Cosmic Vision 2015-2025
Technology Plan

Industry day, Estec 21 November 2008

This file corresponds to one of a series of presentations made during this meeting. The complete set of presentations is available to download from:

http://sci.esa.int/CVIndustryDay2008

Directorate of Science
and Robotic Exploration

Technology Development Plan Implementation

Elaboration of CV Technology Plan

- **Comprehensive Technology Development Plan, including ESA activities and National activities on payload**
  - ✓ General objective: TRL ≥ 5 before starting Implementation Phase (B2/C/D)

- **Separation line between ESA and Member States for Astrophysics missions was agreed at June 08 SPC workshop**
  - ✓ Large and complex payload elements that are strongly interleaved with the spacecraft design remain under ESA responsibility. Example: IXO telescope.
  - ✓ Focal plane instruments under Member States responsibility. Example: SAFARI on SPICA
  - ✓ For cryogenic instruments, the last cryogenic stage(s) which are physically embedded in the instrument are assumed to be part of the instrument assembly

- **ESA activities (subject of this meeting)**
  - ✓ Mainly funded by TRP/CTP technology programmes
  - ✓ Work Plan and Procurement Policy approved by IPC in June/September 08
  - ✓ Planning horizon: 3-4 years, up to end 2011
  - ✓ ESA activities for 2008-2009 approved for implementation

- **Payload National activities**
  - ✓ Are being consolidated with the Member States (convergence expected by June 2009)

ESA T.D.P. content

- **Medium Class Missions (M)**
  - ✓ High technology readiness level (supposed TRL ≥ 5, CV mission selection criterion)
  - ✓ On ESA side: No mission specific technology developments before down-selection end 2009. Pre-developments can be envisaged in the development phase, if justified by the development schedule

- **Large Class Missions (L)**
  - ✓ Ambitious long term missions, high technical complexity requiring technology developments
  - ✓ TDAs to be implemented ASAP, aiming at TRL ≥ 5 for the mission adoption

- **Future Science Programme Themes**
  - ✓ Identified from the CV proposals by AWG, SSWG, FPAG in Oct 2007
  - ✓ TDAs to be implemented ASAP, subject to prioritisation by Advisory Bodies,
  - ✓ Technical objective: TRL ≥ 4 by next CV call in 2011, for enabling mission selection

- **Generic Technologies for Future Science Missions**
  - ✓ Multiple-use technologies required for future Science Programme

ESA T.D.P. evolution

- **The activities over 2008-2009 are being implemented**

- **The activities in 2010-2011 are preliminary will be revisited**
  - ✓ Revision expected after M-mission down-selection, beginning 2010

- **More generally, the TDP will be updated regularly for reflecting the programme needs. First update is foreseen by June 09 and should include:**
  - ✓ Revisit of Outer Planet activities following the down-selection
  - ✓ Solar Orbiter complement activities
  - ✓ Activities for preparing the future Exoplanet mission, following the EPRAT working group conclusions

Procurement Policy and Special Initiatives

- **The nominal Procurement Policy is defined in the plan and has been approved by IPC**

- **Some activities can be subject to Special Initiatives for Geo-return re-balance. Countries concerned for 2008-2009: A, CH, N and IRL**

- **For Special Initiatives (S.I.) activities, the nominal procedure is the following:**
  - ✓ Eligibility to S.I. will be explicitly stated in the ITT (cover letter)
  - ✓ The competition will take place as usual, according to best practices and nominal procurement policy
  - ✓ Following the T.E.B. report, a proposal produced by a company belonging to S.I. country can be retained by the Agency, even if not ranked first, *but only if the proposal is technically satisfactory*.