



[neOCampus]

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Université Paul Sabatier
Opération neOCampus

neOCampus

General

- neOCampus | infrastructure overview,
- sensOCampus | sensors / actuators registration,
- accessOCampus | a neOCampus access control use case,
- Ruggedized MQTT remote I/O | application to DALI protocol and others I/O



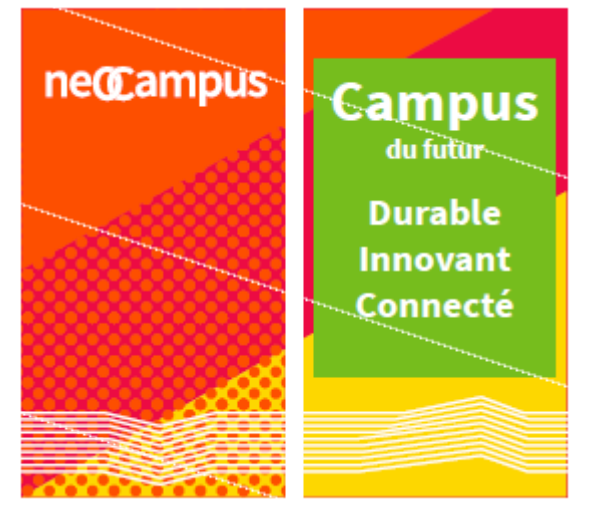
- Buildings ~ 407 000 m²
- Users ~ 36 000

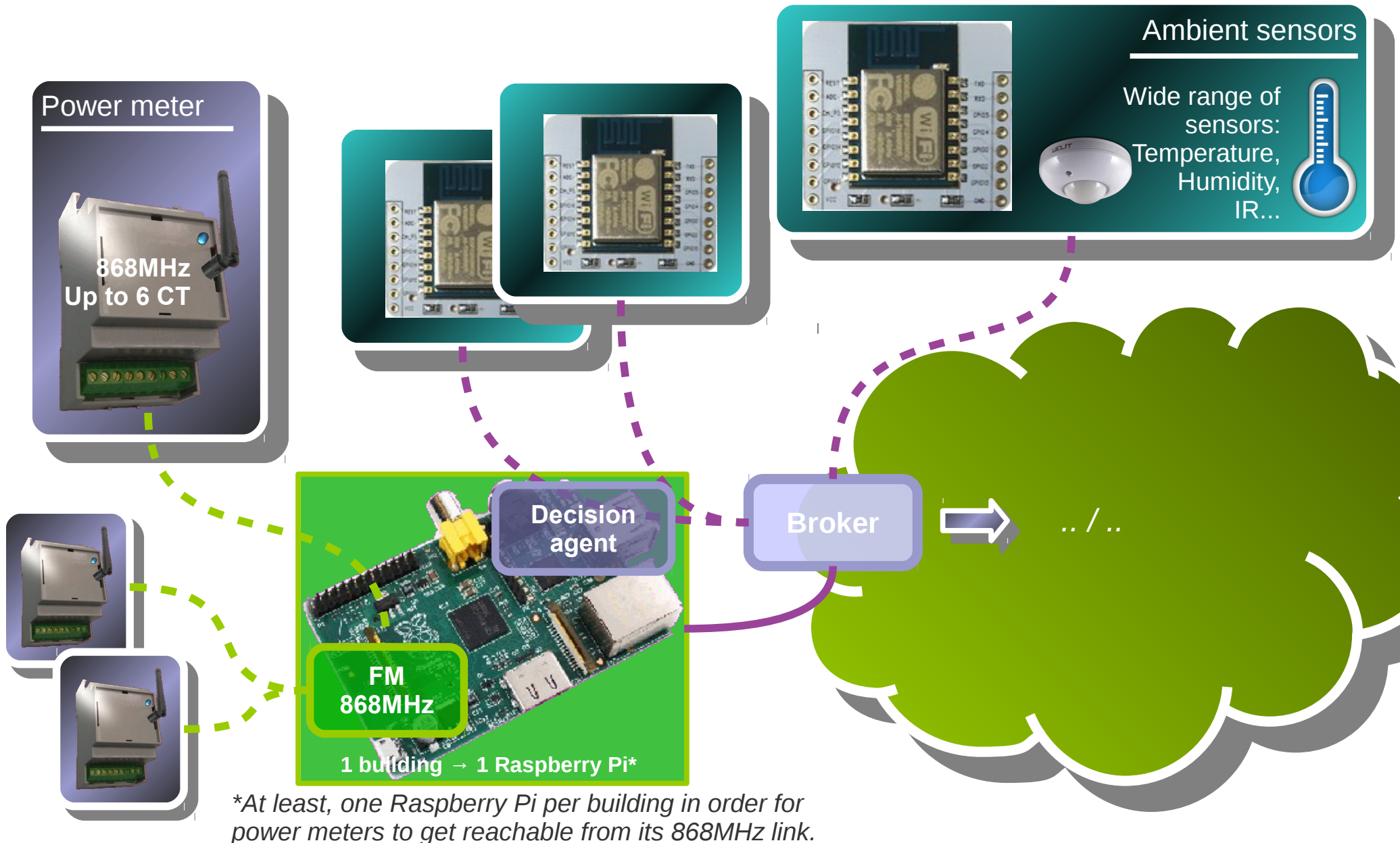
- Comfort to the everyday life for the university community
- Decrease of the ecological footprint of our buildings
- Diminish costs of functioning, in particular electric heating...

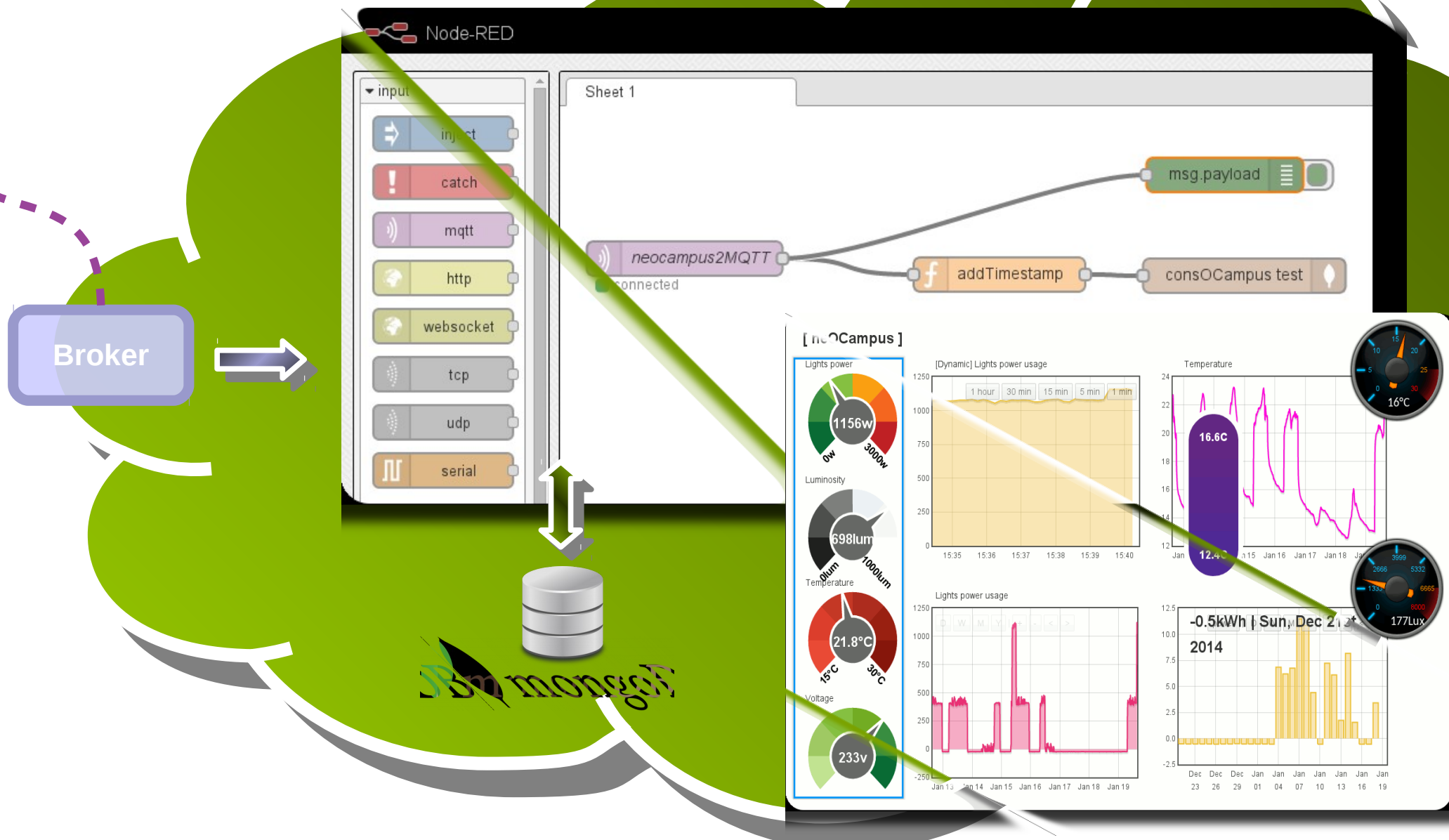


- ❑ **CESBIO** : Centre d'Etudes Spatiales de la BIOsphère
- ❑ **CIRIMAT** : Centre Interuniversitaire de Recherche et d'Ingénierie des Matériaux
- ❑ **ECOLAB** : Laboratoire écologie fonctionnelle et environnement
- ❑ **IRIT** : Institut de Recherche en Informatique de Toulouse
- ❑ **LAAS** : Laboratoire d'Analyse et d'Architecture des Systèmes
- ❑ **LAPLACE** : Laboratoire Plasma et Conversion d'Energie
- ❑ **LCC** : Laboratoire de Chimie de Coordination
- ❑ **LERASS** : Laboratoire d'Études et de Recherches Appliquées en Sciences Sociales
- ❑ **LMDC** : Laboratoire Matériaux et Durabilité des Constructions
- ❑ **PHASE** : Physique de l'Homme Appliqué à Son Environnement

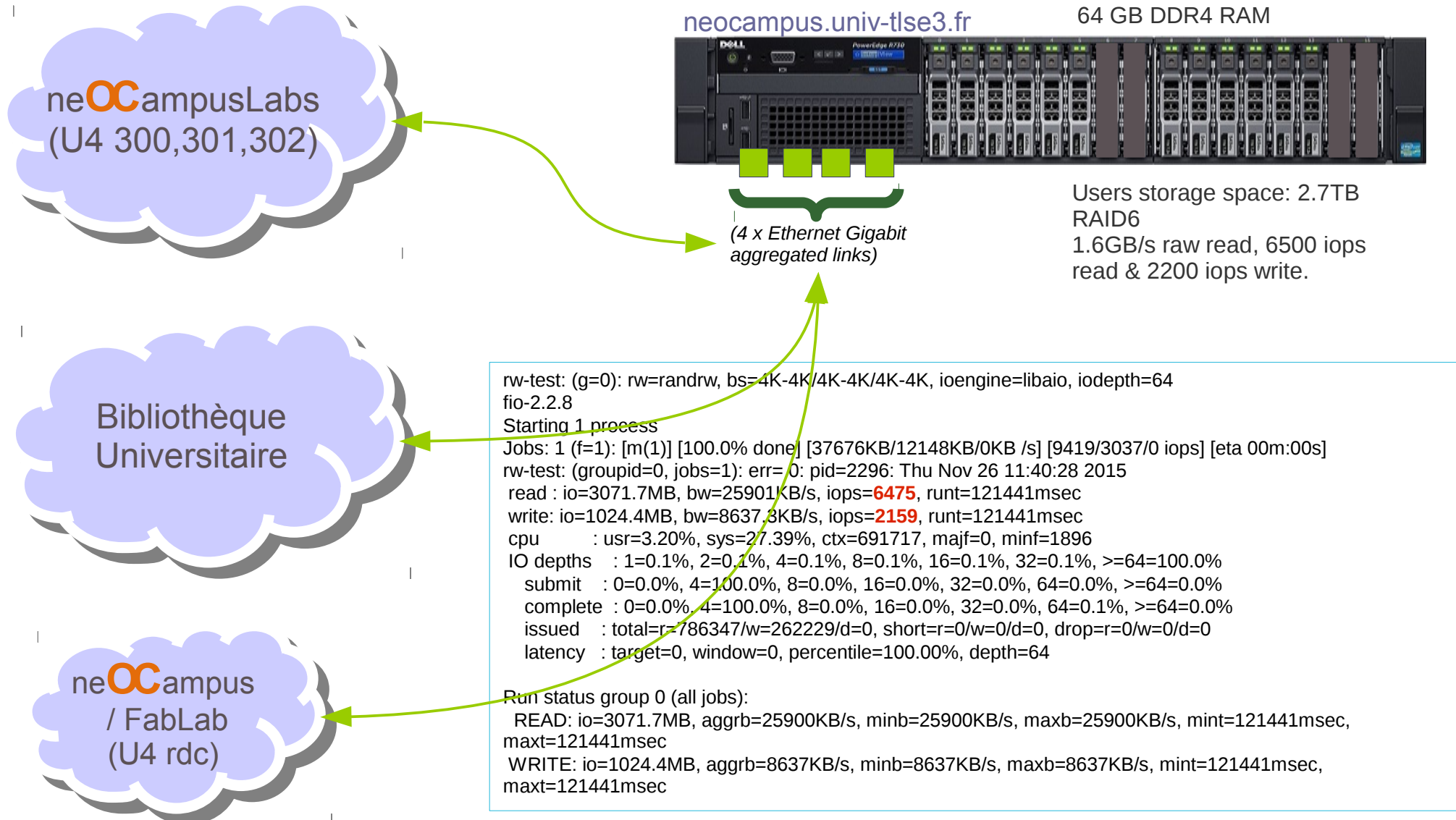
- ❑ Large scale experimentations
- ❑ Open data
- ❑ In real life demonstrator
 - Show room + deployment
 - researchers- training- companies
- ❑ Interdisciplinarity
- ❑ Interoperability
- ❑ Self-adaptation
 - Behaviour autonomy
 - Self-maintenance
- ❑ « Green Campus » and « Smart Campus »







neOCampus infrastructure



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Sensors & actuators registration



Register sensors
& actuators
with GPS pos.

<http://neocampus.univ-tlse3.fr/admin/sensors>

Sensors / actuators management*

List of sensors / actuators ...

Sensor 1 | temperature | U4 | 301 | topic=neocampus/U4/301/lux | ...

Sensor 2 | luminosity | U4 | 301 | topic=neocampus/U4/301/lux | ...

actuator1 | shutters | U4 | 302 | topic=neocampus/U4/302/shutters | ...

sensor3 | access | U4 | 301 | topic=neocampus/U4/301/nfctag | ...

actuator2 | access | U4 | 301 | topic=neocampus/U4/302/door | ...

ADD

DEL

Edit

QR-code is a just a http link to Django application managing sensors / actuators. GPS data will be read from browser.

Registered devices fetch their configuration ...



- Topic to publish to / to subscribe to,
- Login / passwd,
- ClientID to use,
- Agent to launch,
-

Sensors / actuators management

Sensor-x |

Sensor-y |

Internship summary

- Sensors / actuators registration web application (Django),
- 4 months starting January 4th (UE Projet M1),

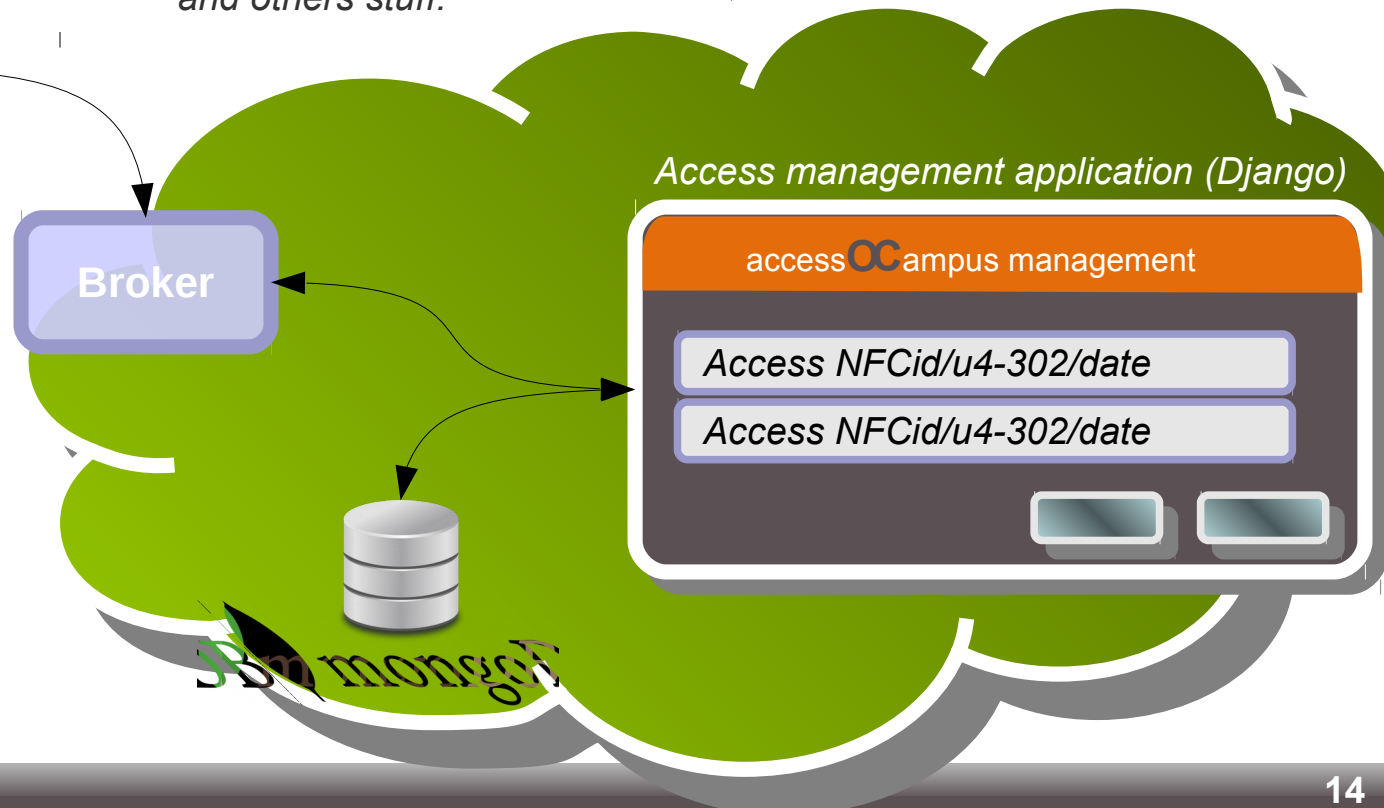
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*NFCreader & camera
sensors registration. Lock
controller registration.*

*Retrieve sensors /
actuators topics setup
and others stuff.*



Internship summary

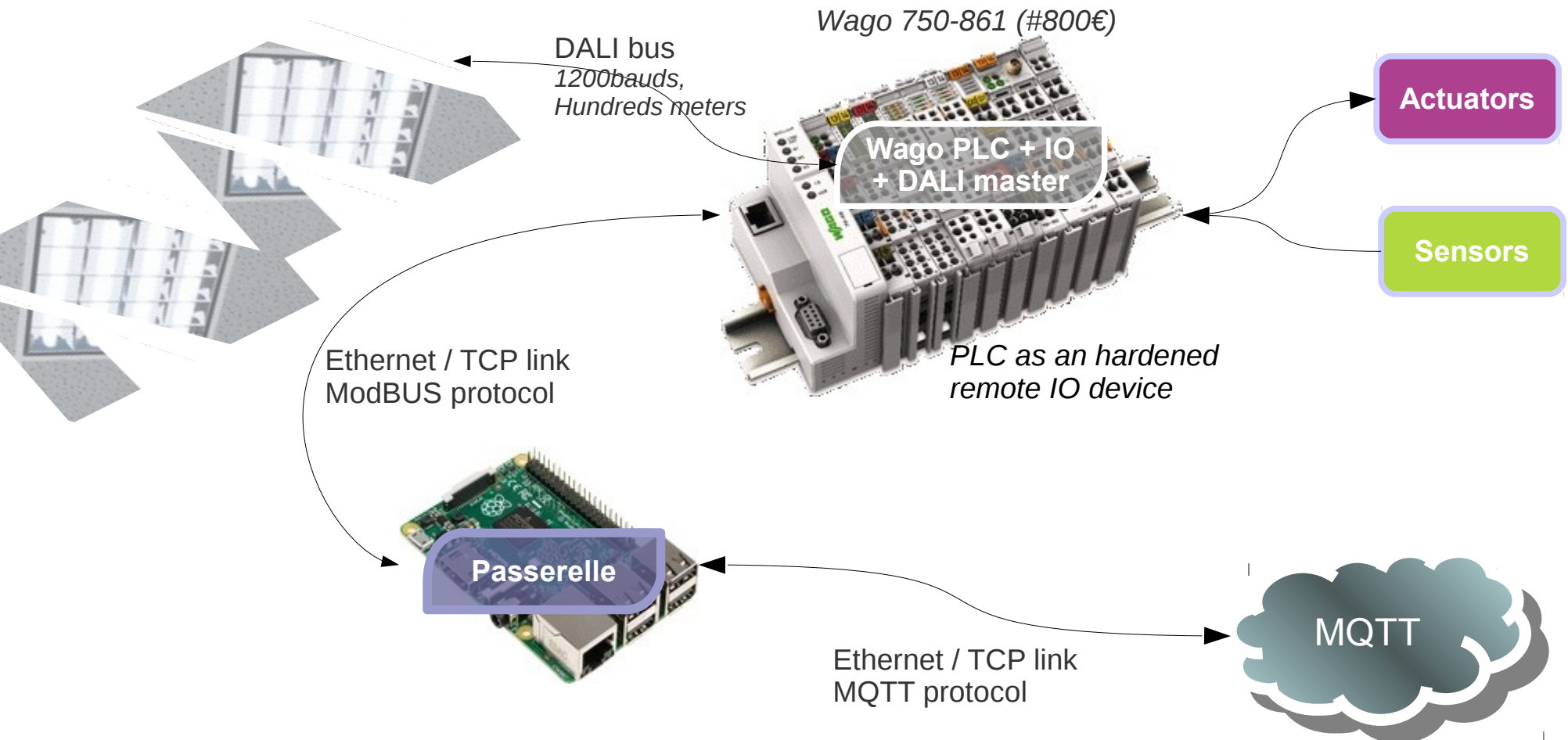
- Complete rewrite* of the access control application with Django,
- Application(s) will benefit from our new neOCampus infrastructure,
- Applicant will be part of the neOCampusLabs integration,
- 4 months starting April 4th (part is related to L3 UE Stage),

** previous version was based on nodeJS and executed as a stand alone application.*

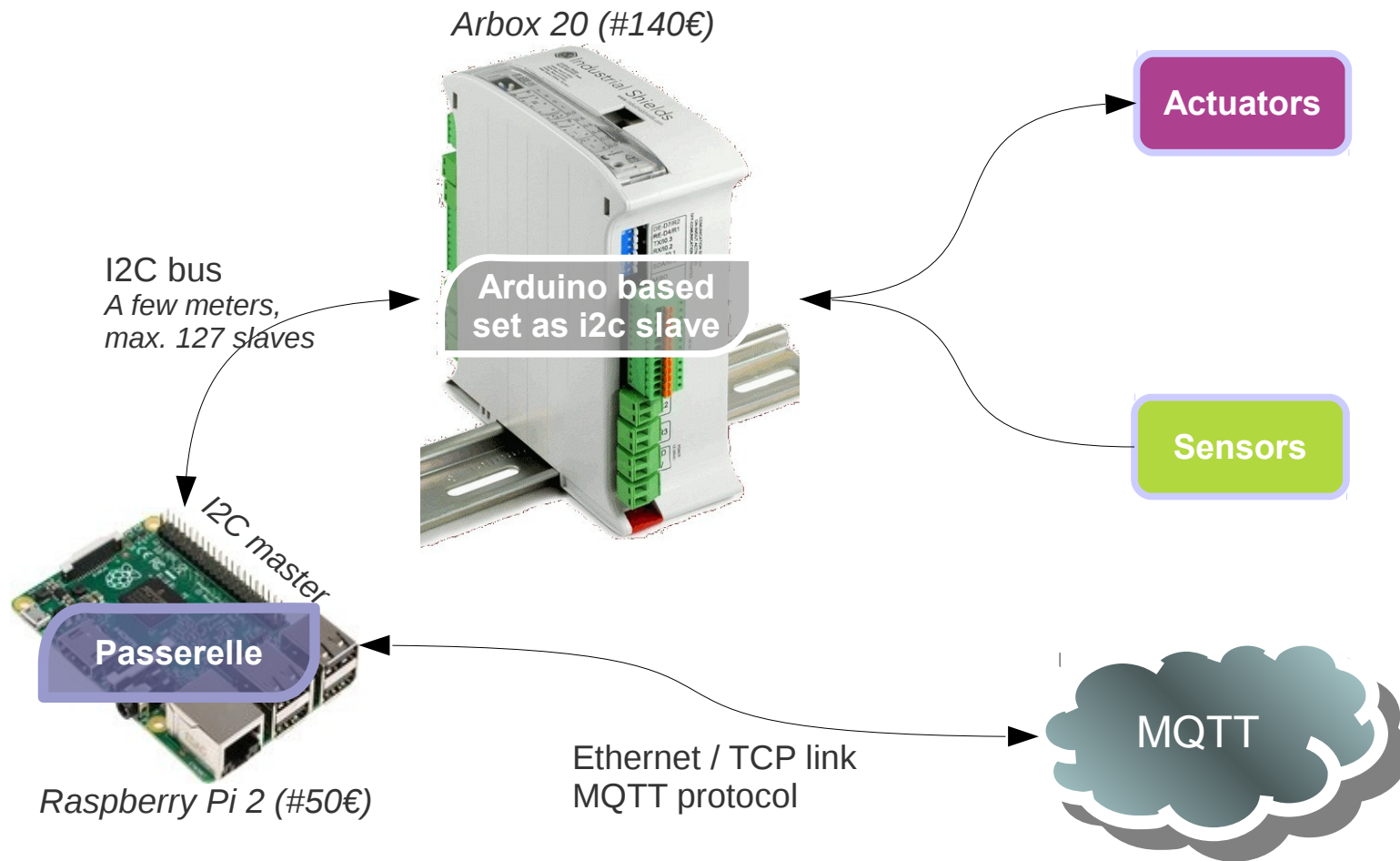
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MQTT to DALI driven leds lighting devices



MQTT to ruggedized remote I/O



Internship summary

- Driving DALI lighting devices from MQTT,
- Ruggedized remote I/O through MQTT,
- Application(s) will benefit from our new neOCampus infrastructure,
- Applicant will be part of the neOCampusLabs integration,
- 4 months starting Mars 14th (Lpro G2EBI),

- Wiki | <http://neocampus.univ-tlse3.fr>
- Data flows | <http://neocampus.univ-tlse3.fr/nodered>
- UI | <http://neocampus.univ-tlse3.fr/domoticz>
- Web site : <http://www.irit.fr/neocampus>