

# Varysian HydrometAFRICA 2022

***Date: 17-19 May***

***All timings in South Africa Standard Time (SAST)***

***Location: Irene African Pride Hotel, Centurion, South Africa***

**Day 1 - 17 May**

***Theme - Capacity Building / the Hydromet Value Chain***

**7.30am-9.00am**

**Registration and morning coffee**

**9.00am-9.50am**

**Welcome and Opening Discussion: Sustainability and Inclusion**

- **What do we mean by sustainability and inclusion and why is it so important?**
- **Where does the meteorology and hydrometeorology sector currently stand - where are the gaps and what are the challenges?**
- **How can we improve things?**

The overarching theme of this summit is sustainability and inclusion across the hydromet (hydrology and meteorology) sector. In this opening session we'll discuss the current lay of the land, organisational challenges and opportunities, and discuss areas of collaboration as well as different partnerships and engagement models.

***Speakers: Tom Copping, Varysian CEO and Amos Makarau, WMO***

**10.00am-10.50am**

**Presentation: Public Private Engagement (PPE)**

- **What is PPE in general and in the context of World Bank activities?**
- **Why is PPE crucial for strengthening Hydromet and agromet services in Africa?**
- **How can we make PPE work? What hinders the development of PPE?**
- **Examples of PPE models**

Stefan Von Gruenigen discusses the power of public private engagement (PPE) in hydromet services. The dynamics between the public, private, and academic sectors have been evolving, creating more opportunities than ever to join forces. This presentation will look at the current landscape of partnerships, explore different approaches, the challenges around PPE and the benefits.

***Speaker: Stefan Von Gruenigen, Consultant on Public Policy and Public Private Engagement, The World Bank***

**11.00am-11.15am**

**Refreshment break in exhibitor hall**

**11.15am-11.30am**

**Innovation Session**

### **A Public Private Partnership (PPP) Case Study**

Michal Najman discusses a WMO-showcased project, where ZAMG, the Austrian Meteorological Service and Meteopress, have been involved in a successful public-private partnership collaboration. The aim is to co-develop a radar network in Austria, sharing the costs and benefits.

During the ongoing four-year project, a C-band radar and three X-band radars have been built. Two more C-band radars will be deployed in 2022 and 2023.

This presentation will describe the details of the collaboration, financial arrangements and lessons learned from the project.

*Speaker: Michal Najman, CEO, Meteopress*

**11.30am-11.45am**

**Innovation Session**

### **EWR Success Story**

Synopsis forthcoming

*Speaker: Ben Costtick, International Business Development, EWR Radar Systems*

**11.40am-12.50pm**

**Roundtable Sessions**

Attendees split into 8 roundtable groups to discuss different aspects of capacity building and the hydrology and meteorology value chain. These will be led by a moderator and the findings shared in the panel session later in the day. The topics are as follows:

### **Tables A-B: Capacity Building**

Talking points:

- Where do met services need support regarding capacity building? What are the biggest challenges and how might we be able to solve them?
- Maximising the impact of funding to ensure uninterrupted operation and maintenance.
- Mobilising funds to ensure capacity development continues.
- Using digital solutions to keep equipment costs down.
- How can we build resilience?
- Examples of successful capacity building
- Revenue generation

*Moderators:*

*Table A - Georgina Flatter Campbell, Executive Director, TomorrowNOW*

*Table B - Brian Bellew, Global Business Development Manager, Baron Weather*

## **Tables C-D: Public Private Engagement and Partnerships (PPE and PPP)**

Talking points:

- The role of public private partnerships (PPP) in the meteorology and hydrometeorology value chain.
- Bringing an end to the mistrust of the private sector.
- What areas could potentially be outsourced
- Examples of win win PPE/PPP projects

*Moderators:*

*Table C - Tom Copping, CEO, Varysian*

*Table D - Richard Fellner, CEO Nowcast*

## **Tables E-F: Developing New Ways of Working Together**

Talking points:

- Bringing an end to duplication of efforts and mission creep
- Knowledge and experience sharing between organisations
- How developed NMHS are supporting developing organisations
- Cross-border and regional collaboration - The need for a more regionally integrated approach to our work

*Moderators:*

*Table E - Roelof Bruintjes, Chief Scientist and Founder, Advanced Radar Corporation*

*Table F - Jan Bester, CEO, Africa Weather*

## **Table G-H: Staff Recruitment, Training and Retention**

Talking points:

- Developing innovation hubs and training centres
- How to fight against the brain drain
- Building relationships with schools and universities

*Moderators:*

*Table G – Mnikeli Ndabambi, SAWS*

*Table H - Ben Cosstick, International Business Development, EWR Radar Systems*

**1.00pm-2.00pm**

**Lunch in the restaurant**

**2.00pm-2.30pm Presentation: Developing a National Framework for Climate, Weather and Water Services**

IWMI discusses its work with the Zambia Met Department to develop their National Framework for Climate, Weather and Water Services.

*Speaker: Dr Inga Jacobs-Mata, Regional Representative, International Water Management Institute (IWMI) Southern Africa*

**2.35pm-3.30pm Panel Discussion: Capacity Building and the Hydromet Value Chain**

- What came out of the roundtable discussions? Key themes and topics.
- Ideas for best practice – examples of success stories
- What should be focused on over the next 12 months?

Having discussed the challenges and opportunities meteorology and hydrometeorology services face around data and technology, our moderators come back together to showcase the key themes and topics raised during the roundtable discussions.

During this interactive session, we discuss the learnings that have come out of the day, where we can go from here and the next steps attendees can take.

*Panellists: Stefan Von Gruenigen, Consultant, World Bank, Georgina Flatter Campbell, Executive Director, TomorrowNOW, Richard Fellner, CEO Nowcast, Representative from Africa Weather and Mnikeli Ndabambi, SAWS*

**3.30pm-3.45pm Refreshment break in exhibitor hall**

**3.35pm-5.15pm Innovation Exhibition and Networking**

**Day 2 – 18 May**

***Theme: Data and Technology***

**8.00am-9.00am Registration and morning coffee**

**9.00am-11.00am Presentations: Where are the Data Gaps?**

- Perspectives from different industries and end users
- Where do we need more resources and activity?
- How can we work together to fill these data gaps?

This session is made up of a series of short presentations from stakeholders working in different sectors, discussing where they feel there are data gaps.

*Speakers: Georgina Flatter Campbell, Executive Director, TomorrowNOW, Oscar Lino, Kenya Red Cross Society, Nikopodi Mphahlele, Energy and Environment Policy Coordinator, Business Unity South Africa (BUSA), Jeremy Naidoo, South Africa Water Authority Lucy Mtilatila, Acting Director of Malawi's Department of Climate Change and Meteorological Services,*

**11.00am-11.15am**

**Refreshment break in exhibitor hall**

**11.15am-11.30am**

**Innovation Session**

### **Saving Lives and Property with Reliable Early Warnings and Early Action**

Synopsis forthcoming

*Speaker: Clemencia Ongaki, Regional Sales Manager - East and Southern Africa, Vaisala*

**11.30am-11.45am**

**Innovation Session**

### **Using Machine Learning to Improve Radar Data**

Baron announces ClearScan, a new patent pending radar clutter mitigation technology that provides the user with current precipitation data with unmatched clarity. Using machine learning algorithms supported by human intervention, Baron ClearScan learns to recognize data from actual weather targets versus radio frequency interference (RF) and anomalous propagation (AP).

*Speaker: Brian Bellew, Global Business Development Manager, Baron Weather*

**12.00pm-1.00pm**

**Lunch in the restaurant**

**1.00pm-1.50pm**

**Roundtable Sessions**

Attendees split into 8 roundtable groups to discuss different aspects of data and technology. These will be led by a moderator and the findings shared in the panel session later in the day. The topics are as follows:

**Tables A-B: Regulatory Issues**

Talking points:

- What regulatory issues do meteorology and hydrometeorology services face regarding data?
- Pros and cons of turning to the cloud
- Data protection

**Moderators:**

*Table A - Georgina Campbell Flatter, Executive Director, TomorrowNOW*

*Table B - X*

## **Tables C-D: Technology**

Talking points:

- How to use digital tools to improve capacity at a local, regional and/or national level
- How can smaller NMHS' keep up with those able to invest millions in the latest technology?
- How can we develop our numerical systems to play an important role in global forecasting when supercomputers are out of our reach?
- What solutions should we be investing in, and why?

**Moderators:**

*Table C – Richard Fellner, CEO Nowcast*

*Table D - Tom Smith, General Manager Weather Systems, DTN*

## **Tables E-F: Standardisation**

Talking points:

- The need for standardisation to improve interoperability between devices.
- WMO Clmo Teco guide update is making automated weather station technology generic
- Open data and public good access

**Moderators:**

*Table E - Tom Copping, CEO, Varysian*

*Table F - Michal Najman, CEO Meteopress*

## **Tables G-H: Data Delivery/Dissemination**

Talking points:

- Getting data to the people that need it - strengthening user interfaces in order to reach the last mile
- The importance of stakeholder engagement in communicating messaging – packaging meteorology and hydrometeorology data for use by non technical decision makers and end users.
- Delivering services rather than forecasts (revenue generation)
- Pros and cons of selling data

**Moderators:**

*Table G - Brian Bellew, Global Business Development Manager, Baron Weather*  
*Table H - Roelof Bruintjes, Chief Scientist and Founder, Advanced Radar Corporation*

**2.00pm-2.15pm**

**Innovation Session**

### **Advantages of Solid-State C-Band and S-Band Radars**

A presentation on current developments in solid state weather radar technology, which enables installations of C-band and S-band weather radars on previously impossible locations, with severely cut budgets.

Such an approach enables the deployment of a much higher number of radars, without compromising the quality of the received data. Mobile versions of C-band radars will be introduced, including a new increased range of radars to 300 km thanks to the orthogonal pulse method and a new unlimited doppler feature. A successful solution of a short-range solid-state challenge will be explained.

*Speaker: Michal Najman, CEO, Meteopress*

**2.15pm-2.30pm**

**Innovation Session**

### **Use Cases for Lightning Data**

Thunderstorms not only pose a big risk to human life but also cause a lot of damages and disruptions to many industries. High precision lightning data help to mitigate those risks and can protect lives and assets and are a perfect enabler for increasing operational efficiency and financial performance.

For example, airports can maximise safety and reduce the time for shutting down an airport, while infrastructure companies can correlate the thunderstorm information with the operational data to reduce outages and optimise service processes and claim handling can also be improved significantly.

*Speaker: Richard Fellner, CEO of Nowcast*

**2.30pm-2.45pm**

**Refreshment Break in Exhibitor Hall**

**2.45pm-3.40pm**

**Panel Discussion: Data and Technology**

- **What came out of the roundtable discussions? Key themes and topics**
- **Ideas for best practice – examples of success stories**
- **What should be focused on over the next 12 months?**

Having discussed the challenges and opportunities hydromets face around data and technology, our moderators come back together to showcase the key themes and topics raised during the roundtable discussions.

During this interactive session, we discuss the learnings that have come out of the day, where we can go from here and the next steps attendees can take.

*Panellists: Georgina Campbell Flatter, Executive Director, TomorrowNOW, Tom Smith, General Manager Weather Systems, DTN, Roelof Bruintjes, Chief Scientist and Founder, Advanced Radar Corporation and Michal Najman, CEO Meteopress*

**3.40pm-5.15pm**

**Innovation Exhibition and Networking**

**Day 3 – May 19**

***Theme: Funding and finance***

**8.00am-9.00am**

**Registration and morning coffee**

**9.00am-9.50am**

**Presentation: The Systematic Observations Financing Facility (SOFF)**

- **What is SOFF**
- **Where do we stand?**
- **How has SOFF engaged with the private sector so far?**
- **The business models**

Serena Odianose, SOFF Secretariat and Michael Staudinger, a Consultant for the World Meteorological Organisation, introduce SOFF - the Systematic Observations Financing Facility, which has been developed to address the long-standing problem of missing weather and climate observations and strengthen the international response to climate change by filling the data gaps that limit our understanding of the climate.

They will discuss the role of the private sector and the identified business models, how SOFF has engaged with the private sector so far and are happy to field any SOFF-related questions attendees have.

***Speakers: Serena Odianose, SOFF Secretariat and Michael Staudinger, Consultant, World Meteorological Organisation***

**10.00am-10.15am**

**Innovation Session**

**An Integrated Early Warning System for Flooding and Landslides**

With extreme weather predicted to increase around the world as part of climate change and especially floods, landslides and droughts, the recent floods in South Africa is a reminder of the changes that are happening.

Therefore, it becomes extremely important to implement effective and timely early warning systems to save lives and infrastructure. This talk will provide an overview of the design of such a system and the important

components of such a system and the approach to identify and predict these events in the short and medium term.

New technologies now provide new opportunities to better predict these extreme events.

*Speaker: Roelof Bruintjes, Chief Scientist and Founder, Advanced Radar Corporation*

**10.15-10.30am**

**Innovation Session**

**Supporting NMHS's with their Multi-Hazard, Impact-Based Forecasting and Warning Services**

Ari Davidov, Tomorrow.io's Director of International Government Sales, discusses developing the first operational global satellite constellation of precipitation radars and microwave sounders to enable a modular technical support solution for NMHS multi-hazard impact-based forecast and warning services.

*Speaker: Ari Davidov, Director of International Government Sales, Tomorrow.io*

**10.30am-10.45am**

**Refreshment break in exhibitor hall**

**10.50am-11.50am**

**Roundtable Sessions**

Attendees split into 8 roundtable groups to discuss different aspects of funding and finances, with a particular focus on SOFF business models. These will be led by a moderator and are designed to enable more detailed and in-depth exchanges of information.

Key findings from the roundtables will be shared with all attendees in the later panel session.

The topics are as follows:

**Tables A-D: SOFF**

Talking points:

- How does SOFF support sustainability and inclusion?
- How can Africa make the most of SOFF?
- Ask your questions to the SOFF team.

Each table will focus on one of the four business models:

**A - Fully public:** Fully State/NMHS owned and operated GBON infrastructure

**B - Public Private:** State/NMHS owned and Private Partner operated

**C - Public Private:** State/NMHS and Private Partner owned

**D - Fully Private:** owned and operated by a private partner with a direct contract with the State/NMHS

*Moderators:*

*Table A - Michael Staudinger, Consultant, World Meteorological Organisation*

*Table B - Clemencia Ongaki, Regional Sales Manager - East and Southern Africa, Vaisala*

*Table C - Richard Fellner, CEO Nowcast*

*Table D - Tom Copping, CEO, Varysian*

## **Tables E: Funding**

Talking points:

- The future of meteorology and hydrometeorology funding - moving away from small, NMHS-specific project funding towards larger, regional project funding.
- Will development projects be given more time?
- What other funding opportunities are there? Africa Hydromet Programme and Green Climate Fund for example.
- Different funding models - subsidies, grants, commercial models, PPE
- How do organisations go about accessing funding opportunities? Where is information available?

*Moderators:*

*Table E - Michal Najman, CEO Meteopress*

## **Tables F-G: Sustainability**

Talking points:

- How do you fund activities to enable sustainability and inclusion?
- Capex vs Opex - how to keep projects alive beyond original funding timescales
- Benefits of public private engagement (PPE)

*Moderators:*

*Table F - Georgina Campbell Flatter, Executive Director, TomorrowNOW*

*Table G - Roelof Bruintjes, Chief Scientist and Founder, Advanced Radar Corporation*

## **Tables H: Revenue Generation**

Talking points:

- How meteorology and hydrometeorology services can generate revenue - opportunities and ideas
- Designing relevant products and services that can generate revenue and have the potential for meteorology and hydrometeorology services to become financially autonomous.
- Case studies: what's worked and what hasn't
- The pandemic deficit – how badly were incomes hit and how can we deal with depleted budgets?
- Balancing revenue generation with the public good

*Moderators:*

*Table H - Brian Bellew, Global Business Development Manager, Baron Weather*

**12.00pm-1.00 pm**

**Lunch in the restaurant**

**1.00pm-1.15pm**

**Innovation Session**

### **Low Power and Low Infrastructure Radar Installations**

Michal Najman introduces two concepts - MASEC-Radar - mobile automatic self-erecting C-band radar and radar crate - autonomous solar and Starlink container-based deployment without the need of any local infrastructure.

Thanks to current developments in solid-state based radars lowering the power consumption by a factor of 10, it is possible to deploy radars without heavy investments in building infrastructure needed for classical Klystron or Magnetron radars without any compromise in data quality.

*Speaker: Michal Najman, CEO, Meteopress*

**1.15pm-1.30pm**

**Innovation Session**

### **How to Set Up GBON (SOFF) Compliant Surface Observations Networks in a Sustainable Manner**

Campbell Scientific discusses models for procuring surface observation networks, technology for the different types of observation networks and requirements for NMHSs to support these models in a sustainable manner.

*Speaker: Foeke Kuik, Business Development Director EMEA, Campbell Scientific*

**1.35pm-2.30pm**

**Panel Discussion: Funding and Finances**

- **What came out of the roundtable discussions? Key themes and topics.**
- **Ideas for best practice – examples of success stories and the main challenges of each SOFF business model**
- **What should be focused on over the next 12 months?**

Having discussed the challenges and opportunities meteorology and hydrometeorology services face around funding and finance - in particular the advantages and disadvantages of each of the SOFF business models, our moderators come back together to showcase the key themes and topics raised during the roundtable discussions.

During this interactive session, we discuss the learnings that have come out of the day, where we can go from here and the next steps attendees can make.

*Panellists: Serena Odianose, SOFF Secretariat, WMO, Michael Staudinger, Consultant, WMO, Michal Najman, CEO, Meteopress, Georgina Campbell Flatter, Executive Director, TomorrowNOW and Brian Bellew, Global Business Development Manager, Baron Weather.*

**2.30-2.45pm**

**Refreshment break in the exhibitor hall**

**2.45-3.40pm**

**Closing Discussion: Sustainability and Inclusion**

- **What have we learnt from this summit?**
- **Have we changed our perspectives?**
- **What are the main takeaways and next steps for us all?**

In this closing discussion we'll talk about what we've learned from the last three days and what steps we can take next to improve sustainability and inclusion across Africa's meteorology and hydrometeorology sector.

*Speakers: Amos Macarau, WMO and Tom Copping, Varysian CEO*

**3.45pm-5.15pm**

**Innovation Exhibition and Networking**