

VESI Technical Standards Harmonisation Gap Analysis Update

25 September 2019



Gap Analysis Findings

The analysis was based on 190 criteria set out in the following categories:

- *Design Standard – Overall Design*
 - *Design Standard – Detailed Design*
 - *Installation*
 - *Inspection*
-
- In summary
 - 41.4% of the criteria in the DB's standards were the same
 - 39.4% of the criteria were not common across the DB's standards *i.e. In some cases drafting requirements and cable properties are mentioned in other standards not specifically related to URD installations*
 - 10.0% of the criteria in the standards had minor differences *i.e. Cable bending radius & clearances*
 - 6.0% of the criteria in the standards had major difference *i.e. Cable pulling tensions*
 - 3.3% of the criteria in the standards were not applicable *i.e. DB specific processes and DB specific (legacy) cables that are not used by the other DBs*

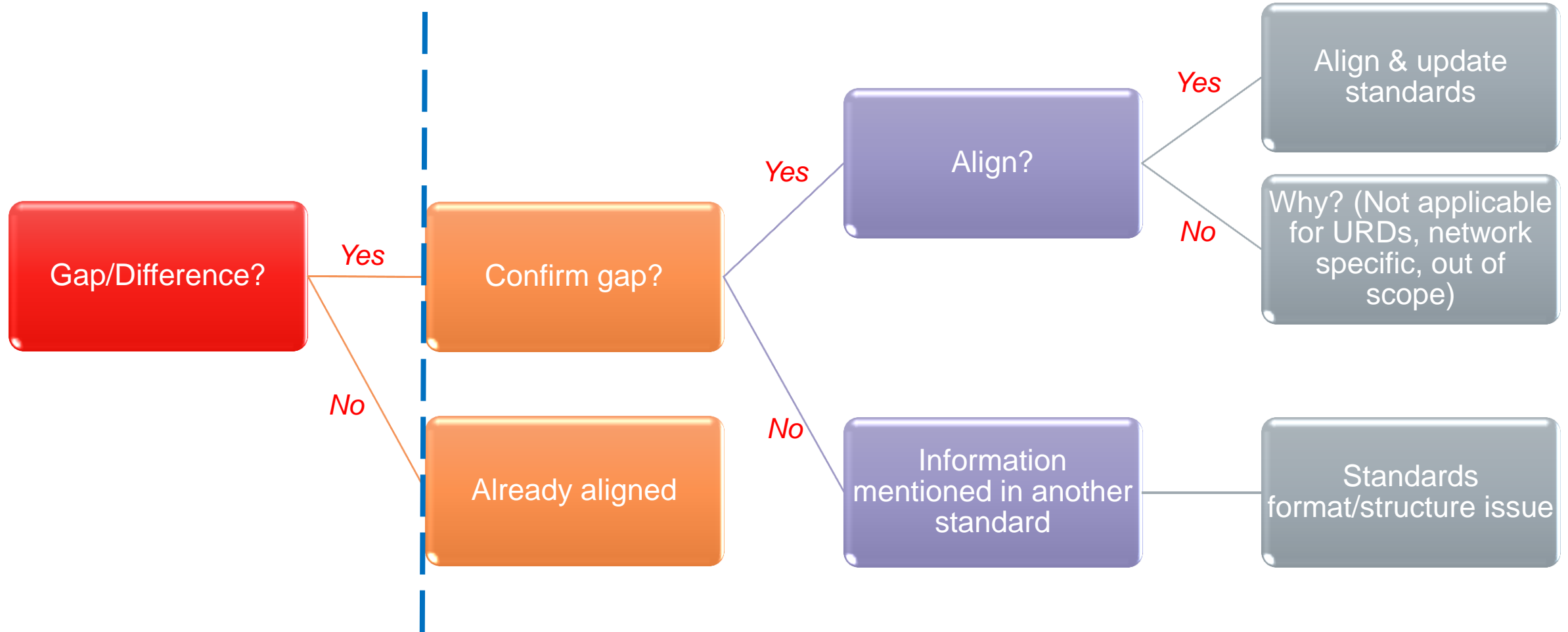
Initial Gap Analysis Review

- From the initial review of the gap analysis report, key alignment opportunities are leading to the following areas:
 - HV and LV joint bay dimensions
 - Installation of service cables
 - Installation of pillars
 - Location of service pits
 - Trenching backfill and installation
 - Horizontal and vertical clearances between assets
 - Cable and conduit bending radius
 - Cable pulling tensions
- Key areas not proposed for alignment:
 - System planning and electrical requirements – as these do not fall within the civil URD requirements.
An example of this is fault level requirements
 - Requirement not applicable to URD installations
An example of this is soil thermal resistivity requirements for 66kV sub-transmission installations
 - Network specific requirements - as these are not required by the majority of DBs & would provide no benefit to URD installations
An example of this is cable turning pits used within the CBD

Analysis Review Methodology

Consultant

Technical Standards Working Group



Gap Analysis Findings Examples

- Gap exists, agree to align
- Information not mentioned in civil URD related standards, but is located in another standards series. i.e. Drafting requirements

Major gap/difference
 Minor gap/difference
 No gap/difference
 Not mentioned

Technical Clauses				Gap Analysis					
Area	Criteria 1	Criteria 2	Criteria 3	United Energy	AusNet	CitiPower	Powercor	Jemena	Alignment agreed
Design Standard	Detailed Design	HV Cable Joints	HV Joint bays are typically 1.5m x 4.0m.	Ok: Doc Number UE GU 2400 Section 4.7	Major: buried heat shrink type. Doc Number 30-4161-03, Section	Minor: Also 200mm deeper than trench Doc Number GC211, Section 6.1	Minor: Also 200mm deeper than trench Doc Number GC211, Section 6.1	Ok: Doc Number JEN MA 0150, Section 14.3.8	Yes
Design Standard	Detailed Design	LV Cable Joints	LV Joint bays are typically 1.2 x 1.8m.	Ok: Doc Number UE GU 2400 Section 4.8	Not mentioned	Minor: Also 200mm deeper than trench Doc Number GC211, Section 6.1	Minor: Also 200mm deeper than trench Doc Number GC211, Section 6.1	Ok: Doc Number JEN MA 0150, Section 14.3.9	Yes
Installations	Trench	Embedment	For TR Non-critical: • Washed sedimentary sand (to AS2758) min 100mm above/below direct buried cables • Natural excavated soil min 50mm above/below conduits	Minor: No specification for conduit. Doc Number UE5/1007 Drawing UE5/1007	Ok: Doc Number 30-4142, Drawing EVX5/1007	Ok: Doc Number GA211, Section 7	Ok: Doc Number GA211, Section 7	Minor: No specification for conduit Doc Number JEN MA 0006, Drawing SP5/1007	Yes
Design Standard	Detailed Design	Cable Proposal Plan	Contains the detailed and dimensioned lay out of the electricity reticulation design including installation requirements.	Ok: Doc Number UE GU 2400 Section 4.2	Not mentioned	Not mentioned	Not mentioned	Ok: Doc Number JEN MA 0150, Section 14.3.3	Information for CitiPower/Powercor & AusNet mentioned in separate drafting standards

Gap Analysis Findings Examples

- Gap exist but no alignment proposed due to clause being related to a network specific requirement or not applicable to URD works

Major gap/difference
 Minor gap/difference
 No gap/difference
 Not mentioned

Technical Clauses				Gap Analysis					
Area	Criteria 1	Criteria 2	Criteria 3	United Energy	AusNet	CitiPower	Powercor	Jemena	Alignment agreed
Design Standard	Detailed Design	UG Manholes - Pits	<ul style="list-style-type: none"> UG systems in Inner Urban CBD areas consist of installation of manholes (pits) for pulling and jointing of cables. Pit design must provide the minimum bending radius required for cable installation and sufficient room for cable jointing's. The height of the pit will depend upon the type of opening, number of layer of conduits and required cover on conduit. Designs for these systems may only be undertaken DNSP personnel. 	Not mentioned	Not mentioned	Ok: Doc Number GA211, Section 13	Ok: Doc Number GA211, Section 13	Not mentioned	No, not applicable for URD

Gap Analysis Findings Examples

- No gap, already aligned

■ Major gap/difference
 ■ Minor gap/difference
 ■ No gap/difference
 ■ Not mentioned

Technical Clauses				Gap Analysis					
Area	Criteria 1	Criteria 2	Criteria 3	United Energy	AusNet	CitiPower	Powercor	Jemena	Alignment agreed
Installations	Trench	Typical Dimensions	Typical Trench for cables: <ul style="list-style-type: none"> • Common trench widths 0.2m ~ 0.9m • Sand above/below cable min 100mm for bedding and screening • Backfill with excavated material (clean and free of impurities and rocks) • Slabs should be 100:50mm above the cable when backfill is complete • Slab overlap cable by > 40mm • Slabs overlap each other by 50mm 	Ok: Doc Number UE5/1007 Drawing UE5/1007	Ok: Doc Number 30-4142, Drawing EVX5/1007	Ok: Doc Number GA211, Section 10	Ok: Doc Number GA211, Section 10	Ok: Doc Number JEN MA 0006, Drawing SP5/1007	No, already aligned
Installations	Service Pits	Conduit	Service Conduits must extend past edge of easements 300mm	Ok: Doc Number UE5/1008/1 Drawing UE5/1008/1	Ok: Doc Number 30-4161-03, Section 11	Ok: Doc Number GA211, Section 11.3	Ok: Doc Number GA211, Section 11.3	Ok: Doc Number JEN MA 0006, Drawing SP5/1008/1	No, already aligned
Installations	Service Pits	Conduit Burial	Service conduit burial depth: 600mm	Ok: Doc Number UE5/1008/1 Drawing UE5/1008/1	Ok: Doc Number 30-4142, Drawing Drawing EVX5/1008/1	Ok: Doc Number GS201, Section Notes	Ok: Doc Number GS201, Section Notes	Ok: Doc Number JEN MA 0006, Drawing SP5/1007	No, already aligned
Installations	LY Cable	Min Bending Radius - Pulling	4C240, AL - 610mm;	Ok: Doc Number UE5/2029 Drawing UE5/2029	Ok: Doc Num 30-4161-03 Section 12.4.3	Ok: Doc Number GC021, Section C	Ok: Doc Number GC021, Section C	Ok: Doc Number JEN MA 0006, Drawing SP5/2029	No, already aligned

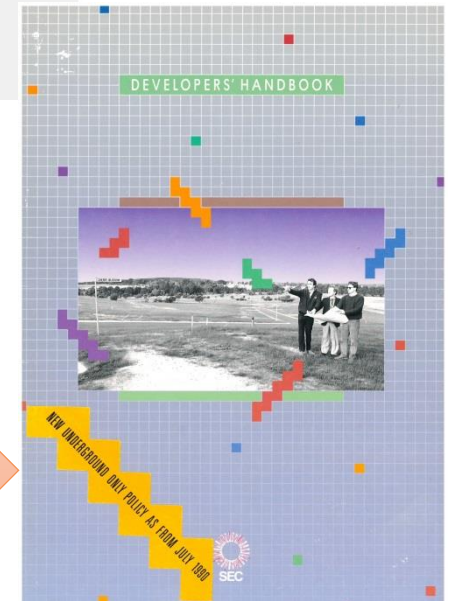
The VESI Technical Standards Working Group will create a single URD Technical Standards document

- As part of the gap analysis review the Technical Standards Working Group has formed the view that a single document which outlines all the common civil design and construction requirements for URD installations would be a benefit to the industry
- The development of this document will be included in the implementation plan and communication strategy outlined in the timeline
- The document will be similar to the previous SEC Developer's Handbook and is proposed to be the overarching URD Technical Standards document that the distribution businesses will refer to in their respective standards. Similar to a Code Of Practice or Australian Standard but specific to Victorian distribution businesses.
- This document will be managed at the VESI level and stored on their website



VESI website

Previous SEC developer's handbook



Next immediate steps

Activity	Due
Share/publish consultant' s gap analysis report	04/10/2019
Complete review of gap analysis report and agree on harmonisation opportunities	11/10/2019
Obtain endorsement of the agreed harmonisation opportunities from the Technical Standards Steering Committee	01/11/2019
Develop an implementation plan and communication strategy for the update of the Technical Standards	22/11/2019