Status of Work Plan item 5.7 Roadmap – planetary defense roadmap

German delegation

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Solicitation of input for a further revision of the Workplan Activity 7 "Planetary Defence Roadmap"

- In particular we would like feedback on Chapter 6 of the Roadmap document "Summary and Conclusions – areas requiring continued or increased effort at the present time".
- Suggestions should be accompanied, where appropriate, with a brief description, which could be included in the body of the document.

- The development and execution of technically and financially realistic test missions to enable deflection concepts to be tried out on real asteroids.
- Remotely-sensed physical characterization of small NEOs (radar, infrared, visible, etc. observations; analysis of archival data). Asteroid observing strategies and campaigns need to be coordinated internationally to make the most efficient use of available telescope time. A dedicated space based thermal-infrared telescope would be a very valuable asset for simultaneous NEO discovery and characterization (National Academies of Sciences, Engineering, and Medicine, 2019).



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- The development of a rapid-response network for physical characterization of asteroids during the discovery apparition.
- The development and execution of space missions for surface material sample return and/or in-situ characterization of asteroids.
- Laboratory tests for a range of asteroid analog materials to better understand impact effects on asteroids.
- Computer modeling with more complex and realistic conditions to understand impact effects on asteroids.
- The development of plans for a rapid-reconnaissance space mission to be launched promptly in case of a real impact threat, to gather information on the physical properties of the asteroid and its orbit.
- The development of new deflection techniques for small NEOs.
- The development of reliable codes for Earth impact consequences assessment taking account of the full range of expected effects.
- The development of software tools for emergency deflection campaign planning to inform decision making.
- Exploration of synergies between the fields of NEO deflection and asteroid mining.

