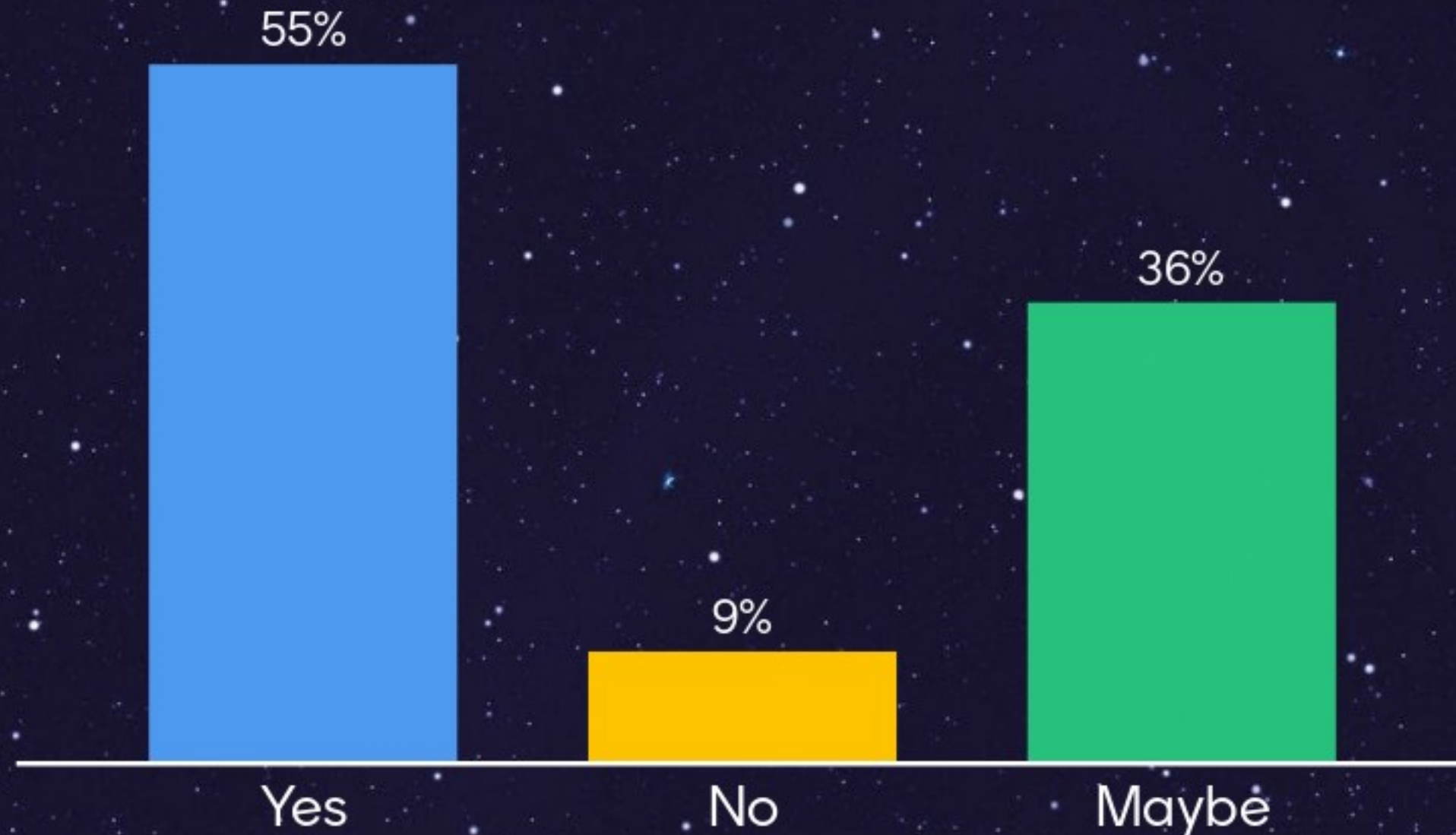


If an actor has a rocket (for space launches) do they also have missile capabilities?





THE LAUNCH PAD SEMINARS

A Virtual Forum for New Ideas on
Space Security and Related Matters

Emmanuelle Maitre

Research Fellow
Fondation pour la Recherche Stratégique



Paul Meyer

Fellow in International Security
Adjunct Professor of International Studies
Simon Fraser University



EPISODE III

Rockets, Missiles, and Space: lessons from
The Hague Code of Conduct and beyond

Wednesday, June 3, 2020



Laura Grego

Senior Scientist, Global Security Program
Union of Concerned Scientists



Dmitry Stefanovich

Research Fellow
Center for International Security
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MODERATOR

Emmanuelle Maitre
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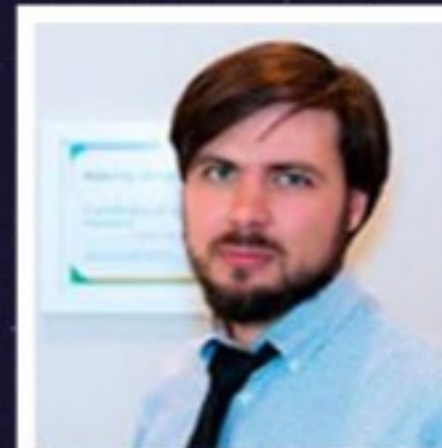
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Paul Meyer

Simon Fraser University

00:00:02

00:08:35



UNIDIR



Paul Meyer



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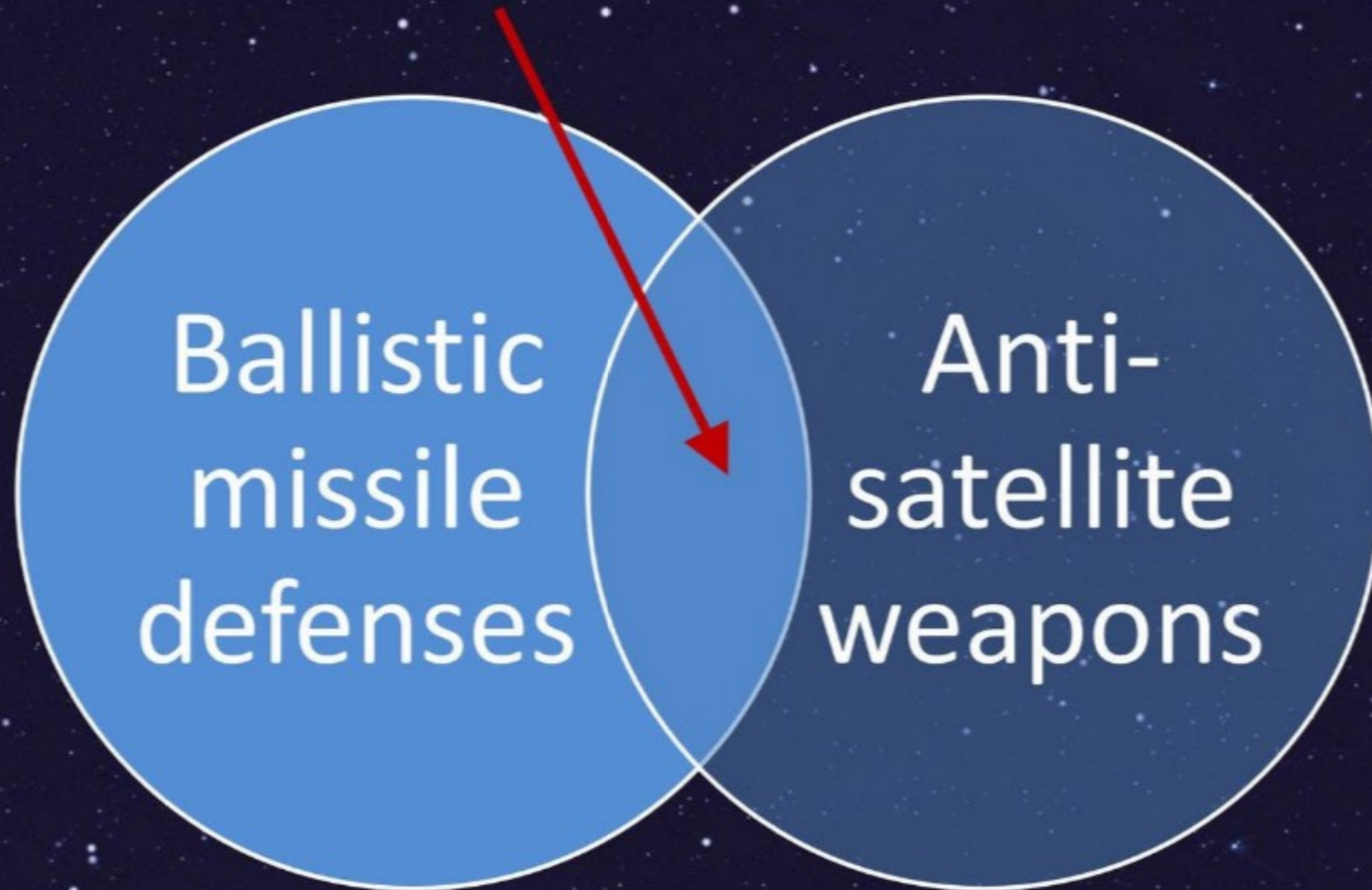
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Strategic missile defenses



Trajectories of an
intercontinental
ballistic missile
and a low-earth
orbiting satellite



Capability of interceptor missile → reach of system

Burnout velocity (km/s)	Example	Approximate reachable altitude (km)
3.0	<i>US Aegis SM-3 Block IA</i>	600 (few LEO satellites)
4.5-5.5	<i>US Aegis SM-3 Block IIA</i>	1450-2350 (all of LEO)
6.5-7.5	<i>US Ground-based Midcourse Defense</i>	6,000 (all of LEO)
8.5-10.5	<i>China lofted missile, 2013</i>	10-36,000 (GPS, Beidou, GLONASS)
10-11	space-based boost phase interceptor	36,000 (geosynchronous orbits)

The destruction of a single 10-ton satellite could double or triple the amount of large debris in low Earth orbit.

	1 to 10 cm	> 10 cm
Current LEO debris	370,000	14,000
Debris from a 10-ton satellite	250,000-750,000	5,000-15,000



Figure 2. Cloud of debris of size greater than 10 cm after 15 minutes.

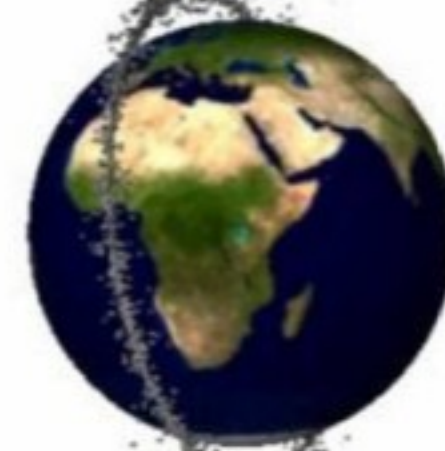


Figure 3. Debris cloud after 10 days.

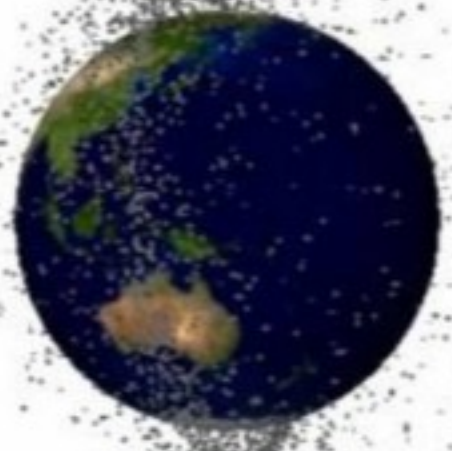


Figure 4: Debris cloud after 6 months.

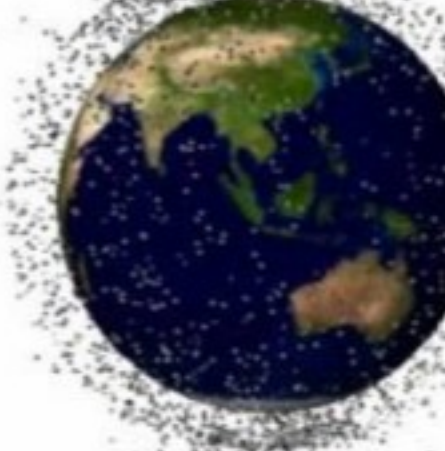
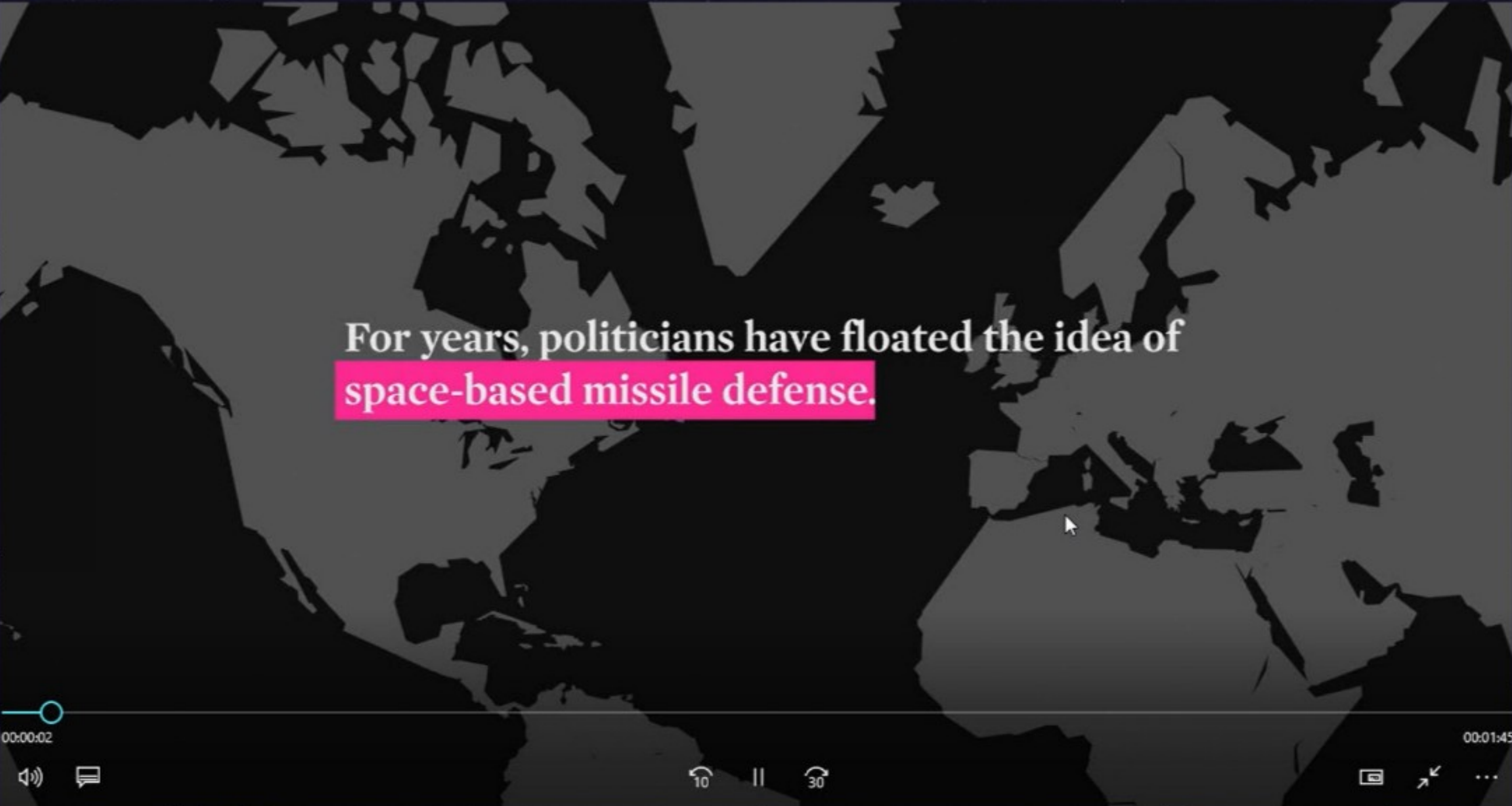


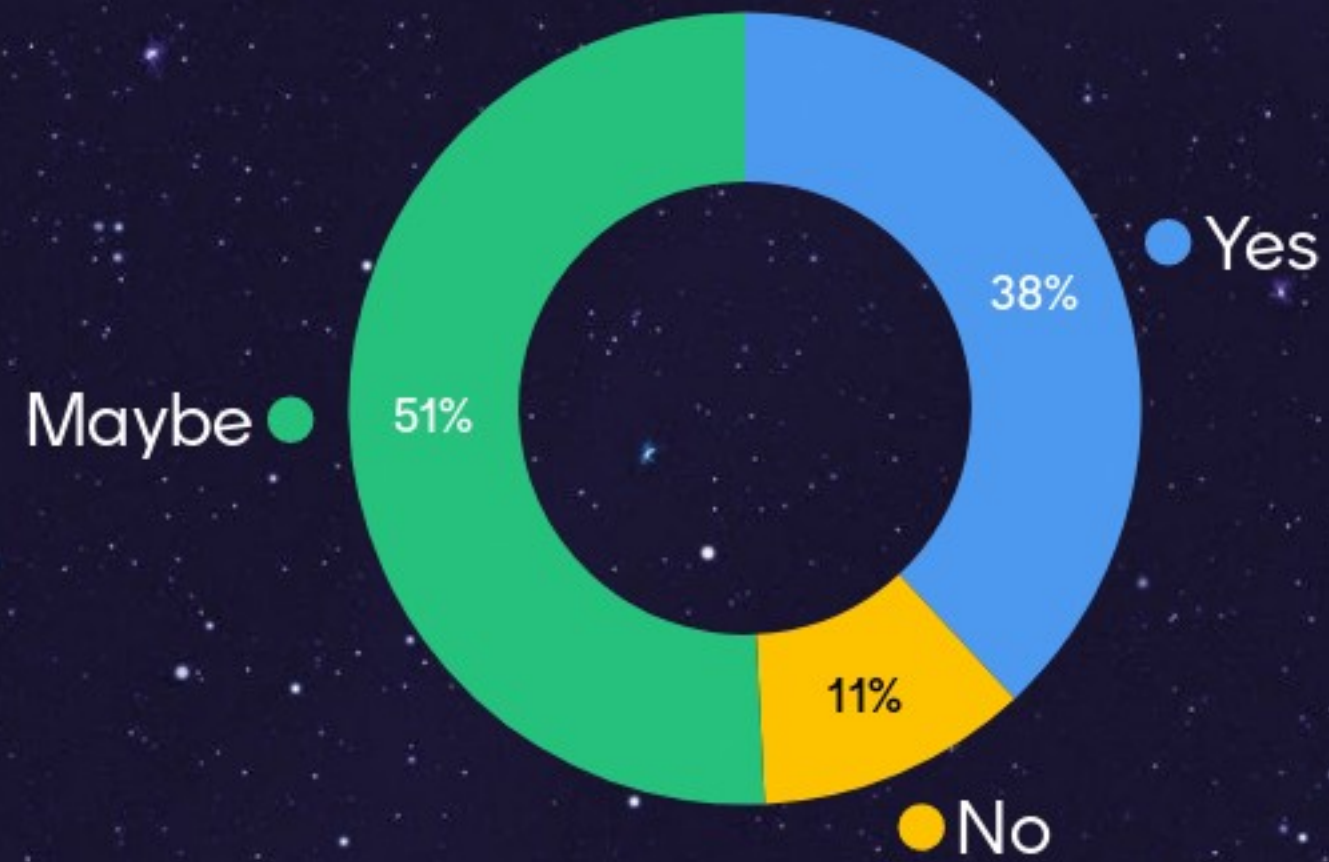
Figure 5: Debris cloud after 3 years.



For years, politicians have floated the idea of space-based missile defense.

Space-based Missile Defense

Does having missile defence capabilities mean having anti-satellite capabilities too?





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What lessons from the Hague Code of Conduct can be applied to space?

Greater transparency could build trust on in-orbit activities

Transparency

More transparency is needed

Transparency increases trust and helps to prevent misunderstanding.

Need to involve major space faring nations such as China and Russia from the beginning of drafting.

That transparency works, even for the 'non-haves'. Being transparent about space missions would increase mutual trust, avoid misunderstandings and reduce the need for certain countermeasures.

The value of transparency

Need to have all major space powers involved from the outset

A platform for dialogue



What lessons from the Hague Code of Conduct can be applied to space?

effective example for a new set of measures to help preventing an arms race in the outer space

Universality increases value.

Political commitment and transparency

transparency and CBM do not necessarily hurt

transparency to confidence building to cooperation

Agreement for protection of lunar assets and life support systems for protection of human life.

Definitions of different types of tech applied around the world

More involvement of superpowers is needed

Transparency requires trust, however trust requires transparency.



What lessons from the Hague Code of Conduct can be applied to space?

Creating specific working groups involving diplomatic representatives.

Universality meaning having major space actors on board from the beginning onwards

Transparency is core need. Agreements are as effective as the ability to 'police'

Importance of constant support from friendly institutions (European Union in this case)

Transparency and CBMs.

Need for an adjudicating body or mediating body which is neutral

Need for common definitions / interpretations!

Inclusive forum for discussion among states; norm-building; HCOC chairs promote voluntary commitments and transparency standards.

stringent penal provisions



What lessons from the Hague Code of Conduct can be applied to space?

Developing countries are not left behind.





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Natália Archinard

Deputy Head of Education, Science
and Space Section, Swiss Federal
Department of Foreign Affairs



Kazuto Suzuki

Vice Dean, Professor
Public Policy School, Hokkaido University



EPISODE IV

Rethinking PAROS and looking ahead at multilateral approaches

Wednesday, June 10, 2020



Daniel Porras

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Benjamin Silverstein

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