Australian Government
Bureau of Meteorology

TAF Review 2021
Final Report

Review of Aerodrome Forecast (TAF) services for the aviation industry.

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Executive Summary

The Bureau of Meteorology (the Bureau) provides meteorological services for the aviation industry including international, domestic and regional airlines and general aviation. In accordance with government policy the Bureau recovers, from the aviation industry, the appropriate costs incurred in the provision of these services through the Meteorological Service Charge (MSC)[1].

Meteorology has a significant influence on aviation operations; timely and accurate aviation meteorological services are required for safety, efficiency and economy. Consequently, the aviation industry maintains a strong involvement in ensuring that aviation meteorological services meet current and future requirements. Regular consultation occurs between the Bureau and representatives of international, domestic and regional airlines, general aviation, aviation industry associations and government departments.

Aerodrome forecasts (TAF) are one of the most important forecasts produced by the Bureau for the aviation industry, amongst several other meteorological products that support safe and effective aviation operations and planning. A TAF is a statement of meteorological conditions expected in the airspace within a radius of five nautical miles of the aerodrome reference point for a specific validity period.

The Bureau conducts regular reviews into the provision of TAF services in consultation with key government stakeholders to ensure the services meet the needs of the whole aviation industry now and into the future. A central objective of the review is to ensure the Bureau continues to offer a value-for-money national network of meteorological observations and forecast services across Australia.

The purpose of the TAF Review is to examine the current and future aviation industry requirements for TAF services and to make recommendations relating to the provision and categorisation of TAFs. This includes the introduction, modification and cancellation of MSC-funded TAF services.

A TAF Review Executive Committee and a TAF Review Working Group were established to complete this work, chaired by the Bureau and comprised of representatives from Airservices Australia (Airservices), the Civil Aviation Safety Authority (CASA), and Department of Infrastructure, Transport, Regional Development and Communications (DOITRDC). The TAF review involved a criteria-based assessment, based around the level [2] and type of aviation operations, and a number of other considerations (refer to Section 2.5).

The Bureau released the TAF Review Consultation Draft Report for a four-week public consultation commencing on 8 September 2020, seeking formal feedback on the

[1] Information on the MSC is available at http://www.bom.gov.au/aviation/about-us/overview/

[2] The Review recognises that COVID-19 has severely impacted aircraft operations. Pre-COVID data was therefore used in the analysis, unless revised data was submitted through the consultation process

recommendations and draft service changes from all areas of the aviation industry and other interested parties.

During the consultation period, 25 submissions were received on the proposed changes to TAFs from aerodrome operators, airlines, associations, and other interested parties within the aviation industry. The TAF Review Executive Committee and the TAF Review Working Group reviewed all submissions and considered safety, operational impacts and other issues and concerns provided by interested parties, and revised the Report where appropriate.

This review determined the following:

- A single recommendation;

  Recommendation 1:

  For International (A) aerodromes, the validity of each routine TAF issue shall be 18, 24 or 30 hours. The TAF validity for an aerodrome will be determined based on demonstrated operational requirements.
- TAF services at 189 aerodromes shall remain unchanged; and
- Changes to MSC-funded[3] TAF services:
  - Reinstate TAF service at 2 aerodromes
  - Increase TAF services at 3 aerodromes
  - Reduce services at 4 aerodromes
  - Cancel MSC funding of TAF service at 9 aerodromes (7 industry specific aerodromes)

Changes to TAF services and each aerodrome's TAF category are contained in Section 3.2 and Appendix 1 respectively of this report.

Changes to TAF services are planned to be implemented on 2 December 2021 and a post implementation review conducted one year after implementation.

[3] Some TAF services are fully or partially funded by Defence. As of 21 July 2021, there are 19 Australian TAF services that are user-funded which will not be changed as part of this review

1 Introduction

The Bureau provides aviation meteorological services within the Australian Flight Information Regions (FIRs) and beyond in accordance with international agreements. The Bureau's role in providing services for civil aviation is established through the *Meteorology Act 1955*.

Australian Government policy requires that the Bureau recover the appropriate costs incurred in providing specialised services to the aviation industry. These costs are recovered by Airservices on behalf of the Bureau via the MSC. Due to their investment and the impact of weather on their operations, the aviation industry maintains a strong ongoing interest and involvement in the scoping and approval of services delivered by the Bureau to the industry.

The Bureau provides a range of aviation meteorological services including TAF , where the TAF is a statement of meteorological conditions expected in the airspace within a radius of five nautical miles of the aerodrome reference point for a specific validity period.

In response to a growing demand for additional TAFs that are not eligible to be funded under the MSC, the Bureau provides user-funded TAF services on a cost recovery basis; these additional TAF services are typically funded by the aerodrome operator.

Further background information on the provision of meteorological services is available in Appendix 5 of this report.

2 TAF Review

2.1 Background

The Bureau is committed to conducting regular reviews of all aviation meteorological services in consultation with key government stakeholders to ensure services continue to meet requirements of the aviation industry and comply with regulatory and safety obligations.

The purpose of the TAF Review is to examine current and future requirements of the aviation industry, and to make recommendations relating to the provision and categorisation of MSC-funded TAFs, including guidelines and recommendations for the introduction, modification and cancellation of TAF services. In this respect, the review process also includes an assessment of the current criteria-based decision framework in terms of its fitness for purpose as a decision tool for TAF services, and providing transparency for stakeholders regarding decisions on TAF services. A copy of the previous TAF Review is available here.

To govern and complete the review, a TAF Review Executive Committee and a TAF Review Working Group were established, each chaired by the Bureau, and comprising representatives from Airservices, CASA and DOITRDC. Their key activities included:

- formally analyse the latest aerodrome information, including movement data;
- prepare a draft report for release and stakeholder comment;
- review and respond to any issues identified in submissions; and
- revise the report, including finalising the recommendation and service changes.

The TAF Review Consultation Draft Report was released for a four-week public consultation period commencing on 8 September 2020. During the consultation period, 25 submissions were received from aerodrome operators, airlines, associations, and other interested parties within the aviation industry on the proposed changes to TAFs. Refer to Section 3 for more details. This report contains the final recommendations and service changes following a review of all submissions received through the consultation process.

2.2 Provision of TAF services

The Bureau provides a TAF service for Australia's international and domestic aerodromes in accordance with each aerodrome's category. Aerodrome categories have been established to provide a clear hierarchy of meteorological service requirements and are based predominantly on an assessment against the following criteria:

- annual passenger numbers;
- annual aircraft movement numbers;
- ICAO-mandated requirements for international aerodromes;
- operational requirements for extended validity periods;
- requirements of non-MSC funded services such as user-funded TAFs and TAFs for the Australian Defence Force (Defence); and
- other considerations outlined in section 2.4

Australian TAF services are categorised into the following four categories (refer to Table 1 Table 1 for further details):

- Cat A - International designated aerodromes
- Cat B – Large aerodromes
- Cat C – Medium aerodromes
- Cat D – Small aerodromes

The provision or non-provision of a TAF by the Bureau, together with its period of validity, impacts the aviation industry. In the absence of a current TAF for a destination aerodrome, pilots are typically required to carry sufficient fuel for a diversion to a suitable alternate aerodrome. Carrying diversion fuel can impose an economic penalty on the aircraft operator, due to the need to reduce freight carried or the number of passengers for a flight, in order to offset the additional weight of the diversion fuel.

Note: at locations where a TAF service is ceased, other aviation weather information will continue to be provided. At the aerodrome, real-time weather observations will continue (e.g. METAR/SPECI and AWIS), and for the airspace around these aerodromes, aviation forecast and warning services such as Graphical Area Forecasts (GAFs), significant weather (SIGWX) and significant meteorology warnings (SIGMET) will also be available.

2.3 Availability of input data

Airservices' Airspace Research Application (ARA) data provides a single, complete dataset of movement and passenger numbers for all aerodromes (including all of those under review). This TAF review utilised the 2018 ARA data set (available in July 2019) as the primary data set for the analysis of passenger and movement numbers.

As the ARA dataset contains estimated statistics for some aerodromes, aerodrome owners or operators were provided an opportunity to submit revised data if they believed that the proposed TAF category did not accurately reflect their actual aerodrome usage. Details on the process for submitting revised figures are contained in Appendix 3.

It is recognised that the aircraft and passenger movements were severely impacted by COVID-19 restrictions and therefore pre-COVID data was used in the analysis, unless revised data was submitted to the review through the consultation process.

A list of aerodromes for which the Bureau provides TAF services is contained in the En-Route Supplement Australia (ERSA) and on the Bureau's webpage. A list of Australian international aerodromes and their alternates is contained in AIP GEN 1.2 and in Appendix 2 of this report.

2.4 Factors considered

There are a number of considerations when determining the location of MSC-funded TAF services, noting the provision or non-provision of a TAF service impacts a range of stakeholders.

As part of the TAF Review, the following were considered:

- ICAO requirements;
- Australian legislation, including Civil Aviation Safety Regulations (CASR);
- the needs of all sectors of the aviation industry—including international, domestic, regional, general aviation and other operators;
- requirements of agencies such as Airservices, CASA and the Australian Defence Force;
- the needs and requirements of Australian regional communities;
- Bureau policies, procedures, budgets and resources;
- Airservices ARA aircraft movement & passenger figures;
- current provision of TAF;
- climatology of locations—including suitable regular, strategic and alternate aerodromes;
- consultation with aviation meteorologists;
- international best practice, together with an assessment of current and future trends with respect to aviation meteorological forecasting;
- current and future technologies and their impact on the provision and monitoring of a TAF service;
- current and future resource requirements for the Bureau's aviation meteorological forecasting capability;
- current and future quality management requirements; and
- current and future observational resource requirements.

2.5 Assessing MSC-Funded TAF services

A range of factors are considered when assessing the provision of a MSC-funded TAF service, as defined in the Bureau's Aerodrome Forecasts (TAF) Request Procedure[4]. These criteria are contained below.

It should be noted that the criteria and considerations listed below do not automatically qualify a location for a MSC-funded TAF service. For example, an aerodrome may meet passenger and/or aircraft movement thresholds, but not receive a TAF because it is considered to be an industry specific aerodrome as defined in Section 2.5.9.

2.5.1 Requirements of International Aerodromes

ICAO Annex 3 defines the requirements for TAF and the Asia & Pacific Region Air Navigation Plan (APAC eANP) details services provided at Australia's designated international aerodromes. International Designated Airports are documented in AIP GEN 1.2 and given in Appendix 2 of this report.

[4] http://www.bom.gov.au/aviation/data/about-us/Aerodrome_Forecast_Request_Procedure.pdf

2.5.2 Passenger and Movement thresholds

The levels of activity, in terms of the number of aircraft movements and/or passenger numbers, are taken into consideration. Aircraft movements are defined as inter aerodrome flights and generally excludes training flights, circuits, touch and go, overshoots and unsuccessful approaches by locally based aircraft.

An initial assessment of annual aerodrome aircraft movements and passenger numbers was conducted using ARA data. Table 1Table 1 shows the thresholds for initial TAF categorisation.

Table 1 - TAF categories

Category	Passengers (annual)	Movements* (annual)
International designated aerodromes[5] (A)	Not Applicable	Not Applicable
Large (B)	>150 000	>75 000
Medium (C)	50 001 – 150 000	10 001 – 75 000
Small (D)	10 000 – 50 000	4 000 – 10 000

* excluding training flights, circuits, touch and go, overshoots and unsuccessful approaches by locally based aircraft

2.5.3 Network Considerations

It is recognised that the aviation community is dependent on a national network of TAF services to traverse our large country. As a result, some TAF services may be classified as Category C or D aerodromes to maintain a national network of TAF services.

2.5.4 Aerodrome Infrastructure

Consideration is given to an aerodrome's infrastructure such as availability of navigation aids and aviation fuel.

2.5.5 Proximity to Alternate Aerodromes

Where a Category C or D TAF is located within 60 nautical miles (approx. 110km) of another TAF, the need for the Category C or D TAF should be reviewed. Typically, only one of the TAFs will be maintained, taking into consideration other factors. Aircraft flying within the region can therefore use the aerodrome with the retained TAF as the alternate aerodrome.

2.5.6 Complexity of the Climatology

Some aerodromes may be considered for a TAF service due to their unique or complex climatology when compared to the surrounding TAF services.

[5] International Designated Airports as defined in AIP GEN 1.2

2.5.7 Observational Requirements

In order to produce a TAF and maintain an appropriate meteorological watch of the TAF during its validity period, aviation meteorologists must be able to access quality meteorological data from a range of information sources. A primary information source is surface observations at the aerodrome, which are provided by an Automatic Weather Station (AWS). Surface observations provided by AWS at an aerodrome must be approved by the Bureau.

The provision of TAFs is subject to minimum observational requirements, based on the requirements defined by ICAO, which are outlined in Appendix 6.

2.5.8 Investment

Consideration is given to aviation-related infrastructure and services investment previously made by Commonwealth and State Governments in specific aerodromes and routes.

2.5.9 Industry Specific Aerodromes

Where the provision of a TAF is warranted by the passenger or movement number, but is for an aerodrome that exists primarily for services to an individual industry rather than the general community (e.g. does not offer regular publicly accessible services), such as mining sites, oil rigs or similar locations, a TAF service will not be funded by the MSC but can be provided by the Bureau on a user-funded basis.

2.5.10 Defence Aerodromes

TAFs are provided to meet the needs of Defence.

3 Assessment of TAF Services

3.1 Assessment

Airservices, CASA, DOITCRD and the Bureau have undertaken the TAF Review to determine where TAF services should be provided based on a threshold assessment of individual locations against aviation activity criteria (movement and passenger numbers). The agencies have considered all feedback received and the factors outlined in Section 2.5 to assess whether the TAF services funded through the MSC should be retained, reinstated, increased, decreased or ceased.

Several submissions raised concerns about the impact, of proposed reduction or cessation of TAF services at aerodromes, on medical emergency flights and search and rescue operations. The TAF Review Working Group and TAF Review Executive Committee determined that the Bureau recognises the high importance and requirements of emergency operations, and has demonstrated that TAF services can be requested by approved emergency users (i.e. medical, search and rescue, firefighting services, etc) when required.

Following this consultation process it has been determined that Derby, Richmond, Moomba and Telfer, which were originally proposed to either cease or receive a reduced TAF services, will retain their existing services for the reasons specified in Table 2Table 2.

Table 2 – Maintain existing MSC-Funded TAF services

Aerodrome Name	ICAO ID	State	Rationale
Derby	YDBY	WA	TAF network requirement as alternate to Broome
Richmond (NSW)	YSRI	NSW	TAF 24h validity required to support international long-haul military flights
Moomba	YOOM	SA	TAF network requirement to support safe and efficient flights in south-west Queensland and north-east South Australia
Telfer	YTEF	WA	TAF network requirement to support safe and efficient flights in inland northern WA

The review determined that the TAF services at 189 aerodromes shall remain unchanged.

3.2 Changes to MSC-Funded TAF services

This review determined that the following changes be made to the MSC-funded TAF services.

3.2.1 Reinstatement of MSC-Funded TAF Services

An MSC-funded TAF service will be reinstated at the following aerodromes which were ceased in 2015 as recommended by the previous TAF Review.

Table 3 - Reinstated MSC-Funded TAF services

Aerodrome Name	ICAO ID	State	Rationale
Naracoorte	YNCR	SA	Demonstrated aviation industry requirement
Temora	YTEM	NSW	Demonstrated aviation industry requirement

Refer to Appendix 1 for new TAF category and hours of TAF coverage.

The following aerodrome applied to have their TAF service reinstated through MSC funding, however data indicates that the aerodrome is an industry specific aerodrome. As such, the review decided not to reinstate the MSC-funded TAF service and that a user-funded TAF service could be provided if the service is required.

Table 4 – Unsuccessful requests for the reinstatement of an MSC-funded TAF service

Aerodrome Name	ICAO ID	State	Rationale
Laverton	YLVT	WA	Assessed as an industry specific aerodrome*

* Industry specific aerodrome (Refer to section 2.5.9)

3.2.2 Increase to MSC-Funded TAF Services

The following aerodromes will have the MSC-funded TAF services increased. See Appendix 1 for new TAF category and hours.

Table 5 – Increase to MSC-funded TAF services

Aerodrome Name	ICAO ID	State	Rationale
Brisbane West Wellcamp	YBWW	QLD	International Designated Aerodrome
Busselton	YBLN	WA	International Designated Aerodrome
Halls Creek	YHLC	WA	National TAF Network Strategic Requirement

An operator requested, through the consultation process, for the category of the Armidale MSC-funded TAF service to be increased, however, aerodrome usage does not support a need to increase the TAF category. As such the review decided not to make any change.

Table 6 – Unsuccessful request for increase to MSC-Funded TAF services

Aerodrome Name	ICAO ID	State	Rationale
Armidale	YARM	NSW	Aerodrome usage does not support a higher TAF category

3.2.3 Reduction to MSC-Funded TAF Services

The following aerodromes will have the MSC-funded TAF service reduced. See Appendix 1 for new TAF category and hours.

Table 7 - Reduced MSC-Funded TAF services

Aerodrome Name	ICAO ID	State	Rationale
Cooma	YCOM	NSW	Aerodrome usage does not support a higher TAF category
Flinders Is	YFLI	TAS	Aerodrome usage does not support a higher TAF category
St Helens	YSTH	TAS	Aerodrome usage does not support a higher TAF category
Taree	YTRE	NSW	Aerodrome usage does not support a higher TAF category

3.2.4 Cessation of MSC-Funded TAF Services

MSC-funding of TAF services will cease at the following aerodromes.

Table 8 – Ceased MSC-Funded TAF services

Aerodrome Name	ICAO ID	State	Rationale
Argyle	YARG	WA	Industry specific aerodrome*
Ballera	YLLE	QLD	Industry specific aerodrome*
Barrow Is	YBWX	WA	Industry specific aerodrome*
Clermont	YCMT	QLD	Aerodrome usage does not support a TAF service
Leinster	YLST	WA	Industry specific aerodrome*
Rottnest Is	YRTI	WA	Aerodrome in close proximity to Perth and Jandakot aerodromes. Current observation site is not representative of aerodrome.
The Granites	YTGT	NT	Industry specific aerodrome*
The Monument	YTMO	QLD	Industry specific aerodrome*
Trepell	YTEE	QLD	Industry specific aerodrome*

* Industry specific aerodrome (Refer to section 2.5.9)

3.3 Impact of ceasing and reducing MSC-funded TAF services

The operation of aviation services into an aerodrome is not dependent on the availability of a TAF for that location, with many aerodromes across Australia operating safely without a TAF. However, flights to destinations with a prescribed instrument approach procedure and without a TAF may be required to carry sufficient fuel to allow them to divert to a suitable

alternate (with a TAF). If the destination aerodrome does not have a prescribed instrument approach procedure, the weather assessment requirement can be based upon the appropriate GAF[6].

The Review recognises that in some cases where the MSC-funding for a TAF service ceases, users may still require a TAF service at these aerodromes, particularly at industry specific aerodromes. Where this is the case, a TAF service can be provided by the Bureau, funded by the aerodrome owner or operator. Details for obtaining a user-funded TAF service can be found in the Bureau's Aerodrome Forecast Request Procedure[7] documentation on the Bureau's Aviation web site.

During emergency situations, e.g. medical, search and rescue, firefighting services etc, a TAF can be requested by approved emergency users. The Bureau recognises the high importance and requirements of emergency operations and has demonstrated from the previous review that additional issues of a TAF or an extension of the TAF validity period can be requested by approved emergency users when required.

Pilots will also retain access to other meteorological forecasts such as GAF, SIGMET, Area QNH and observations such as METAR/SPECI and Automatic Weather Information Services (AWIS) to support flight planning.

If the MSC-funded TAF service ceases at an aerodrome, the existing weather observation instrumentation (Automatic Weather Station (AWS) and/or Aerodrome Weather Information Service (AWIS)) will not be removed unless these are deemed not representative of the aerodrome.

[6] AIP Enroute (ENR) 1.10, 1.2.1

[7] http://www.bom.gov.au/aviation/data/about-us/Aerodrome_Forecast_Request_Procedure.pdf

4 TAF Validity Times

4.1 Validity time specifications

ICAO Annex 3 recommends that "…the period of validity of a routine TAF should be not less than 6 hours and not more than 30 hours; the period of validity should be determined by regional air navigation agreement. Routine TAF valid for less than 12 hours should be issued every 3 hours and those valid for 12 to 30 hours should be issued every 6 hours."

In Australia, a 30-hour TAF is provided for Brisbane, Sydney, Melbourne, Adelaide, Darwin and Perth to assist in flight planning for those aerodromes required by long-haul international operators.

The TAF Review Working Group also noted that some international aerodromes may not have a requirement for each TAF issue to be valid for 24 hours. In such cases an 18-hour validity will suffice.

Recommendation 1:

For International (A) aerodromes, the validity of each routine TAF issue shall be 18, 24 or 30 hours. The TAF validity for an aerodrome will be determined based on demonstrated operational requirements.

Other TAF validity times are determined by the category of aerodrome and the operational needs of industry.

A review of the trend forecast (TTF) at major airports and Defence aerodromes was conducted and resulted in the TTF being replaced with a TAF issued every three hours (TAF3) from 5 November 2020. Further information on this service change, and detailed information about TAF3 services, is available at – TAF3 Implementation webpage[8].

4.2 Standard TAF issue times

The issue and validity times of TAFs are defined in Table 9.

[8] http://www.bom.gov.au/aviation/taf3/

Table 9 - Issue and validity times of TAFs

Category	Aerodrome Type	Issue and validity times
TAF3	Selected aerodromes specified in ERSA and AIP GEN 3.5 paras 3.4.4, 3.4.5, and 3.4.6*	TAF issued 3-hourly, valid for 18, 24 or 30 hours depending on which aerodrome type of TAF category A or B applies to the aerodrome. Commencement times at civil aerodromes: 00, 03, 06, 09, 12, 15, 18 UTC*.
A	International	TAF issued six-hourly, valid for 18, 24 or 30 hours. Commencement times: 00, 06, 12, 18 UTC.
B	Large	TAF issued six-hourly*, valid for 12 or 18 hours. Commencement times: 00, 06, 12, 18 UTC.
C	Medium	TAF issued six-hourly, typically valid for 12 hours. Commencement times 02, 08, 14 and/or 20 UTC, except in Western Australia where commencement times are 04, 10, 16 and/or 22 UTC. Times may be adjusted for daylight saving where applicable.
D	Small	TAF issued six- or 12-hourly, valid for up to 12 hours. Commencement times typically 20 and/or 02 UTC, except in Western Australia where commencement times are typically 22 and/or 04 UTC. Times may be adjusted for daylight saving where applicable.

* A TAF3 service is issued three-hourly Sydney, Melbourne, Brisbane, Perth, Adelaide, Cairns, Canberra, Darwin, Gold Coast and Hobart.

Additionally, TAF3 services are provided at the following military bases when staffed by Defence decision support meteorologists: Williamtown, Nowra, Tindal, Oakey, Townsville, Pearce, Amberley and East Sale.

The validity period for the Category C & D TAF services categorised as user-funded or Defence will be determined by the Bureau's National Manager, Transport Customer Engagement, in consultation with stakeholders.

Category D (Small) TAF locations assessed as requiring a 24-hour TAF service coverage will be re-classified as a Category C (Medium) aerodrome and receive a corresponding service.

TAF services for other locations will only be provided in response to emergency services on a request basis.

5 Next Steps

5.1 Implementation

Implementation of recommendations of this final TAF Review 2021 report will occur with relevant documentation updates, including ERSA and AIP. This is expected to occur on the AIRAC date, 2 December 2021.

Where the Review is recommending the TAF to be user-funded, prior to the implementation date, the Bureau will work with the aerodrome operators to continue the TAF services on a user-funded basis (if required) to minimise any disruption to the TAF service and aircraft operators at these aerodromes.

5.2 New Equipment

As part of its capital works programme, the Bureau will be installing automated observation equipment at MSC-funded TAF aerodromes where the TAF Review has identified a short-coming. Most of this equipment is expected to be installed by the end of 2024. However, delays may occur if there are difficulties in obtaining reasonable cost leases or where there is a lack of supporting infrastructure.

5.3 Post Implementation Review

As agreed in the previous TAF Review, a post-implementation review of any changes made as a result of the TAF Review will be conducted one year after the implementation of the TAF Review recommendations.

5.4 Next Review

The Bureau plans to initiate a full review of all MSC-funded TAF services three years after the implementation of the TAF Review 2021. If a change to a TAF service at an individual aerodrome is required prior to the next review, any proposed changes to the categorisation and service will be discussed and a decision made at a Bureau-Aviation Industry Services Working Group meeting.

Appendix 1: Table of recommended TAF services

Unless otherwise indicated by “User-funded” or “Defence”, all services are MSC-funded.

Aerodromes indicated as “Industry Specific” will be offered a user-funded TAF service by the Bureau.

Table 10 - Table of TAF services

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Adelaide	YPAD	SA	A	No change	Maintain		International Aerodrome
Albany	YABA	WA	C	No change	Maintain		
Albury	YMAY	NSW	B	No change	Maintain		
Alice Springs	YBAS	NT	A	No change	Maintain		International Aerodrome
Amberley	YAMB	QLD	B	No change	Maintain		Defence Aerodrome
Archerfield	YBAF	QLD	B	No change	Maintain		
Argyle	YARG	WA	-	-	Cancel		Industry Specific
Armidale	YARM	NSW	C	No change	Maintain		
Avalon	YMAV	VIC	A	No change	Maintain		International Aerodrome
Ayers Rock	YAYE	NT	B	No change	Maintain		
Bairnsdale	YBNS	VIC	D	No change	Maintain		Partially user-funded
Ballarat	YBLT	VIC	C	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Ballera	YLLE	QLD	-	-	Cancel		Industry Specific
Ballina	YBNA	NSW	B	No change	Maintain		
Bankstown	YSBK	NSW	B	No change	Maintain		
Barimunya	YBRY	WA	C	No change	Maintain		User-funded
Barrow Is	YBWX	WA	-	-	Cancel		Industry Specific
Bathurst	YBTH	NSW	C	No change	Maintain		
Bathurst Is	YBTI	NT	C	No change	Maintain	AWS, C&V	
Bayu Undan	YBYU	WA	D	No change	Maintain		User-funded
Bendigo	YBDG	VIC	C	No change	Maintain		
Birdsville	YBDV	QLD	D	No change	Maintain	C&V	
Boolgeeda	YBGD	WA	C	No change	Maintain		User-funded
Bourke	YBKE	NSW	D	No change	Maintain	C&V	Network
Brisbane	YBBN	QLD	A	No change	Maintain		International Aerodrome
Brisbane West Wellcamp	YBWW	QLD	A	Validity increased to 24 hours	Increase		International Aerodrome
Broken Hill	YBHI	NSW	C	No change	Maintain		
Broome	YBRM	WA	A	No change	Maintain		International Aerodrome

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Bunbury	YBUN	WA	C	No change	Maintain		User-funded
Bundaberg	YBUD	QLD	B	No change	Maintain		
Burketown	YBKT	QLD	D	No change	Maintain		
Busselton	YBLN	WA	A	Validity increased to 24 hours	Increase		International Aerodrome
Cairns	YBCS	QLD	A	No change	Maintain		International Aerodrome
Camden	YSCN	NSW	B	No change	Maintain		
Canberra	YSCB	ACT	A	No change	Maintain		International Aerodrome
Carnarvon	YCAR	WA	D	No change	Maintain		
Ceduna	YCDU	SA	C	No change	Maintain		Increase in movements/passengers
Charleville	YBCV	QLD	C	No change	Maintain		
Chinchilla	YCCA	QLD	C	New user-funded service	-		User-funded
Christmas Creek	YCHK	WA	C	No change	Maintain		User-funded
Christmas Is	YPXM	OTH	A	No change	Maintain		International Aerodrome
Clermont	YCMT	QLD	-	-	Cancel		Below thresholds and in close proximity to Emerald and Moranbah aerodromes
Cloncurry	YCCY	QLD	C	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Cobar	YCBA	NSW	D	No change	Maintain		Network
Cocos (Keeling) Is	YPCC	OTH	A	No change	Maintain		International Aerodrome
Coen	YCOE	QLD	D	No change	Maintain	C&V	
Coffs Harbour	YCFS	NSW	A	No change	Maintain		International Aerodrome
Coober Pedy	YCBP	SA	D	No change	Maintain		
Cooktown	YCKN	QLD	D	No change	Maintain		
Coolangatta	YBCG	QLD	A	No change	Maintain		International Aerodrome
Cooma	YCOM	NSW	D	Decrease to 12 hour TAF	Reduction		TAF issue 20 UTC, 12h validity
Coonabarabran	YCBB	NSW	D	No change	Maintain		Network
Coondewanna	YCWA	WA	C	No change	Maintain		User-funded
Cunderdin	YCUN	WA	D	No change	Maintain		Network
Curtin	YCIN	WA	B	No change	Maintain		Defence Aerodrome
Darwin	YPDN	NT	A	No change	Maintain		International Aerodrome
Derby	YDBY	WA	C	No change	Maintain		Network
Devonport	YDPO	TAS	C	No change	Maintain		
Dubbo	YSDU	NSW	B	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
East Sale	YMES	VIC	B	No change	Maintain		Defence Aerodrome
Edinburgh	YPED	SA	B	No change	Maintain		Defence Aerodrome
Elcho Island	YELD	NT	D	No change	Maintain	C&V	
Eliwana	YEWA	WA	C	New user-funded service	-		User-funded
Emerald	YEML	QLD	B	No change	Maintain		
Ernabella	YERN	SA	D	No change	Maintain	C&V	Network
Esperance	YESP	WA	C	No change	Maintain		
Essendon	YMEN	VIC	B	No change	Maintain		
Fitzroy Crossing	YFTZ	WA	D	No change	Maintain	C&V	Network
Flinders Is	YFLI	TAS	D	Decrease to 12 hour TAF	Reduction		TAF issue 20 UTC, 12h validity
Forrest	YFRT	WA	C	No change	Maintain		Network
Fortescue Dave Forrest	YFDF	WA	C	No change	Maintain		User-funded
Georgetown	YGTN	QLD	D	No change	Maintain		Network
Geraldton	YGEL	WA	A	No change	Maintain		International Aerodrome
Giles	YGLS	WA	D	No change	Maintain		Network
Gladstone	YGLA	QLD	B	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Glen Innes	YGLI	NSW	D	No change	Maintain		Network
Golden Grove	YGGE	WA	C	New user-funded service	-		User-funded
Goulburn	YGLB	NSW	D	No change	Maintain		Network
Gove	YPGV	NT	C	No change	Maintain		
Grafton	YGFN	NSW	D	No change	Maintain		
Griffith	YGTH	NSW	C	No change	Maintain		
Groote Eylandt	YGTE	NT	C	No change	Maintain		
Halls Creek	YHLC	WA	C	Increase to 24 hour TAF coverage	Increase		Network TAF issue 02, 08, 14 and 20 UTC, 12h validity
Hamilton	YHML	VIC	C	No change	Maintain		Network
Hamilton Is	YBHM	QLD	B	No change	Maintain		
Hervey Bay	YHBA	QLD	B	No change	Maintain		
Hobart	YMHB	TAS	A	No change	Maintain		International Aerodrome
Holsworthy	YSHW	NSW	B	No change	Maintain		Defence Aerodrome
Hooker Creek	YHOO	NT	D	No change	Maintain	C&V	Network
Horn Island	YHID	QLD	A	No change	Maintain		International Aerodrome

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Horsham	YHSM	VIC	D	No change	Maintain		
Hughenden	YHUG	QLD	D	No change	Maintain		
Innisfail	YIFL	QLD	D	No change	Maintain		Network
Iron Bridge Mine	YIBO	WA	C	New user-funded service	-		User-funded
Ivanhoe	YIVO	NSW	D	No change	Maintain	C&V	Network
Jabiru	YJAB	NT	D	No change	Maintain		
Jandakot	YPJT	WA	B	No change	Maintain		
Julia Creek	YJLC	QLD	D	No change	Maintain		
Kalgoorlie	YPKG	WA	A	No change	Maintain		International Aerodrome
Karratha	YPKA	WA	B	No change	Maintain		
King Is	YKII	TAS	C	No change	Maintain		
Kingaroy	YKRY	QLD	D	No change	Maintain		User-funded
Kingscote	YKSC	SA	C	No change	Maintain		
Koodaideri	YKDD	WA	C	New user-funded service	-		User-funded
Koolan Island / Koolan Central	YKLC	WA	C	New user-funded service	-		User-funded
Kowanyama	YKOW	QLD	D	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Kununurra	YPKU	WA	C	No change	Maintain		
Latrobe Valley	YLTV	VIC	C	No change	Maintain		Network
Launceston	YMLT	TAS	A	No change	Maintain		International Aerodrome
Learmonth	YPLM	WA	A	No change	Maintain		International Aerodrome
Leigh Creek	YLEC	SA	D	No change	Maintain		Network
Leinster	YLST	WA	-	-	Cancel		Industry Specific
Leonora	YLEO	WA	C	No change	Maintain		
Lismore	YLIS	NSW	C	No change	Maintain		
Lockhart River	YLHR	QLD	D	No change	Maintain		
Lombadina	YLBD	WA	B	No change	Maintain		User-funded
Longreach	YLRE	QLD	C	No change	Maintain		
Lord Howe Is	YLHI	NSW	A	No change	Maintain		International Aerodrome
Mackay	YBMK	QLD	B	No change	Maintain		
Maitland	YMND	NSW	D	No change	Maintain		Network
Mangalore	YMNG	VIC	D	No change	Maintain		
Maningrida	YMGD	NT	D	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Mareeba	YMBA	QLD	D	No change	Maintain		Network
Maryborough (QLD)	YMYB	QLD	D	No change	Maintain		
McArthur River Mine	YMHU	NT	D	No change	Maintain		
Meekatharra	YMEK	WA	C	No change	Maintain		
Melbourne	YMML	VIC	A	No change	Maintain		International Aerodrome
Merimbula	YMER	NSW	C	No change	Maintain		
Mildura	YMIA	VIC	B	No change	Maintain		
Moomba	YOOM	SA	C	No change	Maintain		Network
Moorabbin	YMMB	VIC	B	No change	Maintain		
Moranbah	YMRB	QLD	C	No change	Maintain		
Moree	YMOR	NSW	C	No change	Maintain		
Mornington Is	YMTI	QLD	D	No change	Maintain		
Moruya	YMRY	NSW	C	No change	Maintain		
Mount Gambier	YMTG	SA	C	No change	Maintain		
Mount Isa	YBMA	QLD	B	No change	Maintain		
Mount Magnet	YMOG	WA	D	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Mudgee	YMDG	NSW	D	No change	Maintain		
Murray Bridge	YMBD	SA	D	No change	Maintain		Network
Naracoorte	YNCR	SA	D	Introduce 12 hour TAF service	Reinstate	C&V	Network TAF issue 20 UTC, 12h validity
Narrabri	YNBR	NSW	C	No change	Maintain		
Narrandera	YNAR	NSW	D	No change	Maintain		
Newman	YNWN	WA	B	No change	Maintain		
Ngukurr	YNGU	NT	D	No change	Maintain	C&V	Network
Norfolk Is	YSNF	EXT	A	No change	Maintain		International Aerodrome
Normanton	YNTN	QLD	C	No change	Maintain		
Nowra	YSNW	NSW	B	No change	Maintain		Defence Aerodrome
Oakey	YBOK	QLD	B	No change	Maintain		Defence Aerodrome
Olympic Dam	YOLD	SA	C	No change	Maintain		
Onslow	YOLW	WA	D	No change	Maintain		
Orange	YORG	NSW	C	No change	Maintain		
Paraburdoo	YPBO	WA	B	No change	Maintain		
Parafield	YPPF	SA	B	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Parkes	YPKS	NSW	D	No change	Maintain		
Pearce	YPEA	WA	B	No change	Maintain		Defence Aerodrome
Perth	YPPH	WA	A	No change	Maintain		International Aerodrome
Port Augusta	YPAG	SA	C	No change	Maintain		
Port Hedland	YPPD	WA	A	No change	Maintain		International Aerodrome
Port Keats	YPKT	NT	D	No change	Maintain	C&V	
Port Lincoln	YPLC	SA	B	No change	Maintain		
Port Macquarie	YPMQ	NSW	B	No change	Maintain		
Portland	YPOD	VIC	D	No change	Maintain		
Proserpine	YBPN	QLD	B	No change	Maintain		
Renmark	YREN	SA	D	No change	Maintain		Network
Richmond (NSW)	YSRI	NSW	A	No change	Maintain		International Defence Aerodrome
Richmond (QLD)	YRMD	QLD	D	No change	Maintain		
Rockhampton	YBRK	QLD	A	No change	Maintain		International Aerodrome
Roma	YROM	QLD	C	No change	Maintain		

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Rottnest Is	YRTI	WA	-	-	Cancel		Below thresholds and in close proximity to Perth and Jandakot aerodromes
Scone	YSCO	NSW	D	No change	Maintain		Network
Shark Bay	YSHK	WA	D	No change	Maintain	C&V	Network
Shellharbour (Wollongong)	YSHL	NSW	C	No change	Maintain		
Shepparton	YSHT	VIC	D	No change	Maintain		
Solomon	YSOL	WA	C	No change	Maintain		User-funded
Southern Cross	YSCR	WA	D	No change	Maintain		Network
St George	YSGE	QLD	D	No change	Maintain		
St Helens	YSTH	TAS	D	Decrease to 18 hour TAF coverage	Reduction		Network TAF issue 20 and 02 UTC, 12h validity
Strahan	YSRN	TAS	C	No change	Maintain		Network
Sunshine Coast	YBSU	QLD	A	No change	Maintain		International Aerodrome
Swan Hill	YSWH	VIC	D	No change	Maintain		
Sydney	YSSY	NSW	A	No change	Maintain		International Aerodrome
Tamworth	YSTW	NSW	B	No change	Maintain		
Taree	YTRE	NSW	D	Decrease to 12 hour TAF	Reduction		TAF issue 20 UTC, 12h validity

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Telfer	YTEF	WA	C	No change	Maintain		Network
Temora	YTEM	NSW	D	Introduce 12 hour TAF service	Reinstate	C&V	Network TAF issue 20 UTC, 12h validity
Tennant Creek	YTNK	NT	C	No change	Maintain		
Thangool	YTNG	QLD	D	No change	Maintain		
Thargomindah	YTGM	QLD	D	No change	Maintain		Network
The Granites	YTGT	NT	-	-	Cancel		Industry Specific
The Monument	YTMO	QLD	-	-	Cancel		Industry Specific
Tindal	YPTN	NT	A	No change	Maintain		Defence - International Aerodrome
Toowoomba	YTWB	QLD	C	No change	Maintain		
Townsville	YBTL	QLD	A	No change	Maintain		International Aerodrome
Trepell	YTEE	QLD	-	-	Cancel		Industry Specific
Tropicana	YTRA	WA	C	No change	Maintain		User-funded
Truscott- Mungalalu	YTST	WA	C	No change	Maintain		
Wagga Wagga	YSWG	NSW	B	No change	Maintain		
Walgett	YWLG	NSW	D	No change	Maintain		Network
Wangaratta	YWGT	VIC	D	No change	Maintain		Network

Aerodrome Name	ICAO ID	State	TAF Category	Change to TAF Services	Summary	Observation equipment required	Comments
Warburton	YWBR	WA	D	No change	Maintain	C&V	
Warrnambool	YWBL	VIC	C	No change	Maintain		
Weipa	YBWP	QLD	C	No change	Maintain		
West Angelas	YANG	WA	C	No change	Maintain		User-funded
Whyalla	YWHA	SA	C	No change	Maintain		
Williamtown	YWLM	NSW	A	No change	Maintain		International Aerodrome
Wiluna	YWLU	WA	D	No change	Maintain		
Windorah	YWDH	QLD	D	No change	Maintain		Network
Winton	YWTN	QLD	D	No change	Maintain		
Woomera	YPWR	SA	B	No change	Maintain		Defence Aerodrome
Wynyard	YWYY	TAS	C	No change	Maintain		
Young	YYNG	NSW	D	No change	Maintain		Network
Yuendumu	YYND	NT	D	No change	Maintain	AWS, C&V	Network

Appendix 2: Designated international airports

Extract from AIP GEN 1.2

2.1 Major International Airports

2.1.1 “Major International Airport” means an airport of entry and departure for international air traffic where there is an ongoing border agency presence to conduct all formalities incident to Customs, Immigration and Biosecurity clearance.

Adelaide
Brisbane
Cairns
Darwin
Melbourne
Perth
Sydney

2.2 Restricted Use International Airports

2.2.1 “Restricted Use International Airport” means an airport of entry and departure at which the formalities incident to Customs, immigration, and biosecurity and similar procedures are made available on a restricted basis, to coincide with flights with prior approval only.

2.2.2 Restricted Use International Airports are:

a. Avalon
b. Brisbane West Wellcamp
c. Broome
d. Canberra
e. Coffs Harbour
f. Gold Coast
g. Hobart
h. Learmonth
i. Lord Howe Island
j. Port Hedland
k. Sunshine Coast
l. Townsville
m. Newcastle

2.3 Alternate Airports to International Airports

2.3.1 “Alternate Airport” means an airport specified in the flight plan to which a flight may proceed when it becomes inadvisable to land at the airport of intended landing (see also GEN 1.3 para 6.)

2.3.3 The following designated airports have customs, immigration and biosecurity clearances available if reasonable notification of diversion is given:

a. Canberra
b. Gold Coast
c. Port Hedland
d. Townsville

2.3.4 The following designated airports have customs, immigration and biosecurity services for international arrivals in the event of an emergency/stress:

a. Alice Springs
b. Avalon
c. Busselton Margaret River
d. Coffs Harbour
e. Geraldton
f. Kalgoorlie
g. Launceston
h. Learmonth
i. Rockhampton
j. Tindal

2.4 International Non-Scheduled Flight Airports

2.4.1 “International Non-Scheduled Flight Airport” means an airport at which approval may be granted, provided the prescribed prior notice is given, for international non-scheduled flights only. No other form of international operation is permitted:

Horn Island

2.5 External Territory International Airport

2.5.1 “External Territory International Airport” means an airport of entry and departure for international air traffic located upon an Australian External Territory, where all formalities incident to Immigration, Biosecurity and Territory Customs, and similar procedures are available.

2.5.2 Australian external territory international airports are as follows:

a. Christmas Island
b. Cocos (Keeling) Islands
c. Norfolk Island

Appendix 3: Submission of revised aerodrome data

This form is to be used by an aerodrome owner to provide revised movement and passenger statistics to the Bureau of Meteorology.

This data may be considered by the Bureau in determining whether the aerodrome is entitled to receive a MSC-funded TAF service, based on the criteria defined in the TAF Review. The data you provide will be treated in confidence and for the internal use of the Bureau of Meteorology for the purpose of the TAF Review.

The Bureau will also offer user-funded (cost recovery) TAF services to those aerodromes not meeting the criteria. Such services will incur service charges.

Given the intended use of this submitted data, it is essential that aerodrome owners provide accurate information. Should the Bureau determine that an aerodrome has submitted erroneous data that resulted in the provision of a MSC-funded TAF service at no direct charge, the aerodrome will be required to pay the Bureau all costs incurred to provide this TAF and observational service.

Operators are required to provide accurate information that reflects annual movement numbers and annual passenger numbers for the aerodrome. It is requested that information be provided from the previous calendar year. If data for this period are unavailable, please provide the most suitable data, indicating the period covered and how the data were collected.

The following form is to be completed by the aerodrome's owner, Chief Financial Officer or Chief Executive Officer and submitted to TAFreview@bom.gov.au .

Revised aerodrome data form

Airport details:

Aerodrome name: . . . . . .

Aerodrome ICAO code: . . . . . .

Data:

Intra-aerodrome movement numbers (per annum): . . . . . .

Passenger numbers (per annum): . . . . . .

Metadata:

Are these data for the previous calendar period?

☐ Yes ☐ No

If no, for what period were the data collected? …….

Are the data actual recorded details or estimated?

☐ Actual ☐ Estimated

If estimated, provide specific details of how details were calculated (overleaf if required)

Authorisation:

I certify that the above information is true and correct.

Name of completing officer: . . . . . .

Title: . . . . . .
(Note—only details from CFO or CEO will be accepted)

Signature: . . . . . .

Date: . . . . . .

Appendix 4: Summary of new recommendations

Recommendation 1:

For International (A) aerodromes, the validity of each routine TAF issue shall be 18, 24 or 30 hours. The TAF validity for an aerodrome will be determined based on demonstrated operational requirements.

Appendix 5: Aviation Meteorological Services

Meteorological Authority

Under the Convention for International Civil Aviation (the Chicago Convention) the Bureau of Meteorology (Bureau) is the designated Meteorological Authority for Australia. The Meteorological Authority Office manages this role, on behalf of the Bureau, which is to ensure that meteorological services for civil aviation in Australia are in accordance with the standards and recommended practices set out in Annex 3 to the Convention.

Aviation Meteorological Services

The Bureau's role in providing services for civil aviation is established through the *Meteorology Act 1955*. The Bureau's aviation meteorological services are delivered by the Aviation, Land and Maritime Transport Program and contribute to the safety, efficiency and regularity of national and international aviation operations through the provision of forecasts, warnings and information for aerodromes and en-route operations.

In fulfilling this mandate, the Bureau works closely with Airservices Australia (Airservices), which is Australia's air navigation service provider, and the Civil Aviation Safety Authority (CASA), which is responsible for the safety regulation of civil aviation in Australia.

The Bureau is committed to providing timely and accurate aviation meteorological services that align to international and national requirements, whilst responding to the growing and changing operational and planning needs of the aviation industry.

The Bureau’s aviation meteorological services management function maintains certification under the AS/NZS ISO 9001:2015 Quality Management Standard. Our quality management system ensures rigorous ongoing independent scrutiny of the management and delivery of aviation meteorological services and provides a firm basis for continuous review and improvement to meet industry needs.

The Bureau's aviation meteorological services are provided through its:

- Hazardous Weather Unit (HWU);
- Brisbane and Melbourne Aviation Forecast Centres (AFCs);
- Volcanic Ash Advisory Centre (VAAC); and
- Meteorological Unit at the Airservices Network Coordination Centre (NCC) in Canberra (NCCMET).

The Bureau provides a range of aviation meteorological products and services including TAF. A TAF is a statement of meteorological conditions expected in the airspace within a radius of five nautical miles of the aerodrome reference point for a specific validity period.

Consultation

To ensure continual review, standardisation and improvement of aviation meteorological services, the Bureau participates in a range of national and international stakeholder consultation and coordination processes.

The Bureau is actively involved in a variety of committees, working groups and focus groups with CASA, Airservices, Australian Transport Safety Bureau (ATSB) and the Department of Infrastructure, Transport, Cities and Regional Development (DOITCRD), as well as representatives of international, domestic and regional airlines, general aviation, and other industry groups. This allows the Bureau to develop domestic policies, actively consult with industry on service changes and to guide service improvements.

International consultation and coordination occur via such forums as the World Meteorological Organization Commission (WMO) for Aeronautical Meteorology and working groups, the International Civil Aviation Organization (ICAO) Asia Pacific Air Navigation Planning and Implementation Regional Group, and a number of other ICAO groups. This allows the Bureau to provide expert advice and influence global policy for the Australian and global aviation industry.

Appendix 6: Observational infrastructure

Observational requirements

In order to produce a TAF and maintain an appropriate meteorological watch during the validity period of the TAF, aviation meteorologists must have access to quality meteorological data from a range of information sources. This may include forecast modelling tools, satellite imagery, radar imagery, upper air data, lightning detection equipment, weather cameras, and a range of other sources. However, the primary source of information is provided by surface observations at the aerodrome.

Automatic Weather Stations (AWS), and at some aerodromes in collaboration with aerodrome weather observers, measure surface wind speed and direction, QNH, temperature, dewpoint, precipitation, visibility, cloud amount and height and present weather. In Australia, a routine half hour observation is issued for all TAF locations as a METAR, or non-routinely as a SPECI when certain observational thresholds are met. Both METAR and SPECI observations may be provided by either manual or automatic means.

Adequate aerodrome reports should be available from at least two hours prior to the start of the TAF validity period through to the end of the TAF validity period. A continuous meteorological watch and amendment service is required throughout the period of validity of the TAF.

TAF Observational costs

The Bureau has seen a significant increase in the leasing costs associated with observational equipment at aerodromes. Where the Bureau, in consultation with aerodrome operators, is unable to negotiate access to a suitable location meeting AWS siting requirements at an acceptable cost (based on standard off-aerodrome costs for an automatic weather station), we may need to remove our equipment from the aerodrome and allow the aerodrome to organise its own meteorological observations.

In addition to leasing costs, there are significant costs associated with the purchase and installation of additional equipment defined in the previous sections. The approximate costs of typical equipment installations are:

Table 11 - Typical costs for the purchase and installation of additional equipment

Item	Cost
New Installation (AWS, C & V)	$130K-$300K
Addition of C&V	$100K-$200K

The actual cost per site to upgrade equipment will be reviewed by the Bureau in consultation with industry prior to any decision to progress with the installation of additional equipment. If the upgrade costs are considered excessive, the provision of TAF service will be reviewed.

Appendix 7: Glossary of terms, abbreviations and acronyms

AFC Aviation Forecast Centre
AIRAC Aeronautical Information and Regulation and Control
ATSB Australian Transport Safety Bureau
HWU Hazardous Weather Unit
Bureau Bureau of Meteorology
CASA Civil Aviation Safety Authority
C&V Ceilometer and Visibility meter
Defence Australian Defence Force
DOITCRD Department of Infrastructure, Transport, Cities and Regional Development
ERSA En-Route Supplement
FIR Flight Information Region
GAF Graphical Area Forecast
ICAO International Civil Aviation Organization
MA Meteorological Authority
METAR Meteorological surface report from an aerodrome at a routine time (half-hourly)
MSC Meteorological Service Charge
MSC-funded Aviation meteorological services provided by the Bureau funded by the MSC
NCC Network Coordination Centre
NCCMET Meteorological Unit at the Airservices Network Coordination Centre (NCC)
QNH Brevity code for barometric pressure adjusted to sea level
SIGMET Significant Meteorological information
SPECI A special report of surface meteorological information at an aerodrome issued only when specific criteria are met
Industry Specific aerodrome An aerodrome that exists primarily for services to an individual industry rather than the general community
TAF Aerodrome Forecast
UTC Universal Time Coordinated, Primary time standard for aviation, signified by the letter Z
User-funded Aviation meteorological services provided by the Bureau funded by users of the service
VAAC Volcanic Ash Advisory Centre
WMO World Meteorological Organization