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- Key International and Political Developments
- Advancements and Progress in NEO Discovery
- NEO Characterization Results
- Deflection and Disruption Models & Testing
- Mission & Campaign Designs
- Impact Consequences
- Disaster Response
- Decision to Act
- Public Education & Communication

**STRENGTHENING GLOBAL COLLABORATION AND REDUCING THE RISK OF
DEFECTION OF A COOPERATING NATION IN PLANETARY DEFENSE**

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ABSTRACT

This paper brings the classical debate in the social science discipline of international relations into the policy debate arena of Planetary Defense (PD). We show that mere rational arguments of data sharing motivation would not be enough to build and maintain a viable global PD cooperative framework capable of timely action in case of imminent NEO threat and to avoid sudden, dangerous defection of any key cooperating nation, for example, due to the unilateral use of the nuclear deflection method. We recognize the potential for defection as the greatest risk to the decision-making process and propose a policy design to mitigate it. We approach the problem from a perspective that a predictable action (by any actor, preferably a global one) against the NEO is the desirable goal.

The global PD debate, including the recent contribution of US National Near-Earth Object Preparedness Strategy, focuses on global cooperation as an assumed prerequisite due to the character of the threat. However, threat politics is not usually driven by rational thinking. We identify two different mutually constitutive layers of a viable framework of the PD endeavor – the rational/logical and the irrational/allogical.

First, there is wide consensus that we need to develop a broad and solid infrastructure consisting of international network of various detection installations and mitigation technologies in PD, which is a rational choice project driven by the need of scientific evidence as a rational basis for further decision-making. However, second, the political decision-making would not be reduced to, and merely based on, rational arguments, but also on irrational motivations such as emotions, domestic political struggles or individual opinion bias causing sudden, irreversible, unilateral actions or defections.

We argue that the design of the technological and methodological framework of global PD endeavor should be focused on the technical interdependence between nations willing to participate rather than on mere volunteer international cooperative participation. Deeper interdependence will lower the risk of further defection by any possible delusional individual in power. As we recognized elsewhere, the motivation for triggering any preparatory planetary defense actions on the national basis could be based on a desire for national prestige, commercial boost multiplier, advancement of scientific research or on a will to act responsibly on the global level. Science brings the consciousness of global responsibility, whereas commerce in space tourism or outer space industrial activities like asteroid mining would create the weave for interdependence between participating nations. The deflection method and its execution should be a result of well architected, mature, long-lasting interdependent and internationally predictable commitment rather than a sudden decision act.

The empirical part of this paper will show how technological interdependence contained attempts of individuals to defect on several key historical examples. We chose different super-technological projects such as CERN, ITER or ISS. In the final part of the paper, we propose a five steps policy model for Planetary Defense, which we already proposed on IAC 2016, but have evolved and deepened significantly for this PDC 2017 conference.
