



OPEN DEI

OPEN SOURCE SOFTWARE CATALOGUE

...

22 August 2022

Abstract

This document is intended as a catalogue of Open Source software that can be consulted by any project, LSP (Large Scale Pilot) or use case in order to search for the proper O.S software for its developments. It is part of the effort of the OPEN DEI project to provide tools for pilots/use cases as part of task T8.4.



Prepared for:

European Parliament

Directorate-General Internal Policies

Directorate G - Impact Assessment and European Added Value

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1 EXECUTIVE SUMMARY

The following document is part of the effort of the Task 8.4 from Work Package 8 of the OPEN DEI project to provide useful tools for the daily work of projects, pilots and/or use cases. It is intended as a catalogue of Open Source software that can be consulted by anyone in order to search for the proper O.S software for its developments and/or architecture design. It is a starting point with basic information that will try to guide readers to the proper direction in order to save them time when searching for OSS.

The catalogue is divided in several sections, each one corresponding to some specific software category as follows:

- Security
- Containerization
- IoT
- APIs
- Building blocks
- Code quality/Integration
- Collaboration tools
- Communication tools
- Dashboards
- Programming
- Data management
- Design tools
- Diagram design tools
- Enablers
- Methodologies
- Paradigms
- Platforms
- Solutions
- Standards

Inside of each of the sections listed above, there is a list of all mapped software, including some basic data such as its name, a basic description about its main functionalities and a link to the official website of the software. Further categories and/or software may be added in future versions of the catalogue.

Readers can request additional information about OPEN DEI and the main objectives of the project in the [OPEN DEI official website](#).

2 SECURITY

This section describes some of the main security software available in the market that is suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|--|
| NAME | Forseti Security |
| DESCRIPTION | Forseti Security is an O.S. tool that is used by Google with the aim of improving the security of the Google Cloud platform. |
| LINK | http://forsetisecurity.org/ |

| | |
|-------------|--|
| NAME | Kali Linux |
| DESCRIPTION | Kali Linux is an GPL licensed linux distribution intended for penetration detecting and testing. |
| LINK | https://www.kali.org/ |

| | |
|-------------|--|
| NAME | Metron |
| DESCRIPTION | Metron is a security framework for Hadoop that was created by Apache under Apache license 2.0 with the objective of detecting/solving security problems. |
| LINK | http://metron.apache.org/ |

| | |
|-------------|---|
| NAME | OSSEC |
| DESCRIPTION | OSSEC is an O.S. tool intended to detect intrusions. |
| LINK | https://www.ossec.net/ |

| | |
|-------------|--|
| NAME | Ranger |
| DESCRIPTION | Ranger is a framework created by the Apache Foundation under A.L 2.0 intended for managing/monitoring data security in Hadoop. |
| LINK | http://ranger.apache.org/ |

| | |
|-------------|---|
| NAME | Google application security tools |
| DESCRIPTION | Google application security tools is an Open Source set of tools intended for security testing. |
| LINK | https://www.google.com/about/appsecurity/tools |

| | |
|-------------|--|
| NAME | Shiro |
| DESCRIPTION | Shiro is a Java security framework created by Apache under A.L 2.0 and intended for session management, cryptography and authentication. |
| LINK | http://shiro.apache.org/ |

| | |
|-------------|---|
| NAME | ClamAV |
| DESCRIPTION | ClamAV is an O.S. antivirus. |
| LINK | http://clamav.net/ |

| | |
|-------------|---|
| NAME | Security Onion |
| DESCRIPTION | Security Onion is an O.S linux version focused on security. |
| LINK | http://blog.securityonion.net/ |

| | |
|-------------|---|
| NAME | mailscanner |
| DESCRIPTION | mailscanner is an Open source security mail scanner. |
| LINK | https://www.mailscanner.info/ |

| | |
|-------------|---|
| NAME | OPNSense |
| DESCRIPTION | OPNSense is an O.S. firewall. |
| LINK | https://opnsense.org/ |

| | |
|-------------|--|
| NAME | Wfuzz |
| DESCRIPTION | Wfuzz is a tool intended for penetration detection available under GPL 2.0 license |
| LINK | http://code.google.com/p/wfuzz |

| | |
|-------------|---|
| NAME | Snort |
| DESCRIPTION | Snort is an Open Source intrusion detector tool. |
| LINK | http://snort.org/ |

| | |
|-------------|---|
| NAME | Wapiti |
| DESCRIPTION | Wapiti is a vulnerabilities detector for the web distributed under GNUPL 2.0 license. |
| LINK | http://wapiti.sourceforge.net/ |

| | |
|-------------|---|
| NAME | Zeek |
| DESCRIPTION | Zeek is an Open source tool intended to monitor security. |
| LINK | https://zeek.org/ |

| | |
|-------------|---|
| NAME | AuthZForce PDP/PAP |
| DESCRIPTION | The FIWARE AuthZForce PDP/PAP is an Enabler that uses PDP/PAP and the XACML standard. |
| LINK | https://authzforce-ce-fiware.rtdf.io/ |

| | |
|-------------|--|
| NAME | badssl.com |
| DESCRIPTION | badssl.com. is a site created and maintained by Google which aim is testing browsers and clients against subdomains. |
| LINK | https://badssl.com/ |

| | |
|-------------|---|
| NAME | KeyCloak |
| DESCRIPTION | KeyCloak is an Open Source tool released in 2014 under Apache License 2.0 intended for managing access control in apps. |
| LINK | https://www.keycloak.org/ |

| | |
|-------------|---|
| NAME | Keyrock |
| DESCRIPTION | The FIWARE Keyrock is an Identity Manager that uses OAuth2 and user profiles. |
| LINK | https://fiware-idm.readthedocs.io/en/latest/ |

| | |
|-------------|--|
| NAME | Santuario |
| DESCRIPTION | Santuario is an implementation of the security standards for the XML format created by the Apache Foundation under Apache license 2.0. |
| LINK | http://santuario.apache.org/ |

| | |
|-------------|---|
| NAME | Sentry |
| DESCRIPTION | Sentry is a security system created by Apache under A.L 2.0 and intended for applying role authorizations to data/metadata in Hadoop. |
| LINK | http://sentry.apache.org/ |

| | |
|-------------|---|
| NAME | WSO2 Identity Server |
| DESCRIPTION | The WSO2 Identity Server is an O.S. tool that controls user access to apps using SAML/OIDC standards. |
| LINK | https://wso2.com/identity-and-access-management/ |

3 IOT

This section describes some of the main IoT software available in the market that is suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | Orchestra Cities |
| DESCRIPTION | FIWARE Orchestra Cities is a IoT software intended to manage Smart Cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/c8a29a1f62a688fa58d8bc8d |

| | |
|-------------|---|
| NAME | Mozilla Web of Thing Websocket Streaming API |
| DESCRIPTION | Mozilla Web of Thing Websocket Streaming API is an API draft intended to provide a WebSocket service to the Web of Things. |
| LINK | https://developer.mozilla.org/es/docs/Web/API/WebSockets_API |

| | |
|-------------|--|
| NAME | WebRTC |
| DESCRIPTION | WebRTC is a framework created by Google under A.L 2.0 license that allows communication in mobile platforms, browsers and IoT. |
| LINK | https://www.webrtc.org/ |

| | |
|-------------|---|
| NAME | IoTDB |
| DESCRIPTION | IoTDB is a database that is designed for edge/cloud that was created by Apache under Apache license 2.0 that is intended for being used with IoT. |
| LINK | http://iotdb.apache.org/ |

| | |
|-------------|---|
| NAME | Arduino Cloud IoT |
| DESCRIPTION | Arduino Cloud IoT is a Cloud service intended to connect IoT devices. It is available under A.L 2.0 |
| LINK | https://docs.arduino.cc/cloud/iot-cloud |

| | |
|-------------|---|
| NAME | SENSIoT |
| DESCRIPTION | SENSIoT is a smart environmental service with IoT based on FIWARE |
| LINK | https://marketplace.fiware.org/pages/solutions/666207c189d5917064754e8f |

| | |
|-------------|---|
| NAME | Yggio |
| DESCRIPTION | Yggio IoT is an interoperability platform for smart cities and smart buildings based on FIWARE standards. |
| LINK | https://marketplace.fiware.org/pages/solutions/cfe25e8bc8220d0993a1aaf3 |

| | |
|-------------|---|
| NAME | IoT Agent for JSON |
| DESCRIPTION | FIWARE IoT Agent for JSON is a bridge between HTTP/NGSI/MQTT |
| LINK | https://fiware-iotagent-json.rtdf.io/ |

| | |
|-------------|---|
| NAME | IoT Agent for LoRaWAN |
| DESCRIPTION | FIWARE IoT Agent for LoRaWAN is a bridge between LoRaWAN and NGSI |
| LINK | https://fiware-lorawan.rtdf.io/ |

| | |
|-------------|---|
| NAME | IoT Agent for LWM2M |
| DESCRIPTION | FIWARE IoT Agent for LWM2M is a M2M-NGSI bridge |
| LINK | https://fiware-iotagent-lwm2m.rtdf.io/ |

| | |
|-------------|---|
| NAME | IoT Agent for OPC-UA |
| DESCRIPTION | FIWARE IoT Agent for OPC-UA is a bridge between OPC and NGSI |
| LINK | https://iotagent-opcua.rtdf.io/ |

| | |
|-------------|---|
| NAME | IoT Agent for Sigfox |
| DESCRIPTION | FIWARE IoT Agent for Sigfox is a Sigfox-NGSI bridge. |
| LINK | https://iotagent-sigfox.rtdf.io/ |

| | |
|-------------|---|
| NAME | IoT Agent for Ultralight |
| DESCRIPTION | FIWARE IoT Agent for Ultralight is a bridge between HTTP/MQTT and NGSI |
| LINK | https://fiware-iotagent-ul.rtdf.io/ |

| | |
|-------------|---|
| NAME | IoT Agent library |
| DESCRIPTION | FIWARE IoT Agent library is a library designed to develop an IoT Agent. |
| LINK | https://iotagent-node-lib.rtdf.io/ |

| | |
|-------------|---|
| NAME | Oliot |
| DESCRIPTION | FIWARE Oliot is an Enabler intended to translate data from NGSI to EPCIS. |
| LINK | https://github.com/yalewkidane/FIWARE_EPCIS_Mediation_Gateway |

| | |
|-------------|---|
| NAME | MainFlux |
| DESCRIPTION | MainFlux is an O.S. platform for IoT edge computing. |
| LINK | https://mainflux.com/ |

| | |
|-------------|---|
| NAME | MASAI |
| DESCRIPTION | FIWARE MASAI is a data software intended to gather data from IoT devices. |
| LINK | https://marketplace.fiware.org/pages/solutions/5a6bac60ffca24dd063170ca |

| | |
|-------------|---|
| NAME | WiTraC |
| DESCRIPTION | FIWARE WiTraC is a tracking tool for IoT designed for Smart Cities and Industry 4.0. |
| LINK | https://marketplace.fiware.org/pages/solutions/f9f7f04ac43ec77d9a436a68 |

| | |
|-------------|---|
| NAME | Thingier.io |
| DESCRIPTION | Thingier.io is an Open Source IoT platform designed to connect IoT devices. |
| LINK | https://thingier.io/ |

| | |
|-------------|--|
| NAME | FogFlow |
| DESCRIPTION | FIWARE FogFlow is an IoT framework designed to support flows in the cloud. |
| LINK | https://fogflow.rtdf.io/ |

| | |
|-------------|--|
| NAME | PLC4X |
| DESCRIPTION | PLC4X is a set of O.S IoT libraries created by Apache designed to interconnect industrial controllers. |
| LINK | https://plc4x.apache.org/ |

4 CONTAINERIZATION

This section describes some of the main containerization software available in the market that is suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | Docker |
| DESCRIPTION | Docker is an Open Source software intended for containerization of environments. It is available under Apache license 2.0 |
| LINK | https://www.docker.com/ |

| | |
|-------------|--|
| NAME | OKD |
| DESCRIPTION | OKD is an open-source containerization cloud platform designed by Apache under Apache license 2.0. |
| LINK | https://www.okd.io/ |

| | |
|-------------|--|
| NAME | Portainer CE |
| DESCRIPTION | Portainer CE is an Open Source tool designed to manage containers. |
| LINK | https://www.portainer.io/ |

| | |
|-------------|---|
| NAME | Kubernetes |
| DESCRIPTION | Kubernetes is an O.S. platform designed to deploy containers. |
| LINK | https://kubernetes.io/ |

| | |
|-------------|--|
| NAME | Apache Mesos |
| DESCRIPTION | Apache Mesos is an O.S. platform for containerization in clusters. It is published under A.L 2.0 |
| LINK | https://mesos.apache.org/ |

5 APIS

This section describes many of the main APIs available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | APISIX |
| DESCRIPTION | APISIX is an O.S API gateway based on Nginx and etcd intended for managing web traffic. |
| LINK | http://apisix.apache.org/ |

| | |
|-------------|--|
| NAME | BrAPI Breeding REST API |
| DESCRIPTION | BrAPI Breeding REST API is an Open Source API designed to bring interoperability to a plant breeding DB. |
| LINK | https://brapi.org/ |

| | |
|-------------|--|
| NAME | Cloudify REST API |
| DESCRIPTION | Cloudify REST API is an Open Source API intended to give access to several APIs such as blueprints or deployments. |
| LINK | https://cloudify.co/ |

| | |
|-------------|---|
| NAME | Cordra Indirect API |
| DESCRIPTION | Cordra Indirect API is an Open Source API intended to manage data in NOSQL databases. |
| LINK | https://www.cordra.org/documentation/introduction/introduction.html |

| | |
|-------------|--|
| NAME | Dataverse Project SWORD REST API |
| DESCRIPTION | Dataverse Project SWORD REST API is an O.S. API intended to allow users to save files in the Dataverse cloud service. It is available under Apache license 2.0 |
| LINK | http://guides.dataverse.org/en/latest/api/sword.html |

| | |
|-------------|---|
| NAME | Digitransit HSL Map REST API |
| DESCRIPTION | Digitransit HSL Map REST API is an API intended to provide POI and city images. It is available under CC 4.0 license |
| LINK | https://digitransit.fi/en/developers/apis/3-map-api |

| | |
|-------------|--|
| NAME | FarmBot REST API v1.0 |
| DESCRIPTION | FarmBot REST API v1.0 is an Open Source API intended to manage mail, security and data validation/storage. |
| LINK | https://developer.farm.bot/docs/rest-api |

| | |
|-------------|---|
| NAME | APIInf |
| DESCRIPTION | FIWARE APIInf API is a software intended to administer API's. It is available under EUPL 1.1 license. |
| LINK | https://github.com/apinf/platform |

| | |
|-------------|--|
| NAME | Grafeas |
| DESCRIPTION | Grafeas is an API specification created by Google under Apache license 2.0 with the aim of managing metadata about software resources such as V.Ms, scripts or JARs. |
| LINK | https://grafeas.io/ |

| | |
|-------------|--|
| NAME | Idra |
| DESCRIPTION | FIWARE Idra is a tool that is intended to manage Open D.M systems. It is available under AGPL 3.0 license. |
| LINK | https://idra.rtfid.io/ |

| | |
|-------------|--|
| NAME | Jackrabbit |
| DESCRIPTION | Jackrabbit is a version of the JAVA Content Repo. It was created by Apache under A.L 2.0 and is intended for storing structured and/or unstructured content. |
| LINK | http://jackrabbit.apache.org/jcr/index.html |

| | |
|-------------|--|
| NAME | Juneau |
| DESCRIPTION | Juneau is a Java tool created by Apache under Apache license 2.0 and intended for clasifying POJOs, supporting RDF and providing a REST API. |
| LINK | http://juneau.apache.org/#about.html |

| | |
|-------------|---|
| NAME | Mozilla Web of Thing Websocket Streaming API |
| DESCRIPTION | Mozilla Web of Thing Websocket Streaming API is an API draft intended to provide a WebSocket service. |
| LINK | https://developer.mozilla.org/es/docs/Web/API/WebSockets_API |

| | |
|-------------|---|
| NAME | Open Food Network REST API |
| DESCRIPTION | Open Food Network REST API is an Open Source API intended for selling food products online. |
| LINK | https://www.openfoodnetwork.org/software-platform/ |

| | |
|-------------|--|
| NAME | Orion Context Broker |
| DESCRIPTION | FIWARE Orion Context Broker is a REST API available under the AGPL 3.0 license and intended to update the context. |
| LINK | https://github.com/telefonicaid/fiware-orion/ |

| | |
|-------------|---|
| NAME | OSRM REST API v1 |
| DESCRIPTION | OSRM REST API v1 is an Open Source API intended to recover paths in roads. |
| LINK | http://project-osrm.org/docs/v5.5.1/api/#general-options |

| | |
|-------------|---|
| NAME | Reconmap REST API v0.7.0 |
| DESCRIPTION | Reconmap REST API v0.7.0 is an Open Source API intended for manipulating data in mobile applications. |
| LINK | https://github.com/Reconmap |

| | |
|-------------|---|
| NAME | Rosetta RPC API v1.3.1 |
| DESCRIPTION | Rosetta RPC API v1.3.1 is an Open Source API intended to manage blockchain. |
| LINK | https://www.rosetta-api.org/docs/node_api_introduction.html |

| | |
|-------------|---|
| NAME | SwiftShader |
| DESCRIPTION | SwiftShader is an implementation of the OpenGL/Direct3D 9 graphics APIs that was created by Google under Apache license 2.0 and intended for providing 3D graphics. |
| LINK | https://swiftshader.googlesource.com/SwiftShader |

| | |
|-------------|---|
| NAME | TensorFlow API |
| DESCRIPTION | TensorFlow API is an Open Source API intended for machine learning. |
| LINK | https://www.tensorflow.org/api_docs/ |

| | |
|-------------|---|
| NAME | WSO2 API Manager |
| DESCRIPTION | API Manager is an Open Source API platform intended for management developed by WSO2 that provides secure access/microservices. |
| LINK | https://wso2.com/api-management/ |

6 BUILDING BLOCKS

This section describes some of the main Building blocks available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | Context Broker - BDTI Integration |
| DESCRIPTION | The FIWARE Context Broker - BDTI Integration is a software intended to connect OCB with Cygnus and save data. It is available under EUPL 1.2 license. |
| LINK | https://marketplace.fiware.org/pages/solutions/ea4e02517aad394862de02a1 |

| | |
|-------------|---|
| NAME | Context Broker Data Visualisation |
| DESCRIPTION | The FIWARE Context Broker Data Visualisation is an enabler intended to provide visualization for the Context Broker. It is available under EUPL v1.2 license. |
| LINK | https://marketplace.fiware.org/pages/solutions/a175375c8a026c391cb775c6 |

| | |
|-------------|---|
| NAME | Context Broker - EDP Integration |
| DESCRIPTION | The FIWARE Context Broker EDP is a tool intended to share information from several fonts in the EU portal. It is available under EUPL 1.2 license. |
| LINK | https://marketplace.fiware.org/pages/solutions/b85deaaef49c6c34ff830a0b |

7 CODE QUALITY/INTEGRATION

This section describes many of the main Code quality/Integration tools available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|--|
| NAME | Allura |
| DESCRIPTION | Allura is an Open Source website intended for managing code repositories, discussions, and bugs. |
| LINK | http://allura.apache.org/ |

| | |
|-------------|--|
| NAME | Archiva |
| DESCRIPTION | Archiva is a repository manager created by Apache under Apache license 2.0 intended for managing the files generated by tools such as Maven/Ant. |
| LINK | http://archiva.apache.org/ |

| | |
|-------------|---|
| NAME | Bloodhound |
| DESCRIPTION | Bloodhound is an Open Source tool created by Apache intended for managing tasks, features and bugs of software. |
| LINK | http://bloodhound.apache.org/ |

| | |
|-------------|--|
| NAME | Buildbot |
| DESCRIPTION | Buildbot is an O.S integration tool that automates compilation. It was developed by Brian Warner and was firstly released in 2003. |
| LINK | https://www.buildbot.net/ |

| | |
|-------------|---|
| NAME | Codestriker |
| DESCRIPTION | Codestriker is an open source online tool intended for code revision that can be integrated with many other tools such as CVS/Subversion. It is property of David Sitsky. |
| LINK | http://codestriker.sourceforge.net/ |

| | |
|-------------|--|
| NAME | Copybara |
| DESCRIPTION | Copybara is a tool designed to manage code repositories that was created by Google under Apache license 2.0. |
| LINK | https://github.com/google/copybara |

| | |
|-------------|---|
| NAME | Gerrit |
| DESCRIPTION | Gerrit is an online collaboration tool for code developed by Google under Apache license that can be integrated with Git. |
| LINK | https://www.gerritcodereview.com/ |

| | |
|-------------|--|
| NAME | Go |
| DESCRIPTION | Go is an integration tool that allows visualizing code schemas/workflows. It was developed by ThoughtWorks Inc. under Apache License 2.0 |
| LINK | https://www.gocd.org/ |

| | |
|-------------|--|
| NAME | Gump |
| DESCRIPTION | Gump is a Python integration tool created by Apache under A.L 2.0 that can be integrated with Ant/Maven. |
| LINK | http://gump.apache.org/ |

| | |
|-------------|--|
| NAME | Integrity |
| DESCRIPTION | Integrity is an integration tool based on Ruby. It was created by Nicolas Sanguinetti and Simon Rozet under MIT license. |
| LINK | http://integrity.github.io/ |

| | |
|-------------|---|
| NAME | Jackrabbit |
| DESCRIPTION | Jackrabbit is a version of the Content Repository for Java created by Apache under Apache license 2.0 and intended for storing structured/unstructured content. |
| LINK | http://jackrabbit.apache.org/jcr/index.html |

| | |
|-------------|---|
| NAME | Jenkins |
| DESCRIPTION | Jenkins is an O.S server intended for software development. It was developed by Kohsuke Kawaguchi and was firstly released in 2011. |
| LINK | https://jenkins.io/ |

| | |
|-------------|--|
| NAME | JMeter |
| DESCRIPTION | JMeter is an Open Source app created by Apache and intended for measuring code performance. It is available under Apache license 2.0 |
| LINK | https://jmeter.apache.org/ |

| | |
|-------------|--|
| NAME | Logging |
| DESCRIPTION | Logging is a set of Open Source tools created by Apache and intended for managing the logging of apps. |
| LINK | http://logging.apache.org/ |

| | |
|-------------|--|
| NAME | MOE: Make Open Easy |
| DESCRIPTION | MOE: Make Open Easy is a system created by Google under A.L 2.0 that is intended for managing repos synchronization and scrubbing. |
| LINK | https://github.com/google/moe |

| | |
|-------------|--|
| NAME | Reviewable |
| DESCRIPTION | Reviewable is a tool for code revision with board discussion. It has an Open Source version and is designed by Ideanest LLC. |
| LINK | https://reviewable.io/ |

| | |
|-------------|---|
| NAME | SonarQube |
| DESCRIPTION | SonarQube is an open source platform for code management created by SonarSource and released in 2006. |
| LINK | http://sonarqube.org/ |

| | |
|-------------|---|
| NAME | Subversion |
| DESCRIPTION | Subversion is a system intended for code versions management created by the Apache Foundation under Apache license. |
| LINK | http://subversion.apache.org/ |

8 COLLABORATION TOOLS

This section describes many of the main Collaboration tools available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | Drupal |
| DESCRIPTION | Drupal is an open source web management tool designed by the Drupal community and released in 2001. |
| LINK | https://www.drupal.org/ |

| | |
|-------------|---|
| NAME | Guacamole |
| DESCRIPTION | Guacamole is an O.S remote gateway for desktop created by the Apache Foundation under A.L 2.0 that supports RDP, SSH and VNC protocols. |
| LINK | http://guacamole.apache.org/ |

| | |
|-------------|---|
| NAME | Incubator |
| DESCRIPTION | Incubator is a set of services created by Apache under A.L 2.0 and intended for helping projects to fit into the the Apache style in order to join the Apache Foundation. |
| LINK | http://incubator.apache.org/ |

| | |
|-------------|--|
| NAME | James |
| DESCRIPTION | James is a mail server that runs in the Java Virtual Machine created by Apache under Apache license 2.0. |
| LINK | http://james.apache.org/index.html |

| | |
|-------------|--|
| NAME | JSPWiki |
| DESCRIPTION | JSPWiki is an Open Source WikiWiki tool built with standard JEE components created by the Apache Foundation. |
| LINK | http://jspwiki.apache.org/ |

| | |
|-------------|---|
| NAME | Kibble |
| DESCRIPTION | Kibble is a set of tools created by Apache under Apache license 2.0 and intended to collect/visualize activity. |
| LINK | http://kibble.apache.org/ |

| | |
|-------------|---|
| NAME | ManifoldCF |
| DESCRIPTION | ManifoldCF is a framework created by Apache under A.L 2.0 which objective is connecting repositories (Sharepoint /EMC). |
| LINK | http://manifoldcf.apache.org/ |

| | |
|-------------|--|
| NAME | NextCloud |
| DESCRIPTION | NextCloud is a file sharing tool with group administration. It was designed by Nextcloud under AGPL v3 license and firstly released in 2007. |
| LINK | https://nextcloud.com/ |

| | |
|-------------|---|
| NAME | OwnCloud |
| DESCRIPTION | OwnCloud is a file sharing software designed by OwnCloud GmbH under AGPL v3 license and firstly released in 2010. |
| LINK | https://owncloud.org/ |

| | |
|-------------|---|
| NAME | Petri |
| DESCRIPTION | Petri is a project created by Apache under Apache license 2.0 which main aim is helping projects to become an Apache project. |
| LINK | http://petri.apache.org/ |

| | |
|-------------|---|
| NAME | STeVe |
| DESCRIPTION | STeVe is a Python voting system created by Apache under A.L 2.0 with the aim of managing votings. |
| LINK | http://steve.apache.org/ |

| | |
|-------------|---|
| NAME | VCL |
| DESCRIPTION | VCL is an O.S. cloud platform created by Apache that is intended for giving users access to dedicated compute environments. |
| LINK | http://vcl.apache.org/ |

9 COMMUNICATION TOOLS

This section describes many of the main Communication tools available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | Kopano core |
| DESCRIPTION | Kopano core is an Open Source platform that allows collaborative work between teams |
| LINK | http://kopano.com/ |

| | |
|-------------|---|
| NAME | ActiveMQ |
| DESCRIPTION | ActiveMQ is a messaging server based on Java that was created by Apache under A.L 2.0 with the aim of providing connectivity to apps. |
| LINK | http://activemq.apache.org/ |

| | |
|-------------|--|
| NAME | James |
| DESCRIPTION | James is a mail server that runs in the Java Virtual Machine created by Apache under Apache license 2.0. |
| LINK | http://james.apache.org/index.html |

| | |
|-------------|--|
| NAME | Jitsi |
| DESCRIPTION | Jitsi is an O.S multiplatform app created by Emil Ivov, Inc that allows voice/video calls and chat. It was firstly released in 2003. |
| LINK | https://jitsi.org/ |

| | |
|-------------|--|
| NAME | Qpid |
| DESCRIPTION | Qpid is an Open Source multiplatform messaging tool created by the Apache Foundation that uses AMQP. |
| LINK | http://qpid.apache.org/ |

| | |
|-------------|---|
| NAME | Wire |
| DESCRIPTION | Wire is an O.S. messaging software that allows audio/video calls. |
| LINK | https://wire.com/ |

| | |
|-------------|---|
| NAME | SpamAssassin |
| DESCRIPTION | SpamAssassin is an O.S platform designed by Apache to perform anti-spam tasks such as blocking/filtering mails. |
| LINK | https://spamassassin.apache.org/ |

| | |
|-------------|--|
| NAME | Mattermost |
| DESCRIPTION | Mattermost is an Open Source online chat intended for companies. |
| LINK | https://mattermost.com/ |

| | |
|-------------|---|
| NAME | Zulip |
| DESCRIPTION | Zulip is an Open Source chat tool with file sharing. It was created by Jeff Arnold in 2012. |
| LINK | https://zulip.com/ |

10 DASHBOARDS

This section describes many of the main Dashboards available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|--|
| NAME | Dashbuilder |
| DESCRIPTION | Dashbuilder is an O.S Dashboard intended for reporting. It was designed by RedHat and is available under Apache Software License 2.0 |
| LINK | http://dashbuilder.org/ |

| | |
|-------------|---|
| NAME | Grafana |
| DESCRIPTION | Grafana is a web tool that allows graphs visualization. It was designed by Grafana Labs under GNUPL 3.0 license and released in 2014. |
| LINK | https://grafana.com/ |

| | |
|-------------|---|
| NAME | Mozaik |
| DESCRIPTION | Mozaik is a Dashboard based on Nodejs. It was designed by Plouc and is available under MIT License. |
| LINK | http://mozaik.rocks/ |

| | |
|-------------|--|
| NAME | ReDash |
| DESCRIPTION | ReDash is an O.S. Dashboard created by Redash Inc. that is designed to be connected with several databases in order to represent data. |
| LINK | https://redash.io/ |

| | |
|-------------|--|
| NAME | Smashing |
| DESCRIPTION | Smashing is an O.S. Dashboard based on Sinatra that allows data visualization. |
| LINK | https://smashing.github.io/ |

| | |
|-------------|---|
| NAME | Stashboard |
| DESCRIPTION | Stashboard is an O.S. Dashboard intended to be integrated with services. It was created by Twilio and is available under MIT License. |
| LINK | https://www.stashboard.org/ |

11 DATA MANAGEMENT

This section describes many of the main Data management tools available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | Accumulo |
| DESCRIPTION | Accumulo is a key/value storage created by Apache under Apache license 2.0 and intended for providing data storage. |
| LINK | https://accumulo.apache.org/ |

| | |
|-------------|---|
| NAME | Any23 |
| DESCRIPTION | Any23 is a tool created by Apache under Apache license 2.0 with the aim of extracting structured data from web documents. |
| LINK | http://any23.apache.org/ |

| | |
|-------------|---|
| NAME | Apache DB |
| DESCRIPTION | Apache DB is a database created by Apache under A.L 2.0 based on software from the Apache Foundation. |
| LINK | http://db.apache.org/ |

| | |
|-------------|---|
| NAME | AsterixDB |
| DESCRIPTION | AsterixDB is an Open Source data management system created by Apache with the aim of managing Big Data. |
| LINK | http://asterixdb.apache.org/ |

| | |
|-------------|---|
| NAME | Bigtop |
| DESCRIPTION | Bigtop is a tool created and licensed by Apache with the objective of helping with testing/configuration/packaging of big data. |
| LINK | http://bigtop.apache.org/ |

| | |
|-------------|---|
| NAME | BookKeeper |
| DESCRIPTION | BookKeeper is a storage service created by Apache under A.L 2.0 which is tolerant to failures and scalable. |
| LINK | http://bookkeeper.apache.org/ |

| | |
|-------------|---|
| NAME | Calcite |
| DESCRIPTION | Calcite is a database created by Apache under Apache license 2.0 which uses standard SQL and has optimized queries. |
| LINK | https://calcite.apache.org/ |

| | |
|-------------|--|
| NAME | CarbonData |
| DESCRIPTION | CarbonData is a data format created by Apache under A.L 2.0 and intended for performing analytics on big data platforms. |
| LINK | http://carbodata.apache.org/ |

| | |
|-------------|---|
| NAME | Cassandra |
| DESCRIPTION | Cassandra is an O.S. relational database property of the Apache Software Foundation. It was firstly released in 2008. |
| LINK | http://cassandra.apache.org/ |

| | |
|-------------|--|
| NAME | Clerezza |
| DESCRIPTION | Clerezza is a pack of libraries for Java created and licensed by Apache intended for managing linked data. |
| LINK | http://clerezza.apache.org/ |

| | |
|-------------|---|
| NAME | Cosmos |
| DESCRIPTION | FIWARE Cosmos is an enabler that allows analyzing Big Data in Flink/Spark. It is available under AGPL license 3.0 |
| LINK | https://github.com/ging/fiware-cosmos |

| | |
|-------------|--|
| NAME | CouchDB |
| DESCRIPTION | CouchDB is an O.S. NoSQL database designed by the Apache Software Foundation. It was firstly released in 2005. |
| LINK | http://couchdb.apache.org/ |

| | |
|-------------|--|
| NAME | cTAKES |
| DESCRIPTION | cTAKES is an O.S processing system for natural language created by Apache with the objective of extracting information from medical files. |
| LINK | http://ctakes.apache.org/ |

| | |
|-------------|--|
| NAME | Cygnus |
| DESCRIPTION | FIWARE Cygnus is an enabler that is intended to manage context history. It can be integrated with several databases and is licensed under AGPL v3.0 license. |
| LINK | https://fiware-cygnus.rtdf.io/ |

| | |
|-------------|---|
| NAME | Draco |
| DESCRIPTION | FIWARE Draco is a Nifi-based Enabler that is designed to manage context history. It is available under Apache license 2.0 |
| LINK | https://fiware-draco.rtdf.io/ |

| | |
|-------------|---|
| NAME | Drill |
| DESCRIPTION | Drill is a SQL Query Engine without schema created by Apache under Apache license 2.0 for Hadoop and Cloud Storage. |
| LINK | http://drill.apache.org/ |

| | |
|-------------|---|
| NAME | Druid |
| DESCRIPTION | Druid is an analytics database created by Apache Foundation under A.L 2.0 and intended for workflows. |
| LINK | http://druid.apache.org/ |

| | |
|-------------|--|
| NAME | Empire-db |
| DESCRIPTION | Empire-db is an O.S component for data persistence and database abstraction created by Apache. |
| LINK | http://empire-db.apache.org/ |

| | |
|-------------|--|
| NAME | Flink |
| DESCRIPTION | Flink is a framework created by the Apache Foundation under A.L 2.0 and intended for managing streams of data. |
| LINK | https://flink.apache.org/ |

| | |
|-------------|--|
| NAME | Flume |
| DESCRIPTION | Flume is a service created by Apache under Apache license 2.0 intended for storing, moving, and collecting log data. |
| LINK | http://flume.apache.org/ |

| | |
|-------------|--|
| NAME | Fluo |
| DESCRIPTION | Fluo is a distributed processing system created by Apache under Apache license 2.0 with the aim of making updates to big datasets. |
| LINK | https://fluo.apache.org/ |

| | |
|-------------|---|
| NAME | Geode |
| DESCRIPTION | Geode is a data management tool that was created by Apache under A.L 2.0 with the objective of building high speed data APPs. |
| LINK | https://geode.apache.org/ |

| | |
|-------------|--|
| NAME | Gora |
| DESCRIPTION | Gora is an Open Source framework for big data created by Apache and intended for providing persistence and a data model. |
| LINK | http://gora.apache.org/ |

| | |
|-------------|--|
| NAME | Griffin |
| DESCRIPTION | Griffin is an O.S. big data tool created by Apache with the aim of measuring data quality. |
| LINK | http://griffin.apache.org/ |

| | |
|-------------|---|
| NAME | Hadoop |
| DESCRIPTION | Hadoop is an O.S framework created by the Apache Foundation that is designed to process a big dataset in clusters of computers. |
| LINK | http://hadoop.apache.org/ |

| | |
|-------------|--|
| NAME | HAWQ |
| DESCRIPTION | HAWQ is an Open Source SQL database for Hadoop developed by the Apache Foundation. |
| LINK | http://hawq.apache.org/ |

| | |
|-------------|---|
| NAME | HBase |
| DESCRIPTION | HBase is an O.S big data database scalable for Hadoop created by the Apache Foundation. |
| LINK | http://hbase.apache.org/ |

| | |
|-------------|---|
| NAME | Hive |
| DESCRIPTION | Hive is an O.S data warehouse designed by Apache with the objective of managing large datasets in distributed storages. |
| LINK | http://hive.apache.org/ |

| | |
|-------------|---|
| NAME | Hudi |
| DESCRIPTION | Hudi is a tool created by Apache under Apache license 2.0 that is intended for storing datasets in DFS. |
| LINK | http://hudi.apache.org/ |

| | |
|-------------|--|
| NAME | Iceberg |
| DESCRIPTION | Iceberg is a type of table for big datasets created by Apache under A.L 2.0 and intended for adding high performance tables to Spark/Presto. |
| LINK | http://iceberg.apache.org/ |

| | |
|-------------|--|
| NAME | Impala |
| DESCRIPTION | Impala is an Open Source analytics database for Hadoop developed by the Apache Foundation. |
| LINK | http://impala.apache.org/ |

| | |
|-------------|---|
| NAME | IoTDB |
| DESCRIPTION | IoTDB is a database that is designed for edge/cloud that was created by Apache under Apache license 2.0 that is intended for being used with IoT. |
| LINK | http://iotdb.apache.org/ |

| | |
|-------------|--|
| NAME | JanusGraph |
| DESCRIPTION | JanusGraph is an O.S version of TITAN database created by Google which main aim is storing graphs. |
| LINK | http://janusgraph.org/ |

| | |
|-------------|---|
| NAME | Json |
| DESCRIPTION | Json is a format used to store a Javascript object in plain text. It was firstly developed in 1999. |
| LINK | https://json.org/ |

| | |
|-------------|--|
| NAME | Json-ld |
| DESCRIPTION | Json-ld is format used to note linked data with Json and was firstly released in 2010. |
| LINK | http://www.w3.org/TR/json-ld/ |

| | |
|-------------|--|
| NAME | Kafka |
| DESCRIPTION | Kafka is an Open Source streaming platform created by Apache and intended for managing streaming, pipelines and integration. |
| LINK | http://kafka.apache.org/ |

| | |
|-------------|--|
| NAME | Kudu |
| DESCRIPTION | Kudu is an Open Source tool created by Apache and intended for Hadoop storage in order to allow fast data analytics. |
| LINK | https://kudu.apache.org/ |

| | |
|-------------|---|
| NAME | Kylin |
| DESCRIPTION | Kylin is an Open Source Analytical Data Warehouse created by the Apache Foundation under Apache license 2.0 and intended for Big Data OLAP. |
| LINK | http://kylin.apache.org/ |

| | |
|-------------|---|
| NAME | MADlib |
| DESCRIPTION | MADlib is an O.S. library for Big Data and machine learning created by the Apache Foundation intended for PostgreSQL/Greenplum. |
| LINK | http://madlib.apache.org/ |

| | |
|-------------|--|
| NAME | MariaDB |
| DESCRIPTION | MariaDB is an O.S. database designed by MariaDB Corp. that was firstly released in 2009. |
| LINK | http://mariadb.com/ |

| | |
|-------------|---|
| NAME | MetaModel |
| DESCRIPTION | MetaModel is an interface designed by Apache under A.L 2.0 that is intended for exploring and discovering metadata. |
| LINK | http://metamodel.apache.org/ |

| | |
|-------------|---|
| NAME | Mnemonic |
| DESCRIPTION | Mnemonic is a library created and licensed by the Apache Foundation and intended for performing hybrid memory storages. |
| LINK | http://mnemonic.apache.org/ |

| | |
|-------------|---|
| NAME | MongoDB |
| DESCRIPTION | MongoDB is a database focused on document management that is property of MongoDB Inc. It was firstly released in 2009 and is available under GNU AGPL 3.0 |
| LINK | http://www.mongodb.org/ |

| | |
|-------------|---|
| NAME | mtail |
| DESCRIPTION | mtail is a tool developed by Google under A.L 2.0 with the objective of extracting metrics and monitoring data from logs. |
| LINK | https://github.com/google/mtail |

| | |
|-------------|---|
| NAME | MySQL |
| DESCRIPTION | MySQL is an O.S. database designed by Sun Microsystems and Oracle Corporation. It was firstly released in 1995. |
| LINK | http://www.mysql.com/ |

| | |
|-------------|---|
| NAME | ODT |
| DESCRIPTION | ODT is an O.S. tool created by the Apache Foundation that allows integrating and storing processes/data/metadata. |
| LINK | http://oodt.apache.org/ |

| | |
|-------------|--|
| NAME | OpenNLP |
| DESCRIPTION | OpenNLP is a set of tools intended for machine learning that was created by the Apache Foundation under A.L 2.0 to process natural language. |
| LINK | http://opennlp.apache.org/ |

| | |
|-------------|---|
| NAME | ORC |
| DESCRIPTION | ORC is a storage for Hadoop created by the Apache Foundation under Apache license 2.0 that includes support for snapshot isolation and ACID transactions. |
| LINK | https://orc.apache.org/ |

| | |
|-------------|---|
| NAME | Parquet |
| DESCRIPTION | Parquet is an O.S storage format for Hadoop created by the Apache Foundation. |
| LINK | http://parquet.apache.org/ |

| | |
|-------------|---|
| NAME | Perkeep |
| DESCRIPTION | Perkeep is a set of O.S. formats, protocols and software for data available under Apache license 2.0. |
| LINK | https://perkeep.org/ |

| | |
|-------------|---|
| NAME | Pig |
| DESCRIPTION | Pig is platform created by the Apache Foundation that is designed to analyze datasets. It is available under Apache license 2.0 |
| LINK | http://pig.apache.org/ |

| | |
|-------------|--|
| NAME | PostgreSQL |
| DESCRIPTION | PostgreSQL is an O.S. database focused on objects. It is property of PostgreSQL Global Development Group and was firstly released in 1996. |
| LINK | http://www.postgresql.org/ |

| | |
|-------------|---|
| NAME | QuantumLeap |
| DESCRIPTION | FIWARE QuantumLeap is an Enabler that is designed to save context data in databases. It is available under MIT license. |
| LINK | https://github.com/smartsdk/ngsi-timeseries-api/ |

| | |
|-------------|--|
| NAME | Redis |
| DESCRIPTION | Redis is an O.S. database based on memory that is property of Redis Labs. It was firstly released in 2009. |
| LINK | http://redis.io/ |

| | |
|-------------|--|
| NAME | RethinkDB |
| DESCRIPTION | RethinkDB is an open source database focused in document management. It is property of RethinkDB and was firstly released in 2009. |
| LINK | http://rethinkdb.com/ |

| | |
|-------------|--|
| NAME | Rya |
| DESCRIPTION | Rya is a Big Data storage created by Apache under A.L 2.0 that is intended for RDF data. |
| LINK | http://rya.apache.org/ |

| | |
|-------------|---|
| NAME | ShardingSphere |
| DESCRIPTION | ShardingSphere is an O.S. set of distributed databases created by Apache and intended for providing distributed transactions/data sharding/orchestration. |
| LINK | http://shardingsphere.apache.org/ |

| | |
|-------------|--|
| NAME | Spark |
| DESCRIPTION | Spark is an O.S engine created by the Apache Foundation that is intended for processing big amounts of data. |
| LINK | http://spark.apache.org/ |

| | |
|-------------|--|
| NAME | Spinnaker |
| DESCRIPTION | Spinnaker is an Open Source platform created by Netflix and Google that is intended for continuous delivery. |
| LINK | http://www.spinnaker.io/ |

| | |
|-------------|---|
| NAME | SQLite |
| DESCRIPTION | SQLite is an O.S. relational database, developed by D. Richard Hipp. It was firstly released in 2000. |
| LINK | http://www.sqlite.org/ |

| | |
|-------------|---|
| NAME | Sqoop |
| DESCRIPTION | Sqoop is a software created by Apache under Apache license 2.0 intended for transferring bulk data. |
| LINK | http://sqoop.apache.org/ |

| | |
|-------------|---|
| NAME | STH Comet |
| DESCRIPTION | FIWARE STH Comet is an Enabler available under AGPL 3.0 license designed to save context data in a MongoDB. |
| LINK | https://fiware-sth-comet.rtd.io/ |

| | |
|-------------|---|
| NAME | Superset |
| DESCRIPTION | Superset is a platform created and licensed by Apache and intended for performing data exploration/visualization. |
| LINK | https://superset.apache.org/ |

| | |
|-------------|--|
| NAME | Tika |
| DESCRIPTION | Tika is a tool created by Apache under A.L 2.0 that is intended for detecting/extracting text and metadata from XLS/PPT/PDF files. |
| LINK | http://tika.apache.org/ |

| | |
|-------------|--|
| NAME | TinkerPop |
| DESCRIPTION | TinkerPop is an O.S framework created by Apache and intended for creating OLTP and OLAP. |
| LINK | http://tinkerpop.apache.org/ |

| | |
|-------------|---|
| NAME | Trafodion |
| DESCRIPTION | Trafodion is a transactional database for Hadoop that was created by the Apache Foundation under A.L 2.0. |
| LINK | http://trafodion.apache.org/ |

| | |
|-------------|---|
| NAME | UIMA |
| DESCRIPTION | UIMA is an Open Source framework created by Apache intended for analyzing unstructured information. |
| LINK | http://uima.apache.org/ |

| | |
|-------------|---|
| NAME | Unomi |
| DESCRIPTION | Unomi is an Open Source data platform for Java created by Apache with the aim of managing users data and privacy. |
| LINK | http://unomi.apache.org/ |

| | |
|-------------|---|
| NAME | Vitess |
| DESCRIPTION | Vitess is a distributed database created by Google under Apache license 2.0 that uses MySQL as a backend and can be run in the cloud. |
| LINK | http://vitess.io/ |

| | |
|-------------|---|
| NAME | XML |
| DESCRIPTION | XML is a markup language created by the WWW Consortium in 1999. |
| LINK | http://www.w3.org/XML |

| | |
|-------------|--|
| NAME | Zeppelin |
| DESCRIPTION | Zeppelin is a web notebook created by Apache under Apache license 2.0 that is focused in creating collaborative documents. |
| LINK | http://zeppelin.apache.org/ |

| | |
|-------------|---|
| NAME | Beam |
| DESCRIPTION | Beam is an O.S programming model created by Apache with the aim of streaming data processing jobs and implementing batches. |
| LINK | https://beam.apache.org/ |

12 DESIGN TOOLS

This section describes many of the main Design tools available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|--|
| NAME | GIMP |
| DESCRIPTION | GIMP is an open source software for image manipulation/edition created in 1996 by the GIMP Team. |
| LINK | https://www.gimp.org/ |

| | |
|-------------|---|
| NAME | Open Images Dataset |
| DESCRIPTION | Open Images Dataset is a dataset of images created by Google under CC 2.0 and CC 4.0 that has about 9 millions of labeled pictures. |
| LINK | https://g.co/dataset/open-images |

| | |
|-------------|--|
| NAME | SwiftShader |
| DESCRIPTION | SwiftShader is an implementation of the OpenGL and Direct3D 9 graphics APIs created by Google under Apache license 2.0 and intended for providing 3D graphics. |
| LINK | https://swiftshader.googleusercontent.com/SwiftShader |

13 DIAGRAM DESIGN TOOLS

This section describes many of the main Diagram design tools available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | Cayenne |
| DESCRIPTION | Cayenne is a tool created by Apache under Apache license 2.0 that is intended for schema/map editing. |
| LINK | https://cayenne.apache.org/ |

| | |
|-------------|--|
| NAME | Draw.io |
| DESCRIPTION | Draw.io is a software for diagram/chart design that is property of diagrams.net. It has a desktop/online app that is available under Apache license. |
| LINK | https://app.diagrams.net/ |

| | |
|-------------|--|
| NAME | Giraph |
| DESCRIPTION | Giraph is an O.S graph processing tool created by the Apache Foundation that is similar to Google Paper. |
| LINK | http://giraph.apache.org/ |

14 ENABLERS

This section describes many of the main Enablers available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | FI-ASSIST |
| DESCRIPTION | FIWARE FI-ASSIST is an indoor navigator software for ASSIST. |
| LINK | https://marketplace.fiware.org/pages/solutions/5c48e1d037f08d143452189c |

| | |
|-------------|---|
| NAME | KNOWAGE |
| DESCRIPTION | FIWARE Knowage is an O.S data visualization software available under GNU public license. |
| LINK | https://marketplace.fiware.org/pages/solutions/59611fb5573b7cb51c44ef68 |

| | |
|-------------|---|
| NAME | REPLO |
| DESCRIPTION | REPLO is an application based on FIWARE that allows controlling the attendance in events. |
| LINK | https://marketplace.fiware.org/pages/solutions/c9c25a72e2ea4dac5643cce8 |

| | |
|-------------|---|
| NAME | SENSIoT |
| DESCRIPTION | SENSIoT is a IoT software based on FIWARE that is intended for gathering data from SES |
| LINK | https://marketplace.fiware.org/pages/solutions/666207c189d5917064754e8f |

| | |
|-------------|---|
| NAME | siGEUS |
| DESCRIPTION | siGEUS is a solution based on FIWARE that is intended to monitor traceability, weight and location of the waste. |
| LINK | https://marketplace.fiware.org/pages/solutions/e86ee0ac0f75b7e6d86fadde |

| | |
|-------------|---|
| NAME | Situm Indoor Positioning |
| DESCRIPTION | Situm Indoor Positioning is a FIWARE positioning/navigation tool designed for smartphones |
| LINK | https://marketplace.fiware.org/pages/solutions/3b90cc37b408cb4cdb22e055 |

| | |
|-------------|---|
| NAME | Traxion |
| DESCRIPTION | FIWARE Traxion is an automatic capacity check software designed for cameras. |
| LINK | https://marketplace.fiware.org/pages/solutions/009aceade7ed67c669365f31 |

| | |
|-------------|---|
| NAME | Xapix |
| DESCRIPTION | FIWARE Xapix is a software intended to develop smart city solutions. |
| LINK | https://marketplace.fiware.org/pages/solutions/470c610dc1ae16ab64770bd2 |

15 METHODOLOGIES

This section describes many of the Methodologies available in the market that are suitable to be used by any LSP (Large Scale Pilot). Although not being software, these methodologies can be useful for any starting pilot as a reference.

| | |
|-------------|---|
| NAME | Agile |
| DESCRIPTION | The Agile methodology for software development divides the work between teams and encourages collaboration between them. |
| LINK | https://en.wikipedia.org/wiki/Agile_software_development |

| | |
|-------------|---|
| NAME | Continuous integration |
| DESCRIPTION | Continuous integration is a development technique for software that merges all code in a repository. |
| LINK | https://en.wikipedia.org/wiki/Continuous_integration |

| | |
|-------------|---|
| NAME | RAD |
| DESCRIPTION | RAD is a development technique used for creating software that is focused in interfaces with little planning. |
| LINK | https://en.wikipedia.org/wiki/Rapid_application_development |

| | |
|-------------|---|
| NAME | Scrum |
| DESCRIPTION | Scrum is a software development methodology which is focused in performing several team meetings. |
| LINK | https://en.wikipedia.org/wiki/Scrum_(software_development) |

| | |
|-------------|---|
| NAME | TDD |
| DESCRIPTION | TDD is a development technique for software that focuses on repeating small development cycles. |
| LINK | https://en.wikipedia.org/wiki/Test-driven_development |

| | |
|-------------|---|
| NAME | Waterfall |
| DESCRIPTION | The Waterfall is a software development technique that divides the development in independent phases. |
| LINK | https://en.wikipedia.org/wiki/Waterfall_model |

16 PARADIGMS

This section describes many of the Paradigms available in the market that are suitable to be used by any LSP (Large Scale Pilot). Although not being software, these paradigms can be useful for any starting pilot as a reference.

| | |
|-------------|---|
| NAME | Declarative programming |
| DESCRIPTION | The Declarative programming is a computer paradigm that does not describe a unique control flow in apps. |
| LINK | https://en.wikipedia.org/wiki/Declarative_programming |

| | |
|-------------|---|
| NAME | Imperative programming |
| DESCRIPTION | The Imperative programming is a computer science paradigm that focuses on apps that are managed by specific commands. |
| LINK | https://en.wikipedia.org/wiki/Imperative_programming |

| | |
|-------------|---|
| NAME | Metaprogramming |
| DESCRIPTION | Metaprogramming is a computer science paradigm where applications are capable of using other apps and its data. |
| LINK | https://en.wikipedia.org/wiki/Metaprogramming |

| | |
|-------------|---|
| NAME | MSA |
| DESCRIPTION | MSA is a software architecture that is based on several services aligned in order to create an app. |
| LINK | https://en.wikipedia.org/wiki/Microservices |

| | |
|-------------|---|
| NAME | MVC |
| DESCRIPTION | MVC is a software architecture that divides a program in Model/View/Controller in order to separate the front-end from the back-end. |
| LINK | https://en.wikipedia.org/wiki/Model%E2%80%93view%E2%80%93controller |

| | |
|-------------|---|
| NAME | Non Structured programming |
| DESCRIPTION | Non Structured programming is a computer science paradigm that uses GO-TO commands. |
| LINK | https://en.wikipedia.org/wiki/Non-structured_programming |

| | |
|-------------|---|
| NAME | Publish-subscribe architecture |
| DESCRIPTION | Publish-subscribe is a software architecture that creates and sends messages to users without requests |
| LINK | https://en.wikipedia.org/wiki/Publish%E2%80%93subscribe_pattern |

| | |
|-------------|---|
| NAME | SOA |
| DESCRIPTION | SOA is a software architecture that provides services. |
| LINK | https://en.wikipedia.org/wiki/Service-oriented_architecture |

| | |
|-------------|---|
| NAME | Structured programming |
| DESCRIPTION | The Structured programming is a computer science paradigm focused at improving the code quality. |
| LINK | https://en.wikipedia.org/wiki/Structured_programming |

17 PLATFORMS

This section describes many of the main Platforms available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | CCOC |
| DESCRIPTION | CCOC is a platform based on FIWARE designed to manage suppliers' services |
| LINK | https://marketplace.fiware.org/pages/solutions/bc3be30528b157f998e5d87f |

| | |
|-------------|---|
| NAME | FIWOO |
| DESCRIPTION | FIWARE FIWOO is a data platform for urban IoE apps and services. |
| LINK | https://marketplace.fiware.org/pages/solutions/dd093c0591de5859866dd62c |

| | |
|-------------|---|
| NAME | Flink Node |
| DESCRIPTION | FIWARE Flink Node is a platform with all generic enablers |
| LINK | https://marketplace.fiware.org/pages/solutions/92e80d4f18e1c3e98e91aadf |

| | |
|-------------|---|
| NAME | Helix |
| DESCRIPTION | Helix is a microservice platform based on FIWARE |
| LINK | https://marketplace.fiware.org/pages/solutions/fee10a6a7755e554686664fd |

| | |
|-------------|---|
| NAME | Orchestra Cities |
| DESCRIPTION | FIWARE Orchestra Cities is an IoT software that is intended for creating Smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/c8a29a1f62a688fa58d8bc8d |

| | |
|-------------|---|
| NAME | Sirus |
| DESCRIPTION | FIWARE Sirus is a platform based on Open Source that is designed to run in the Cloud. |
| LINK | https://marketplace.fiware.org/pages/solutions/c9e72846b5e38de6a87bfcc9 |

| | |
|-------------|---|
| NAME | SmartOrchestra |
| DESCRIPTION | FIWARE SmartOrchestra is a Platform designed to securely orchestrating apps. |
| LINK | https://marketplace.fiware.org/pages/solutions/cfad9d3a4c855c0dfc5217c2 |

| | |
|-------------|---|
| NAME | Telenet Tinx |
| DESCRIPTION | Telenet Tinx is a FIWARE device and data management platform for smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/444cb097eb2148134651c0f8 |

| | |
|-------------|---|
| NAME | Urban Data Platform |
| DESCRIPTION | Urban Data Platform is a solution based on FIWARE created by Atos and intended for gathering and processing data from sensors. |
| LINK | https://marketplace.fiware.org/pages/solutions/eeba4dad358befeaa3dbcff6 |

| | |
|-------------|---|
| NAME | UrbanPulse |
| DESCRIPTION | UrbanPulse is an information platform for urban data based on FIWARE |
| LINK | https://marketplace.fiware.org/pages/solutions/b1daf7e5fa6b90683d396736 |

| | |
|-------------|---|
| NAME | We4City |
| DESCRIPTION | FIWARE We4City is an IoT platform intended for gathering data coming from sensors in smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/a351bee753897d144351bc5a |

| | |
|-------------|---|
| NAME | Yggio |
| DESCRIPTION | FIWARE Yggio is an IoT operating system intended for managing smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/cfe25e8bc8220d0993a1aaf3 |

18 SOLUTIONS

This section describes many of the main Solutions available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|---|
| NAME | Agricolus |
| DESCRIPTION | Agricolus is a FIWARE app intended for precision farming. |
| LINK | https://marketplace.fiware.org/pages/solutions/2ec3c741ef4dd8f83bab4e83 |

| | |
|-------------|---|
| NAME | Artudata |
| DESCRIPTION | FIWARE ArtuData is an A.I. software designed to help users to find clients. |
| LINK | https://marketplace.fiware.org/pages/solutions/06c346aedee5e14b06c41ccf |

| | |
|-------------|---|
| NAME | Beeta |
| DESCRIPTION | FIWARE Beeta is a software designed to help people to save money in their energy bills. |
| LINK | https://marketplace.fiware.org/pages/solutions/619aca61c8662981e03a561a |

| | |
|-------------|---|
| NAME | Bettair |
| DESCRIPTION | FIWARE Bettair is a mapping tool designed to measure pollution in cities |
| LINK | https://marketplace.fiware.org/pages/solutions/d75bc7d8db8a2cdf8cc12084 |

| | |
|-------------|---|
| NAME | Bookingabus.com |
| DESCRIPTION | FIWARE Bookingabus.com is a software intended to manage bus pricing. |
| LINK | https://marketplace.fiware.org/pages/solutions/699a35a5411fe12e4cc27701 |

| | |
|-------------|---|
| NAME | Breeze |
| DESCRIPTION | FIWARE Breeze is a software intended to gather data coming from sensors to create better environments. |
| LINK | https://marketplace.fiware.org/pages/solutions/4cee5102717a2b0d36681b7e |

| | |
|-------------|---|
| NAME | Bustimize |
| DESCRIPTION | FIWARE Bustimize is a platform intended to reduce the passengers waiting time. |
| LINK | https://marketplace.fiware.org/pages/solutions/e1f9208b1b215ac9954f3178 |

| | |
|-------------|---|
| NAME | CardioWheel |
| DESCRIPTION | FIWARE CardioWheel is an ADAS intended to prevent drowsiness in drivers. |
| LINK | https://marketplace.fiware.org/pages/solutions/da548f1997eb5d2f664328 |

| | |
|-------------|---|
| NAME | Ciclogreen |
| DESCRIPTION | FIWARE Ciclogreen is an online platform that rewards sustainable mobility in smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/b6b4b03f1d65ce7c8983f43b |

| | |
|-------------|---|
| NAME | CityGO |
| DESCRIPTION | FIWARE CityGO is a mobility app designed to give users recommendations to improve their paths. |
| LINK | https://marketplace.fiware.org/pages/solutions/6ccbccac9c87ab76c5f8ff61 |

| | |
|-------------|---|
| NAME | CitySense |
| DESCRIPTION | FIWARE CitySense is a project created in Malaga with the aims to interconnect users with the city. |
| LINK | https://marketplace.fiware.org/pages/solutions/5d166a43a16d274f0305de1d |

| | |
|-------------|---|
| NAME | Cloud City Operations Center |
| DESCRIPTION | Cloud City Operations Center is a FIWARE application intended for managing smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/310ad83a0540d4d2fa77596a |

| | |
|-------------|---|
| NAME | DelSuper.es |
| DESCRIPTION | FIWARE DelSuper.es is a software intended to perform grocery shopping. |
| LINK | https://marketplace.fiware.org/pages/solutions/10b3c42968b005e70383401f |

| | |
|-------------|---|
| NAME | Digitanimal |
| DESCRIPTION | FIWARE Digitanimal is a solution designed to increase profit of farms, animal welfare and traceability. |
| LINK | https://marketplace.fiware.org/pages/solutions/cfffde4b5aaf151b325da8c3 |

| | |
|-------------|---|
| NAME | Drone2.Me |
| DESCRIPTION | FIWARE Drone delivery is a service intended to perform drone transportation of goods to consumers. |
| LINK | https://marketplace.fiware.org/pages/solutions/88cd0f20155dfb79981a9e1f |

| | |
|-------------|---|
| NAME | e-bot7 |
| DESCRIPTION | FIWARE e-bot7 integrates A.I. in the customer service. |
| LINK | https://marketplace.fiware.org/pages/solutions/d9cb655536053d4d6f0462b1 |

| | |
|-------------|---|
| NAME | EcoSAT |
| DESCRIPTION | FIWARE EcoSAT is a solution for the monitoring of waste collection and road cleaning services |
| LINK | https://marketplace.fiware.org/pages/solutions/2c5abf8cf48258c0cd03b0d8 |

| | |
|-------------|---|
| NAME | Elliot Cloud |
| DESCRIPTION | FIWARE Elliot Cloud is an Internet of Everything platform designed to monitor sources of data. |
| LINK | https://marketplace.fiware.org/pages/solutions/4a79e8b0c28795af14cc5475 |

| | |
|-------------|---|
| NAME | Everimpact |
| DESCRIPTION | FIWARE Everimpact is a software intended for monitoring Carbon Emissions in smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/de9dfc84c4fc2db2b5b0df19 |

| | |
|-------------|---|
| NAME | eVineyard |
| DESCRIPTION | Vineyard is a FIWARE management software designed to help users with bureaucracy. |
| LINK | https://marketplace.fiware.org/pages/solutions/8448609e669175cbe00eaa2e |

| | |
|-------------|---|
| NAME | Farm Dog |
| DESCRIPTION | FIWARE Farm Dog is a tool intended for keeping agricultural fields free from pests. |
| LINK | https://marketplace.fiware.org/pages/solutions/170e9893cebe97135d474b42 |

| | |
|-------------|---|
| NAME | FASHION CLOUD |
| DESCRIPTION | FIWARE FASHION CLOUD is a platform designed to allow the interchange of content in fashion industry |
| LINK | https://marketplace.fiware.org/pages/solutions/c54993aa921db6c182cdacc2 |

| | |
|-------------|---|
| NAME | FLIWARE |
| DESCRIPTION | FIWARE FLIWARE is a mobile app designed to help passengers in the airport. |
| LINK | https://marketplace.fiware.org/pages/solutions/cf625a793addfd4fc4199b90 |

| | |
|-------------|---|
| NAME | FLOUD |
| DESCRIPTION | FIWARE FLOUD is a platform designed to collect data from vehicles. |
| LINK | https://marketplace.fiware.org/pages/solutions/306211d4fa85454ef12254a2 |

| | |
|-------------|---|
| NAME | FOODER |
| DESCRIPTION | FIWARE Fooder is a software intended to help users to select food in shops. |
| LINK | https://marketplace.fiware.org/pages/solutions/cdbf01b17e05aa9b4b397370 |

| | |
|-------------|---|
| NAME | FreshIndex |
| DESCRIPTION | FIWARE Fresh Index is a real time shelf life indicator for food. |
| LINK | https://marketplace.fiware.org/pages/solutions/d8b01cb491d2fa11ac1fc955 |

| | |
|-------------|---|
| NAME | FruitsApp |
| DESCRIPTION | FIWARE FruitsApp is a marketplace designed for fruit companies. |
| LINK | https://marketplace.fiware.org/pages/solutions/3b89435e8de6f91d732b8217 |

| | |
|-------------|---|
| NAME | Fueloyal |
| DESCRIPTION | FIWARE Fueloyal is a solution designed to manage fleet tracking and fuel management. |
| LINK | https://marketplace.fiware.org/pages/solutions/1cad11ed4a4cfc0145d35315 |

| | |
|-------------|---|
| NAME | greenApes |
| DESCRIPTION | FIWARE greenApes is a digital platform intended to increase sustainability for citizens in smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/81d411b25138d04f3fb67763 |

| | |
|-------------|---|
| NAME | GymCraft |
| DESCRIPTION | FIWARE GymCraft is a software designed to connect users with fitness devices and virtual environments. |
| LINK | https://marketplace.fiware.org/pages/solutions/34935a42f379aacdde30d6bb |

| | |
|-------------|---|
| NAME | Hostabee |
| DESCRIPTION | FIWARE Hostabee is a software designed to keep track bees' colonies. |
| LINK | https://marketplace.fiware.org/pages/solutions/4dca56137f0998f888d2d172 |

| | |
|-------------|---|
| NAME | IDA |
| DESCRIPTION | FIWARE IDA is a web platform designed to control climate and its risks. |
| LINK | https://marketplace.fiware.org/pages/solutions/046391801525ebf1cb80ec1a |

| | |
|-------------|---|
| NAME | IMAS+ |
| DESCRIPTION | FIWARE IMAS+ is a platform designed for Infrastructure maintenance. |
| LINK | https://marketplace.fiware.org/pages/solutions/cdcee19416245452203d1062 |

| | |
|-------------|---|
| NAME | INSYLO |
| DESCRIPTION | FIWARE INSYLO is a solution intended to monitor silos in farms to lower costs. |
| LINK | https://marketplace.fiware.org/pages/solutions/3074edd75d2df456482dfe72 |

| | |
|-------------|---|
| NAME | Linea Ciudadana |
| DESCRIPTION | FIWARE Linea Ciudadana is a platform designed to help in citizens communication. |
| LINK | https://marketplace.fiware.org/pages/solutions/9eae8fbd2402886a64f169f8 |

| | |
|-------------|---|
| NAME | MASAI |
| DESCRIPTION | FIWARE MASAI is a software intended to manage data coming from IoT devices in manufacturing systems. |
| LINK | https://marketplace.fiware.org/pages/solutions/5a6bac60ffca24dd063170ca |

| | |
|-------------|---|
| NAME | Maturix |
| DESCRIPTION | FIWARE Maturix is a tool intended to check concrete curing. |
| LINK | https://marketplace.fiware.org/pages/solutions/be495e532b436f83d79eb808 |

| | |
|-------------|---|
| NAME | Mermix |
| DESCRIPTION | FIWARE Mermix is a farm management system designed to help farmers to find services/tools. |
| LINK | https://marketplace.fiware.org/pages/solutions/3bacbe5a1a8e374ccd3256ee |

| | |
|-------------|---|
| NAME | MUV |
| DESCRIPTION | FIWARE MUV is a SMM system designed to enable mobility. |
| LINK | https://marketplace.fiware.org/pages/solutions/a386af961169aee70316e276 |

| | |
|-------------|---|
| NAME | nixi1 |
| DESCRIPTION | FIWARE nixi1 is a tool intended to text/send voice notes to book flights and hotels. |
| LINK | https://marketplace.fiware.org/pages/solutions/0a1a5da96f9e6ffb7cf6a244 |

| | |
|-------------|---|
| NAME | OpenMove |
| DESCRIPTION | OpenMove is a FIWARE software intended for transport ticketing. |
| LINK | https://marketplace.fiware.org/pages/solutions/4042fd6a4c4dc0afba151226 |

| | |
|-------------|---|
| NAME | OurPath |
| DESCRIPTION | FIWARE OurPath is an online software to help users becoming healthier. |
| LINK | https://marketplace.fiware.org/pages/solutions/00b408d7d5e3e8f15b5031bf |

| | |
|-------------|---|
| NAME | Outbarriers |
| DESCRIPTION | FIWARE Outbarriers is a beacon solution. |
| LINK | https://marketplace.fiware.org/pages/solutions/8ffba0c562fc2cdbc3d3fbea |

| | |
|-------------|---|
| NAME | Qirate |
| DESCRIPTION | FIWARE Qirate is a software designed to measure the quality of life in a location. |
| LINK | https://marketplace.fiware.org/pages/solutions/3872869382e638bb47e6700b |

| | |
|-------------|---|
| NAME | QUHOMA |
| DESCRIPTION | QUalitative HORTiculture MArketplace is a FIWARE online market for sharing Agri-food data. |
| LINK | https://marketplace.fiware.org/pages/solutions/6c7ea7af132d35128d43891d |

| | |
|-------------|---|
| NAME | RAY |
| DESCRIPTION | RAY is a FIWARE cloud service designed to improve accessibility in smartphones for blind people. |
| LINK | https://marketplace.fiware.org/pages/solutions/61516158faa4060d122f14ca |

| | |
|-------------|---|
| NAME | RezGuru |
| DESCRIPTION | FIWARE RezGuru is a dynamic pricing tool. |
| LINK | https://marketplace.fiware.org/pages/solutions/426caaa587b5f5cbb46a3a40 |

| | |
|-------------|---|
| NAME | Rosy |
| DESCRIPTION | FIWARE Rosy is a traffic planner software designed to dynamize traffic in cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/8a9733d64dc9ee59b9aa8acf |

| | |
|-------------|---|
| NAME | SaMMY |
| DESCRIPTION | FIWARE SaMMY is a platform designed for yacht industry. |
| LINK | https://marketplace.fiware.org/pages/solutions/00d3fb3501261fdb5ab32dff |

| | |
|-------------|---|
| NAME | Save-a-Space |
| DESCRIPTION | FIWARE Save-a-Space is parking software designed to reserve and pay for a parking. |
| LINK | https://marketplace.fiware.org/pages/solutions/c1b22bc229cb0e2bab4435f2 |

| | |
|-------------|---|
| NAME | Scuter |
| DESCRIPTION | Scuter from FIWARE is a smart 3 wheels scooter designed to improve urban mobility. |
| LINK | https://marketplace.fiware.org/pages/solutions/5e5c1985461f0fad2a2e43c8 |

| | |
|-------------|---|
| NAME | Sensei |
| DESCRIPTION | FIWARE Sensei is an AI software intended for products recognition in video streamings. |
| LINK | https://marketplace.fiware.org/pages/solutions/a54eba6b3317120cb6c2d9e7 |

| | |
|-------------|---|
| NAME | SmartAppCity |
| DESCRIPTION | FIWARE SmartAppCity is an APP designed to put together all data coming from smart city services. |
| LINK | https://marketplace.fiware.org/pages/solutions/012f0678486c9bc99d6e2913 |

| | |
|-------------|---|
| NAME | Smartlamppost |
| DESCRIPTION | FIWARE Smartlamppost is smart lamppost for smart cities that can be connected by software using 5G. |
| LINK | https://marketplace.fiware.org/pages/solutions/ee86ef5b0bdbbfe59babb01c |

| | |
|-------------|---|
| NAME | Snap4City |
| DESCRIPTION | FIWARE Snap4City is a software builder for smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/b8905e91973b420189cce972 |

| | |
|-------------|---|
| NAME | SPERO |
| DESCRIPTION | Spero is a FIWARE DSS report tool intended for smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/f4190146f027ff2d15a03334 |

| | |
|-------------|---|
| NAME | Stop-buy |
| DESCRIPTION | FIWARE Stop-buy is a smart parking software for smart cities. |
| LINK | https://marketplace.fiware.org/pages/solutions/34ce499bc9bcffbb4b0102dc |

| | |
|-------------|---|
| NAME | Stratio Automotive |
| DESCRIPTION | FIWARE Stratio Automotive is a software intended to manage data coming from smart vehicles. |
| LINK | https://marketplace.fiware.org/pages/solutions/96afb6f8ccaef2f85aec6d77 |

| | |
|-------------|---|
| NAME | TalkyCar |
| DESCRIPTION | FIWARE TalkyCar is a software designed to connect a car with a smartphone. |
| LINK | https://marketplace.fiware.org/pages/solutions/f8190f6a6d5bcf4e90636c68 |

| | |
|-------------|---|
| NAME | Thor |
| DESCRIPTION | FIWARE Thor is a cloud workflow. |
| LINK | https://marketplace.fiware.org/pages/solutions/9028ac500c98f40e11723878 |

| | |
|-------------|---|
| NAME | Trace Labs |
| DESCRIPTION | FIWARE Trace Labs is a protocol designed for data exchange. |
| LINK | https://marketplace.fiware.org/pages/solutions/2691a34514feadd49b93724 |

| | |
|-------------|---|
| NAME | Urbo |
| DESCRIPTION | FIWARE Urbo is a Dashboard designed to manage smart city services. |
| LINK | https://marketplace.fiware.org/pages/solutions/449113d3a2ce64f5ede27160 |

| | |
|-------------|---|
| NAME | Viur |
| DESCRIPTION | FIWARE Viur is a software intended to visualize data. |
| LINK | https://marketplace.fiware.org/pages/solutions/e72ef17817f3a6a48f5ebf60 |

| | |
|-------------|---|
| NAME | Waste4Think |
| DESCRIPTION | FIWARE Waste4Think is a software designed to manage waste systems. |
| LINK | https://marketplace.fiware.org/pages/solutions/00326bfd7ff982e47d0d857 |

| | |
|-------------|---|
| NAME | Watcher |
| DESCRIPTION | FIWARE Watcher is a tool designed to help families managing its finances. |
| LINK | https://marketplace.fiware.org/pages/solutions/32122a93aa41f43998794035 |

| | |
|-------------|---|
| NAME | WiseTown |
| DESCRIPTION | WiseTown is a FIWARE application for IoT in smart cities designed to improve the life of citizens. |
| LINK | https://marketplace.fiware.org/pages/solutions/669bf8523d9a4f4c8caff9a5 |

| | |
|-------------|---|
| NAME | YBVR |
| DESCRIPTION | FIWARE YerbaBuena is a live streaming software for VR. |
| LINK | https://marketplace.fiware.org/pages/solutions/2a6a0338b1efbf6c6bf0c230 |

19 STANDARDS

This section describes many of the main Standards available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|--|
| NAME | Chemistry |
| DESCRIPTION | Chemistry is an O.S. version of CMIS created by Apache and intended for sharing data between CMS'. |
| LINK | http://chemistry.apache.org/ |

| | |
|-------------|---|
| NAME | ETSI GR CIM 002 V1.1.1 |
| DESCRIPTION | ETSI standard about C.I.M. applied to Smart cities. |
| LINK | https://www.etsi.org/deliver/etsi_gr/CIM/001_099/002/01.01.01_60/gr_cim002v010101p.pdf |

| | |
|-------------|---|
| NAME | ETSI TR 118 522 V2.0.0 |
| DESCRIPTION | ETSI standard about HGI-oneM2M integration. |
| LINK | https://www.etsi.org/deliver/etsi_tr/118500_118599/118522/02.00.00_60/tr_118522v020000p.pdf |

| | |
|-------------|---|
| NAME | ETSI TR 118 524 V2.0.0 |
| DESCRIPTION | ETSI standard about oneM2M-3GPP architectures relationship. |
| LINK | https://www.etsi.org/deliver/etsi_tr/118500_118599/118524/02.00.00_60/tr_118524v020000p.pdf |

| | |
|-------------|---|
| NAME | Santuario |
| DESCRIPTION | Santuario is an implementation of the security standards for the XML format created by the Apache Foundation. |
| LINK | http://santuario.apache.org/ |

20 PROGRAMMING

This section describes many of the main Programming tools available in the market that are suitable to be used by any LSP (Large Scale Pilot).

| | |
|-------------|--|
| NAME | Abseil |
| DESCRIPTION | Abseil is an Open Source project created by Google with the objective of increasing the C++ library. |
| LINK | https://abseil.io/ |

| | |
|-------------|--|
| NAME | AdaNet |
| DESCRIPTION | AdaNet is a framework based in TensorFlow created by Google under Apache 2.0 license that is intended for learning models. |
| LINK | https://github.com/tensorflow/adanet |

| | |
|-------------|---|
| NAME | Airavata |
| DESCRIPTION | Airavata is a framework created by Apache monitor apps/workflows on clouds/grids. It is available under Apache license 2.0. |
| LINK | http://airavata.apache.org/ |

| | |
|-------------|---|
| NAME | Airflow |
| DESCRIPTION | Airflow is an O.S. tool designed by Apache with the objective of monitoring/scheduling workflows. |
| LINK | http://airflow.apache.org/ |

| | |
|-------------|---|
| NAME | Ambari |
| DESCRIPTION | Ambari is a tool created by Apache in order to manage Hadoop clusters. It is available under Apache license 2.0 |
| LINK | http://ambari.apache.org/ |

| | |
|-------------|---|
| NAME | Angular |
| DESCRIPTION | Angular is a framework created by Google under MIT license that is designed to develop web apps. It was firstly released in 2016. . |
| LINK | https://angular.io/ |

| | |
|-------------|--|
| NAME | Ant |
| DESCRIPTION | Ant is a Java tool created by Apache intended to perform building tasks in order to generate an app. It is available under Apache license 2.0. |
| LINK | http://ant.apache.org/ |

| | |
|-------------|---|
| NAME | Any23 |
| DESCRIPTION | Any23 is a tool created by Apache under Apache license 2.0 with the aim of extracting structured data from RDF web documents. |
| LINK | http://any23.apache.org/ |

| | |
|-------------|--|
| NAME | Aries |
| DESCRIPTION | Aries is a set of Java components created by Apache under Apache license 2.0 and intended to create an OSGi model. |
| LINK | http://aries.apache.org/ |

| | |
|-------------|--|
| NAME | Arrow |
| DESCRIPTION | Arrow is a development platform created by Apache under Apache license 2.0 with the aim of extracting analytic data from memory. |
| LINK | http://arrow.apache.org/ |

| | |
|-------------|--|
| NAME | Atlas |
| DESCRIPTION | Atlas is a set of services created by Apache under Apache license 2.0 that allows defining governance services for Hadoop and integration with data. |
| LINK | http://atlas.apache.org/#/ |

| | |
|-------------|---|
| NAME | Attic |
| DESCRIPTION | Attic is a tool created by Apache under A.L 2.0 to provide processes/solutions to determine whether a project has finished. |
| LINK | http://attic.apache.org/ |

| | |
|-------------|---|
| NAME | Avro! |
| DESCRIPTION | Avro! is a system for data serialization created by Apache under A.L 2.0 that provides data structures, compact format and RPC. |
| LINK | http://avro.apache.org/ |

| | |
|-------------|---|
| NAME | Axis |
| DESCRIPTION | Axis is a Java web service container created by Apache under Apache 2.0 license in order to deploy/run webservices. |
| LINK | http://axis.apache.org/ |

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| NAME | Bahir |
| DESCRIPTION | Bahir is a set of extensions for Spark/Flink created by Apache under A.L 2.0 in order to extend the reach of Spark/Flink. |
| LINK | http://bahir.apache.org/ |

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| NAME | Bazel |
| DESCRIPTION | Bazel is an Open Source build tool for client/server software created and maintained by Google. |
| LINK | https://bazel.build/ |

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| NAME | Biz Framework |
| DESCRIPTION | FIWARE Biz Framework is an Enabler intended to support context monetization. |
| LINK | https://business-api-ecosystem.rtd.io/ |

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| NAME | Blockly |
| DESCRIPTION | Blockly is a library developed by Google intended for adding drag and drop functions to iOS/Web/Android apps. |
| LINK | https://developers.google.com/blockly |

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|-------------|---|
| NAME | BoringSSL |
| DESCRIPTION | BoringSSL is an Open Source openssl fork created by Google in order to implement cryptography and TLS. |
| LINK | https://boringssl.googlesource.com/boringssl/ |

| | |
|-------------|---|
| NAME | Brooklyn |
| DESCRIPTION | Brooklyn is a software created by Apache intended for creating/managing cloud apps. It is licensed under Apache license 2.0 |
| LINK | http://brooklyn.apache.org/ |

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|-------------|---|
| NAME | Buildr |
| DESCRIPTION | Buildr is a Java build system created by Apache under A.L 2.0 that includes support for Groovy and other tools. |
| LINK | http://buildr.apache.org/ |

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|-------------|--|
| NAME | Kubric |
| DESCRIPTION | Kubric is an O.S. framework designed by Google with the aim of creating realistic scenes with PyBullet tool. |
| LINK | https://pybullet.org/wordpress/ |

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|-------------|--|
| NAME | BVal |
| DESCRIPTION | BVal is an Open Source version of the Java Bean specification that is licensed under A.L 2.0 |
| LINK | http://bval.apache.org/ |

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|-------------|--|
| NAME | Camel |
| DESCRIPTION | Camel is an Open Source framework created by Apache intended for integrating systems consuming/producing data using EIP. |
| LINK | https://camel.apache.org/ |

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|-------------|---|
| NAME | Cartographer |
| DESCRIPTION | Cartographer is a mapping utility created by Google under Apache license 2.0 that is intended to provide localization/mapping in real time. |
| LINK | https://github.com/cartographer-project/ |

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|-------------|--|
| NAME | Cauliflower Vest |
| DESCRIPTION | Cauliflower Vest is a tool developed by Google under A.L 2.0 that is intended for optimizing technologies for disk encryption. |
| LINK | https://github.com/google/cauliflowervest |

| | |
|-------------|---|
| NAME | Celix |
| DESCRIPTION | Celix is a C framework that implements the OSGi specification. It was created by Apache under Apache license 2.0 and is intended for developing software. |
| LINK | http://celix.apache.org/ |

| | |
|-------------|--|
| NAME | Chemistry |
| DESCRIPTION | Chemistry is an O.S. version of CMIS created/licensed by Apache and intended to enable information sharing between CMS'. |
| LINK | http://chemistry.apache.org/ |

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|-------------|---|
| NAME | CKAN extensions |
| DESCRIPTION | FIWARE CKAN extensions is an Enabler available under AGPL 3.0 license and intended to allow dataset publication, manage access and assign prices to the CKAN. |
| LINK | https://fiware-ckan-extensions.rtfid.io/ |

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|-------------|---|
| NAME | CloudStack |
| DESCRIPTION | CloudStack is an Open Source software created by Apache intended for deploying/managing networks of virtual machines. |
| LINK | http://cloudstack.apache.org/ |

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|-------------|---|
| NAME | Cocoon |
| DESCRIPTION | Cocoon is a Spring framework created by Apache under Apache license and intended for app development with components. |
| LINK | http://cocoon.apache.org/ |

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|-------------|---|
| NAME | Cordova |
| DESCRIPTION | Cordova is an Open Source framework created by Apache intended for developing mobile apps based in HTML/Javascript. |
| LINK | https://cordova.apache.org/ |

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|-------------|---|
| NAME | Creadur |
| DESCRIPTION | Creadur is a Java tool created by Apache under Apache license 2.0 with the aim of auditing license headers. |
| LINK | http://creadur.apache.org/ |

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|-------------|--|
| NAME | cTAKES |
| DESCRIPTION | cTAKES is a processing system for natural language created by Apache under Apache license 2.0 with the objective of extracting information from medical files. |
| LINK | http://ctakes.apache.org/ |

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|-------------|---|
| NAME | Curator |
| DESCRIPTION | Curator is a Java library which includes a framework. It was created by Apache with the objective of using Zookeeper. |
| LINK | http://curator.apache.org/ |

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|-------------|--|
| NAME | CXF |
| DESCRIPTION | CXF is an O.S. framework created by Apache that is intended for developing services (REST/SOAP) with frontend APIs like JAX-RS/JAX-WS. |
| LINK | http://cxf.apache.org/ |

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|-------------|---|
| NAME | Dart |
| DESCRIPTION | Dart is a ECMA programming language created by Google under BSD license and intended for desktop/mobile app development . |
| LINK | https://dart.dev/ |

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| NAME | DataFu |
| DESCRIPTION | DataFu is a set of libraries created by Apache under A.L 2.0 with the objective of managing data in Hadoop. |
| LINK | http://datafu.apache.org/ |

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|-------------|---|
| NAME | DeepMind Lab |
| DESCRIPTION | DeepMind Lab is a 3D game platform developed by Google under GNU license 2.0 that is intended for A.I. and machine learning |
| LINK | https://github.com/deepmind/lab |

| | |
|-------------|---|
| NAME | DeltaSpike |
| DESCRIPTION | DeltaSpike is a set of CDI extensions created by Apache under A.L 2.0 and intended for providing new JAVA features. |
| LINK | http://deltaspikes.apache.org/ |

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|-------------|---|
| NAME | Directory |
| DESCRIPTION | Directory is an Open Source Java project created by the Apache Foundation with the aim of providing directory solutions/tools for LDAP. |
| LINK | http://directory.apache.org/ |

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|-------------|---|
| NAME | Domibus |
| DESCRIPTION | FIWARE Domibus is an Enabler designed with the aim of helping users to share data. It is available under public license. |
| LINK | https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Domibus |

| | |
|-------------|---|
| NAME | Dopamine |
| DESCRIPTION | Dopamine is a framework based on TensorFlow that was created by Google under Apache license 2.0 with the aim of reinforcing learn algorithms. |
| LINK | https://github.com/google/dopamine |

| | |
|-------------|---|
| NAME | Draco |
| DESCRIPTION | Draco is a library designed by Google under Apache license 2.0 that is intended for decompressing/compressing 3D graphics and improving its storage/transmission. |
| LINK | https://github.com/google/draco |

| | |
|-------------|--|
| NAME | Dubbo |
| DESCRIPTION | Dubbo is an RPC O.S. framework based on Java created by Apache with the aim of providing RPC interfaces, balancing and service registration. |
| LINK | http://dubbo.apache.org/ |

| | |
|-------------|--|
| NAME | Eclipse |
| DESCRIPTION | Eclipse is an O.S. IDE (Integrated Development Environment) that was created by the Eclipse foundation under Apache license in 2001. |
| LINK | https://www.eclipse.org |

| | |
|-------------|---|
| NAME | Fast DDS |
| DESCRIPTION | FIWARE Fast DDS is an Enabler available under Apache license 2.0 that is intended for performing interfacing tasks with ROS2. |
| LINK | https://github.com/eProsima/Fast-RTPS |

| | |
|-------------|--|
| NAME | Fastlane |
| DESCRIPTION | Fastlane is an open source tool created by Google intended for building automation of mobile APPS. |
| LINK | https://fastlane.tools/ |

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|-------------|---|
| NAME | Felix |
| DESCRIPTION | Felix is an OSGi framework and service platform implementation created by the Apache Foundation under Apache license. |
| LINK | http://felix.apache.org/ |

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|-------------|--|
| NAME | FIROS |
| DESCRIPTION | FIWARE FIROS is an Enabler available under MIT license and intended for performing interfacing tasks between robots and cloud. |
| LINK | https://github.com/iml130/firos |

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|-------------|---|
| NAME | FlatBuffers |
| DESCRIPTION | FlatBuffers is an open source serialization library for several languages created by Google and intended for improving apps optimization. |
| LINK | http://google.github.io/flatbuffers |

| | |
|-------------|--|
| NAME | Flex |
| DESCRIPTION | Flex is an Open Source framework created by Apache under A.L 2.0 with the aim of creating mobile/web apps. |
| LINK | http://flex.apache.org/ |

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|-------------|--|
| NAME | Flutter |
| DESCRIPTION | Flutter is an SDK developed by Google that is intended for developing mobile APPS. It is licensed under Creative commons 4.0 |
| LINK | https://flutter.dev/ |

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|-------------|--|
| NAME | FontDiff |
| DESCRIPTION | FontDiff is a tool created by Google under Apache license 2.0 that is intended to compare differences between fonts. |
| LINK | https://github.com/googlei18n/fontdiff |

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|-------------|--|
| NAME | FontView |
| DESCRIPTION | FontView is a tool developed by Google under A.L 2.0 that is intended for displaying all the content inside a font file. |
| LINK | https://github.com/googlei18n/fontview |

| | |
|-------------|--|
| NAME | FreeMarker |
| DESCRIPTION | FreeMarker is a Java library created by Apache under Apache license 2.0 and intended for generating text outputs based on TFL files. |
| LINK | https://freemarker.apache.org/ |

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|-------------|--|
| NAME | GenomeWarp |
| DESCRIPTION | GenomeWarp is an O.S. tool designed by Google under A.L 2.0 with the aim of translating genetic variants in genomes. |
| LINK | https://github.com/verilylifesciences/genomewarp |

| | |
|-------------|---|
| NAME | Geronimo |
| DESCRIPTION | Geronimo is a set of O.S Java/Jakarta libraries created by Apache and intended for providing OSGi metadata. |
| LINK | http://geronimo.apache.org/ |

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|-------------|--|
| NAME | Go |
| DESCRIPTION | Go is an O.S. programming language used by Google that is focused on productivity. |
| LINK | https://golang.org/ |

| | |
|-------------|---|
| NAME | Groovy |
| DESCRIPTION | Groovy is a programming language developed by the Apache Foundation available under Apache 2.0 license that is similar to Python. |
| LINK | http://groovy.apache.org/ |

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|-------------|---|
| NAME | gRPC |
| DESCRIPTION | gRPC is a framework created by Google under A.L 2.0 that is intended for connecting services in data centers and performing maintenance/security tasks. |
| LINK | https://grpc.io/ |

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|-------------|---|
| NAME | Helix |
| DESCRIPTION | Helix is a framework created by Apache under Apache license 2.0 and intended for managing resources on clusters of nodes. |
| LINK | http://helix.apache.org/ |

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| NAME | HttpComponents |
| DESCRIPTION | HttpComponents is a set of tools for Java focused on HTTP created by the Apache Foundation. |
| LINK | http://hc.apache.org/ |

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|-------------|---|
| NAME | Ignite |
| DESCRIPTION | Ignite is a memory computing platform created by Apache under Apache license 2.0 and intended for building apps with big data processing. |
| LINK | https://ignite.apache.org/ |

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|-------------|--|
| NAME | Intra |
| DESCRIPTION | Intra is an O.S application created by Google that is intended for securing the internet access to avoid DNS manipulation. |
| LINK | https://intra.app/ |

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|-------------|---|
| NAME | Ion |
| DESCRIPTION | Ion is a platform that was created by Google under A.L 2.0 with the aim building graphical client APPs. |
| LINK | https://github.com/google/ion |

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| NAME | Isis |
| DESCRIPTION | Isis is an Open Source tool created by Apache intended for providing automatically generated UI's to apps. |
| LINK | http://isis.apache.org/ |

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|-------------|--|
| NAME | Istio |
| DESCRIPTION | Istio is an Open Source platform created by Google to connect and secure micro services. |
| LINK | https://istio.io/ |

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|-------------|--|
| NAME | Java |
| DESCRIPTION | Java is a programming language appertaining to Oracle that is available under GNU GPL license. |
| LINK | https://www.java.com |

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|-------------|---|
| NAME | Javascript |
| DESCRIPTION | Javascript is a programming language appertaining to the Mozilla fundation. It was firstly developed in 1995. |
| LINK | https://developer.mozilla.org/es/docs/Web/JavaScript |

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|-------------|--|
| NAME | jclouds |
| DESCRIPTION | jclouds is a set of O.S. Java tools created by Apache and intended for creating applications that are portable between clouds. |
| LINK | http://jclouds.apache.org/ |

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|-------------|---|
| NAME | Jena |
| DESCRIPTION | Jena is an Open Source framework created by the Apache Foundation and intended for building linked data apps/semantic webs. |
| LINK | https://jena.apache.org/ |

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| NAME | Johnzon |
| DESCRIPTION | Johnzon is a set of extensions for JsonProcessing created by the Apache Foundation. |
| LINK | http://johnzon.apache.org/ |

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|-------------|---|
| NAME | Joshua |
| DESCRIPTION | Joshua is a Java O.S decoder created by the Apache Foundation with the objective of performing machine translation. |
| LINK | http://joshua.apache.org/ |

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|-------------|--|
| NAME | JUDDI |
| DESCRIPTION | JUDDI is a Java O.S. implementation of OASIS created by Apache that includes JSR 93 (SCOUT). |
| LINK | http://juddi.apache.org/ |

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|-------------|--|
| NAME | Juneau |
| DESCRIPTION | Juneau is a Java set of tools created by Apache under Apache license 2.0 and intended for supporting POJOs/RDF and providing a REST API. |
| LINK | http://juneau.apache.org/#about.html |

| | |
|-------------|---|
| NAME | Karaf |
| DESCRIPTION | Karaf is an O.S runtime created by the Apache Foundation and intended for running on the cloud. |
| LINK | http://karaf.apache.org/ |

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|-------------|--|
| NAME | Knative |
| DESCRIPTION | Knative is an O.S platform based on Kubernetes developed by Google that is intended for administering workloads. |
| LINK | https://knative.dev/ |

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|-------------|--|
| NAME | Knox |
| DESCRIPTION | Knox is an Application Gateway created by the Apache Foundation under Apache license 2.0 that is intended to interact with Hadoop. |
| LINK | http://knox.apache.org/ |

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|-------------|---|
| NAME | Kritis |
| DESCRIPTION | Kritis is an O.S. application developed by Google under A.L 2.0 with the aim of securing Kubernetes apps. |
| LINK | https://github.com/grafeas/kritis |

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|-------------|---|
| NAME | Kubeflow |
| DESCRIPTION | Kubeflow is a tool designed by Google under Apache license 2.0 that is intended for performing deployments in Kubernetes. |
| LINK | https://kubeflow.org/ |

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|-------------|--|
| NAME | Kurento |
| DESCRIPTION | FIWARE Kurento is an Enabler designed to process streams of data |
| LINK | https://kurento.rtd.io/ |

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|-------------|--|
| NAME | Kythe |
| DESCRIPTION | Kythe is a software created by Google under Apache license 2.0 which main aim is building tools that work with code. |
| LINK | https://kythe.io/ |

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|-------------|--|
| NAME | Libcloud |
| DESCRIPTION | Libcloud is a library created by Apache with the aim of allowing users to interact with cloud services through an API. |
| LINK | http://libcloud.apache.org/ |

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| NAME | Logging |
| DESCRIPTION | Logging is a set of O.S. tools created by Apache and intended for managing the logging behavior of applications. |
| LINK | http://logging.apache.org/ |

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| NAME | Lucene |
| DESCRIPTION | Lucene is an Open Source search software based on Java that was created by the Apache Foundation. |
| LINK | https://lucene.apache.org/ |

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|-------------|--|
| NAME | Lucene.NET |
| DESCRIPTION | Lucene.NET is a .NET version of Lucene created by Apache under Apache license 2.0. |
| LINK | http://lucenenet.apache.org/ |

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|-------------|---|
| NAME | Magenta |
| DESCRIPTION | Magenta is a Google O.S project intended for improving the machine learning process of creating artistic representations. |
| LINK | https://magenta.tensorflow.org/ |

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|-------------|---|
| NAME | Mahout |
| DESCRIPTION | Mahout is an O.S. algebra framework created by Apache under A.L 2.0 and intended for easing the implementation of algorithms. |
| LINK | http://mahout.apache.org/ |

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|-------------|--|
| NAME | Maven |
| DESCRIPTION | Maven is a tool created by Apache under Apache license 2.0 and intended for performing build tasks using a POM file. |
| LINK | http://maven.apache.org/ |

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|-------------|--|
| NAME | Micro XRCE-DDS |
| DESCRIPTION | FIWARE Micro XRCE-DDS is an Enabler available under Apache license 2.0 that is a light version of DDS. |
| LINK | https://github.com/eProsima/Micro-XRCE-DDS |

| | |
|-------------|---|
| NAME | MINA |
| DESCRIPTION | MINA is a network framework created by Apache under A.L 2.0 and intended for helping users to develop network applications. |
| LINK | http://mina.apache.org/ |

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|-------------|--|
| NAME | MyFaces |
| DESCRIPTION | MyFaces is a library created by Apache under A.L 2.0 that implements additional features/components for JSF. |
| LINK | http://myfaces.apache.org/#/ |

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|-------------|--|
| NAME | Mynewt |
| DESCRIPTION | Mynewt is an O.S. framework created by apache that is intended for communicating apps with network stacks such as Bluetooth/Wi-Fi. |
| LINK | http://mynewt.apache.org/ |

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|-------------|---|
| NAME | Netbeans |
| DESCRIPTION | Netbeans is a Java IDE created by Apache under CDDL and GPL2 license. |
| LINK | https://netbeans.org/ |

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| NAME | Neuroglancer |
| DESCRIPTION | Neuroglancer is a visualization framework created by Google under Apache 2.0 license which main objective is displaying volumetric data. |
| LINK | https://github.com/google/neuroglancer |

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|-------------|--|
| NAME | NiFi |
| DESCRIPTION | NiFi is a tool created by Apache under A.L 2.0 with the objective of supporting scalable graphs. |
| LINK | http://nifi.apache.org/ |

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|-------------|--|
| NAME | Nomulus |
| DESCRIPTION | Nomulus is a software created by Google under Apache license 2.0 that is in charge of managing the registration of domains on the Google Cloud Platform. |
| LINK | https://nomulus.foo/ |

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|-------------|---|
| NAME | Nutch |
| DESCRIPTION | Nutch is a web crawler created by Apache under Apache 2.0 license that uses Hadoop in order to process batches of data. |
| LINK | http://nutch.apache.org/ |

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| NAME | Olingo |
| DESCRIPTION | Olingo is a Java OData library developed by Apache under Apache license. |
| LINK | http://olingo.apache.org/ |

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| NAME | Oozie |
| DESCRIPTION | Oozie is a workflow scheduler created by the Apache Foundation under A.L 2.0 that is intended for managing Hadoop jobs. |
| LINK | http://oozie.apache.org/ |

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|-------------|--|
| NAME | OpenCensus |
| DESCRIPTION | OpenCensus is an O.S library created by Google with the aim of giving visibility in distributed systems. |
| LINK | http://opencensus.io/ |

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|-------------|---|
| NAME | OpenJPA |
| DESCRIPTION | OpenJPA is a Java library created by Apache under A.L 2.0 that can be used as a POJO persistence layer. |
| LINK | http://openjpa.apache.org/ |

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|-------------|---|
| NAME | OpenMTC |
| DESCRIPTION | FIWARE OpenMTC is a tool created to develop OneM2M apps. |
| LINK | https://fiware-openmtc.readthedocs.io/ |

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|-------------|--|
| NAME | OpenNLP |
| DESCRIPTION | OpenNLP is a M.L. tool created by the Apache Foundation under Apache 2.0 license with the aim of processing natural language text. |
| LINK | http://opennlp.apache.org/ |

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|-------------|---|
| NAME | OpenThread |
| DESCRIPTION | OpenThread is an O.S implementation of the Thread IPv6 communication protocol for apps. |
| LINK | https://openthread.io/ |

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|-------------|---|
| NAME | OpenVidu |
| DESCRIPTION | FIWARE OpenVidu is a Kurento layer that is intended for media processing. |
| LINK | https://github.com/OpenVidu/openvidu/ |

| | |
|-------------|--|
| NAME | OpenWeave |
| DESCRIPTION | OpenWeave is an Open Source implementation of Weave that is intended for securing communications of Nest products. It is available under Apache 2.0 license. |
| LINK | https://openweave.io/ |

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|-------------|--|
| NAME | OpenWebBeans |
| DESCRIPTION | OpenWebBeans is an implementation of CDI for Java EE created by Apache under Apache license 2.0. |
| LINK | http://openwebbeans.apache.org/ |

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|-------------|---|
| NAME | OpenWhisk |
| DESCRIPTION | OpenWhisk is an O.S. platform created by Apache with the aim of triggering actions in response to events. |
| LINK | http://openwhisk.apache.org/ |

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|-------------|---|
| NAME | Ozone |
| DESCRIPTION | Ozone is an O.S object store for Hadoop created by the Apache Foundation that can be used in containerized environments like YARN/Kubernetes. |
| LINK | http://ozone.apache.org/ |

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|-------------|--|
| NAME | PDFBox |
| DESCRIPTION | PDFBox is an O.S. library created by Apache with the aim of working with PDF files using Java. |
| LINK | https://pdfbox.apache.org/ |

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| NAME | Perkeep |
| DESCRIPTION | Perkeep is a set of O.S. formats, protocols and software for sharing/storing/searching data. |
| LINK | https://perkeep.org/ |

| | |
|-------------|---|
| NAME | Perl |
| DESCRIPTION | Perl is a server interpreter created and licensed by Apache with the aim of developing dynamic content. |
| LINK | http://perl.apache.org/ |

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|-------------|--|
| NAME | Phoenix |
| DESCRIPTION | Phoenix is a tool created by Apache under A.L 2.0 that is designed to allow OLTP and Hadoop analytics. |
| LINK | http://phoenix.apache.org/ |

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|-------------|--|
| NAME | Pivot |
| DESCRIPTION | Pivot is an Open Source Java platform created by Apache that is intended for building internet applications. |
| LINK | http://pivot.apache.org/ |

| | |
|-------------|---|
| NAME | Pixel Visual Core Camera |
| DESCRIPTION | Pixel Visual Core Camera is a software created by Google under A.L 2.0 with the aim of helping developers enabling Pixel Visual Core in apps. |
| LINK | https://github.com/google/pixelvisualcorecamera |

| | |
|-------------|---|
| NAME | POI |
| DESCRIPTION | POI is a Java tool developed by Apache under Apache license 2.0 and intended for manipulating many file formats based in Open XML Office standards. |
| LINK | http://poi.apache.org/ |

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|-------------|--|
| NAME | Polymer |
| DESCRIPTION | Polymer is a library created by Google available under BSD license that is intended for helping users to structure web apps by creating HTML elements. |
| LINK | https://www.polymer-project.org/ |

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|-------------|--|
| NAME | Portable Runtime |
| DESCRIPTION | Portable Runtime is a set of libraries created by Apache under Apache license 2.0 in order to provide interfaces to platform-specific implementations. |
| LINK | http://apr.apache.org/ |

| | |
|-------------|---|
| NAME | Python |
| DESCRIPTION | Python is a programming language developed in 1991 by the Python Foundation under PSFL license. |
| LINK | https://www.python.org/ |

| | |
|-------------|---|
| NAME | Quick, Draw! Dataset |
| DESCRIPTION | Quick, Draw! Dataset is a set of 50000000 pictures intended for helping developers to train neural networks. It is available under CC 4.0 |
| LINK | https://github.com/googlecreativelab/quickdraw-dataset |

| | |
|-------------|---|
| NAME | RabbitMQ |
| DESCRIPTION | RabbitMQ is an O.S. SMS brokerage platform that works with several protocols. It was released in 2007 by Pivotal Software under Mozilla Public License and, currently, is property of VMWare. |
| LINK | https://www.rabbitmq.com/ |

| | |
|-------------|---|
| NAME | React |
| DESCRIPTION | React is a Javascript framework focused in developing mobile apps. It was firstly released on 2013 by Facebook under MIT license. |
| LINK | https://reactjs.org/ |

| | |
|-------------|--|
| NAME | REEF |
| DESCRIPTION | REEF is a library created by Apache under A.L 2.0 that is intended for creating light apps for Hadoop. |
| LINK | http://reef.apache.org/ |

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|-------------|--|
| NAME | River |
| DESCRIPTION | River is a version of Jini created by Apache under Apache license 2.0 intended for creating distributed systems. |
| LINK | http://river.apache.org/ |

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|-------------|--|
| NAME | Roller |
| DESCRIPTION | Roller is a server based in Java created by the Apache Foundation under Apache license 2.0 that is intended for hosting blogs. |
| LINK | http://roller.apache.org/ |

| | |
|-------------|---|
| NAME | Royale |
| DESCRIPTION | Royale is an O.S. frontend app created by the Apache Foundation and intended for allowing user to code in MXML & AS3. |
| LINK | https://royale.apache.org/ |

| | |
|-------------|---|
| NAME | Samza |
| DESCRIPTION | Samza is a framework created by Apache under Apache license 2.0 that allows building stateful apps. |
| LINK | http://samza.apache.org/ |

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|-------------|--|
| NAME | Scorpio Broker |
| DESCRIPTION | The FIWARE Scorpio Broker is a NGSI-LD Broker intended for federated env. that is available under BSD 3.0 license. |
| LINK | https://github.com/ScorpioBroker/ScorpioBroker |

| | |
|-------------|---|
| NAME | Serf |
| DESCRIPTION | Serf is a C library created by Apache with A.P.R. and intended for being a HTTP client. It is available under A.L 2.0 |
| LINK | http://serf.apache.org/ |

| | |
|-------------|--|
| NAME | ServiceComb |
| DESCRIPTION | ServiceComb is an O.S. micro service software with support for several languages created by the Apache Foundation. |
| LINK | http://servicecomb.apache.org/ |

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| NAME | ServiceMix |
| DESCRIPTION | ServiceMix is an O.S. container created by Apache that unifies CXF/Camel/ActiveMQ/Karaf in the same platform. |
| LINK | http://servicemix.apache.org/ |

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| NAME | SINGA |
| DESCRIPTION | SINGA is a tool created by Apache under Apache license 2.0 focused on training deep learning and models. |
| LINK | http://singa.apache.org/ |

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| NAME | SIS |
| DESCRIPTION | SIS is an O.S. software created by Apache under Apache license 2.0 and intended for developing geo-spatial apps. |
| LINK | http://sis.apache.org/ |

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| NAME | Skia |
| DESCRIPTION | Skia is an Open Source graphic library that is used for rasterization with Open GL/Vulkan. |
| LINK | https://skia.org/ |

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| NAME | SkyWalking |
| DESCRIPTION | SkyWalking is an app created by Apache under Apache license 2.0 with the objective of monitoring a distributed system. |
| LINK | http://skywalking.apache.org/ |

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| NAME | Sling |
| DESCRIPTION | Sling is an O.S framework created by the Apache Foundation under A.L 2.0 intended for creating REST apps. |
| LINK | https://sling.apache.org/ |

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| NAME | Spring Framework |
| DESCRIPTION | Spring is an O.S. framework based on C.I. created for Java that was firstly released in 2002 under Apache License 2.0. |
| LINK | https://spring.io/ |

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| NAME | Stellio Context Broker |
| DESCRIPTION | The FIWARE Stellio Context Broker is an alternative enabler for NGSI-LD Broker available under A.L 2.0 |
| LINK | https://github.com/stellio-hub/stellio-context-broker |

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| NAME | Storm |
| DESCRIPTION | Storm is an Open Source software created by Apache and intended for processing streams of data. |
| LINK | http://storm.apache.org/ |

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| NAME | Streams |
| DESCRIPTION | Streams is a set of modules created by Apache under A.L 2.0 that allows integrating online data sources. |
| LINK | http://streams.apache.org/ |

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| NAME | Struts |
| DESCRIPTION | Struts is an O.S. framework created by the Apache Foundation and intended for creating Java MVC web-apps. |
| LINK | https://struts.apache.org/ |

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| NAME | Submarine |
| DESCRIPTION | Submarine is a platform created by Apache under Apache license 2.0 and intended for executing Deep/Machine Learning. |
| LINK | http://submarine.apache.org/ |

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| NAME | Synapse |
| DESCRIPTION | Synapse is an ESB created by Apache under A.L 2.0 with the aim of providing support for several interchange formats. |
| LINK | http://synapse.apache.org/ |

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| NAME | Syncope |
| DESCRIPTION | Syncope is an O.S. technology created by Apache to administer digital roles in companies. |
| LINK | http://syncope.apache.org/ |

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| NAME | SystemDS |
| DESCRIPTION | SystemDS is an O.S software created by the Apache Foundation that is intended for machine learning with big data. |
| LINK | http://systemds.apache.org/ |

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| NAME | Tapestry |
| DESCRIPTION | Tapestry is a Java framework created by Apache under A.L 2.0 intended for creating Java web apps. |
| LINK | https://tapestry.apache.org/ |

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| NAME | TensorFlow |
| DESCRIPTION | TensorFlow is an O.S. platform developed by Google that is focused in machine learning. |
| LINK | https://tensorflow.org/ |

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| NAME | TensorFlow Playground |
| DESCRIPTION | TensorFlow Playground is an O.S visualization software created by Google that is intended for neural networks. |
| LINK | http://playground.tensorflow.org/ |

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| NAME | TEZ |
| DESCRIPTION | TEZ is a framework created by Apache under Apache license 2.0 and intended for displaying complex graphs. |
| LINK | http://tez.apache.org/ |

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| NAME | Thrift |
| DESCRIPTION | Thrift is a framework created by Apache under Apache license 2.0 and intended for building services for several languages. |
| LINK | https://thrift.apache.org/ |

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| NAME | Tomcat |
| DESCRIPTION | Tomcat is an O.S. server created by Apache that is intended for JSP. |
| LINK | http://tomcat.apache.org/ |

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| NAME | TomEE |
| DESCRIPTION | TomEE is the JEE version of the Apache Tomcat server licensed under A.L 2.0 |
| LINK | http://tomee.apache.org/ |

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| NAME | Traffic Control |
| DESCRIPTION | Traffic Control is an O.S. software created by Apache that allows creating CDNs. |
| LINK | http://trafficcontrol.apache.org/ |

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| NAME | Traffic Server |
| DESCRIPTION | Traffic Server is a server software created by Apache under A.L 2.0 intended for improving the time of response and some other tasks. |
| LINK | http://trafficserver.apache.org/ |

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| NAME | Turbine |
| DESCRIPTION | Turbine is a framework created by Apache under Apache license 2.0 and intended for building web apps. |
| LINK | http://turbine.apache.org/ |

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| NAME | TVM |
| DESCRIPTION | TVM is an O.S framework for GPU/CPU created by Apache that is focused in Machine Learning and intended for optimizing backends. |
| LINK | http://tvm.apache.org/ |

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| NAME | Upspin |
| DESCRIPTION | Upspin is an Open Source framework for sharing files created by Google and focused in the security. |
| LINK | https://upspin.io/ |

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| NAME | Usergrid |
| DESCRIPTION | Usergrid is a backend created by Apache that is focused on mobile apps. It is available under Apache license 2.0 |
| LINK | http://usergrid.apache.org/ |

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| NAME | Velocity |
| DESCRIPTION | Velocity is a Java software created by the Apache Foundation under A.L 2.0 with the aim of providing a template language. |
| LINK | http://velocity.apache.org/ |

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| NAME | WebM |
| DESCRIPTION | WebM is an O.S. compressed video format that is intended to be used in HTML5. |
| LINK | http://www.webmproject.org/ |

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| NAME | Whimsy |
| DESCRIPTION | Whimsy is a set of tools created by the Apache Foundation under A.L 2.0 and intended for automating processes and displaying data. |
| LINK | http://whimsical.apache.org/ |

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| NAME | Wicket |
| DESCRIPTION | Wicket is an O.S. framework developed by Apache with the objective of creating web apps using Java. |
| LINK | http://wicket.apache.org/ |

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| NAME | Wilma |
| DESCRIPTION | FIWARE Wilma is an Enabler designed to perform proxy functions by using OAuth2/PEP. |
| LINK | https://fiware-pep-proxy.rtdf.io/ |

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| NAME | Wirecloud |
| DESCRIPTION | Wirecloud is an Enabler intended for dashboard development. |
| LINK | https://wirecloud.rtd.io/ |

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| NAME | WSO2 API Manager |
| DESCRIPTION | API Manager is an Open Source API platform developed by WSO2 that provides secure access/microservices. |
| LINK | https://wso2.com/api-management/ |

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| NAME | WSO2 Enterprise Integrator |
| DESCRIPTION | The WSO2 Enterprise Integrator is an O.S. platform created by WSO2 that is designed to be used as ESB and for streaming. |
| LINK | https://wso2.com/integration/ |

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| NAME | Xalan |
| DESCRIPTION | Xalan is a set of libraries created by the Apache Foundation under A.L 2.0 intended for transforming XML documents using style sheets. |
| LINK | http://xalan.apache.org/ |

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|-------------|--|
| NAME | Xerces |
| DESCRIPTION | Xerces is a software created by Apache under Apache license 2.0 that is in charge of XML parsers and other components. |
| LINK | http://xerces.apache.org/ |

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| NAME | XML Graphics |
| DESCRIPTION | XML Graphics is a software created by the Apache Foundation under A.L 2.0 that is in charge of converting XML to graphics. |
| LINK | https://xmlgraphics.apache.org/ |

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|-------------|---|
| NAME | Yetus |
| DESCRIPTION | Yetus is a set of libraries/tools created by Apache under Apache license 2.0 designed to allow user contribution to projects. |
| LINK | http://yetus.apache.org/ |

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| NAME | ZooKeeper |
| DESCRIPTION | ZooKeeper is an O.S. service created by Apache that allows distributed synchronization and several other services. |
| LINK | https://zookeeper.apache.org/ |

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| NAME | ZXing |
| DESCRIPTION | ZXing is a code library for Java created by Google under Apache license 2.0 that is designed to process barcodes. |
| LINK | https://github.com/zxing/zxing |