

**WORLD METEOROLOGICAL ORGANIZATION**



**WORLD WEATHER RESEARCH PROGRAMME  
(WWRP)**

**STANDING COMMITTEE ON SERVICES FOR AVIATION  
(SC-AVI)**

*A subsidiary body of WMO's Commission for Weather, Climate, Water and  
Related Environmental Services and Applications (SERCOM)*

**ONLINE MEETING OF THE AVIATION RESEARCH AND  
DEVELOPMENT PROJECT – PHASE 2 (AvRDP2)  
SCIENTIFIC STEERING COMMITTEE**

**22 November 2023**

**Meeting minutes**

**Published 14 December 2023**

## 1. OPENING OF THE MEETING

The meeting was opened by Chris who welcomed everyone and provided an overview of the agenda. The agenda included updates on the two airport pairs (London to Johannesburg and Hong Kong to Singapore), as well as discussing milestones for 2024. Chris noted that 2024 will be a transition year as the research moves toward application and user evaluation.

The agenda for the meeting included:

1. Update on LHR-JNB pair (includes Jacob's work on ensemble products, Morne's investigation of turbulence products, and user engagement update)
2. Update on HKG-SIN pair (includes Danice and Michiko's comparison)
3. Update on any work by Claire on cross-comparison with the Met Office system.
4. Co-chairs' update on the half-term report
5. Stephanie W.'s update on outcomes of the ICAO WG-MRAD meeting (31 Oct. - 2 Nov.)
6. Preliminary milestones for 2024
7. Next meeting.

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1. Update on LHR-JNB pair (includes Jacob's work on ensemble products, Morne's investigation of turbulence products, and user engagement update)
  - It was noted that the baseline of using global model data has been set up, but other data sources like radar have not yet been blended in.
  - The next steps are to try blending in additional data sources by the next meeting in January.
  - Verification plans are still being developed and will require further discussion between now and mid-2024.
  - Trajectory modelling is underway using model data both with and without convection information to evaluate impacts.
2. Update on HKG-SIN pair (includes Danice and Michiko's comparison)
  - Denise presented the results of the blending of the ECMWF ensemble with satellite nowcasts to generate convection probabilities for the HKG-SIN pair. This showed potential to improve upon just using the ensemble alone, by incorporating nowcast data.
  - Further exploring satellite-based products and instability indices to provide longer lead time guidance was advised.
  - It was discussed and agreed to have a blended probabilistic product to serve as the baseline for this pair by mid-2024.
  - It was advised for the pair to continue verification efforts using lightning data as a ground truth.
  - It was suggested that the pair develop a simplified visualization of convection forecasts for pilots.
3. Update on any work by Claire on cross-comparison with the Met Office system
  - Claire presented comparison convection forecasts between the London to Johannesburg and Hong Kong to Singapore routes using deterministic and probabilistic forecasts.
  - The comparison between the Hong Kong/Singapore and London/Johannesburg routes showed that while there are differences in the products used, the convection was captured in similar areas by both deterministic and probabilistic

forecasts. This indicates deterministic forecasts could serve as a common baseline for comparison.

- The London/Johannesburg route needs to start blending additional information beyond just global forecasts into their system by the next meeting to stay on track. Satellite data may be the most practical initial product to blend with over central Africa.

#### 4. Co-chairs' update on the half-term report

- Chris asked if there was anything else that should be included in the half-term report that is due within the next month.
- Danice said she could write up some of the results from her work in Hong Kong in the next 3-4 weeks to include in the report.
- Chris thinks including Denise's write-up would be helpful for the report.

#### 5. Stephanie W.'s update on outcomes of the ICAO WG-MRAD meeting (31 Oct. - 2 Nov.)

- Stephanie W. presented an update on the ICAO meeting she attended in early November. She provided a high-level overview of the AVRDP2 project and main outcomes of the 2nd SSC meeting, to the ICAO group.
- She noted that the group was interested to see how enhanced convection information could provide added value compared to global models.
- It was thought that providing data requirements to WMO would be valuable information for their projects and timelines.

#### 6. Preliminary milestones for 2024

- By mid-2024, to finalize which datasets will be blended for each airport pair route.
- To begin blending selected datasets and developing initial blended products (H1 2024).
- To evaluate blended products and begin the verification process (H2 2024).
- Prepare blended products to be evaluated in applications in late 2024/early2025.

#### 7. Next meeting date and discussion points.

- The next meeting will be in mid-February 2024, with possible dates ranging from February 14th to February 23rd. Helen will send out a Doodle poll to find the best date within that 2-week period.
- The meeting will focus on progress updates and the next steps for blending datasets on the two airport routes. It will also discuss further developing the verification plan for evaluating the blended products.

## 2. **NEXT ONLINE MEETING:** in mid-February 2024

<b>AvRDP2-SSC-actions</b>	<b>Who/Due date</b>
○ Pair 1 and Pair 2 to finalize datasets to be blended for each airport pair and begin the development of initial blended products	Mid-2024
○ Danice is to write up some of the results from her work in the next 3-4 weeks to include in the report	Danice/Dec 2023
○ Verification methods for the products for Pair 1 and Pair 2 to start in late 2024/early 2025	Chris/Piers/Ramon/Late 2024-early 2025
○ Next meeting doodle poll and links	Hellen/end Nov 2023

## LIST OF ATTENDEES

### 1. SSC members

COUNTRY	NAME	E-MAIL	WMO AFFILIATION
HONG KONG, CHINA	SHI, Xiaoming	<a href="mailto:shixm@ust.hk">shixm@ust.hk</a>	WWRP
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UNITED STATES OF AMERICA	DAVIS, Chris <sup>[1]</sup>	<a href="mailto:cdavis@ucar.edu">cdavis@ucar.edu</a>	WWRP

<sup>[1]</sup> Co-chair of AvRDP-SSC

### 2. WMO Secretariat

NAME	POSITION	E-MAIL
WIGNIOLLE, Stéphanie	Scientific Officer, Services for Aviation Division, Services Department	<a href="mailto:swigniolle@wmo.int">swigniolle@wmo.int</a>
MSEMO, Hellen	Scientific Officer, World Weather Research Division, Science and Innovation Department	<a href="mailto:hmsemo@wmo.int">hmsemo@wmo.int</a>

### 3. List of apologies/absentees

NAME	POSITION	E-MAIL	WMO AFFILIATION
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DE CONING, Estelle	Head, World Weather Research Division, Science and Innovation Department	<a href="mailto:edeconing@wmo.int">edeconing@wmo.int</a>	WWRP

### 4. Invitees

NAME	POSITION	E-MAIL
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