

New Zealand Aviation Meteorology Symposium

Meeting 1 - Summary

Date:	31 August 2017	Time:	0830-1700
Venue:	CAA Wellington	Host	CAA NZ
Attendees:	Refer Appendix 4	Apologies	Refer Appendix 4
Agenda	Refer Appendix 3	Actions	Refer Appendix 1

1. Discussion Summary

#	Item	Discussion/Action
1.	Previous Summary	n/a
2.	Actions Review	n/a
3.	Objective	To better support the dynamism of New Zealand aviation in the region , through a regular aviation MET industry meeting where the users, providers, and regulators can come together to co-ordinate and collaborate efforts with the objective of ensuring what is done, and what is developed, is optimal, responsive, and sustainable. <i>(Changes as per decision 01/01 in Section 7. Below)</i>
4.	Presentations	<p>The Powerpoint (PPT) presentations made can be viewed on the CAA web site <i>Meteorology</i> pages under <i>Meteorology Symposium</i>. (refer to : https://www.caa.govt.nz/meteorology/meteorology-home/)</p> <p>CAA – Peter Lechner, Keith Mackersy, David Wills:</p> <ul style="list-style-type: none"> ○ Scene setting ○ Regulation ○ International Responsibilities ○ International Interaction ○ IWWX and SWIM ○ Clear Base-line MET <p>MetService – Kevin Alder, Paula Acethorp, Matt Corey, Ray Thorpe</p> <ul style="list-style-type: none"> ○ Modern airport observing systems in NZ ○ Aviation forecast operations ○ Aviation portal concepts and API ○ MET CDM <p>Airways - Wayne Blythe, Ian Dore, Al Shaw</p> <ul style="list-style-type: none"> ○ Future operational context and technology changes ○ SkyLine – X and MET use/display ○ IFIS one-stop-shop development ○ IWXXM ○ AMHS implementation ○ AIM Support for IWXXM <p>Airports Assoc / WLG – Lachlan Thurston</p> <ul style="list-style-type: none"> ○ Impact of weather on aerodrome operations ○ Supporting TALPA runway condition reporting ○ Using lightening information ○ Presenting MET information in user friendly formats ○ A-CDM – current shape and MET potentials <p>Australian Bureau of Meteorology – Gordon Jackson</p> <ul style="list-style-type: none"> ○ New structure – fewer forecast centres

		<ul style="list-style-type: none"> ○ Industry interaction ○ Development processes ○ Aust/NZ collaboration
5.	Discussion Points	<p>This section simply lists key points that were discussed during the day:</p> <ol style="list-style-type: none"> 1. Need to expand the focus of the Symposium and its future to a regional perspective in order to gain optimum benefits) – accepted. 2. David Morgan now Chairman of IATA Operations group and can assist with influence in that quarter. 3. Funding not necessarily an issue in the MET area as long as clear benefit is identified in changes and developments. 4. Many significant issues in the Pacific Islands in both observational and forecast information. 5. IWXXM implementation is not without its issues with regard to AMHS provision, user interfaces, and default visualisations and messaging. 6. TAC (traditional alphanumeric coded MET information) will be needed parallel to IWXXM for a considerable period as users implement IWXXM capable reception and ingestion systems both in flight operations and in aircraft. 7. ACARs continues to provide valuable data especially in the descent and ascent phases – noted that ADS-B could also provide 2-way MET data if enabled (squit temp and wind data). While this is unlikely in the current NZ approach there may be other means of achieving the same thing in the future. 8. The MetService graphical low-level significant weather product (close to that shown) is programmed for initial delivery testing end of 2017. 9. The current location of MetService AWS (and therefore METAR AUTO) can be changed to accommodate changing aerodrome usage. 10. The TREND product needs to be reviewed given it relates to old operational contexts. Noted however that some operators do actively use the current TREND product. 11. Concept of global hazardous weather product supported (and the end of FIR based SIGMET). 12. A-CDM could benefit by the addition of additional MET information. 13. Remains a call from users including RNZAF to continue improve current products while new perspectives are developed. 14. New Airways SkyLine-X system is about 3 years away for domestic operations and international by 2021. 15. GRIB2 not fully implemented in current Airways system. 16. Lightning detection and advisory in new SkyLine-X system is possible – to be investigated further. 17. Similarly better use of ground-based weather radar is possible as long as the data is less aged – to be investigated further. 18. IFIS is getting about 1500 hits/day. 19. Work continues on the addition of graphical MET information on IFIS – the key will be the use of API. 20. AMHS link to Australia due in 2018. 21. Met Service DR centre in Auckland all set with AMHS connectivity. 22. RPAS will bring new social, economic, and technical advances (currently 280k operators in NZ). The situation is moving very quickly and the MET requirement needs to be prepared with pace also. 23. Need to invite Andy Grant of the UAVNZ to next meeting. 24. Airways conducting UAV regional trials. 25. Bureau of Meteorology (BoM) Australia undergoing major structural changes and product developments in the aviation area. 26. BoM holds regular consultative meetings with all parts of the aviation sector. 27. General aviation has a preference for data to be pushed to them rather than pulled.
6.	Breakout feedback	See Appendix 2.
7.	Actions	Full list of actions in Appendix 1.

8.	Continuation	<p>The meeting agreed that there was high value in continuing to focus on MET development through this kind of symposium or meeting and that it should meet next in 6 months' time. It was suggested that the venue could possibly rotate around CAA, Airways and MetService</p> <p>Governance structures should be addressed at that meeting to answer questions such as:</p> <ol style="list-style-type: none"> 1. Adding terms of reference to the overall objective to further clarify span and intent of work. 2. Deciding on a form of governance and formal mandate. 3. Deciding on addition of other State, private/commercial constituencies. <p>Election of Chairperson and Deputy or deciding some form of revolving Chair responsibilities.</p>
9.	Closing Comments	<p>Air NZ noted that Aus/NZ can lead the world in the development of MET for modern Air Traffic Management (this includes RPAS too). Close cooperation/partnerships between Airways, Met, Airlines, airports and other industry players is needed to make this happen.</p> <p>Group observation: We need to look at better management and utilisation of BIG data, more effective partnerships and co-operation across the board to take the leap required to become world leaders in the development, provision and utilisation of MET information, starting with the APAC region, our own back yard.</p>

Next Meeting	
Date:	Around late March 2018 - TBA
Place:	TBA
Time:	Full day

Peter Lechner

Appendix 1 – Consolidated Actions and Decisions

Mtg	Action / Decision	Description and comment	State	Who/Lead	When
1	01	Amend the objective of the Symposium to take a regional view, not just New Zealand. Agreed by meeting.	Closed!	CAA	This report
1	02	Continue with the development of the GA graphical and ARFOR Sit Brief products, with user testing	Open	MetService	Report Mar 2018
1	03	Investigate the provision of enhanced verification of existing MET products (this may mean at least the provision of PODs and FARs for all domestic aerodromes) – using latest satellite and IT potentials.	Open	MetService	Report Mar 2018
1	04	Investigate the provision of MET data to 3 rd party App providers such as Oz Runways and AvPlan so these products can provide information that has full Met integrity from authoritative source(s)	Open	MetService & Airways	Report Mar 2018
1	05	Develop a TAF provision policy based on aerodrome usage and demand – with a view to spreading limited AWS capacity (and METAR AUTO production) in a collaborative and considered fashion. Note the BoM work in this area.	Open	MetService	Report Mar 2018
1	06	Develop, for consultation, a new air navigation based MET charging model in conjunction with Airways, using ICAO/IATA guidelines and in close liaison with CAA.	Open	MetService	Report Mar 2018
1	07	Investigate and implement if possible access to Fiji Airways AMDAR.	Open	MetService	Report Mar 2018
1	08	Investigate the potential implementation and costs of meteorologist direct link to airport/ATM/airline operations.	Open	MetService	Report Mar 2018
1	09	Work with aerodromes to implement key MET input into A-CDM. To include runway condition and radar scanning concepts and costing.	Open	MetService	Report Mar 2018
1	10	Promote possible usage of pending ADS-B or other technology to move MET data to/from aircraft. Noted that this may be difficult with current ADS-B bandwidth availability.	Open	CAA	Report Mar 2018
1	11	Maintain watch on ICAO development of new Terminal Area Forecast approach to support TBO.	Open	CAA	Report Mar 2018
1	12	Improve verification and reporting from Vanuatu's Volcano Observatory working with GNS Sciences and BoM	Open	MetService	Report Mar 2018
1	14	Investigate the modification of weather radar scanning patterns (e.g. low levels first) to provide useful data to Airways (and others) quickly.	Open	MetService & Airways	Report Mar 2018
1	15	Continue to develop ash concentration model for DARWIN and Wellington VAACs in close association with the WMO VABP and ICAO METP. Noted that an ICAO requirement is a number of years away.	Open	BoM & MetService	Report Mar 2018
1	16	Implement a programme of investigation into the probable MET requirements of UAV/ RPAS including low-level smaller craft through to unmanned heavy metal aircraft (eg B747 freighters) at cruising levels.	Open	BoM & MetService	Report Mar 2018
1	17	Develop a Pacific Island assistance strategy to improve the provision of MET products from the region.	Open	CAA, BoM & MetService	Report Mar 2018
1	18	Review the utility of TREND in context of operator need for short term forecast window on probable aerodrome	Open	CAA,	Report Mar

Mtg	Action / Decision	Description and comment	State	Who/Lead	When
		conditions – noting the recent work completed by BoM in this regard		MetService	2018
1	19	Ensure that the various development programmes, including NSS, address the issues of IWXXM data storage and distribution within the SWIM environment – drawing on overseas developments and testing within the ICAO gambit.	Open	CAA	Report Mar 2018

Appendix 2 – Break-Out Session

Breakout outcomes sought:

What needs to be done now?

What future issues are anticipated and what can we start to do now?

GA and Training Sector General Discussion

1. Many are happy to get rid of the TAC products as they find them hard to understand – however, any IWXXM product therefore needs to be easy for all users to understand and have one portal to access all information. There is a requirement to “demystify” the data.
2. There is a perception by some that we are pessimistic in our forecasts, over-forecasting the conditions. Users are requesting more accurate TAFs. This ties in with the airline industry requesting verifications – providing data with which to assess the quality of the products.
3. Discussions were held on whether there should be a MetService/Airways/CAA type collaboration to create an app to supply the data to GA, or whether MetService is better to simply be a supplier of data to a 3rd party app – the likes of OZRunways or AvPlan. Again, the one-stop shop approach was emphasized.
4. Making weather data easy to access also helps support efforts to engage and educate microlight and drone users, who’ve not gone through the traditional PPL type route where they would learn the importance of weather information. A suggestion was made whether data could be pushed to those users, to ensure it was used.
5. The security and validity of the data supplied via apps was raised as a concern – how do users know they are receiving a quality source of information.
6. Some users want a greater granularity of data – 1 min obs for example.
7. Discussion was held around determining what the criteria should be for the provision of TAFs – do we take a similar approach to the Bureau where the number of movements defines the level of service, unless a TAF is of a critical nature to the network.

The point was made that data provision should be:

- Accessible to all – easy to get, easy to understand
- Support a connectivity from the data supplier to the user
- Provide support for a risk based approach to aviation
- Above all, support the safety and efficiency of aviation operations.

Airline Sector General Discussion

MET charging model

- Change in charging model - frequency / timing / detailed / future cost outlook.
- Any changes need to be fiscally neutral.
- Any new charges should to be based on extended product and defined benefits.
- Needs a clear structure, and visibility to the industry.
- Possibility of ascribing set finance to MetService R&D as is done in Australia

New MET product

- New products or enhancements should be based on clear documented user requirements.
- Develop solutions that are NZ specific and cannot be bought at a lower price from another vendor, e.g. The Weather Company (WSI). "Nothing is produced if not needed/will be used."
- Products that release traffic capacity are important – especially in the A-CDM context.
- Every new product needs to be checked and approved.
- Verification data drives were we are going with performance based planning.
- Need to understand UAV/RPAS MET needs.
- Noted:

- pending international development of TMA forecast to replace current TAF product/data (supporting TBO and covering much larger footprint),
 - Rolls-Royce issue of ash tolerance data allowing new review of the scientific viability and potential for providing ash concentration products globally.
- Volcanic Ash detection / higher resolution polygon (with colours - VAAC Darwin). No need for an NZ variation if already available - collaboration AU/NZ is important.

Verification

- New products and existing products need to have robust verification schemes that are visible to users – both in development and testing and in operational production.
- Verification schemes must have a direct and visible impact on product improvement - accuracy, probability, confidence etc.

Collaborative Decision Making

- Better understanding of threats and risks for the day - early heads up!
- Weather and ATC wise - heads up for the operations regarding upcoming runway changes, selection of alternates, traffic congestions, etc.
- Access to weather radar and lightening data is imperative in A-CDM.
- Potential to have meteorologists dedicated to CDM support (as in Australia).

MetService as Data Provider

- API data should be pushed to the airlines or flight planning solutions in airline operations - best available solution to update on every given moment.
- Unfettered access to NZ MET data will become much more straightforward under the new charging model (internationally familiar air navigation charge model).

Other Issues

- Noted problems with Vanuatu volcano monitoring and eruption notification out of their observatory.

Appendix 3 – Agenda

#	Item	Covering	Presenter
1.	Opening and Introductions	<ul style="list-style-type: none"> Opening Remarks Meeting Objectives Round table introductions and expectations (introduce White board process for– issues +ideas + actions) 	Graeme Harris Peter Lechner CAA
2.	CAA Responsibilities	<ul style="list-style-type: none"> MET Authority Regulatory (including Part 174 and AC 174) Facilitation of services 	Peter Lechner CAA
3.	International meteorological (MET) system developments and progress.	<ul style="list-style-type: none"> ICAO METP background (summary only; focusing on impact NZ and adjacent regions) Data centric direction of change NSS/GANP/SWIM/IWXXM 	Peter Lechner David Willis CAA
4.	MetService overview and current product review	<ul style="list-style-type: none"> Brief outline of recent MetService developments including GSM and VAAC/VAAS Resilience programme WN/AK Graphical developments Review of existing products 	Kevin Alder Paula Acethorp Ray Thorpe Matt Corey MetService
5.	Airways overview	<ul style="list-style-type: none"> Emerging strategy New surveillance system Tower automation Comms changes – AMHS, IP, D-VOLMET 	Wayne Blythe Ian Dore Al Shaw Airways
6.	Airports overview	<ul style="list-style-type: none"> Developing airport MET requirements Collaborative development systems 	Lachlan Thurston NZAA
7.	RNZAF overview (to be confirmed)	<ul style="list-style-type: none"> Current situation Operations profiles Future MET requirements 	RNZAF Jim Rankin
8.	RPAS and other new Tech	<ul style="list-style-type: none"> Expectations MET requirements Uplinking to iPad, EFBs etc 	Discussion session
9.	Australian perspectives	<ul style="list-style-type: none"> Structures Funding Development processes Aust/NZ collaboration 	Gordon Jackson BoM
10.	Establishing clear base-line MET	<ul style="list-style-type: none"> Situation and shortcomings New contract arrangements Funding strategy and direction 	Peter Lechner CAA
11.	Airlines	<ul style="list-style-type: none"> Parallel Panel discussion Review of existing MET products and benefits. Ideas on new MET products and benefits 	David Morgan Graham Rennie? John Becket? Andrew Sturrock
12.	GA/Training	<ul style="list-style-type: none"> Parallel Panel discussion Review of existing MET products and benefits. Ideas on new MET products and benefits 	Paul Kearney John Nicholson Tony Quayle Tim Allen Warwick Wild
13.	Report Back	<ul style="list-style-type: none"> From Panel discussions 	All
14.	Review	<ul style="list-style-type: none"> Issues - identified Actions - allocated 	
15.	Future Meeting structure	<ul style="list-style-type: none"> Management Periodicity Governance 	

Appendix 4 – Participants and Apologies

Participants

Air NZ	David Morgan	Markus Kraettli	Hugh Pearce		
Airways	Wayne Blyth	Al Shaw	Ian Dore		
AOPA	Don Ryder				
BoM	Alicia Tuppack	Andrew Arnold	Gordon Jackson		
CAA	Steve Smyth	Greg Baum	Grant Twaddle	Steve Kern	Jeanette Lusty
CAA	Peter Lechner	Keith Mackersy	David Wills	Steve Moore	
Fiji Airways	Mike Truman	Shyamal Krishna			
Massey Aviation	Ivan Campbell				
MET Service	Ray Thorpe	Paula Acethorp			
MET Service	Kevin Alder	Simon Leyland	Matt Corey		
MoT	John Macilree				
Navigatus	Paul Dickinson				
NZ Airports Assoc	Lachlan Thurston				
NZ Sport Aircraft	Peter Nunn				
NZAWA	Penny Mackay				
RNZAF	Jim Rankin				
SAA / Kapiti AC	Tony Quayle				
Tasman Cargo AL	Andrew Sturrock				
Virgin	Adrian Slootjes				

Apologies

Aeropath	Trent Clark		
Air2There	Tim Allen		
CASA	Ashley McAlpine		
GNS	Brad Scott		
MET Service	Norm Henry	Ramon Oosterkamp	James Lunny
MoT	Russel Brown	Andrew Palmer	
NZPIA	Jennifer Lowe		
NZAWA	Christina Needham		
Qantas	Graeme Rennie		