United Nations Office of Outer Space Affairs
Committee on Peaceful Uses of Outer Space

Overview for NEO Threat Response

United Nations
COPUOS/OOSA

Inform in case of credible threat

Next meetings planned in conjunction with DPS/EPSC Oct 2016

Parent Government Delegations

Determine Impact time, location and severity

Potential deflection mission plans

International Asteroid Warning Network (IAWN)

Space Missions Planning Advisory Group (SMPAG)

Observers, analysts, modelers…

Space Agencies and Offices

SMPAG Task 5.1 Criteria and Thresholds

- Collaborate with the IAWN Steering Committee to develop a set of criteria, based on observable parameters and characteristics of a NEO impact risk, to be used to establish thresholds for action.
- The criteria may be graduated based on orbit-related parameters that determine probabilities for impact and estimated physical characteristics of the object of interest, among other things. The crossing of a threshold would trigger a specific set of actions by IAWN, SMPAG and other identified entities to begin work on preparations and recommendations for an actual, real-world, mitigation campaign. The thresholds might also be graduated, and actions could involve, on the part of IAWN, increased focus on observations of the object of interest and tasking additional assets to assist with observations, while SMPAG could begin working with specific space-capable entities to define a viable set of mitigation campaign activities to adequately address the real-world scenario.

Threshold Criteria

Examples:

- Threshold criteria statements should be concise and easy to present to the layman
- But also based on sound technical analysis that can be explained to a technically informed audience.

Threshold Criteria

Examples:

IAWN will warn of possible impact of all objects detected **greater than 10 meters** in size.

Terrestrial protection planning should begin when warned of a possible impact **within 20 years** of **probability > 10%** for an object **greater than 20 meters** in size.

SMPAG should start mission option planning activities when warned of a possible impact **within 50 years** of **probability > 1%** for an object **greater than 50 meters** in size.

Object Designation	Year Range	Potential Impacts	Impact Prob. (cum.)	$V_{infinity}$ (km/s)	H (mag)	Est. Diam. (km)	Palermo Scale (cum.)	Palermo Scale (max.)	Torino Scale (max.)
2000 SG344	2069-2113	104	2.20E-03	1.36	24.8	0.037	-2.93	-3.26	0