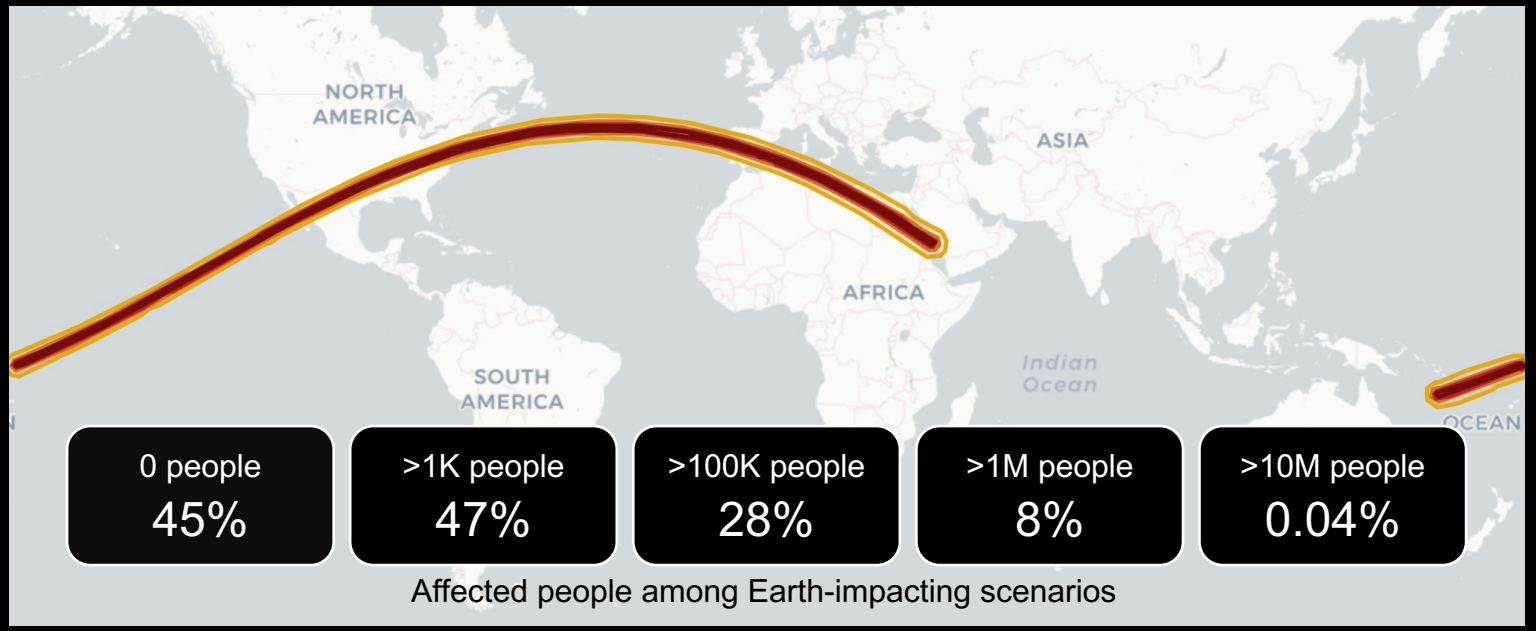
Module 3: Recommended Courses of Action

- Technical briefs
  - Module 3a/Day 1: None
  - Module 3b/Day 2: Briefing to senior leaders (45 minutes)
- Discussion will focus on
  - International collaboration and coordination
  - Decision-making in the face of uncertainties
  - Processes for identifying recommended courses of action

PLANETARY DEFENSE INTERAGENCY TABLETOP EXERCISE 5



72%
probability of Earth impact

14.25 years
from today

Many
uncertainties

Flyby
KI deflection options

Rendezvous
IB and NED deflection options

Today
2 Apr 2024

2026 ~~Jan~~	2027 Jul	2028 Jul	2031 Jan	2033 Jul	2036 Jan
		May 2028	Dec 2030	Dec 2032	Dec 2035

Potential Earth impact
12 Jul 2038

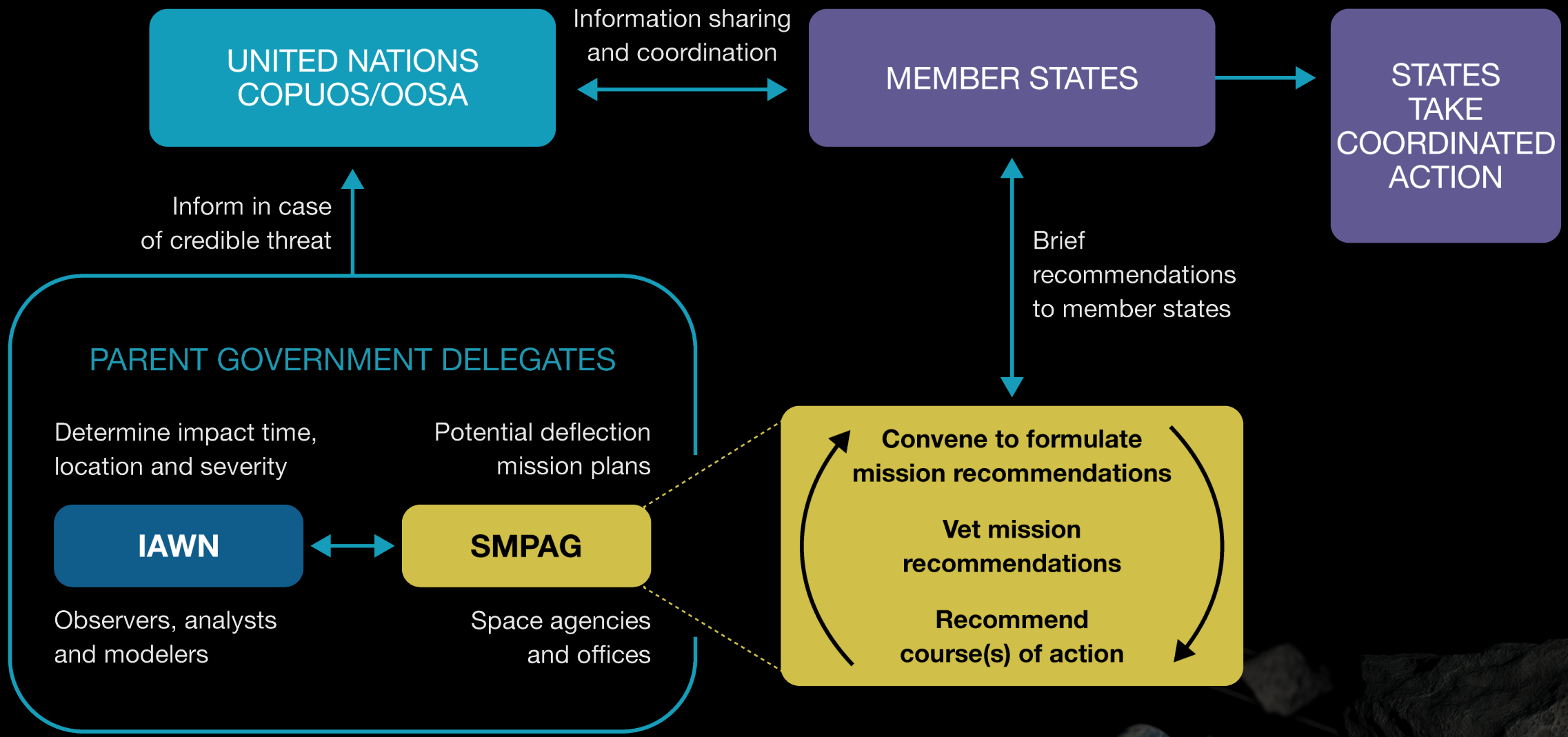
Potential Telescopic Information

Nov 2024: Impact location uncertainty is the size of Earth.

2028: Earth impact location ±25 km. Spectral and JWST possible. Uncertainties remain in key asteroid properties.

2033: Radar detection is possible if the object is large.

Notional Coordination for PD Missions



- What processes exist that might be relevant for decision making?

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  - What else might need to be put in place?

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- What factors might you weigh when considering which, if any, of these space missions to pursue at this time?

- What processes exist that might be relevant for decision making?
- What international agreements exist to enable international cooperation on these mission options?
  - What else might need to be put in place?
- What factors might you weigh when considering which, if any, of these space missions to pursue at this time?
- If there are differences in opinion concerning the recommended courses of action, how would these differences be discussed and adjudicated?

- Does a country's physical location in relation to the risk swath change their responsibilities or the priority of their recommendations?

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- Are there any courses of action that your organization would be categorically opposed to recommending?
  - If so, why?

- Does a country's physical location in relation to the risk swath change their responsibilities or the priority of their recommendations?
- Are there any courses of action that your organization would be categorically opposed to recommending?
  - If so, why?
- What risk posture or redundancies might be appropriate for these missions?

From: Senior leaders

Date: 2 April 2024

To: TTX5 participants

Subject: Request for briefing on recommended courses of action

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Dear TTX5 participants:

We hereby request to be briefed on recommended courses of action for space missions and disaster preparedness to address the potential Earth impact of an asteroid in 2038.

Sincerely,
Senior leaders

Please open the orange envelope in your folder.

Break

- What space-based mission options should be presented to senior leadership tomorrow?

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- What assets or resources might your organization be willing to contribute to these space missions?

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- How might various assets or resources be coordinated internationally?

- What space-based mission options should be presented to senior leadership tomorrow?
- What assets or resources might your organization be willing to contribute to these space missions?
- How might various assets or resources be coordinated internationally?
- What barriers do you foresee related to international cooperation on space mission options?

- How much would your country rely on international partners for space mission options?

- How much would your country rely on international partners for space mission options?
- Are there other challenges to public messaging about mission options that we haven't considered?

Disaster Preparedness for Asteroid Impacts

PLANETARY DEFENSE
INTERAGENCY
TABLETOP EXERCISE 5

Earthquake

Volcanic eruption

Flood

Hurricane

Wildfire

?

Asteroid impact

- Are there any immediate courses of action that disaster preparedness and response organizations would recommend at this time?

- Are there any immediate courses of action that disaster preparedness and response organizations would recommend at this time?
- Would it be helpful to have an international collaboration for NEO impact disaster planning?
  - If so, why?

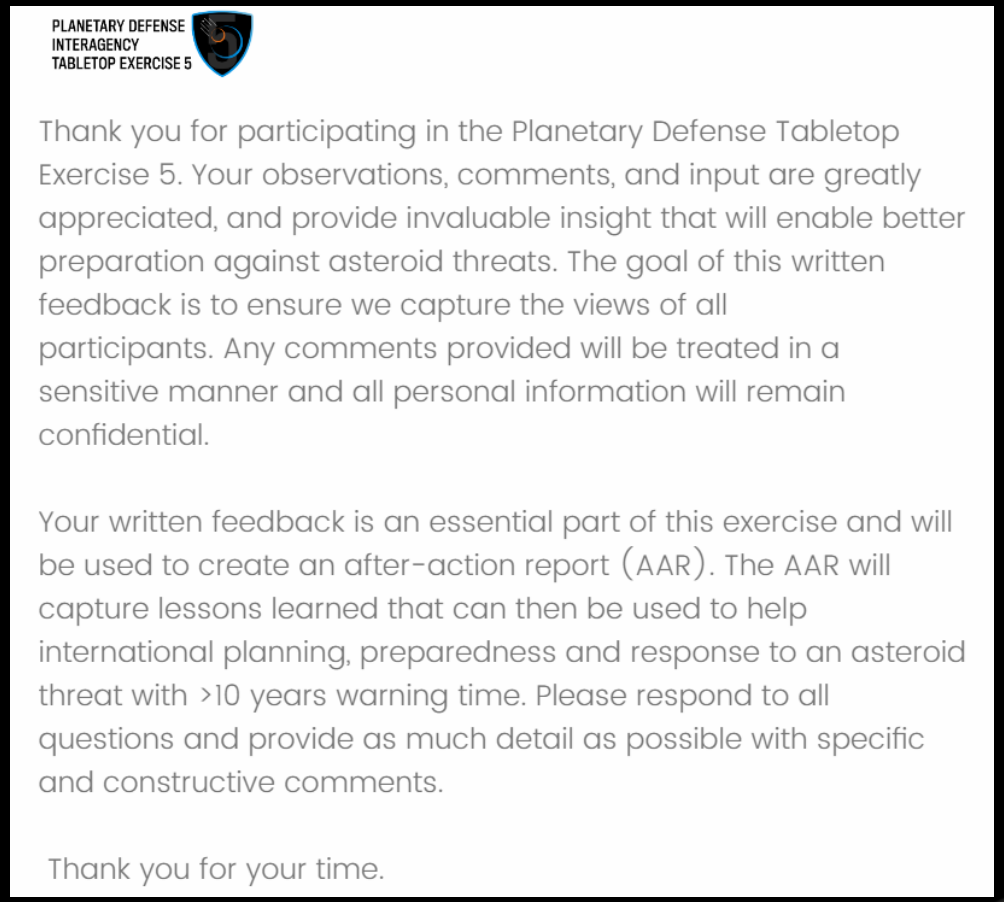
Hot Wash

- Goal is to gather quick comments and impressions
- One representative from each organization to provide:
  - One lesson learned
  - One best practice
- Two areas of interest for comments:
  1. Preparedness, including policy, technology, or capability gaps
  2. Comments on this exercise: strengths, opportunities, and ideas for future exercises
- Please limit responses to **2–3 minutes** so that many organizations can share
- Remember, you can post comments and responses to comments in the chat, too

Your comments and discussions are the data that will help this TTX culminate in an impactful after-action report.

Participant Feedback Forms

- See link posted in XLeap



PLANETARY DEFENSE
INTERAGENCY
TABLETOP EXERCISE 5

Thank you for participating in the Planetary Defense Tabletop Exercise 5. Your observations, comments, and input are greatly appreciated, and provide invaluable insight that will enable better preparation against asteroid threats. The goal of this written feedback is to ensure we capture the views of all participants. Any comments provided will be treated in a sensitive manner and all personal information will remain confidential.

Your written feedback is an essential part of this exercise and will be used to create an after-action report (AAR). The AAR will capture lessons learned that can then be used to help international planning, preparedness and response to an asteroid threat with >10 years warning time. Please respond to all questions and provide as much detail as possible with specific and constructive comments.

Thank you for your time.

Revisit the Parking Lot & Day 1 Hotwash

- Revisit key discussions from earlier modules that might have been cut short

Module	Description
1	Scene setting and international coordination
2	Space mission options
3a	Recommended courses of action

Looking Ahead to Day 2

- Introduction of new players
- Brief to senior leaders on recommended courses of action
- Public information messaging, disaster preparedness
- Final discussion, including capability gaps (all topics)

Day 2 (April 3): 8 a.m. – 4 p.m.

7:30 a.m.	Arrival, check-in
8:00 a.m.	Welcome
8:30 a.m.	Module 3b: Senior leader brief
10:15 a.m.	Break
10:30 a.m.	Module 4: Public information messaging
12:15 p.m.	Lunch
1:15 p.m.	Module 5: Disaster preparedness
3:15 p.m.	Break
3:30 p.m.	TTX debrief, capability gaps, next steps
4:00 p.m.	Adjourn