	Date
D1	Work Plan explaining the roadmap to produce the TDR	Q4 2023
D2	Review and assessment document of existing information relevant for civil engineering	Q1 2024
D3	Requirements and specific objectives for the civil engineering tender documents for consultant(s) to develop civil engineering layouts/specifications and to produce cost/schedule report and risk analysis	Q2 2024
D4	Configuration of design tools (Geoprofiler, GIS data, BIM model etc.)	Q3 2024
D5	Structure of the TDR	Q4 2024
D6	TDR	Q4 2026

MOU established with CERN 2024-2026

- support ETO on the preliminary TDR for the civil engineering infrastructure.
- review the activity plans and the documents from the local teams (TETI and EMR)

ETO Civil Engineering meeting with Local Teams
(EMR and TETI)

Meeting date: 29-30 April 2024

Meeting location: CERN

ADDENDUM NO. 1 TO FRAMEWORK COLLABORATION AGREEMENT KN 5637/TE

BETWEEN: THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH (“CERN”), an Intergovernmental Organization having its seat at Geneva, Switzerland,

AND: THE NATIONAL INSTITUTE FOR NUCLEAR PHYSICS (“INFN”), established in Rome, Italy,

AND: THE DUTCH NATIONAL INSTITUTE FOR SUBATOMIC PHYSICS (“Nikhef”), established in Amsterdam, The Netherlands,

AND: THE INSTITUT DE FISICA D’ALTES ENERGIES (“IFAE”), established in Barcelona, Spain,

Hereinafter each individually referred to as a “Party” and collectively as the “Parties”,

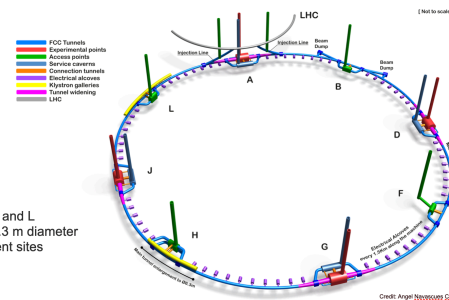


Future Circular Collider (FCC) Study

Design frozen for costing
exercise every ~2 years

FCC Underground

- 90.6 km
- 8 Surface Sites
- 4 Experimental Areas
- 4 Technical Areas
- 14 shafts
- Klystron Galleries at Point H and L
- Point H tunnel widening to 6.3 m diameter
- Tunnel widening at experiment sites
- Beam dump at point B



CERN experience indicates producing a final TDR for the ET Research Infrastructure might go beyond ET-PP execution period (D6.5 not anymore in the scope of ET-PP ?)

We welcome to evaluate the scenario of redefining D6.3 and D6.5 deliverables such that a Preliminary TDR RI is produced by the end of the project, reflecting the understanding of the ET RI aspects by fall 2026. (D6.3 delivered before ET-PP ends)

Ongoing discussions with EC officer

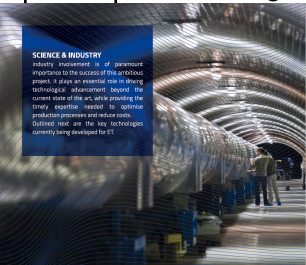
In close collaboration with CERN Civil Engineering Team

WP7 — Transfer of Technology

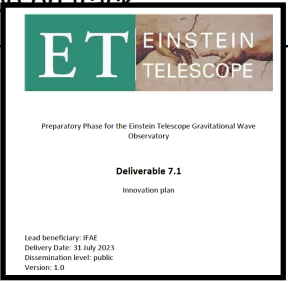
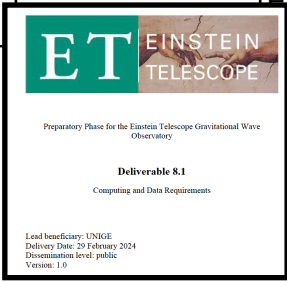
WP8 — Computing Model

The two WPs are delivering as ET-PP originally planned

#	Details	WP	Status	Due by	Delivered	Comment
D26	D7.1: Innovation plan	7	EC approved	Done		
D27	D7.2: Report on industry engagement plan execution	7		Feb 2026		Expected to be on track
D28	D7.3: Model for pursuing in ET a balanced industrial return	7		May 2025		Expected to be on track
D29	D7.4: Report on TT and Intellectual property management in ET	7		April 2026		Expected to be on track
D30	D8.1: Computing and Data Requirements	8	Submitted to EC	Feb 2024	Feb 2024	Resubmitted to EC
D31	D8.2: Computing and Data Model	8		Feb 2026		Expected to be on track
D32	D8.3: Data Access Implementation Guidelines	8		Jul 2026		Expected to be on track
M9	Analysis of promotion strategies accomplished	7		Abril 2023	Abril 2023	Done
M10	Engagement plan produced	7		June 2023	Oct 2023	Done
M11	Analysis of balanced industrial return strategies accomplished	7		Nov 2023	Oct 2024	Done
M12	Workflows Requirements collection and constraints: computing and data	8		July 2023	July 2023	Done
13	Computing Infrastructures availability for ET workflows, characteristics	8		Aug 2024	Jul 2024	Done
14	On site infrastructure, computing and data model	8		Aug 2025		Expected to be on track
15	Low latency and offline workflows and computing model	8		Dec 2025		Expected to be on track
16	Data management, access, policy and implementation	8		Jun 2026		Expected to be on track



Intense ET-PP activity during 2024 as led by WP7 in preparation for the BSBF meeting @ Trieste



WP9 — Sustainability

#	Details	WP	Status	Due by	Delivered	Comment
D33	D9.1: ET Sustainable Development Implementation Strategy	9	Delayed	Feb 2024		Expected by October 2025
D34	D9.2: ET Environmental impact assessment and mitigation strategy	9	Delayed	Aug 2024		Expected by October 2025
D35	D9.3: ET CO2 footprint ET assessment and mitigation strategy	9	Delayed	Aug 2025		Expected by October 2025
M17	Preliminary sustainability plan	9	Delayed	Jul 2023	Internal Sept 2024	Submitted to EC
M18	ET Sustainability Workshop	9		Feb 2024	Nov 2023	Done
M19	Final sustainability plan	9		July 2026		Expected to be on track

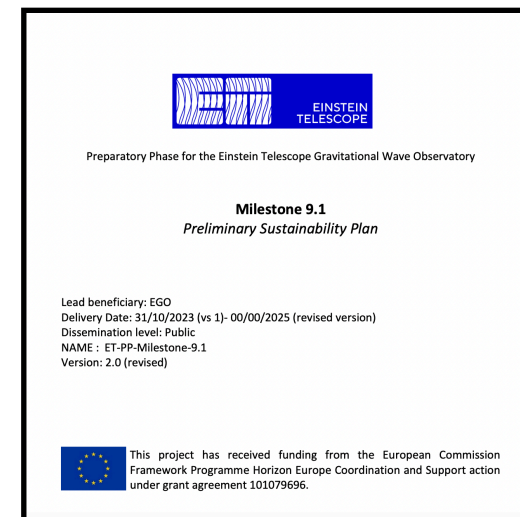
Sustainability studies are linked to activities on site characterisation and civil engineering aspects
—> need more time

We arrived to the conclusion robust sustainability related documents (meeting the required EC standards) will require also involving private companies specialised on the subject [difficult to find in house the required personnel or hiring people with the required skills]

—> This follows CERN's example involving private specialised companies for similar studies in the FCC collider project

To accommodate this action within ET-PP an amendment is required
—> in preparation modifying ET-PP INFN budget assignment

Meanwhile, INFN offered the possibility to proceed with the hiring paperwork using INFN internal funds



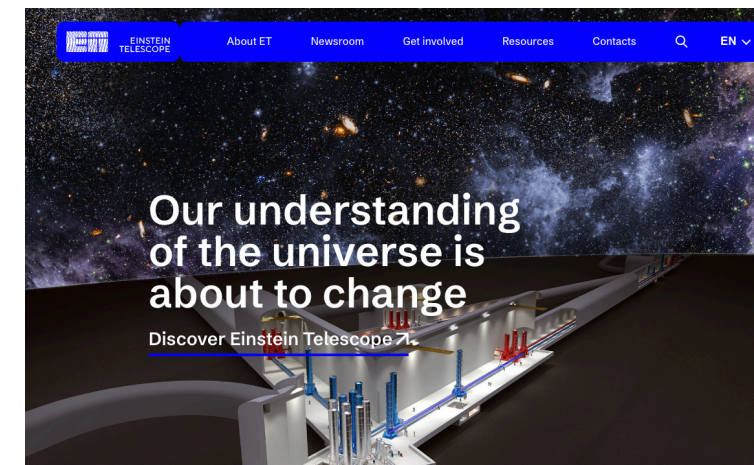
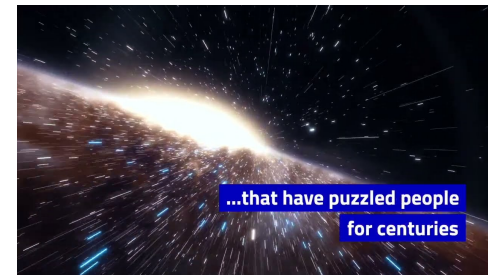
WP10-Education, Outreach and Citizen Engagement

#	Details	WP	Status	Due by	Delivered	Comment
D36	D10.1: Initiate strategic media and communications plan	10	EC approved	Done		
D37	D10.2: Launch consortium website and social media accounts	10	Submitted to EC	Aug 2024	Oct 2024	Submitted to EC
D38	D10.3: Formulate strategic media and communications plan	10	Submitted to EC	Aug 2024	Oct 2024	Submitted to EC
D39	D10.4 Complete bank of graphics and multimedia resources	10		Aug 2025		Expected to be on track
D40	D10.5 Launch ECR mentorship and training programme	10		April 2026		Expected to be on track
20	Appointment of Communications and Outreach Coordinator	10		April 2023	July 2023	Done
21	ET Consortium website and social media launched	10		Aug 2024	Oct 2024	Published
22	ECR Mentorship and Training programme established	10		April 2026		Expected to be on track

Enormous progress has been reported by WP10

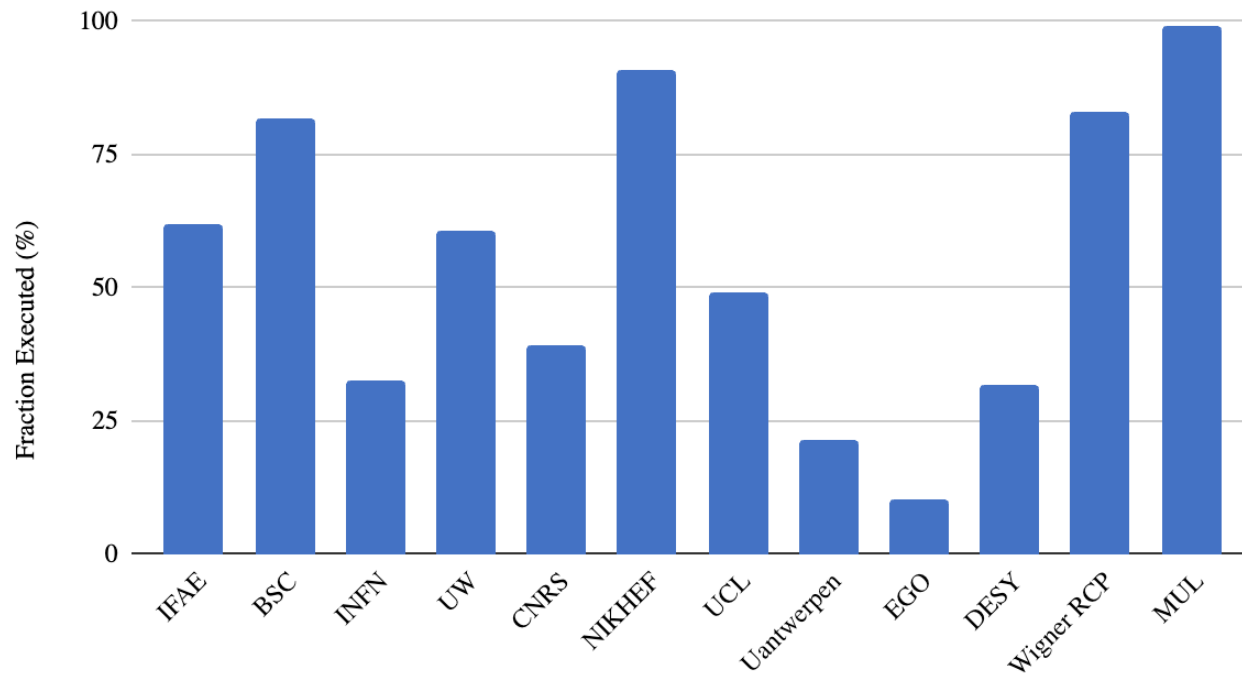
- Social media already very active
- YouTube channel
- New visual identity
- New website became public

<https://einsteintelelescope.eu>

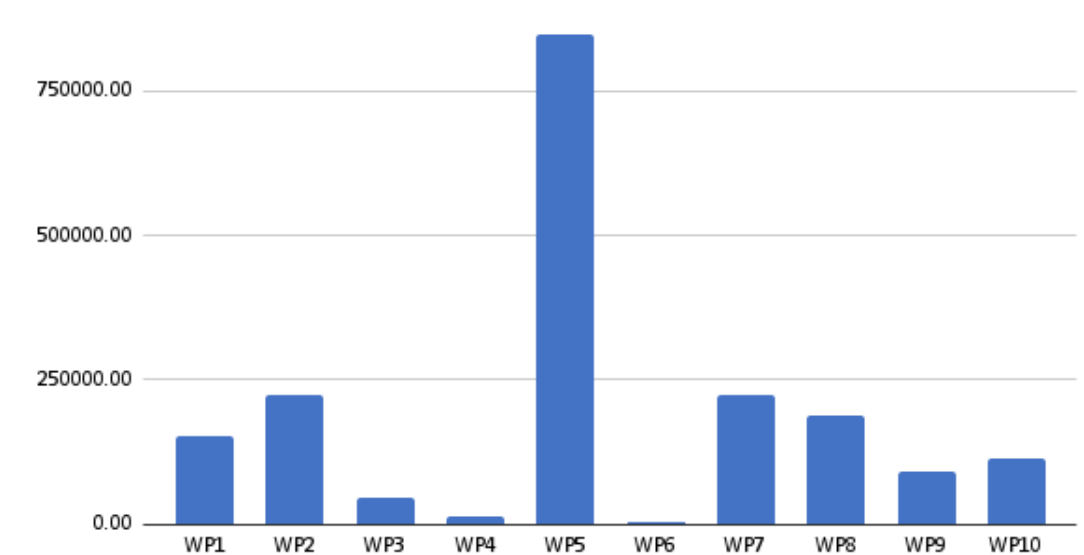


Some RP1+RP2 indicators on ET-PP funds

Fraction Executed (%)



RP1+RP2 total execution (Euros)



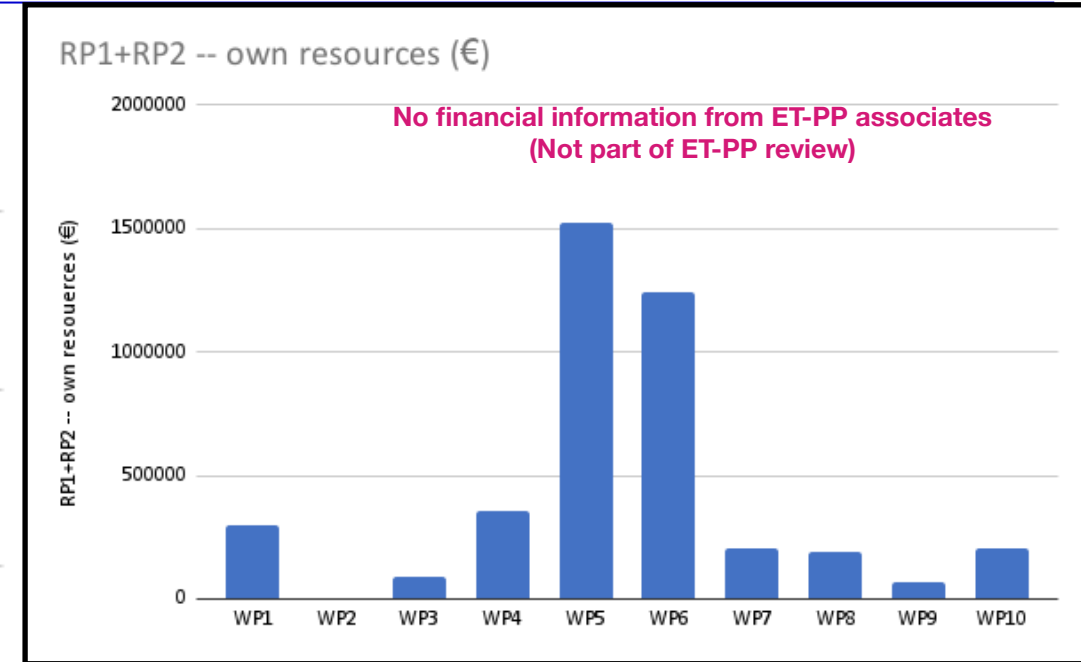
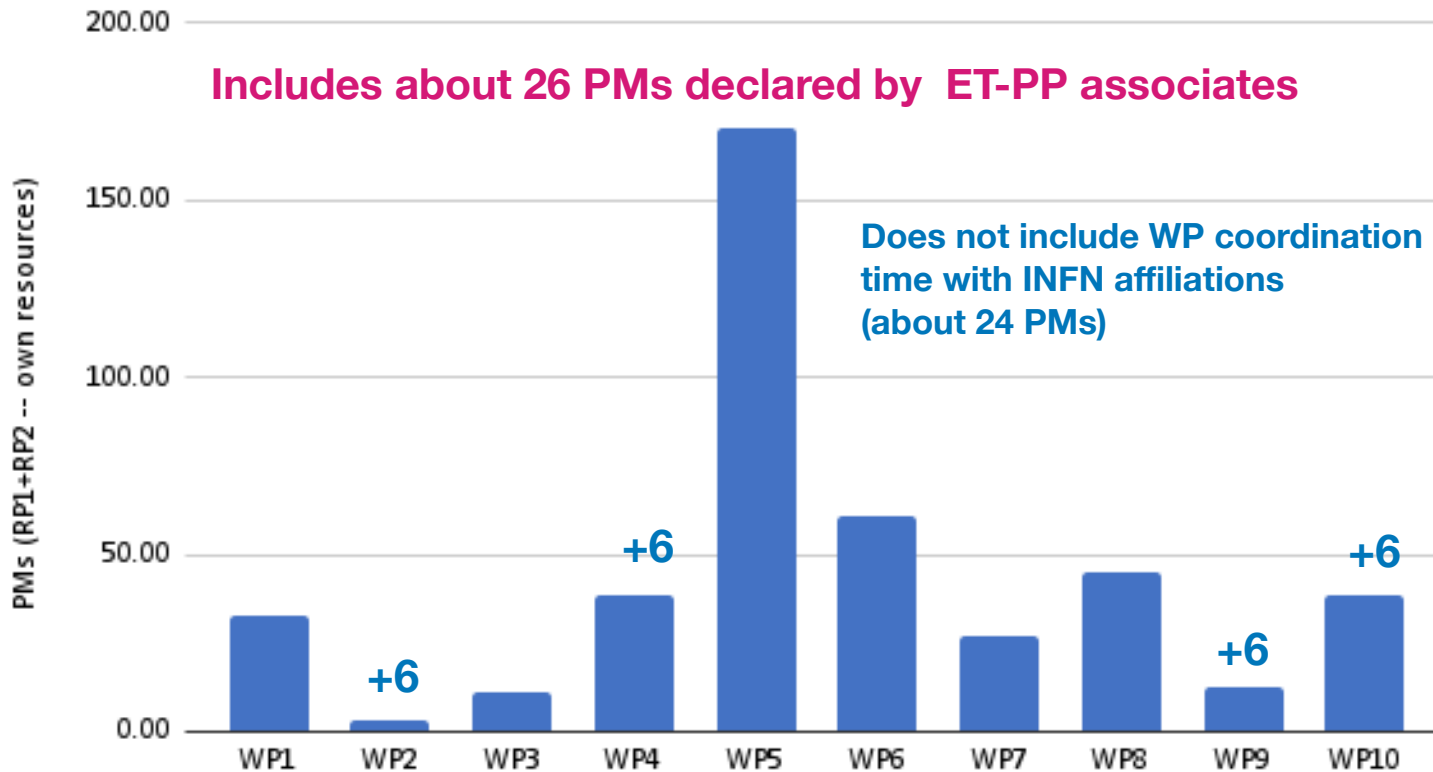
1.9M€ executed (1.43M€ in RP2)
—> 55% of the total (flat is 62.5%)

1.5M€ remaining for RP3 period

We are now preparing the forecast for the following 18 months

Own resources

Person-months (RP1+RP2 -- own resources)



About 4.3M€ contribution from Beneficiaries

440 + 24 PMs invested in ET-PP (RP1+RP2)

About 50% of total anticipated effort

The numbers do not reflect the activities in the WPs [third parties]

Are affected by the limitations in the declarations from Beneficiaries [INFN - affiliated not included**]

—> some of our WP coordinators time is not counted here [6 PM each for a 20% dedication]

Summary of ET-PP achievements

Highlights

- ET-PP seed money funding ETO allows forming the partnership for the early in-kind contributions
- Functional ETO - Project office and Engineering Dept in place
- New established ET identify in place and a new Web site coming along very soon
- ET Communication office emerging making ET very visible in the public domain
- ET Refined Science Case Document released (Blue Book) by ET Collaboration
- Vacuum Pipe TDR v1 released under the ETO supervision
- Multiple solid documents on KTT, Innovation and Industrial returns in place
- Multiple solid documents on Computing Requirements in place
- Multiple solid documents on communication and outreach strategy in place
- Key Documents from the Candidate Sites and Sustainability Planning in place



In summary

	Met	Delayed & to be met	On track	To be redefined
Deliverables	18	8	12	2
Milestones	16		6	

- We saw the need to re-evaluate the timelines for a number of deliverables in ET-PP.
- The accumulated delays w.r.t original ET-PP time line have different origins
 - Discussions on alternative geometries (triangle vs 2L) translates into more work
 - Complexity of the site characterisation work at the candidate sites beyond original expectations and agreements with private companies do not align well with ET-PP schedule
 - Close interaction with CERN on Civil Engineering aspects related to big science showed us things will take more time than expected
 - Interaction with BGR (funding agencies): the timing of agreeing on a legal entity or legal framework is not yet clear (also linked with site selection process)
 - Robust sustainability studies will require more time —> linked with activities on the different sites and civil engineering aspects, and will demand the involvement of a private company
- A number of WPs are delivering as ET-PP originally planned

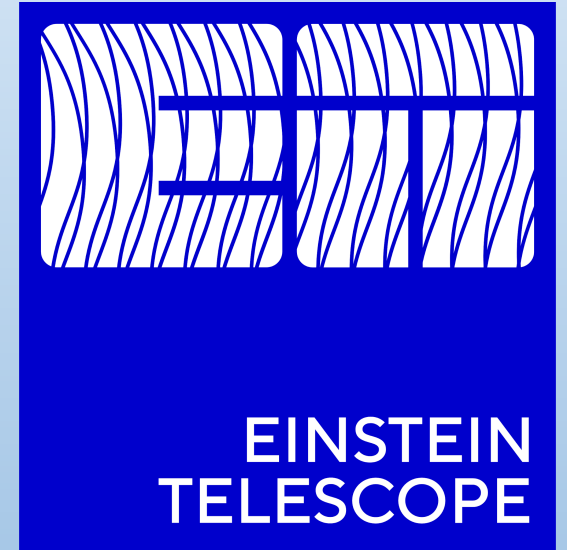
ET-PP amendment

To be resumed right after RP2 is concluded

- We plan to submit an amendment in the following month(s)
 - Redefinition of timelines for rest of deliverables/milestones
 - Revision of description of remaining WP2 and WP6 deliverables
 - Modification of scope of WP4, WP9 — including now Lusatia activities
 - Slight modification of budget
 - Transfers CNRS \rightarrow INFN O(10k€)
 - Transfers INFN \rightarrow DESY O(80K€)
 - Modified model for INFN budget execution
- Reintroduction of mention to third parties contributions in GA [TBC]



Horizon Europe:
Coordination and Support Actions



ET-PP Overview Coordinators Report 2nd review meeting (RP2)

15/05/2025
Grant agreement: N° 101079696