

FIWARE for Industry Trial Construction

Efficient Collaborative
Access to information



What is FIWARE

FIWARE is an **open initiative** aiming to create a sustainable ecosystem to grasp the opportunities that will emerge with the new wave of **digitalization** caused by the integration of recent **Internet technologies**.

FIWARE for Developers

FIWARE provides an **enhanced OpenStack-based cloud environment** plus a rich set of **open standard APIs** and **OSS components**, i.e. Generic Enablers that make it easier to connect to the Internet of Things, process and analyse Big data and real-time media or incorporate advanced features for user interaction.

FIWARE for Industry

FIWARE for Industry extends FIWARE generic Internet components with cloud-enabled **industrial specific OSS components** organised in **3 modular reference architectures**, for cost-effective implementation of **innovative industrial digital processes**, on top of existing factory IT tools and legacy.



*Improved access to information for
quicker decision making*

Trial industrial motivation

- **Construction industry is relevant for EU's economy.** Construction represents 9.9% of Europe's GDP.
- **Concrete is used in any construction project.** The use of concrete ranges from basic (the foundation of a metallic structure) to essential (the wall of a dam).
- **Concrete quality control is an essential process.** This represents 30% to 50% of the quality control cost.

Collaborative Access to Information Features

Information concerning the concrete control process is available through **secured workspaces**.

Samples traceability information is available and updated online, **in real time**.

Concrete quality results are available to all parties, **as they are generated**, allowing for **quicker decisions**.

Competitive advantage



Cost

- 60% reduction for analyzing test results
- 40% reduction on paper load



Efficiency

- 99% decrease in time for data exchange between stakeholders
- 75% decrease in time to record test results related to Health & Safety

FIWARE for Industry Reference Architectures

Smart Factory

The Smart Factory reference architecture organises the FIWARE assets to support the development of **shopfloor intelligence** enhancing physical processes. FIWARE enables more efficient, flexible and safe shopfloor by supporting machine-vs-machine and human-vs-machine convergence. It builds on top of FIWARE's Internet-of-Things (IoT) Service Enablement Chapter.

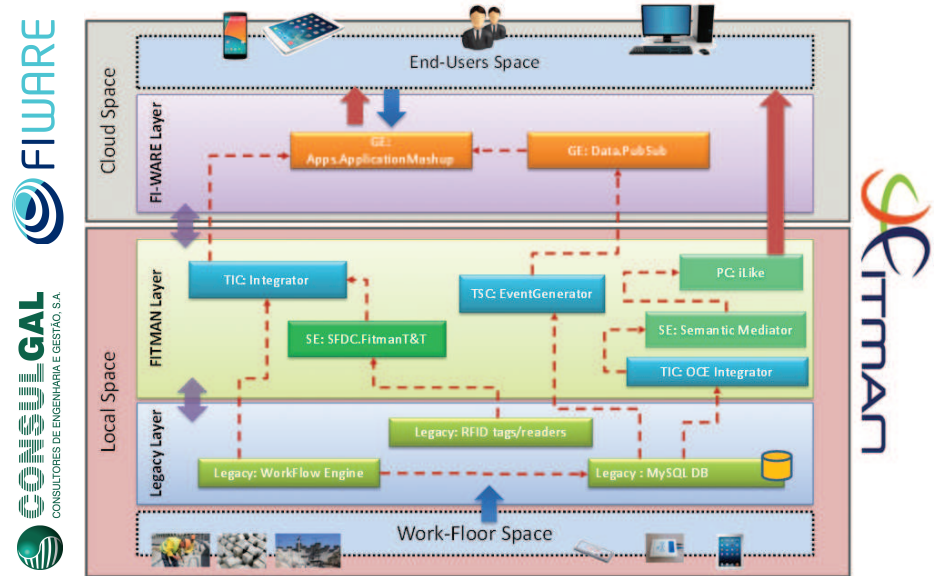
Digital Factory

The Digital Platform reference architecture organises the FIWARE assets to support the development of **knowledge-based manufacturing processes** aiming at improving the time-to-product and time-to-market of products and services, managing more efficiently the product life-cycle information from heterogeneous sources (ERP, social networks, CRM, PLM). It wires together three GEs from two different FIWARE Chapters: Apps and Data/Context Management.

Virtual Factory

The Virtual Platform reference architecture extends the "classic" supply chain processes with more advanced features, such as **cloud manufacturing and digital marketplaces**, targeted at distributed organizations and virtual enterprises. The Virtual Platform brings the business ecosystem framework from FIWARE's Apps Chapter into the manufacturing domain.

Digital Factory Reference Architecture Instantiation

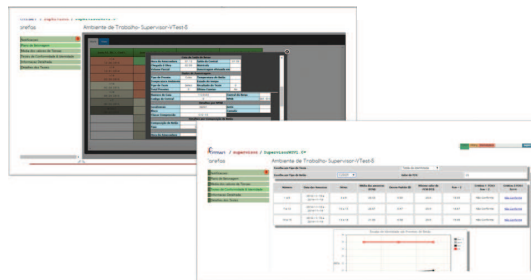


To develop an Efficient Collaborative platform dedicated for concrete handling process in construction, Consulgal has instantiated the Digital Factory Reference Architecture.

FIWARE for Industry Business Process in Action



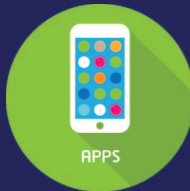
Smart concrete samples identification and tracing



Efficient work Collaboration and Decision making

FIWARE for Industry Open Source Components Used

Application Mashup - Wirecloud GE



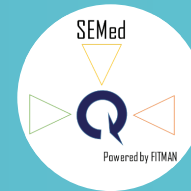
Publish/Suscribe Context Broker GE



Shopfloor Data Collection SE



SEMed SE



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