



**OPENING UP  
THE SMART GRID**

OpenLV Business & Academia  
Trial Participant  
**MEMORANDUM OF  
UNDERSTANDING TEMPLATE**



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## **1 Introduction**

### **1.1 Background**

OpenLV is an Ofgem Network Innovation Competition (NIC) Project, managed on behalf of WPD by EA Technology. OpenLV aims to trial and demonstrate an open, flexible platform, the Low Voltage Common Application Platform (LV-CAP™) that could ultimately be deployed to every LV substation in Great Britain, replacing a wide range of proprietary systems that deliver a variety of highly specialised substation management solutions with a single piece of hardware that could run a range of different substation management software applications.

### **1.2 Document Purpose**

The purpose of this Memorandum of Understanding (MoU) is to provide a template to be used to define the relationship between EA Technology and each Business & Academia trial Participant.

### **1.3 Reference Documents**

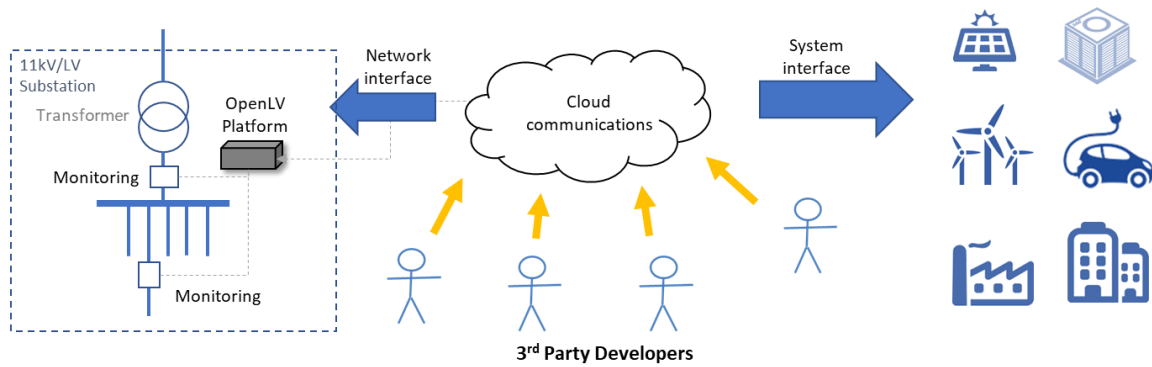
The following documents provide further information regarding the overall OpenLV Project and the Business & Academia trials:

- **Bid Document:** The OpenLV Bid document provides an overview of the overall Project [Ref. 1];
- **Business & Academia Trial Leaflet:** This leaflet provides a high-level overview of the Business & Academia trials [Ref. 2];
- **Business & Academia Trial Application Form:** This form enables 3<sup>rd</sup> parties to apply to EA Technology to participate in the Business & Academia trials Ref. 3];
- **OpenLV Measurement Points Document:** This document provides an overview of the data that will be collected and made available to trial participants Ref. 4];
- **OpenLV Public Application Programming Interface (API):** This document provides information on how trial applicants can develop software applications to be deployed on the OpenLV platform that runs the LV-CAP™ operating system; and
- **OpenLV Developer Guide:** Provides further information on how trial applicants can develop software applications to be deployed on the OpenLV platform that runs the LV-CAP™ operating system.

All the above documents can be found here: [Business & Academia Trial Documentation](#).

### **1.4 Business and Academia Trials**

Figure 1 provides an overview of the systems architecture that will be deployed to complete the OpenLV Business and Academia project trials. As part of the trials, Trial Participants will either make use of the LV network data provided by the OpenLV Platform, and/or develop and deploy 'apps' to provide benefits for organisations including but not exclusive to DNOs, renewables developers, customers (including householders, industrial or commercial) commercial organisations, other sectors of the electricity industry and government. In total 10 OpenLV platforms running the LV-CAP™ operating system have been made available to Trial Participants.



What

- To enable companies to develop innovative algorithms and applications for either the DNO, or it's customers

How

- Publicise the opportunity to 3<sup>rd</sup> parties
- Make available standard App 'container' for third parties to use for their development
- Make available 10 LV-CAP™ devices for substation deployment
- Funding to develop specific Apps to be raised outside of the project budget, e.g. private sector

**Figure 1: OpenLV Business & Academia Trial Infrastructure**

## 2 Memorandum of Understanding

Each Party agrees as follows:

### 2.1 Definitions & Interpretation

- **Confidential Information:** Information of commercial value, in whatever form or medium, disclosed by one Party (or any of its affiliates) to the other Party (or any of its affiliates), including commercial or technical know-how, intellectual property, technology, information pertaining to business operations and strategies.
- **EA Technology:** Are responsible for the overall Project Management and delivery of the OpenLV project.
- **Electricity Network Data:** Means the electricity network data provided by EA Technology and Western Power Distribution (WPD) during the Project in relation the performance of and electricity demand at electricity substations owned and operated by WPD. The data provided to the OpenLV Platform is described here: [OpenLV Measurement Points Document](#).
- **Licensed Software:** The Trial Participant Software.
- **LV-CAP™ Software Application(s):** Software Applications that could be deployed on the OpenLV Platform that have not been developed by the Trial Participant.
- **LV-CAP™:** LV-CAP™ (Low Voltage Common Application Platform) is a hardware agnostic environment that in and of itself does not provide any direct functionality but instead makes available the environment in which various software applications, each designed to provide specific a network benefits (or benefits) can be deployed.
- **Network Innovation Competition:** The Electricity NIC is an annual opportunity for electricity network companies to compete for funding for the development and demonstration of new technologies, operating and commercial arrangements.
- **Ofgem:** Government regulator responsible for running the Network Innovation Competition (NIC). The funding source for the OpenLV project: [Electricity Network Innovation Competition](#).
- **OpenLV Platform:** Consists of a ruggedised PC with a Linux based operating system running the Low Voltage-Common Application Platform (LV-CAP™). This platform receives, stores and processes data from external LV monitoring equipment. These devices have sufficient computational power to store and run multiple software applications and can provide relevant information out via a communications link to centralised server(s). See: [OpenLV Platform Specification Design & Testing](#).
- **Open-Source Software:** Any software licensed under any form of open-source licence meeting the Open Source Initiative's Open Source Definition (set out at [www.opensource.org](http://www.opensource.org)) or any libraries or code licensed from time to time under the General Public Licence (as described by the Free Software Foundation and set out at [www.gnu.org](http://www.gnu.org)), or anything similar, included or used in, or in the development of, the Application, or with which the Trial Participant has compiled or to which it is linked.
- **Party or Parties:** EA Technology and the Trial Participant.
- **Project:** The OpenLV project as defined in the project bid document: [OpenLV Project Bid Document](#).

- **Technology Representative:** The people identified by both Parties to be responsible for working collaboratively to ensure the idea outlined by the Trial Participant in their application form is developed accordingly to the timescales agreed in this document.
- **Trial:** Means the OpenLV Business & Academia trials as described in the following document: [OpenLV Business & Academia Trials - Guidance for Applicants](#).
- **Trial Participant:** The organisation(s) applying to take part in the Business & Academia project trials (Defined as Method 3: OpenLV Extensibility in the OpenLV Bid document).
- **Third-Party Software:** The software programs proprietary to third parties which are to be provided to EA Technology without modification.
- **Trial Software Application:** Software application developed by the applicant that is named in the MoU.

## **2.2 Common Aspirations**

- 2.2.1 The Parties acknowledge that the main objective of this MoU is to confirm each Party's commitment to engage with the OpenLV Project to utilise low voltage Electricity Network Data and/or develop and implement Trial Software Application(s) on the OpenLV Platform.
- 2.2.2 The Parties will work together to develop knowledge and learning from the Project Business & Academia Trials.
- 2.2.3 Each Party acknowledges that the learning gained from the Project trials will be summarised and published in technical reports on the Project website and shared with Ofgem, who are funding the Project via the Network Innovation Competition (NIC).

## **2.3 EA Technology's Obligations**

- 2.3.1 EA Technology will support applicants wishing to develop apps for the OpenLV project. EA Technology will provide for the duration of the OpenLV project:
- The OpenLV Platform(s) - This includes the following:
    - Sensors required to collect voltage and current data from the LV substation;
    - The hardware required to monitor the LV network (to connect to the sensors);
    - The OpenLV Platform to take the data from the LV monitoring equipment and send it to the Cloud Hosted Server; and
    - Covering the costs for all of the above.
  - Background Infrastructure - This includes the following:
    - The server that is required to manage the OpenLV Platform(s) deployed as part of the Project trials and to deploy app(s) to the platform;
    - The Cloud Hosted Server to enable trial participants to access the data collected on the OpenLV Platform(s); and
    - Covering the costs for all of the above.
  - Software Application development support - This includes the following:
    - The application programming interface (API) for developers intending to write applications to run on the OpenLV platform;



- A testing environment for third parties that develop apps to enable them to be tested before they are deployed;
  - A skeleton app that provides base code for third parties to utilise to speed up app development;
  - The option to attend workshop(s) to provide further information on the development of apps for the OpenLV Platform;
  - Technical support to answer any questions you may have regarding app development; and
  - Covering the costs for all of the above (but not travel, hotel accommodation etc. for attendance at the workshops(s)).
- Deployment support - This includes the following:
    - Testing of the app(s) developed by applicants;
    - Working with trial participants to select a suitable LV substation to install the OpenLV platform;
    - The installation of the OpenLV Platforms and associated LV monitoring hardware;
    - The provision of the communications infrastructure to support the Project trials;
    - Maintenance of the OpenLV Platforms and associated LV monitoring hardware throughout the Project trials;
    - Decommissioning of equipment at the end of the trials; and
    - Covering the costs of the above including the costs on-going communication costs for transferring data from the OpenLV Platform(s) for the trial time period.
- 2.3.2 EA Technology will not cover the costs for developing new Trial Software Applications.
- 2.3.3 In addition to the above EA Technology will work with each Trial Participant to define the functionality that will be delivered by the proposal outlined on the Trial Participants application form.
- 2.3.4 EA Technology will take the lead in defining the success criterion for trialling the idea proposed in the Trial Participants application form.
- 2.3.5 A single OpenLV Platform will be provided to each Trial Participant to trial the idea outlined in their application form, EA Technology reserves the right to install additional LV-CAP™ Software Application(s) on the OpenLV Platform, provided to the Trial Participant, to maximise the learning on the Project.
- 2.3.6 EA Technology will appoint a Technology Representative, who will be the main contact responsible for providing support for the Trial Participant to develop the idea outlined in the Trial Participants application form.
- 2.3.7 EA Technology will take all reasonable steps to maintain continuity in relation to the support staff team.

## **2.4 Trial Participant's Obligations**

### **2.4.1 Trial Participants are required to:**

- Utilise Electricity Network Data and/or develop a Software Application to be deployed on the OpenLV Platform as described in their application form;



- Define the functionality that will be delivered by the idea proposed in their application form;
- Fund the development of the idea as outlined in their application form;
- Support EA Technology to enable trial success criterion to be agreed prior to the trial starting;
- Work with EA Technology to ensure Trial Software Application(s) are adequately tested and any bug fixes are completed prior to deployment;
- Work with EA Technology throughout the trials to resolve any software faults with Trial Software Application(s) developed by the trial participant;
- Provide EA Technology with progress updates and key learning at fixed points throughout the trial time period. It should be noted that this will be led by EA Technology and will not involve any travel on behalf of the trial participant; and
- Provide EA Technology with key learning points and assess whether the trial success criterion have been met at the end of the trial. It should be noted that this will be led by EA Technology and will not involve any travel on behalf of the trial participant; and
- Take reasonable steps to support EA Technology to disseminate learning from the project.

2.4.2 The Trial Participant will appoint a Technology Representative, who will be the main contact responsible for the overall development of the idea outlined in the Trial Participants application form.

2.4.3 The Trial Participant will take all reasonable steps to maintain continuity in relation to the support staff team.

## **2.5 Commencement & Duration**

2.5.1 Both Parties shall perform their obligations under this agreement in accordance with Sections 2.3 and 2.4 and the timescales as outlined in clause 2.5.2.

2.5.2 The timeline for the development of the idea(s) outlined in the Trial Participants application form is as follows:

- Trial application deadline: End of February 2018.
- Selection of trial participants: April 2018.
- Define Trial Software Application functionality & Trial Success Criterion: May 2018.
- Development of apps: May to July 2018.
- Installation of OpenLV Platform & app deployment: August 2018.
- OpenLV Business & Academia trial time period: September 2018 to July 2019.

2.5.3 Changes to the agreed timeline will be agreed in writing between both Parties.

## **2.6 Funding**

2.6.1 EA Technology will fund the OpenLV platform(s), background infrastructure, software application development support and deployment support as outlined in Section 2.3. In addition, EA Technology will lead on defining the success criterion for trialling the idea proposed in the Trial Participants application form.

- 2.6.2 The Trial Participant must fund the development of their idea to utilise Electricity Network Data and/or develop a Trial Software Application. The funding provided by Ofgem explicitly excludes funding for Trial Participants to develop the idea(s) put forward by Trial Participants.

## **2.7 Confidentiality**

- 2.7.1 Each Party undertakes not to use the Confidential Information otherwise than in the exercise and performance of its rights and obligations under this Agreement.
- 2.7.2 Confidential Information defined by both Parties is listed in Annex 3.
- 2.7.3 In relation to EA Technology's Confidential Information the Trial Participant shall treat as confidential all Confidential Information of EA Technology supplied under this agreement. The Trial Participant shall not divulge any such Confidential Information to any person, except to its own employees and then only to those employees who need to know it for the Permitted Purposes.
- 2.7.4 EA Technology shall treat as confidential all Confidential Information of the Trial Participant contained or embodied in the Trial Software Application or Documents, or otherwise supplied to EA Technology during the performance of this agreement.
- 2.7.5 EA Technology is required to share the learning from the Project trials with Ofgem and publish the learning in technical reports on the Project website. EA Technology will not publish information that is classed as Confidential Information by the Trial Participant.
- 2.7.6 EA Technology has the right to refer to the Trial Participant and this agreement in any publicity or other materials in relation to the Project without the Trial Participants consent.

## **2.8 Intellectual Property Rights**

- 2.8.1 The Intellectual Property Rights in the Trial Application Software (other than the Open-Source Software and the Third-Party Software) are, and shall remain, the property of the Trial Participant (or the appropriate third-party rights-owner(s), if any).

## **2.9 Software License**

- 2.9.1 The Trial Participant grants, subject to the terms of this agreement, EA Technology the non-exclusive right for the Implementation Period to use the Licensed Software and the Documents for any purpose.
- 2.9.2 EA Technology may make such copies of the Licensed Software and Documents as are reasonably necessary for use in accordance with this agreement and for the purposes of backup and security. EA Technology has no right to make, or authorise the making of, any other copies of the Licensed Software.
- 2.9.3 EA Technology may use the Licensed Software in conjunction with or incorporation within any other software at its sole discretion.
- 2.9.4 EA Technology may not make adaptations or variations of the Licensed Software without the prior consent of the Trial Participant.
- 2.9.5 EA Technology may not disassemble, decompile, reverse translate or in any other manner decode the Licensed Software, without the without the prior consent of the Developer.

2.9.6 EA Technology will not make use of the software after the Implementation Period unless a separate agreement is made with the Trial Participant.

## **2.10 Warranties**

2.10.1 The Trial Participant warrants and represents that:

- a) the Licensed Software and Documents are proprietary to the Trial Participant and that it has the right to license all Intellectual Property Rights in and to the Licensed Software and Documents to EA Technology; and
- b) use of the Licensed Software does not infringe the Intellectual Property Rights of any third party.

2.10.2 Each Party warrants that it has full capacity and authority, and all necessary licences, permits and consents to enter into and perform this agreement and that those signing this agreement are duly authorised to bind the party for whom they sign.

## **2.11 Relationship of the Parties**

2.11.1 Nothing contained in this MoU shall make a Party a partner of the other Party and no Party shall hold out the other as such. No Party shall be entitled to make any promise or enter into any agreement on behalf of or pledge the credit of the other Party and no Party shall purport to do so.

## **2.12 Status of Memorandum of Understanding**

2.12.1 This MoU shall not be legally binding unless superseded by a formal agreement between the Parties.

## **2.13 Governing Law**

2.13.1 This agreement and any dispute or claim arising out of or in connection with it or its subject matter or formation shall be governed by and construed in accordance with the laws of England and Wales.

2.13.2 The parties irrevocably agree that the courts of England and Wales shall have exclusive jurisdiction to settle any dispute or claim that arises out of or in connection with this agreement or its subject matter or formation (including non-contractual disputes or claims).

## **2.14 Termination**

2.14.1 Either Party may terminate this agreement with immediate effect by giving written notice.

Signed for and on behalf of [Trial Participant Organisation/Company Name]

Name \_\_\_\_\_

Signed \_\_\_\_\_

Job Title \_\_\_\_\_

Date \_\_\_\_\_

**Signed for and on behalf of EA Technology**

Name \_\_\_\_\_

Signed \_\_\_\_\_

Job Title \_\_\_\_\_

Date \_\_\_\_\_

**Annex 1: Trial Participant Application Form**

**Annex 2: Trial Software Definition & Trial Success Criterion  
Template**



**Annex 3: Confidential Information**

