Developing IoT Mashups
With
Docker, MQTT, Node-RED,
InfluxDB, Grafana

Didier DONSEZ
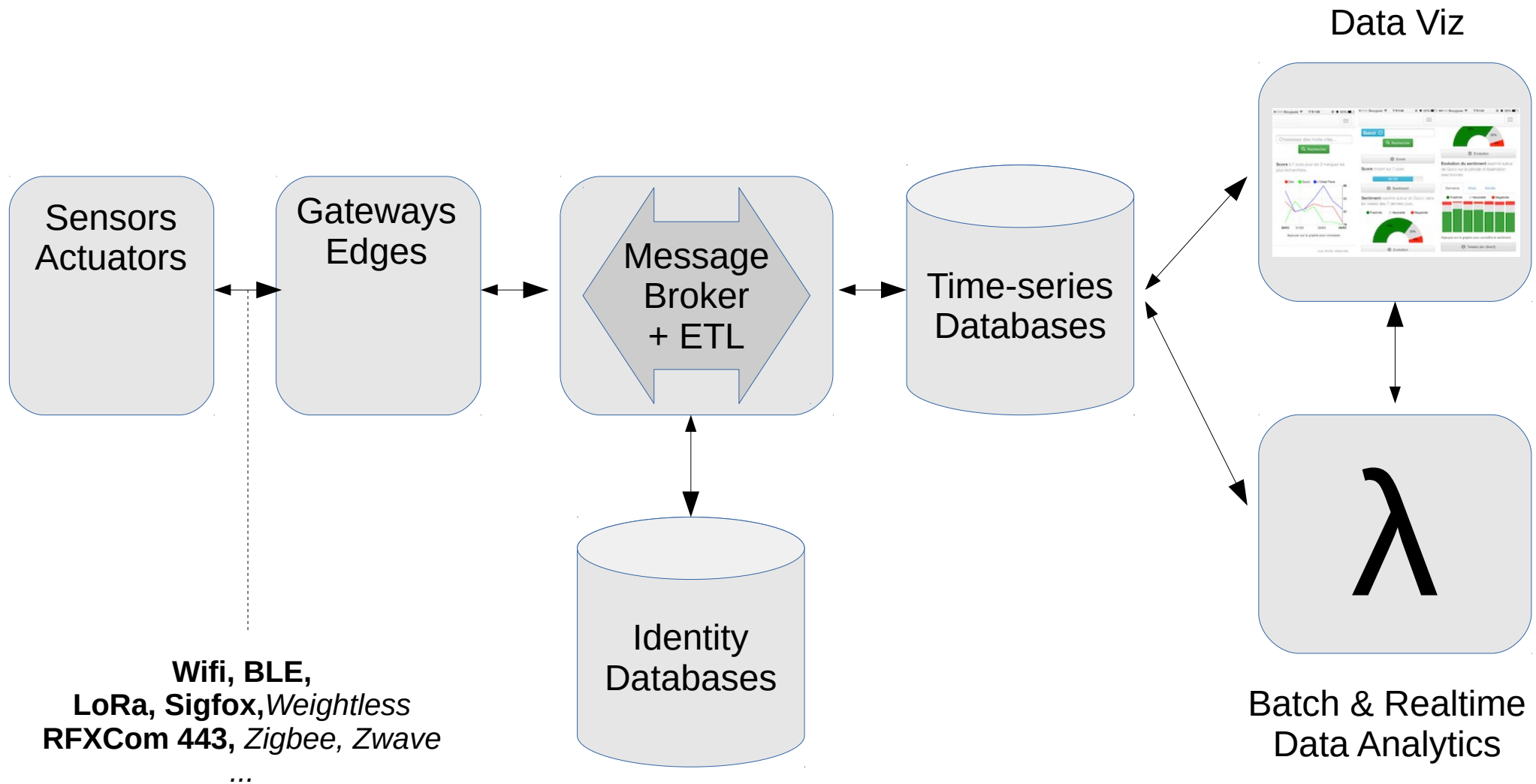UGA & Polytech / LIG

Goal : IoT Mashup

building rapidly
a minimal IoT stack
from sensors to dataviz
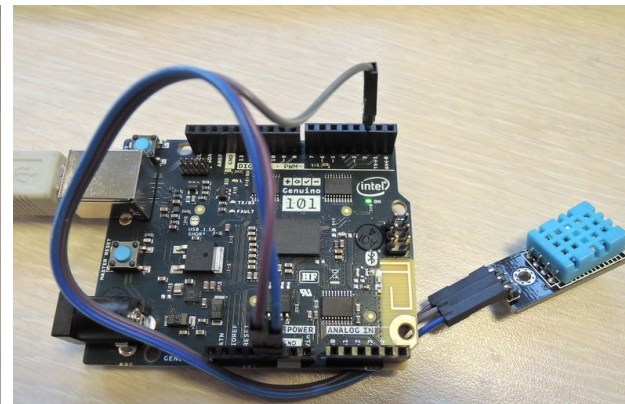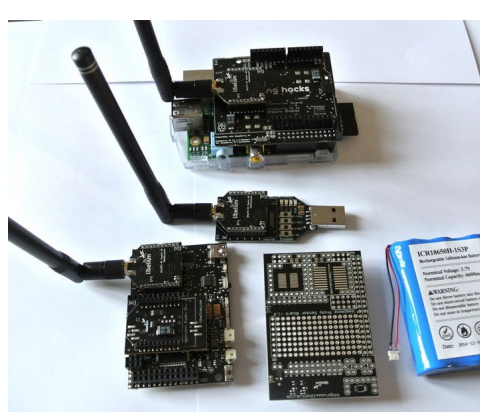(and realtime analytics).

Rapid means Near « Zero » SLoC.

Typical IoT Stack

Sensors Actuators

Gateways Edges

Message Broker + ETL

Time-series Databases

Data Viz

Identity Databases

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**Wifi, BLE,
LoRa, Sigfox,** *Weightless*
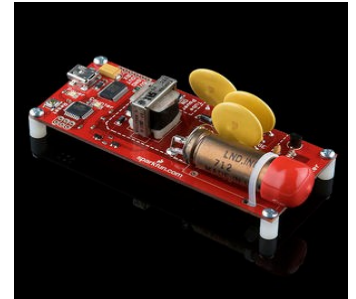**RFXCom 443,** *Zigbee, Zwave*
...

Batch & Realtime
Data Analytics

Hardware compoments

- various (wireless) sensors,

- USB radio modems plugged into embedded IoT gateways,

- Raspberry Pi 1 and 2 playing the role of embedded IoT gateways/edge,

- Your PC/Mac playing the role of the IoT datacenter server,

- A t2 micro AWS instance playing the role of the IoT datacenter server
  - if a public IP address is required (case for Sigfox callback).

Various sensors
(and radio modem)

Software Components

- Docker,
- Node.js and NPM,
- **Node-RED and node contributions,**
- Mosquitto
- InfluxDB
- MongoDB
- Chronograf
- Grafana
- Spark

Let's play ...