Australian VLab Centre of Excellence Regional Focus Group meeting

11th June 2020

Bodo Zeschke Australian VLab Centre of Excellence Point of Contact

Content of the Regional Focus Group meeting 11th June 2020

Topics of discussion

A brief summary of the Technical Interchange Teleconference between NOAA, JMA and BOM 6/7th April 2020 including:

- GEO-XO introduction (Dan Lindsay NOAA/NESDIS)
- Himawari RGB Quick Guides, examining RGB's containing near-infrared imagery (Akihiro Shimizu JMA)
- AOMSUC-10 Training Event feedback (Bodo Zeschke BOM)
- GK-2A and Himawari-8 rapid scan imagery presented in combination

How good was Big Blue Button in hosting the April RFG meeting? A summary of participants feedback

(facilitator to both sessions Mr. Bodo Zeschke BMTC)

Cooperative Institute for Meteorological Satellite Studies

NOAA-ABOM-JMA Technical Interchange Meeting 2300 UTC on 6 April 2020

Webinar Recording (1 hour, 13 minutes)

Presentation from Dan Lindsey, NOAA

Dan Lindsey's Presentation: GEO-XO Introduction

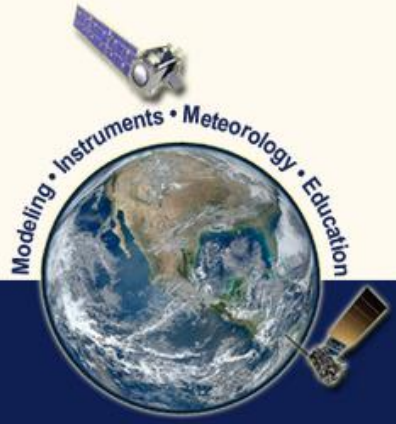
Presentation from Bodo Zeschke (from Australia's Bureau of Meteorology)

Bodo Zeschke's Presentation: AOMSUC -10 Training Event feedback pertaining to Satellite Data use, data requirements and training.

Supplemental Material: A PowerPoint showing rapid scan imagery from GK2A and Himawari-8

Presentation from Akihiro Shimuzu (from the Japan Meteorological Agency)

Akihiro Shimizu's (PowerPoint) Presentation: Himawari RGB Quick Guides and examining RGBs containing near infrared imagery (Presentation in PDF Format available here)



Space Science and Engineering Center (SSEC), University of Wisconsin-Madison
1225 W. Dayton St. Madison, WI 53706 | Phone: 608-263-7435 | Fax: 608-262-5974

http://cimss.ssec.wisc.edu/training/TIMApril2020/

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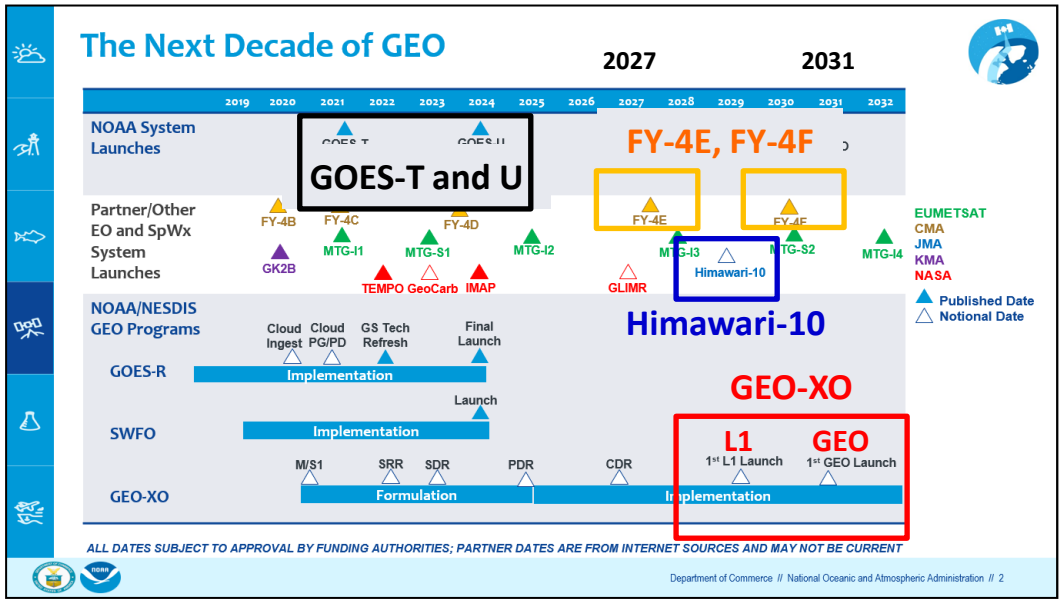


NOAA is planning the Geostationary and Extended Orbits (GEO-XO) program within the 2030 – 2050 timeframe

This will employ sensors and spacecraft in:

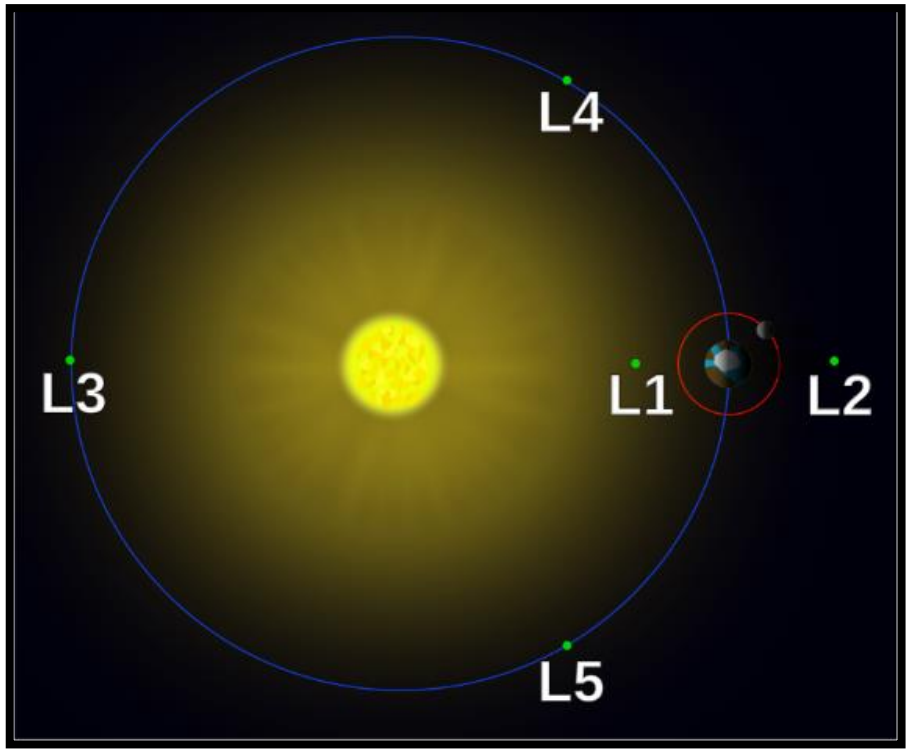
- Geostationary orbit
- Sun-Earth Lagrange point orbits
- Maybe Highly-elliptical geosynchronous orbits

Successors to the following:

- The GOES-R mission
- The Deep Space Climate Observatory (DSCOVR) mission
- Space Weather Follow-On (SWFO) mission

The GEO-XO constellation orbits

Geostationary orbit



The Sun-Earth Lagrangian Point 1 orbit.
This gets an uninterrupted view of the sun
(advanced warning of solar flares)

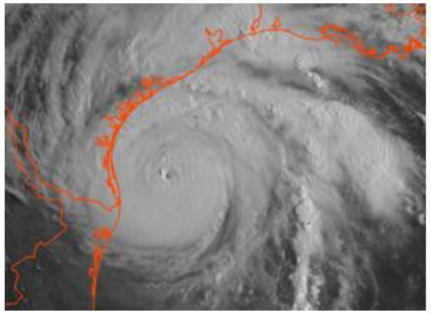
Possible “Tundra” Highly Elliptical Orbit

Possible L5 orbit

GEO-XO Observations

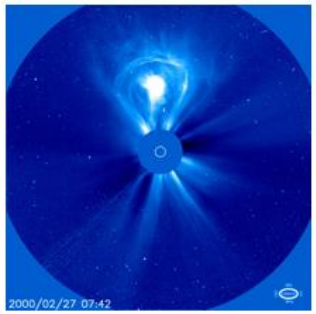
- Both GOES-R/SWFO continuity as well as new observations are in consideration for GEO-XO
  - Magnetometer, Solar Wind / Particle Sensors, Solar Irradiance Monitor, plus those shown below

Visible & Near-IR Imagery

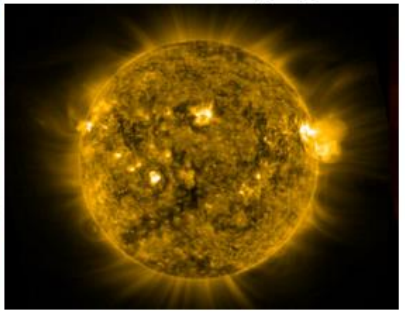


Lightning Mapping

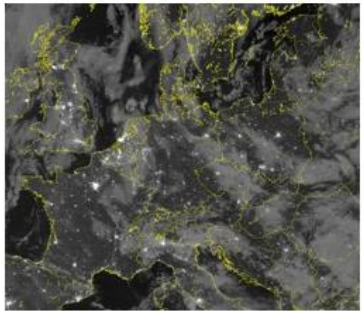
CME Detection



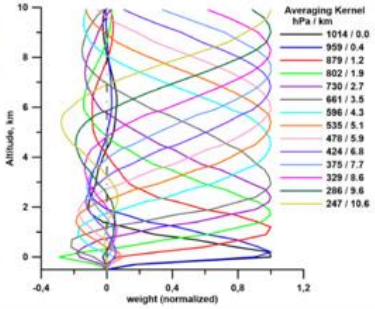
Solar UV Imaging



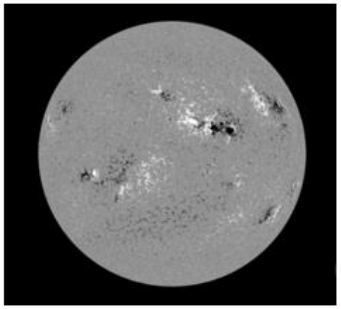
Day/Night Imagery



Sounding



Solar Magnetogram



Auroral Imaging

Regular visible and infrared observations are retained in the legacy system **Additional GEO orbit observations considered:** lightning mapping, Day/Night imagery, hyperspectral sounders.

User Engagement Plan Elements

- GEO-XO User Requirements Working Group
  - Engages user community to inform GEO-XO capabilities
  - Conducts/directs OSSE or other quantitative value assessments
  - Conducts future scenario assessments to inform needs
  - Recommends Systems Performance Requirements & Ops Con
- Targeted User Outreach
  - NCEP Centers, OFCM, DoD, Emergency Managers, and others
  - Inputs solicited regularly, and in preparation for key decisions
- GEO-XO Workshops throughout formulation phase
  - Present GEO-XO status and plans to US/international user community and partners
  - Solicit community input on implementation decisions
  - Potentially in conjunction with NOAA Satellite Conference
- Annual conferences – AMS, NWA, AGU, EUMETSAT, Space Symposium, etc
  - GEO-XO status and plans
- Satellite Liaisons, Proving Ground, TOWR-S (NWS embed)
  - Prepare users in advance of operations for new system/data/products
- NOAA Social Media and News Releases

Future scenario assessments will be used in GEO-XO formulation

GEO-XO User Requirements Working Group: First set of requirements of GEO-XO
Reaching out to international partners: To get your feedback of what the needs are from an international standpoint.
Future simulations: What will the satellite meteorology world be like in 2045 ?

Summary

- GEO-XO builds on the NSOSA study results to define NOAA's next generation satellite systems
- Within the next year:
  - Continue user engagement activities
  - Industry studies will begin
  - Plan for formulation will be defined
- We look forward to working with the community to develop GEO-XO

GEO-XO will maintain and advance NOAA's observational capabilities through 2050

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(facilitator to both sessions Mr. Bodo Zeschke BMTC)

Meteorological Satellite Center (MSC) of JMA

Monitoring the earth from space

Technical Interchange Teleconference between NOAA, BOM and JMA

Himawari RGB Quick Guides and examining RGBs containing near-infrared imagery

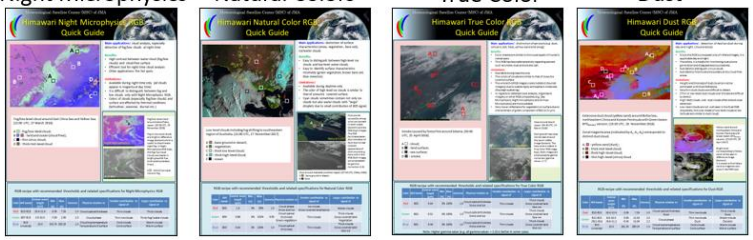
- heading towards more effective use of RGB composite imagery -

Meteorological Satellite Center
Japan Meteorological Agency
Akihiro SHIMIZU

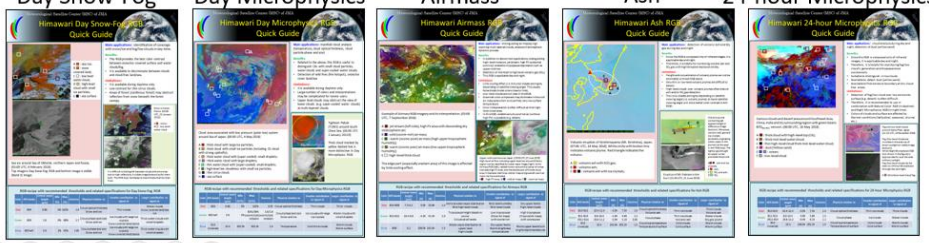
The Tenth Asia-Oceania Meteorological Satellite Users' Conference (AOMSUC-10)

Himawari RGB Quick Guides for WMO Standard RGBs

Night Microphysics | Natural Colors | True Color | Dust



Day Snow-Fog | Day Microphysics | Airmass | Ash | 24-hour Microphysics



Quick Guides as a simple summary of how to use RGB composite imagery.

- Quick Guides are a single sheet, with information on both sides
- Easy reference for Operational Forecasters
- Contents include.
  - ✓Main application(s), benefits and limitations
  - ✓Typical cases
  - ✓Color interpretation
  - ✓RGB recipe explained
- Himawari Quick Guides for 18 RGB composites will be available within the SATAID software soon.

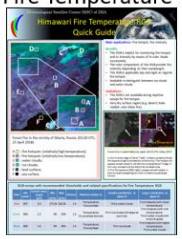
Himawari RGB Quick Guides for well-known RGBs and polar-orbit satellites origin RGBs

Day Convective Storms

Day Convective Storms

Day Cloud Phase

Fire Temperature



Fire Temperature

Natural Fire Color

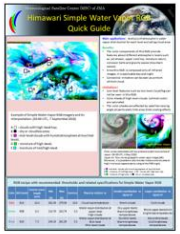
Himawari RGB Quick Guides for RGBs developed by JMA

Cloud Phase Distinction

Day Deep Clouds

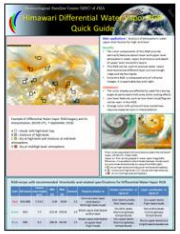
SO2

Simple Water Vapor



Simple Water Vapour

Differential Water Vapor



Differential Water Vapour

Quick Guides have been developed for a number of non-standard RGB composites.

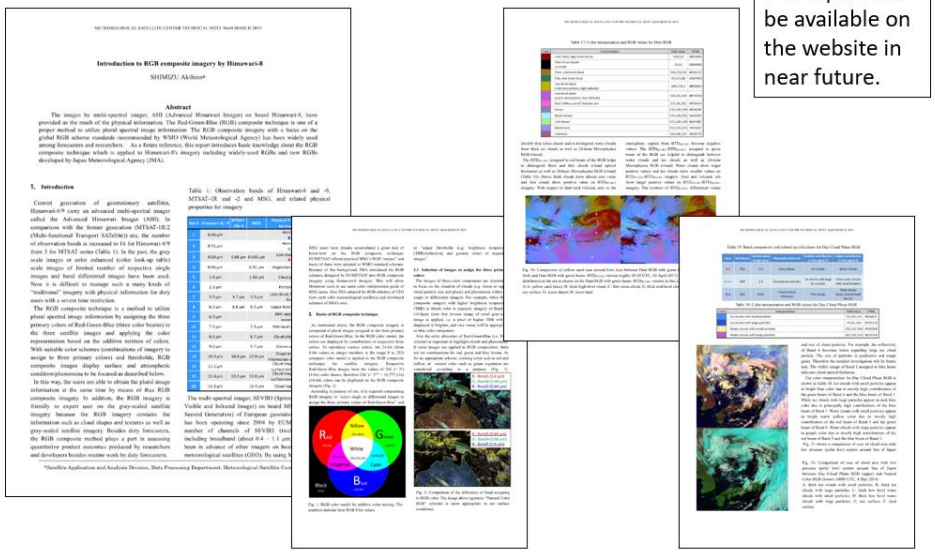
For example feedback from US forecasters indicate that the **Cloud Phase RGB** is popular:

- It reveals the glaciation of clouds
- It is also useful for Tropical Cyclone analysis. Could be useful for the Automated Dvorak Technique.

There is also a need to develop Quick Guides for quantitative satellite products (EUMETSAT RGB workshop recommendation)

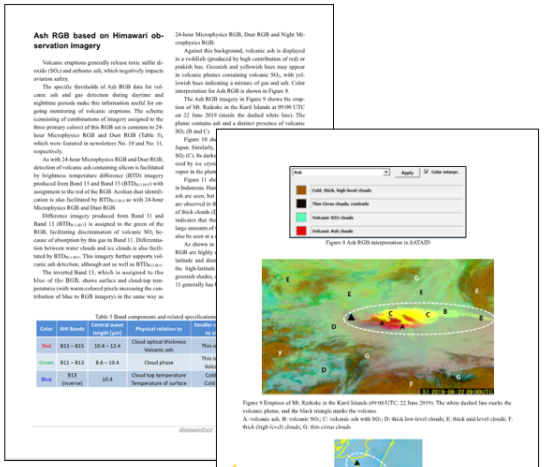
JMA's Meteorological Satellite Center Technical Note

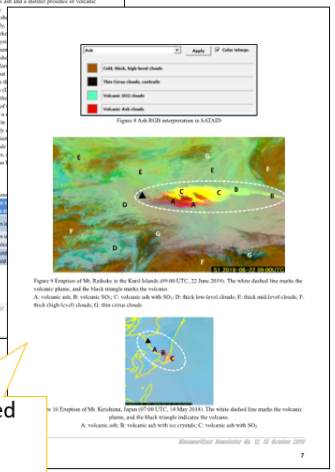
"Introduction to RGB composite imagery by Himawari-8" (A. Shimizu)



The report will be available on the website in near future.

Reference: HimawariCast Newsletter





There are serialized article on RGB composites!

- HimawariCast Newsletters have been established in consideration of the current situation to enable sharing of important information and expertise on satellite imagery analysis.
- Their contents include important information relating to the operation of HimawariCast receiving systems, examples of satellite imagery analysis techniques and tips on using JMA's SATAID display and analysis program.

https://www.data.jma.go.jp/mscweb/en/himawari89/himawari_cast/himawari_cast.php

Quick Guides contents are based on JMA's "Meteorological Satellite Center Technical Note" written by A. Shimizu and existing Quick Guides of EUMeTrain and NASA SPoRT.

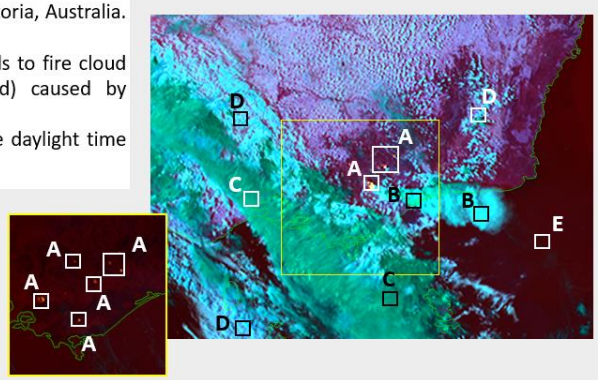
JMA's report will be available on the website in near future.

HimawariCast Newsletters contents include:

- information relating to the operation of HimawariCast receiving systems
- examples of satellite imagery analysis techniques
- and tips on using JMA's SATAID display and analysis program.

Fire Temperature RGB

(Right) Large scale fires in Victoria, Australia. (05:30 UTC, 3 March 2019)
Cloud marked "B" corresponds to fire cloud (including pyrocumulus cloud) caused by bush fire (marked "A").
(Bottom) Fire hotspots before daylight time (20:00 UTC, 2 March 2019)



A : fire hotspots;
B : fire clouds (pyrocumulus cloud) with ice droplets;
C : ice clouds;
D : water clouds;
E : sea surface

Color interpretation for Fire Temperature RGB

Color	Interpretation
	Low temperature hotspots
	Medium temperature hotspots
	High temperature hotspots
	Water clouds
	Ice clouds

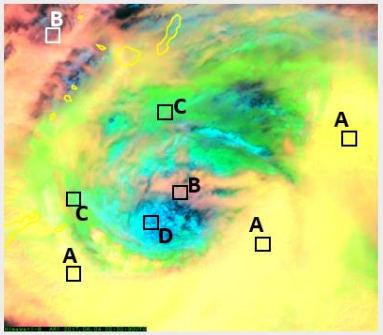
RGB recipe with recommended thresholds and related specifications for Fire Temperature RGB

Color	AHI bands	Central wave length [μm]	Min [K/%]	Max [K/%]	Gamma	Physical relation to	Smaller contribution to signal of	Larger contribution to signal of
Red	B07	3.9	273.0K	350.0K	1.0	Temperature Cloud phase	Thick water clouds	Fire hotspots (with lower temperature)
Green	B06	2.3	0%	50%	1.0	Temperature Cloud phase and size	Thin ice clouds with large ice particles	Fire hotspots (with mid temperature) Thick water clouds with small droplets
Blue	B05	1.6	0%	50%	1.0	Temperature Cloud phase	Thin ice clouds	Fire hotspots (with higher temperature) Thick water clouds

Cloud Phase Distinction RGB

Typhoon (Noru) by Cloud Phase Distinction RGB. (02:50UTC, 4 August 2017)

The detailed structure consisting of blueish low level clouds (marked "D") can be seen inside eyewall.



A : thick high-level clouds with ice particles;
B : thin high-level clouds with ice particles;
C : thick low level ice clouds;
D : thick low level water clouds

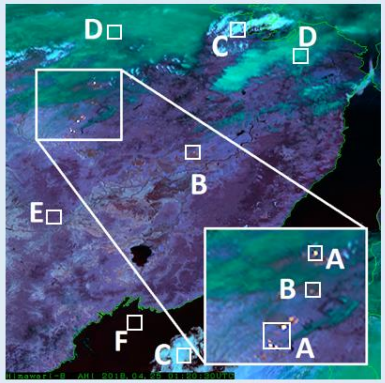
Color interpretation for Cloud Phase Distinction RGB

Color	Interpretation
	Thick high level clouds with ice particles, Cb
	Thin high level clouds with ice particles
	Thick low level ice clouds Snow/ice covered area
	Thick low level water clouds

RGB recipe with recommended thresholds and related specifications for Cloud Phase Distinction RGB

Color	AHI bands	Central wave length [μm]	Min [K/%]	Max [K/%]	Gamma	Physical relation to	Smaller contribution to signal of	Larger contribution to signal of
Red	B13	10.4	219.6K	280.7K	1.0	Cloud top temperature	Warm clouds	Cold clouds
Green	B03	0.64	0%	85%	1.0	Cloud optical thickness	Thin clouds	Thick clouds Snow covered land Sea ice
Blue	B05	1.6	1%	50%	1.0	Cloud phase Snow and ice	Ice clouds	Water clouds

Fire Temperature RGB



Forest fire in the vicinity of Siberia, Russia. (01:20 UTC, 25 April 2018)

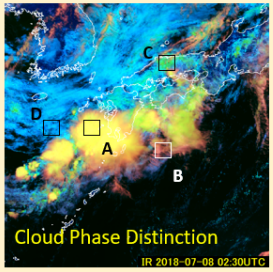
A : fire hotspots (relatively high temperature);
B : fire hotspots (relatively low temperature);
C : water clouds;
D : ice clouds;
E : land surface;
F : sea surface

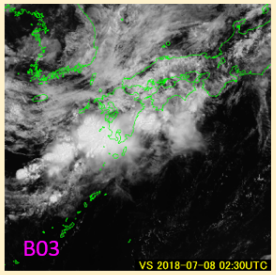
Main applications: Fire hotspot, fire intensity

Benefits:
- This RGB is helpful for monitoring fire hotspot and its intensity by means of its color shade successively.
- The color components of this RGB provide fire intensity depending on their wavelength.
- This RGB is applicable day and night as regards fire hotspot.
- Available to distinguish between ice clouds and water clouds.

Limitations:
- This RGB is not available during daytime except for fire hotspot.
- Very dry surface region (e.g. desert) looks reddish color (false fire).

Cloud Phase Distinction RGB





Cloud area corresponding to Baiu (Mei-yu) stationary front above Western Japan. (02:30 UTC, 8 July 2018)

Cloud analysis only by using visible image (bottom) requires to estimate from cloud shapes and patterns. Meanwhile, thick clouds (Cbs) and low-level clouds can be distinguished easily by Day Cloud Phase RGB (top) at a glance.

A : thick high-level clouds with ice particles;
B : thin high-level clouds with ice particles;
C : thick low level ice clouds;
D : thick low level water clouds

Main applications: Analysis cloud thickness, height of cloud top and cloud phase

Benefits:
- Easy to distinguish between high-level ice clouds and low-level water clouds.
- Easy to identify surface snow/ice.

Limitations:
- Available during daytime only
- Colors of clouds and surface are affected by thermal conditions (latitudinal , seasonal, diurnal etc.).


Thank you !

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AOMSUC-10 Training Event Socrative question and feedback summary, with particular emphasis on Satellite data use by attendees

Bodo Zeschke BMTC

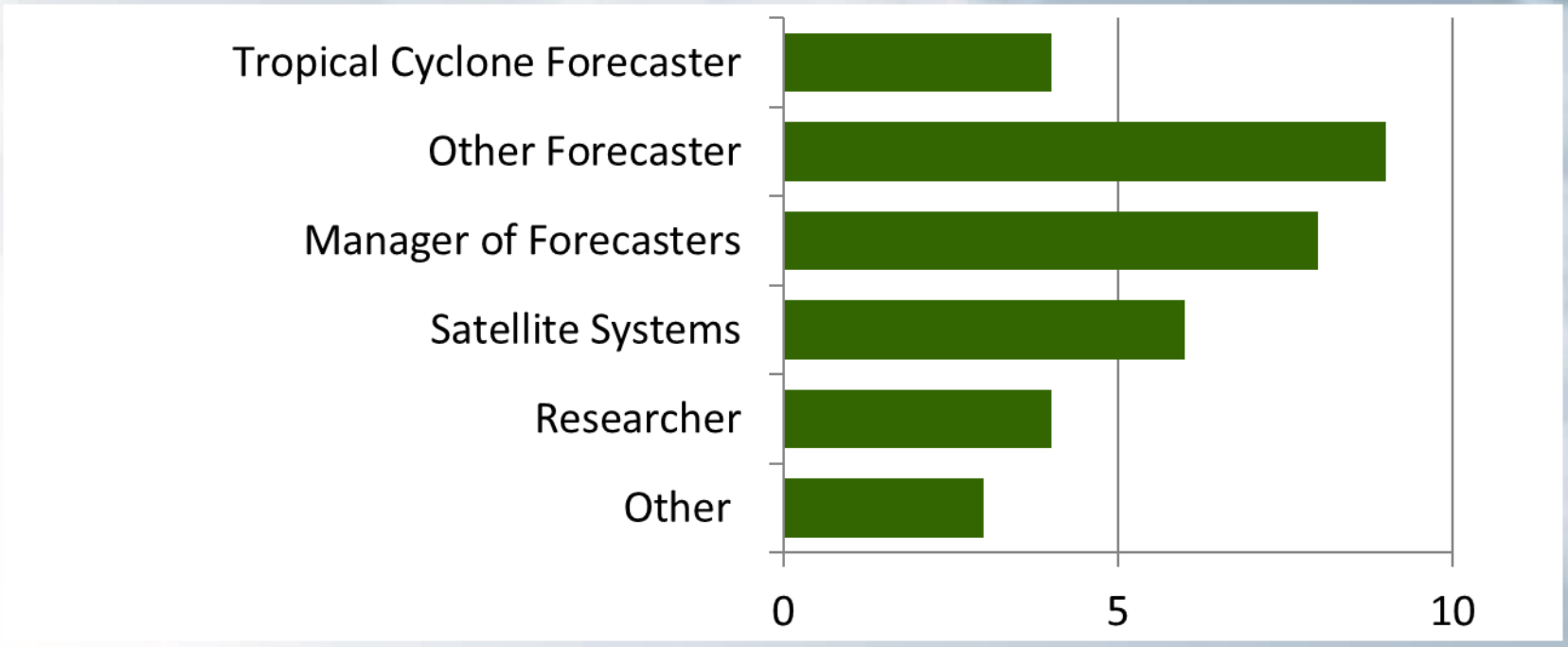
(image courtesy Stephen Gillespie)

AOMSUC-10 Training Event, showing the sessions where Socrative was used

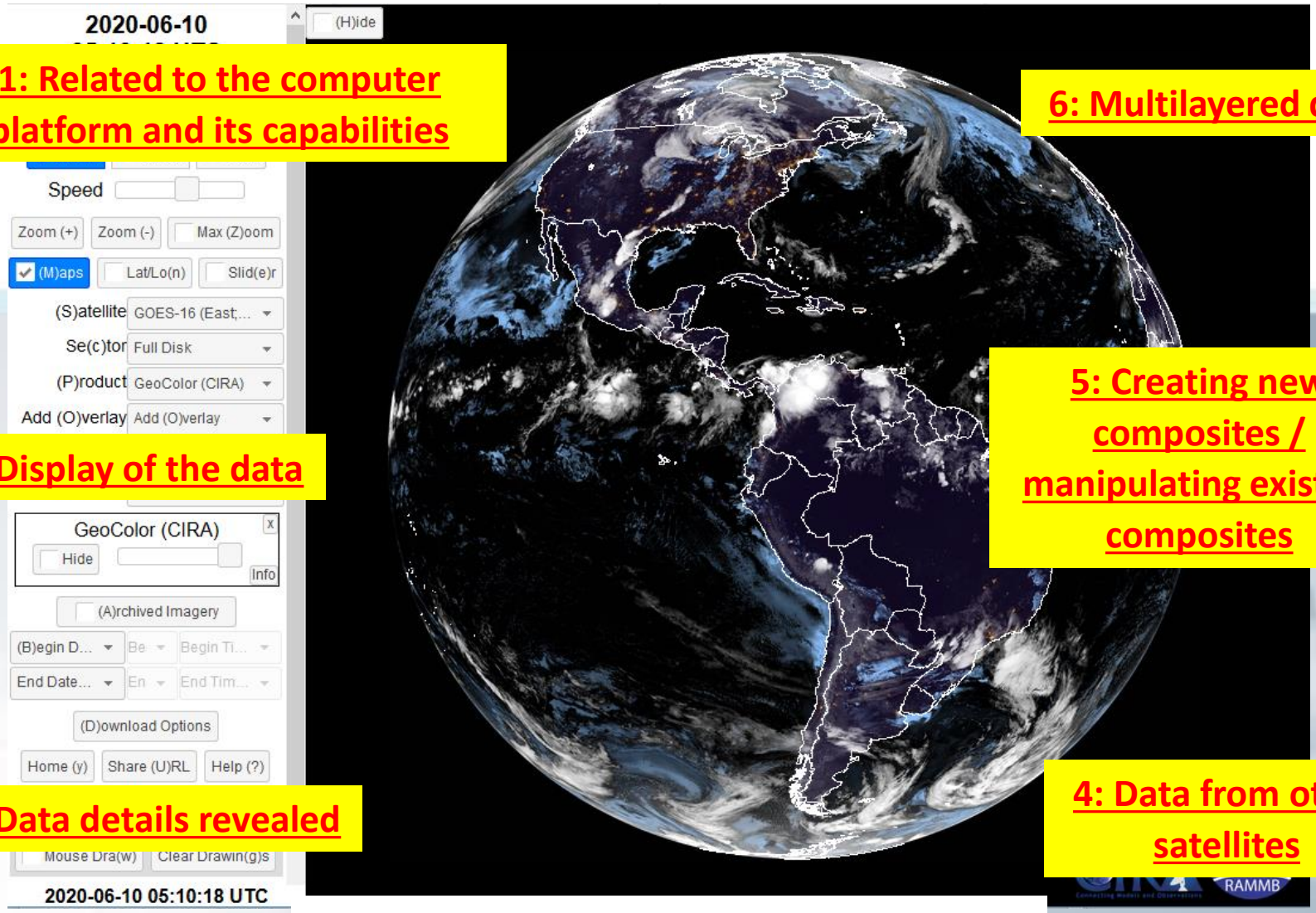
Local time /session	Monday, 2nd December 2019	Tuesday, 3rd December 2019
0830 (session 1)	Welcome session	A panel led discussion pertaining to how and where to access the satellite data
0915 (session 2)	Spectral bands and their uses	Introduction to the WMO Space-Based Weather and Climate Extremes Monitoring Demonstration Project
1000	Morning tea /Photo	Morning tea
1030 (session 3)	Application of the spectral bands to RGB composites	Group discussions that consolidate the content of the previous sessions. Experts to mentor the groups.
1115 (session 4)	Introduction to now-casting using satellite data and products: Tropical storm and Typhoon examples	
1200 (session 5)	Introduction to now-casting using satellite data and products: Thunderstorm examples	
1245	Lunch	Lunch
1400 (session 6)	Introduction to now-casting using satellite data and products: Precipitation examples.	**13:30 to 14:30 LST. VLab Regional Focus Group (RFG) Weather presentation.**
1445 (session 7)	Nowcasting applications using GEO-KOMPSAT-2A data and RGB products	**A chaired post RFG discussion.**
1530	Afternoon break	Afternoon break
1600 (session 8)	Spectral band / now-casting exercise with a short example or two using RAMMB/CIRA SLIDER	Future developments: utilizing data from multiple satellite platforms.
1645 (session 9)	Spectral band / now-casting exercise with examples using SATAID	Summary session including evaluation and review of the Training Event.
1730	Finish	Finish

AOMSUC-10 Training Event question: "Which of these options best describe your work?".

(image courtesy Stephen Gillespie)



AOMSUC-10 Training Event question: " What functionality would you most like to see on SLIDER?*"



1: Related to the computer platform and its capabilities

2: Display of the data

3: Data details revealed

4: Data from other satellites

5: Creating new composites / manipulating existing composites

6: Multilayered data

*or an equivalent satellite image viewer

"What functionality would you most like to see on SLIDER?"

Related to the computer platform and its capabilities

1. It should be on a GIS platform
2. Ability to load satellite, observational data such as weather RADAR and NWP from the local PC.
3. Job scheduler with automatic download to specific official organization website.
4. Should be able to download the data into geoTIFF format.
5. An easily accessible archive of past data

Display of the data

1. The ability to change the projections of the imagery
2. Ability to rotate the earth within the display window
3. Ability to choose (zoom into) a specific subsector in the display such as a region or a country.
4. Ability to permit "limb viewing" of the atmosphere at the edge of the full disk earth image for satellites other than Himawari-8
5. Rocking animation
6. The slider function that permits side by side comparison of different display layers. See also https://rammb-slider.cira.colostate.edu/ , specifically the Slider option.

NOTE SLIDE

"What functionality would you most like to see on SLIDER?"

Data details revealed 1. Information such as latitude and longitude and the value of the parameters of the display layers to be available whilst scrolling the mouse over the image display. 2. For the "Follow Feature" function on the web site https://rammb-slider.cira.colostate.edu/ one attendee would like to see the latitude and longitude information so that the monitoring of storm and Tropical Cyclone movement can be more accurate.
Data from other satellites 1. Attendees would like to see a display that includes a wide range of satellite data, including GEO-KOMPSAT-2A, Fengyun-4A, the INSAT and polar orbiting satellites.
Creating new composites / manipulating existing composites 1. Ability to create RGB composites using selected bands, image differences and gamma corrections

NOTE SLIDE

"What functionality would you most like to see on SLIDER?"

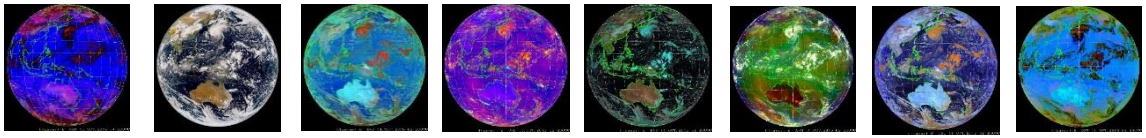
Multilayered data

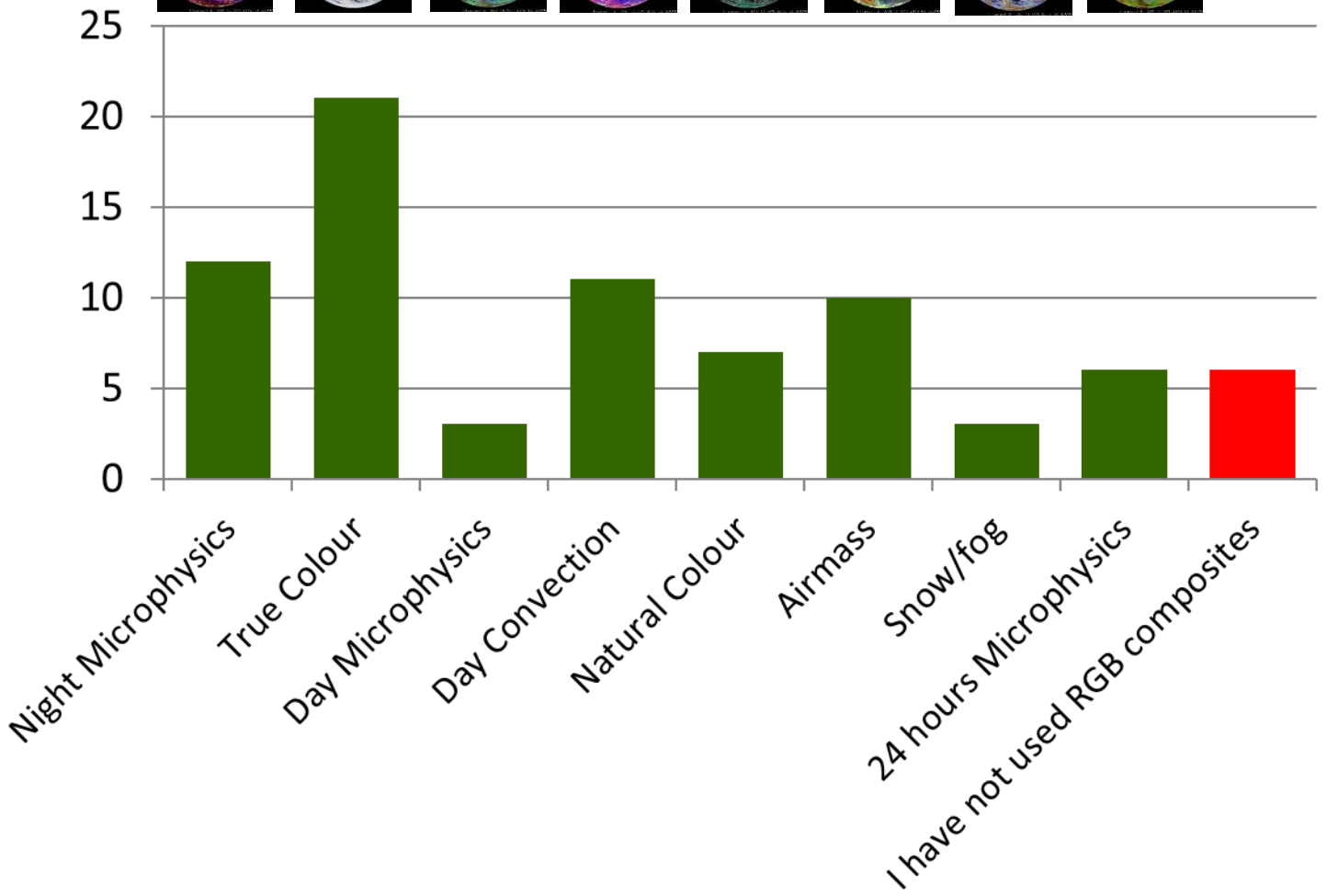
1. Weather RADAR overlay
2. Other observational data overlay
3. Cloud drift winds
4. Lightning data that can be superimposed onto visible and infrared data. Lightning data from the GOES satellite. Lightning data over the Indian Ocean
5. Scatterometer (ASCAT) data processed in near real time.
6. Other microwave sensors
7. Addition of Level 2 satellite products (Geophysical quantity retrieved from single instrument data in original instrument projection Note: For example, temperature, humidity, radiative flux see http://www.wmo.int/pages/prog/sat/dataandproducts_en.php)
8. Quantitative Precipitation Estimate (QPE) data
9. Overlaying with NWP model outputs
10. Predefined products (what is meant by this)

NOTE SLIDE

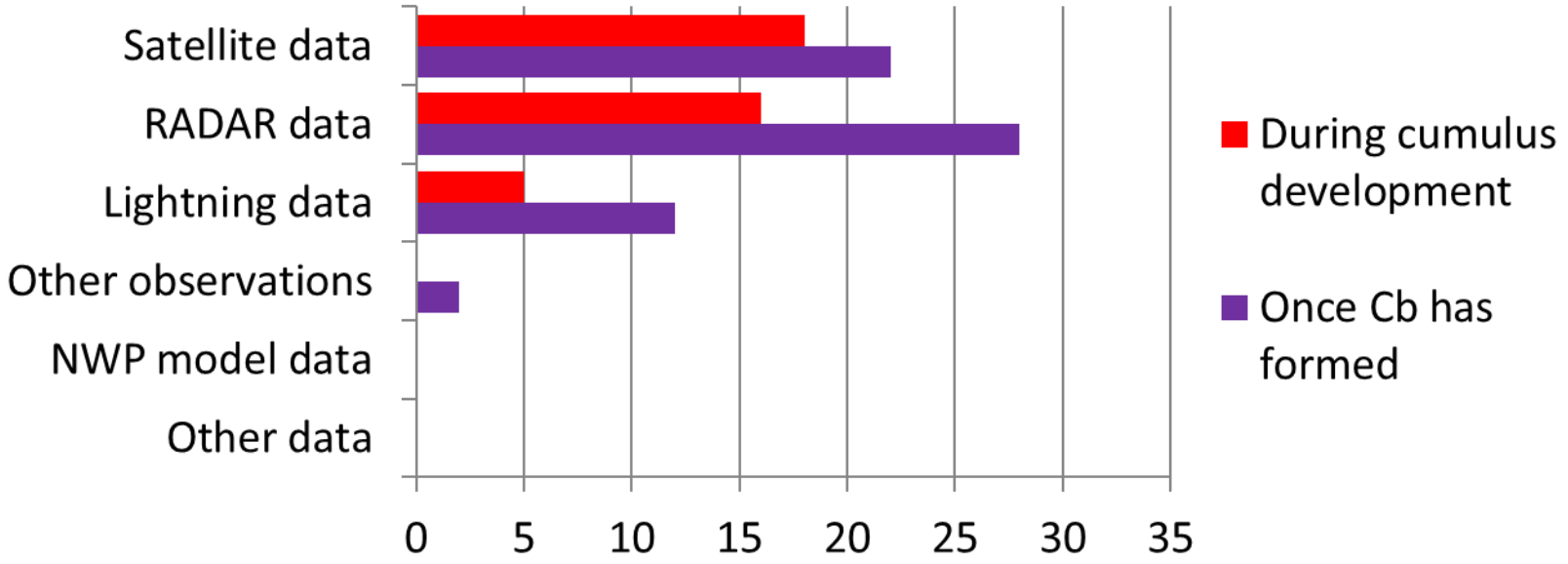
satellite images courtesy JMA/BOM

AOMSUC-10 Training Event question: "Which RGB composites do you use most during your work".

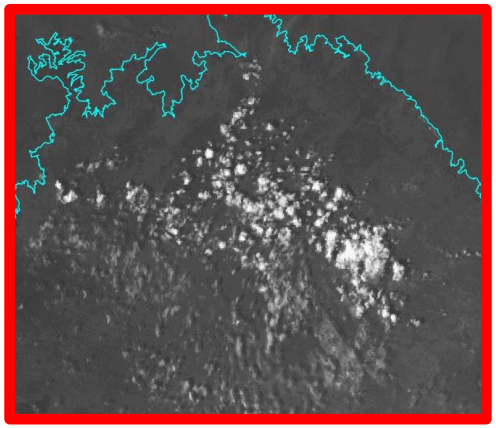


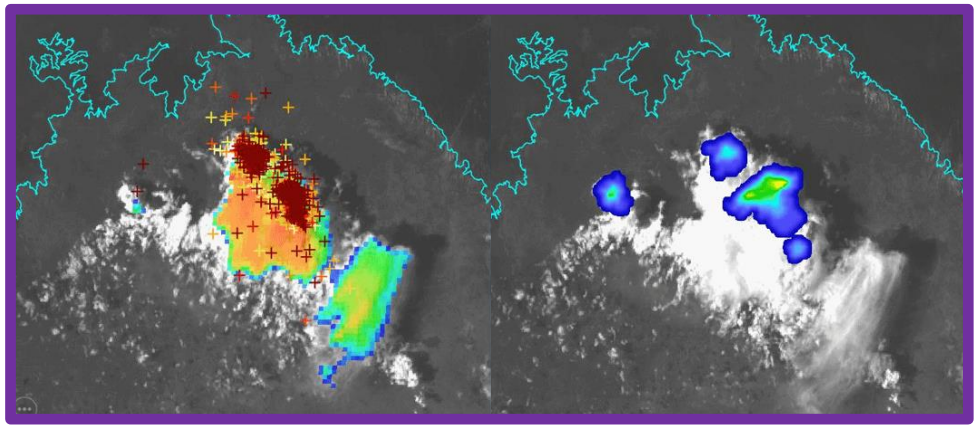


AOMSUC-10 Training Event question: "What data is most important when you are monitoring the development of thunderstorms".

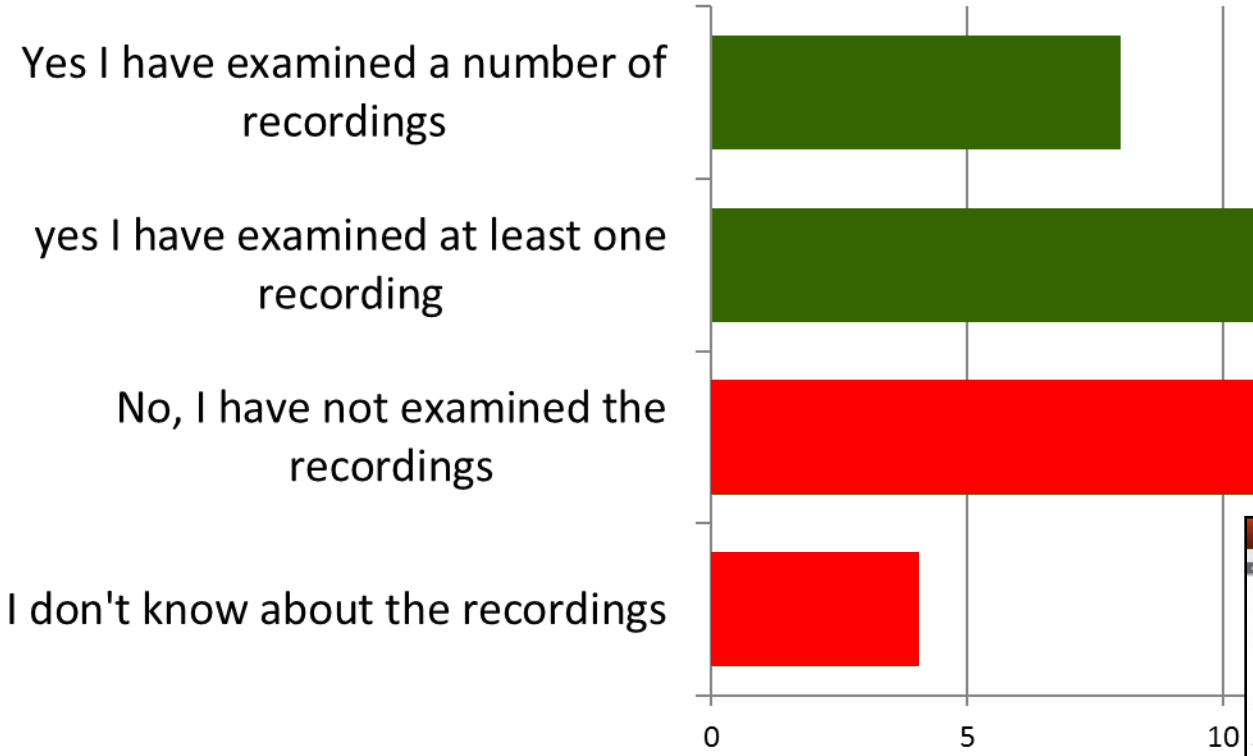


satellite images courtesy JMA/BOM, lightning data courtesy WeatherZone



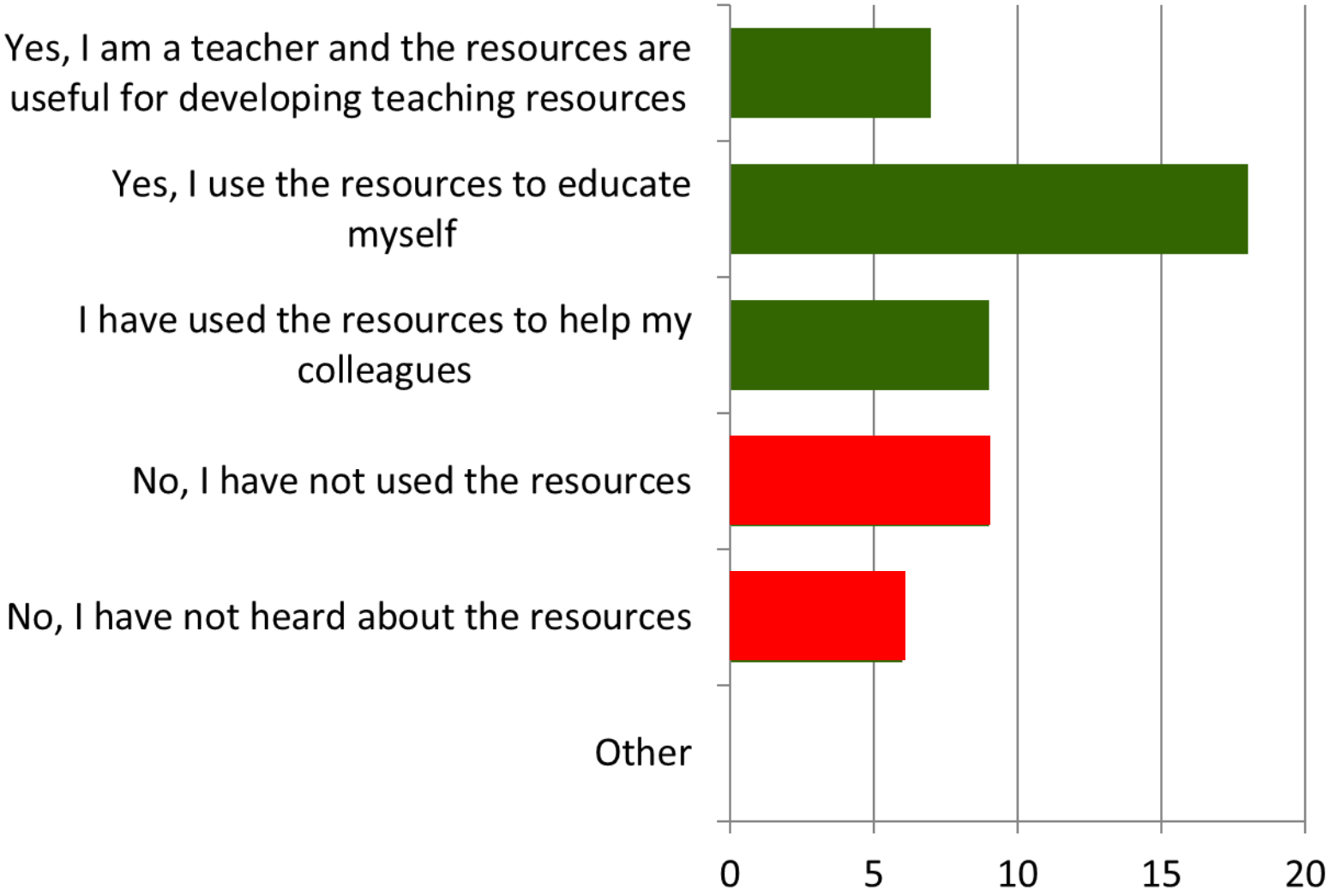


AOMSUC-10 Training Event question: "Have you examined the archived recordings of the Regional Focus Group meetings?".



http://www.virtuallab.bom.gov.au/archive/regional-focus-group-recordings/

AOMSUC-10 Training Event question: "Have you used Australian VLab Centre of Excellence resources in your work ?".



"Topics for discussion at future Regional Focus Group meetings"
AOMSUC-10 Training Event attendees responses

1. A broad range of topics – not confined to satellite meteorology 1	6. Case Studies, including extreme / hazardous events 7	11. Interseasonal events (ENSO) 2
2. NWP and derived products topics 9	7. Weather and Forecast discussions, including contributions by Australian and overseas presenters 5	12. Intraseasonal events (MJO, Tropical Waves, monsoon etc.) 6
3. Developing training resources 1	8. Satellite data used in forecasting process 6	13. Synoptic events (Tropical Cyclones, Cyclogenesis etc.) 4
4. Himawari-8 data and data products 1	9. Aviation Forecasting 2	14. Synoptic/mesoscale events (thunderstorms, MCS's etc.) 5
5. Polar Orbiting Satellites 4	10. Climate topics 4	

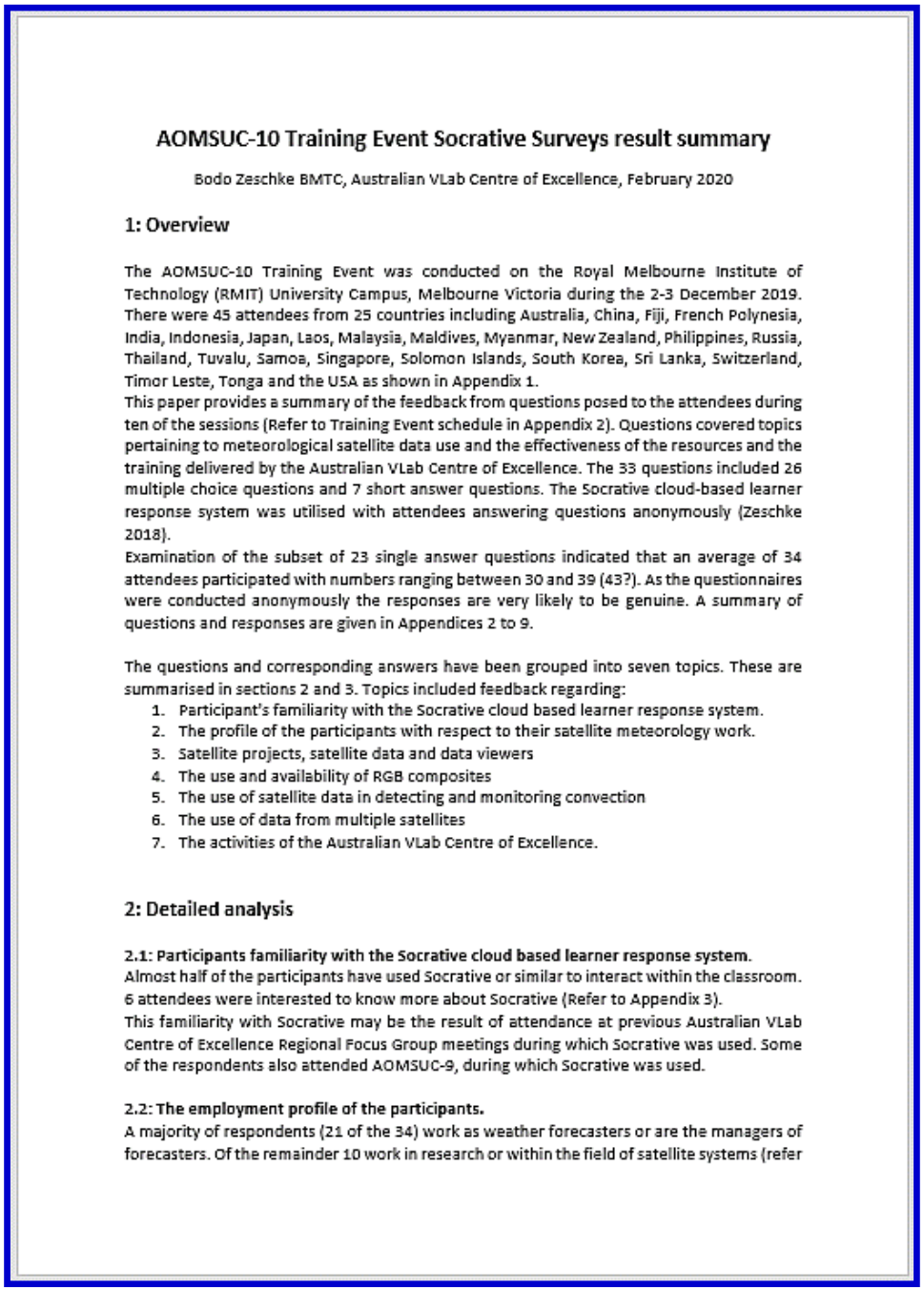
Additional Topics of Interest

1. Useful techniques for comprehensive analysis of multiple satellite data with varying temporal/spatial resolution.	6. Real-time analysis of Sea Surface Temperature. In what situations does it have diurnal signal variability? i.e. calm versus stormy seas.	11. Space based drought monitoring
2. Cloud type classification using satellite images.	7. Cumulus development into thunderstorms and their decay.	12. Fire weather predecessor conditions (NDVI, Land Surface Temperature)
3. Developing Cloud Climatologies under different wind flow regimes and their use in nowcasting.	8. Use of geostationary lightning mapper data.	13. Is machine learning or deep learning technology really helpful for weather forecasting?
4. Use of cloud relative motion to diagnose thunderstorms, tropical systems, etc.	9. Coastal land/sea breeze induced convective systems	
5. Characteristics of tropical waves.	10. Mountain area snow analysis	

NOTE SLIDE

Report

The report "AOMSUC Training Event Socrative Surveys result summary" has been submitted to a Bureau Training Event coordinator for comment and anticipating further feedback



AOMSUC-10 Training Event Socrative Surveys result summary

Bodo Zeschke BMTC, Australian VLab Centre of Excellence, February 2020

1: Overview

The AOMSUC-10 Training Event was conducted on the Royal Melbourne Institute of Technology (RMIT) University Campus, Melbourne Victoria during the 2-3 December 2019. There were 45 attendees from 25 countries including Australia, China, Fiji, French Polynesia, India, Indonesia, Japan, Laos, Malaysia, Maldives, Myanmar, New Zealand, Philippines, Russia, Thailand, Tuvalu, Samoa, Singapore, Solomon Islands, South Korea, Sri Lanka, Switzerland, Timor Leste, Tonga and the USA as shown in Appendix 1.
This paper provides a summary of the feedback from questions posed to the attendees during ten of the sessions (Refer to Training Event schedule in Appendix 2). Questions covered topics pertaining to meteorological satellite data use and the effectiveness of the resources and the training delivered by the Australian VLab Centre of Excellence. The 33 questions included 26 multiple choice questions and 7 short answer questions. The Socrative cloud-based learner response system was utilised with attendees answering questions anonymously (Zeschke 2018).
Examination of the subset of 23 single answer questions indicated that an average of 34 attendees participated with numbers ranging between 30 and 39 (43?). As the questionnaires were conducted anonymously the responses are very likely to be genuine. A summary of questions and responses are given in Appendices 2 to 9.

The questions and corresponding answers have been grouped into seven topics. These are summarised in sections 2 and 3. Topics included feedback regarding:

1. Participant's familiarity with the Socrative cloud based learner response system.
2. The profile of the participants with respect to their satellite meteorology work.
3. Satellite projects, satellite data and data viewers
4. The use and availability of RGB composites
5. The use of satellite data in detecting and monitoring convection
6. The use of data from multiple satellites
7. The activities of the Australian VLab Centre of Excellence.

2: Detailed analysis

2.1: Participants familiarity with the Socrative cloud based learner response system.
Almost half of the participants have used Socrative or similar to interact within the classroom. 6 attendees were interested to know more about Socrative (Refer to Appendix 3).
This familiarity with Socrative may be the result of attendance at previous Australian VLab Centre of Excellence Regional Focus Group meetings during which Socrative was used. Some of the respondents also attended AOMSUC-9, during which Socrative was used.

2.2: The employment profile of the participants.
A majority of respondents (21 of the 34) work as weather forecasters or are the managers of forecasters. Of the remainder 10 work in research or within the field of satellite systems (refer

Content of the Regional Focus Group meeting 11th June 2020

Topics of discussion

A brief summary of the Technical Interchange Teleconference between NOAA, JMA and BOM 6/7th April 2020 including:

- GEO-XO introduction (Dan Lindsay NOAA/NESDIS)
- Himawari RGB Quick Guides, examining RGB's containing near-infrared imagery (Akihiro Shimizu JMA)
- AOMSUC-10 Training Event feedback (Bodo Zeschke BOM)
- GK-2A and Himawari-8 rapid scan imagery presented in combination

How good was Big Blue Button in hosting the April RFG meeting? A summary of participants feedback

(facilitator to both sessions Mr. Bodo Zeschke BMTC)

Examination of GEO-KOMPSAT-2A and Himawari-8 Rapid Scan imagery as applied to south-eastern Australian case studies of the 23rd and 31st January 2020

http://www.virtuallab.bom.gov.au/index.php/download_file/view/1508/278/

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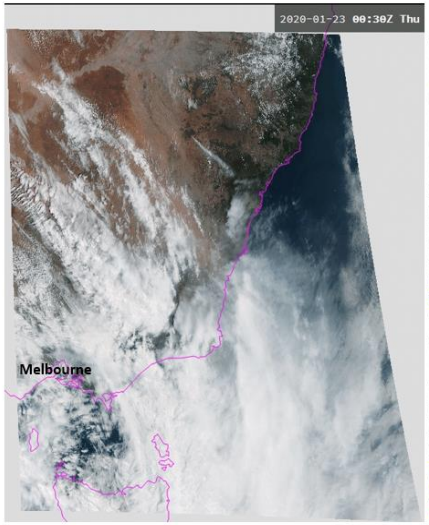
Teacher Australian Bureau of Meteorology Training Centre
Point of Contact Australian VLab Centre of Excellence
bodo.zeschke@bom.gov.au

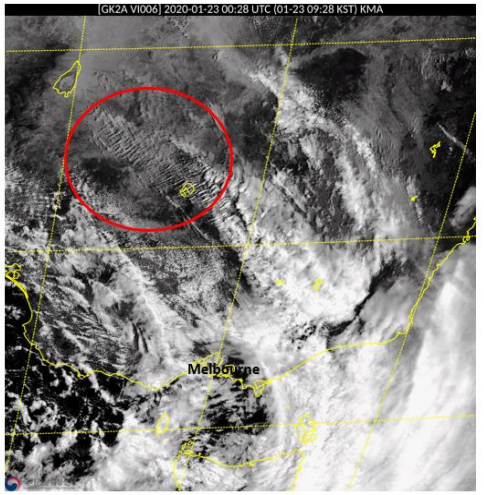
Please start the Power Point Slide Show to activate the animation

GEO-KOMPSAT-2A compared to Himawari-8 rapid scan imagery

South-eastern Australia 00 to 03UTC 23rd January 2020

assembled by B.Zeschke BOM





Himawari-8 True Colour RGB (500

GEO-KOMPSAT-2A Band 3 (0.64 micron, 500m resolution)

Himawari-8 animation courtesy Japan Meteorolo produced through work by L.Majewski, V.Villani, M.Broomhall BOM, GEO- orological Administration

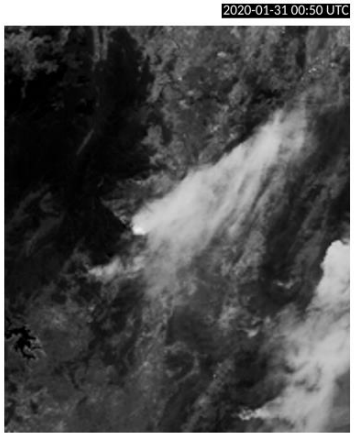
Case Study 1

Please start the Power Point Slide Show to activate the animation

assembled by B.Zeschke BOM

GEO-KOMPSAT-2A compared to Himawari-8 rapid scan imagery

Orroral Valley fire near Canberra, Australia 0050 to 0250UTC 31st January 2020



Himawari-8 True Colour RGB

GEO-KOMPSAT-2A Band 3 (0.64 micron)

Himawari-8 animation courtesy Japan Meteorc produced through work by L.Majewski, V.Villani, M.Broomhall BOM, GE rological Administration

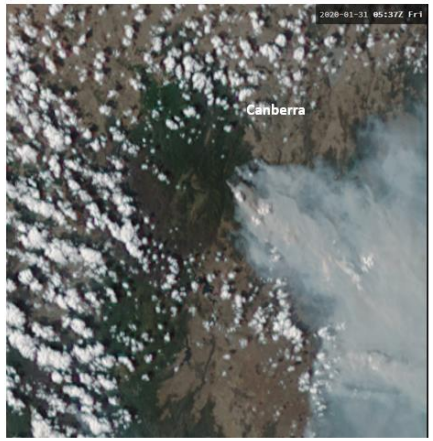
Case Study 2a

Please start the Power Point Slide Show to activate the animation

assembled by B.Zeschke BOM

GEO-KOMPSAT-2A compared to Himawari-8 rapid scan imagery

Orroral Valley fire near Canberra 0500 to 0750UTC 31st January 2020



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Himawari-8 animation courtesy Japan Meteorolc duced through work by L.Majewski, V.Villani, M.Broomhall BOM, GEO- ogical Administration

Case Study 2b

Examination of GEO-KOMPSAT-2A and Himawari-8 Rapid Scan imagery as applied to south-eastern Australian case studies of the 23rd and 31st January 2020

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Point of Contact Australian VLab Centre of Excellence
bodo.zeschke@bom.gov.au

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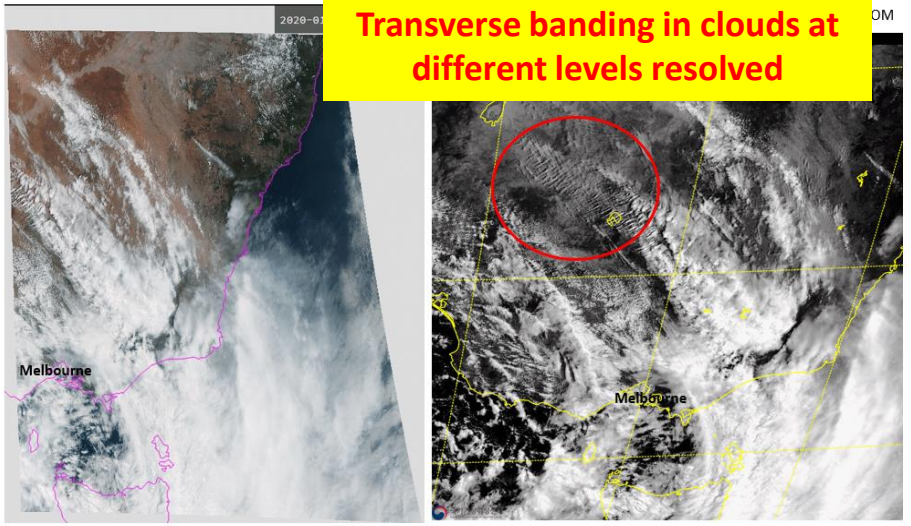

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GEO-KOMPSAT-2A Band 3 (0.64 micron, 500m resolution)

Himawari-8 animation courtesy Japan Meteorolc produced through work by L.Majewski, V.Villani, M.Broomhall BOM, GEO-K orological Administration

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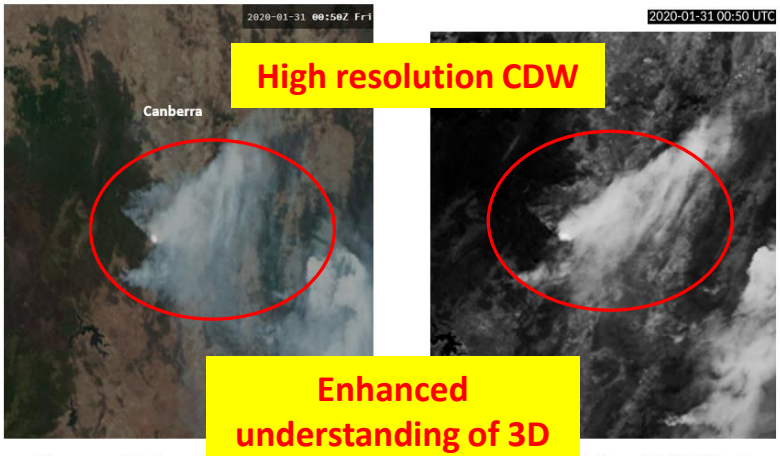

Himawari-8 True C A Band 3 (0.64 micron)

Himawari-8 animation courtesy Japan M duced through work by L.Majewski, V.Villani, M.Broomhall BO gical Administration

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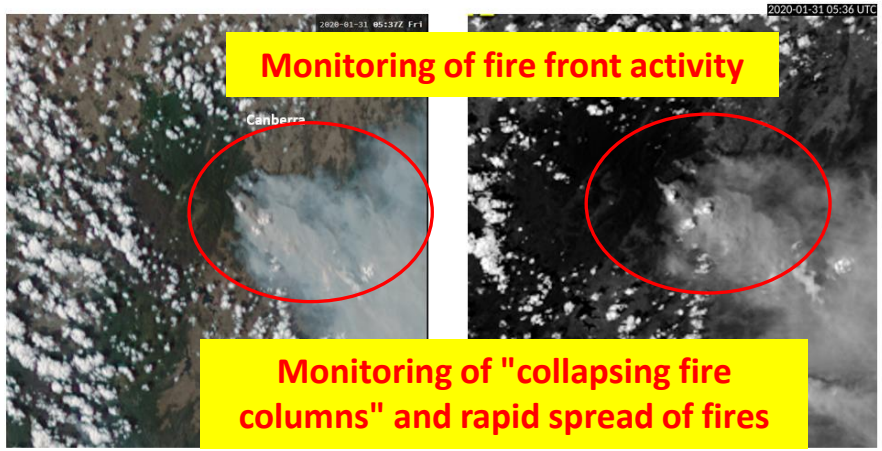
GEO-KOMPSAT-2A compared to Himawari-8 rapid scan imagery

Orroral Valley fire near Canberra 0500 to 0750UTC 31st January 2020



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http://www.virtuallab.bom.gov.
d_file/view/150

Bodo Zeschke
Teacher Australian Bureau of Mete
Point of Contact Australian VLab
bodo.zeschke@bom

My great interest: using this high temporal and special resolution data in 3D stereo viewing

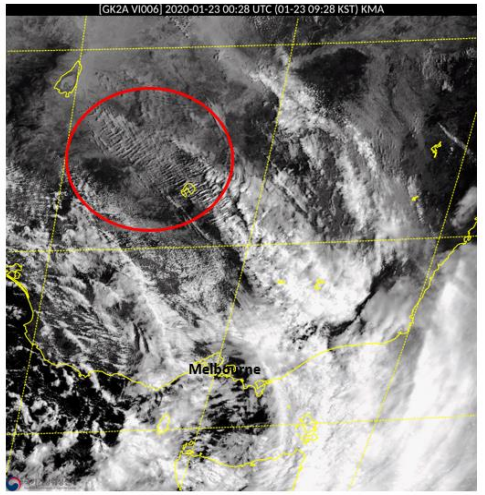
image courtesy Wikimedia Commons (Evan Amos)

Please start the Power Point Slide Show to activate the animation

GEO-KOMPSAT-2A compared to Himawari-8 rapid scan imagery

South-eastern Australia 00 to 03UTC 23rd January 2020

assembled by B.Zeschke BOM



GEO-KOMPSAT-2A Band 3 (0.64 micron, 500m resolution)

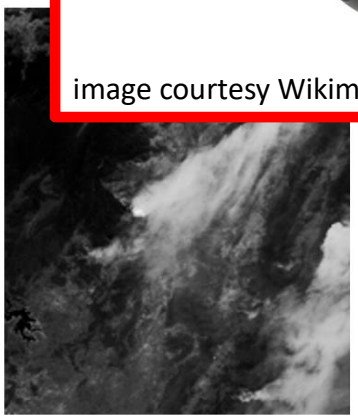
produced through work by L.Majewski, V.Villani,
orological Administration

Study 1

Please start the Power Point Slide Show

GEO-KOMPSAT-2A compared to Hima

Orroral Valley fire near Canberra, Australia 00



Himawari-8 True Colour RGB

GEO-KOMPSAT-2A Band 3 (0.64 micron)

Himawari-8 animation courtesy Japan Meteorc
M.Broomhall BOM, GE

Case Study 2a

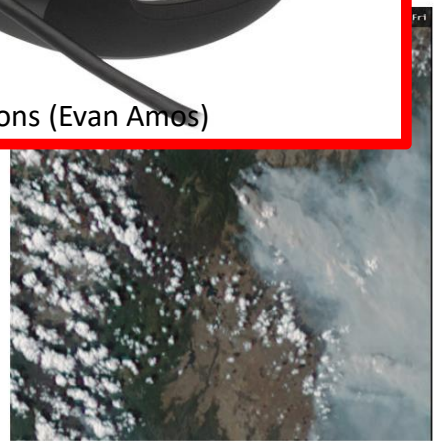
roduced through work by L.Majewski, V.Villani,
rological Administration

Slide Show to activate the animation

assembled by B.Zeschke BOM

to Himawari-8 rapid scan imagery

ra 0500 to 0750UTC 31st January 2020



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GEO-KOMPSAT-2A Band 3 (0.64 micron)

Himawari-8 animation courtesy Japan Meteorolc
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Case Study 2b

duced through work by L.Majewski, V.Villani,
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Content of the Regional Focus Group meeting 11th June 2020

Topics of discussion

A brief summary of the Technical Interchange Teleconference between NOAA, JMA and BOM 6/7th April 2020 including:

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How good was Big Blue Button in hosting the April RFG meeting? A summary of participants feedback

(facilitator to both sessions Mr. Bodo Zeschke BMTC)

Feedback pertaining to the use of Big Blue Button during the VLab RFG meeting of the 30th April 2020

- 52 attendees logged into Joe's presentation
- 29 attendees could be identified by email
- Survey questions were sent out to these attendees.
- Responses were received from 16 of the attendees, including those from Australia (2), China (1), Fiji (1), Indonesia (3), Japan (1), Kiribati (1), New Zealand (4), Solomon Islands (1), USA (2).
- Feedback also from the presenter, Joe Courtney and the coordinator (me!)

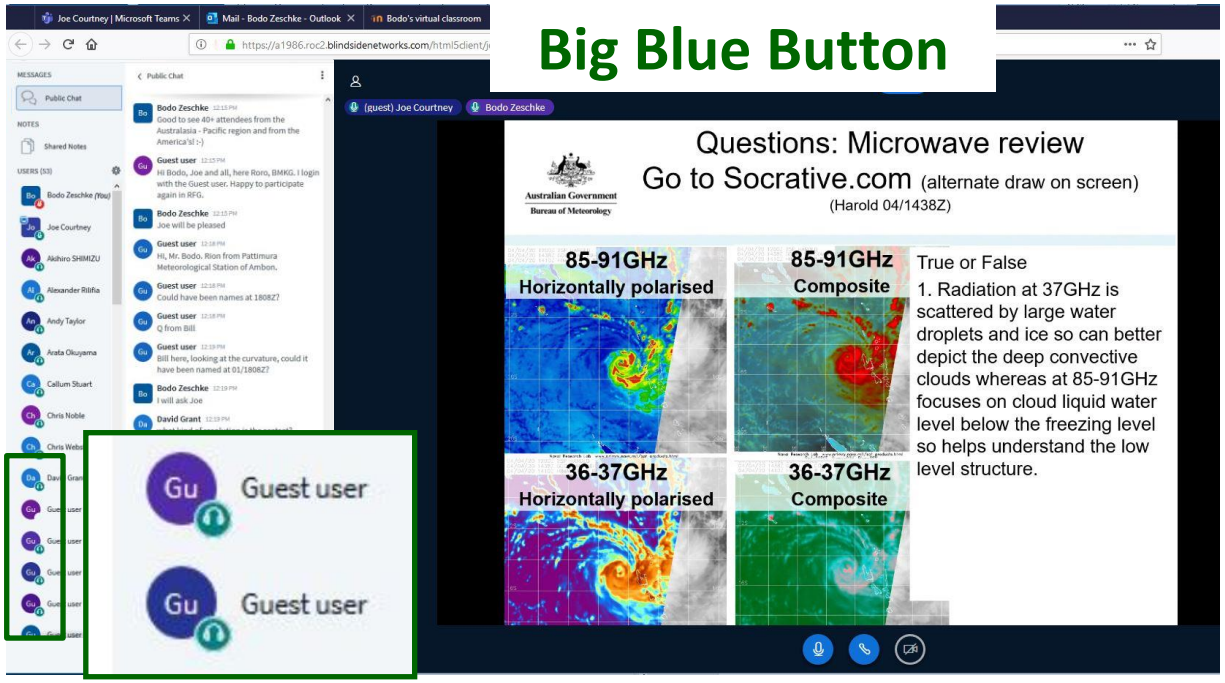
Feedback pertaining to the use of Big Blue Button (BBB) during the VLab RFG meeting of the 30th April 2020

- 14 attendees registered. 11 attendees had no problems in registering
- 2 attendees chose the "Guest" option
- 13 attendees found it easy to log into the BBB session.
- 14 attendees reported good audio transmission
- 13 attendees reported good video transmission
- 7 attendees preferred BBB over GoToWebinar
- 6 attendees liked both BBB and GoToWebinar

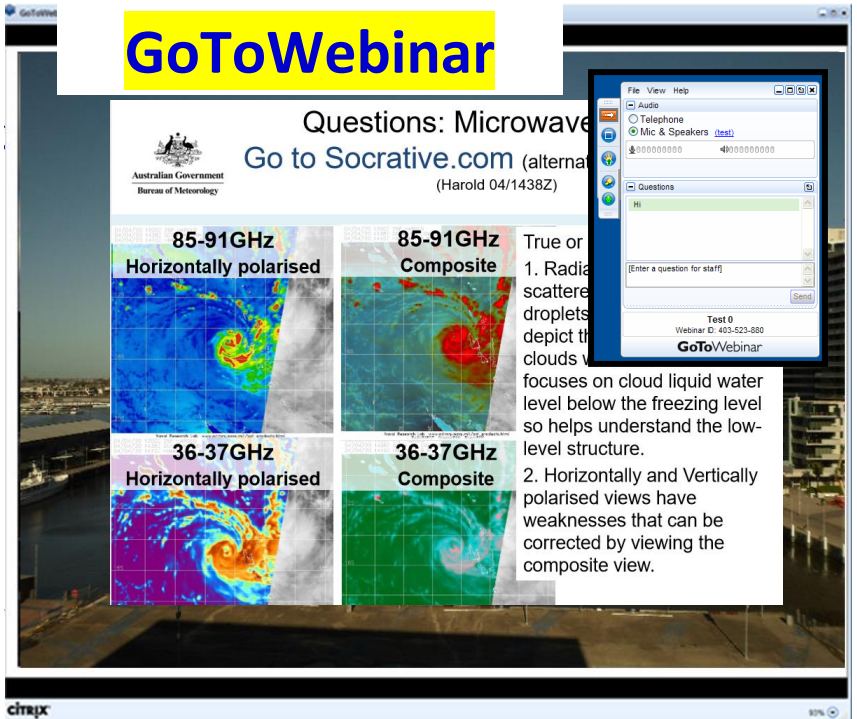
Summary Point 1

Difficulty in obtaining the identity and country of origin of many of the attendees in Big Blue Button, in particular those logged in as guests.

This is an issue when compiling the statistics for these international sessions for reports.

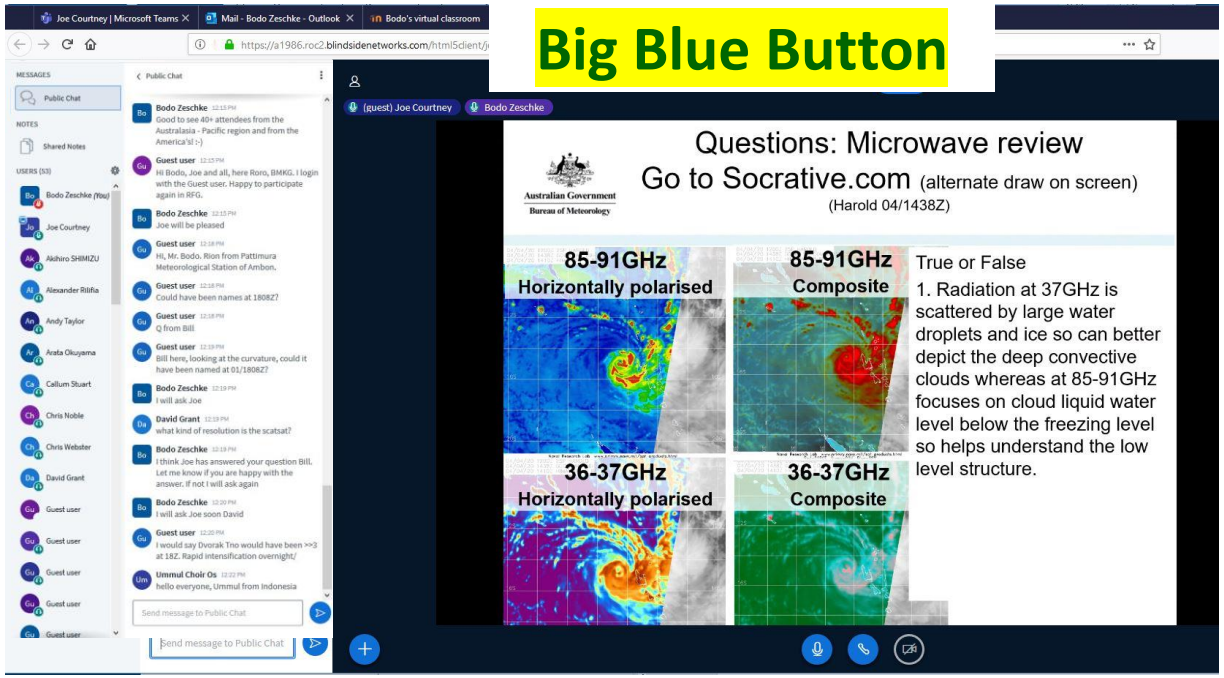


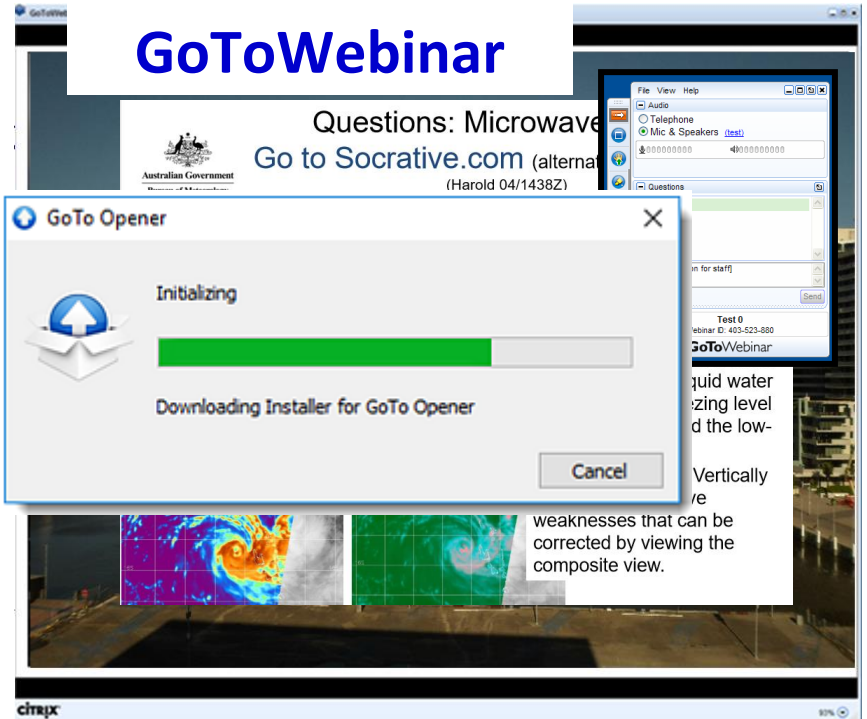
At the end of a GoToWebinar session you can download the email ID's and country of origin of all attendees



Summary Point 2

The advantage of not having to install software to log into Big Blue Button. This was an issue with GoToWebinar.





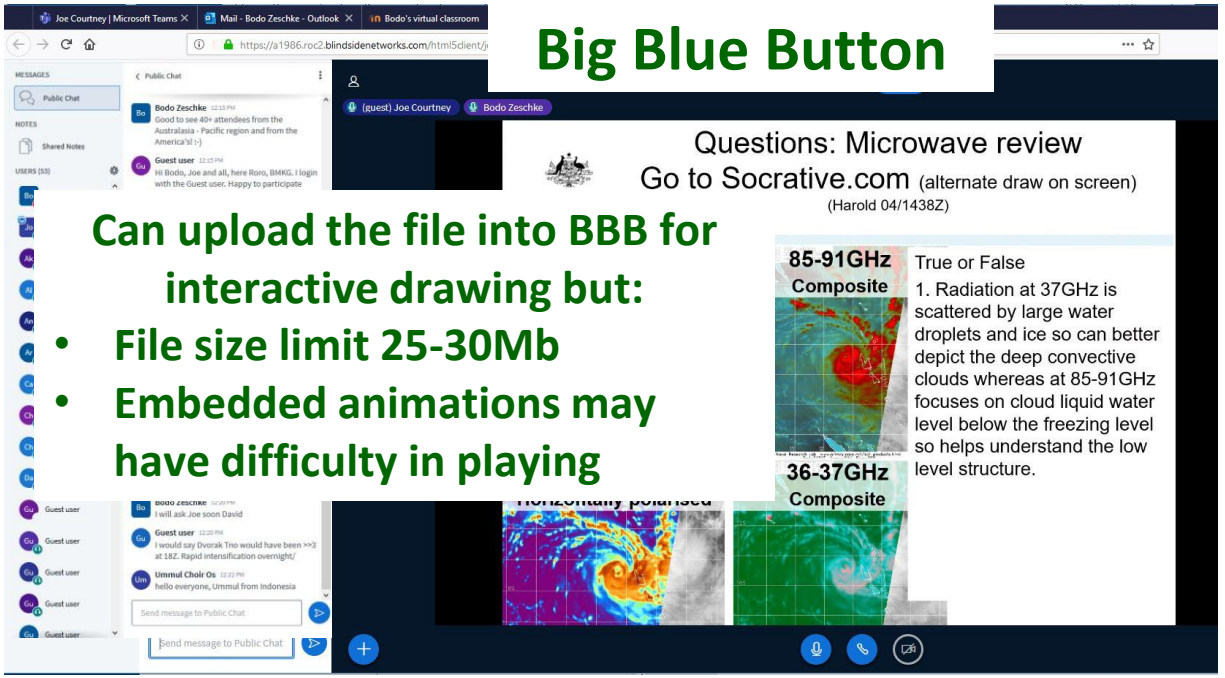
GoToMeeting uses a "helper" application to launch you into active sessions. This application is known as the GoTo Opener app.

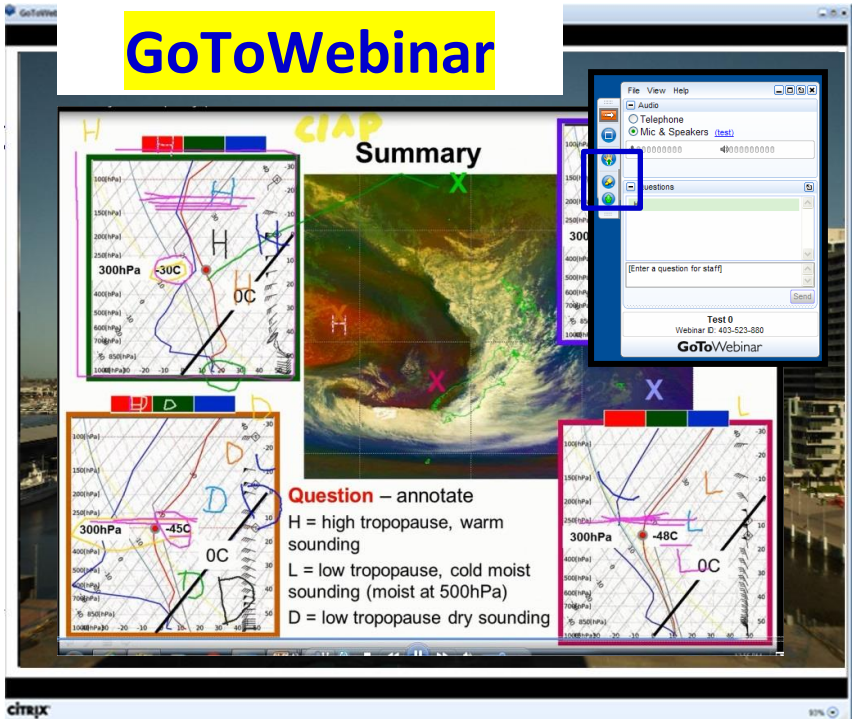
This can be blocked by the local security setup if you are not permitted to install software on your work computer.

Summary Point 3

Limitation in attendees not being able to draw on the shared screen by the attendees in BBB.

GoToWebinar permitted the attendees to do this.

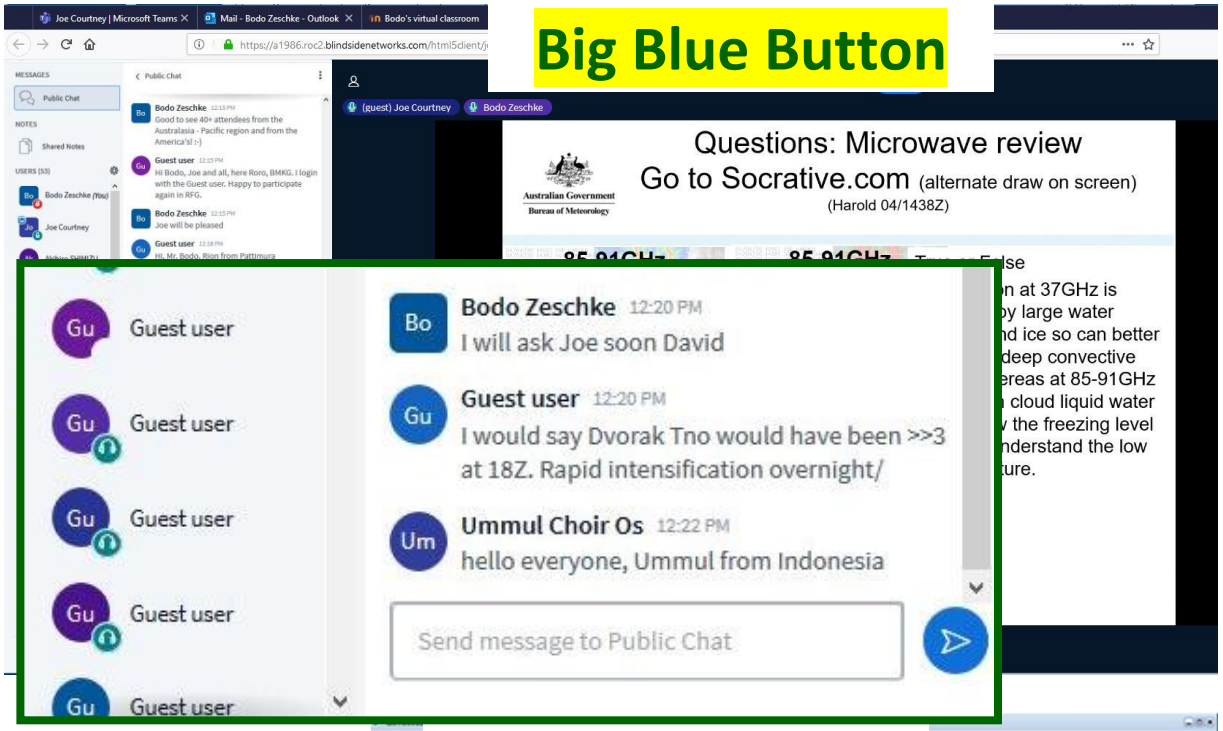


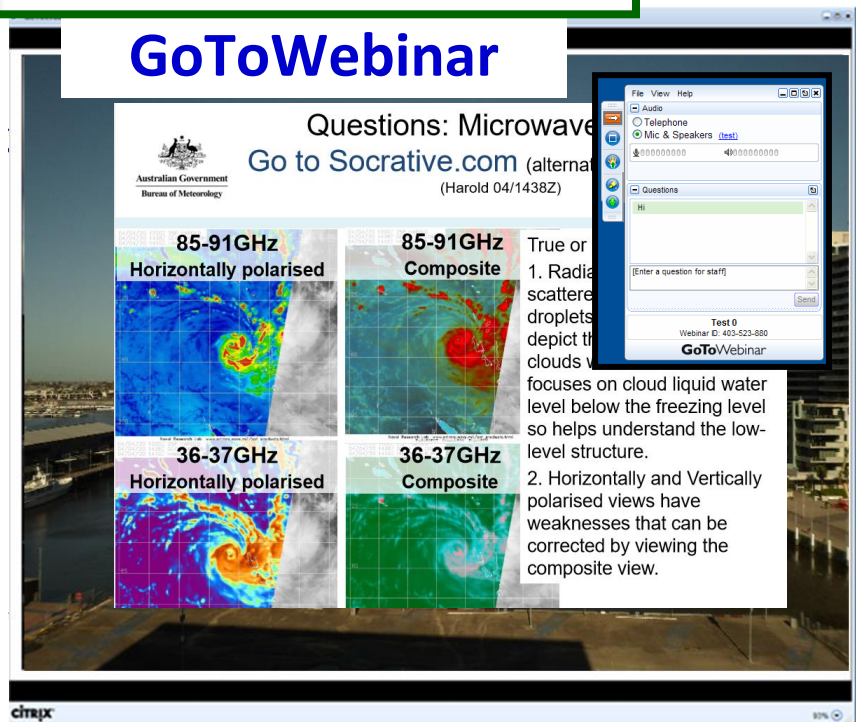


Summary Point 4

Attendees enjoyed the ability to see the register of attendees and to interact with these during the presentation. This was not possible when using GoToWebinar.

However, it would have been good to know the identity of the guest attendees.

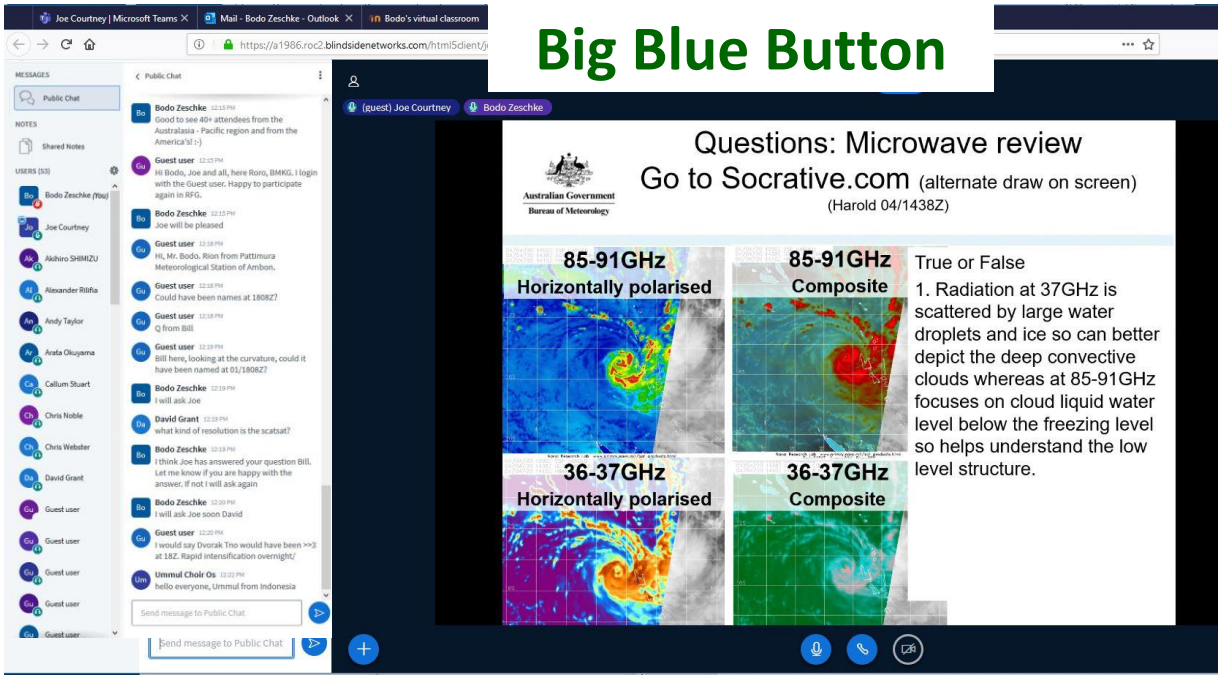




Summary Point 5

BBB does not appear to have the "audience view window" functionality that GoToWebinar has.

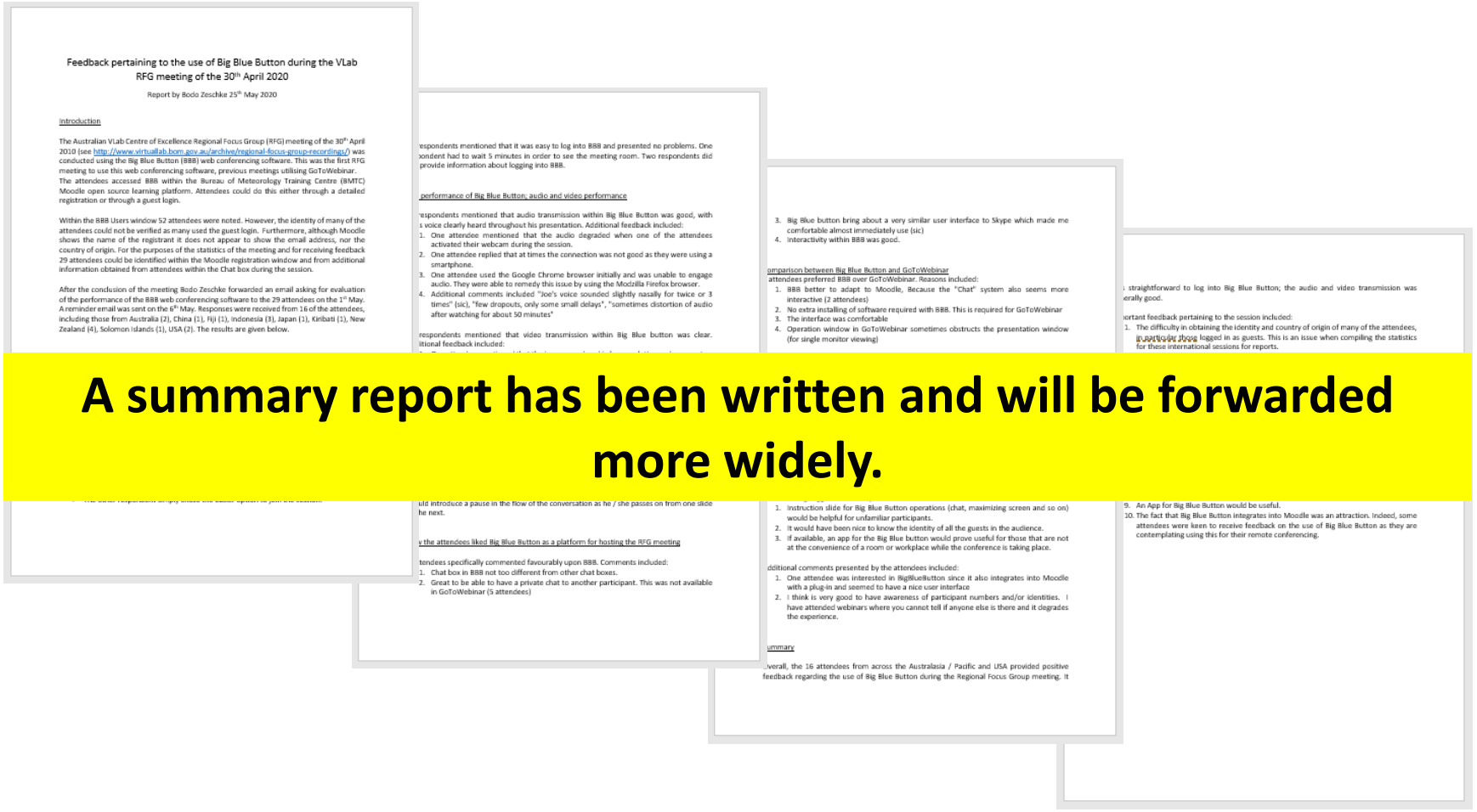
The presenter finds this useful as he / she can see when the slide is changing for participants.



Feedback pertaining to the use of Big Blue Button during the VLab RFG meeting of the 30th April 2020: Other comments

- Instruction for the use of Big Blue Button for first time users would be useful.
- A Big Blue button App would prove useful for those that are not at the convenience of a room or workplace while the conference is taking place.
- Big Blue button has a similar user interface to Skype which made me feel comfortable
- One attendee was interested in BigBlueButton since it also integrates into Moodle with a plug-in and seemed to have a nice user interface

Feedback pertaining to the use of Big Blue Button during the VLab RFG meeting of the 30th April 2020



Feedback pertaining to the use of Big Blue Button during the VLab RFG meeting of the 30th April 2020

Report by Bodo Zeschke 25th May 2020

Introduction

The Australian VLab Centre of Excellence Regional Focus Group (RFG) meeting of the 30th April 2010 (see http://www.virtuallab.bom.gov.au/archive/regional-focus-group-recordings/) was conducted using the Big Blue Button (BBB) web conferencing software. This was the first RFG meeting to use this web conferencing software, previous meetings utilising GoToWebinar. The attendees accessed BBB within the Bureau of Meteorology Training Centre (BMTC) Moodle open source learning platform. Attendees could do this either through a detailed registration or through a guest login.

Within the BBB Users window 52 attendees were noted. However, the identity of many of the attendees could not be verified as many used the guest login. Furthermore, although Moodle shows the name of the registrant it does not appear to show the email address, nor the country of origin. For the purposes of the statistics of the meeting and for receiving feedback 29 attendees could be identified within the Moodle registration window and from additional information obtained from attendees within the Chat box during the session.

After the conclusion of the meeting Bodo Zeschke forwarded an email asking for evaluation of the performance of the BBB web conferencing software to the 29 attendees on the 1st May. A reminder email was sent on the 6th May. Responses were received from 16 of the attendees, including those from Australia (2), China (1), Fiji (1), Indonesia (3), Japan (1), Kiribati (1), New Zealand (4), Solomon Islands (1), USA (2). The results are given below.

espondents mentioned that it was easy to log into BBB and presented no problems. One ondent had to wait 5 minutes in order to see the meeting room. Two respondents did provide information about logging into BBB.

performance of Big Blue Button; audio and video performance

espondents mentioned that audio transmission within Big Blue Button was good, with voice clearly heard throughout his presentation. Additional feedback included:

1. One attendee mentioned that the audio degraded when one of the attendees activated their webcam during the session.
2. One attendee replied that at times the connection was not good as they were using a smartphone.
3. One attendee used the Google Chrome browser initially and was unable to engage audio. They were able to remedy this issue by using the Modzilla Firefox browser.
4. Additional comments included "Joe's voice sounded slightly nasally for twice or 3 times" (sic), "few dropouts, only some small delays", "sometimes distortion of audio after watching for about 50 minutes"

espondents mentioned that video transmission within Big Blue button was clear. itional feedback included:

uld introduce a pause in the flow of the conversation as he / she passes on from one slide he next.

y the attendees liked Big Blue Button as a platform for hosting the RFG meeting

tendees specifically commented favourably upon BBB. Comments included:

1. Chat box in BBB not too different from other chat boxes.
2. Great to be able to have a private chat to another participant. This was not available in GoToWebinar (5 attendees)

3. Big Blue button bring about a very similar user interface to Skype which made me comfortable almost immediately use (sic)
4. Interactivity within BBB was good.

omparison between Big Blue Button and GoToWebinar

attendees preferred BBB over GoToWebinar. Reasons included:

1. BBB better to adapt to Moodle, Because the "Chat" system also seems more interactive (2 attendees)
2. No extra installing of software required with BBB. This is required for GoToWebinar
3. The interface was comfortable
4. Operation window in GoToWebinar sometimes obstructs the presentation window (for single monitor viewing)

1. Instruction slide for Big Blue Button operations (chat, maximizing screen and so on) would be helpful for unfamiliar participants.
2. It would have been nice to know the identity of all the guests in the audience.
3. If available, an app for the Big Blue button would prove useful for those that are not at the convenience of a room or workplace while the conference is taking place.

dditional comments presented by the attendees included:

1. One attendee was interested in BigBlueButton since it also integrates into Moodle with a plug-in and seemed to have a nice user interface
2. I think is very good to have awareness of participant numbers and/or identities. I have attended webinars where you cannot tell if anyone else is there and it degrades the experience.

ummary

verall, the 16 attendees from across the Australasia / Pacific and USA provided positive feedback regarding the use of Big Blue Button during the Regional Focus Group meeting. It

straightforward to log into Big Blue Button; the audio and video transmission was erally good.

ortant feedback pertaining to the session included:

1. The difficulty in obtaining the identity and country of origin of many of the attendees, in particular those logged in as guests. This is an issue when compiling the statistics for these international sessions for reports.

9. An App for Big Blue Button would be useful.
10. The fact that Big Blue Button integrates into Moodle was an attraction. Indeed, some attendees were keen to receive feedback on the use of Big Blue Button as they are contemplating using this for their remote conferencing.

A summary report has been written and will be forwarded more widely.

Summary of the Regional Focus Group meeting 11th June 2020

Topic of discussion

A brief summary of the Technical Interchange Teleconference between NOAA, JMA and BOM 6/7th April 2020 including:

- GEO-XO introduction (Dan Lindsay NOAA/NESDIS)
- Himawari RGB Quick Guides, examining RGB's containing near-infrared imagery (Akihiro Shimizu JMA)
- AOMSUC-10 Training Event feedback (Bodo Zeschke BOM)
- GK-2A and Himawari-8 rapid scan imagery presented in combination

How good was Big Blue Button in hosting the April RFG meeting? A summary of participants feedback

The next Regional Focus Group meeting is scheduled to be held during late June / early July 2020