



fiQare

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www.celticplus.eu/project-fiQare

Future Intelligent Quality Assurance for Release Enhancement

Future Intelligent Quality Assurance for Release Enhancement (fiQare) is a revolutionary new concept in safety, reliability and quality for IoT environments. fiQare develops an innovative methodology based on artificial intelligence. We analyse FIWARE technology automatically using eight axes of ISO 25010 standard, to measure the quality of IoT (Internet of Things) Platforms, such as Smart Cities and Factory 4.0

Main focus

This project proposes the design, development and execution of an innovative “artificial intelligence QA methodology” through the research and application of the eight axes of the ISO 25010 applied the FIWARE Generic Enablers (GEs), this will result in the development of two use cases in real environment and the im-

provements of a set of GEs selected, providing them to the FIWARE Community.

The core of all this process will be a set of Artificial Intelligence Tools that will be developed and that will allow to automatically test the software and to check their quality in terms of functionality, performance, security, reliability, usability, maintainability, compatibility and portability.

Approach

The project can be structured in three phases:

- ◆ The first phase consists of testing the set of selected GEs quality following the eight axes of the ISO 25010.
- ◆ The second phase involves the development of a set of intelligent tools (based



in Artificial Intelligence) to solve the identified problems. These tools are the core of this proposal as they will provide the companies involved beyond-the-state-of-the-art tools to be used. Moreover, the goal is to actively build a set of enhanced GEs and utilities for the FIWARE community. Finding errors in the implementation of GEs, analyzing modules, improving the quality of the code, detecting problems in communication protocols, and testing web services will result in a substantial improvement of the state of the art.

- ◆ The third phase will be focused on building two use cases involving innovation in smart domains and of actual interest for the companies in this consortium. One of them is on sensing the city and makes data science on the information gathered by real IoT devices working in several urban environments. The second one is about Internet of health things for smart home assisted living. Moreover, the intelligent testing tools will be improved based on the results obtained in a real environment.

Main results

When the identity of the device is related to the identity of a human being, the true value of IoT emerg-

es. However, with access to data comes the enigma of privacy.

ISO/IEC 25010 determines which quality characteristics will be taken into account when evaluating the properties of a software product. This model will be applied in the fiQare project.

Platforms such as FIWOO (or any other FIWARE based platform) will improve their quality and security. fiQare will enable faster and greater development of these technologies by increasing confidence in them.

Impact

This project has a balance between science for a sound analysis and its validation in building new and more reliable services. It also includes academic nodes to interact to companies in making transference from university, and will produce abundant information and concrete results so as to go both for business plans and foster knowledge and tools in “getting connected”, “while connected” and intelligent applications in IoT, smart cities and cyber-physical systems.

We will provide a methodology based on automatic learning algorithms for GEs analysis and we will report on the status of the quality of GEs in IoT Platforms.

This will produce an enhance FIWARE's management tools (GEs), which are offered to the community.

FIWARE-based Platforms (such as FIWOO) will experience a substantial improvement in safety and quality.

About Celtic-Plus

Celtic-Plus is an industry-driven European research initiative to define, perform and finance through public and private funding common research projects in the area of telecommunications, new media, future Internet, and applications & services focusing on a new „Smart Connected World“ paradigm. Celtic-Plus is a EUREKA ICT cluster and belongs to the inter-governmental EUREKA network. Celtic-Plus is open to any type of company covering the Celtic-Plus research areas, large industry as well as small companies

or universities and research organisations. Even companies outside the EUREKA countries may get some possibilities to join a Celtic-Plus project under certain conditions.

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