



ONLINE ACTION PLAN

BUREAU OF METEOROLOGY
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Department of the Environment and Heritage

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1 Key Commitments

The Commonwealth Government Online Strategy released in April 2000 by the Office of Government Online, sets out a national approach to meeting the Prime Minister's commitment to making all appropriate government services online by the end of 2001. The strategy includes a Commonwealth agency reporting and planning framework and a set of key online standards and timelines for meeting these.

The Bureau of Meteorology, as an agency within the Department of Environment and Heritage, is required to report twice yearly to the Office of Government Online and to prepare and publish an Online Action Plan which outlines how the Bureau intends to meet its commitment to provide all appropriate services online by 2001.

The Bureau of Meteorology has had an online presence since early 1996 and is already well advanced in online service provision. The internet has become a primary delivery channel for meteorological products and services and the Bureau continues to expand and improve its online service delivery in response to technological developments, changing community expectations and client needs. In its commitment to the Commonwealth Government Online Strategy, the Bureau's emphasis is on ensuring that it meets the key national standards identified in the strategy.

2 About the Bureau of Meteorology

The Bureau of Meteorology is the National Meteorological Authority for Australia, a statutory body reporting to the Parliamentary Secretary to the Minister for the Department of the Environment and Heritage and an agency within the Department of the Environment and Heritage

2.1 Purpose, Mission and Objectives

The purpose of the Bureau of Meteorology is to contribute to Australia's social, economic, environmental and cultural goals through the performance of the functions of a National Meteorological Service in the public interest generally, and in particular:

- for the purposes of the Defence force;
- for the purposes of navigation and shipping and of civil aviation; and
- for the purpose of assisting persons and authorities engaged in primary production, industry, trade and commerce

The Bureau's overall mission is to observe and understand Australia's weather and climate and provide meteorological, hydrological and oceanographic services in support of Australia's needs and international obligations.

The Bureau's overall objective is to meet the needs of all Australians for the meteorological information, understanding and services that are essential for their safety,

security and general well-being, and to ensure that meteorological data and knowledge are effectively applied to Australia's national and international goals.

2.2 Information Technology Environment

The IT infrastructure at the Bureau is typical of a modern National Meteorological and Hydrological Service where the mission is to support weather and hydrological forecasting operations and research into weather and climate. The IT infrastructure includes supercomputing facilities, mid-range UNIX servers and workstations, mass storage facilities, desktop workstations and PCs.

2.2.1 Central Computing Facility and Network

The central computing facility is in Melbourne and comprises supercomputers, a cluster of Unix servers and associated networking and computing support machines. This facility is connected to the rest of the Bureau via a TCP/IP Local Area Network within Head Office and nationally to each Regional Office via a Wide Area Network called Weathernet. This is a private data network using Telstra's Frame Relay service augmented recently with a broadband ATM service between Melbourne and Sydney.

Each Regional Office has its own LAN which includes nodes for a number of remote field offices. Regional Offices house data servers and specialised graphics workstations as part of the Australian Integrated Forecast System (AIFS), in addition to general purpose desktop equipment. Connected to the Bureau's LANs are over 1700 workstations, servers and PCs.

2.2.2 Internet Infrastructure

The Bureau is connected to the World Wide Web through a high capacity internet link for high volume data transfer to outside organisations and the general public. The Bureau operates its public web site using two web servers outside its firewall with a back up server behind the firewall. On occasions, a commercial web hosting service is used to provide a backup mirror site for special projects, such as for the Sydney 2000 Olympic Weather Project.

3 Functions and Services

3.1 Overview

The primary functions and services provided by the Bureau are encapsulated in its four key output groups as follows:

- *Meteorological and Related Data and Products*, including the historical climate record, the description and diagnosis of current meteorological conditions and the products of the Bureau's numerical analysis and other prediction systems.

- *Meteorological and Related Research*, including the findings of:
 - pure research into atmospheric processes and phenomena;
 - strategic research into the mechanisms of Australian weather and climate;
 - applied research and development of the applications of meteorology to national community needs.

- *Meteorological and Related Services*, including:
 - weather services for the community at large and for marine users, civil aviation, defence and primary, secondary and tertiary industry;
 - climate services including climate data, analysis and prediction;
 - consultative services including the provision of meteorological advice and the conduct of special investigations;
 - hydrological services including national water resources assessment, flood warning services and hydrometeorological advisory services.

- *International Meteorological activities*, including:
 - direct contribution to the regular budget activities of the World Meteorological Organization (WMO);
 - multilateral cooperation through the WMO and other components of the international intergovernmental and non-governmental systems;
 - bilateral cooperation with the National Meteorological Services and other meteorological organizations of individual countries.

3.2 Services Audit

An audit of services was conducted in June 2000 as part of the preparation for the first round of agency reporting to the Office of Government Online in July 2000. This audit identified those services suitable for online provision, those services which are already provided online and those services considered unsuitable for provision online. These are itemised in the tables following

To a great extent, those services considered appropriate for online provision are already delivered via the Bureau's public web site. Additions and improvements to these services are ongoing, in response to changing community expectations, evolving client group needs and technological developments.

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4 Specific Services suitable for online provision

4.1 Meteorological and Related Services

Online provision of the services described in the table below involves complex processing and automated delivery of data and products to the Bureau web site from multiple source systems. In many cases, products are delivered to the web in real time. Therefore these services do not fit into the proposed government online service categories (for example simple information provision, information hosting, advisory services or regulatory functions).

SERVICE	DESCRIPTION	KEY CLIENT GROUPS	VOLUME P.A.	ALREADY ONLINE
METEOROLOGICAL SERVICES				
Weather Services	Provision of weather forecasts, warnings, observations, charts, satellite and radar imagery, numerical model output	Media, Defence, Aviation, Marine, Media, Government, Business, General Public, Primary Industry, Community Organisations	500,000 +	95%
Climate Services	Provision of climate analysis and prediction products, standard packaged data products, seasonal outlooks, archived maps, charts and images,	Media, Primary Industry, Government, Business, Tourism, International, General Public	250,000	60%
	SILO Web Site	Rural and Regional Users	-	yes
Hydrological Services	Provision of flood warnings, river height information, standard packaged rainfall analysis and water resources information	Media, Primary Industry, Government (especially local) Business, General Public	150,000	60%
Special Event Met Services	For example, Sydney 2000 Olympic Weather web site	All groups	-	Yes

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4.2 Information Provision

These services provide general information to the public about the Bureau and its activities, and fall into the online service category of simple information provision.

SERVICE	DESCRIPTION	KEY CLIENT GROUPS	VOLUME P.A.	ALREADY ONLINE
INFORMATION PROVISION				
Corporate Information	Annual Report, Charter, Met Act 1955, Service Charter, External Reviews, Corporate Strategy, Organisation Structure, Contacts	All groups	-	Yes
Press Releases/News	Current and past	All groups	200	70%
Service Information	Service Directory, product catalogue, product explanatory material, contacts, service performance information	All groups	-	80%
International Activities	World Meteorological Organization (WMO) information, project information, operational information	WMO, other National Meteorological Services, Government	-	5%
Collaborative Projects with other agencies	Bureau/CSIRO High Performance Communications and Computing Centre Information Bureau/CSIRO Projects		-	Yes
Educational	Educational material on meteorological science including interactive learning modules, lesson plans, index of terms	Primary and Secondary Students, Teachers, General Public	-	Yes
National Meteorological Library Services	Online access to catalogue, research paper abstracts, journals index, other resources	All groups	-	Yes
General Publications	Brochures, Fact Sheets, Leaflets	General Public, Educational	-	50-60%
Public Tenders, Recruitment	Tender documents, lodgement of applications, Positions vacant	Business, Individuals	-	No

4.3 Client Interaction

These services involve collecting information from clients using online forms. In the simplest case forms can be downloaded by the client, filled in and faxed to the Bureau. More complex interaction involves automated processing of the form data, as is the case with web site feedback.

SERVICE	DESCRIPTION	KEY CLIENT GROUPS	VOLUME P.A.	ALREADY ONLINE
CLIENT FEEDBACK				
	Collection of client feedback on online services, redirecting of queries and requests to appropriate service areas, online surveys	All groups	6,000	Yes
SUBSCRIPTION REGISTRATIONS				
	Downloadable forms for ordering subscription services.	Individuals, Business, Primary Industry, Media	150	Yes

5 Online services which would benefit from enhancements

5.1 Weather and Climate Services

The Bureau web site would benefit from restructuring to make client access to key products and supporting information more direct, to provide a stronger geographical focus and to integrate weather, climate and hydrological services more closely.

As part of this upgrade, the corporate appearance, page layout and graphics standards would need to be improved, as would the readability/accessibility of explanatory information on interpreting and understanding meteorological products.

A review and restructure could also facilitate the streamlining of maintenance, approval and validation procedures and the clarification of ownership and accountability issues for key areas of the site.

Any new structure must be flexible enough to allow for additional types of service, transaction and information categories which may be introduced as part of ongoing improvements to the site.

5.1.1 SILO web site for regional and rural users

This web site will be enhanced to integrate weather and climate information, to provide a single entry point for meteorological information for farmers and other regional users.

5.2 *Cost recovery services*

Client access to services and products provided on a cost recovery basis is currently handled by online subscriptions. This involves collection of payment off-line and the provision of password access to one or more packaged products for the agreed duration of the subscription. Subscriptions generally involve the setting up of an Access Agreement between the client and the Bureau of Meteorology. This covers service conditions such as restrictions on secondary distribution and copyright.

This service could be improved in a number of ways:

5.2.1 E-Commerce

The implementation of an e-commerce solution would permit clients to access individual cost recovery products on a “pay per view” basis, instead of committing to the purchase of several months access in advance. As well as improving the service, this would also reduce the costs involved in the manual processing of subscription orders and payments.

The Bureau has conducted a technical trial of e-commerce and is working on putting in place supporting infrastructure, including a product charges database. Any e-commerce solution adopted in the future must be capable of handling large numbers of small individual charges with low overhead costs to the Bureau.

5.2.2 Subscription registration and processing

For those clients who require ongoing subscriptions to online services, improvements could be made to the method of subscription ordering, implementation and payment collection. Currently, clients are able to download an online order form and fax it for processing. The subsequent setting up of passworded access to online products is manual, as is the payment processing. Ideally, clients could submit an online order form which would be processed as part of a subscription processing system, thus reducing the cost of supporting the service and providing faster access for clients.

6 **Specific Services inappropriate for online provision**

6.1 *Advisory services*

The Bureau has a number of advisory services, where information and/or data is provided to clients in response to specific requests. In general, these services are not suitable for online provision due to the requirement for contact and clarification of client needs, the restricted nature of the audience and the highly specialised nature of the information or data being provided. If the demand for a particular set of information or data becomes common, online service provision may then be considered.

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ADVISORY SERVICE	DESCRIPTION	RATIONALE FOR NOT PROVIDING THIS SERVICE ONLINE
Climate Services	Specialised data extractions, compiled data products, delivery of very large datasets	Restricted audience, very large products, complexity of data, security and performance issues.
Hydrological Services	Water Resources assessment activities, PMP and other specialised rainfall studies	Requires contact, limited audience
Consultative Services	Special investigations, field studies, professional advice on meteorology and related oceanography	Limited audience, highly specialised information, requires contact, low volumes compared with other services (450 per annum). Tailored to needs of individual clients.

7 Draft criteria for evaluating online service provision

The Bureau is in the process of developing criteria for assessing whether new services are appropriate for online provision, as part of its service management procedures. The criteria may include the following :

- Level of demand for online provision of the service
- Level of internet uptake by client group
- Expected volume of users
- The extent to which online provision will increase efficiency
- The cost of operating online delivery compared with conventional delivery
- Priority of the service compared with other planned online services
- Potential to integrate service with other, similar online services
- Organisation, sponsorship and accountability for the online service project
- Commitment of service content provider to meeting online standards
- Complexity of processing involved in online delivery
- Robustness of delivery and support arrangements, service levels
- Development and maintenance costs, resource requirements
- Expected life of service.

8 Evaluation and continuous improvement strategies

8.1 Client feedback system

The Bureau of Meteorology encourages online feedback from all users by providing an online input form, accessible from all web pages. The feedback form allows users to select from a number of categories which broadly describe the type of feedback being submitted. This includes the client group, the category of information being commented on, the location of the client and whether the feedback is a criticism, a request, a suggestion, query or approval of the service. The form also provides a free format text

area for the actual content of the feedback. Feedback is processed automatically and directed via email to the appropriate service area which provides a response by email to the client within a few working days.

Feedback data is archived electronically for the purpose of preparing regular performance and feedback statistics, which are published on the intranet. The feedback system permits service areas to monitor user needs and concerns and this information can be used when assessing changes or additions to online services.

8.2 *Web Site Usage Statistics*

Daily, weekly and monthly statistical reports showing web site usage patterns are generated automatically from the web server logs and published immediately on the Bureau intranet in text and graphical form. As well as volume and usage statistics, the reports include rankings of the most popular products, thus allowing fine tuning of the web site to speed client access to these products.

In addition to these generic statistics, the web support group provides more detailed statistics to specific services areas such as Defence, Civil Aviation and Marine services.

8.3 *External Ratings Services*

The Bureau Web Site consistently features in the top five government web sites according to external ratings services such as HitWise™ and A.C. Nielsen eRatings. External ratings services generally use one of two main ratings methodologies, either based on web site access statistics or user panels.

The Bureau recently ordered a subscription to the A.C. Nielsen eRatings™ Audience Measurement Service. This service will provide the Bureau with valuable demographic information about its online clients which will assist greatly with monitoring and future planning for its online services.

8.4 *Client Surveys*

Public offline surveys are also conducted periodically to gauge public opinion of the Bureau's current online services and potential areas for improvement. The next survey is likely to be conducted in early 2001.

8.5 *Independent web site audits*

In late 1998 an independent audit of the Bureau web site was undertaken by an external consultancy group. The terms of reference for the audit included usability, accessibility, consistency, quality, structure and navigational aids. As a result of this a number of improvements were implemented. A further audit is likely to be conducted in early 2001.

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9 Progress towards standards compliance

ISSUE	OGO STANDARD OR GUIDELINE	IMPLEMENTATION REQUIREMENTS	PROGRESS
Information provision	Online Information Service Obligations (OISOS)	New material June 2000 Existing material December 2000	Completed
Metadata	Australian Government Locator Service (AGLS) Metadata Standard	As above	Bureau-specific standards completed, subject thesaurus 80% complete, harvest control list specified, procedures documented. Implementation by December 2000.
Electronic publishing, record-keeping and archiving	Guidelines for Commonwealth Information Published in Electronic Formats	As above	Completed for Public Accountability documents. Investigation required for Met services and other types of information provision.
Accessibility	W3C Web Content Accessibility Guidelines	December 2000	Guidelines incorporated into Bureau web content provider standards. New content checked for accessibility. Existing content checked as part of routine site maintenance.
Authentication	Gatekeeper: A Strategy for Public Key Technology use in Government	Ongoing	Watching brief – not required for BoM transactions at this stage.
Privacy	Guidelines for Federal and ACT Government Web Sites	June 2000	Procedures and systems comply. Draft privacy policy statement prepared.
Security	Australian Communications Security Instructions - 33	Ongoing	Ongoing improvements
Electronic Payments and Electronic Procurement	Commonwealth Electronic Procurement Strategy	Pay suppliers electronically. 90% of purchasing arrangements to be conducted electronically by 2001	75% of payments already conducted electronically. Implementation of SAP 4.6 will enable progress on electronic procurement.

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10 Approaches to overcoming impediments

The following impediments to complying with the above standards and guidelines have been identified.

ISSUE	IMPEDIMENTS	STRATEGY
Staff Resources and Compliance Costs	Current web services staff largely engaged in maintenance role due to volatility and size of Bureau web site. Difficult to meet OGO requirements with existing resources	Procedures are under review and extra IT staff are being trained to undertake some of the operational work to relieve pressure.
Meeting Accessibility Guidelines	<ul style="list-style-type: none"> - Multiple, complex computer applications generate content in real time. - Geographically widespread content providers – difficult to centralise approval - Size and complexity of web site 	<p>Issue guidelines specifically for feeder systems, as well as general content provider guidelines.</p> <p>Tighten checking procedures. Review number of content Promote accessibility guidelines throughout Bureau.</p> <p>Staged checking of web site sections.</p> <p>3rd party review and endorsement.</p>