IRENA

International Re-Entry demoNstrator Action

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"International Re-Entry demoNstrator Action"

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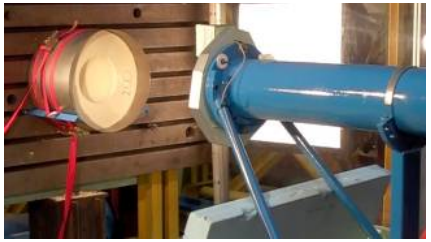
6 NASA – Hampton, VA,USA, 7 JAXA - Sagamihara, Japan

#2105
12th International Planetary Probe Workshop
June 15-19, 2015 – Cologne (Germany)
Session 1: Missions

What is IRENA ?

- R&D project funded by the EC's Horizon 2020 Research and Innovation Programme
  - A Coordination and Support Action (CSA)
  - in preparation for an international technology demonstrator mission.

- Selected out of Space Call COMPET-09-2014: **"Technology "demonstrator projects" for exploration"**



- Objectives:
  - **Define 2 <u>entry/re-entry demonstrator</u> projects (flight or ground)** appropriate for <u>international cooperation</u> (esp. USA and Japan)
  - **Create the ground for their implementation**
    - Preliminary program file
- **Schedule**: January 2015 – April 2016

- **Budget**: 800 k€

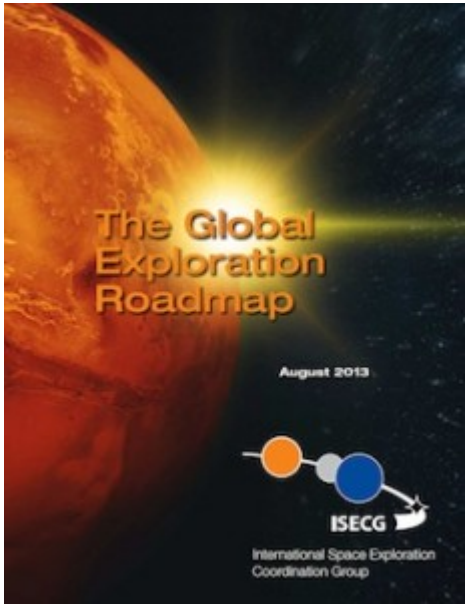
Why ?

- **Call based on conclusions from ISECG**
  - (International Space Exploration Coordination Group)
- **ISECG's vision and roadmap (GER)**
  - need for entry, descent, and landing technologies
  - test and demonstrate
  - International cooperation is key

- **EC also selected entry/re-entry as a key technology**
  - among 5/6 key technology areas

- **Interest to create and promote new initiatives in Europe**

ISECG
International Space Exploration Coordination Group



Who is involved ?

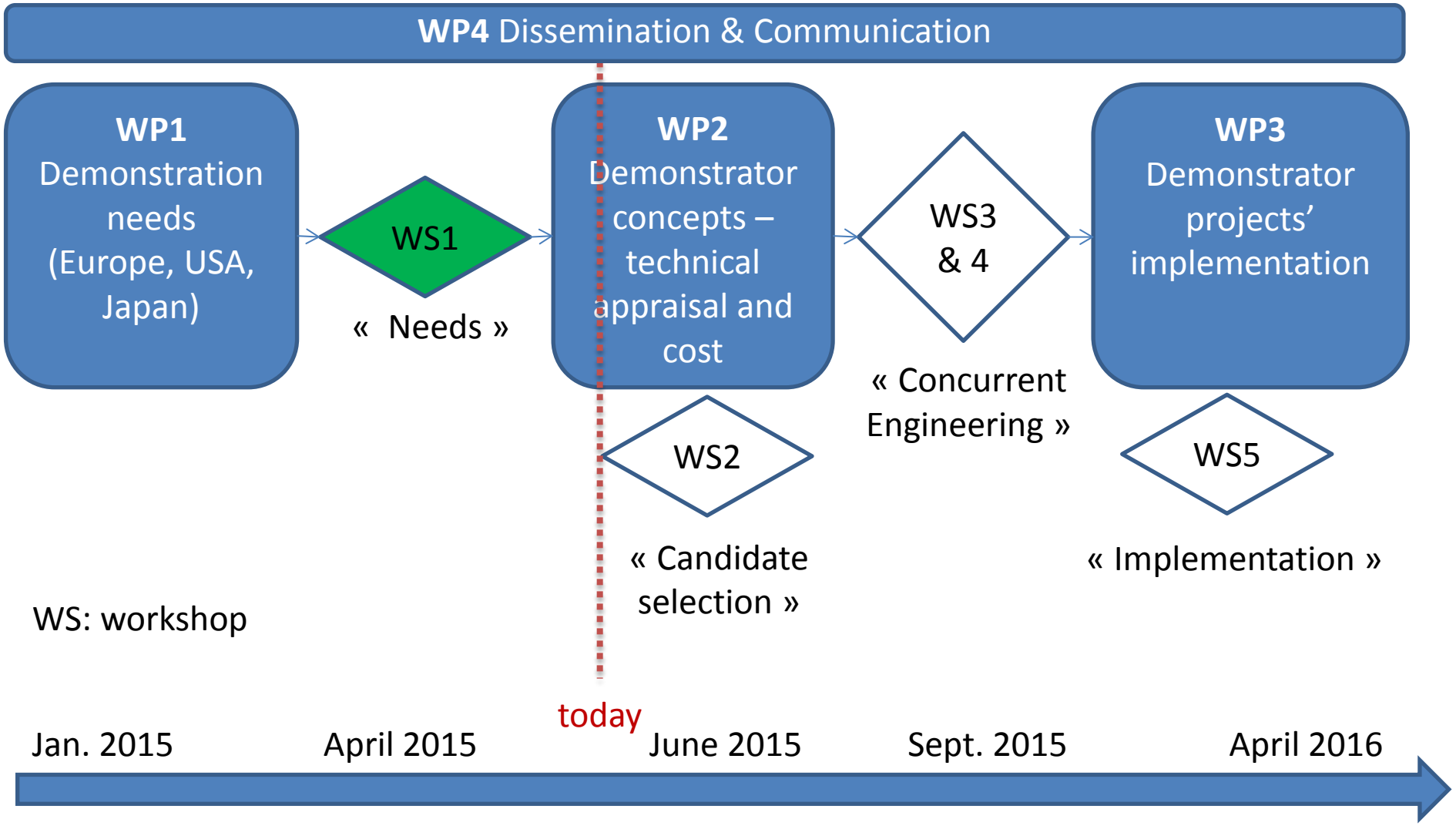
- 4 space agencies

- 2 large space integrators

coordinator

- 1 research institute

How is the work done ?



Workshop 1

- Review of demonstration needs in Europe, Japan and the USA
  - Highlight possible convergence
- End goal:
  - Sample Return missions
  - Human Mars mission
  - …
- Technologies and operations to be demonstrated:
  - Aeroassist devices, including aerocapture
  - Advanced TPS and hot structures
  - GNC
  - Soft landing devices and technologies
  - Hard landing
  - Validated modelling and simulation tools
  - New instrumentation/sensors
- One open session

Workshop 2

- Objectives:
  - select 3 ground & 3 flight demonstrator candidates
  - Dissemination

- Venue:
  Multiburo European Parliament
  Square de Meeûs 40
  1000 BRUSSELS
  Belgium

- Dates: 22-24 June 2015

- Open session on June 24 afternoon

More information on IRENA:

www.irena-project.eu

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Demonstrator Proposal Form Content

1 - Title :
2 - Authors:
3 - Type of Demonstrator and type of mission **Ground Demonstrator Flight Demonstrator** **System Subsystem** **Aerocapture Sample Return Hypersonic Decelerator Precision Landing High Speed Vehicle** **Others**
4 - Description of the Re-entry Demonstrator
5 - Breakthrough compared to State-of-the-art
6 - EDL Technologies identification and improvements
7 - Possible synergy topics
8 - Working Steps, Schedule, Roadmap and Budget
9 - Contributing Partners