

UN COPUOS

49th Session of the Scientific and Technical Subcommittee

Working Group on the Long-term Sustainability of Outer Space
Activities

Expert Group B

Space Debris, Space Operations and Tools to Support Collaborative SSA



First Informal Meeting Outcomes

First EG B Informal Coordination Meetings: Cape Town, South Africa the 5th-6th October 2011

1. Draft Draft Methods of Work for Expert Group B developed (subsequently circulated electronically to EG B members for further review.
2. Revised list of topics developed to address the following areas:
 - Space debris
 - Space operations
 - Tools to support collaborative space situational awareness
3. Input Submission Form for Expert Group B reflecting proposed areas of work was posted on the working group's dedicated webpage.



Agenda

First formal meetings of Expert Group B (EG B): to be held on 10th and 13^o of February 2012

Agenda:

1. Review and adoption of Expert Group B objectives and outputs, method of work and schedule.
2. Review of inputs received in response to:
 - UN OOSA requests to Member States, inter-governmental organizations and non-governmental organizations
 - EG B Chairs request for inputs from Member States and international non-governmental organizations
3. Review and adoption of outline of Expert Group B report
4. Assignment of editors for specific sections of draft Expert Group B report



Draft Method of Work for EG B

A. Membership

- Experts from COPUOS MS and international intergovernmental organizations with permanent observer status with the Committee

B. Objective and Outputs

- Obtain and review inputs provided by COPUOS Member States, intergovernmental organizations, national non-governmental organizations and other designated non-governmental entities
- Develop a consolidated set of voluntary best practices guidelines focused on practical and prudent measures that could be implemented in a timely manner in the areas of:
 - Space debris
 - Space operations
 - Tools to support collaborative space situational awareness

C. Method of Work

- Working meetings on the margins of and/or during the sessions of the Scientific and Technical Subcommittee and the Committee, and at other times to be agreed in advance, to support the deliberations of the LTSSA Working Group.



EG B Candidate topics

1. Space debris:

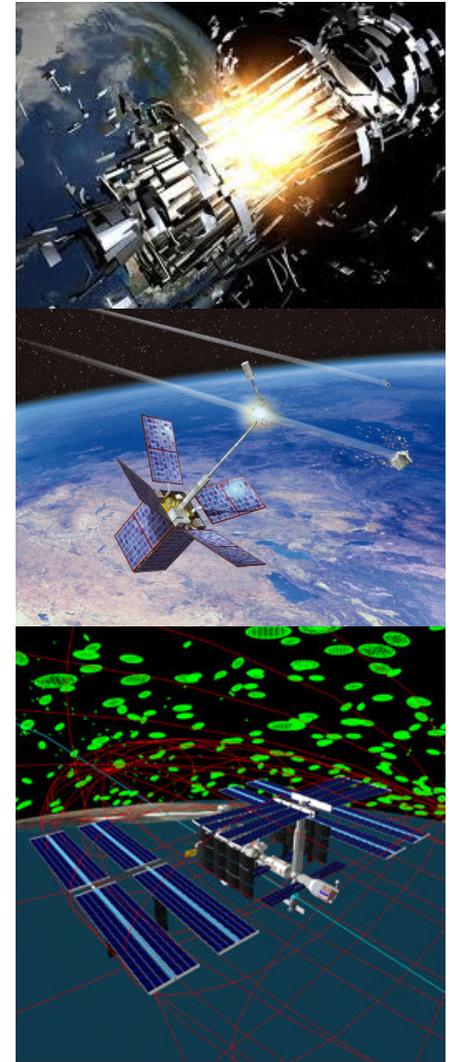
- a. Measures to reduce the creation and proliferation of space debris
- b. Technical developments and possibilities regarding space debris removal

2. Space operations:

- a. Conjunction assessment and collision avoidance processes and procedures
- b. Pre-launch and manoeuvre notifications (supporting launch and on-orbit collision avoidance for functional space objects)
- c. Rendezvous, proximity and capture operations
- d. Common standards, practices and guidelines for all mission phases

3. Tools to support collaborative space situational awareness

- a. Registries of operators and contact information
- b. Collection, sharing and dissemination of orbital data on functional and non-functional space objects
- c. Storage and exchange of information on the operational status of space objects (both functional and non-functional)
- d. Information-sharing procedures



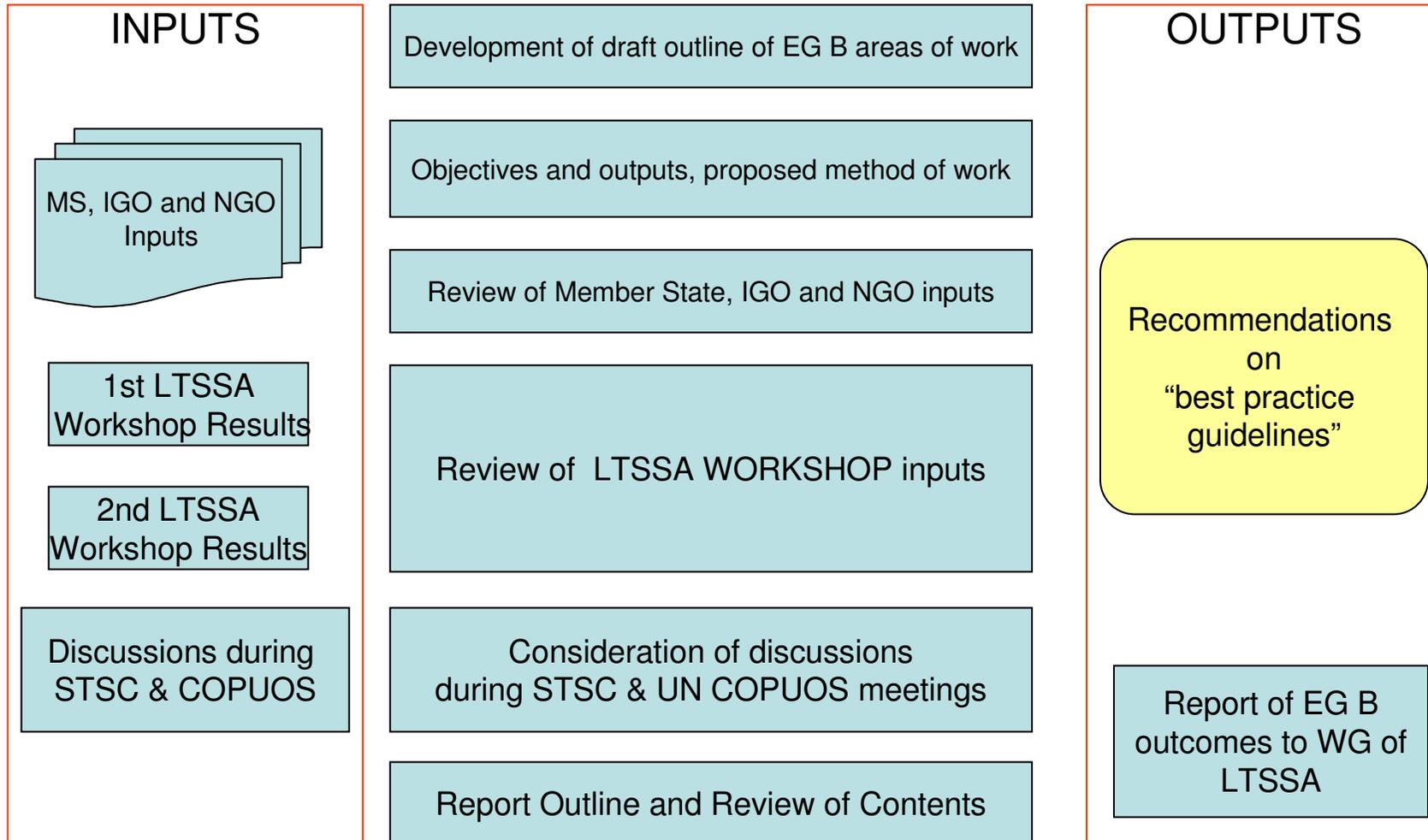


Indicative schedule of work for future EG B meetings

Date	Place	Note
June 2012	Vienna, Austria	on the margins of the 55th session of UN COPUOS
October 2012	Naples, Italy	(informal) on margins of 63th IAC
Nov 2012-Jan 2013		Electronic Meetings
February 2013	Vienna, Austria	LTSSA Workshop (in conjunction with the 50th session of the UN COPUOS STSC) and EG B meetings
June 2013	Vienna, Austria	on the margins of 56th session of UNCOPUOS
October 2013	Beijing, China	(informal) on margins of 64th IAC
Nov 2013-Jan 2014		Electronic Meetings
February 2014	Vienna, Austria	on the margins of 51st session of the UNCOPUOS STSC
June 2014	Vienna, Austria	on margins of 57th session of UN COPUOS



Activities Flow





Space Debris Input Submissions

a. Measures to reduce the creation and proliferation of space debris:

- Japan - “Basic Plan for Space Policy” and the “Space Debris Mitigation Standard (JMR-003)”
- United Kingdom - UK Outer Space Act
- United States
 - U.S. Government - Orbital Debris Mitigation Standard Practices (8 standard practices).
 - Non-Governmental
 - Aerospace Industries Association - ISO 24113, Debris Management.
 - Commercial Space Transportation Advisory Committee (COMSTAC) – “space debris legal definition”
 - U.S. Technical Advisory Group to ISO Technical Committee 20/Subcom14
- European Organisation for the Exploitation of Meteorological Satellite (EUMETSAT)



b. Technical developments and possibilities regarding space debris removal:

- International Association for the Advancement of Space Safety



Space Operations Inputs

a. Conjunction assessment and collision avoidance processes and procedures

- Japan
- United States
 - Best practices for conjunction assessment and collision avoidance
 - Non-governmental
 - Aerospace Industries Association
 - Secure World Foundation
 - U.S. Technical Advisory Group to ISO TC 20/SC 13
 - U.S. Technical Advisory Group to ISO TC 20/SC 14
- Consultative Committee for Space Data Systems
- EUMETSAT





Space Operations Inputs

b. Pre-launch and manoeuvre notifications (supporting launch and on-orbit collision avoidance for functional space objects)

- Japan
- United States
 - Best practices for pre-launch notification and launch collision avoidance
 - Non-governmental
 - Aerospace Industries Association
 - U.S. Technical Advisory Group to ISO TC 20/SC 13
 - U.S. Technical Advisory Group to ISO TC 20/SC 14
- Consultative Committee for Space Data Systems





Space Operations Inputs

c. Rendezvous, proximity and capture operations

- Japan

d. Common standards, practices and guidelines

- Japan
- United States

- Best practices for conjunction assessment and collision avoidance
- Best practices for pre-launch notification and launch collision avoidance

• Non-governmental

- Aerospace Industries Association
- COMSTAC
- Secure World Foundation
- U.S. Technical Advisory Group to ISO TC 20/SC 13
- U.S. Technical Advisory Group to ISO TC 20/SC 14

- Consultative Committee for Space Data Systems





Collaborative SSA Inputs

a. Registries of operators and contact information

- Japan
- United States
 - Database of spacecraft operator and contact information
 - Non-governmental
 - Secure World Foundation
 - U.S. Technical Advisory Group to ISO TC 20/SC 13
- International Telecommunication Union

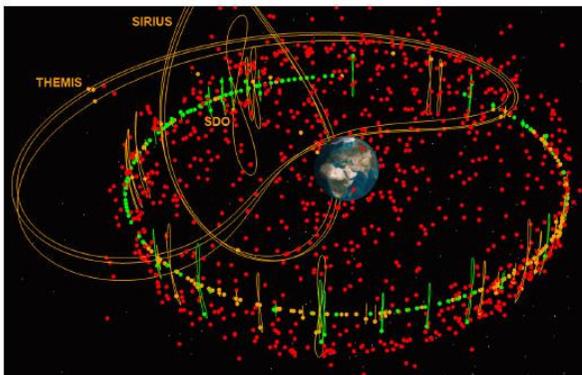




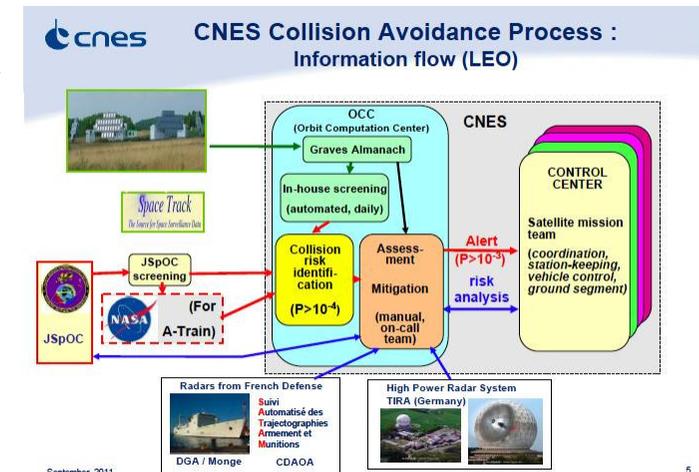
Collaborative SSA Inputs

b. Collection, sharing and dissemination of orbital data on functional and non-functional space objects

- Australia
- Japan
- United States
 - Best practices in the sharing and dissemination of data on space objects
 - Non-governmental
 - Aerospace Industries Association
 - Secure World Foundation
 - U.S. Technical Advisory Group to ISO TC 20/SC 1
- Asia-Pacific Space Cooperation Organization
- Space Generation Advisory Council



Credit: Analytical Graphics Inc.

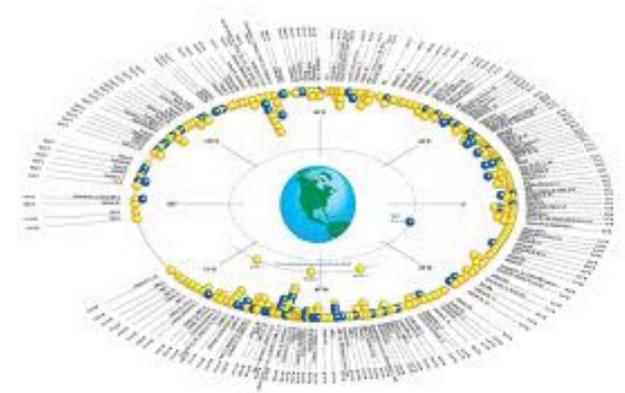




Collaborative SSA Inputs

c. Storage and exchange of information on the operational status of space objects (both functional and non-functional)

- United States
 - Non-governmental
 - Aerospace Industries Association
 - Secure World Foundation
- Consultative Committee for Space Data Systems



d. Information-sharing procedures

- Japan
- United States
 - Best practices in the sharing and dissemination of data on space objects
 - Non-governmental
 - Aerospace Industries Association
 - Secure World Foundation
 - U.S. Technical Advisory Group to ISO TC 20/SC 13





Next Steps

First formal meetings of Expert Group B (EG B): to be held on 10th and 13th of February 2012

- **Convene at 0900 in Room M0E100**

Continue to receive inputs from Member States, IGO and national NGOs through June 2012

Development of draft outline for EG B report

Review all inputs at second round of formal meetings on margins of COPUOS in June

Progress of EG B will be reported in COPOUOS STSC reports