FUTEBOL
Federated Union of Telecommunications Research
Facilities for an EU-Brazil Open Laboratory

FUTEBOL Live Demo
Cloud and Fog interplay
in an optical/wireless infrastructure

IoT partners

UFRGS, UFMG, UFC, UNIBRIS, TCD, and UFES

Motivation

- IoT uses wireless and optical networks for remote processing
  - Cloud and Fog
- Unexpected delay may happen
  - Contention for the wireless access
  - Congestion in the wired/optical network
- Problems for low latency IoT applications
  - A smart light system will face quality of experience degradation with delays greater than 200 ms

2
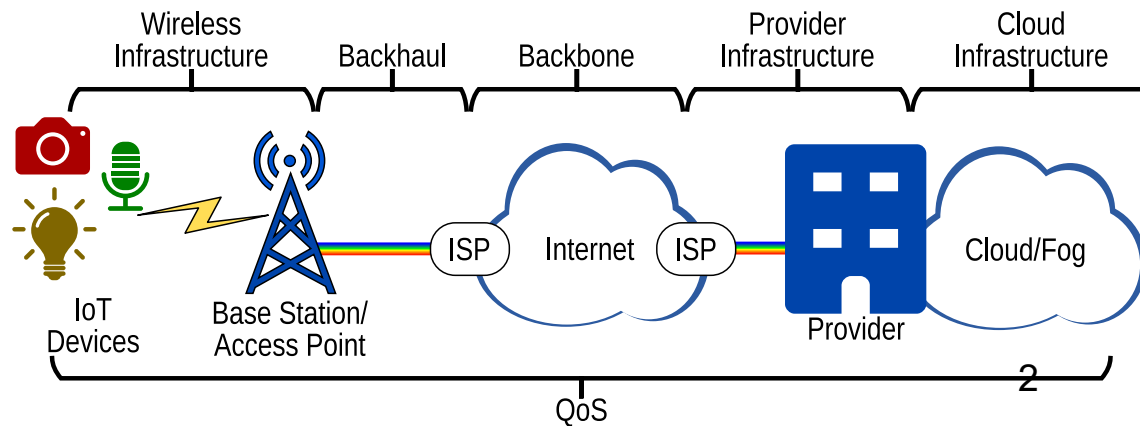
Experimental Scenario Definition

- **IoT Application**

Real time sign/sound interpretation to turn on a smart light system

- **Cloud at UNIVBris**

A high processing capacity system in Europe able to compute and store all the sound/video received from the SObjs to send back a reply

- **VMServer at UFMG**

VMServer is an MDC that has the capability to process video/sound on demand to send the results to both SObjs and the Cloud

- **Cloud decision system**

Intelligence to decide when a computing routine must be delegated according to the optical infrastructure capacity available versus wireless link degradation regarding delay
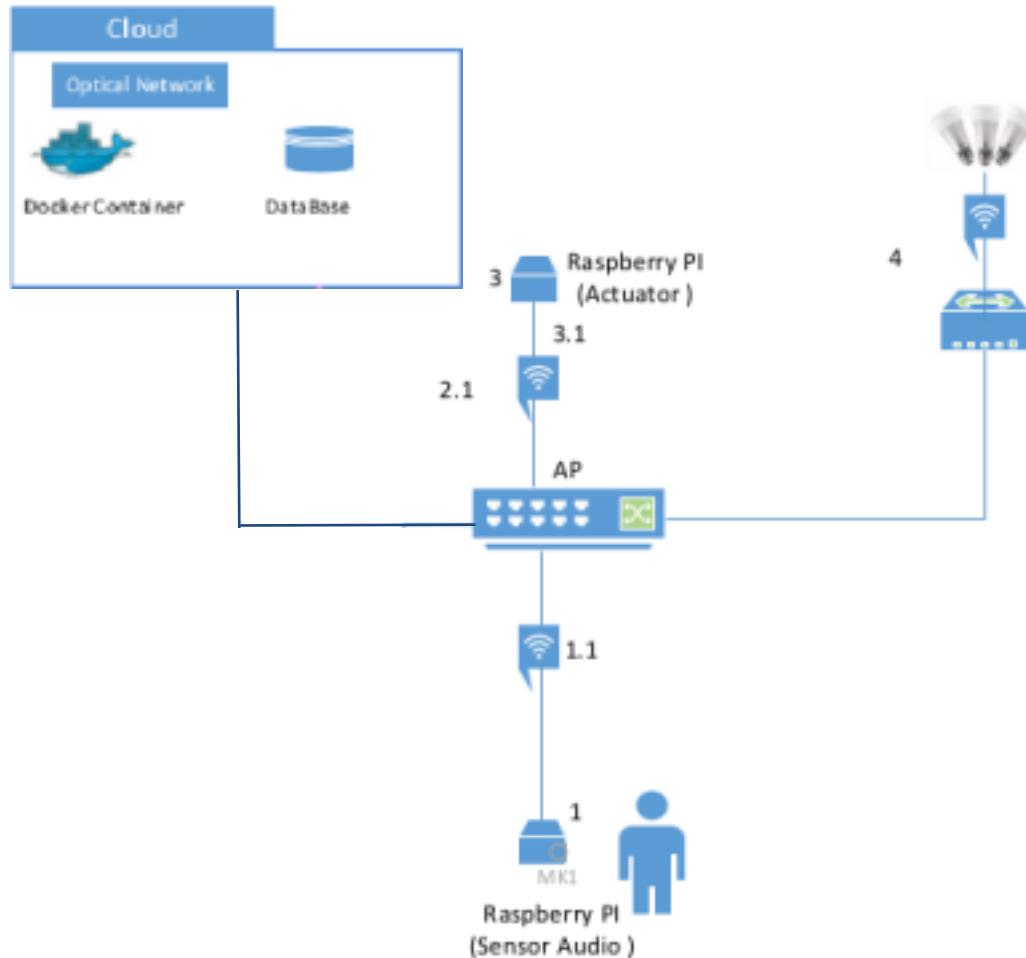

3
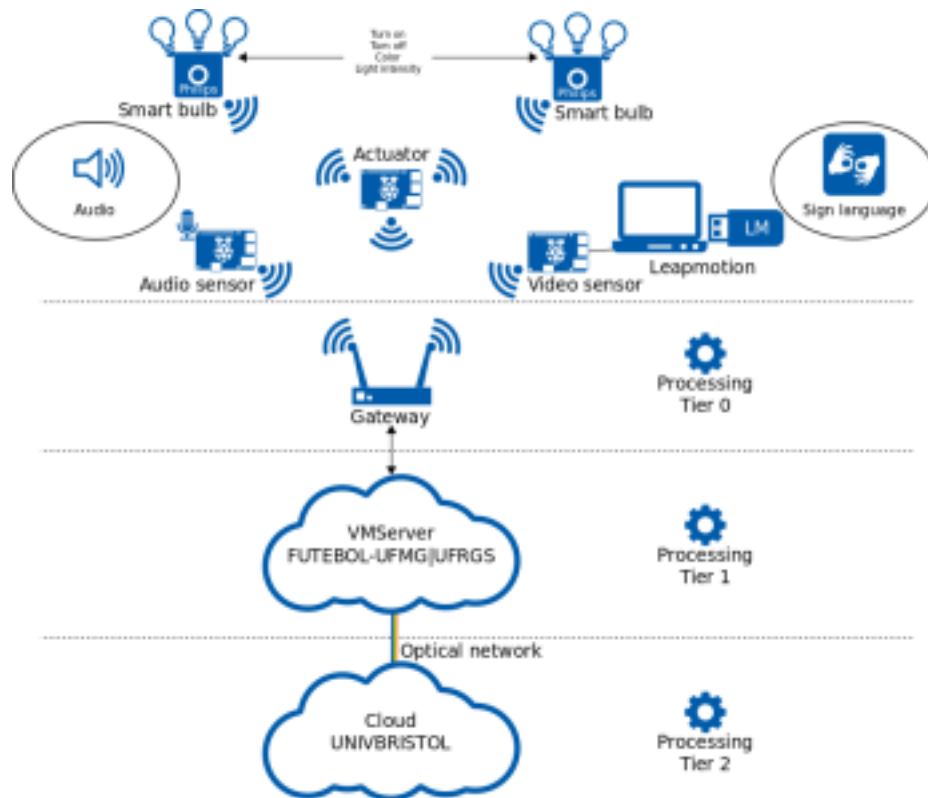
Local demo - Scenario
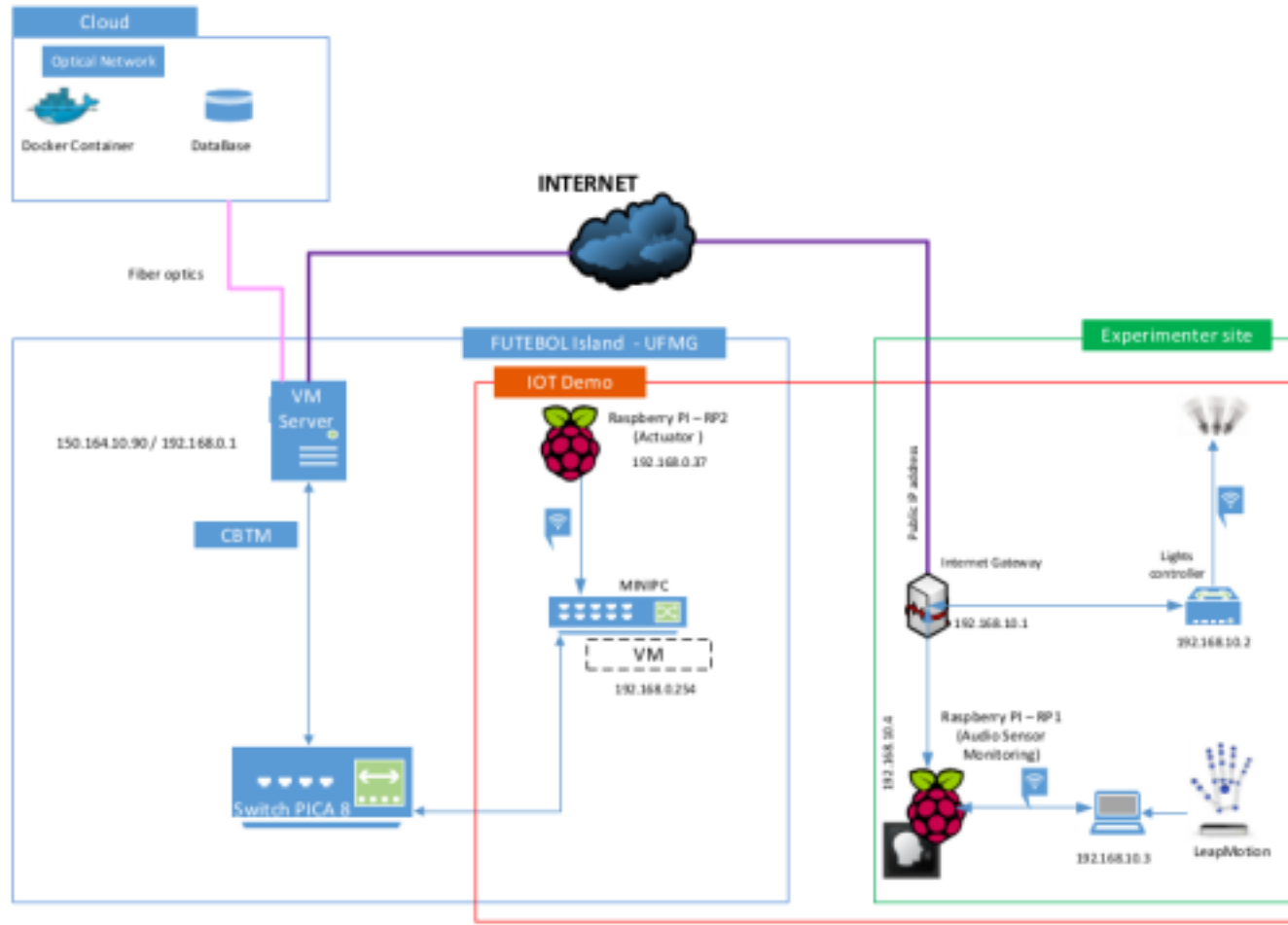
Local demo - Voice command Application

1 – Audio is recorded
1.1 – Audio is sent to the VM

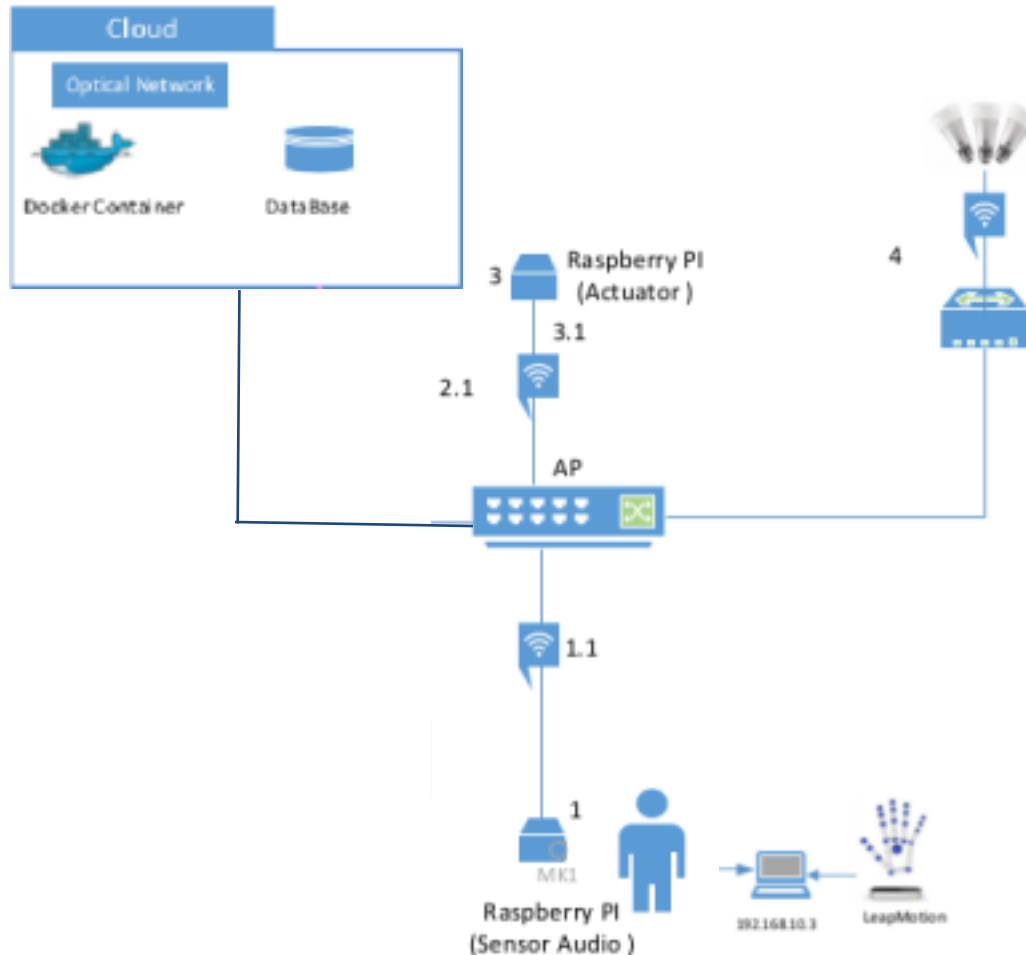2 – The audio is processed: conversion to text
2.1 – Text is sent to the Actuator

3 – Verification of the text
   (Turn On - Turn Off)

3.1 - Command is sent to the Lamp Controller

Local demo - Sign command Application

LeapMotion is connected to a computer that captures hand gestures

1 – Gesture data is sent to the Sensor
1.1 - Gesture data is sent to the VM

2 – Gesture data is processed and converted into textual command

2.1 - textual command is sent to actuator

3. In the actuator, the command is sent to the lamp controller

DEMO 1