



ESO ALMA Development Plan Studies 2010

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Process



- Following the definition of the overall scientific priorities for ALMA Development (by ASAC and *ad hoc* WG), we developed a process to identify European priorities and assess readiness of possible upgrades in Europe

- The process involves
 - Open call for Studies
 - Scientific/Technical evaluation of Studies to support
 - Studies to deliver complete Science Cases and assess readiness of upgrades for implementation (range of possibilities: conceptual design, supporting R&D, detailed design, production and implementation plan)
 - Studies duration 1-2 yrs

- The process follows the scheme used for some of the VLT and E-ELT instrument projects. Endorsed by STC/ESAC.



Call Details



■ Broad Scope:

- Advance detailed planning on existing projects (e.g. B5)
- Develop detailed plans on a range of projects (e.g. new B, VLBI)
- Identify and support projects that require long R&D, new ideas

■ Goals

- Develop European priorities for ALMA Development Plan
- Ensure that R&D, Design, Science/Tech Cases of upgrades are developed to the level to compete for ALMA Development Plan funding

■ The output of the studies will be detailed science requirements, design, cost and timeline for ALMA upgrades

- These studies will be combined with plans advancing in NA and EA to produce a coherent ALMA Development Plan for ALMA

■ Timeline:

- Call in July 2010, info meeting on July 19 at ESO, deadline Sept 15
- Proposal evaluation in second half of 2010
- Kick-off of studies in early 2011



Proposals



- 11 proposals received

- Front-End system
 - Upgrade of “existing” ALMA Bands: B7 & B9
 - Detailed design for production of B1, B2(+3), and B5
 - Research and Development for THz receivers and focal plane arrays

- Back-End system
 - Study of possible Correlator upgrade using UniBoard design

- VLBI Capabilities

- Weather conditions monitor
 - Cloud monitor with passive radiometer on site





Evaluation



- Evaluation based on Scientific and Technical case, credentials of the proposing team (track record, available resources etc.), timeliness for ALMA Dev Plan
- ESAC involved in the assessment
- Five projects selected as high priority for funding within the limited budget (one did not required funding), one deferred
- Two projects started, one in advanced negotiation, two under discussion
- Started an internal supporting investigation





Ongoing studies



- B9 2SB upgrade - NOVA
- Phasing up ALMA for VLBI - MPIfR
- Implications/cost on backends of doubling bandwidth – ESO
- Advanced negotiations: B5 full production preparations

