An experimentally-validated multi-scale materials, process and device modelling & design platform enabling non-expert access to open innovation in the Organic and Large Area Electronics Industry (MUSICODE)

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Report on the developed OLAE semantics and ontology

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- v1.1 reviewed and commented by the coordinator: 09/02/2023
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Contents

Publishable summary

The deliverable provides the ontological description of MUSICODE and OLAE in general.

The ontology development process has been initiated by identifying the discrete applications in the project. Then, the bottom-up approach has been used to model all the identified applications. The identified applications are simulation, fabrication, characterization, manufactured devices, and materials. The finalized MUSICODE ontology is a union of all five application ontologies.

The ontology has been built using web ontology language (OWL) and protégé software. The concepts and classes used in the other ontologies, i.e., EMMO, and BattINFO, have been reused and extended whenever needed. All the partners were involved in the development process by providing feedback and required information to construct an ontology. The required information was collected by using pre-defined data collection templates. Those templates are also submitted with this deliverable.

The MUSICODE ontology conveniently represents the organization of knowledge intended as a set of concepts, possible relations, and restrictions between the different concepts in OLAE.