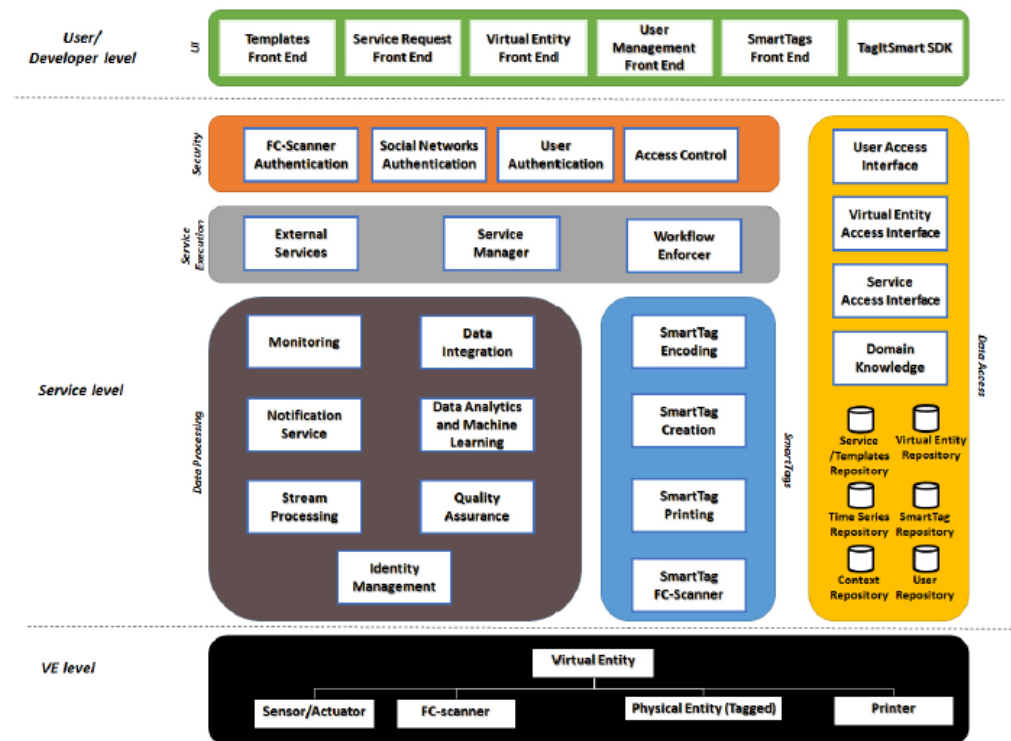


# IoT Challenge 2018- AffectUs Intro

16-17 March 2018,  
Department of Informatics and Telematics,  
Harokopion University of Athens

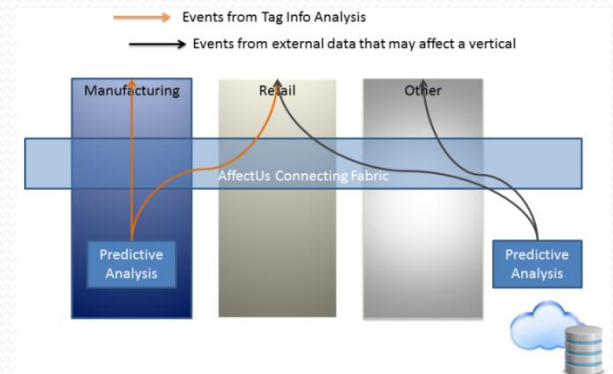
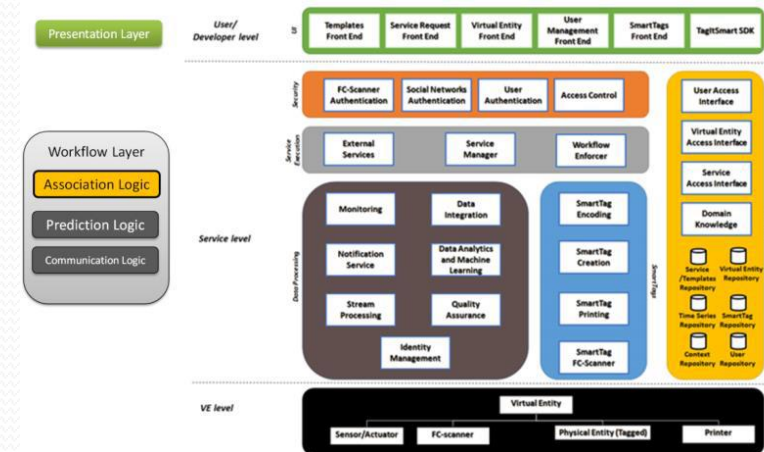
# What is TagItSmart (TIS)

- H2020 IoT project aiming at utilizing smart QR sensors in the IoT Thing lifecycle
- Embedded sensing into the sensors using smart ink
  - Detects parameters such as temperature, luminosity, humidity etc.
- Set of services to enable management of Things and their related scanned data
  - Primary part of interest: EVERYTHING platform  
<http://evrythng.com/>

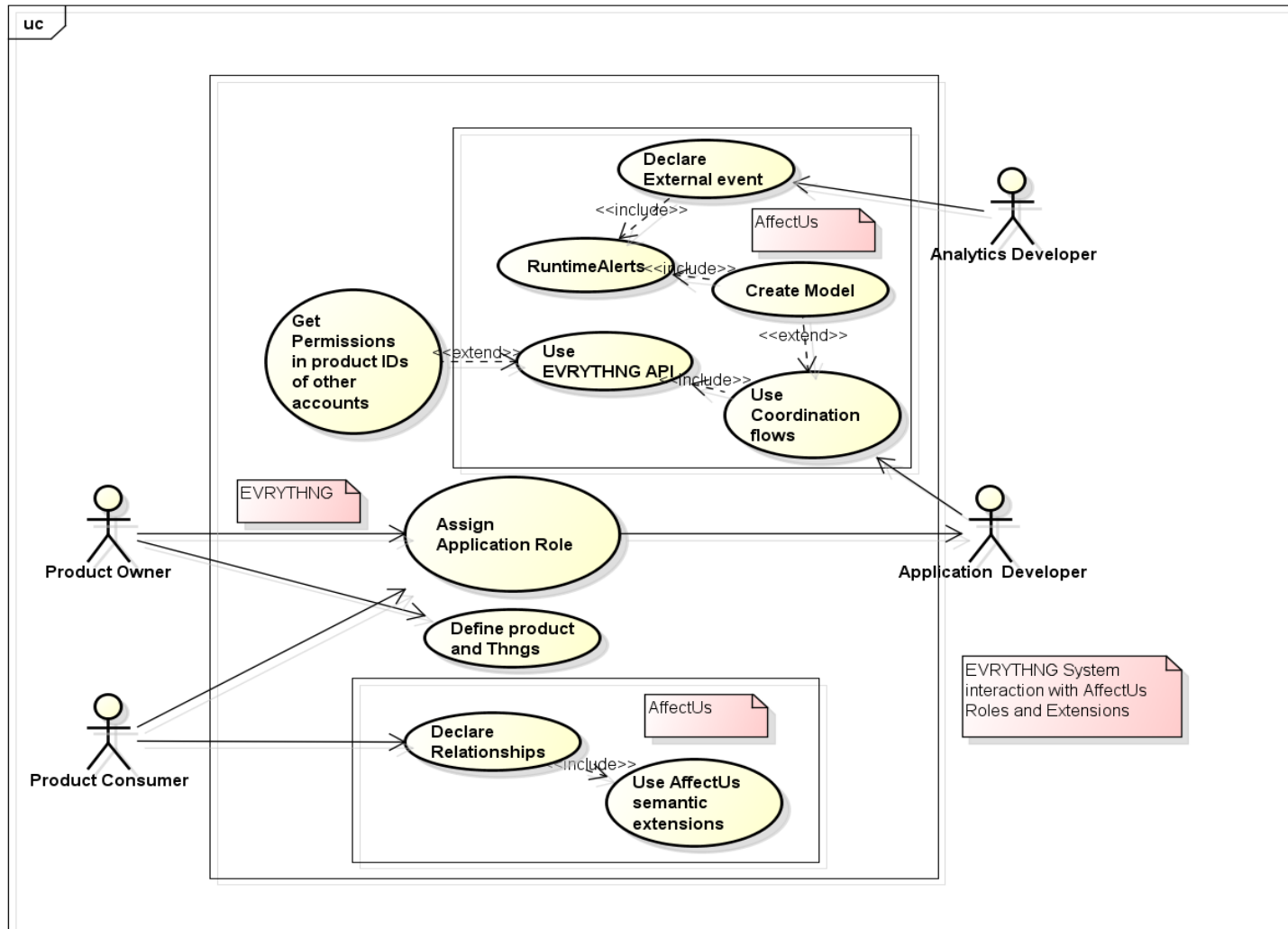


# What is AffectUs?

- Extension project for TIS
- Exploit thing management from EVERYTHING
- Enable app developers and product owners to describe and model their supply chain
  - Detect various erroneous states, e.g. illegal transitions, timing of transitions etc.
- Enable external developers to create and forward event notifications based on external data
- Fuse information from different but dependent verticals and supply chains as well as affecting external sources of events
  - Thus proactively generate early warnings and mitigate the effects of a specific event.

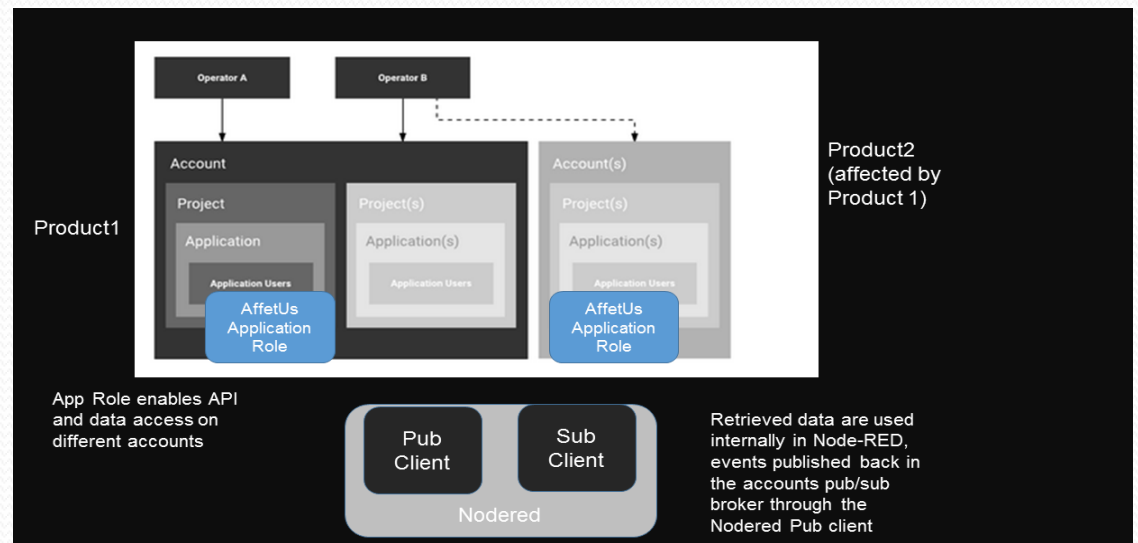


# High Level Use Case- General Process of AffectUs

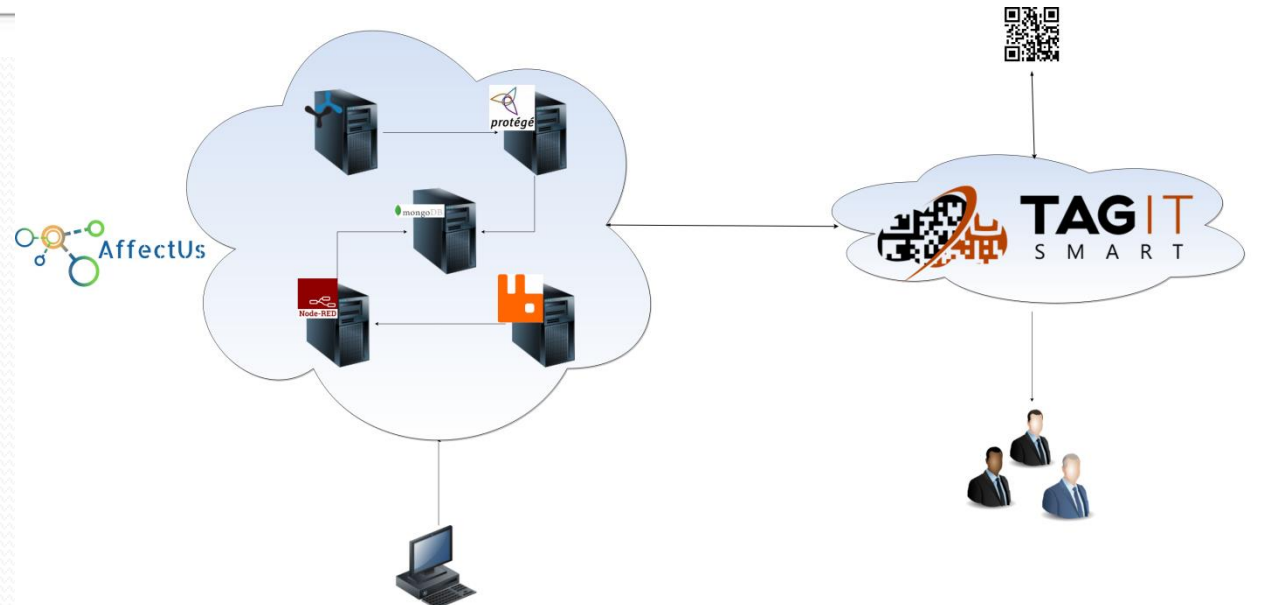
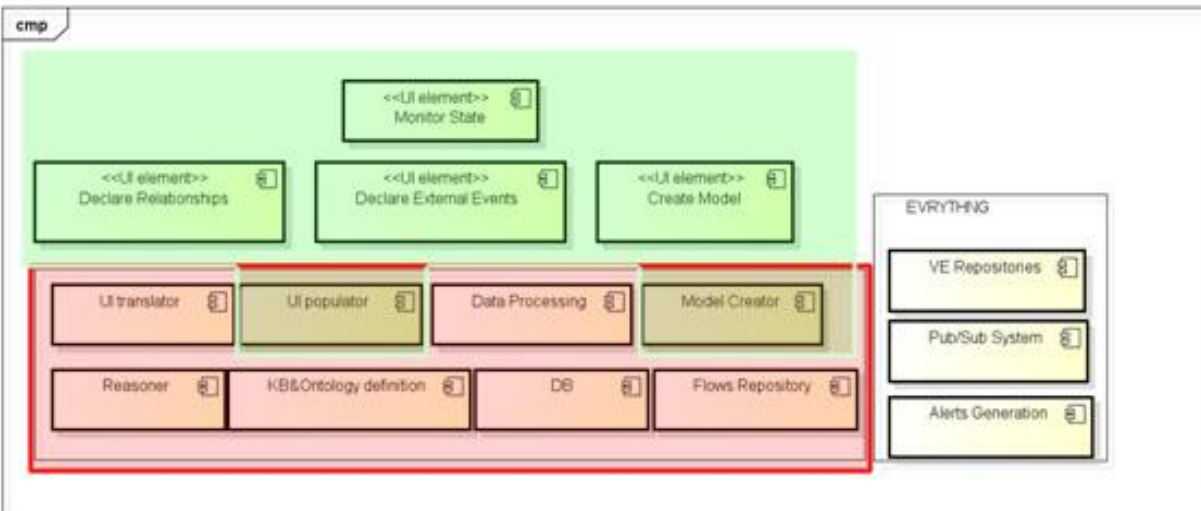


# Relation to EVERYTHING platform

- AffectUs utilizes the OATH mechanism of EVERYTHING in order to bridge information from two accounts based on semantic declarations from the app developers of these accounts
  - Correlate scan data information with supply chain stage
  - Model expected duration of stage
  - Check correct order of scan arrivals
- Or from externally produced events



# AffectUs internals





# IoT Challenge@HUA 2018

- Opening event: 16 March 17:30
  - Tools presentation
  - Development Support: 17 March 10:00-18:00
  - Submission of implementations within one week
  - Announcement for first three awards: the week after
- Program for Today:
- Welcome and Intro to AffectUs
  - -List of a scenarios
- **Scenario A Slot**
  - Intro on Node-RED
  - Intro on L architectures
  - Intro on helper flows (clustering, weather, dashboard, tensorflows etc.)
- **Scenario B Slot**
  - Intro on EVRYTHING, Product Owner UI and backend operations
  - Intro on App Dev UI, supporting tabs (e.g. chain monitoring) and backend operations
  - Intro on ExtDev UI and backend operations
  - Available System Tools and packaging



The poster for the AffectUs Hackathon is displayed on a background of blurred code. At the top, it features the Harokopio University logo and name in Greek and English. The AffectUs logo, consisting of a network of colored circles, is prominently shown next to a QR code. The event title '~\$> Hackathon' is written in a large, green, monospace font. Below the title, the event details are listed in a similar green font: the dates (Mar 16-17, 2018), start time (17:30), and location (Harokopio University, Informatics & Telematics Department, 9, Omirou Str. 17778, Tavros). A section titled 'Used Technologies:' shows logos for Docker, Node-RED, and Protegé. The prize section, titled 'Certificates will be awarded', lists three prizes: 1st Prize (Huawei H5025 X4 Drone with camera and GPS), 2nd Prize (Raspberry Pi 3 Starter Kit), and 3rd Prize (SparkFun Inventor's Kit v4.0).

ΧΑΡΟΚΟΠΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ  
HAROKOPIO UNIVERSITY

**AffectUs**

**~\$> Hackathon**

DATE : Mar 16-17, 2018  
START EVENT: Mar 16, 17:30  
PLACE: Harokopio University  
Informatics & Telematics Dep.  
9, Omirou Str. 17778, Tavros

Used Technologies:

docker Node-RED protégé

1st Prize  
Huawei H5025 X4  
Drone with camera + GPS

2nd Prize  
Raspberry Pi 3  
Starter Kit

3rd Prize  
SparkFun  
Inventor's Kit  
v4.0

**Certificates  
will be awarded**

# Scenario A

- Scenario A refers to the exploitation of one or more Open Data sources from Smart Cities (regardless of which city)
- Includes data ingestion, processing and extraction of events of interest, following the DIKW paradigm. As an example, obtaining raw data and applying clustering techniques can help categorize them in two or more categories of interest that are automatically extracted based on non-supervised machine learning approaches.
- The final outcome (the created event and its publication endpoint) should finally be declared through the AffectUs ExtDev UI in order to test its functionality and provide feedback.



# Scenario practicals

- Search for open data sources that are easily retrievable
- You will probably need to include a database to store information for later processing and analysis
- Think of intelligent combinations that can produce knowledge not evident from the baseline data
- Integrate at least one external data source and one data management solution (of your choice) in order to store the retrieved data.
- Apply at least one filtering/processing layer (could be based on Machine Learning, statistical analysis etc).
- Consider individualization of the event based on some kind of user input
  - E.g. location, time etc

# Scenario B

- Scenario B refers to the rationale of building a supply chain from Things and modelling the chain through AffectUs case.
- For this scenario, the EVERYTHING platform (<http://evrythng.com/>) may be used in order to create and manage things, while the modelling of the chain may be performed through the AffectUs respective App Dev UI.
- Given that there are no actual things involved, simulation of scanned data (QR code labels) from the things, feeding into EVERYTHING and then to AffectUs would be needed.
- The purpose of this scenario is to create an inventory of things in EVERYTHING, and the respective model of the supply chain through the AffectUs platform.

# Scenario practicals

- Create an account and Things scenario on EVERYTHING
- Use the AffectUs UI to enable OATH access to the created products and use the Product Owner and Create model UIs
- Achieve the data flow from EVERYTHING to AffectUs backend and notification mechanisms
- Describe the chain, create dummy data and try out the modelling phase

# Material

- Code and documentation available for the hackathon
  - Github: <https://github.com/affectus-hua/tools>
- Slack channels: [affectus.slack.com](https://affectus.slack.com)
  - Channels per topic
    - One general channel
    - One system oriented channel (for VM and Docker oriented questions)
    - One machine learning oriented channel
    - One semantics oriented channel
    - One Node-RED and UI oriented channel
  - Invite link
    - [https://join.slack.com/t/affectus/shared\\_invite/enQtMzE3OTI3MTU2MzA2LWQzODJlNTA1YTkyNDQ3YzMyNzJjNTk5MDE5MGJkNTdjNTJkZTU2MzNhZWVxOGlyMjE4MjI5OTRhOTBmOTdmZTM](https://join.slack.com/t/affectus/shared_invite/enQtMzE3OTI3MTU2MzA2LWQzODJlNTA1YTkyNDQ3YzMyNzJjNTk5MDE5MGJkNTdjNTJkZTU2MzNhZWVxOGlyMjE4MjI5OTRhOTBmOTdmZTM)
  - Automatic inclusion in all available channels
- Email: [affectus\\_hackathon\(a\)hua.gr](mailto:affectus_hackathon(a)hua.gr)
- Or [gkousiou\(a\)hua.gr](mailto:gkousiou(a)hua.gr)

# Submission of final prototypes

- You can send your prototype files along with a small number of slides detailing what you did and how one can execute the produced software in one of the following ways:
  - <https://github.com/affectus-hua/tools/tree/master/HackathonPrototypes>
  - gkousiou(a)hua.gr
  - affectus\_hackathon(a)hua.gr
- Be sure to include your names and emails in the communication so we can get back to you!
- Add your name, team members and email so that we can contact you!
  - <https://docs.google.com/forms/d/e/1FAIpQLSdFEN1YMHCfbQTxDPSYnocL2qTBYpW6sA5LS4Qzu6UezgopA/viewform>

# Rating criteria

- Logic and usefulness of implemented scenario, combinatorial logic of data sources and identified events
- Ability to be reused in different contexts
- Completeness and visualization aspects
- Included feedback on used flows/material from affectUs including benefits and drawbacks etc