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| **OWE – Partner contribution document** | |
| **Organisation** | AKKA Informatique et Systèmes (AKKA) |
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| **Countries/parties involved** | *France* |
| **Type of organisation** | *Industry (Engineering)* |

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| **Past and ongoing projects involving Work on dataexchange platforms** | | | | |
| **Project name** | **Start & end date** | **Funding program** | **Role in the project** | **Assets provided to the proposal** |
| AUTOPILOT (Automated Driving progressed by Internet of Things) | 2017-2019 | H2020 | AKKA is responsible of two main tasks for test data management using BigData technologies on one hand and safety critical aspects of automated driving on the other hand. | BigData Collection/storage, real-time data collection, Stream processing, Stream Analytics, Machine learning, statistical models  Platooning functions (longitudinal and lateral without global references) and associated test data on demonstrators. |
| ELVITEN  (proposes replicable  usage schemes to boost ownership or sharing of all categories of EL-Vs  by systematic and occasional urban travellers  and by light delivery companies) | 2017-2020 | H2020  [www.elivten-project.eu](http://www.elivten-project.eu) | AKKA takes part in the services architecture design and implementation with focus on identiy management, privacy protection and brokering data streams for feeding a large data warehouse before users behaviours analysis. | Multi-tier systems connectivity and message brokering solutions in constrained environments (where in particular data privacy is sensible).  Identity Manager and authorisation Management, interoperability solutions for data collection, curation and storage in Data Warehouse. Analytics Services/Data Vizualisation modules. |
| EU-SYSFLEX (Pan-European system with an efficient coordinated use of flexibilities for the integration of a large share of Renewable Energy Sources) | 2017-2021 | H2020  [www.eu-sysflex.com](http://www.eu-sysflex.com) | AKKA contributes in the elicitatioon of business and system use cases, Data management for facilitation of flexibility exchanges between Energy operators, aggregators and consumers. | Development of Data exchange conceptual models, interoperability modules between operators platforms,and privacy protection functions, bigdata reference architectures for collection of large datasets (e.g. from IoT platforms acting on smart meters), ML-based modules for optimisation of use of flexibility services. |
| CLARUS  (develops new solutions for trusted and secured data management in the Cloud. Anonymisation, Encryption, Split&Merge,... for Database and Web Services Protocols (eHealth and GIS demonstrators). | 2015-2017 | H2020  [www.clarus-secure.eu](http://www.clarus-secure.eu) | AKKA acted as technical lead in the definition of the architecture and the implementation of CLARUS-Proxy between trusted zone and a Public cloud. | An open and flexible data proteciton proxy that accomodates standard protocols (e.g. PostgreSQL, WMF/WFS) and security techniques such as anonymisation, searchable encryption, data slit&merge,..  A dataviewer that allows enduser to view and trust applied securty techniques and transfer of secured private data in a Cloud |

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| **Proposed scope of work of your organisation within the project (use as many rows as needed)** | |
| **Objective addressed** | **Proposed activities** |
| *More open and flexible solutions for end-users wishing to gain and improve control on its smart building assets* | **Smart contracts and End-users tools for Flexibility Services**  The exploitation of flexibility services in citizens home, in industry or public buildings is on its way and numerous examples of deployments in several countries are available. Several actors are positioned on the market leveraging on the installation of smart devices (connected and remotely controlled meters, actuators…) that allow for fine-tuned exploitation of possible renewable energy sources (PhotoVoltaic roofs, wind turbines…) and control of electricity consumption (turning on/off heating devices, planning the start of production stages in the industry at a certain point of time depending on electricity market prices etc.).  The advantages for both electricity consumers and producers / distributors can be immense with optimised consumption and then price paid for the energy, monetization of the flexibility, proper exploitation of immediately available sources of energy to be injected in the grid (reactive power management), technical frequency regulation and so on.  Several actors propose boxes and associtaed services that offer “Energy Intelligence and Automation”. Software solution mainly rely on predictive systems using AI technologies and leveraging on large IoT networks at the home, quartier, industry plant, village/city level.  These solutions are accompanied with various tools dedicated to the end-user in order to facilitate monitoring of what is currently happening, what is planned, its gains and in order to facilitate monetization of its sources of energy on the market.  OWE will be able to propose more transparency in the contractualisation between end-users energy aggregators, distributors and providers of smart building solutions by proposing a standardized conceptual data formats, interoperability of serivces, customized monitoring and supervision functions. We intend to develop “didactic” tools that focus on simplicity and openess without downsizing possibilities for end-users to benefit at most from operators competition, from the flexibility services he/she can offers from his/her installation, especially, RES.  We intend to use Distributed Ledger Technologies for proper contractualisation issues, Semantic Web (Linked Open Data) ontologies and databases for conceptualisation and knowledge modeling of smart grids, smart building functions and assets while ensuring data privacy using for instance solutions we devloped in former project CLARUS.  We propose to base developments on specific use cases such as explicit demand-response in Electrical Vehicle charging networks (the EV and/or Batterie Management Storage installations being mobilized for reactive power or frequency regulation). Other Use cases to be detailed in the future. |