



AHEAD 2020

INTEGRATED ACTIVITIES FOR
HIGH ENERGY ASTROPHYSICS



Funded by the Horizon 2020
Framework Program
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WP5: “Experimental and Test Ground/Laboratory Facilities” TNA (alias TA1)

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S. Sciortino, 2nd AHEAD General, Nov 26th. 2024





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WP5/TNA1- Access to Exp. Facilities



- **AIM:** To offer free-of-cost **competitive** access to top-level EU-based test equipments and/or calibration facilities.
- **TARGET:** Scientific and industrial teams working on hardware development in fields such as exploration of the cosmos, planetology, solar and plasma physics and particle physics (but other research/innovation areas are possible as well ...).
- **OFFER:** Access time to 6 different infrastructures and 9 distinct installations, plus travel expenses and daily allowance for a 3 person team whose majority must work in a country different from the one hosting the facility. Non-EU access is possible with a 20% limitations. Preparatory/mentoring visits are part of the offer.





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Implementation



- Guest Teams may submit proposals **at any time** since AO opening and till end of June 2024
- Proposal evaluated by a 5 person panel, with 3 members not involved with AHEAD 2020. A deeper technical assessment needed only in a couple of cases.
- Given the limited number of proposals selection performed by teleconference or email exchange.
- All management activities in line with project plan
- The COVID outbreak has delayed the begin of activities and required, for the first ~ 12-18 months, to adopt (if feasible) a TNA remote access scheme not foreseen in the original proposal
- On 3rd November 2023, we have to face the sad loss of Graziella Branduardi-Raymont, a member of the selection panel. Pietro Ubertini has been appointed and has kindly served till AHEAD closure.





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Summary of TA1 accesses



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Access provider	Activity Infrastruc.	Min. Acc.	Est. User Projects	Facility (ke)	GO Supp (ke)	Access (days)	Done Projec
UNIFE	LARIX A	31	4	32.8	13.7	22	2
UNIFE	LARIX T	8	1	8.2	4.7	5	3
INAF/OAPA	XACT	14	1	14.1	6.8	0	0
INAF/OAB	BEaTriX	7	2	10.4	6.1	13 + 48 as remote TNA	3
CSL@ULI EGE	Focal 2	3	1	39.0	2.9	0	0
CSL@ULI EGE	Shaker 200	8	4	58.5	10.1	10	2
CSL@ULI EGE	BBOTOC	3	1	6.5	2.9	10	2
IOM-CNR	BABE	68	10	84.5	42.5	60 few as remote TNA	8
Cosine Res.	Shaker	6	1	14.2	3.9	0	0





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TA1 at AHEAD closure



- 21 proposals [where 9 till June 2022] submitted, 1 unfeasible on technical basis. Accesses have been requested for 6 of the 9 offered installations
- 20 proposals have been approved, “in person” access preferred, remote access in “emergency case”
 - 2 from “mixed” groups inside/outside AHEAD2020.
 - 2 PI from a SME (for a total of 5 proposals)
 - 3 PI from non-EU & associated country
- BABE asked by 8 proposals for about 60 working days
 - 4 proposals done in remote or partially remote access
 - All approved visits have been performed
- CSL Shaker and BBOTOC asked by 4 proposal for about 20 working days
 - All approved visits have been performed
 -
- LARIX-A and LARIX-T asked by 5 proposals for about 27 working days (incl. Prep. Visit)
 - All approved visits have been performed
- BeaTriX asked by 3 proposals for about 60 working days, 48 of which in remote access mode
 - All approved visits have been done, 2 in partially remote accesses
- Overall the time devoted to TNA accesses is in line with the (revised, after amendment) TNA offer.
- Guest team have in most cases provided the requested feedback by filling the form they have received



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A summary of activities



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- Investigations of the properties of thin films and surface coating in the UV and X-ray spectral range in view of application for space missions
- Investigations of the mechanical properties of thin films
- Characterization of the properties of gamma-ray detector prototypes for space missions
- Investigations of pore-optics properties for the ESA NewAthena mission study
- Characterization of total ionizing dose on organic semiconductor materials for radiation protection of astronauts.





Final remarks

- For a program like AHEAD, the amount of experimental facility TNA accesses made available has shown to be in-line with the level of requests from the interested community. A more ample offer can hardly be justified.
- A large-size, hardly replicable, facility with multiple capabilities, like a synchrotron beam, is, not surprising, at the top of the requests.
- Small-size, easily replicable, facilities are much less attractive, unless they are extremely specialized ones.



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