EINSTEIN TELESCOPE

ET-PP status and meeting goals

M. Martínez

ET-PP annual meeting

22nd July 2024

IFAE

ICREA

BIST

https://etpp.ifae.es

Outline

- Notes on Logistics & Agenda
- Goals for this meeting
  - Conclude on the RP2 process
  - Review plans for next 12 months
  - Prepare baselines for GA amendment
  - First discussion on post-ET-PP
- Notes on ET-PP RP2 review
- Status of Deliverables/Milestones

ET-PP is a project supported by the European Commission Framework Programme
Horizon Europe Coordination and Support action under grant agreement 101079696

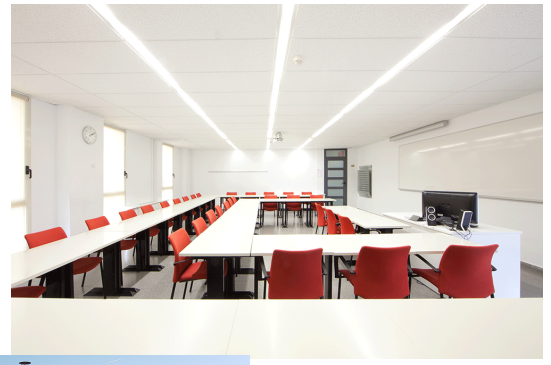
Logistics

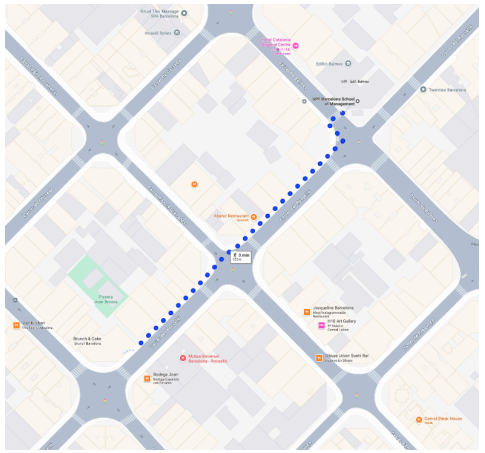
https://indico.ifae.es/event/2183/

- Wifi information in the agenda and in badge
- Zoom meetings for each room in the agenda
- Plenary/Parallel Sessions in Auditorium
- Parallel Sessions in 607 and 608 (6th floor)
- Coffee breaks will take place in the terrace

—

- Dinner tonight at 20:00 PM
  @ Restaurant Balthazar [3 min walking]





Day 1 — Plenaries

Registation

09:00 - 09:10

Welcome coffee

Koiné Galery - Ground Floor

09:10 - 09:25

Plenary: Introductions & Overviews & Goals

Auditorium

09:25 - 11:30

Coffee Break

Terrace -- Floor 7

11:30 - 12:00

Parallel: ETO-WP5-WP6-Preliminary DET TDR (D6.4)

Harald Lueck (AEI), Christian Olivetto(Paris-Saclay), Alessandro Variola (INFN)

Auditorirum 12:00 - 13:30

Parallel: WP7 - Industrial engagement, industrial returns, intelectual properly (D7.2, D7.3, D7.4)

Mauro Morandin (INFN), Rob van der Meer (NIKHEF)

Room 607 12:00 - 13:30

Parallel: WP4-WP5-WP8-WP9 - ET Sustainable Development Implementation Strategy, ET Environmental impact ; ET CO2 footprint (D9.1, D9.2, D9.3)

Maria Marsella (NFN), Francesca Spagnuolo (EGO)

Room 608 12:00 - 13:30

09:25 → 11:30 **Plenary: Introductions & Overviews & Goals**

09:25 **Welcome**
Speaker: Eugenio Coccia (IFAE)

09:30 **Introduction and Goals**
Speaker: Mario Martinez (IFAE)

09:45 **News from ETO**
Speaker: Andreas Freise (NIKHEF), Fernando Ferroni (INFN)

10:05 **News from ETC**
Speaker: Michele Punturo (INFN)
ETC-status-ET-PP-J...

10:25 **ET beam pipe activities @ CERN**
Speaker: Paolo Chiggiato (CERN)
ET-PP-WP6.2+ET+b...

10:45 **News from Sardinia**
Speaker: Giovanni Bisoffi (INFN)

11:00 **News from EMR**
Speaker: Stan Bentvelsen (NIKHEF)

11:15 **News from Saxony**
Speaker: Andreas Rietbrock (GPI)

Day -2

Parallel: ETO-WP6-WP8 - Computing and Data Access Policy & ET DMP (D6.6, D8.1, D8.2,D8.3)
Nadia Tonello (BSC), Achim Stahl (DESY), Michele Punturo (INFN)

Auditorium 09:00 - 10:30

Parallel: WP2 - WP3 - Governance, Legal Entity and Financial Models (D2.3, D2.4, D3.1, D3.2, D3.3)
Chiara Arina (Louvain), Miriam E.H. Roelofs (NIKHEF), Fernando Ferroni (INFN), Thomas Berghoefer (DESY), Federico Ferrini (INFN)

Room 607 09:00 - 10:30

Draft time for preparing reports (in parallel)

Same as parallel sessions 10:30 - 11:00

Coffee Break

Terrace - Floor 7 11:00 - 11:30

Parallel: ETO-ETC-WP10 - Education, Outreach and Citizen Engagement (D10.4, D10.5) & ET Web
Dorota Rosinska (UW), Vincenzo Napolano (EGO), Martine Oudenhoven (NIKHEF),

Room 607 11:30 - 13:00

Parallel: ETO-WP5-WP6 - RI TDRs (D6.3, D6.5)
Harald Lueck (AEI), Christian Olivetto(Paris-Saclay), Alessandro Variola (INFN), Patrick Werneke (NIKHEF),Maria Marsella (INFN)

Auditorium 11:30 - 13:00

Day -3

Plenary: ET-PP Answers to RP2 -- Preparation of GA amendment and next Steps — *Mario Martinez*

Auditorium

Coffee Break

Terrace - Floor 7

Plenary: Post-ET-PP discussion

Auditorium

End of the meeting

UPF Barcelona School of Management - Barcelona 12:30 - 12:32

09:00 → 10:30 **Plenary: ET-PP Answers to RP2 -- Preparation of GA amendment and next Steps**

Convener: Mario Martinez (ICREA/IFAE)

- 09:00 **Review of ET-PP reaction to EC RP2 review report**
  Speaker: Mario Martinez (ICREA/IFAE)
- 09:30 **Financial Statements -- RP2 and forecast for GA preparation**
  Speaker: Arnau PICO (IFAE)
- 09:45 **Overview of GA amendment preparation**

10:30 → 11:00 **Coffee Break**

11:00 → 12:30 **Plenary: Post-ET-PP discussion**

Convener: Andreas Freise (NIKHEF)

- 11:00 **New INFRA-DEV proposal discussion**
  Speakers: Daniela Trani (NIKHEF), Monique Bossi (INFN)
- 11:30 **Discussion**
  - How to transfer ET-PP related activities to ETO in the future?
  - How to retain people from the ET-PP WP in ET?
  - Beyond the ET-PP deliverables, what are the next tasks?

EC RP2 report comments

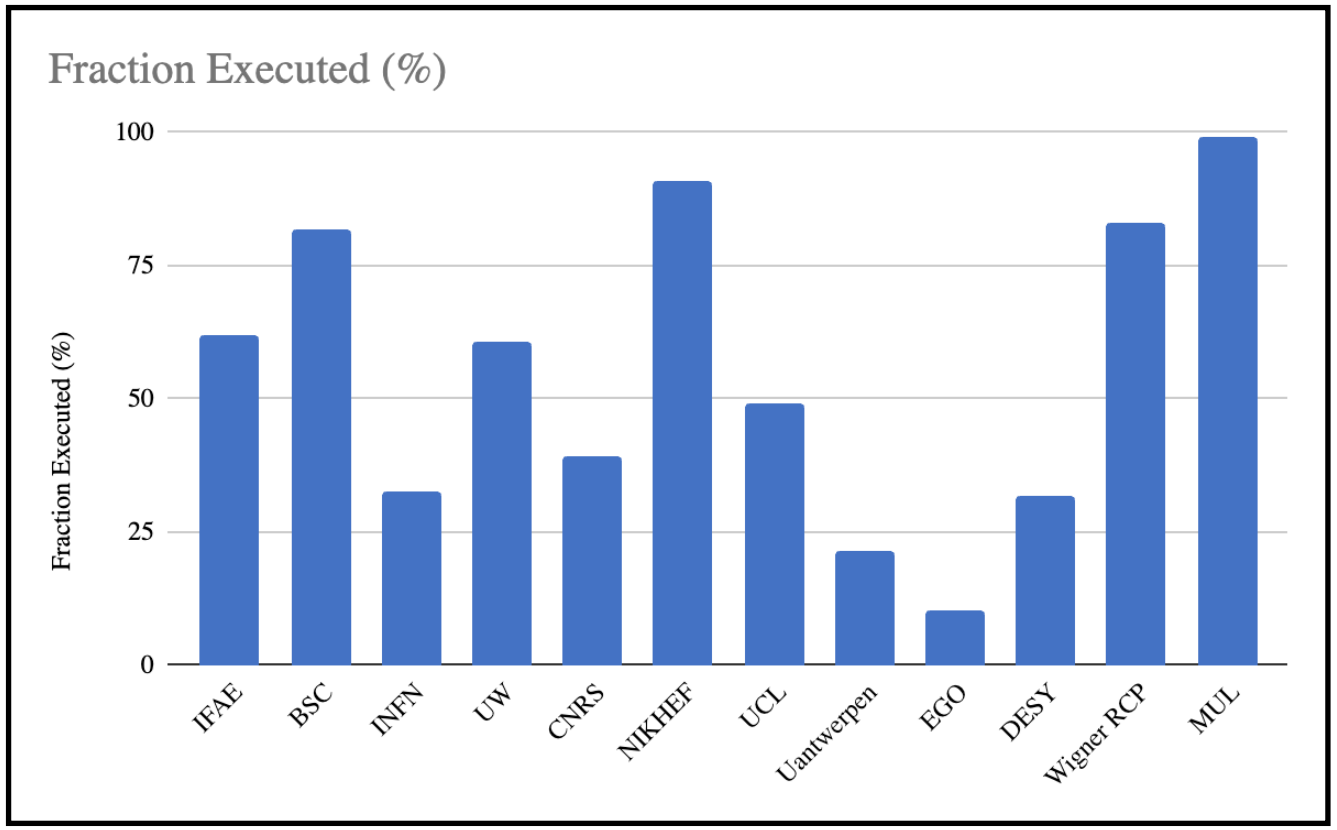
Focused on the actual action items

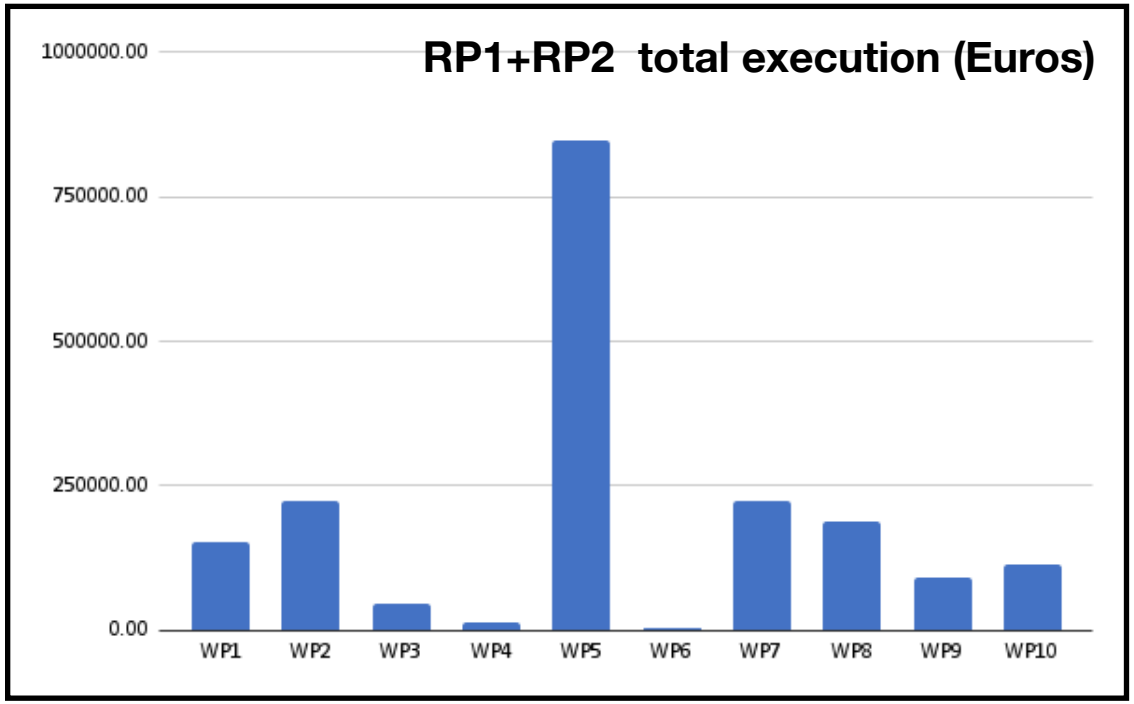
- Deliverables D4.2, D8.1, D10.3 need revision
- Milestones M2, M3 (from WP4) and M17 (from WP9) need revision

#	Details	WP	Due by (originally)	Comment
D11	D4.2: Updated socio-economic impact studies	4	Nov 2023	**Needs revision from RP2**
D30	D8.1: Computing and Data Requirements	8	Feb 2024	**Needs revision from RP2**
D38	D10.3: Formulate strategic media and communications plan	10	Aug 2024	**Needs revision from RP2**
M2	Document detailing the site-specific characteristics that impact ET sensitivity and its duty cycle.	4	Nov 2022	**Needs revision from RP2**
M3	Common methodology to estimate impact of site characteristics on ET sensitivity and operation	4	June 2023	**Needs revision from RP2**
M17	Preliminary sustainability plan	9	Jul 2023	**Needs revision from RP2**

I expect this is going to be an important item of discussion during parallel sessions with conclusions during plenaries the last day of the meeting

Some RP1+RP2 indicators on ET-PP funds execution





We are now preparing the forecast for the following 18 months

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

1.5M€ remaining for RP3 period

Steps to close RP2

1. Produce a formal answer to EC officer before end of July (ongoing)
    1. Received all the inputs from WPs (not all of them)
2. Deliver all the revisited documents - deliverables and milestones
3. Submit revisited financial statements (concluded now)
    1. Some mistakes on own resources declaration were solved
4. Some additional information (more tables) in technical report requested (ongoing)

Hard deadline for 2-4 above is 10th of September — will happen in following weeks

WP2 & WP3

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 this known before August 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	Delayed	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	In internal review	May 2025

* **It is not feasible that WP2 is able to deliver legal documents and contents of statutes in 2025.**

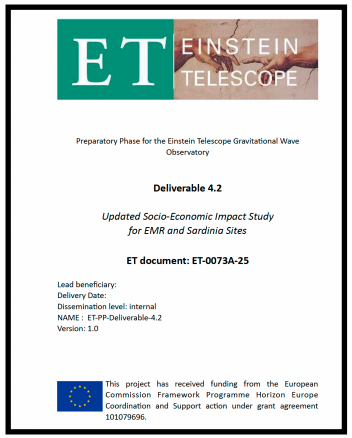
ACTION ITEMS FOR THIS MEETING

- **Converge on GA amendment for D2.3**
- **Discuss roadmap for legal entity**
- **Prepare the field for an early discussion on feasibility of D3.X (D3.1 expected soon) in Sept**

* 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.

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	**Requires revision**
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	**Requires revision**
M3	Common methodology to estimate impact of site characteristics on ET sensitivity and operation	4	Delayed	June 2023	March 2024/ March 2025	**Requires revision**

Discussion on WP4 deliverables took place before this meeting and its continuation has been posponed to early September

Today we will have an overview in the plenary session

Draft of answers to RP2 remarks to WP4 already received
New timeline for deliverables already discussed

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**

ACTION ITEMS FOR THIS MEETING

- **Converge on GA amendment for RI TDRs — in coordination with WP6 and ETO**
- **We are assuming all WP5 RP2 documents will be accepted in the EC portal — TBC**

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	**Expected to be approved**
D21	D6.2: Vacuum pipe Design	6	Submitted to EC	Aug 2024	Dec 2024	**Expected to be approved**
D22	D6.3: Preliminary RI TDR	6	Delayed	Aug 2024	July 2026	
D23	D6.4: Preliminary DET TDR	6	Delayed	Aug 2024	Feb 2026	
D24	D6.5: RI TDR	6	Delayed	Dec 2025	Delayed	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

ACTION ITEMS FOR THIS MEETING

- **Converge on GA amendment for D6.3, D6.4 and D6.5 — in coordination with WP5 and ETO**
- **Prepare answers to EC officers on Data Access / Data Policy and DMP together with WP8 and ETO**
- **Continue discussion on D6.6 preparation (see previous item)**

WP7 — Transfer of Technology / WP8 — Computing Model

#	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	Submitted	May 2025	July 2025	
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	**Revision requested**
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

- **Plan for rest of WP7 and WP8 deliverables & Milestones**
- **Prepare answers to RP2 EC comments on D8.1 and DMP in collaboration with WP6**
- **Discuss actions for D8.1 and the ET Data policy and DMP documents in collaboration with ETO and WP6**

WP9 — Sustainability

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

ACTION ITEMS FOR THIS MEETING

- **Plan for rest of deliverables and milestones to be reflected in the GA amendment**
- **Discuss actions for M17 modifications**
- **Discuss with Site representatives on the availability of data for sustainability results**
- **Already received draft of answers to M17 comments**

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	**Revision required**
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

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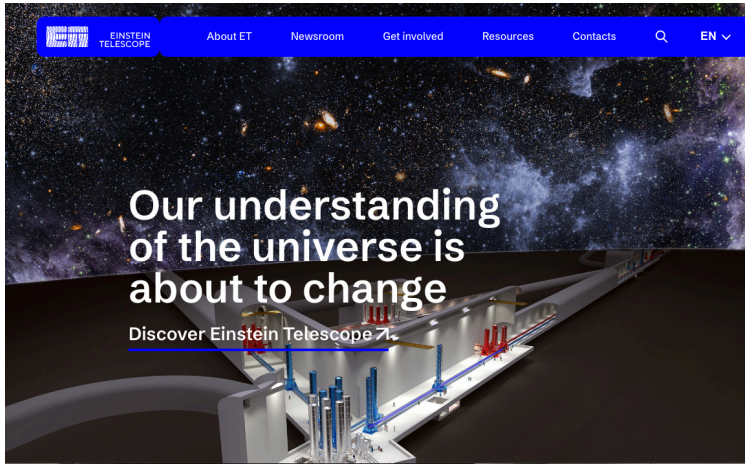

ACTION ITEMS FOR THIS MEETING

- **Plan for rest of Deliverables and Milestones**
- **Address D10.3 modifications — conclude answers to EC officer**
- **Discuss the organization and future of Web**

ET-PP GA amendment

To be resumed right after RP2 is concluded

- We plan to submit an amendment by mid September — working in August :|
- 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 Saxony activities as possible
- Consider to modify some text related to Data Policy and DMP
- Slight modification of budget assignments
    - Transfers CNRS —> INFN O(4k€)
    - Transfers INFN —> DESY O(80K€)
    - Modified model for INFN budget execution
- Reintroduction of mention to third parties contributions in GA [TBC]
- Anything else that might come up during the following three days

Welcome to BCN

Bonus Slides

RP2-Report: General comments

- Include Saxony information in all site related deliverables
- Drop Sustainability effort — not supported by EC officer — lets discuss in parallel session the plan
- The communication plan needs revisions, concentrating more on effective communication supporting the science objectives and less on projecting an appearance — German Saxony-bid interpreted as a surprised and lack of communication strategy —
- The plans for low-latency release of gravitational wave strain data (or lack thereof) have to be provided.
- In terms of compliance with the DoA this refusal to address this request is at odds with task 8.4: “Data Access Implementation” / coordinator BSC: guidelines for the data policy compliance, relevant to the data storage, access, process and distribution, on all relevant time scales, respecting the EU policies on open data.

— this demands a dedicated answer — Subject of discussion for parallel session

- Final thoughts: the failures show how progress is hampered by the convoluted structure of the project: The lines of command and responsibility are not straightforward — yes but this is ETO /ETC /BGR everyday discussion

Detailed comments

WP4 — D4.2, M2, M3

- D4.2 — *The report is made of two completely independent studies, one for the EMR and one for the Sardinia site, and it lacks a unified analysis employing the same evaluation criteria. … the two reports need to be harmonized*
    - The Referee is completely correct — D4.2 was the result of merging two documents from sites + cover letter — consequence of last minute delivery and the lack of site-site communication and decided effort to build a single document
    - Discussion with WP4 coordinators to make an effort of an extended introduction to the different site studies injecting this sense of common view
- M2 — The document is very brief and general. It should contain more detail.....
- M3 — Overall the report needs to be significantly more focused …. and concentrate on clear definitions of metrics to evaluate the site, in terms of its impact on the ET sensitivity.
    - Comments along the lines of those already received by the external committee —

Detailed comments

WP8 — D8.1

- D8.1 — The computing and data requirements presented for online analyses are adequate, and represent a reasonable extrapolation from what is currently done for ground-based detectors. However the rationale for using a factor 5 in estimating ET data requirements based on LIGO/Virgo detectors should be clearly presented.
    - Lets provide a comprehensive explanation
- D8.1 — The plans for low latency production and public dissemination of calibrated data, data quality flags, and their revisions, is lacking. The report must include this, as this is a major deliverable of interest to the broader community.
    - This talks to very important discussions on DMP and Data distribution policy
    - This will be addressed in D6.6 DMP —but we need to anticipate now part of the contents in our answer
- EC officer insists on a recurrent comment on FAIR and Open Data Access Policy
    - Brussels has a very strict vision of public funds — public data
    - Preparing an answer needs now a collaborative effort of WP6, WP8 and ETO
    - In a meeting with WP8 yesterday I proposed coordinators to prepare a separate document as part of the answer t the EC comments with a global view of these matters
        - Lets coordinate this in a ET-PP across the borders answer — I understood this goes inline with recent ETC discussions at the level of the EB — lets converge so we can provide an answer by the end of July.

Detailed comments

WP9 — M17

- M17 — The document is far too verbose: more pages are spent on the motivation for this deliverable than on specific plans relating to the ET project. There is hardly new and original material in this document. The state of this work makes the planned timeline for the delivery of the ET sustainability plan unlikely.
    - Lets make a revision of the document — for the third time with the help of ARUP
- D9.1 (not submitted) — Unfortunately the progress is too modest and at this point the timescale too short for the deliverables to be believable [comment from referee]
    - EC officer however insisted in delivering WP9 documents in view of the importance of the sustainability aspects
    - A failure in delivering credible sustainability documents will affect the ET project

Detailed comments

WP10 — D10.3

- D10.3 — The report has a lot of textbook information about how to set up an effective communication plan, but the actual application to the specific case lacks depth.
    - I confess I am a bit surprised because this document was reviewed by a very competent set of communication experts
- The surprise site-bid by the Saxony, demonstrates that the communication within the community and with possible stake holders has failed.
    - [??]
- This version still does not take into account the recommendations from the first review, namely that it is necessary to carry out a census of project's different web sites for communication and exchange, to critically review them, and compile a table of them with relevant details and links
    - Lets prepare comprehensive answers to the EC comments —-