

# HelioMaroc Project

November 25<sup>th</sup> – 28th 2020

Presented by Daniel Benitez (DLR)



Knowledge for Tomorrow

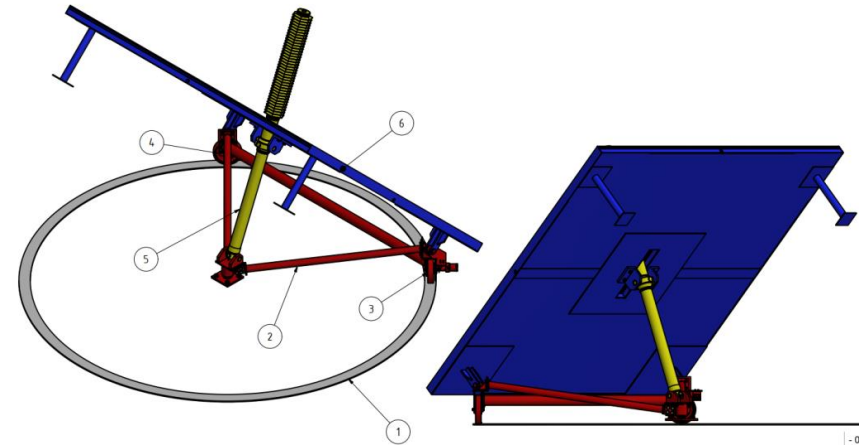
# Content



# Project Overview



SENER's Heliostats at Noor 3 plant in Ouarzazate

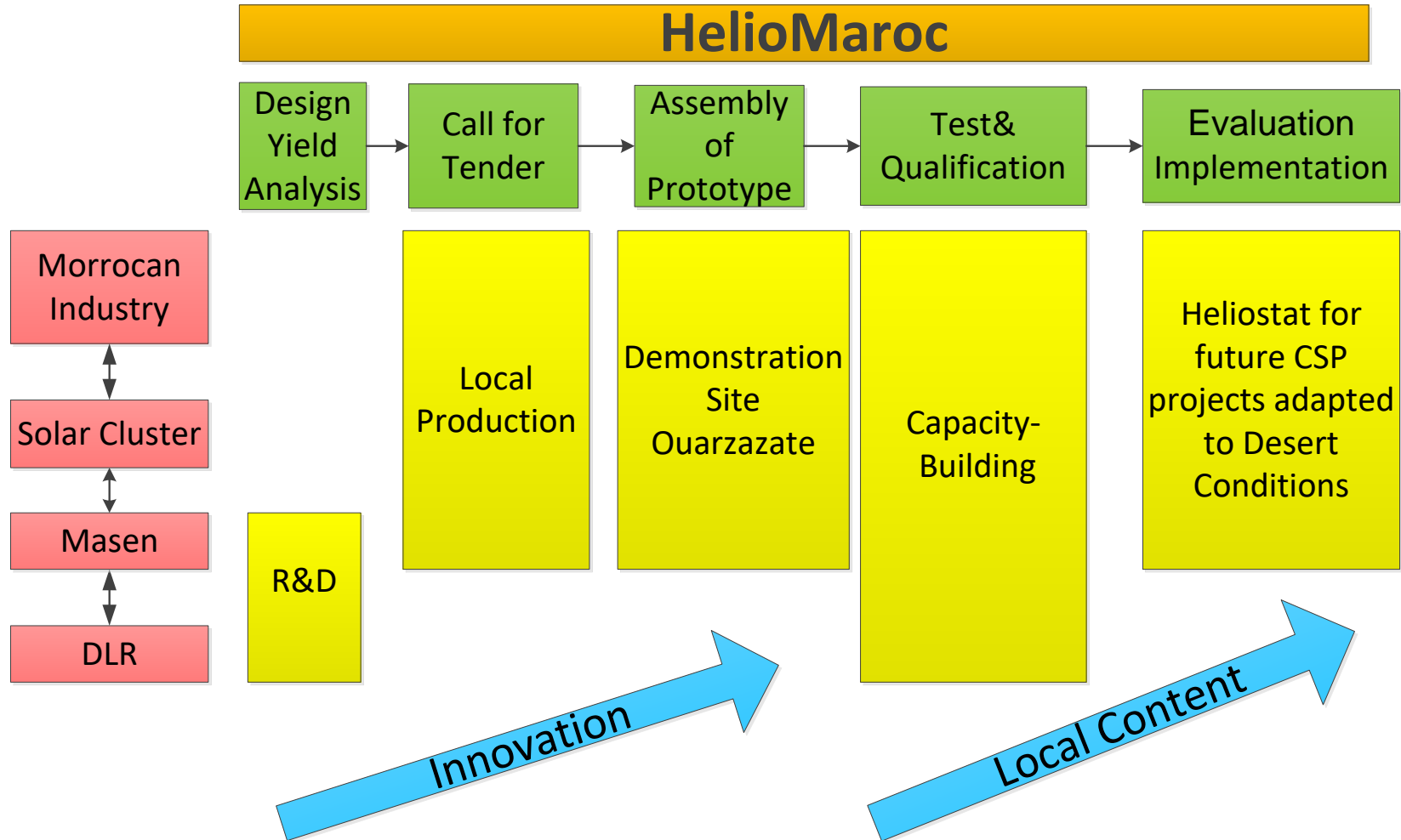


HelioMaroc design for low cost and high local content





# Project Overview



## Project Partners

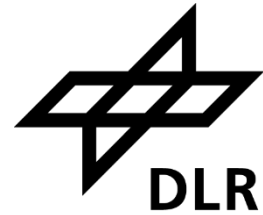


### Main Tasks:

- Contact with Moroccan industry
- Coordination of call for proposals for prototype construction and installation
- Provide testing infrastructure
- Performance testing



## Project Partners



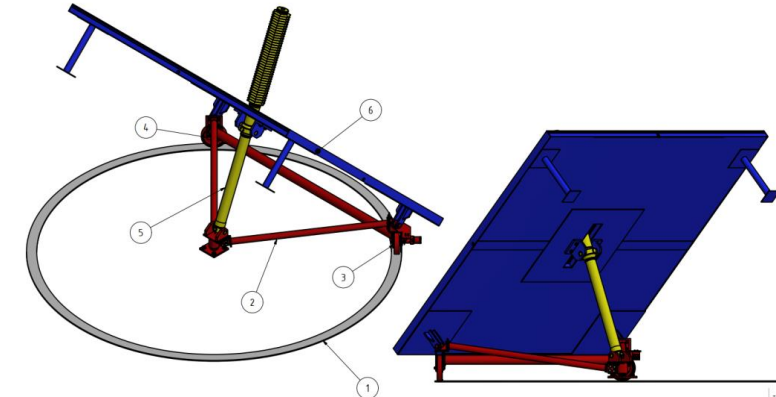
DLR

**Deutsches Zentrum  
für Luft- und Raumfahrt**  
German Aerospace Center



### Main Tasks:

- Heliostat design: foundation, tracking system, sandwich-type mirror, metal support structure
- Small scale prototype construction at DLR
- Capacity building regarding qualification
- Evaluation of results
- Benchmarking and recommendations for improvements





## Project Participants

## Consortium 1



## Consortium 2



## Tasks of the Moroccan Consortia

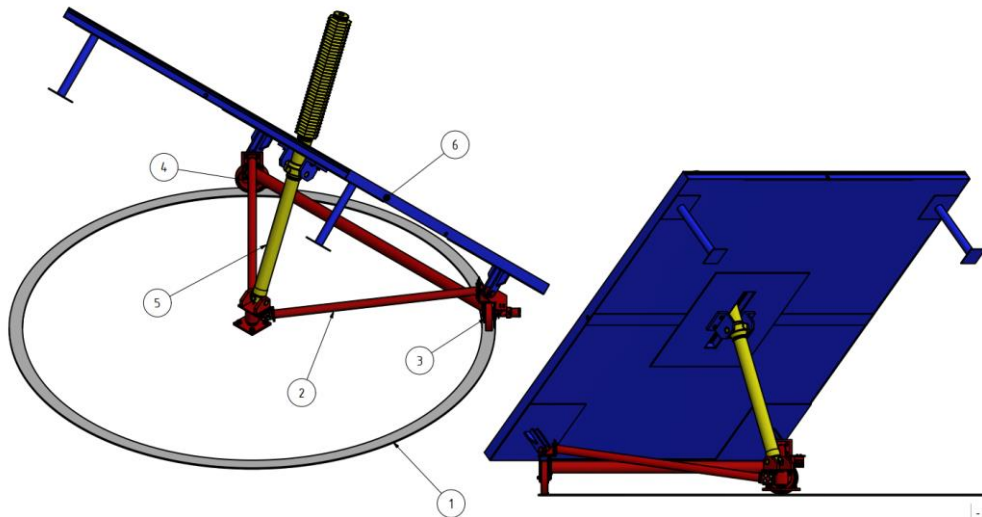
- Manufacture and install heliostat prototype
- Analyze test results
- Propose improvements

## Stakeholders search



## Current Status

- Heliostat fully designed by DLR
- Two consortia built and tested indoors one prototype each
- Both consortia are preparing the assembly of the heliostats at Masen's testing platform in Ouarazazate
- DLR gave training to Masen regarding heliostat qualification





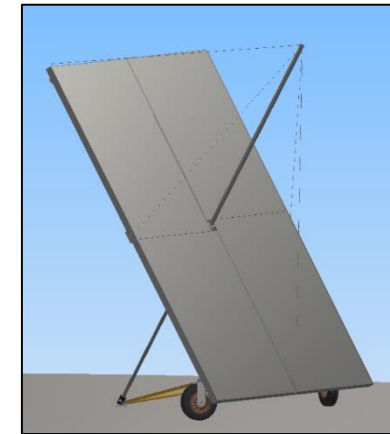
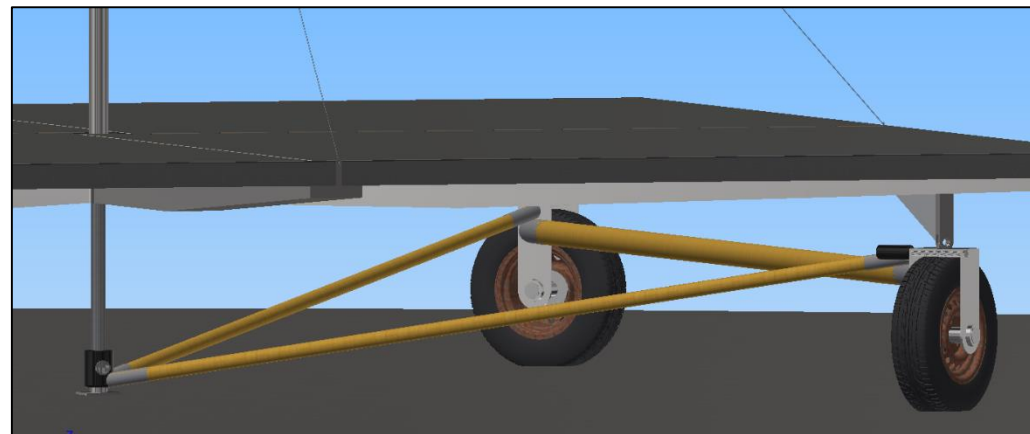
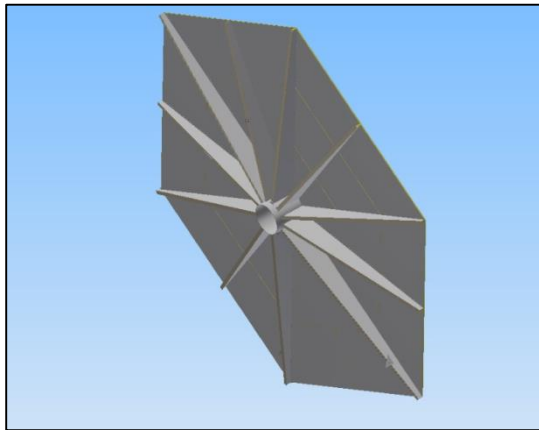
## Next Project Steps

- Heliostats will be installed and operated for short tests at Ouarzazate
- Masen will perform the heliostat qualification with DLR remote support
- DLR will evaluate the heliostat measured data
- Main result will be the qualification and the experience gained by the consortia



## Follow-Up Ideas

- Adjust the heliostat design in order to increase the local content and improve the quality
- Upscale the heliostat to 50m<sup>2</sup> (upcomming demonstration in 2021 by DLR for 20m<sup>2</sup>)
- Demonstrate the daily operation on a pilot plant with many heliostats (100+) „made in Morocco“
- Determine the durability of the local heliostats
- Integrate the heliostats into relevant applications (e.g. process heat for industry or rural applications)



# Thank you for your attention!

## Any Question?

### Contact Data:

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