



United Nations Committee on Peaceful Uses of Outer Space (COPOUS):

Space Weather Expert Group

Thematic Priority 4: Developing an International Framework
for Space Weather Services (2018-30).

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Thanks to Expert Group
and to Karel Schrijver, Chair of COSPAR-ILWS Space Weather Roadmap Team.



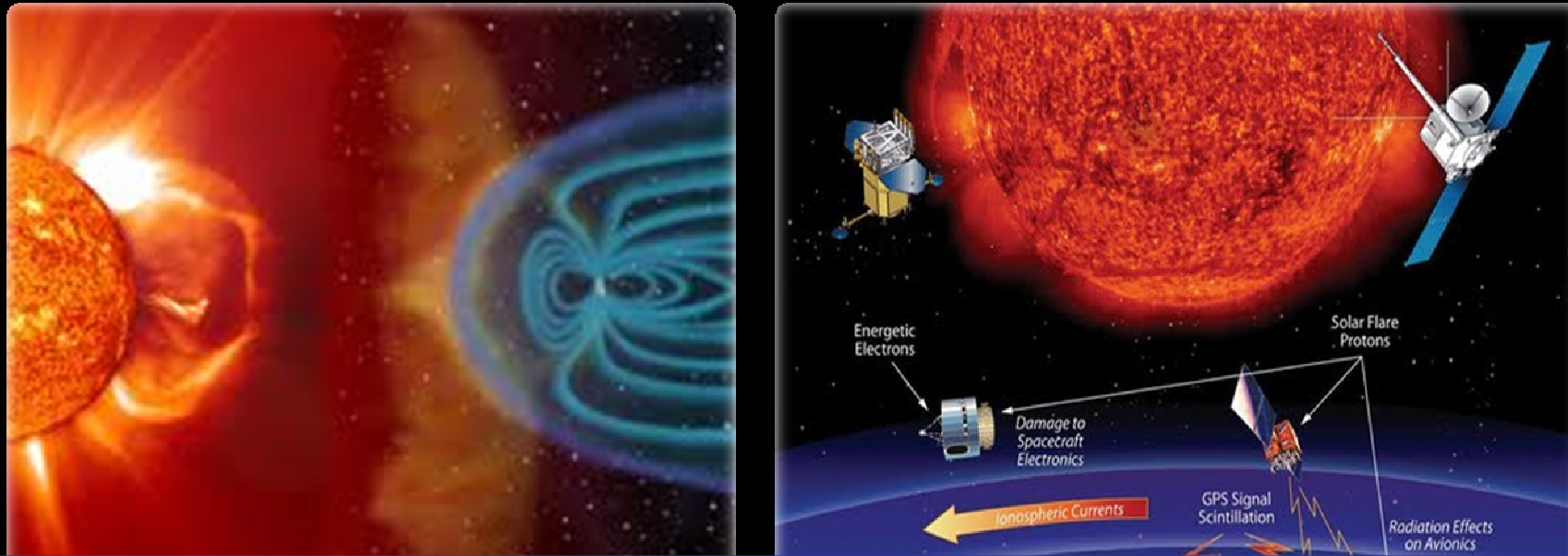
Heritage of Space Weather in COPUOS

- Builds on work of Expert Group C (Space Weather) in Long-Term Sustainability of Outer Space Activities (LTS) in UN Committee on Peaceful Uses of Outer Space (COPUOS). 2011- 2015.
- New Space Weather Expert Group with Rapporteur (Mann), reporting to UN COPUOS under permanent agenda item approved Feb. 2015 in Vienna.

Opportunity to define activities of the Space Weather Expert Group to meet needs of international community for 2018-2030.

Space Weather has a wide range of impacts on terrestrial and space-based infrastructure.

International co-ordination and collaboration is critical to understand and quantify impacts and for *future critical infrastructure protection*.



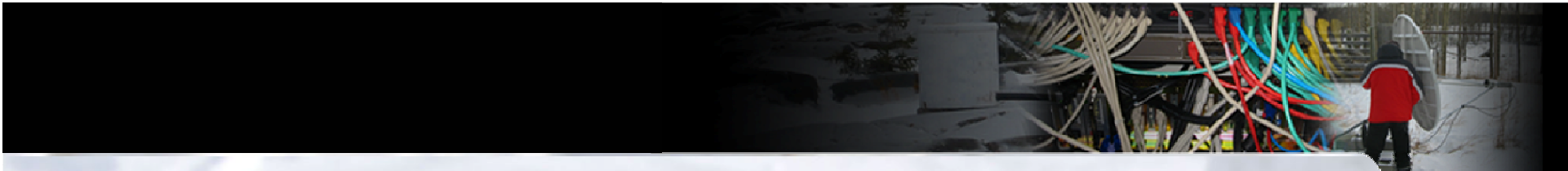
UN – Long-Term Sustainability of Outer Space Activities program resulted in approval of new space weather guidelines by COPUOS in 2016.



UN Space Weather Expert Group

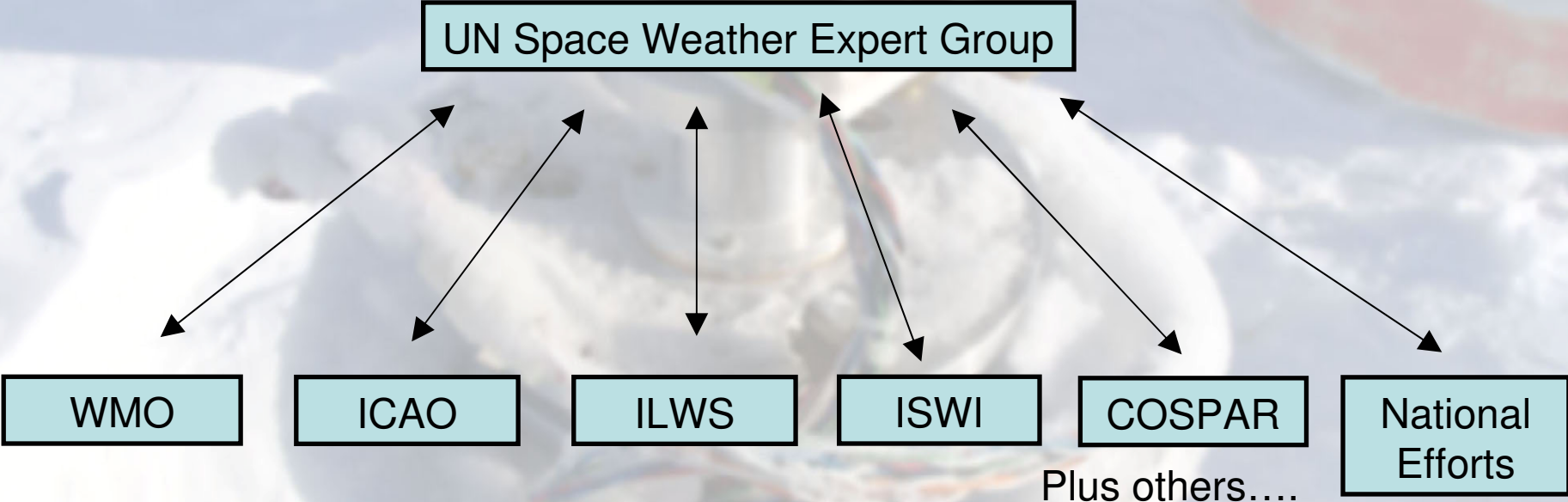
(UN COPUOS STSC)

- Mandate: Promote awareness, provide guidance, and enable communication and cooperation in space weather related activities among Member States and related national and international organisations.
- Focus: To promote awareness, communication, and provide guidance and enable cooperation in space weather related activities.
- Specific actions and definite outcomes: Ensure that the work is complementary to other space weather coordination activities such as those within the WMO, ISES, COSPAR, ILWS, ICAO etc.



Active International Space Weather Efforts

UN has political role to promote and coordinate



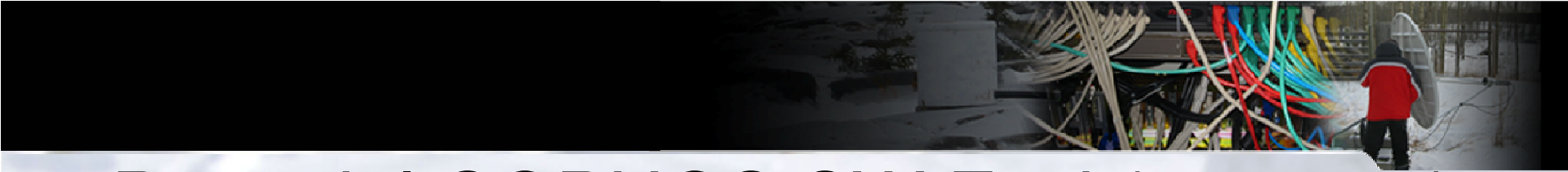
With new understanding of both increased likelihood and impact of space weather, international coordination is essential.



Potential Prioritisation of Space Weather in UN COPUOS for 2018-30

- UN COPUOS defining Thematic Priorities for 2018-2030.
- Space Weather under consideration as Thematic Priority 4: Developing an International Framework for Space Weather Services. (TP-4 report available for download from UN).
- Priorities discussed at June 2018 COPUOS meeting at UNISPACE+50.
- To be now defined further over next 2 years through COPUOS work in a new Working Group.

**EG seeks feedback and input to this process
New volunteers for EG?**



Potential COPUOS SW Foci (2018-30)

- WHEN: *Important to know when to act.*
 - **International Space Weather Warning Network?** Cf. UN International Asteroid Warning Network (IAWN)?
- WHAT: *Important to know what to do.*
 - Promote study of **socio-economic and risk impact studies** in member states.
 - Promote engagement of **Critical Infrastructure Protection** administrations in Member States.
 - Promote definition of **actionable operational responses**.
 - Improve modeling and R2O – action teams under UN/COSPAR via CCMC SWAT.
- HOW: *Define appropriate mechanism/administration to meet space weather needs in UN context.*
 - Suggesting a potential **International Meeting/Workshop on Space Weather in 2019** to kick-off of the post-2018 Space Weather actions.
 - Define future administration in UN context – proposal to form an **International Coordination Group on Space Weather (ICGSW)** in 2020.
- SCIENCE: New science research needs to be prioritized at UN Member State and international agency level. How best to promote and achieve this?

UN COPUOS has political influence for communication and coordination with and between Member States; implementation expected to be delivered by other entities (WMO, ISES, national space weather plans etc).



Future UN Focus for 2018-30

- Space Weather Expert Group via TP-4 proposes formation of potential new ***“International Coordination Group for Space Weather” (ICGSW)***.
- Could provide forum for space weather stakeholders to promote improved international communication and collaboration, incorporating formal membership of appropriate space weather stakeholder organisations.
- If approved, the ICGSW could replace the UN Space Weather Expert Group with appropriately modified Terms of Reference and Mandate etc.
- See also publication: “Mann et al., *“International Collaboration Within the United Nations Committee on the Peaceful Uses of Outer Space: Framework for International Space Weather Services (2018–2030).”*, ***Space Weather***, 2018”.

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Discussion

- *How to improve Expert Group communication and cooperation channels with SW stakeholder bodies?*
- *Can we identify activities in SW stakeholder organisations where the Expert Group can add value?*
- *How to develop baseline proposal for improved international collaboration through ICGSW or other mechanism?*



***UN COPUOS Space Weather Expert Group
Meeting/Space Weather Workshop in 2019***

***“Towards International Framework for Space Weather
Services”***

July 10-11th 2019

***On margins of IUGG 2019 in Montreal.
(Dates before IAGA sessions at IUGG)***

***To be hosted at Canadian Space Agency HQ in St.
Hubert, QC, Canada – close to Montreal.***



Contacts:

Provide discussion and feedback here, to member(s) of the Expert Group, or by email (for example to):

- Prof. Ian R. Mann, University of Alberta (Canada). Chair and Rapporteur for the UN COPUOS Expert Group on Space Weather. (imann@ualberta.ca)
- Prof. Hermann Opgenoorth, Swedish Institute of Space Physics (Sweden).
- Dr. Terrance Onsager, NOAA/NWS/Space Weather Prediction Center (USA)
- Dr. Mamoru Ishii, NICT(Japan), etc.