

## TRANSNATIONAL ACCESS USER PROJECT FACT SHEET

USER PROJECT	
Acronym	LCC
Title	Low Cost Concentrator Array
ERIGrid Reference	GA 654113
TA Call No.	

HOST RESEARCH INFRASTRUCTURE			
Name	CRES		
Country	Greece		
Start date	2/9/18	N° of Access days	5
End date	8/9/18	N° of Stay days	7

USER GROUP	
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## 1. USER PROJECT SUMMARY (objectives, set-up, methodology, approach, motivation)

The test campaign has been run successfully at CRES during one week in September. The weather conditions were good except one afternoon. The CRES infrastructure was adequate for the purpose of the tests, allowing access to a roof well exposed to the direct sun and logistics support. Very kind attention has been given by the CRES staff to our people and has been pretty much appreciated. The tests allowed us to understand some effects on the specimen and to characterize the performance of the reflectors. The collected data are under detailed analysis before being presented to the European Space Agency, end of October.

Without testing, it would have been impossible to get such results and reach a deeper understanding of, namely, a gravity effect on the reflectors.

The design of the new concentrator will evolve to take the tests results into consideration.



## 2. MAIN ACHIEVEMENTS (results, conclusions, lessons learned)

The effect of gravity should be taken into account when performing ground testing. In microgravity such effects will not exist and the results of illumination will therefore be better.

Defects on the reflectors were detected during the tests

The stability of the prototype was assessed and some design evolutions were identified (such as angle positioning system, motorisation, reflector hanging system, etc.)

Some conclusions and perspective for follow-on program:

- The junction between the sheets has to be enhanced to prevent any over or under illumination
- The size/thickness of the available sheets has to be widened to limit the number of junctions and decrease radius of curvature
- Sensible effect of gravity on the thin film sheets. Action proposed: test under mirror vertical position with a normal light source (sun is only possible with a heliostat).
- Stopping of the deployment at the final angle is still to be designed

For the hosting Facility (CRES) it is suggested that the acquisition of a heliostat should be a plus.

Furthermore, it is also suggested to have a reference frame showing the axis of rotation of the Earth to facilitate installation of an equatorial tracker

## 3. PLANNED DISSEMINATION OF RESULTS (journals, conferences, others)

**European Research Infrastructure supporting Smart Grid Systems Technology Development, Validation and Roll Out**

- IAC 2019 Washington DC, October 2019
- Final Presentation, ESTEC October 25, 2018

**4. PLANNED DISSEMINATION OF RESULTS THROUGH ERIGRID CHANNELS**

Contact [erigrid-ta@list.ait.ac.at](mailto:erigrid-ta@list.ait.ac.at) to organise promotion of your results