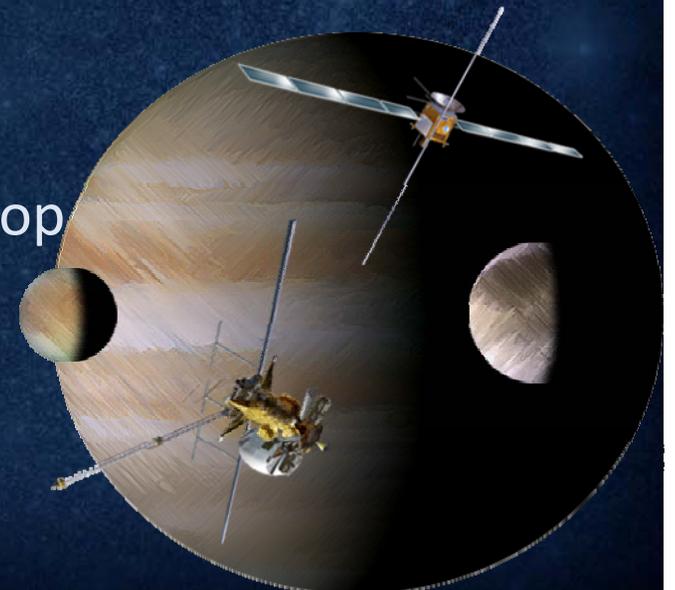




# ESA JGO Announcement of Opportunity

**Christian Erd**  
**JGO Study Manager**

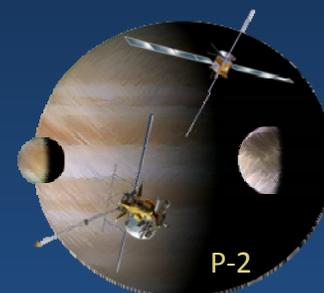
EJSM Instrument Workshop  
July 27-29, 2010





## Motivation for Model Payload

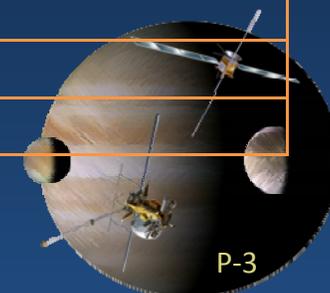
- System study was using on a model payload which was defined in response to the science requirements
- Purpose is –
  - the demonstration of the feasibility of satisfying science requirements
  - Evaluation of achievable science return
- The choice of the model payload instrument shall not preclude the selection of instrumentation through an AO process





# JGO Model Payload

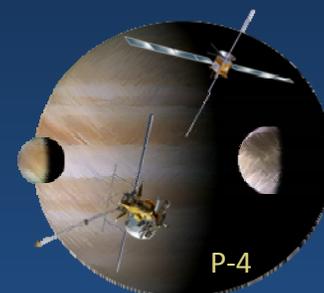
Instrument	Acronym	High level description
High Resolution Camera	HRC	Spectral range: 350–1050 nm, 12 filters, IFOV: 0.005 mrad
Wide Angle Camera	WAC	Wide: 12 filters Framing, IFOV: 2 mrad
Plasma Package (includes part of INMS)	PLP	Plasma Analyzer Electrons: 1 eV – 20 keV, Ions: 1 eV – 50 keV Particle Analyzer: Electrons: 15 keV – 1 MeV Ions: 3 keV – 5 MeV, ENA: 10 eV – 10 keV Thermal plasma number density ( $T_e < 10$ eV)
Radio and Plasma Wave Instrument	RPWI	Plasma Wave: electrons, ions Electric & magnetic field vector, QTNS
Magnetometer	MAG	Dual tri-axial fluxgate sensors
Visible and infrared Hyperspectral Imaging spectrometer	VIRHIS	Pushbroom imaging spectrometer with two channels with scan system, Spec. range: 400–5200 nm, Spec. res: 2.8 - 5 nm
Submillimeter Wave Sounder	SWI	2 channels: Spec. range: 550–230 $\mu$ m FOV: 0.15° – 0.065°
Radio Science Instrument	JRST	2-way Doppler with Ka-Band transponder
Ultrastable Oscillator	USO	Ultra-stable Oscillator
Ultraviolet Imaging Spectrometer	UVIS	EUV and FUV + MUV grating spectrometers Spectral range: 50–320 nm
Laser Altimeter	LA	Single Beam @ 1064 nm, 10 m spot @ 200 km 175 Hz pulse rate
Subsurface Radar	SSR	Single frequency: 20–50 MHz, Dipole antenna: 10 m





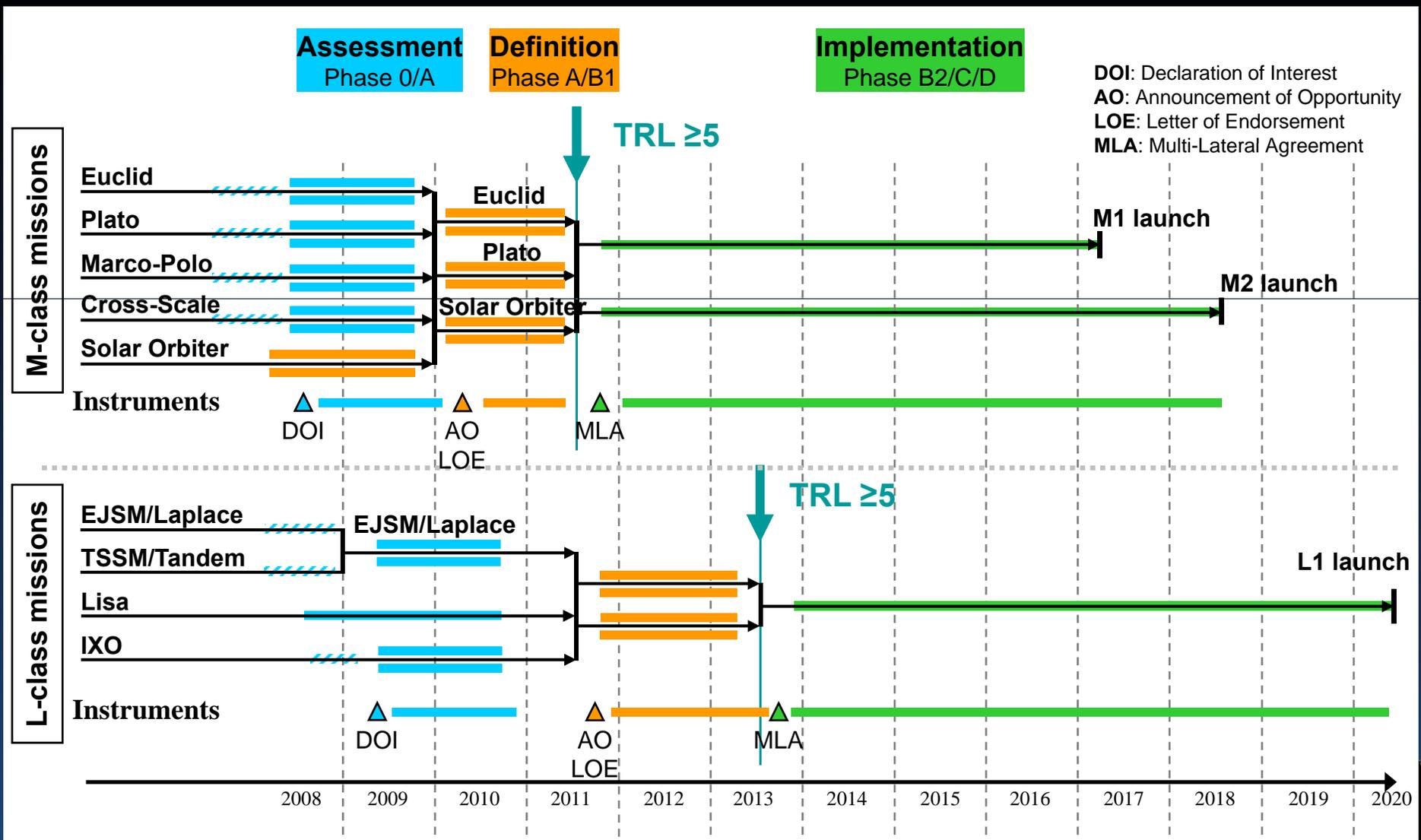
# L-Mission Review and Down-selection

- Evaluation process will closely follow that of M-missions
  - Independent reviews on science, technical and programmatic
  - Review on ESA elements (or potential ESA elements, if ESA/NASA respective contributions are not frozen)
- Schedule:
  - Technical independent reviews take place in October & November 2011
  - All L missions are in collaboration with NASA and one with JAXA → Discussions with ESA partners on respective contributions during Spring 2011
  - SPC decision in June 2011





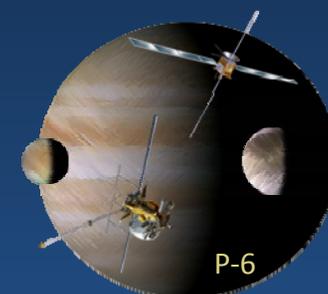
# Cosmic Vision 2015-2025 Implementation





# AO Preparations: DOI Studies

- Instrument development is funded by member states at all levels, not through ESA
- Purpose of the studies is to –
  - Allow for higher level of definition of instruments in the AO
  - Identify critical elements, key interfaces and s/c resources
  - Identify and start key technology development
  - Enable an assessment of development risk and readiness level
  - Establish Rough Order of Magnitude (ROM) cost
- 33 DOI studies for instrumentation were conducted between end 2009 and end 2010 (11 instruments in model payload)
- Final reports due on 31 August 2010
  - Instrument design and development report
  - Instrument cost assessment report





# AO Documentation

- Proposal information package
  - Description of the AO process
    - Process, evaluations, responsibilities, contents, etc.
  - Science Management Plan (SMP)
    - Development and Implementation, contributions and responsibilities (ESA & member states), science management (operations and data)
  - Science Requirements Document (Sci-RD)
  - Experiment Interface Document A (EID-A)
    - Provisions by the spacecraft
  - Science Ground Segment Interface Document
- Templates for assisting response
  - Proposal Template
  - Experiment Interface Document B (EID-B)
    - the description of the instrument needs
- Additional technical reference information
  - Environment specifications, etc
- Response shall also include a Letter of Endorsement by the respective national funding agencies





# Instrument Proposal Evaluation and Selection

- Technical evaluation by ESA
  - Feasibility, compatibility of interface to s/c, programmatics, cost
  - Input to scientific evaluation (SSEWG)
- Evaluation by ESA science advisory structure
  - Solar System Exploration Working Group (SSEWG)
    - Evaluation and recommendation to SSAC
  - Space Science Advisory Committee (SSAC)
    - Evaluation and recommendation to SPC
- Decision by member states: Science Programme Committee (SPC)





# Cosmic Vision 2015-2025 Implementation

