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Présentation d'un Projet MQTT

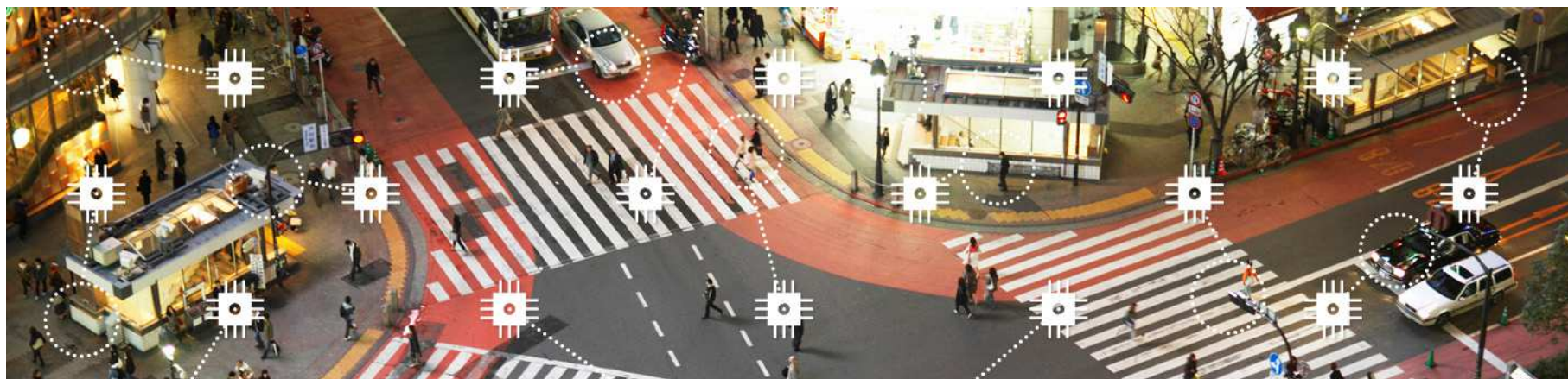
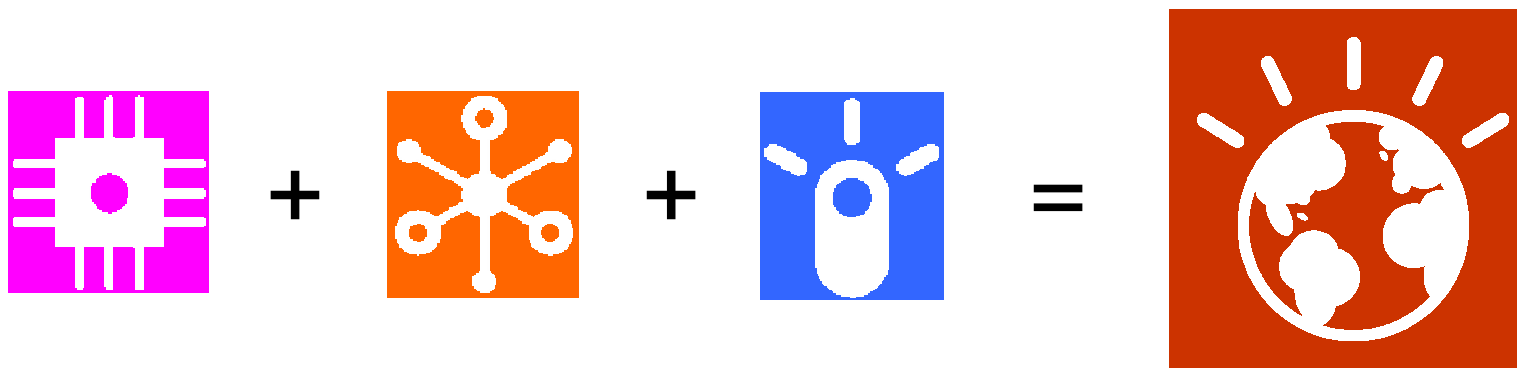
Agenda



- Pourquoi MQTT ?
- Présentation d'un projet MQTT
- Démonstration
- Ressources

Pourquoi MQTT ?

Internet of Things...



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The Physics arXiv Blog

January 4, 2013

2013: The year of the Internet of Things

The Internet of Things probably already influences your life. And if it doesn't, it soon will, say computer scientists

<http://www.technologyreview.com/view/509546/2013-the-year-of-the-internet-of-things/>

Exemple d'implémentations de MQTT

■ Réseaux Sociaux



Exemple d'implémentations de MQTT

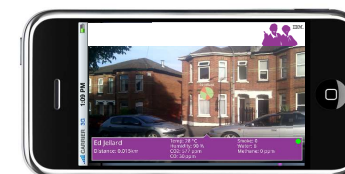
■ Santé



Città di Bolzano
Stadt Bozen

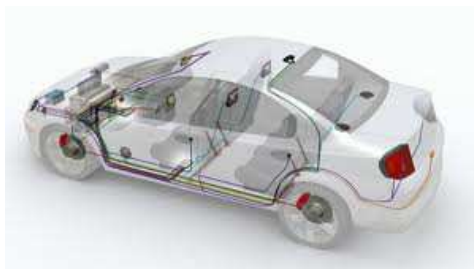


The Living Safe (abitare sicuri) project

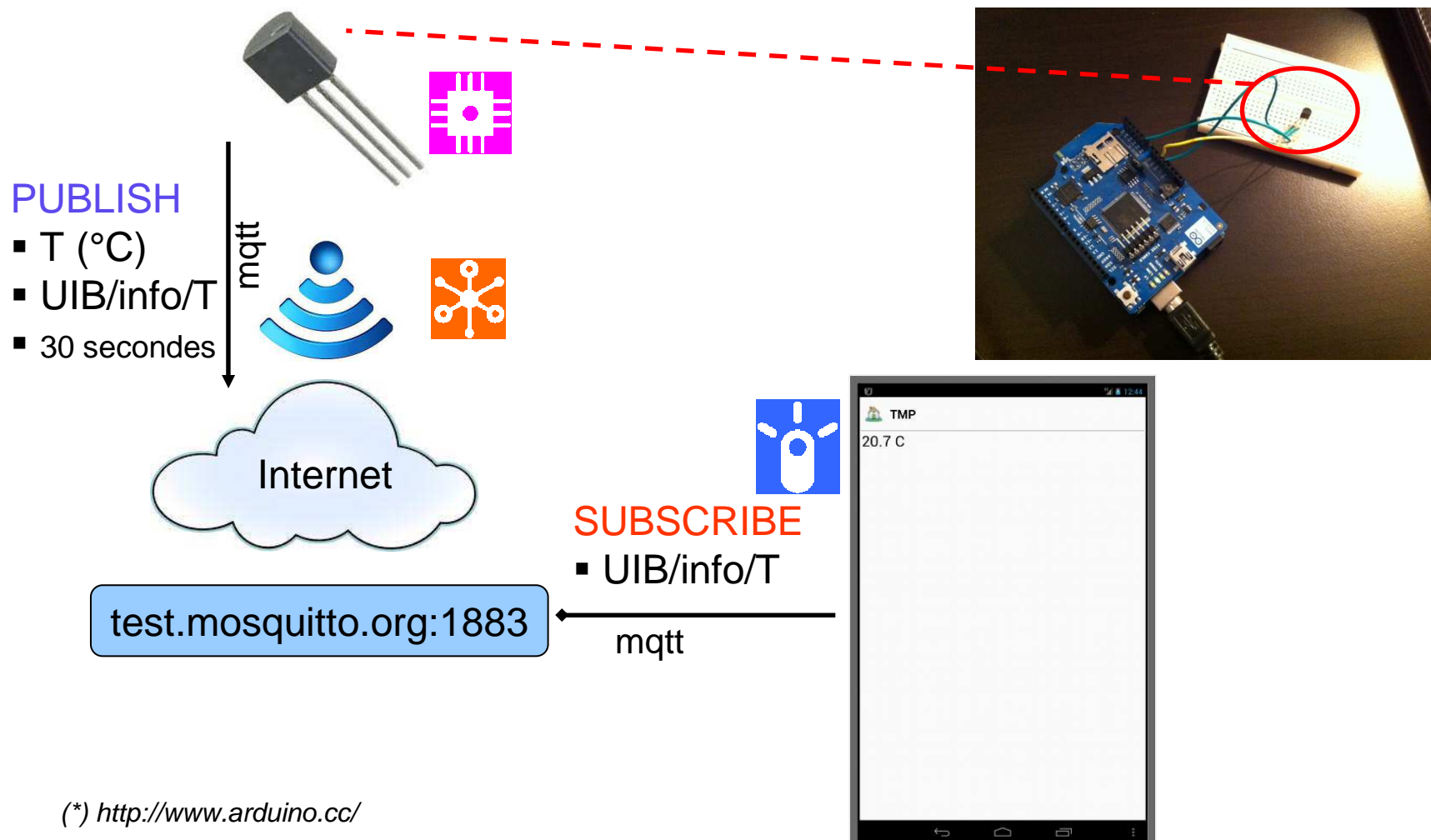


Exemples d'implémentations de MQTT

- Industrie
- Energie
- Communications M2M
- Systèmes financiers,...



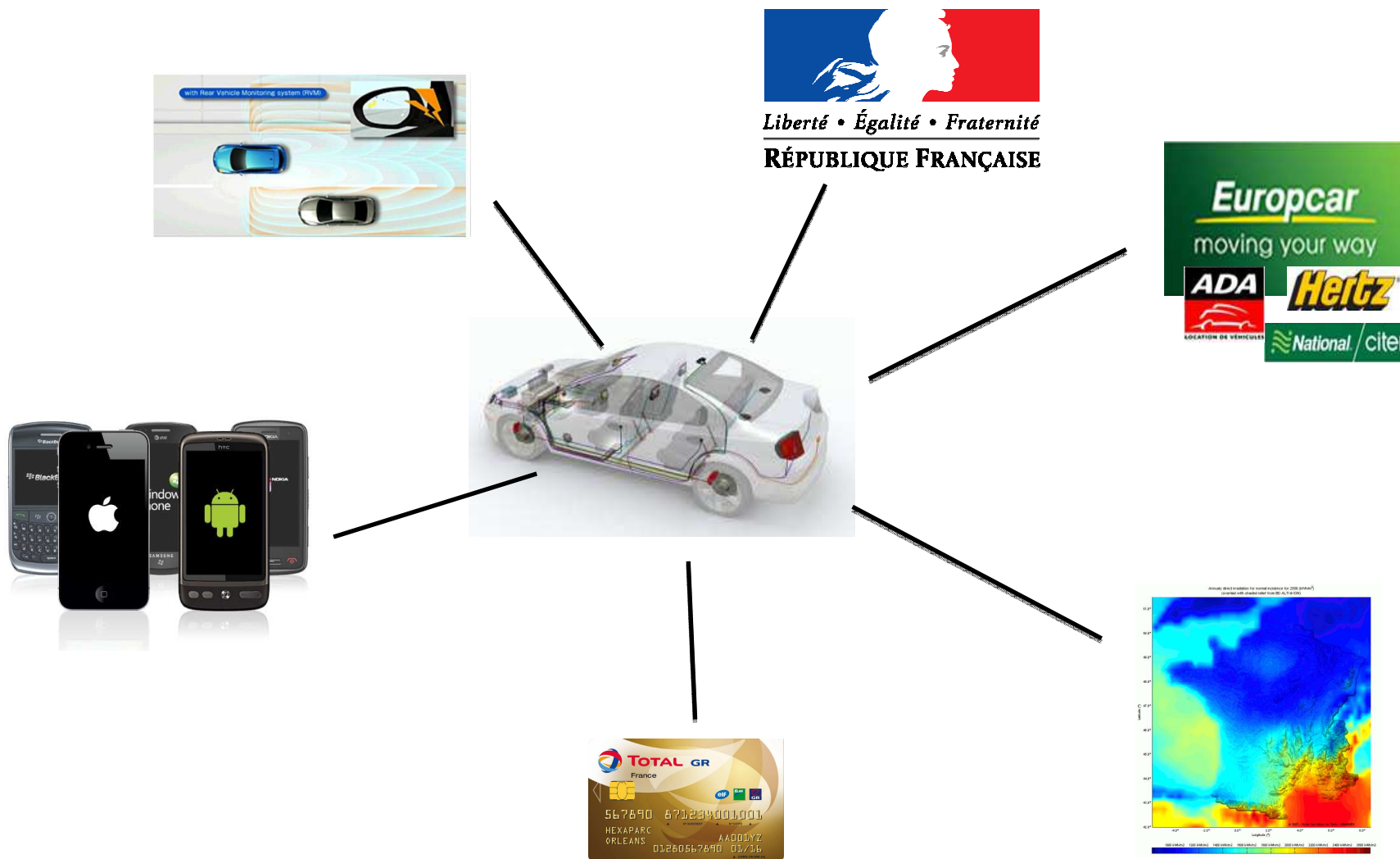
Mon IoT ... « Arduino (*) » »



(*) <http://www.arduino.cc/>

Présentation d'un Projet MQTT

L'écosystème du projet



Détails du Projet



WorkLight
Server

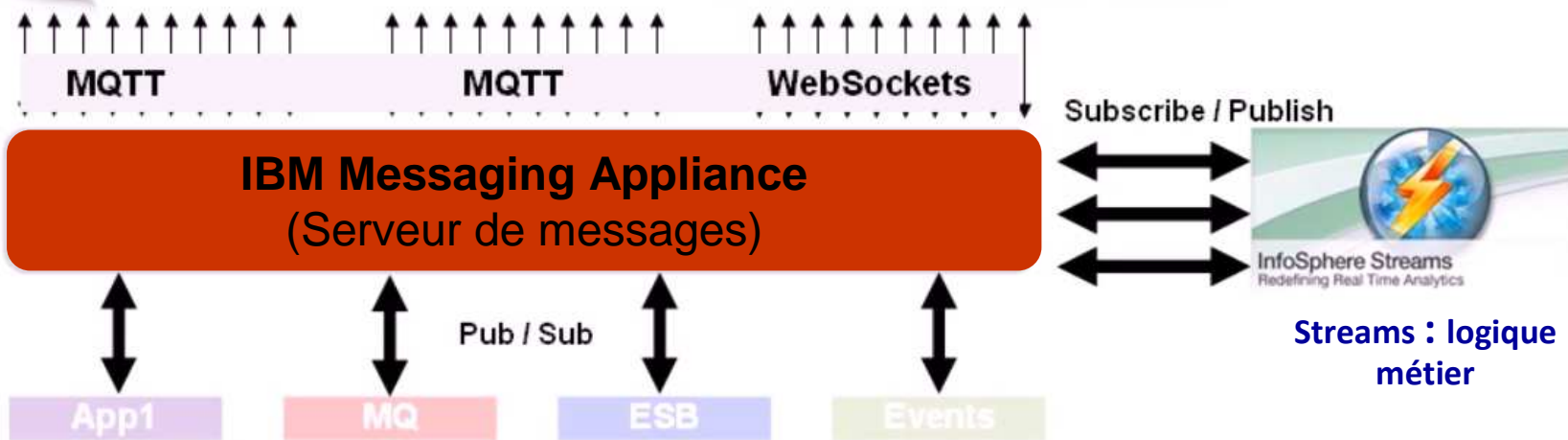
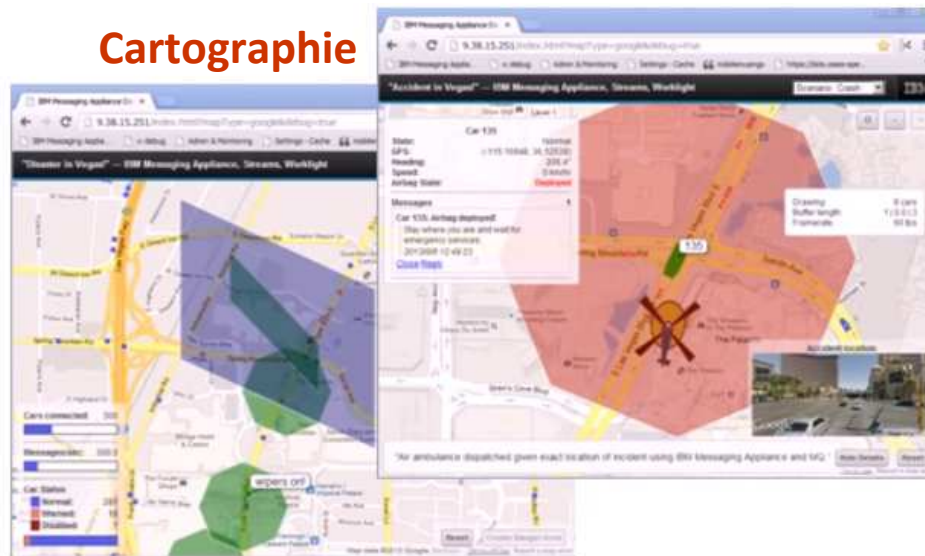
Smartphone, tablettes
navigation



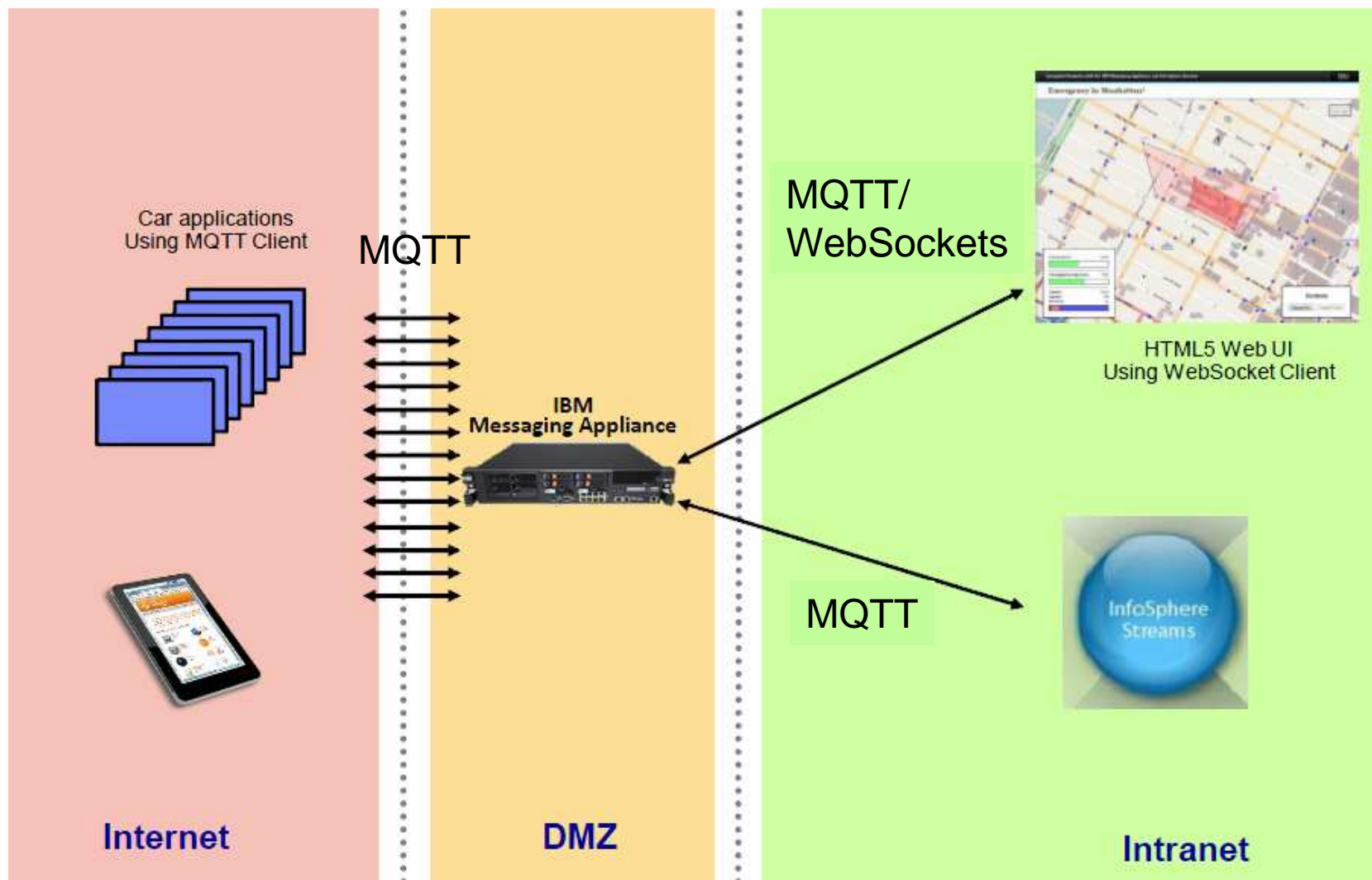
Générateur
de trafic



Cartographie



Architecture du Projet



Technologies Utilisées

- Générateur de trafic
 - Simulation de trafic: Java (client MQTT)
- Smartphone
 - Application Androïd/IOS
 - Gestion des smartphones via Worklight Server
- WebApp
 - HTML5
 - Cartographie: Google Maps
 - Javascript: MQTT/WebSockets
- Infosphere Streams
 - Analyse des données en temps réel

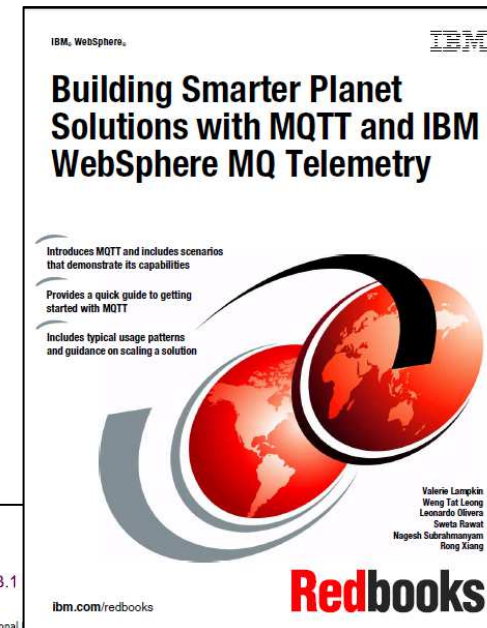
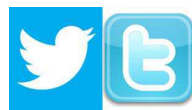
Démonstration

<http://www.youtube.com/watch?v=W-6yyS2oU4A>

Ressources

Some MQTT Resources

- MQTT.org
 - videos
 - <http://www.mqtt.org>
- MQTT Specification (V3.1)
 - <http://public.dhe.ibm.com/software/dw/webservices/ws-mqtt/mqtt-v3r1.html>
- IBM Redbooks
 - <http://www.redbooks.ibm.com/abstracts/sg248054.html>
- Twitter
 - <https://twitter.com/mqttorg>
- Arduino & MQTT
 - <http://www.arduino.cc/>



MQTT V3.1
 Authors: International Eurotech
 ibm.com/redbooks

Abstract

MQ Telemetry Transport (MQTT) is a lightweight broker-based publish/subscribe messaging protocol designed to be open, simple, lightweight and easy to implement. These characteristics make it ideal for use in constrained environments, for example, but not limited to:

- Where the network is expensive, has low bandwidth or is unreliable
- When run on an embedded device with limited processor or memory resources

Features of the protocol include:

- The publish/subscribe message pattern to provide one-to-many message distribution and decoupling of applications
- A messaging transport that is agnostic to the content of the payload
- The use of TCP/IP to provide basic network connectivity
- Three qualities of service for message delivery:
 - "At most once", where messages are delivered according to the best efforts of the underlying TCP/IP network. Message loss or duplication can occur. This level could be used, for example, with ambient sensor data where it does not matter if an individual reading is lost as the next one will be published soon after.
 - "At least once", where messages are assured to arrive but duplicates may occur.
 - "Exactly once", where message are assured to arrive exactly once. This level could be used, for example, with billing systems where duplicate or lost messages could lead to incorrect charges being applied.
- A small transport overhead (the fixed-length header is just 2 bytes), and protocol exchanges minimised to reduce network traffic
- A mechanism to notify interested parties to an abnormal disconnection of a client using the Last Will and Testament feature

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