

SFERA-III

Solar Facilities for the European Research Area



Webinar session
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Trans-national Access to SFERA-III Research Infrastructures

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ACCESS TO FACILITIES



THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME UNDER GRANT AGREEMENT NO **823802**

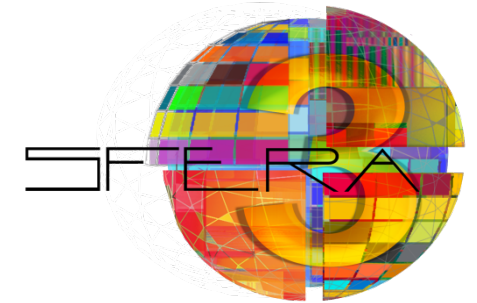
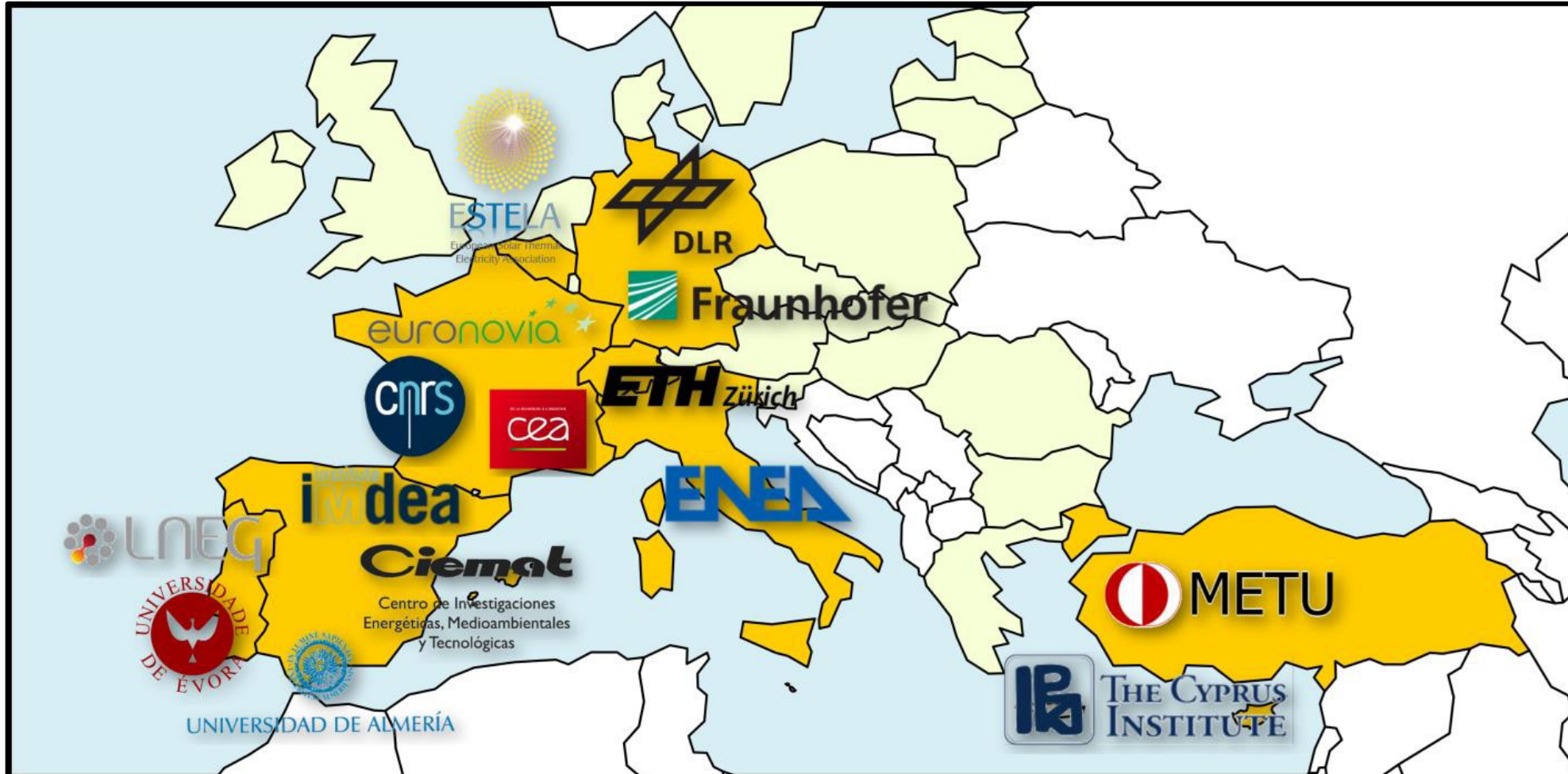
Content:

- Objectives of the SFERA-III Project
- Objectives of the Trans-national Access Programme
- Modality of access
- What is funded?
- Requirements for access
- Support offered to Users
- Dissemination/publication of project results
- Templates to fill in
- Evaluation of Proposal Form
- Installations and Services offered



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Objectives of the SFERA-III Project:

Addressing advanced science challenges
and integrated research activities



Offering to the R&D community a new
level of high-quality services

Opening key Research Infrastructures
(RIs) in solar concentrating systems



Carrying out energy and materials
research as well as research in other fields

Training of a new generation of researchers and engineers

What does this translate into?

- Educating new researchers to enable them to make appropriate use of the RIs
- Fostering the use of RIs by industrial researchers and increasing the general awareness in the possible applications of the CST technologies
- Increasing the scientific and technological knowledge in the CST field, and fostering the innovation potential of the RIs

What does this translate into?

- **Providing access to state-of-the-art CST research infrastructures:**

13 European advanced solar laboratories, including two laboratories in non-EU countries, i.e., Turkey and Switzerland, which complement the services offered by the EU RIs

- **Providing new and more advanced services to the CST industry and academics in all the areas of interest**

- thermal storage systems
- water desalination
- water treatment
- solar fuel production
- materials for solar receivers and STE components
- linear systems and point focusing systems



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Objectives of the Trans-national Access Programme

- **Offering** European and non-European researchers from academy and industry **effective and well-organised access** to unique and diverse advanced solar laboratories
- **Providing high quality infrastructures and services** that enable users to conduct first-class experimental research focusing on CST activities
- **Supporting promising researchers** who do not have access to high quality RIs in their own country

Note: Facilities are also **open for any other suitable R&D project from any other sector** needing the use of CST technologies for their success.

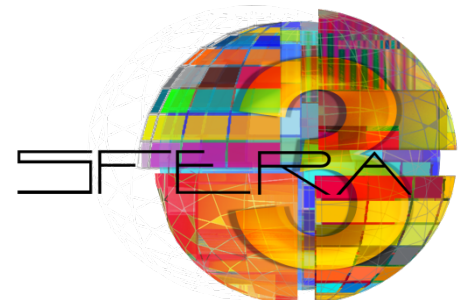
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Modality of access

- Access is regulated by a **competitive concurrence regime procedure**, the so-called **quality-based access mode**, with an independent and transparent evaluation process
- The **Call for Proposals** is open on a yearly basis for all the services
- A **Single Entry Point (SEP)** on the SFERA-III Project website allows accessing the overall list of facilities, technologies, as well as services available, and submitting a comprehensive proposal
- **Rules** and the **application procedure** are described on the SEP where the **application form** is also available

<https://sfera3.sollab.eu/access/>



Modality of access

- Access will always be **granted to a single SFERA-III site** for all project steps
- A **maximum of two Users** (exceptionally three Users) **per proposal can be supported**
- The **duration of the Access stay** will be defined by the work plan described in the proposal and agreed with the Installation Project Leader* (IPL). This duration will **never exceed 3 months, nor be less than 3 days** (1/2 week)

*Person responsible for a project at the Research Infrastructure.

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What is funded?

- No funding is provided directly to the User/User group by the European Commission. Instead, through **Access Providers**, the European Commission bears
 - the cost of access to the infrastructure, and
 - expenses such as sample shipment, as well as the travel costs and related subsistence allowances of the selected Users
- SFERA-III TA reimbursements will be made exclusively to the Users **on an individual basis**
- Access providers will not reimburse in any form the advance payments or reimbursements made by the User groups' home institute.



What is funded?

- Expenses will be reimbursed according to the **limits, standard rules and procedures** of the Access Provider
- Please note **it is not within the remit of SFERA-III** to provide any additional equipment or sensors for the access over and above what is already available in the selected RI (installation).

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Requirements for access

- Multiple access to the same facility under the same proposal cannot be supported beyond standard reimbursement limits
- The User Group Leader and the majority of the users must **work in a country other than the country where the installation is located**
- Access for user groups with a majority of **users not working in an EU or associated country** is now possible under H2020 on the condition that it is **limited to 20%** of the total amount of units of access provided under the grant

Requirements for access

- Only users or user groups that are **allowed to disseminate the results** they have generated under the action may benefit from the access
- **Users working for or with industry** of any size **are very welcome** to apply for SFERA-III access either alone or in partnership with academic teams. Access is granted free-of-charge provided results are published
- **Users working for SMEs are exempted from the obligation to disseminate the results generated within SFERA-III**, but proposals submitted by users working for SMEs will undergo technical feasibility check and scientific evaluation as for all SFERA-III proposals.



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Support offered to Users (prior to Access)

- Users should contact the Access Provider to discuss
 - the **project idea** before submitting the Application (contact details on the SEP), and
 - the **technical and logistic details** related to the requested Access
 - technical requirements of the research,
 - materials needed,
 - estimated Access duration, and
 - installation to be used for the Access
- User will be informed about options for **travel and accommodation**
- Access Provider can arrange for the **shipment of the samples** necessary for the execution of the Project (agreed on a case-by-case basis)



Support offered to Users (prior to Access)

Before installation access begins you will be asked to sign a

- Travel Information form, a document in which each RI describe how the travel will be organised and the costs to be reimbursed to the User
- Travel and Accommodation form, where you indicate the dates for the Access stay, and how you want to organise the travel
- User Access Policy, which will define the contractual terms related to scope of the Access, duration, confidentiality, property rights, dissemination of results, exploitation of results, safety rules and policies



Support offered to Users (during the Access)

During the Access, the Access Provider will

- provide information on:
 - Health and Safety Rules implemented in the installation
 - Internal rules concerning transport, meals, working time, etc.
- support the User on any **research and scientific aspects** regarding the experiments to be performed
- provide the User with the **on-site technical assistance** that s/he may require to perform the experiments
- **assist the User with analysis of data** by trained and experienced research staff



Support offered to Users (after the Access)

Once the Access is finished, Users must prepare two reports:

- An **Access Summary Report**
- An **Access Evaluation Report**

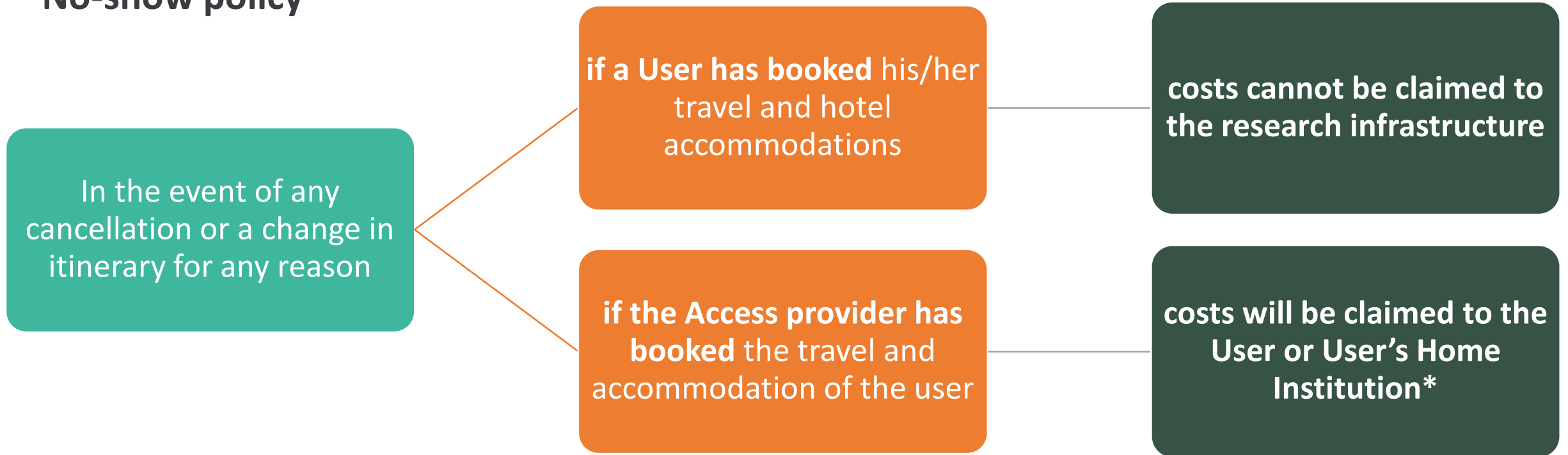
Access provider will

- support the User in the drafting of the **Access Summary Report**
- provide the User with any information s/he could need **for the processing and evaluation of the tests data collected** during the Access

Access Provider can arrange for the **shipment of the samples** gathered or generated during the Access (agreed on a case-by-case basis)



No-show policy



*unless it's a case of force majeure

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Dissemination/publication of project results

Users are requested to acknowledge both **the use of the facilities and its researchers/technology experts**, and **the European Community support** in any output (i.e., publication, patent, data, etc.) deriving from research conducted within their fields:

We thank the <name of the Access Provider> for providing access to its installations, the support of its scientific and technical staff, and the financial support of the SFERA-III project (Grant Agreement No 823802).

It is expressly recommended to include the SFERA-III staff members who ensured the access support in the acknowledgements.

Dissemination/publication of project results

- In order to allow the SFERA-III Consortium to monitor and collect all the dissemination activities, **users shall give notice** of any dissemination actions at least **30 days prior to publication/abstract submission**.
- Notifications containing at least the tentative title, list of authors and abstract are to be sent via email to access-sfera@sollab.eu.
- Co-authorship shall follow the **gentlemen's agreements** and **best-practices** commonly adopted within the scientific community.

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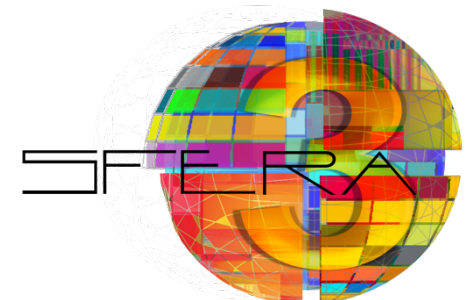
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Templates to fill in:

The SFERA-III User Research Proposal Form is divided into two parts:

- The **electronic form** which includes:
 - Title of the proposed project
 - Acronym
 - Scientific Field
 - Installation to which Access is requested
 - Information on the applicant (User Group Leader)
 - Brief CV of the group leader, including a short list of the most relevant papers
 - Short description identifying the team members and their current lines of research, specifying why the team activities are relevant to the project implementation.
 - Commitments of the applicant



Templates to fill in:

The SFERA-III User Research Proposal Form is divided into two parts:

- The **SFERA-III Application Form (SAF)** which includes:
 - Objectives of the project (valid for the criterion of scientific excellence)
 - Full details of any necessary materials including samples
 - Previous work of the applicant in the field
 - Detailed work plan (what you intend to do in the installation, any potential risk(s) related to the Access, how many visits, how many people)
 - Why you need to make use of the selected installation (valid for the criterion of technical feasibility)
 - Expected results and possible application, as well as information or experience you will be able to gain from this Access stay



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Evaluation of the SFERA-III User Research Proposal Form

All access proposals will go through three stages of review:

1. **Eligibility assessment** by the Access Coordinator
2. **Technical feasibility assessment** by the Access Provider
3. **Scientific evaluation** by the User Selection Panel

During the evaluation process, Applicants may be requested to provide additional information if considered necessary by the Access Provider or any member of the User Selection Panel

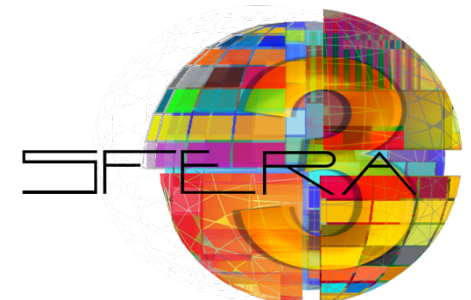
Evaluation of the SFERA-III User Research Proposal Form

1. Eligibility Assessment

A pre-screening of the incoming proposals conducted by the Access coordinator to check the compliance of the proposals with the eligibility criteria as set down by the EC Trans-national Access rules.

2. Technical feasibility assessment based on the following aspects:

- **Feasibility of the project** to be successfully conducted with the SFERA-III service providing installation;
- **Availability of required technologies and expertise** at the SFERA-III service provider; and
- **Availability of possible required supporting laboratory** for the project execution



Evaluation of the SFERA-III User Research Proposal Form

3. Scientific evaluation based on the following criteria:

- **Scientific excellence** of the project (5 points)
 - **Overall technical quality** of the project (5 points), and
 - **Qualifications and complementarity** of the User Group (5 points)
- The threshold for individual criteria is 3
 - If the proposal fails to surpass the threshold for any of the criteria, the evaluation of the proposal stops
 - The overall threshold, applying to the sum of the three individual scores, is 10



Evaluation of the SFERA-III User Research Proposal Form

Access priority will be given to User Groups composed of users who:

1. have not previously used the installation,
2. are working in countries where no equivalent research infrastructure exist,
3. are young researchers, taking into account the parity of male-female users, and
4. are from outside the SFERA-III network.

Those proposals contributing to the **improvement of the services** provided by the infrastructures, the **harmonisation and optimization of methodologies**, and the **reinforcement of the partnership with industry** will receive a special consideration



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Installations and Services offered

Access provider short name	Short name of infrastructure	Country	Quantity of access to be provided (weeks)
CIEMAT	PSA	Spain	86
CNRS	PROMES	France	83
ENEA	ENEA	Italy	17
DLR	Solar Institute	Germany	20
CEA	DURASOL	France	58
CEA	ESTHER	France	10
UEVORA	RES	Portugal	32
ETHZ	PREC	Switzerland	24
IMDEA	IMDEA	Spain	26
CYI	CYI Campus	Cyprus	10
CYI	PROTEAS	Cyprus	22
Fraunhofer	ISE-Lab	Germany	38
LNEG	LNEG	Portugal	10
METU	ODAK	Turkey	5
UAL	CIESOL	Spain	11

SFERA-III is providing access to 15 state-of-the-art CST RIs, unique in the world, and a total of **47 installations**.

Quantity of access to be provided
452 weeks

Access for non-EU users
Up to 90 weeks



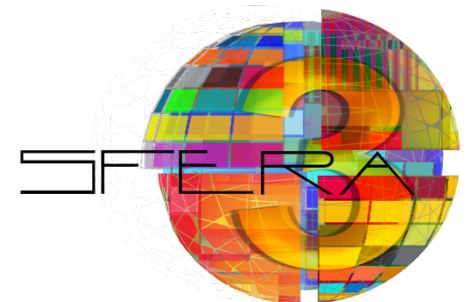
Installations and Services offered



Installations and Services offered

Allowing **academic and industrial Users** to conduct excellent research but also qualify commercial prototypes **in fields such as** but not limited to:

- Solar thermal electricity generation (tests from research on components and methods to full prototypes systems):
 - ✓ thermodynamic cycles such as Brayton and Stirling cycles,
 - ✓ receivers and their coatings,
 - ✓ thermal storage,
 - ✓ concentrating optics and mirrors,
 - ✓ control algorithms and solar resource evaluation,
 - ✓ heliostats and linear collectors,
 - ✓ high concentration PV cells, etc.



Installations and Services offered

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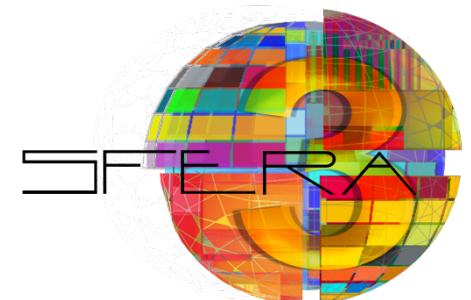
- Solar fuels production: H_2 , Syngas, liquid and gas hydrocabons, etc.
- Cycles for chemical storage of solar energy for short and long duration: ZnO, CeO, Iron, etc.
- Solar water treatment: desalination, disinfection and decontamination
- Solar heating and cooling of buildings to improve the energy efficiency in buildings
- Modelling and controlling of concentrating solar technologies for power plants and for industrial processes



Installations and Services offered

Allowing **academic and industrial Users** to conduct excellent research but also qualify commercial prototypes **in fields such as** but not limited to:

- High value material synthesis and/or coatings deposits (experimental or test of processes): nanomaterials like C or ZnO nanotubes, new ceramics or metals, foams, catalytic layers, etc.
- High-flux photochemistry and photo-physics.
- Characterization of materials behaviour and properties under extreme conditions such as for solar, space or nuclear fields: thermal shields, high temperature materials and parts, etc.
- Solar pumping of LASER for industrial and space applications.



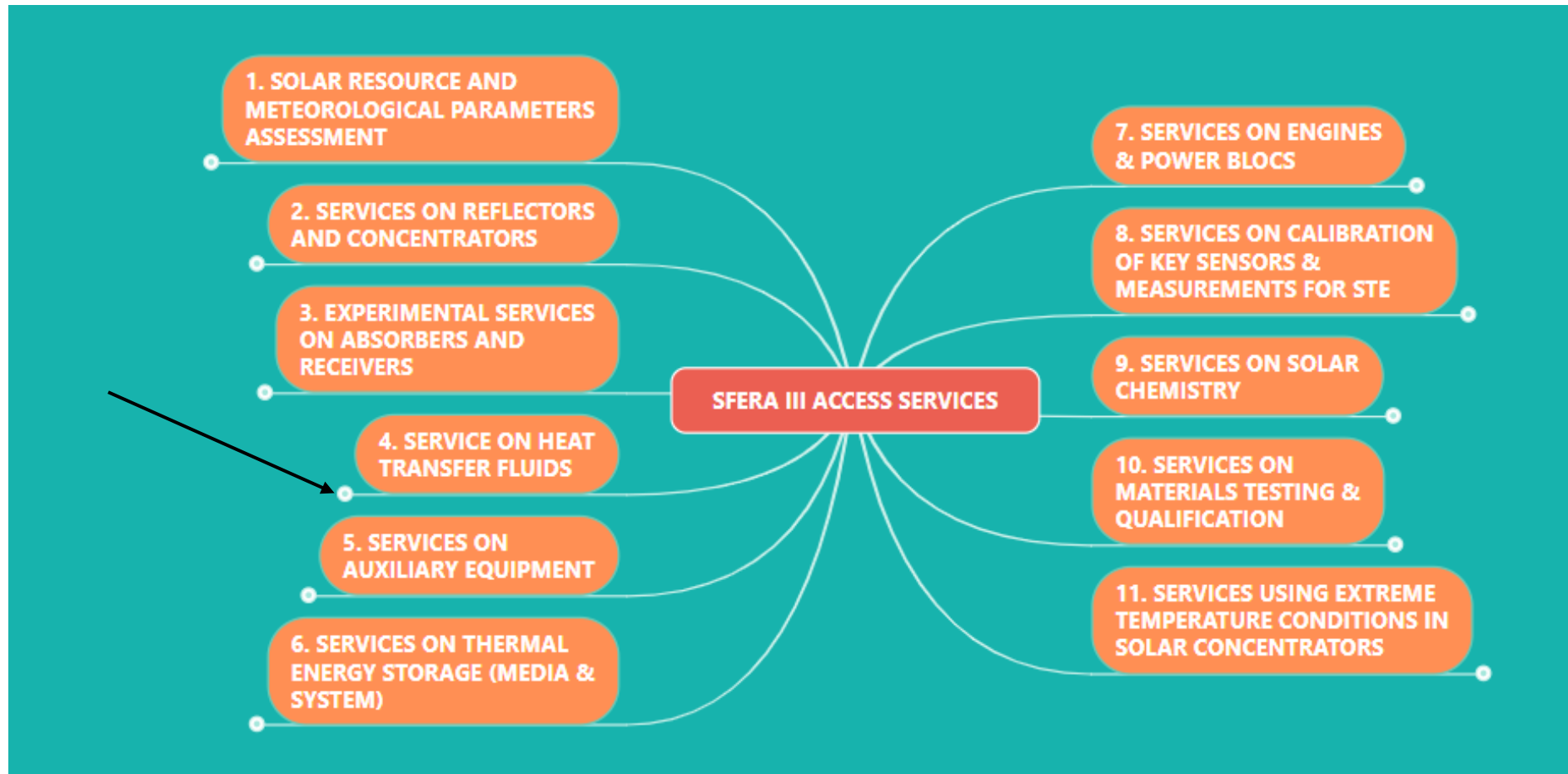
Installations and Services offered

1. SOLAR RESOURCE (DNI) AND METEOROLOGICAL PARAMETERS ASSESSMENT
2. SERVICES ON REFLECTORS AND CONCENTRATORS
 - 2.1. Experimental Services on Reflectors
 - 2.2. Available Services on Concentrator's Experimental Characterization
3. EXPERIMENTAL SERVICES ON ABSORBERS AND RECEIVERS
 - 3.1. Experimental Services on Absorbers
 - 3.2. Experimental Services on Linear Focus Receivers
 - 3.3. Experimental Services on Anti-Reflective Materials
 - 3.4. Experimental Services on Point Focus Receivers
4. SERVICES ON HEAT TRANSFER FLUIDS
5. SERVICES ON AUXILIARY EQUIPMENT
6. SERVICES ON THERMAL ENERGY STORAGE (MEDIA & SYSTEMS)
7. SERVICES ON ENGINES AND POWER BLOCS
 - 7.1. Solarized Stirling Engines
 - 7.2. Other Services on Engines and Power Blocks for CSP
8. SERVICES ON CALIBRATION OF KEY SENSORS & MEASUREMENTS FOR STE
9. SERVICES ON SOLAR CHEMISTRY
 - 9.1. Water Treatment, Disinfection and Desalination
 - 9.2. High Temperature Solar Chemistry
 - 9.3. Solar Hydrogen
10. SERVICES ON MATERIALS TESTING AND QUALIFICATION
11. SERVICES USING EXTREME TEMPERATURE CONDITIONS IN SOLAR CONCENTRATORS



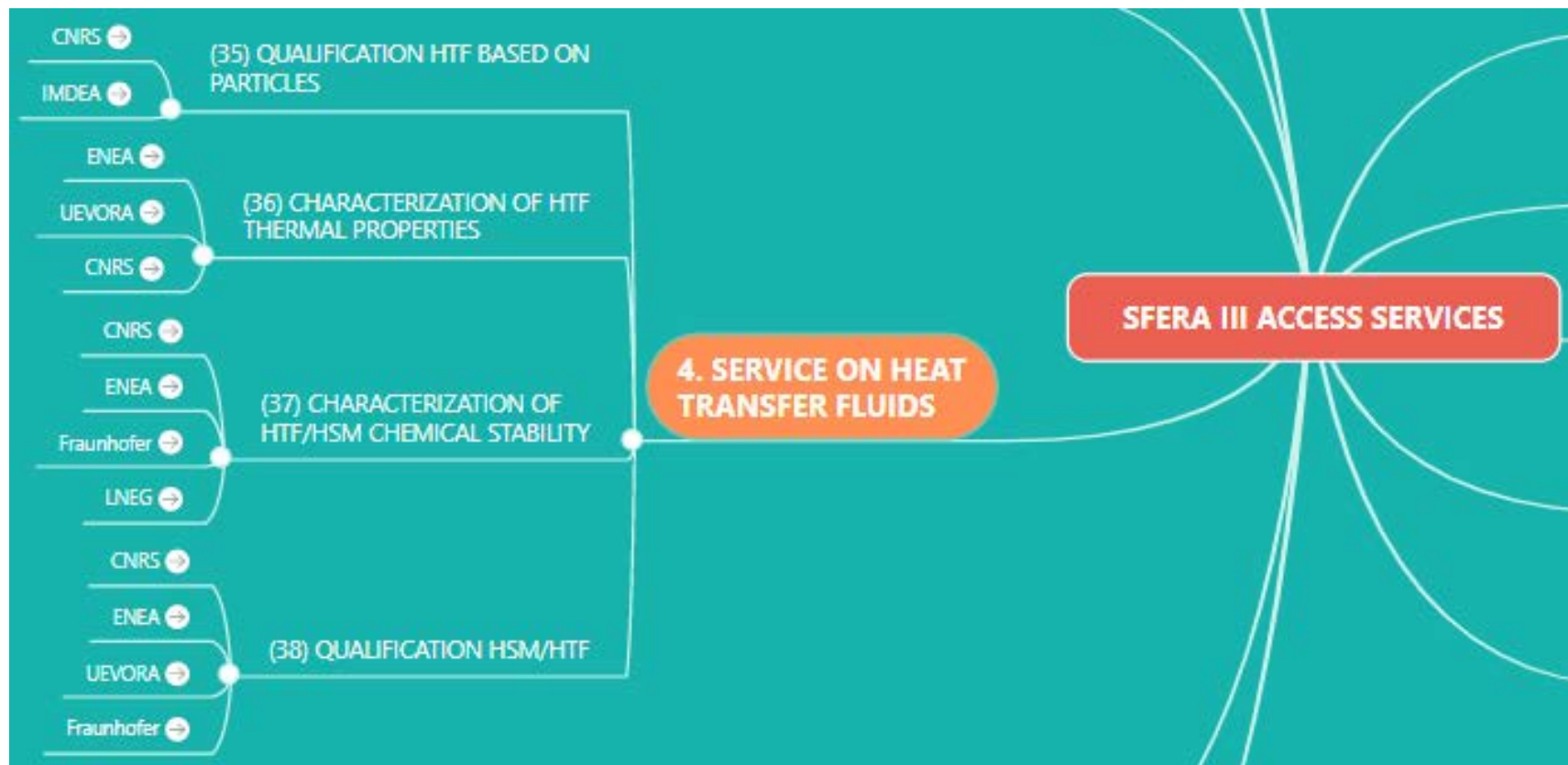
Installations and Services offered

[SFERA-III Access services](#)



Installations and Services offered

[SFERA-III Access services](#)



Installations and Services offered (this year)

Access provider short name	Short name of infrastructure	Installation short name
CIEMAT	PSA	MOSA
		DESAL
CNRS	PROMES	MicroSol'R
ENEA	ENEA	ESOL
DLR	Solar Institute	Synlight
CEA	ESTHER	Lhasa
UEVORA	RES	CER
		PECS
		INIESC
		DNI-N
ETHZ	PREC	CHEM
		HFSS

Access provider short name	Short name of infrastructure	Installation short name
IMDEA	IMDEA	HTPU-CDL
		KIRAN42
		VHCST
CYI	CYI Campus	Fresnel
	PROTEAS	AHTLab
		Exposure receiver
Fraunhofer	ISE-Lab	CD-Lab
LNEG	LNEG	LMR-LES
METU	ODAK	GunSolSim

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THANK YOU FOR YOUR ATTENTION!
ANY QUESTIONS?

