

Talk2Lab - The Smart Lab of the Future

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- Integration of smart devices in a lab environment
- "Talk to" Alexa to retrieve real time data from your laboratory
- Use sensors to monitor temperature, water flow and laser power in a laser lab
- Alerts and warnings through Slack for out of specification readings

Alexa, what is Talk2Lab?

Alexa, why make Talk2Lab?

- Labs have yet to adopt smart technologies; remaining primitive compared to home automation systems
- Improve access to useful laboratory data
- New interaction methods in laboratory environments
- Allow scientists to have hands-free retrieval of data

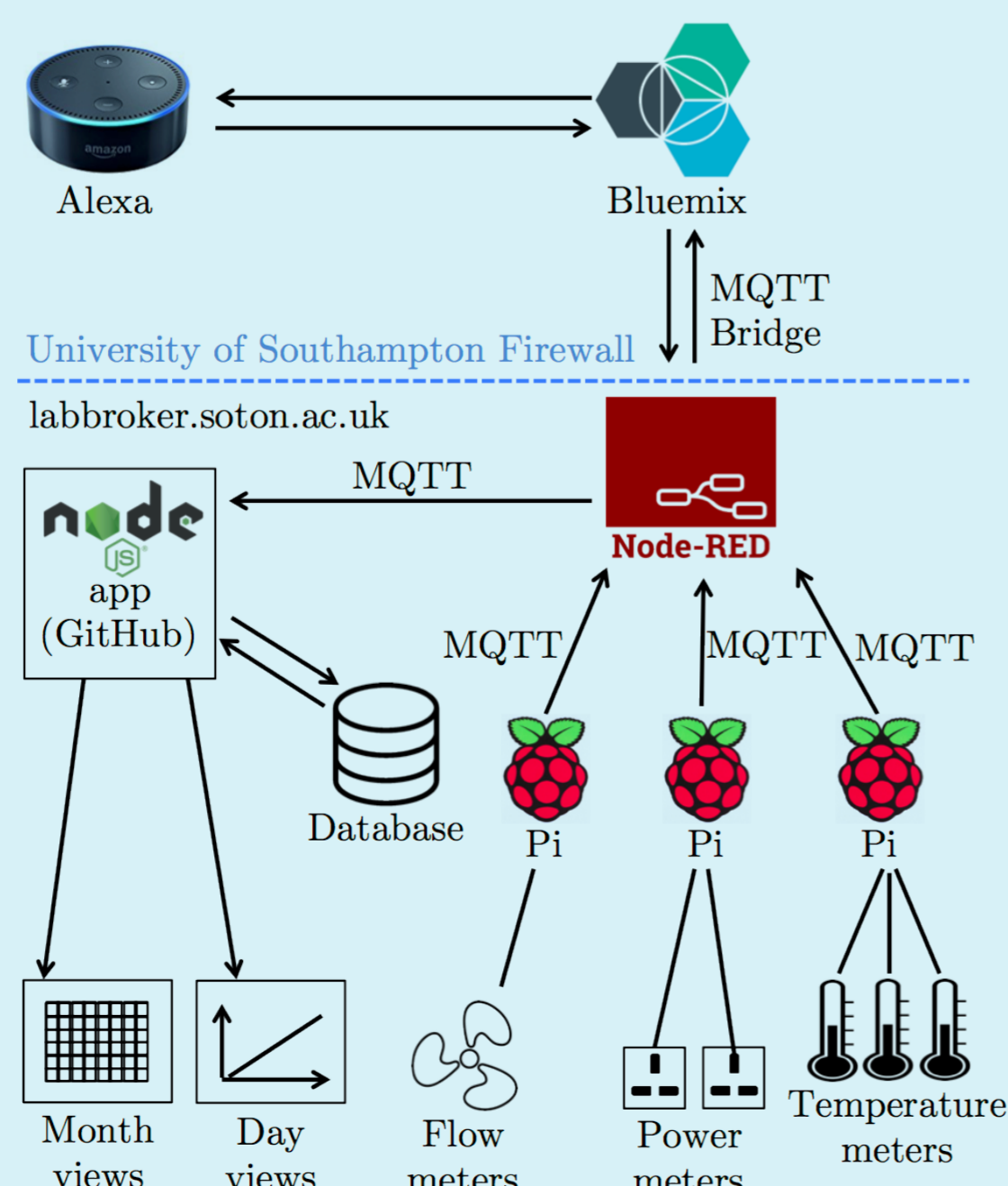
Alexa, where is Talk2Lab?

- Developed in physics laser lab at the University of Southampton
- Sensors monitor lab environment:
 - Temperature
 - Water flow rates
 - Electricity consumption
 - Vacuum pressures
- Sensors are linked up to MQTT broker for dissemination of readings



Alexa, how does Talk2Lab work?

- Access sensor data through Slack and Echo dot devices
- Uses Node-RED & MQTT for data transferral



Alexa, what is the future of Talk2Lab?

- Expansion in number of sensors
- Process more complex queries
- Control display screens / dashboards
- Record data & images in lab books
- View camera feeds for image analysis
- Combine different instrument readings to diagnose equipment problems using machine learning