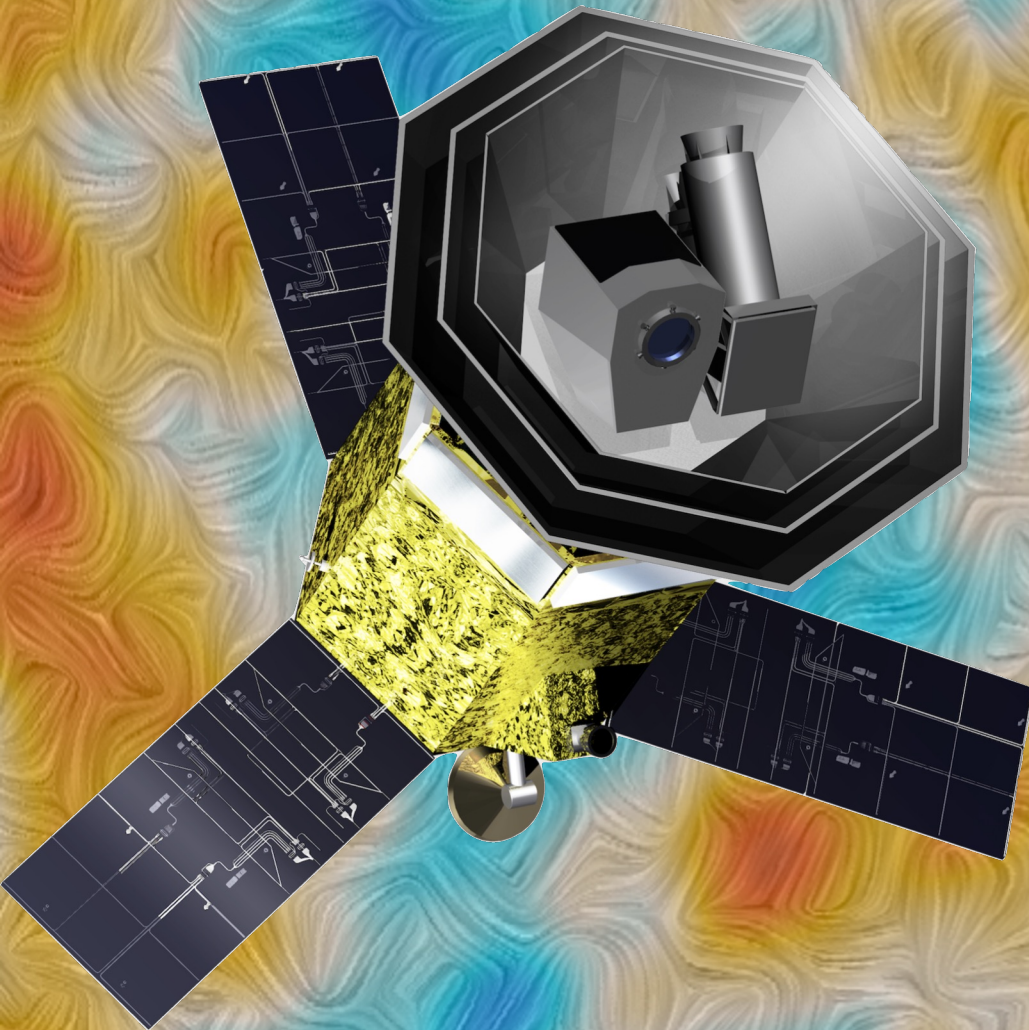


# TASI Study status

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24/05/2023



After the positive results of the McGill tests (see Giulia's talk), we were aware that our board was enough mature to evaluate the effort necessary to get a space grade version of it.

Negotiation started around 1 year ago (funds requested on 2022 budget)

RFQ sent on Fall 2022 to OHB-I and TAS-I based on:

- Evaluation of our current design to identify possible areas where a consolidation could be needed
- Definition of the analytical and design activities in case it will be necessary to consolidate the project
- Evaluation of the engineering costs to implement the design of the previous point
- Evaluation of the production costs including the procurement of parts and materials.



The result of this study will be a document containing a development plan which, as baseline, will cover the following aspects:

- Results of the analysis of the INFN-Bicocca design
- Identification of the activities aimed at modifying the design and to be implemented in the succeeding phase
- **Planning of the activities necessary to modify the INFN-Bicocca design and to manufacture the electronic boards, including the procurement of the components and materials.**
- **Evaluation of the cost of the abovementioned activities**



- Kick-off happened on March 13th 2023 in Thales
- P1 design was given together with BOM
- A folder containing design files and various documentation was shared
- Further clarifications on timelines, number and kind of deliverables were given in April and just before the first progress meeting (10.05.23)
- NDA necessary for formal exchange of design details.
- First Progress Meeting in Thales on 11th May 2023



## Various AI as output of May meeting:

- AI INAF-MI 23/5: establish who is in charge for signing the NDA (INFN side)
- AI TAS-I 1/6: prepare and NDA draft to share.
- AI INFN (asap): prepare a technical note with the requirements
  - Operative temperature range:  $[-20, +40]^{\circ}\text{C}$
  - RND accelerations loads during the launch: 20grms fino a 2000Hz
  - LET =  $40\text{MeV}\cdot\text{cm}^2/\text{mg}$ , 25 krad
  - Bias voltage 5.5V +/-4% WC
  - Component quality: grade 1 possibly (baseline), or highest available grade to be defined for each component
  - Lifetime: 3y ground, 3y space mission, 3y extension.
  - FIT: TBD
- AI TAS-I 1/6: verification of part list vs temperature, reliability and radiation requirements
- AI TAS-I 1/6: first revision of the electrical project.
- AI INFN 1/6: confirm that the number of SCA EM boards (#8, 4 deliverables) is enough to fulfill all the necessities for system level tests of the WRE in Canada, for system level tests by the Payload prime (ESA/CNES) and by satellite (JAXA)



## EGSE e TEST

- At this moment #2 TE each of which able to manage #2 SCA, for a total of 4 in parallel.
- For SCU, #2 TE (TBC) able to manage 8 SCAs.

The easiest approach when designing the TE is to integrate 8 DA with a quality level such that when connecting to SCA FM there is no risk of failure propagation.

- AI INFN 1/6: verify if the above approach is feasible.
- AI INFN 15/6: define at high level electrical/functional acceptance tests

Next meeting on June 1st or just after AI are fulfilled.