Comparison of current Australian Standard with updated ISO standard

Current Australian Standard	**AS 3778.2.1 - 2001**	Measurement of water flow in open channels Part 2.1 General Guidelines for the selection of methods
Updated ISO Standard	**ISO 18365:2013**	Hydrometry – Selection, establishment and operation of a gauging station

High-level comment on differences

The overview is based using the ISO standard as the basis that the Australian standards are reviewed against. The layout of each document differs considerably and has had to be reviewed section by section while ensuring that the intent of the content is matching although the terminology and description differs. Generally, the contents of the Australian Standard AS3778.2.1 – 2001 are covered in the more recently published ISO 18365. The table below highlights areas that I believe should be considered for updating. This could be achieved by adding adopting the ISO standard and adding specific paragraphs.

The more recently released and updated ISO 18365 standard should be adopted as the Australian standard with modifications. It makes sense to combine the two Australian Standards into one. However, extracting the section 3 Principles of Measurement from the old standard and inserting it onto a new combined standard would provide the reader with greater clarity on how to achieve the best measurement results.

The table and associated notes in the ISO 18365 Standard are I believe more clearly laid out and easier to digest.

The review has been challenging as there are two Australian Standards that are covered by the single international standard. Having a single standard is I believe preferable, however it does make it more difficult to ensure that all areas are covered in the more recent ISO standard.

Reviewer recommendation

I recommend that the technical committee

- ***accept the updated ISO in full to combine and replace the two current Australian Standards (AS 3778.2.1 and AS3778.2.2)***

(This recommendation was reached following further discussion with Working Group members)

Certain existing material in the Australian Standards noted in the table below should be incorporated in the WaMSTeC National Industry Guidelines for hydrometric monitoring, possibly *NI GL 100.02 Site Establishment and Operations.*

Detailed summary of differences

The table below outlines in more detail a summary of the differences between the current Australian Standard under review and the relevant updated ISO standard and includes reviewer comment where relevant.

Column 1: Identifies the number and name of the section in the current Australian Standard

Column 2: Classification of the change for that section. Classified as either:

- ***No change** (green shading) – The updated ISO is the same as the current Australian Standard.*
- ***Minor change** (blue shading) – Changes that have minimal impact on the outcome, including*
    - *minor format, style or heading changes*
    - *minor additions, removals or changes to a few words or clauses*
    - *addition or exclusion of more detailed explanation*
    - *very minor changes to steps or processes.*
- ***Significant change** (orange shading) – Changes that have a moderate to major impact on the outcome, such as*
    - *Changes to requirements*
    - *Significant changes to calculations, steps or processes.*

Column 3: More detail to describe the change, and comment from the reviewer (enough detail for the consideration of AHA and WaMSTeC members in their review).

Text colour is used in this column as follows:

- *Black text – More detailed explanation of the changes and reviewer comment. Specific reviewer comment on the changes highlighted in yellow.*
- *Blue text – reference to information included in the updated ISO that is not in the current Australian Standard*
- *Red text – reference to information included in the current Australian Standard that is not in the updated ISO.*

Section (AS section number)	Classification of change AS to ISO	More detail and comment on changes in the updated ISO
Section 5.4.6.3.2 **Nonstandardized measuring structures** **Include sections** **5.4.6.4** **5.4.6.5** **5.4.6.6** **5.4.6.7**		After adopting the ISO standard to the Australian Standard this section should be added.
Section 5.5 Establishment and operation of a stage-fall relation gauging station (two gauges) **5.5.1** **Through to 5.5.5**		After adopting the ISO standard to the Australian Standard this section should be added.
Section 6 Direct discharge-gauging stations through to section 6.2.5		After adopting the ISO standard to the Australian Standard this section should be added.
5.5.3.2 Benchmarks		The ISO standard does not mention benchmarks. BM's are critical to the long term operation of a gauging station and should be installed at establishment.