In space, the situation is much murkier. In addition to classical conceptions of space weapons—as dedicated anti-satellite weapons, space-based weapons that can hit terrestrial targets, or space-based missile defense interceptors—some space capabilities are dual-use and can be used in anti-satellite mode or for other purposes. An exoatmospheric missile defense interceptor, for example, could destroy a satellite circling Earth in a predictable orbit more easily than it could stop a ballistic missile suddenly launched at an unanticipated target. Low-powered, commercially available lasers used for satellite tracking and other legitimate purposes could temporarily blind imaging satellites.[33] And small, maneuverable satellites could conduct close proximity operations for benign reasons, such as taking diagnostic pictures of a malfunctioning satellite, or for malicious ones. There is no way to outlaw all capabilities that could be used as space weapons without also foregoing many beneficial applications.

Uncertainty about a satellite's function is as much of a problem for soft law as it is for formal arms control. Commercial space-based communication and imaging services are used extensively by the United States and increasingly by other countries to enhance their terrestrial military capabilities. In addition, governmental and non-governmental satellites can serve users from different countries, making it hard to determine when and what type of action against a satellite would be acceptable under international laws of armed conduct, including principles of necessity, proportionality, discrimination, and neutrality.

Instead of posing insurmountable barriers to arms control, these conceptual complications present compelling reasons for regulating behavior and not just capability (i.e., whether a technology fits criteria that define it as a "weapon" or that are used as a proxy for hostile intent). They suggest that trying to find the right balance between protecting peaceful uses of space and preventing aggressive, unacceptably threatening, or recklessly irresponsible ones, should be done through a discussion and negotiation process that includes all key stakeholders and is approached as an evolving and interactive project, rather than as an abstract intellectual exercise, a policy question to be answered separately by each space-faring state, or a static course of action where the rules, once negotiated, are set in stone. Perhaps most importantly, these complexities suggest that before trying to elaborate new rules for cooperative space security, parties need to decide on the fundamental purpose and guiding principle of their enhanced space security regime.

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[33] Low-powered laser beams are sent into space hundreds of times a year for various reasons, including tracking and imaging satellites, measuring distances between objects in space, calibrating instruments, and assessing continental drift. In 1997, the United States used high- and low-powered lasers against one of its own satellites to assess vulnerability to deliberate attacks and to the level of inadvertent lasing that might occur if a satellite crossed into one of these low-powered beams. For technical reasons, the United States could not collect complete information on the effects of the high-powered MIRACL laser, but it did determine that the 30 watt tracking laser, used longer than intended because of information collection problems, was sufficient to dazzle the imaging satellite at 500 km altitude. For an assessment of what can and cannot be done with low-powered lasers, see Wright, Grego, and Gronlund, *The Physics of Space Security,* pp. 125-128. Kenneth Bacon, "DoD News Briefing," October 23, 1997, http://www.defenselink.mil/transcripts/transcript.aspx?transcriptid=1103 describes the MIRACL laser test.