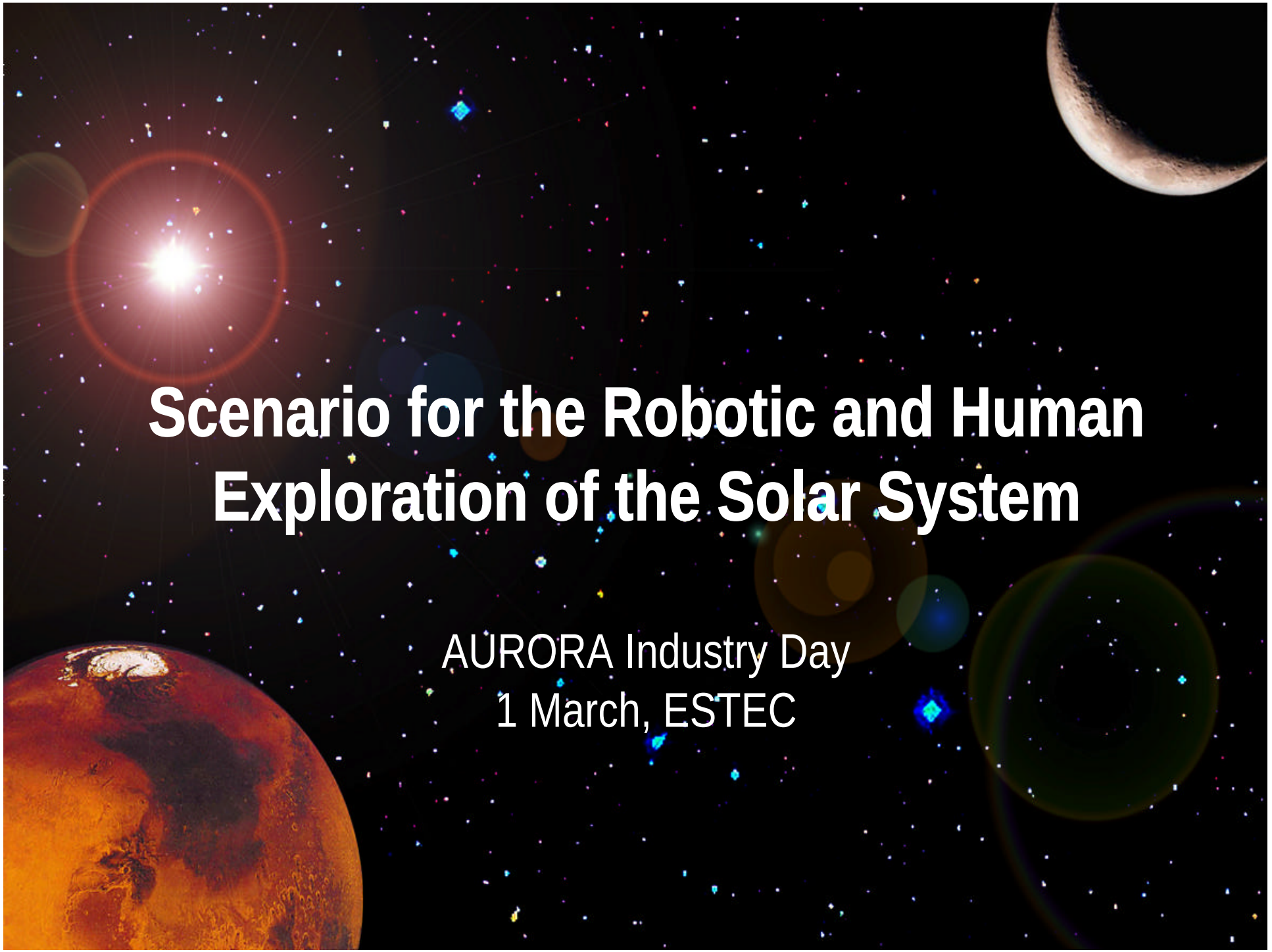


Scenario for the Robotic and Human Exploration of the Solar System

AURORA Industry Day
1 March, ESTEC

Scope and Assumptions

Scope

Identify and define **European long-term priorities** for

- Future of ISS utilisation and evolution
- Participation to US-led human return to Moon
- Mars exploration

Assumptions

- Societal Project
- Global Endeavour

Activity Elements and Objectives

Approach

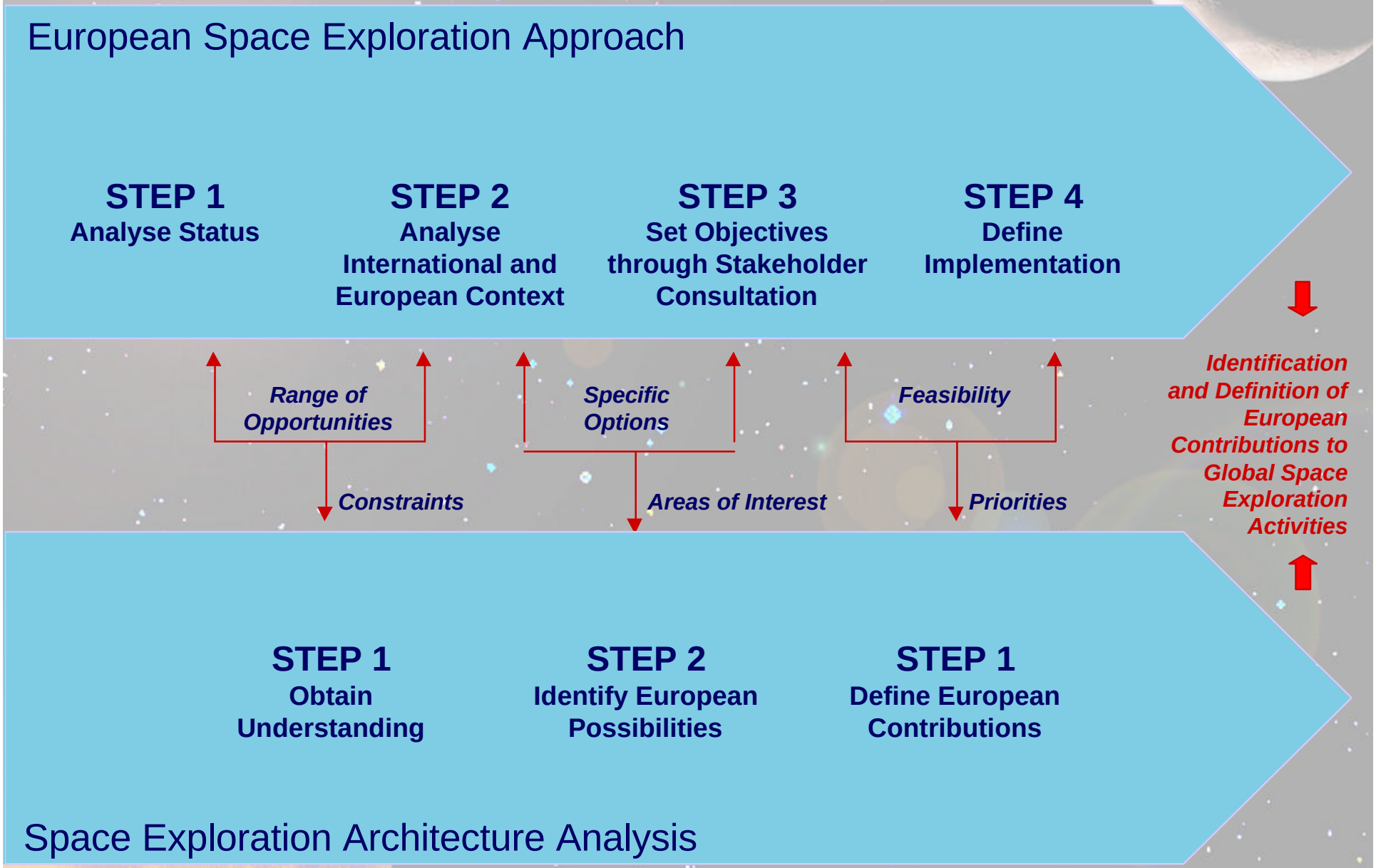
- Engage a wide range of European stakeholders for identifying **European strategic priorities**
- Analyse **long-term scenarios** to ensure robustness of European contributions and programme in an uncertain international context

Architecture

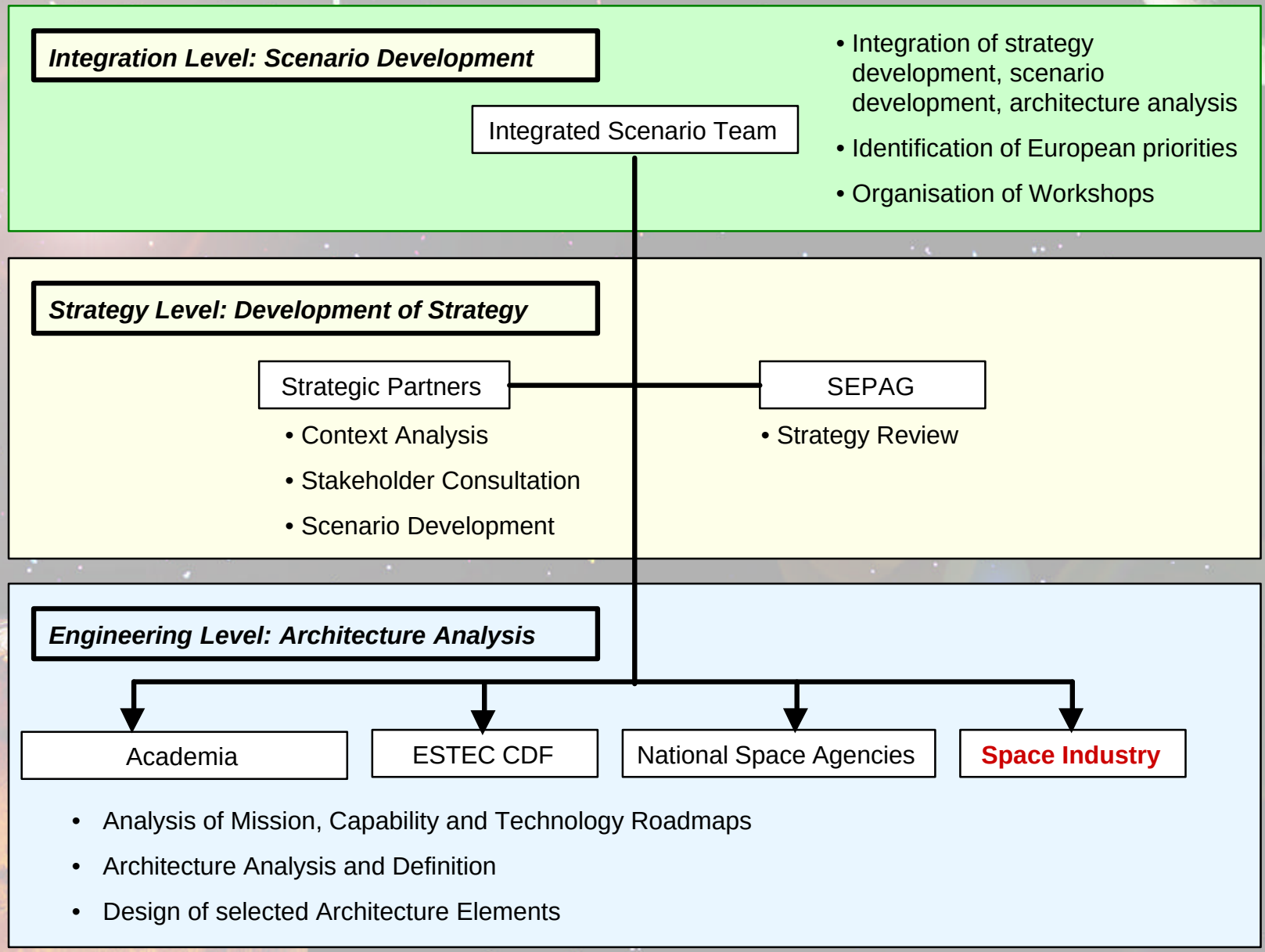
- Analyse exploration architectures for deriving **high-level requirements**
- Confirm strategic interest in and verify technical and programmatic **feasibility** of European priorities

European Exploration Strategy

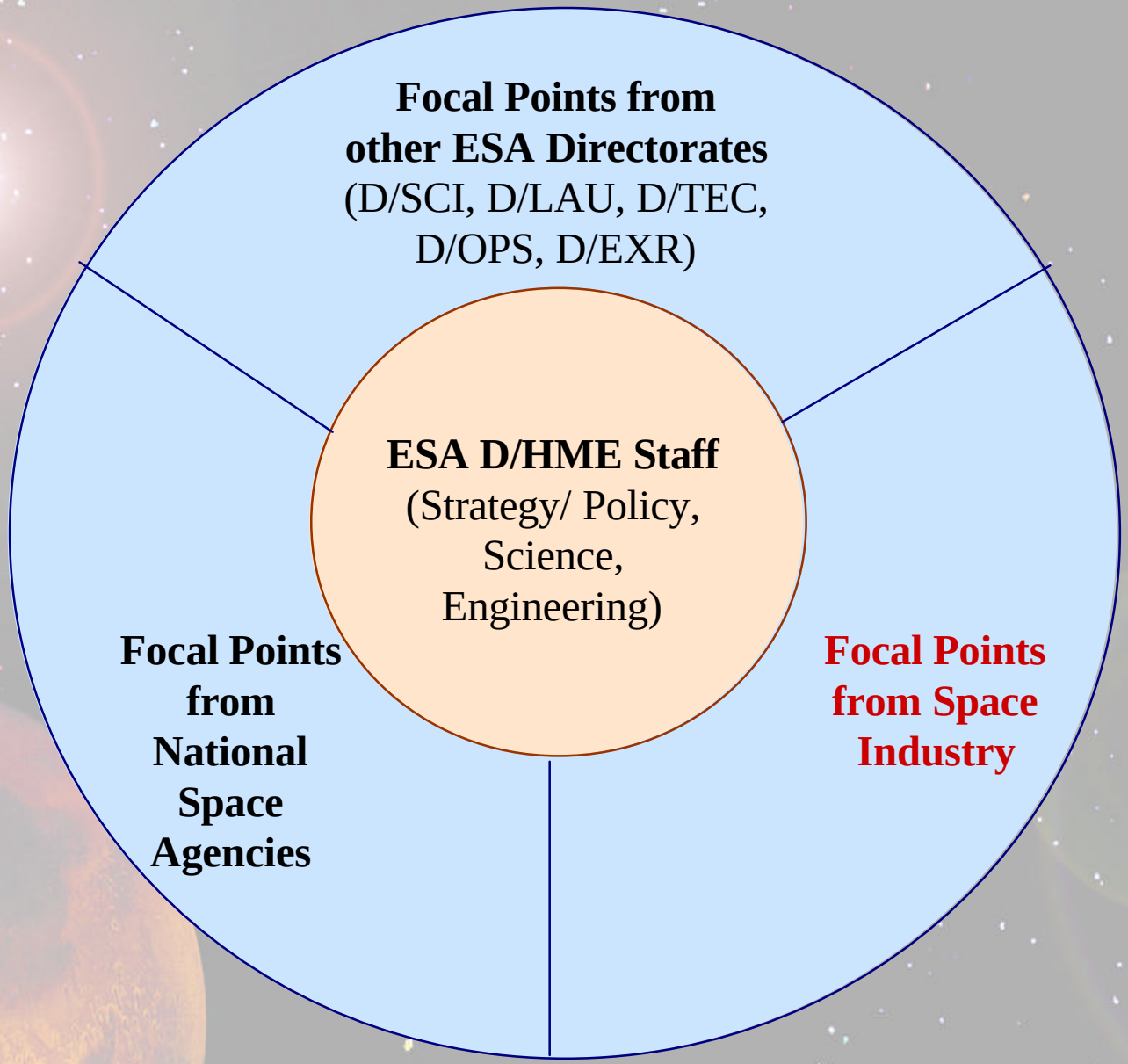
Integrated Scenario Development Process



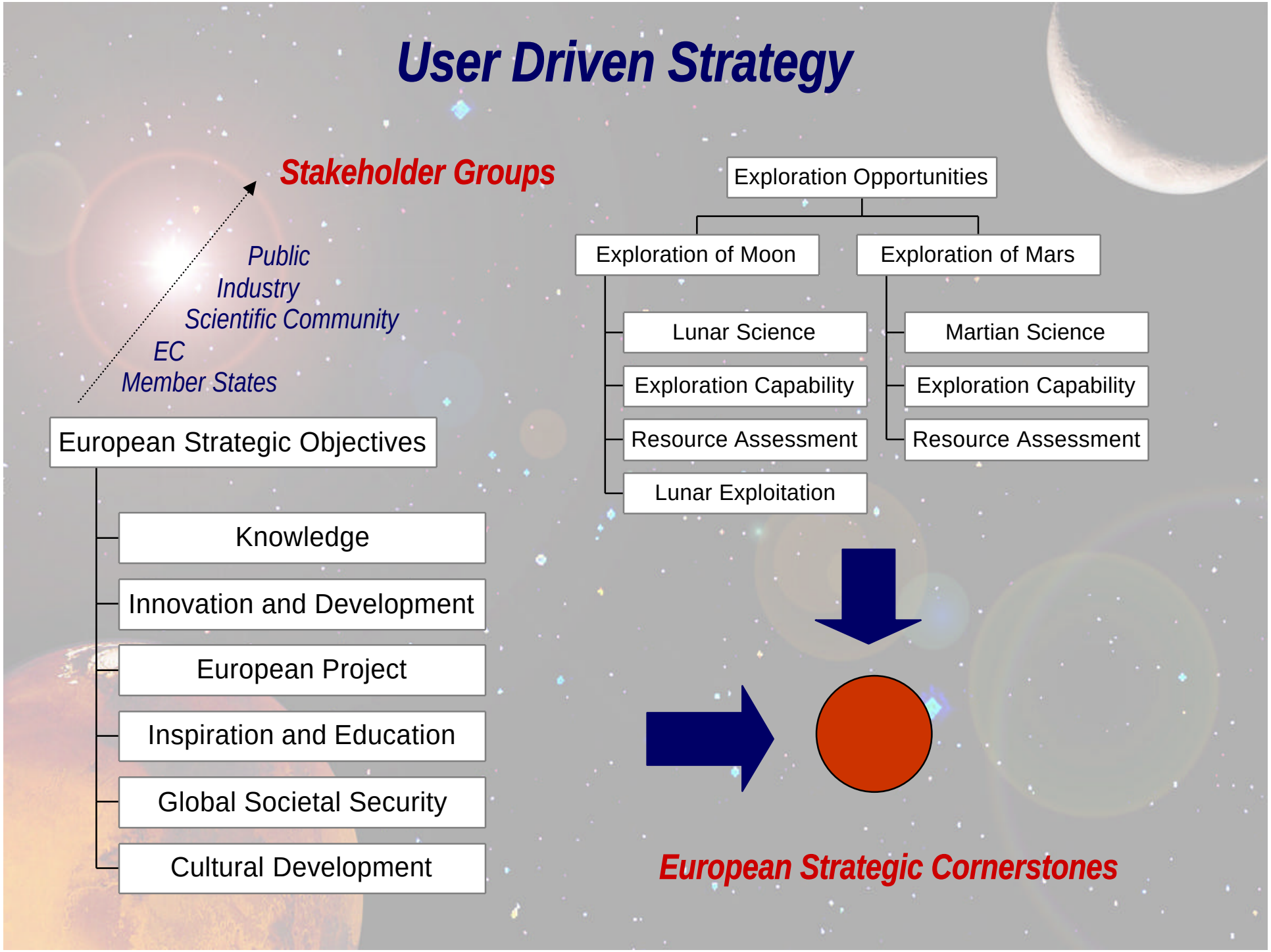
Overall Organisation of Scenario Development



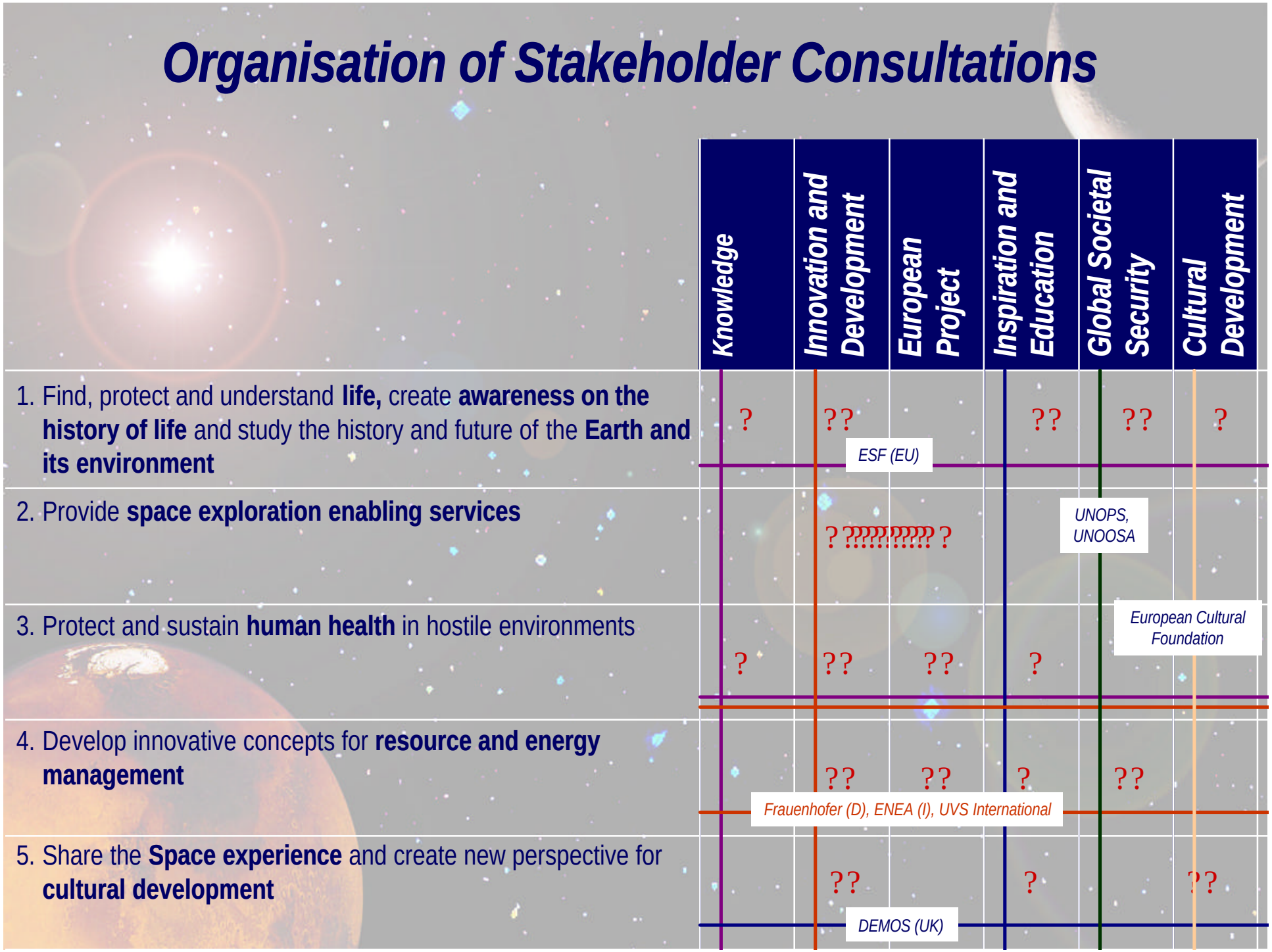
Organisation of Integrated Scenario Team



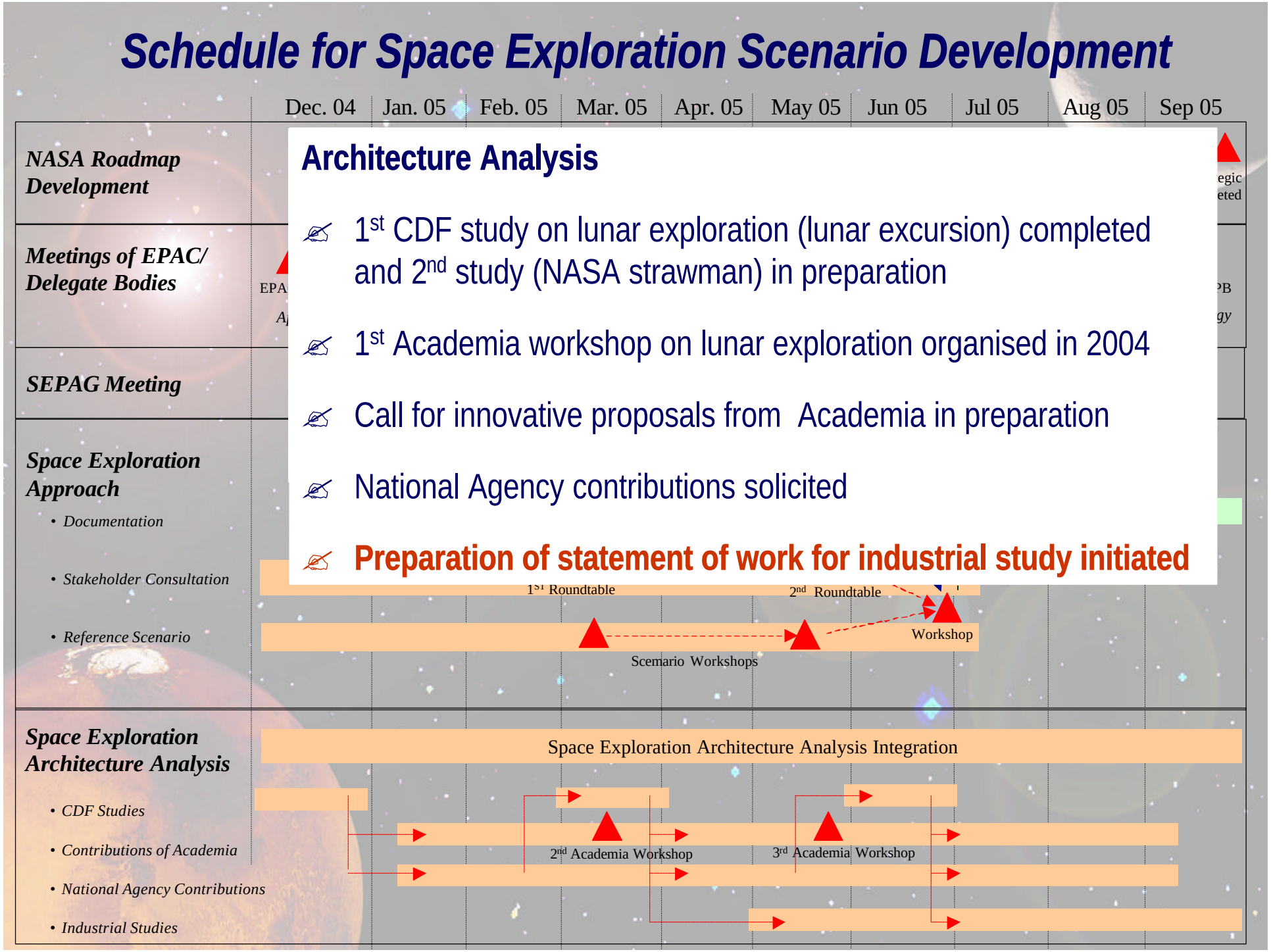
User Driven Strategy



Organisation of Stakeholder Consultations



Schedule for Space Exploration Scenario Development



Architecture Analysis

- 1st CDF study on lunar exploration (lunar excursion) completed and 2nd study (NASA strawman) in preparation
- 1st Academia workshop on lunar exploration organised in 2004
- Call for innovative proposals from Academia in preparation
- National Agency contributions solicited
- **Preparation of statement of work for industrial study initiated**

Partners for Stakeholder Consultations

European drivers	Organizations
Knowledge	ESF (European Science Foundation)
Innovation and Development	ENEA (Italian National Agency for New Technologies, Energy and the Environment)
	UVS International (Unmanned Vehicle Systems International)
	Fraunhofer Institut
	ANVAR
Inspiration	DEMOS
Cultural Development	European Cultural Foundation
	UNESCO (United Nations Education, Science and Culture Organization)
Global Societal Security	UNDP (United Nations Development Programme)
	UNEP (United Nations Environmental Development)
	UNOOSA (United Nations Office for Outer Space Affairs)
	UNOPS (United Nations Office for Project Services)
	WHO (World Health Organization)
Context Analysis	ESPI (European Space Policy Institute)

Elements of Space Exploration Architecture Study

Phase 1 - Architecture Analysis

- Analysis of integrated Moon/ Mars space exploration architectures for derivation of high-level requirements for key capabilities

Phase 2 - Capability Analysis

- **Capability Definition**: definition of selected capabilities for lunar exploration; candidates for European contributions to spiral 2 (human mission to Moon) and spiral 3 (sustainable lunar exploration)of US led-return to the Moon
- **Capability Roadmap**: analysis of evolution scenarios of defined capabilities to support future exploration missions beyond and development of long-term capability roadmaps
- **Capability Assessment:** prioritisation of European capability developments on the basis of agreed criteria such as costs, risks, strategic value, European heritage, cooperation opportunities, exploration scenario versatility

Phase 3 - Development Plan

- Preparation of detailed development plan leading to capability demonstration

Procurement Approach and Schedule

- Direct Negotiation with consortium of European primes **led by Alenia**
- Minimum TBD financial allocation for involvement of non-primes and academia to foster **innovation**
- Broad industry participation solicited for Interim study reviews to facilitate **European coordination**