



Australian Government
Bureau of Meteorology

Water Regulations 2008 — Water Data Transfer Format (WDTF) Versioning and Release Policy

February 2014



Release history

Date	Version	Status	Owner
February 2014	1.0	Final	Standards and Regulations Section regulations@bom.gov.au

Cover photograph by Alison Pouliot

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Foreword

The Bureau of Meteorology administers Part 7 (Water Information) of the Water Regulations 2008 (the regulations). Part 7 sets out details for provision of water information to the Bureau, as required in the *Water Act 2007*. It defines who must give specified water information to the Bureau, and the time and format in which it must be given.

The regulations individually name over 200 organisations that are required to give the Bureau specified water information that is in their possession, custody or control. The Water Data Transfer Format is one of the formats of water information specified in an [Administrative Instrument](#) that is publicly available on the Bureau's website.

The Bureau is conscious that organisations incur costs in order to comply with these requirements. It seeks to minimise the impacts of changes to legislative requirements and foster a cooperative approach with data providers that is transparent and treats data providers equally.

To this end, the Bureau has developed a framework to formalise and communicate a consistent approach to maintaining and developing Part 7 of the regulations. The framework involves a three tiered architecture consisting of principles, policies and procedures.

- **Principles** are high level, strategic and enduring. They represent our values in relation to legislative requirements affecting stakeholder organisations. They frame the strategic development of the underlying policies.
- **Policies** are rules and protocols which are practical in nature and dictate how we will manage particular aspects of the legislative requirements.
- **Procedures** are internal documents that augment the published policies. They contain additional detail relevant to Bureau personnel who are responsible for implementing them.

The Bureau is developing policies and procedures for each of the activities involved in managing the regulations. These activities include:

1. amending the Water Regulations 2008
2. issuing and maintaining the Administrative Instrument
3. maintaining the list of Commercially Sensitive Sites
4. maintaining the Metadata and Contextual Information Requirements
5. maintaining the list of Persons and Classes of Persons
6. versioning and release of the Water Data Transfer Format.

Water Data Transfer Format (WDTF) Versioning and Release Policy

Policy

1. Supported Versions of Water Data Transfer Format:

In November 2013, amendments to the Water Regulations 2008 provided for the Director of Meteorology to specify the format in which water information must be given to the Bureau. An online Administrative Instrument sets out requirements for certain organisations to provide water information in specified formats. From 28 February 2014, some data providers are required to give specified water information to the Bureau in Water Data Transfer Format (WDTF)¹. Over time, the regulations will require more Person Categories to provide their water information in WDTF.

The Administrative Instrument will only specify WDTF versions which are “supported” by the Bureau.

“Supported” means that the Bureau has published the format with an official version number and that the Bureau will provide appropriate tools and help for this version of the format, for example:

- The format itself (e.g. as XML schema)
- Documentation and examples
- A validation service to validate instances of the format
- A “helpdesk” service or equivalent support platform
- Conversion tools (e.g. an Excel to WDTF convertor)
- Vocabulary terms to be used in conjunction with the format

In order to minimise the impact on data providers to keep up with version changes the Bureau commits to support a minimum of **three** versions of WDTF at any one time for the foreseeable future. Data providers may choose to provide data in any of the supported versions which are specified within an Administrative Instrument. For more information please refer to the [Administrative Instrument policy](#).

New versions of WDTF will be published on the Bureau website. Older versions may be flagged as deprecated and/or removed from the website as deemed appropriate by the Bureau. Unofficial versions of the WDTF format that do not originate from the Bureau will not be supported.

¹ <http://www.bom.gov.au/water/standards/wdtf/>

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2. Version Numbering:

The WDTF version numbering policy is based on the three level release pattern defined in Open Geospatial Consortium (OGC) policies². For WDTF the release pattern is defined as follows:

Major release – a significant change (e.g. *Version 2.0 is a major update to Version 1.0*)

Minor release – minor modifications to a previous release (e.g. *Version 2.1 is a minor update to version 2.0*)

Patch release – a correction or bug-fix (e.g. *Version 2.0.1 patches version 2.0*)

A corresponding three level numbering pattern is used:

X.Y.Z (e.g. 2.0.2)

X indicates the Major number.
This number increases with a Major release.

Y indicates the Minor number.
This number increases with a Minor release

Z indicates the Patch number.
This number increases with a Patch release.

It is important to note that only Major and Minor releases count towards the total count of “three supported versions of WDTF at any one time”. Patch releases do not count towards this total of three. Patch releases are considered to be approved fixes to the supported Major or Minor versions.

The different release types are further described in the following sections.

² 2011, Open Geospatial Consortium, Policy Directives for Writing and Publishing OGC Standards: TC Decisions, OGC 06-135r11

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2.1 Characteristics of a Major release

A Major release indicates that there is significant change in scope or structure of the WDTF format.

For example it may contain:

- Changes in data structure, terms and definitions
- Changes in relationships between data structures
- Additional data structures or terms and definitions
- Different rules about how existing data structures should be used

A major release will typically be associated with substantial re-engineering of software tools or data systems.

2.2 Characteristics of a Minor release

A Minor release is an *extension* to another release and will usually only contain small modifications to the release that is being extended. Some modifications to software tools or data systems will be necessary to support the new extensions.

A Minor release can be an update to a Major release e.g. 2.0 >> 2.1 or it can be an update to another Minor release e.g. 2.1 >> 2.2.

A key characteristic of a Minor release is that it is *backwards compatible* with the release it updates. I.e. it does not specify anything that is fundamentally incompatible with the release it updates and it does not remove any specifications that were in the release it updates.

In practice this means that the main purpose of a Minor release is to add new optional elements to an existing release. It cannot remove something that was previously there and it cannot add new mandatory elements.

A minor release may also be used to make items optional when they were previously mandatory. The reverse is not true.

In some circumstances *it may be possible to be less restrictive about the 'type' of an attribute*, for example to permit a value to be any number when previously only integers were permitted.

The practical effect of maintaining backwards compatibility is that any software written to work with a Minor release (e.g. 2.1) will also be able

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to work with earlier releases with the same Major version number (e.g. 2.0) without any significant changes.

For example:

If WDTF 2.0 defines the class 'Example' with two attributes:

Attribute 'a' is of type *string* and is mandatory
Attribute 'b' is of type *integer* and is optional

A Minor release, WDTF 2.1, may:

Make attribute 'a' optional (i.e. be less restrictive than 2.0)
Add more *optional* attributes e.g. 'c' and 'd'
Change the type of attribute 'b' to *number*
(integers are still supported as they are a type of number).

In this example the 2.1 rules do not conflict with the existing rules in 2.0 so any existing data specified according to 2.0 is still valid against 2.1 rules. This Minor release 2.1 is said to be *backwards compatible* with 2.0.

It does not work the other way. E.g. data that is valid according to 2.1 will not necessarily be valid according to 2.0 since the 2.0 format specification has no knowledge of the 2.1 extensions.

In this example WDTF 2.1 may **not**:

Add more *mandatory* attributes e.g. add a mandatory attribute 'c'.
Make attribute 'b' mandatory (i.e. tighten the cardinality from optional).
Change the type of 'a' or 'b' to a type that is incompatible with 2.0.
E.g. may not change 'b' to be a 'decimal'.

Doing any of these things would mean that data specified according to WDTF 2.0 would not be valid according to the 2.1 specification. This means 2.1 would *not* be backwards compatible with 2.0 and it would not meet the requirements of this release policy.

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2.3 Characteristics of a Patch release

Patch releases are considered to be *corrections* to existing Major or Minor versions. A Patch release is used to fix an inaccuracy or error with the data structure or documentation. Since Patch releases are purely to correct errors they do not count towards the three “supported” versions.

For example:

If at a particular time, the Bureau supports the following three versions of WDTF:

Version 2.0
Version 2.1
Version 3.0

A minor correction could be made to version 2.1 which would result in a **Patch version 2.1.1**. The Bureau would then support:

Version 2.0
Version 2.1 **plus** Version 2.1.1
Version 3.0

In exceptional circumstances, such as a serious error, a Patch may result in the deprecation **of the version it patches**.

For example:

If 2.1.1 is released as a Patch to 2.1 and it is decided to deprecate 2.1, in this case the three supported versions would now be:

Version 2.0
Version 2.1.1
Version 3.0

(2.1 has been deprecated by the Patch release.)

3. Frequency of Releases:

New Major or Minor versions will be released no more frequently than annually. In effect this means that data providers shall not be required to adopt a new version of WDTF more often than every three years, provided they move to the newest approved version each time they update. In practice it is anticipated that future releases will occur less frequently than annually as WDTF matures.

Patch releases may be released at any time.

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4. Versioning of Supporting Tools:

Tools that support WDTF e.g. Validation services or conversion tools are not subject to the same versioning policy as the WDTF format. In particular there are no constraints on the frequency of the updates of tools (beyond those implied by the Bureau's commitment to provide supporting tools for each WDTF version).

The version numbering of tools can be independent of the WDTF format version numbering.

Tools will therefore indicate (via documentation) which versions of WDTF they support.

5. Versioning of Vocabularies and Terms in Vocabularies:

Vocabularies and terms in vocabularies may be versioned independently of the WDTF format version and be modified on different timeframes.

Vocabularies and terms in vocabularies will be subject to vocabulary governance rules not defined in this document.

6. Release Policy Exceptions:

While this policy states that the Bureau will support three versions of WDTF the Bureau may in particular circumstances elect to support more than three versions.

7. Schedule for Policy Review:

This policy may be reviewed by the Bureau according to the following schedule:

The policy will be reviewed at least once every three years.

The policy will not be reviewed more frequently than annually.

A review may or may not result in changes to the policy.

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Definitions

WDTF means Water Data Transfer Format

Date of effect

This policy takes effect on 10 February 2014

Review date

This policy is due for review by February 2017

Who is affected?

This policy applies to water information providers affected by the Water Regulations and those in the Bureau who have a role in developing and managing the ingest of data in WDTF.

Rationale

Data providers incur costs to meet format requirements for water information. The Bureau must make judgments and trade-offs between minimising data provider obligations and maximising the utility of the information given.

Contact

For more information on this policy, contact: waterdatasupport@bom.gov.au

Related documents

[Bureau of Meteorology Principles for developing and maintaining Part 7 of the Water Regulations 2008](#)

Bureau of Meteorology policy on amending the Water Regulations 2008 (to be published shortly)

[Bureau of Meteorology Strategic Plan 2010-2015](#)

[Bureau of Meteorology Administrative Instrument Policy](#)

Availability

This policy is published on the Bureau's website at:
<http://www.bom.gov.au/water/regulations/principlesPolicies.shtml>
