

## D3.1 AEOLIX ECOSYSTEM TECHNICAL ARCHITECTURE SPECIFICATION

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Full deliverable available here: <http://aeolix.eu/deliverables/>

The main aim of Deliverable 3.1 “AEOLIX Ecosystem Technical Architecture Specification” is to provide a deep analysis and specification on how the AEOLIX platform will be designed and how it will operate. The document contains all the information related to the design and specification of the AEOLIX platform. This includes the conceptual objectives of AEOLIX; connections between the stakeholder requirements; elaboration of a high level architecture that acts as the basis for the further core modules that will form the platform; the technical requirements for such a platform, starting from user stories; and the technical architecture of the AEOLIX platform. In addition to the above, in this document can be found the different dynamic behavior between modules of the platform, how they will interact with each other and, in the case of the MyAEOLIX tool, mockups of what the tool will look like. The document gives information about the deployment of the different services that are part of the ecosystem to end up with the technical description.

Based on the analysis of the platform, by linking the business needs identified in other work packages with the technical needs, an identification of the roles that will be present in the platform and an elaboration of the functional requirements and their associated use cases is provided, which are described in depth following a scenario approach and finally traced. Platform roles are very important to understand what will be the capabilities that the AEOLIX platform will offer, leading to the definition of the technical architecture of the platform.

The architecture chapter describes in an accurate way each of the modules that will be part of the AEOLIX platform. This description is done from different perspectives: a first view on which modules will be part of the platform, how their specification will be, their functionalities, etc. As a second point of view, the dynamic interaction between the described modules can be found in sequence diagrams. This part links not only the dynamic view of the system, but also the use cases specified for the platform to each of the functionalities described here. It is included a specification about how each of the modules of the platform will be deployed and where.

Through the development of this deliverable, the architecture of the AEOLIX platform has been defined and there is a clear view on what is expected from each of the modules of the platform. The next deliverables (D3.2.X) must dig deeper in the specifics of their functionalities and specifications.

To be able to get to this point, all the functional requirements and use cases that will be supported by the AEOLIX platform have been defined, according to their user stories. The identification of the different user roles for the Identity Manager system has also been performed. Also some non-functional requirements related to the platform performance have been designed.

From an operational point of view, the AEOLIX platform will provide a configuration tool, which is MyAEOLIX, in order to accomplish all the previous requirements and from where all the main objectives (information sharing for visibility, interoperability and governance) can be managed. MyAEOLIX will lay on the different back-end services of the plat-



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form, connectivity engine, data transformation service and toolkit services (as well as its own modules), and will support front-end services, such as the Intelligent Dashboard. MyAEOLIX will make the proper configuration at a Living Lab level by enabling the creation of their own user network, getting access to shared data sources, managing communication infrastructure to share their own data, or connecting services from the toolkit or new applications that could be developed.

From the MyAEOLIX interface, each Member of the platform will be able to request access to all the desired data sources that are available in the catalogue, both public or private; manage the received requests and add subscribers. This functionality is the one that provides governance on the data being shared by a stakeholder.

This document serves as a starting point on the development of the described modules, even though some of these modules are already being developed. In parallel, there will be work in progress on the MyAEOLIX tool: defining its Graphic User Interface (GUI) and the back-end services and databases needed to support its functionalities; the data transformation service, defining the approach and specifying how data transformation will be done; Toolkit Services, defining how to include them in the catalogue and how to access them via AEOLIX platform; and the Intelligent Dashboard, by offering full functionality on visibility of information supporting all the Living Labs and applying "intelligence" to the data gathered.

To wrap up with the document, there is an implementation plan for each module and its subcomponents. The project will execute an implementation schedule plan of the specific technical activities that will be performed during the period between month 18, which corresponds with the delivery of this document, and month 24 when the first early prototype of the platform must be completed. Then, in month 24, a revision of the scheduling will be reviewed in Deliverable 3.2, to identify and complete the tasks to provide the full prototype in month 30. This plan is as well aligned with the AEOLIX Description of Action in work package 3 activities. The final version of the AEOLIX Platform will be realised and deployed in a cloud environment to provide support for AEOLIX Living Lab's implementation.

Annex I provides a cookbook to those technical users that want to start experimenting with some of the modules of the platform such as the Connectivity Engine or making some integration between existing services of the Toolkit and the Connectivity Engine communication platform. This living cookbook will be kept updated during the project's lifetime.

