FIWARE Overview
Timo Mukari
University of Oulu
Center for Internet Excellence
timo.Mukari@cie.fi

http://www.fiware.org
The Future Internet Public-Private Partnership (FI-PPP)

- The aim of the FI-PPP is to place Europe in the best position to capture new opportunities in the Future Internet, derived from digitalization of economy sectors.

- This requires creating an generic, open and standard platform (FIWARE) and meeting point (FILAB) around which a dynamic innovation ecosystem can be created engaging developers and entrepreneurs.

EC provides half of the funding:

- Industry driven, major industry players involved
- Pan-European dimension

**FACTS:**

- €300 million investment by the European Commission & programme participants
- 158 partners, 68% organizations and companies, 18 academic institutions
- 23 countries represented (2 from outside Europe)

Open APIs for Open Minds

Transport, Mobility and Logistics
Smart Energy Grid
eHealth
e-government
tourism
FIWARE Generic Enablers (GEs)

- **A FIWARE Generic Enabler (GE):**
  - set of general-purpose **platform functions** available through **APIs**
  - Building with other GEs a **FIWARE Reference Architecture**

- **FIWARE GE Specifications** are **open** (public and royalty-free)

- **FIWARE GE implementation (FIWARE GEi):**
  - Platform product that implements a given GE Open Spec
  - There might be multiple compliant GEis of each GE Open Spec
  - Available FIWARE GEis published on the **FIWARE Catalogue**

- **The FIWARE project will deliver at least one reference implementation** of FIWARE GEs:
  - Based upon results of previous R&D projects
  - Publicly available **Technical Roadmap** updated in every release
  - Licensed with no costs within the FI-PPP program
  - Commercialized under FRAND conditions or license as open source
FIWARE: Targeting developers needs

**What**
- Rich web-based User Experience
- Connect apps to the physical world
- Manage open data at large scale and transform it into knowledge
- Benefit from open innovation (crowd-sourcing, apps composition)
- Reach target users, monetize
- Ensuring Privacy, Security and Trust
- Take the most of infrastructures while keeping costs lower and under control
- access from everywhere, adapt to devices

**How**
- Advance UI & middleware
- IoT-M2M Enablers
- Data/Context Enablers
- Integration and Composition Enablers
- Business & Delivery Framework (revenue-share, cross-selling, …)
- Security Enablers
- Advanced Cloud Enablers
- Enablers easing interface to Network and Devices

Built-in APIs & tools
FIWARE Instances

Future Internet Applications run on top of “FIWARE Instances” that are built by “FIWARE Instance Providers” upon:

- selection of FIWARE GEis (products) from the FIWARE Catalogue
- assembly of selected FIWARE GEIs with proprietary added-value products
FI-LAB (FIWARE Open Innovation Lab)

- FI-LAB will be a **case example of a FIWARE Instance**. It:
  - Provides **Cloud hosting** capabilities so third parties can run experimental Future Internet Applications and test them
  - Make **Generic Enablers** implementations available for experimentation:
    - Global accessible instances provided “as a Service”
    - Deployable as dedicated instances by application providers using Cloud blueprint management functions
  - Will be operated under central control and be accessible from a dedicated website.

- Entrepreneurs can setup accounts for free, adhering to certain terms and conditions

- Liaison with so-called application sponsors (e.g., cities) to enrich the environment
Opportunities for all

Application sponsors (business, cities, etc)
- Connect to innovators
- Put their data at work
- Visibility, promotion
- Costs saving
- Better service to customers
- Corporate Reputation

Entrepreneurs, Developers
- Ability to test with real data
- Ability to run trials with real users
- Visibility, promotion
- Hosting of permanent showcase
- Connection to potential customers
- Acceleration of product development

FIWARE Technology Providers
- Added value to just the technology
- Connecting to entrepreneurs:
  Revenue-sharing opportunities
What comes next

100 M€ of funding for SMEs and Web entrepreneurs developing products on top of FIWARE:

- to be canalized through incubators, accelerators, SME associations
- projects starting end 2014
- 16 projects established to organize open calls for SMEs for different application domains (see next page)
- FICHe is one of these:
  - For Health domain
  - Lead from Oulu
  - Runs in three phases
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FICHe: eHealth apps Using FIWARE Results
Useful FiWare links

- www.fi-ware.org: Main page, contains links to:
- www.fi-ware.org/blog: Blog page
- edu.fi-ware.org: eLearning training classes
- lab.fi-ware.org: Cloud services available to test your apps
- catalogue.fi-ware.org: Catalogue of Generic Enablers and Tools,

Contains links to documentation & Sources in:
- https://forge.fi-ware.org/

NOTE: Above links will be converted to new url address *.fiware.* without hyphen in the near future!
# Available FiWare Software

## Apps:
- Application Mashup
- Light Semantic Composition Edit
- Marketplace
- Mediator
- Mediator
- Registry
- Repository
- Revenue Settlement and Sharing System
- Service Composition Engine
- Service Mashup
- Store
- Business Calculator
- Business Modeler
- Wirecloud
- COMPEL
- SAP RI Mediator
- SETHA2
- SAP RI
- SAP RI
- ECE
- Mashup Factory
- WStore

## Cloud:
- IaaS Data Center Resource Mgmt
- IaaS Service Management
- Cloud Proxy
- Self-Service Interfaces
- Object Storage
- SW Deployment And Config
- Monitoring
- PaaS Management
- Edgelets
- Job Scheduler
- Scalability Manager
- Claudia
- Cloud Portal
- Sagitta
- Pegasus
- ProActive
## Available FiWare Software

### IoT – Internet of Things:
- Backend IoT Broker
- Backend Configuration Mgr
- Backend Configuration Mgr
- Backend Device Manager
- Gateway Device Manager
- Gateway Protocol Adapter
- Gateway Protocol Adapter
- Gateway Protocol Adapter
- Gateway Data Handling
- Gateway Data Handling
- Template Handler
- IoT Broker
- Orion Context Broker
- IoT Discovery
- IDAS
- OPEN MTC
- ZPA
- EPCGE
- MR CoAP
- Esper4FastData
- Sol/CEP

### DATA:
- Complex Event Processing
- BigData Analysis
- Semantic Application Support
- Context Broker
- Context Broker
- Semantic Annotation
- Stream Oriented GE
- Context Semantic Extension
- Unstructured Data Analysis
- Compressed Domain Video Analysis
- Media-enhanced Query Broker
- Metadata Preprocessing
- Metadata Preprocessing
- Location Platform
- Location Platform
- PROTON
- COSMOS
- SAS
- CAP
- ORION
- SANr
- KURENTO
- FLOD
- UDA
- Codoan
- QueryBroker
- MetadataProcessor
- LOCS
Available FiWare Software

I2ND – Interface to Networks & Devices:
• Cloud Edge (CE)
• Connected Device Interfacing (A-CDI)
• Network Information and Control (OFNIC-Uniroma)
• Network Information and Control (Altoclient)
• Network Information and Control (VNEIC)
• Network Information and Control (VNP)

Service, Capability, Connection and Control:
• EPC OTT API (OpenEPC)
• Network Identity Management
• Seamless Network Connectivity
• Network Positioning Enabler
• SMS - MMS
• API_Mediation
• Telecom_AS

Security:
• Identity Management (GCP)
• Identity Management (One-IDM)
• Identity Management (Digital Self)
• Identity Management (KeyRock)
• Data Handling (PPL)
• Context-based security&compliance (PRRS)
• DB Anonymizer (OSE) (DBA)
• Privacy Preserving Authentication
• Malware Detection Service (OSE) (Morphus)
• Android Flow Monitoring (OSE) (Flowoid)
• Content-based Security (OSE) (CBS)
• Access Control
• Secure Storage Service (OSE) (SecureStorageService)
Available FiWare Software

Security Monitoring:
- Security Monitoring  Service Lvl SIEM(SLS)
- Security Monitoring  Visual Framework
- Security Monitoring  6LowFuzzer
- Security Monitoring  Ovaldroid
- Security Monitoring  Attack Paths Engine
- Security Monitoring  MulVAL
- Security Monitoring  Remediation App
- Security Monitoring  ScoredAttackPaths

Advanced Middleware:
- Adv. Middleware  KIARA component
- Adv. Middleware  KIARA RPC over DDS
- Adv. Middleware  KIARA RPC over REST
- Adv. Middleware  KIARA Fast Buffers

MiWi Middleware:
- 2D-UI
- 3D-UI  XML3D
- 3D-UI  Web Tundra
- Synchronization
- Cloud Rendering
- Display as a Service  DaaS
- GIS Data provider
- POI Data provider
- 2D-3D Capture
- Augmented Reality
- Real/Virtual Interaction
- Virtual Characters
- Interface Designer
Example Business Ideas (using MiWi GEs)

• Using 3D – internet
  • Hospital design using collaborative virtual 3D models
  • Wellbeing applications based on gamification, e.g. running against yourself in virtual 3D environment
  • Educational healthcare applications:
    • Virtual surgery
    • Physical therapy movements
  • Virtual Gym Instructor, Avatar with Kinect movement tracking
  • Running Treadmill/Exercise Biking in virtual environment, using cave or Oculus
  • Virtual Healthcare teams, expert collaboration
Example Business Ideas (using MiWi GEs)

• Using Augmented reality
  • Scanning patient’s treatment history by pointing with AR device
  • Fitness trail navigation
  • Virtual Yellow sticker notes for memory disordered

• Using Point of Interest
  • App finding closest emergency help, open pharmacy etc.
  • Hiking maps

• Using IoT
  • Patient monitoring system, combined events generate alerts

• Using Security:
  • Protecting user’s e.g. patients private information