

A composite image showing Earth in the upper left, a large cratered asteroid in the center, and a smaller asteroid in the distance on the right, all set against a starry space background.

# The Space Mission Planning Advisory Group - status report

**Detlef Koschny, ESA**

- ❑ **SMPAG was officially established in February 2014**
- ❑ **SMPAG Terms of Reference were finalized in June 2014**
- ❑ **SMPAG has established a work plan in November 2015, which is a living document**
- ❑ **The most recent SMPAG meetings:**
  - **Meeting #14 (Feb 2020) – in Vienna, Austria**
  - **Meeting #15 (Sep 2020) - virtuell**
  - **Meeting #16 (Mar 2021) - virtuell**

## Official members with nominated delegations:

**AEM (Mexico)**

**ASI (Italy)**

**Belpo (Belgium)**

**CNES (France)**

**CNSA (China)**

**Czech Republic**

**DLR (Germany)**

**ESA**

**FFG (Austria)**

**IAWN (ex officio)**

**ISA (Israel)**

**JAXA (Japan)**

**KASI (South Korea)**

**NASA (USA)**

**ROSA (Romania)**

**ROSCOSMOS (Russian Federation)**

**SSAU (Ukraine)**

**SUPARCO (Pakistan)**

**UKSA (UK)**

**Permanent Observers: ASE, IAA, IAU, UNOOSA, ESO, COSPAR**

ESA-S2P-PD-HO-0100 Oct 2021, dvk

- Task 1 – Criteria and thresholds for threat response (NASA) – Done, see SMPAG-RP-003**
- Task 2 – Mitigation mission types + technologies (UKSA) - ongoing**
- Task 3 – Mapping of threat scenarios to mission types (ESA) - unchanged**
- Task 4 – Reference missions (ASI) - ongoing**
- Task 5 – SMPAG action in case of credible threat (NASA/ASI) – see exercise**
- Task 6 – Communication guidelines (NASA) - ongoing**
- Task 7 – Road map for future work (DLR) - ongoing**
- Task 8 – Consequences of mitigation missions (ESA/FFG) - ongoing**
- Task 9 – Criteria for deflection targeting (ROSA) - ongoing**
- Task 10 – The nuclear device option – literature - ongoing**
- Task 11 – Toolbox for characterisation payload (CNES) – ongoing**

**Note the outgoing chair's proposal for restructuring the work plan – next page**

## Annex 1

### SMPAG Workplan Items (including Chair's proposal, Point 3 of meeting minutes)

- **5.1 Criteria and thresholds for impact response actions (NASA)**
    - Criteria have already been implemented in several documents of member states
  - **5.2 Mitigation mission types and technologies to be considered (UKSA)**
  - **5.3 Mapping of threat scenarios to mission types (ESA)**
  - **5.4 Reference missions for different NEO threat scenarios (ASI)**
  - **5.5 A plan for action in case of a credible threat (NASA/IAA)**
    - SMPAG has supporting role as defined in ToR
  - **5.6 Communication guidelines in case of a credible threat (NASA)**
    - Could be combined with IAWN activity on communication
  - **5.7 Roadmap for future work on planetary defense (DLR)**
    - Living document
  - **5.8 Consequences, including failure, of NEO mitigation space missions**
    - Draft will be distributed soon for review
  - **5.9 Criteria for deflection targeting (ROSA)**
  - **5.10 Study the nuclear device option (all)**
    - Provide more references and text for introduction
  - **5.11 Toolbox for a NEO characterization payload (CNES)**
    - Provide input for database of instruments and capabilities
- Activities 5.2, 5.9, and perhaps parts of 5.3 could be combined into 1 activity (Mitigation technologies)
  - Activities 5.3, 5.4, and potentially 5.5 could be combined as well (Mitigation missions)
  - The development of visible output should be accelerated.
  - The aim is to produce reports, databases or tools for practical applications at the engineering level.
  - Some activities could be completed with higher priority and support from all members. An update of the workplan is envisaged

- Progress in most work items – see detailed reports later**
- No real progress in restructuring the work plan – keep in mind for exercise**
- Legal WG: Discuss how to keep it active**
  
- Request for all (some already did it): Check the Excel sheet with the member list – each Delegation should have leader identified, and 3-4 members.**
  
- Proposal for now to next meeting: Focus on SMPAG exercise**