

views of the group itself.<sup>9</sup> Secondly, SSWG members were also provided with a series of draft 20-30 page research papers which examined each of the 12 indicators in some detail based on unclassified materials.

Following a review of the Space Security Survey results, research papers and a round-table discussion, SSWG members were asked to complete another Space Security Survey designed to assess the status of each space security indicator for 2003. At the conclusion of this process the Group reviewed these results and members were asked to provide an overall assessment of the status of space security for 2003.

### **Space Security 2003: Key Assessments**

The following discussion paper provides an overview of the early results of this evaluation of space security for 2003 -- described within this project as *Space Security 2003 Assessments*. A summary of the key assessments of this discussion paper is provided within this introduction. Following the introduction this paper provides a 3-5 page summary of the key research results for each of the 12 space security indicators including: a working definition for each indicator and an analysis of how developments with respect to the indicator impact space security; a brief review of key background information and historical developments relevant to the indicator; an overview of key developments with respect to the indicator during 2003; an integrated evaluation of the status of space security for 2003 with respect to the indicator drawn from documentary research efforts as well as the quantitative and qualitative results of the two Space Security Questionnaires completed by the larger space security expert group (October 20 to November 14, 2003 and the SSWG November 24-25, 2003). Key background information for this project is attached to this paper as a series of annexes, including lists of SSWG participants and a working bibliography.

## **I-The Space Environment**

### **1-Space Debris**

A majority (19) of SSWG members assessed that there had been little or no effect upon space security with respect to this indicator, while 6 members of the Group assessed that space security had been somewhat enhanced with respect to this indicator during 2003. A significant number (53) of Space Security Survey respondents assessed that there had been little or no effect upon space security. A total of 24 Space Security Survey respondents that assessed space security had been somewhat enhanced, and 33 Survey respondents assessed that space security had been somewhat reduced (28) or reduced (5).

The SSWG assessed that developments with respect to this indicator were consistent with the contradictory trends of previous years. Space debris was a serious concern related to the secure and sustainable access to space -- particularly with respect to MEO and GEO. While amounts of debris continued to increase in absolute terms over 2003, the rate of this increase was declining. The UN-mandated Inter-Agency Space Debris Coordination Committee was successful in developing voluntary international guidelines for debris mitigation, which was expected to be endorsed by the UN Committee on the Peaceful Uses of Outer Space in 2004. Compliance with these voluntary guidelines remained a concern as most mitigation measures require additional fuel to maneuver satellites into graveyard orbits and/or greater launch costs associated with added weight which are significant considerations for commercial actors or newer space security actors. China's commitment to space exploration raised questions about how an enhanced Chinese space program might affect debris creation. **In view of these developments, it was assessed that there had been little or no effect upon space security during 2003 with respect to this indicator.**

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<sup>9</sup> An invitation to participate in this Space Security Survey was provided to over 400 individuals with expertise in the legal, scientific, technological, political, civil, commercial, and military dimensions of space security issues. Participants were asked to provide both quantitative and qualitative judgements and were assured anonymity of their responses. They were also asked to self-identify their level of expertise with respect to specific issues and, on a voluntary basis, indicate their country of origin. A total of 115 respondents completed some parts of the survey. A total of 87 respondents indicated their country of origin with a clear majority from Canada and the United States. Other countries represented were Australia, China, France, Germany, India, Japan, Netherlands, New Zealand, Poland, Russia, Sweden, Switzerland, and the United Kingdom. [BOB TO RESPOND TO DND REQUEST FOR DETAIL]