

**ISECG Science Working Group**

**INTERNATIONAL COORDINATION OF  
SPACE EXPLORATION  
– SEEKING A SCIENTIFIC PERSPECTIVE**

SSERVI GER Day, July 2014

Co-Chaired by DLR – Juergen Hill, CNES – Francois Spiero

# Continue Roadmapping Activity



## ◆ Detail long-range strategy, near-term mission scenario (2020 – 2030)

- Advance definition of innovative mission concepts, leveraging on humans in cis-lunar space and robotic lunar surface assets
- Define strategies and architectures for accessing lunar surface with humans
- Understand Mars-forward demonstration value of near-term missions

## ◆ Solicit stakeholder feedback on 2<sup>nd</sup> GER iteration

## ◆ Better articulate science opportunities (SWG)

## ◆ Further promote coordination of preparatory activities in fields such as

- Human research,
- Technology demonstration,
- Acquisition of knowledge about exploration destinations critical for human missions

➔ **3<sup>rd</sup> GER iteration roughly in the end-2015-timeframe**

# ISECG Science Working Group (SWG)

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## ◆ New working group

- SWG aims at the **facilitation of exchange between ISECG, exploration and science communities** for the benefit of all sides.

## ◆ SWG Participation

- Participation of 10 ISECG agencies (ASI, CNES, CNSA, CSA, DLR, ESA, JAXA, NASA, NKAU, UKSA)
- Chaired by DLR/CNES
- Mix of scientists and programmatic experts

## ◆ Objective 2014

- Develop a **concrete plan for mutually beneficial interaction with the scientific communities** to promote the scientific accomplishments in present and future exploration activities as articulated in the GER. This includes the interaction with international scientific groups for the benefit of both sides.

## ◆ Activity Themes

- Science drivers for exploration destinations
- Science opportunities in the GER mission scenario

## ◆ Initiate Development of Paper on “Science Enabled by the Human/Robotic Exploration Partnership in the context of the ISECG Global Exploration Roadmap (GER)”

- ◆ **Document: “Science Enabled by the Human/Robotic Exploration Partnership in the context of the ISECG Global Exploration Roadmap (GER)”**
- ◆ **Proposal**
  - Describe an international view of the science that could be enabled by missions in the GER by engaging the scientific communities in identifying these opportunities
  - Target the same stakeholder community as the GER – stakeholders, decision makers, broader human space exploration community while engaging the scientific community
  - Could be distributed as a companion document to the GER with next update (end 2015).
  - Focus on human missions and human/robotic concepts with emphasis on early mission themes, but incorporate the driving science priorities up to Mars: Lunar vicinity, asteroids, Moon, Mars system and Mars.
  - Foster a deeper mutual understanding of priorities, challenges and opportunities for both scientific and exploration communities
- ◆ **Incorporates various scientific themes/communities, e.g.**
  - Planetary Science, Space Science, Life Sciences, Astrobiology, Astronomy, Physical Sciences, including Strategic Knowledge Gaps
  - Links to substantive authoritative literature from the international science community
  - Can provide input on the high level science topics and research priorities that could be addressed by missions in the GER.
- ◆ **Concise formulation. Purpose is to link comprehensive external documents to the GER not to define the science.**

- ◆ **Needs significant role/ownership among the international scientific communities in development of the contents**
- ◆ **Diversity of scientific community needs to be respected. Possible approaches could be:**
  - Commissioning of inputs by each agency from their own stakeholder communities (common approach or individual?)
  - International call for ideas
  - Identify science representatives to prepare scientific material (global/regional?)
- ◆ **Inputs are consolidated by SWG or nominated panel**
- ◆ **Each agency seeks to verify/confirm the validity of the document through whatever process is required internally.**
  - The processes might need to be defined in advance in order to ensure that verification requirements are addressed during the preparatory process.

### ◆ Purpose

- Seek feedback on the overall vision and rationale for the paper
- Seek feedback on possible scope and content for the paper
- Seek inputs on the development approach
- Identify leaders in the science community willing to lead development of the paper

### ◆ Specific Questions:

- Do you think a paper targeting the proposed audiences would be useful? If not, what would you change?
- Do you agree with the objectives of the paper? If not, what would you change?
- What level of detail would be appropriate for the audiences targeted?
- Are there overall concerns with implying international consensus on science priorities? Who could seek consensus on these topics?
- What are the international science priorities associated with each of these destinations? Which are priority landing sites?
- Which science objectives benefit most from human-robotic interaction?
- What advice can you give on developing chapters?
- What sort of review/vetting of the paper would be important prior to release?

# EXPLORING TOGETHER

INTERNATIONAL SPACE EXPLORATION  
COORDINATION GROUP



**ISECG**

[www.globalspaceexploration.org](http://www.globalspaceexploration.org)

ISECG is the international forum set up by 14 space agencies to advance the Global Exploration Strategy through coordination of their mutual efforts in space exploration

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