EuAPS – EuPRAXIA Advanced Photon Source

Project Management

INFN-LNF 27/06/2022

Antonio Falone







TOR VERGATA Consiglio Nazionale delle Ricerche WP1 — Project Management & Dissemination



Ranking 1° in the Research Infrastructure ESFRI Area PNRR Call - 191/200

The project (GANTT) chart appears to be well constructed and reasonable.

The description of the project management in this proposal is what one would expect for an outline project of the highest international standard.

> We are grateful for the very good comment from the reviewer but at the same time it is huge responsibility to implement what has been written in the proposal and keep the same Project Management standard.







ROLES & MAIN PLAYERS



- ☐ Proponente: INFN
- ☐ Co-Proponente:

UniTov

CNR

- ☐ Unità Operative:
- U01: INFN LNF
- U02 : INFN LNS
- U03 : INFN MI
- U04 : CNR INO (Pisa)
- U05 : CNR ISM (Montelibretti RM)
- U06 : CNR ISM (Tito Scalo PZ)
- U07: UniTov

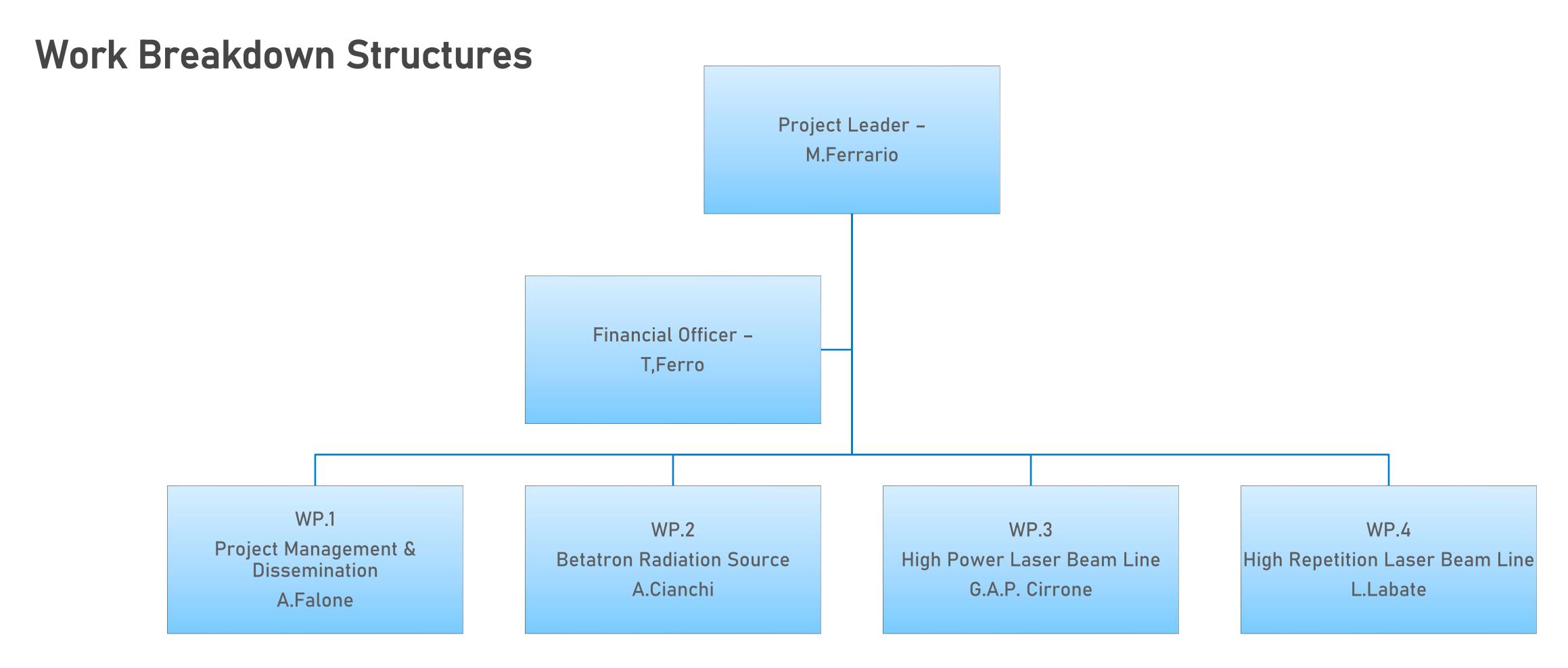




Consiglio Nazionale delle Ricerche

Work Breakdown Structure





Financial Officer supported by Financial Officers from co-proponent







Project Budget



Costs included in the request for funding (€)				
	To be located within the eight southern regions	To be located outside the eight southern Regions	Total requested grant	
Fixed term personnel specifically hired for the project	270.000,00	1.258.000,00	1.528.000,00	
Scientific instrumentation and technological equipment, software licenses and patent	6.917.812,47	10.865.386,00	17.783.198,47	
Open Access, Trans National Access, FAIR principle implementation	0,00	0,00	0,00	
Civil infrastructures and related systems	1.300.006,38	280.000,00	1.580.006,38	
Indirect costs, including running costs	575.081,15	869.302,00	1.444.383,15	
Training activities Total	0,00 9.062.900,00	15.000,00 13.287.688,00	15.000,00 22.350.588,00	







WP1 – Task Distribution



WP 1 - Tasks.

WP	Bimester	Milestone ID	Milestone Name	Costs (€)
	1	M.1.1.1	Approval of the Project Management Plan	0,00
	3	M.1.3.1	Meeting on defining EuAPS Data Policy	16.873,00
1	4	M.1.2.1	Website publication	23.046,00
'	6	M.1.1.2	Hiring of the infrastructure manager	28.396,15
	12	M.1.4.2	Draft Report on EuAPS Results for EuPRAXIA TDR	62.965,85
	14	M.1.3.2	Meeting on EuAPS Data Management Experience	34.569,00





WP2 – Task Distribution



WP 2 - Tasks.

WP	Bimester	Milestone ID	Milestone Name	Costs (€)
	3	M.2.4.1	Specs for test chamber and electron and ion spectrometers; call for tenders	0,00
	4	M.2.1.1	Hardware commissioning	302.452,00
	4	M.2.4.2	Installation of the electron and ion spectrometers in the test chamber	83.816,31
	4	M.2.6.1	Design of cross correlation methods	395.900,00
	6	M.2.2.1	Capillary - gas jet test report	1.450.920,00
	6	M.2.3.1	Procurement of phase noise analyzer	162.675,00
	6	M.2.5.1	Design user endstation	181.900,00
2	8	M.2.4.3	Commissioning of the electron and ion spectrometers	838.165,24
	10	M.2.3.2	Procurement of laser oscillator	391.620,00
	12	M.2.2.2	Laser transport	3.598.303,00
	12	M.2.6.2	Advanced Photon Diagnostics Commissioning	203.300,00
	13	M.2.5.2	Assembly of the chamber with instrumentation	524.300,00
	13	M.2.2.3	Laser Transport	773.041,00
	14	M.2.4.4	Commissioning of the electron and ion spectrometers	263.936,90
	15	M.2.1.2	Numerical characterization of betatron source completed	184.397,00
	15	M.2.2.4	Plasma Source Commissioning	47.080,00
	15	M.2.4.5	Report on pilot experiments with the electron and ion spectrometers	12.481,55
	15	M.2.5.3	Test end station report	42.800,00







WP3 – Task Distribution



WP 3 Tasks.

WP	Bimester	Milestone ID	Milestone Name	Costs (€)
	2	M.3.1.1	Clean room design	0,00
	3	M.3.2.1	Design	160.500,00
	5	M.3.2.2	Procurement and first payment	1.005.801,67
	5	M.3.4.1	Design and procurement	428.000,00
	5	M.3.1.2	Procurement and first payment	278.191,66
3	7	M.3.1.3	Second payment	417.300,00
	8	M.3.2.3	Second payment	1.508.702,50
	9	M.3.5.1	Design, procurement	428.000,00
			and mechanical realization of diagnostic	
	10	M.3.1.4	Third payment	417.300,00
	12	M.3.1.5	Assembling, commissioning and fourth payment	278.200,00
	12	M.3.2.4	Third payment	1.508.702,50
	12	M.3.3.1	Design and procurement	428.000,00
	15	M.3.2.5	Assembling and commissioning and fourth payment	1.005.801,67
	15	M.3.3.2	Realization and tests	0,00
	15	M.3.5.2	Calibration under conventional beams	0,00





WP4 – Task Distribution



WP 4 Tasks.

WP	Bimester	Milestone ID	Milestone Name	Costs (€)
	2	M.4.2.1	Laser transport and manipulation full-scale modelling	42.800,00
	3	M.4.1.1		
	8	M.4.3.1		
	8	M.4.1.2	Laser second payment (40%)	1.612.335,92
	10	M.4.3.2	Procurement of optical tables	64.200,00
	10	M.4.1.3	Laser third (final) payment (40%)	1.663.544,12
11 M.4.2.2 Definition and procurement of optics, optomechanic beam transport		Definition and procurement of optics, optomechanics, etc. for laser	117.700,00	
7	11	M.4.2.3	Definition and procurement of laser beam temporal diagnostics	96.300,00
13 M.4.3.3		M.4.3.3	Procurement of vacuum pipes/pumps/steering chambers for beam transport	139.100,00
		M.4.3.4	Procurement of vacuum chamber for end station	42.800,00







GANNT CHA

10

Gannt Chart

T0 = 01/09/2022

Duration 30 months

Detailed GANNT CHART will be distributed









D	Text1 Ta	ask Name	Half 2, 2019 Half 1, 2020 Half 2, 2020 Half 1, 2021 Half 2, 2021 Half 1, 2022 Half 2, 2022 Half 1, 2023 Half 2, 2023 Half 2, 2024 Half 2, 2024 Half 2, 2025 Half
0	E	uPRAXIA Advanced Photon Source	
	WP.1	Management & Dissemination	Management & Dissemination 04/03/25
	1.1 M1.1.1	Project & Financial management Approval Project Management Plan	Approval Project Management Plan 01/09/22
	D1.1.1	Progress report	Progress report ◆ 01/06/23
	D1.1.2	Progress report	Progress report • 03/06/24
	D1.1.3	Final report	Final report ◆ 01/12/24 Hiring (nfrastructure Manager ◆ 01/06/23
	M1.1.2	Hiring Infrastructure Manager Dissemination & Communication	Tilling Illiash detale Wallager • 01/00/23
	D1.2.1	Website published	Website published ♦ 02/02/23
13	M1.2.1	School on advanced photon sources	School on advanced photon sources → 01/12/23
	M1.2.2	User workshop	User workshop ◆ 03/06/24
	1.3 M1.3.1	Data Management Meeting on defining EuAPS data policy	Meeting on defining EuAPS clata policy ◆ 01/12/22
	M1.3.2	Meeting on EuAPS Data Management Experience	Meeting on EuAPS Data Management Experience • 01/10/24
	D1.3.1	EuAPS Data Policy Document	EuAPS Data Policy Document ♦ 01/09/23
20	D1.3.2	Report EuAPS Data Management	Report EuAPS Data Management 🔷 01/12/24
	1.4	Integration with EuPRAXIA ESFRI PROJECT	Report on EuAPS results for EuPRAXIA TDR • 01/12/24
	D1.4.1 M1.4.1	Report on EuAPS results for EuPRAXIA TDR Planning integration EuAPS in EuPRAXIA-ESFRI	Planning integration EuAPS in EuPRAXIA-ESFRI • 01/02/23
	M1.4.2	Draft Report on EuAPS Results for EuPRAXIA TDR	Draft Report on EuAPS Results for EuPRAXIA TDR ◆ 01/06/24
26			
	WP.2	Betatron Radiation Source (UNIV TOV)	Betatron Radiation Source (UNIV TOV) 31/07/25
	2.1	Start to End Simulations (INFN-MI)	Hardware commissioning • 01/05/23
	M2.1.1 D2.1.1	Hardware commissioning Numerical characterization of betatron source by internal injection (report).	Numerical characterization of betatron source by internal injection (report). 5 01/09/24
	M2.1.2	Numerical characterization of betatron source completed	Numerical characterization of betatron source completed 31/07/25
34	D2.1.2	Data analysis tools for betatron source characterization (report)	Data analysis tools for betatron source characterization (report) • 03/03/25
	2.2	Plasma Source (INFN-LNF)	
	D2.2.1	Plasma Source Design	Plasma Source Design Capillary - gas jet test report 02/09/24
	M2.2.1 M2.2.2	Capillary - gas jet test report Laser transport	Laser transport 4 04/11/24
	D2.2.2	Plasma SourceCommissioning	Plasma SourceCommissioning 🔻 03/03/25
41	2.3	Timing & Synchronization (INFN-LNF)	•
	M2.3.1	Procurement laser oscillator	Procurement laser oscillator • 01/04/24
	D2.3.1 2.4	Commissioning Timing & Synch. System Online Photon diagnostics (CNR-ISM)	Commissioning Timing & Synch. System * 01/11/24
	M2.4.1	Specs for test chamber and electron and ion spectrometers; call for tenders	Specs for test chamber and electron and ion spectrometers; call for tenders • 01/03/23
	D2.4.1	Report on Design of gas monitor	Report on Des gn of gas monitor \$\square\$01/05/23
49	M2.4.2	Installation of the electron and ion spectrometers in the test chamber	Installation of the electron and ion spectrometers in the test chamber \$\frac{1}{4}.01/03/24
	D2.4.2	Report on commissioning of the gas monitor	Report on commissioning of the gas monitor 15/08/24 Commissioning of the electron and ion spectrometers 28/01/25
	M2.4.3 D2.4.3	Commissioning of the electron and ion spectrometers Report on pilot experiment with the electron and ion spectrometers	Report on pilot experiment with the electron and ion spectrometers 301/04/25
	2.5	User's end station (UNITOV)	
55	M2.5.1	Design user endstation	Design user endstation • 01/09/23
	D2.5.1	Hardware procurement	Hardware procurement ★ 01/01/24
	M2.5.2	Assembly of the chamber with instrumentation	Assembly of the chamber with instrumentation 4 01/11/24 Test endstation report 03/03/25
	D2.5.2 2.6	Test endstation report Offline advanced photons diagnostics (ISM-Montelibretti)	rest enustation report \$ 03/03/23
	M2.6.1	Design of cross correlation methods	Design of cross correlation methods • 01/05/23
62	D2.6.1	Report cross correlation methods	Report cross correlation methods 501/09/23
	M2.6.2	Advanced Photon Diagnostics Commissioning	Advanced Photon Diagnostics Commissioning \$\square\$02/09/24
	D2.6.2	Report of Advanced Photon Diagnostics activities	Report of Advanced Photon Diagnostics activities 303/03/25
65 66	WP3	High Power Laser Beam Line	
	3.1	Clean Room Realisation	
69	M3.1.1	Design	Design • 01/12/22
	M3.1.2	Procurement	Procurement 303/07/23
	M3.1.3 D3.1.1	Implementation and Installation Infrastructure realization	Implementation and Installation 3 01/03/24 Infrastructure realization 3 01/05/24
	3.2	Laser Design and Realization	
	M3.2.1	Design	Design • 01/12/22
	M3.2.2	Procurement and first payment (20%)	Procurement and first payment (20%) 5 03/07/23
	M3.2.3	Second payment (40%)	Second payment (40%) - 01/06/24 Third payment (30%) - 02/07/24
	M3.2.4 M3.2.5	Third payment (30%) Assembling and commissioning and fouth payment (10%)	Assembling and commissioning and fouth payment (10%) 03/09/24
	D3.2.1	Laser Design Procurement and installation	Laser Design Procurement and installation 4/09/24
81	3.3	Target system for High Rep.Rate (10Hz)	•
	M3.3.1	Design & Procurement	Design & Procurement • 01/09/23
	M3.3.2 D3.3.1	Realization and Tests Design and realization of the target system.	Realization and Tests 202/09/24 Design and realization of the target system. 07/03/25
	3.4	Plasma Diagnostics	5 57/55/25
	M3.4.1	Design & Procurement	Design & Procurement • 03/03/25
89	D3.4.1	Plasma diagnostics acquisition and installation	Plasma diagnostics acquisition and installation 🕏 03/04/25
	3.5	Secondary Beam Diagnostics	Design, procurement and mechanical realization of diagnostic • 01/05/24
	M3.5.1 M3.5.2	Design, procurement and mechanical realization of diagnostic Calibration under conventional beams	Calibration under conventional beams 03/03/25
	D3.5.1	Secondary Beam Diagnostics acquisition and installation	Secondary Beam Diagnostics acquisition and installation 501/04/25
95			
	WP4	High Repetition Rate Laser beamline (CNR-INO)	
	4.1 M4.1.1	High rep rate laser system	Laser system tender • 01/02/23
	M4.1.1 D4.1.1	Laser system tender Laser system design (report)	Laser system tender 01/02/23 Laser system design (report) 01/03/23
	M4.1.2	Laser system design (report) Laser system delivery and commissioning	Laser system delivery and commissioning 01/05/24
	D4.1.2	Laser system specifications (report)	Laser system specifications (report) \$\frac{1}{4}\$ 01/05/24
	4.2	High rep rate laser system diagnostics, transport and beam conditioning	
	D4.2.1	Laser beam transport (report)	user's beam specs and available operation modes (report) 01/07/24
	D4.2.2 M4.2.1	User's beam specs and available operation modes (report) Laser beam transport to user's end station	User's beam specs and available operation modes (report) \$\int_01/07/24\$ Laser beam transport to user's end station \$\int_01/11/24\$
	M4.2.2	Laser diagnostics and spectral phase manipulation	Laser diagnostics and spectral phase manipulation \(\sqrt{01/01/25} \)
	4.3	High rep rate laser infrastructure and user's end station	
	D4.3.1	Infrastructure design (report)	Infrastructure design (report) • 01/05/23
	M4.3.1	Laser bay full commissioning	Laser bay full commissioning \$\infty\$ 01/05/24 User's area capability design (report) \$\infty\$ 01/07/24
	D4.3.2 M4.3.2	User's area capability design (report) User's end station commissioning	User's end station commissioning 4 01/01/25
	D4.3.3	Final infrastructure report, including full beam line specs and available options	Final infrastructure report, including full beam line specs and available options (report) 3/03/25
	1	(report)	





Final Considerations



This will be a very challenging project that can bring a significant impact in the EuPRAXIA development and related technologies that will be acquired.

It will require a significant effort from all of us but it also a big opportunity that cannot be missed.

- Documentation effort from your side
- Documenting system and approval cycle to be respected
- Change managament to be fully understood. Changes in the scope (both technically and financially) must go through an internal approval cycle to ensure that the overall project objectives and committment towards funding agencies are fully respected.

Synergies with other PNRR projects can be found.

Personal Opinioni: A common tool and methodology of project management within PNRR activities can be useful to harmonize the projects monitoring & control within the LAB (at least).





Final Considerations



Relevant documents that are in preparation and that will be distributed very soon to all the participant:

- Project Charter
- Project Management Plan
- Gannt-Chart
- Deliverable template





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Final Considerations



Very short term to-do-list:

- Distribute all relevant documents
- Elaborate a change management process (very important to keep under control potential changes)
- Coordinate on a common repository (coordination with CNR colleagues is necessary)
- Set up a calendar of meetings and implement proper communication channels
- Create a mailing list for WP leaders and collaborators.

All before august holidays.





Final Considerations



Thanks a lot for your effort and collaboration during the proposal phase.

The same will be required in the future!

Keep up the good work and thank you!!