TDWG Deliverable B3: Shared Platform Concept

Statement of Work (DRAFT)

Prepared by: Alectra Utilities
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This document outlines the statement of work (SOW) for Deliverable B3: Shared Platform Concept including descriptions of the deliverable, work packages, timelines, dependencies, and resources for executing the deliverable. This SOW will inform the TDWG workplan to end of 2024.

1. Description of Deliverable

Generally, a shared platform is a cloud-based digital platform that facilitates or coordinates the procurement, trade, scheduling, dispatch and/or settlement of energy or system services between the IESO, LDCs/DSOs and DER Aggregators/Owners (DER(A)).

While a shared platform can serve many functions, the goal of this deliverable is to conceptualize a shared platform that enables Transmission-Distribution (T-D) coordination of distributed energy resources with specific focus on:

1. Defining the platform requirements and functionalities to facilitate optimal system visibility and information sharing across multiple LDCs, IESO and DER owner/aggregators in the context of use cases that involve a T-D coordination component. This could include understanding when DERs are available, which DERs have bid into which service (wholesale/distribution), and when resources are being utilized.
2. Gain insights into other jurisdiction's shared platform solutions regarding functionality, architecture, relevant market design, and accompanying regulatory and ownership structure backdrop. These insights will inform the functionalities outlined in the final deliverable.

In this context, a shared platform can include many functionalities, from registration of DERs all the way to settlements. For the purposes of this deliverable, the functionalities developed will focus on use cases that facilitate DER coordination from a transmission-distribution perspective. For these use cases to operate, inputs from other processes in the DER lifecycle might be required. Inputs required for these use cases will be sourced from existing IESO and LDC/DSO processes rather than being developed within the shared platform.

While the main purpose/benefit of the shared platform outlined here is to facilitate T-D coordination, there exists many benefits that go beyond coordination, including (but not limited) to registration, pre-qualification, dispatching, measurement and verification (M&V) and settlements. It is important to document, at a high level, the additional benefits of a shared platform can serve. A sub-section in Work Package 3 and 4 will include gathering and documenting the various benefits of a shared platform beyond coordination.

The aim of this deliverable is to inform the creation of a shared platform that is highly configurable. As such, the platform will be based on a universal approach that would accommodate not only the two bookend coordination protocols defined by the TDWG, but also provide flexibility that will future-proof the platform to enable it to be adaptable to the changing market rules and coordination requirements in Ontario as the sector evolves.

Due to the integral nature of this deliverable, there exists significant interdependencies between the shared platform and all the other deliverables. As such, it is imperative that these interdependencies are clearly defined and collaboration mechanisms established.

The guiding principles for the requirements and functionalities of shared platform could potentially include (but not limited to) considerations on the following aspects:

- The functionality identified within this deliverable will be developed from a technology/vendor agnostic point of view.
- A single interface for T/D coordination, facilitated through information sharing across all parties
- The conceptual shared platform will be framework agnostic. The platform will borrow and be built on the fundamental principles from TDWG Deliverable A and DER Scenarios and Modeling Study and will have its own set of coordination protocols. Alectra and the sub-group members will collaborate to document the protocols for the shared platform as part of this deliverables work package.
- The shared platform will also contemplate tri-party coordination i.e., coordination between the IESO, host LDC and embedded LDC. This is to ensure that all parties are consulted on critical actions from the DER perspective that can have an impact on their respective grids.
- Alignment with the functional assessment deliverable outlined in Deliverable B1, and if the functions needed for the IESO/LDCs aligns with the functions needed to enable a shared platform concept
- Alignment with Deliverable B4 - Communication Assessment

Furthermore, this deliverable builds upon the foundational work outlined in the 2020 ICF-IESO Whitepaper, which recommends the creation of a shared platform for IESO, LDCs, and DER providers, aimed at centralizing market and operational coordination, as a means to enhance Ontario's energy ecosystem.

Lastly, this deliverable will also leverage similar solutions in other jurisdictions, that include, but are not limited to:

- GOPACS: GOPACS is the coordination platform for Dutch grid operators that acts as an intermediary between the needs of network operators and markets, paired with the marketplace platform ETPA
- INTERRFACE: The Interrface project used the IEGSA platform to facilitate competition between energy markets by linking wholesale, retail, balancing and new congestion management markets. In piloting external Market Operator (NordPool) and flexibility service providers (Fusebox, Kapacity.io) were engaged.
- IBM-Ofgem: Ofgem (electricity regulator in the UK) commissioned IBM to investigate the potential role for a System-wide Flexibility Exchange (SFE). A SFE platform could facilitate the interaction between flexibility service providers (FSPs) and market operators (MOs) through data exchange.

2. Lead & Sub-Groups

- Lead organization
    - Alectra will lead the B3 – Shared Platform deliverable, for final conceptual platform deliverables to be completed by Q4 2024
- Sub-group members – the following members have expressed interest to support on this deliverable:
    - Hydro One
    - IESO
- Consultants – this is under consideration. Consultants will be included as needed, and subject to funding availabilities
    - Technical consultant
        - An energy consultant might be brought on as a subject matter expert, with experience in shared platforms
    - Legal/regulatory consultant
        - Under the "Key Considerations" work package, the lead might bring on a legal/regulatory consultant to provide regulatory perspectives on the functionalities and data requirements identified in the shared platform deliverable.

Regular collaboration between Alectra, sub-group contributors, IESO and other TDWG leads will be facilitated through the following processes:

Communication description	**Frequency**	**Organization**	**Communication type**	**Initiative responsible**
Regular Status update	Weekly	Alectra – to sub-group members	Email update	Alectra
Sub-group meeting	Bi-weekly	Alectra, HydroOne	Virtual meeting	Alectra
TDWG Deliverables Team meeting	Monthly	Alectra, Toronto Hydro, HydroOne, IESO, Essex, EDA, etc.	Virtual meeting	IESO
TDWG - All	Quarterly	All participants at TDWG	Virtual, in-person, or hybrid meeting	All

3. Work Packages

The deliverable will be broken down into work packages with distinct activities and sub-deliverables as outlined in Table 1 below. The description of the work packages should provide details of purpose, activities, approaches, and the expected outputs. The table also identifies the responsibilities and roles (including specialized subject matter expertise) of the deliverable lead or any sub-group members for executing the work packages.

Table 1: Work packages descriptions and roles/responsibilities

No	Name	Detailed Description	Roles & Responsibilities	Outputs
1	Statement of Work Development	With feedback from sub-group, Deliverables Team and TDWG member group, finalize the shared platform statement of work, in terms of objectives and expected outcomes	Alectra to draft scope and seek feedback from sub-group + Deliverables Team + TDWG group	Final Statement of Work (SOW) document
2	Market Intel/Research	Conduct a jurisdictional scan of similar platforms in other jurisdictions. The focus of the jurisdictional scan will be to map out specific business functionalities that drive shared platforms across the globe (available in the public domain), and technical functionalities that enable optimal DER usage through information sharing for all parties involved. Can also include a cost component (to feed into work package 7)	Potential engagement with technical consultant to lead research work and inform TDWG; Feedback from sub-group on relevant models. Alectra to bring key feedback to the Deliverables Team and TDWG	Presentation deck
3	Workshops: Business, Functional and Technical Requirements,	Conduct in-depth requirement gathering workshops with sub-group to document business, functional and technical requirements. The functionality identified within this deliverable will be developed	Alectra to lead requirements gathering workshops to solicit feedback from TDWG participants to capture	Detailed documentation from the workshops (Word document)

	Benefits beyond coordination, Integration Requirements	from a technology/vendor agnostic point of view. Benefits beyond coordination: Document other benefits of shared platform such as functions and processes identified during document business, functional and technical requirements that go beyond coordination. Integration Requirements: Work with sub-group and the IESO to identify what system inputs (through data exchange, API connections etc.) are required from the shared platform, and what system outputs will feed into existing systems for the LDCs and IESO.	business requirements. Technical consultant to support, as required.	
4	Requirements Documentation and Analysis	Based on the requirements gathering workshops, all data to be consolidated to build out detailed requirement documentation specific for a shared platform	Alectra will lead documentation with inputs from sub-group and IESO for this work package.	Document and/or Presentation Deck
5	Key Considerations	Outline key considerations in the following area:	Alectra to lead, with inputs from sub-groups and	Document and/or Presentation Deck

		1) Regulatory considerations: Clearly defined roles and responsibilities; regulatory requirements for shared platform 2) Ownership structure	potential external consultants: Energy consultant support to ensure all LDCs are represented; Legal consultant to contribute to regulatory considerations	
6	Implementation and Costing (Scalability Plan)	Outline a high-level plan for implementation of the conceptual shared platform. Outline tools, processes and resources required for scalability, including a range of expected costs/budget, utilizing publicly available information for similar solutions. The implementation plan ensures that the platform is highly configurable, provides flexibility for future-proof and is adaptable for changing market rules and coordination requirements.	Alectra to lead, with inputs from sub-group, IESO and broader TDWG	Document and/or Presentation Deck
7	Draft complete memo + Q&A appendix	A complete draft memorandum will be provided, including an appendix containing a feedback and response document, summarizing the feedback received from the TDWG throughout the development of the deliverable.	Alectra to lead	Document and/or Presentation Deck
8	Final complete memo	Final memorandum, reflecting final TDWG feedback, and with IESO cover letter prepended.	Allow IESO, sub-commitees and TDWG group to provide feedback	Document and/or Presentation Deck

4. Timelines, Dependencies, Resources and Other Specifics

Table 2 outlines the expected timeframe for each of the work packages described above. It also details dependencies, resources, and other specifics for each work package.

Table 2: Work package expected timeline, dependencies, resources, and other specifics

No	Name	Expected Timeline	Dependencies	Resources	Other Specifics
1	Statement of Work Development	Oct – Nov 2023	n/a	1.5 FTE Alectra Resources 0.15 FTE Sub-Group Resource	
2	Market Intel/Research	Nov – Mar 2024	n/a	1.5 FTE Alectra Resources 0.15 FTE Sub-Group Resource Consultant engagement, as required	
3	Workshops: Business, Functional and Technical Requirements, Benefits beyond coordination, Integration Requirements	Apr – June 2024	A - Coordination Protocols B1 – Functional Assessment B2 - Communication Assessment B4 – Architecture Assessment Mitigation strategies – proactively involve and take part in A, B1, B2, B4 sub-group discussions to understand impact on business, functional and technical requirements	1.5 FTE Alectra Resources 0.15 FTE Sub-Group Resource Consultant engagement, as required	Set up workshops to solicit feedback from broader TDWG.

4	Requirements Documentation and Analysis	July –Sept 2024	B1 - Functional Assessment B2 – Communication Assessment B4 - Architecture Assessment	1.5 FTE Alectra Resources 0.15 FTE Sub-Group Resource	
5	Key Considerations	July – Sept2024	Alignment with the below deliverables. Dependies could post workshops B1 – Functional Assessment B4 – Architecture Assessment	1.5 FTE Alectra Resources 0.15 FTE Sub-Group Resource Consultant engagement, as required	
6	Implementation and Costing (Scalability Plan)	Aug – Nov 2024	A - Coordination Protocols B1 – Functional Assessment B2 - Communication Assessment B4 – Architecture Assessment	1.5 FTE Alectra Resources 0.15 FTE Sub-Group Resource	
7	Draft complete memo + Q&A appendix	Nov 2024	A - Coordination Protocols B1 – Functional Assessment B2 - Communication Assessment B4 – Architecture Assessment	1.5 FTE Alectra Resources 0.15 FTE Sub-Group Resource	
8	Final complete memo	Dec 2024	A - Coordination Protocols B1 – Functional Assessment B2 - Communication Assessment B4 – Architecture Assessment	1.5 FTE Alectra Resources 0.15 FTE Sub-Group Resource	This work package is to allow time to incorporate feedback provided on the draft memo