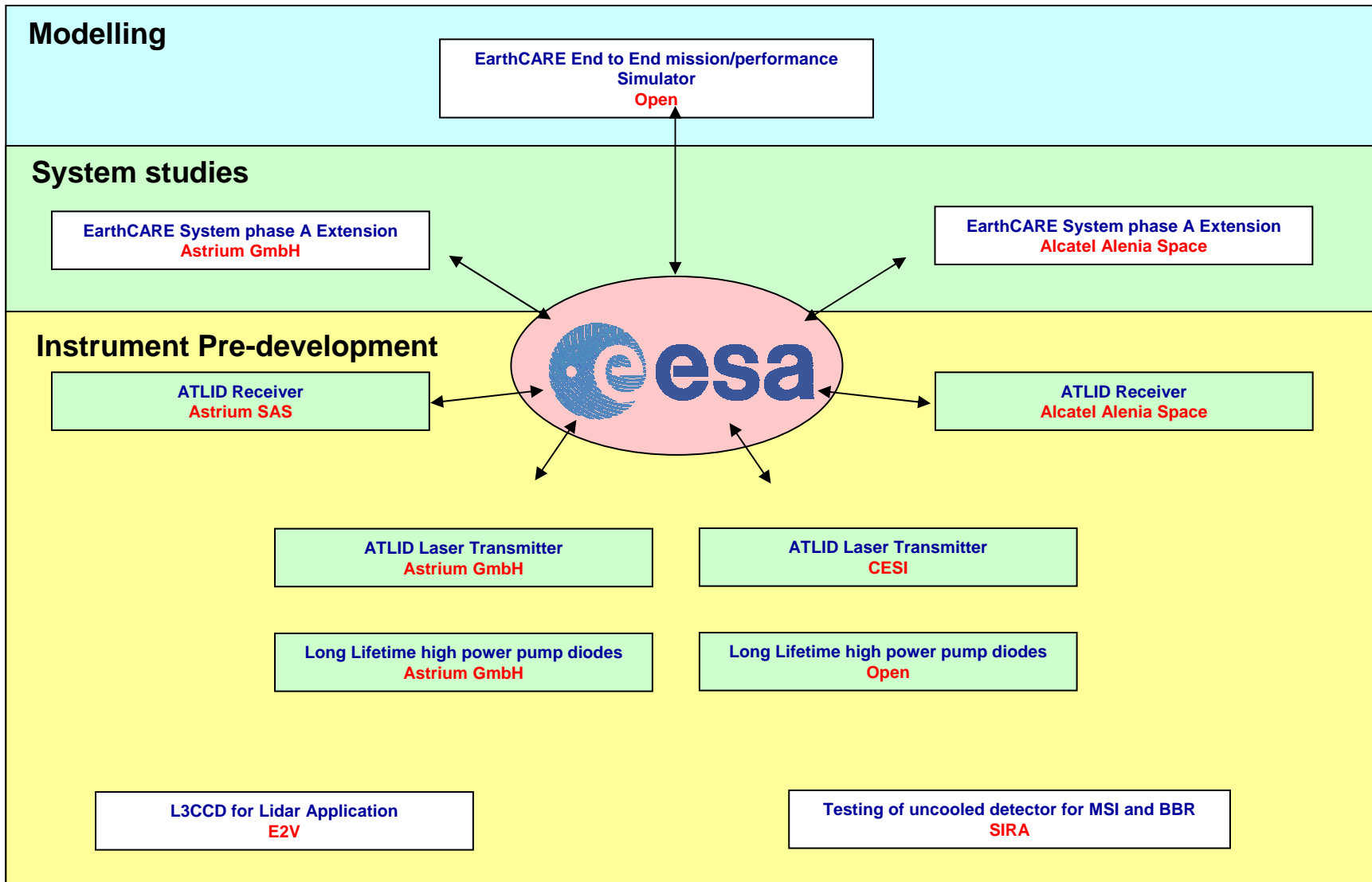


At their 103rd meeting, EOEP Participating States approved EarthCARE as the 6th ESA Earth Observation Explorer mission (ESA/PB-EO(2004)110,rev.1).

At their 222nd meeting the IPC has approved the procurement plan for the EarthCARE System consolidation Activities and Instrument Pre-development.



❑ ATLID Laser Source Breadboard

ATLAS: ATLID LAsER Source

- The ATLAS PDM shall be representative of the ATLAS FM with the exception of:
 - Laser electronics, which shall be functionally representative but could be based on laboratory ones,
 - Mechanical interfaces,
 - The seeder unit, which could be based on laboratory equipment,
 - Space qualification of pump laser diodes and of any sub-system developed in this activity.

- Study duration: 16 months

- Technical requirements:
 - 70Hz – 30 mJ ↔ 100Hz – 23 mJ
 - Wavelength tunability ↔ Fixed wavelength
 - Optical-optical efficiency(*): 6%

(* defined as the ratio of the output average optical power at 355nm to the average optical power emitted by the laser diodes. This does not include seeder power, electronics power or thermal control, but applies to the whole laser head.

❑ ATLID Receiver Breadboard

ALFA: ATLID Filtering and Acquisition chain

- The objective of the Activity is to demonstrate the feasibility and performance of the main critical sub-systems/units of the receiver by breadboarding with an emphasis on the optical filtering realising the High Spectral Resolution function and on the acquisition chain.
- Activity implemented in two parts:
 - The objective of Part 1 is to demonstrate the feasibility and performance of the **main critical sub-systems/units** of the receiver by breadboarding with an emphasis on the optical filtering realising the **High Spectral Resolution function** and on the **acquisition chain**.
 - Part 2 would cover the integration and test of the **complete ALFA chain** and would demonstrate the main performance.
- Study duration: < 18 months (Part 1)

❑ Long Lifetime high power pump diodes

➤ The scope of the Activity is to develop passively cooled high-power laser diodes arrays with an improved lifetime and to guaranty reproducibility of the manufacturing process for the ATLID/EarthCARE

➤ Study duration: 36 months

➤ Technical requirements:

- Wavelength : $807 \pm 2\text{nm}$
- Peak power: $> 700\text{ W}$
- Total efficiency: $> 50\%$
- 10 billions shots