



ABSTRACT

The Bureau of Meteorology (BoM) has been given a mandate to develop and maintain an integrated national water information system. To this end over 200 water related industries Australia wide are now required, under Section 126 of the Commonwealth Water Act 2007, to provide data that falls within ten specific categories including flows, groundwater levels, reservoir storage, waterquality, water use, water entitlements and water trades.

THE SOLUTION

The purpose of the system implemented by Western Water and Cromarty is to automate the compliance in accordance with the Water Regulations 2008 for transfer of water data between organisations.

The transfer process matches the Extract, Transform, and Load (ETL) process used in data warehousing which involves:

1. Extracting data from outside sources
2. Transforming the data to fit operational needs
3. Loading data into the end target

The three elements of the Western Water implementation that perform these tasks are respectively:

1. A Citect Historian that collects and stores the tag information from the distributed Western Water Control System
2. The Cromarty developed BoMScout web browser based application that configures the data transfer
3. The Microsoft BizTalk Server which transforms the data to WDTF XML format and sends the XML file to BoM.

TESTIMONIAL

Western Water has worked closely with Cromarty as they have developed this system to deliver key water data collected by our SCADA system to the BoM. From the commencement of project the design was to achieve an efficient process which can be set up and left to deliver excellent inter-organisational data transfer in the background.

Cromarty were selected for their excellent bid and obvious expertise and have continued to impress us with a quality project delivered on time and within budget. BoM assisted with funding for the project in response to a submission by Western Water and as a result, a design that is able to be adapted for use by others was developed. Into the future Western Water sees this product and process being a model for an increased data transfer within the industry, making a wide range of water related data available to many key stakeholders who can use it to assist in optimal management of their use of this vital resource.

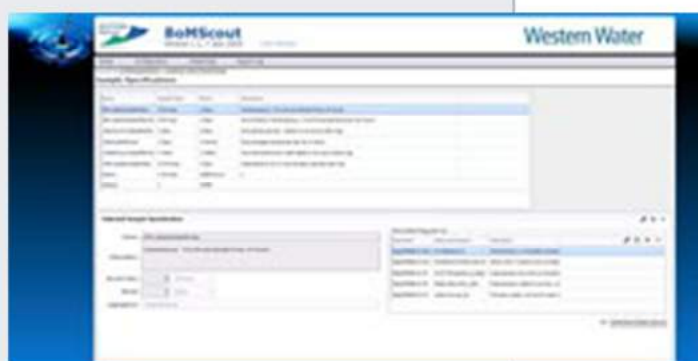
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CITECT HISTORIAN

The Historian is primarily used without engineering modification with the addition of some interface software allowing data to be accessed by the BoMScout solution.

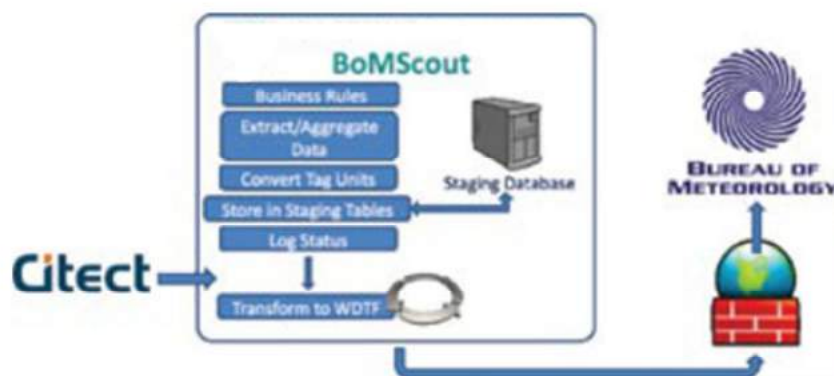
This allowed Western Water to integrate BoMScout with the Historian that was available to them and also allow for a change, should it be required, in the future.



BOMSCOUT

BoMScout is a web-based Graphical User Interface (GUI) for the control of data reporting. This solution can be configured to allow access for local intranet users by local IT administrators. Application access is provided by adding a user's network ID to the BoMScout user groups on the intranet web server.

From this interface the user may select the regulation to which reporting is necessary and the sources from which data is to be read in order to demonstrate compliance with the BoM requirement. Report data may be customised by the user to display the desired engineering units and scheduled to allow for the correct data retrieval and transmission to meet the BoM timing requirement. The use of an intra/internet back end allows users to decide between providing their own equipment for the access of the data or Cromarty to host it online. In Western Water's case the decision was made to provide their own server however the online provision allows for a lower initial outlay should it be required.



BIZTALK

Microsoft BizTalk Server 2009 was configured as a staging database and along with this controlled the inward/outward flow of data. This server is the engine of the system dealing with all of the data retrieval from Citect Historian and the in/out pipeline data flow control. The server is directly controlled by the user inputs that are seen in the BoMScout GUI and is responsible for the aggregation of data and the conversion to the BoM's format (WDTF).

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