

Progress Report to STSC at their 60th session, Vienna, Febr. 8, 2023

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WMO-ISES-COSPAR Coordination on SWx:

- **Invitation letter from the UN Office of Outer Space Affairs** (UNOOSA) dated on July 1, 2022 by request of the Committee on the Peaceful Use of Outer Space (UN-COPUOS) and its Scientific and Technical Subcommittee (STSC).
- **COSPAR, ISES and WMO were invited to lead efforts** to improve the global coordination of space weather activities in consultation and collaboration with other relevant actors and international organizations.





Overview of COSPAR Panel on Space Weather (PSW) and the International Space Weather Action Teams (ISWAT)

**COSPAR PSW
&
ISWAT**

PSW Mission:

- **Advance our understanding of space environment processes**
- **Facilitate scientific and observational gap analyses.**
- ***Provide expert knowledge on physical mechanisms responsible for the variability of the space environment:*** i.e., about processes and impacts which could potentially be harmful for both humans and advanced technological systems in space and on the ground.
- **Communicate new research community findings** to national space weather program leads and agencies through **Global Living Roadmaps** and **National Strategic Planning Documents**.

ISWAT Mission:

The **ISWAT initiative** is the facilitating backbone for the next COSPAR SWx Roadmap <https://iswat-cospar.org/> and aims to demonstrate the **potential of new scientific understanding** and the **use of advanced models** to improve on space weather predictive capabilities – **“Enabling *Space Weather Science*”**

**GLOBAL
COMMUNITY
FORUM**

**GLOBAL
COMMUNITY
VOICE**



Guidance on General Standards and Recommendations for Global Services:

The WMO model will assist in selecting the most feasible options from currently used SWx practises or in finding entirely new ways for efficient SWx collaboration

Consolidated High Quality Data Dissemination Systems for enhanced visibility

The well proven approaches adapted by WMO will facilitate standardization in Integrated SWx activities.

Benefits of Integration:

- Sharing knowledge, observations and modelling with fair consolidated principles is a cost efficient way for the SWx community to tackle the high demands for future SWx services
- Following jointly agreed approaches and policies will facilitate data exchange, Model validation and development, communication of extreme events, ensuring adequate competencies and capacity building

The International Space Environment Service

ISES is coordinating Space Weather Services since 1962

(Prior to 1996 ISES was called the International URSIgram and World Days Service (IUWDS)).

- **The Mission of ISES:**

...to deliver, coordinate and improve operational space weather services.

- **This is accomplished through**

- the rapid exchange of space environment information;
- the sharing of best practices for data analysis and product development; and
- the open dissemination of products and services.

ISES is organized and operated for the benefit of the international space weather user community.



ISES
International Space
Environment Service

ISES National Members



www.spaceweather.org

Initial Brainstorming meeting in Coimbra, Sep 30 – Oct 1, 2022

- **Participants - 2 persons each from:**
 - **COSPAR:** Masha Kuznetsova (Chair PSW) and Hermann Opgenoorth (Vice-Chair PSW)
 - **ISES:** Jesse Andries (Director) and Mamoru Ishii (Deputy Director)
 - **WMO:** Kenneth Holmlund (H/SSU) and Kirsti Kauristie (co-chair of ET-SWX)
- **Moderator:** Ian Mann on behalf of UN-COPUOS SWx-EG(remote participation)
- **Facilitator:** Suzy Bingham, WMO/UK MetOffice
- **Venue:** Observatório Geofísico e Astronómico da Universidade de Coimbra (OGA), Portugal

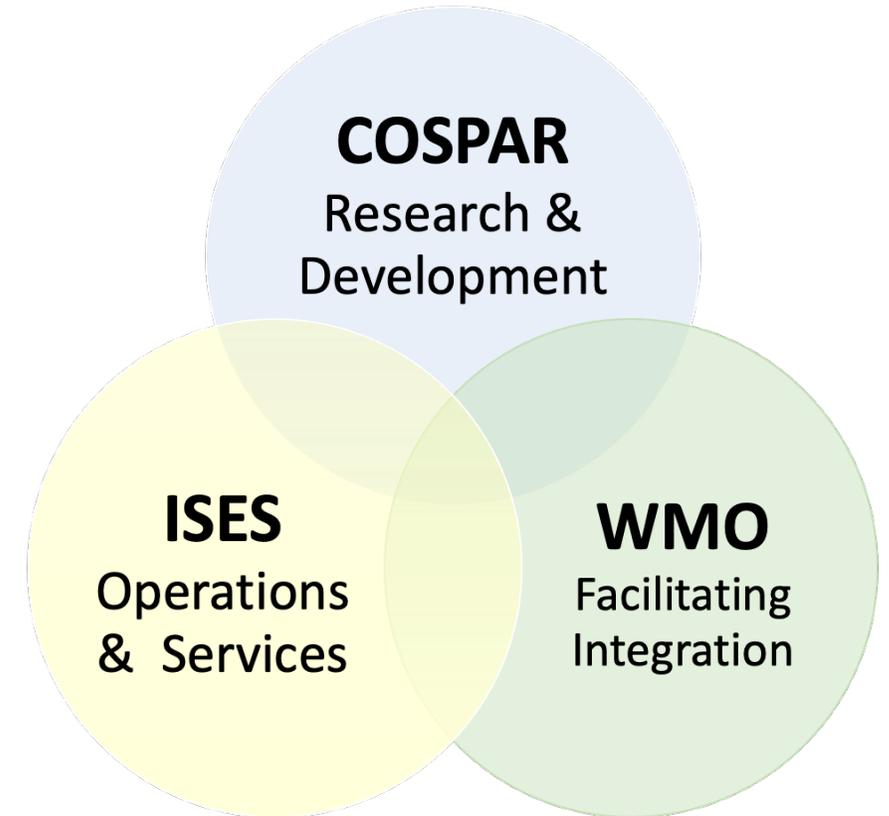


The Six Participants

Photographer: Suzy Bingham

The Coimbra Declaration

- Acknowledgement of the UNOOSA invitation letter
- Core expertise of the three organizations agreed =>
- Agreement to collaboratively define overarching activities in the areas of overlapping expertise =>
- Adding cross-memberships in the organizations' working groups
- Add reference to the Coimbra Declaration in the COSPAR ISWAT Roadmap overview paper on International Space Weather Landscape
- Formalizing the partnership - e.g. with a MoU
- Find agreements on next steps of coordinated work



Some Primary Roles of the Three Involved Organisations

COSPAR: Research & Development:

- Advance understanding of space environment processes → improved prediction capabilities
- Development and validation of space environment models
- Science and observations gap analysis
- Formulation of a scientific SWx Roadmap as an updatable and adaptable *"LIVING DOCUMENT"*

WMO: Facilitating & Integration:

- Communicate international standards
- Facilitate best practices for SWX activities
- Advocate SWx issues, threat-analysis and procedures among WMO member countries for sustained resources
- Engagement of SWx services with national and regional emergency response functions

ISES: Services & Operations:

- Provide direct value for the society
- Engagement with the user community
- Stimulate exchange of data, knowledge, and best practises between operational SWX services
- Provide regional and global space weather warning functions and services

Next Steps: COSPAR-WMO-ISES Coordination

- Space Weather **Round Table Discussion (Nov 2023)** to
 - engage additional SWx organisations and agencies
 - position their particular expertise in the relevant "Space Weather Ecosystem" for the benefit of future coordination
 - review the connections of such SWx activities to other STSC SWx-EG recommendations and their status
- Identification and definition of **Joint Pilot Projects** to demonstrate benefits of partnership
- **Reporting to UN-COPUOS STSC** on the progress in SWX coordination activities

