

# International Space Environment Service

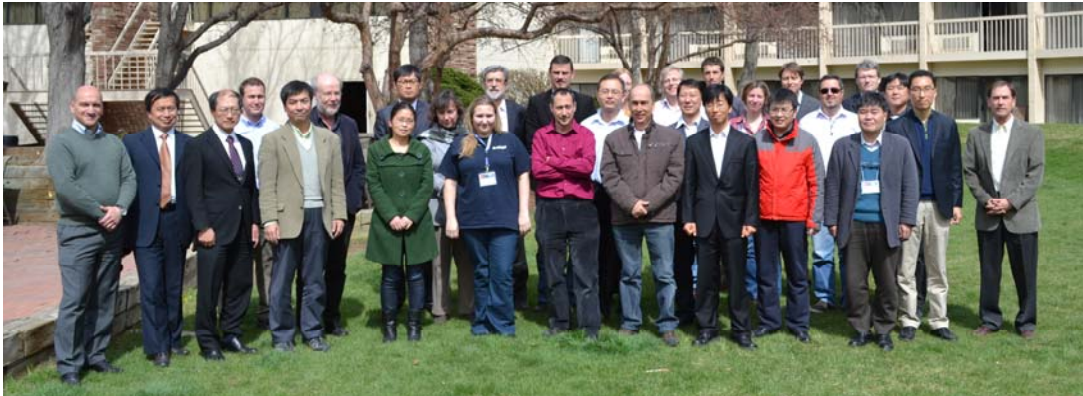
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RWC Australia (Sydney), RWC Belgium (Brussels), RWC Brazil (São José dos Campos), RWC Canada (Ottawa), RWC China (Beijing), RWC Czech Republic (Prague), RWC India (New Delhi), RWC Japan (Tokyo), RWC Korea (Jeju), RWC Poland (Warsaw), RWC Russia (Moscow), RWC South Africa (Hermanus), RWC Sweden (Lund), WWA USA (Boulder)

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## International Space Environment Service – 2013 Annual Meeting Boulder, Colorado, April 20-21, 2013

### Meeting Report



Attendees (from left to right): Danielle Biron, Huaning Wang, Mamoru Ishii, Bob Rutledge, Tsutomu Nagatsuma, Henrik Lundstedt, Yanhong Chen, KiChang Yoon, Lee-Anne McKinnell, Laura Wentworth, Jerome Lafeuille, Clezio Marcos De Nardin, Alain Hilgers, Jianguang Guo, Robyn Fiori, Joaquim Eduardo Rezende Costa, Graham Steward, Junzhuang Zhao, Michael Terkildsen, Sunhak Hong, Suzy Bingham, Weiguo Zong, Matthew West, Rubens Cruz Gatto, Matthias Meier, Shinichi Watari, JinWook Han, JaeHyung Lee, Terry Onsager; Not in photo: Larisza Krista, Mauro Messerotti

#### Introduction

The 2013 Annual Meeting of the International Space Environment Service was held at the Millennium Hotel, Boulder, Colorado USA on April 20-21, 2013. The meeting was attended by 30 participants from 10 Regional Warning Centers (RWCs), one Collaborative Expert Center (CEC), 13 countries, and 16 organizations. The following main topics were discussed: 1. Membership within the ICSU World Data System; 2. Formal Relationship between ICSU/ISES and WMO/ICTSW; 3. Refreshing ISES; 4. ISES Website; 5. Regional Warning Center Information Exchange.

It was also recognized that substantial, overlapping efforts are now occurring in various international organizations with the broad goal of advancing and coordinating space weather services. This includes efforts being conducted by ISES, the World Meteorological Organization (WMO), the Coordination Group for Meteorological Services, and the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS). The 2013 ISES meeting was the first ISES meeting for which all

members of the WMO Inter-Programme Coordination Team were invited to attend. As the importance of space weather continues to grow, we need to ensure that the interests of all participating groups are included in the dialog and that our actions are well integrated where there are common goals. Maintaining focus without duplication of effort will be a challenge that we all need to work together to achieve.

## 1. Membership within the ICSU World Data System

ISES was a permanent service of the Federation of Astronomical and Geophysical Data Analysis Services of the International Council of Science (ICSU) until 2008. At the end of 2008, the Federation of Astronomical and Geophysical Data Analysis Services was dissolved, with the expectation that the existing service organizations would be incorporated into the new ICSU World Data System (WDS) after submitting a required formal application.

There was unanimous agreement at the 2012 ISES meeting that Terry Onsager, the new ISES Director, should submit an application to ICSU-WDS for membership on behalf of ISES. The application to join as a WDS Network Member was submitted in December, 2012. After formal review, the ISES application was accepted in March, 2013, pending ISES's response to the reviewers' comments.

A formal agreement signed by ICSU-WDS and the ISES Director is required for ISES to become a Network Member. The first draft of this agreement was distributed to ISES members on March 28, 2013, along with copies of the ICSU-WDS Constitution (Annex A) and the ICSU-WDS Data Policy (Annex B) and the WDS Certification Procedures that all members must agree to.

Through email exchange with ISES members and ICSU, the Network Member agreement was subsequently revised. A document distributed prior to the 2013 ISES meeting (ICSU\_Membership\_v1.doc) outlined the following revisions made to the initial agreement through consultations with ICSU:

- a. The agreement type, "Letter of Agreement" has been changed to "Consortium Agreement"
- b. Paragraph 3b has been shortened to contain only: "Promote long-term data stewardship by encouraging participating data centres of the Network to join ICSU-WDS as Regular Members." All ISES Regional Warning Centers are encouraged to apply for membership as Regular Members, in addition to their affiliation as Network Members. In the case of NOAA/SWPC, our long-term data archival and stewardship is done through the National Geophysical Data Center (NGDC), which is a Regular Member. Therefore, SWPC will not apply for this additional membership. A similar situation may exist in other RWCs.
- c. Paragraph 5 has been added with the following text: "Although ISES strives for full and open exchange of all data, metadata, and products; the provision of operational space weather services sometimes requires the use of proprietary data or data with restricted access. It is recognized that such data fall outside the scope of ICSU-WDS and are not included in this Consortium Agreement."

**Action 1: All ISES members must review the current agreement and associated documents (ICSU\_WDS\_ISES\_Agreement\_v2.doc, Annex A, Annex B, and the WDS Certification**

**Procedures) and either acknowledge consent of the agreement or recommend modifications that would make the agreement acceptable. Due: June 1, 2013**

## 2. Formal Relationship between ICSU/ISES and WMO/ICTSW

ICSU and WMO Secretariats both recognize the strategic importance of a strong ISES-WMO connection and are interested in pursuing an agreement to formalize the relationship between our organizations. ISES members also acknowledge the value of this relationship. A document drafted by Jerome Lafeuille and distributed to all ISES members on April 11, prior to the meeting, (ICTSW\_ISES-ICSU-WMO-draft7.pdf) outlined the relationship between ISES and WMO and recommended contents of an agreement. Prior to the meeting, Jerome made the additional suggestion that the agreement be directly between ISES and WMO, rather than involving ICSU-WDS. A draft agreement (ISES-WMO-MoU-draft0.doc) was distributed to ISES members on April 19.

The ISES meeting attendees agreed that we should pursue an ISES-WMO agreement. Using the MoU drafted by Jerome, a team was formed to consider the discussions of the meeting and to develop further the MoU for review by ISES and WMO.

**Action 2: Draft ISES-WMO Memorandum of Agreement for review by ISES and WMO. Team: Mamoru Ishii (lead), Jerome Lafeuille, Alan Hilgers, JaeHyung Lee, Mike Terkildsen Wuaning Wang. Due: June 30, 2013**

## 3. Refreshing ISES

ISES has a long history of valuable contributions to space weather observations, research, and services. While many of the core activities of ISES have not changed appreciably over the years, much has changed, and the original text describing the activities and structure of ISES is out of date. We are now in a time when space weather capabilities and service needs are changing rapidly. In view of the growing need for space weather services and the increasing involvement of national and international organizations, it is important to consider how ISES may need to adjust its activities.

The ISES meeting attendees agreed that the text describing the Basic Functions, the Constitution, and the Organizational Structure for ISES must be review and perhaps modified. Among the issues discussed was the need for a consensus forecast, the requirements to be an ISES member, and the possibility of additional membership categories. A team was formed to consider the discussions of the meeting and to recommend revisions of the ISES documents.

**Action 3: Review and revise the ISES documents on Basic Functions, Constitution, and Organizational Structure for review by ISES members. Team: Robyn Fiori (co-lead), Terry Onsager (co-lead), Alain Hilgers, Bob Rutledge, Tsutomu Nagatsuma, Matthew West (cc: Clezio Marcos De Nardin). Due: July 15, 2013 for inclusion in the revised website (see below)**

ISES officers: Graham Steward agreed to hold his position as Secretary for Space Weather, and there was unanimous support from the meeting attendees. A team was established to hold an election

for the Deputy Director.

**Action 4: Hold an election for ISES Deputy Director. Team: Alain Hilgers (lead), Clezio Marcos De Nardin, Mike Terkildsen. Due: July 1, 2013**

#### 4. ISES Website

At the July, 2012 ISES meeting, the issue of updating the ISES web site was discussed. It was generally agreed that it would be good to have a simple, organized view of key information from all RWCs to facilitate the communication and coordination of services. This should be done in a way that does not present an additional burden on forecasters, but rather enables forecasters to get a quick picture of the alerts, warning, forecasts, and other relevant information from our partners around the globe. At that time, volunteers were requested to host the new web site.

RWC South Korea generously agreed to host the new ISES web site. This is especially timely as RWC Canada will be required to discontinue hosting the current web site by August 1, 2013. The new web site provided by the Korean Space Weather Center (KSWC) will initially include a public site, similar to the current site, and will make available, as resources allow, a private forum for information exchange among RWCs.

Sunhak Hong presented the draft web site design and the development timeline. The anticipated time schedule for release of the new web site will include a beta version for review by July 1, 2013 and the official launch of the initial public site by August 1, 2013. KSWC will work with RWC Canada to transfer ownership of the ISES domain names. Two domain names are currently being used by ISES: [www.spaceweather.org](http://www.spaceweather.org) and [ises-spaceweather.org](http://ises-spaceweather.org). The [ises-spaceweather.org](http://ises-spaceweather.org) domain name is the one most used today. KSWC will obtain access to both domain names and will allow both to go to the ISES site. A follow-on version of the web site will contain forecasts that are collected from each RWC's website or via email and a text-based discussion tool for real-time communication among RWCs.

**Action 5: Transfer the “spaceweather.org” and “ises-spaceweather.org” domain names from RWC Canada to RWC South Korea. Due: August 1, 2013**

RWC South Korea prepared three design selections. The meeting participants unanimously suggested what was referred to in the presentation as Design 1, which had black text on a white background. There was discussion on various web site features, such as the “News” section. It was agreed that the “News” section should not require frequent updating, but could include major activities and events at the RWCs. The need for the web site to be accessible by all modern browsers was acknowledged.

The web site design included a standard template that all RWCs will use to identify their organization, contact information, photograph of the facilities, etc. RWC South Korea will email the template to all RWCs, who will provide the requested information to RWC South Korea.

**Action 6: RWC South Korea will email the template for contact information to all RWCs, who**

**will provide the requested information to RWC South Korea. Due: June 15, 2013**

**Action 7: Release new ISES web site. Team: SuhHak Hong, JaeHyung Lee, JinWook Han, KiChang Yoon. Due: Beta version: July 1, 2013; Public version: August 1, 2013**

Rubens Cruz Gatto (RWC Brazil) presented web design considerations based on the wisdom of Socrates. Phase 1 of web site design includes consideration of the audience. What are the goals of the site, what do the users need, what is the content inventory and organizational structure? Phase 2 involves navigation design. How will the web site work and how will it be navigated? Phase 3 involves presentation of the information. What is the desired appearance, layout, images, background, etc.

## 5. Regional Warning Center Information Exchange

It was generally agreed that there is a need for improved communication and coordination of information among ISES. This was highlighted by the Space Weather Workshop session on improved communication and coordination related to extreme events and reinforced by the excellent activities going on at all the Regional Warning Centers. RWC Japan was recognized for the valuable effort they have initiated to bring together forecasts from a number of RWCs.

The discussion on information sharing concentrated on two main categories: 1. informal commentary and discussion among forecasters, and 2. formal products and services. Many RWCs expressed an interest in being able to share a running commentary as events are developing. RWC Brazil gave the example of an "IT Service Ticket," where an issue is initially documented and then undergoes a life cycle with contributions being added from interested participants until resolution is achieved and the ticket is closed. To accommodate some initial, informal information sharing among forecasters, RWC Korea agreed to include some chat or similar capabilities on the web site they are developing, as resources allow.

The sharing of formal forecasts, alerts, or data products was discussed with regard to the WMO Information System (WIS) and the URSIgrams that are currently being used. The inclusion of space weather information in WIS has been discussed for a number of years in the WMO Inter-Programme Coordination Team on Space Weather (ICTSW), and most ISES Regional Warning Centers are represented on this team. One of the ICTSW Terms of Reference specifically addresses utilizing WIS for space weather information exchange: "Standardization and enhancement of Space Weather data exchange and delivery through the WMO Information System (WIS)." By moving toward globally accepted metadata standards, ISES services will be more readily accessible to the growing network of service providers and users, and these services will be compliant with the requirements of the ICSU-WDS. It was recognized that if a transition away from URSIgrams is desired, it would be a long-term effort, perhaps five to ten years. It may also be that the URSIgram format is fine as the Regional Warning Center product, and all that is needed is WIS-compliant metadata that describes the URSIgram content and can be registered in the WIS.

In order to investigate the use of WIS for space weather products, a team was established to conduct a pilot project to identify some initial product or products to share, and then to work with WMO to

integrate the product(s) into WIS. This project would identify all the steps required in the process and allow an assessment to be made of the feasibility of using WIS for space weather information.

**Action 8: Conduct a pilot project to use the WMO Information System for the exchange of space weather information. Team: Shinichi Watari (lead), Mike Terkildsen, Graham Steward, Matthew West, Terry Onsager. Due: August 1 (initial feedback on the approach and anticipated timeline)**

Specific issues regarding the communication and coordination of information related to extreme events were discussed, following the session at Space Weather Workshop that the RWCs participated in. Thanks to the efforts of Mangala Sharma and all the participating RWCs, the session was highly successful and initiated valuable discussion. It was reiterated that a standardization of activity levels is needed, along with guidelines and recommended practices for various levels. As we move forward with this issue, participation of all interested groups will need to be included. For example, there is an action from the November, 2012 ICTSW-3 meeting “to draft an overview of the process involved and issues to be addressed in extreme event warning.” No additional actions were decided for this topic. It is anticipated that through the joint ICTSW-ISES activities, progress will be made in this important area.

#### 2013 ISES Meeting Actions

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Meeting Attendees

Graham Steward	RWC Australia – Secretary for Space Weather
Mike Terkildsen	RWC Australia
Matthew West	RWC Belgium
Robyn Fiori	RWC Canada – Secretary for World Days
Huaning Wang	RWC China
Yanhong Chen	RWC China
Clezio Marcos De Nardin	RWC Brazil
Joaquim Eduardo Rezende Costa	RWC Brazil
Rubens Cruz Gatto	RWC Brazil
Alain Hilgers	CEC - European Space Agency
Mamoru Ishii	RWC Japan
Shinichi Watari	RWC Japan
Tsutomo Nagatsuma	RWC Japan
Lee-Anne McKinnell	RWC South Africa
Laura Wentworth	RWC South Africa
JaeHyung Lee	RWC South Korea
SunHak Hong	RWC South Korea
JinWook Han	RWC South Korea
KiChang Yoon	RWC South Korea
Henrik Lundstedt	RWC Sweden
Bob Rutledge	RWC United States
Terry Onsager	RWC United States - ISES Director
Matthias Meier	DLR – Germany
Mauro Messerotti	INAF - Italy
Danielle Biron	CNMCA – Italy
Larizza Krista	CU, NOAA/SWPC – United States
Suzy Bingham	UK Met Office – United Kingdom
Jerome Lafeuille	WMO
Weiguo Zong	CMA – China
Junzhuang Zhao	CMA – China
Jianguang Guo	CMA – China



# International Space Environment Service

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RWC China (Beijing), RWC Czech Republic (Prague), RWC India (New Delhi), RWC Japan (Tokyo), RWC Korea (Jeju),  
RWC Poland (Warsaw), RWC Russia (Moscow), RWC South Africa (Hermanus), RWC Sweden (Lund), WWA USA (Boulder)

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## International Space Environment Service – 2013 Annual Meeting Century Room, Millennium Hotel, Boulder, Colorado USA April 20-21, 2013

### AGENDA

April 20, 2013 – 09:00 – 17:30

- 09:00 Welcome, Logistical Issues, and Introductions
  - 09:15 1. Membership within the ICSU World Data System
    - Network Membership Agreement and Member Responsibilities
    - WDS Open Metadata Catalogue
    - ICSU-WDS Strategic Plan
  - 09:45 2. Formal Relationship between ICSU/ISES and WMO/ICTSW
    - Examples of other Organization-to-Organization Agreements
    - Elements of an ICSU/ISES – WMO/ICTSW Agreement
  - 10:45 Break
  - 11:00 3. Refreshing ISES
    - Review the Basic Functions, Constitution, and Organizational Structure
    - Review the Working Group Structure
    - Other Activities to Initiate
  - 12:00 Lunch – Millennium Room
  - 13:00 3. Refreshing ISES (continued)
  - 14:00 4. ISES Website
    - Website Status – South Korea Radio Research Agency
    - Public versus Private Information
    - Catalogue of Products
    - Quality Metrics
    - Other Information to Include
  - 15:15 Break
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- 15:30 5. Regional Warning Center Information Exchange
- Is There a Need for Improved Communication and Coordination of Information?
  - How Should Information be Shared (URSIgram, WMO Information System, WDS Open Metadata Catalogue)?
  - Procedures during Extreme Events
  - Other Issues

17:30 Adjourn

April 21, 2013 – 9:00 – 13:00

- 09:00 6. Regional Warning Center Reports (15 Minutes for each RWC)
- Australia
  - Belgium
  - Brazil
  - Canada
  - China (NAO and CSSAR)
  - Czech Republic

10:45 Break

- 11:00 6. Regional Warning Center Reports (15 Minutes for each RWC)
- India
  - Japan
  - Poland
  - Russia
  - South Africa
  - South Korea
  - Sweden
  - U.S.

13:00 Adjourn

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