IOTWeek

Dublin — June 20-23, 2022

# IoT Lab & Fed4FIRE+

Cédric Crettaz, Mandat International

GLOBAL VISION:
IoT TODAY AND BEYOND

IOTForum

# What IoT Lab offer



- An international platform based in Geneva, Switzerland, to grasp the future of the Internet of Things.
- International expertise in Internet of Things and data protection.
- From research to large-scale exploitation, our mission is to transform problems and ideas.

# What IoT Lab do



- Ecosystem approach to solve problems linked to IoT.

- Strong background on research activities.

- Interface between research, industry, standardization and SDGs:
  - Liaison with ITU.
  - Contact with key academic institutions and IoT community.
  - IoT Forum and IoT Week.

# IoT Lab expertise



- Specialized lab to research, develop and test IoT.
- Testbed as a Service.
- Interoperability, multiprotocol integration and certification:
  - IPv6 certification
  - UDGaaS (Universal Device Gateway as a Service)

# IoT Lab testbed



- Based on crowdsourcing and crowdsensing.
- Access to different types of resources:
  - IoT sensors
  - IoT actuators
  - Sensors installed on smartphones
  - Surveys
  - Mobile application
- https://www.iotlab.eu/

**IoT Lab** is a research platform exploring the potential of crowdsourcing and Internet of Things for multidisciplinary research with more end-user interactions. It gives the power to the crowd to be at the core of the research and innovation process. It gives you the power to change the world and the way we understand it.

**IoT Lab in a nutshell**
What, How, Who

Privacy by design

About IoT Lab

**Join the wisdom of the crowd!**
It is easy, fun and useful!

**Join IoT Lab community and experiments**

Join us, share your ideas, assess and rank brilliant ideas and shape the future!

- See the top ranked ideas
- Look at ongoing researches
- Learn about mobile app

Download IoT Lab app

**Lead a research**
Researchers community

**IoT Lab testbed as a Service**

Join us as a researcher and work with our testbed as a service and the wisdom of the crowd.

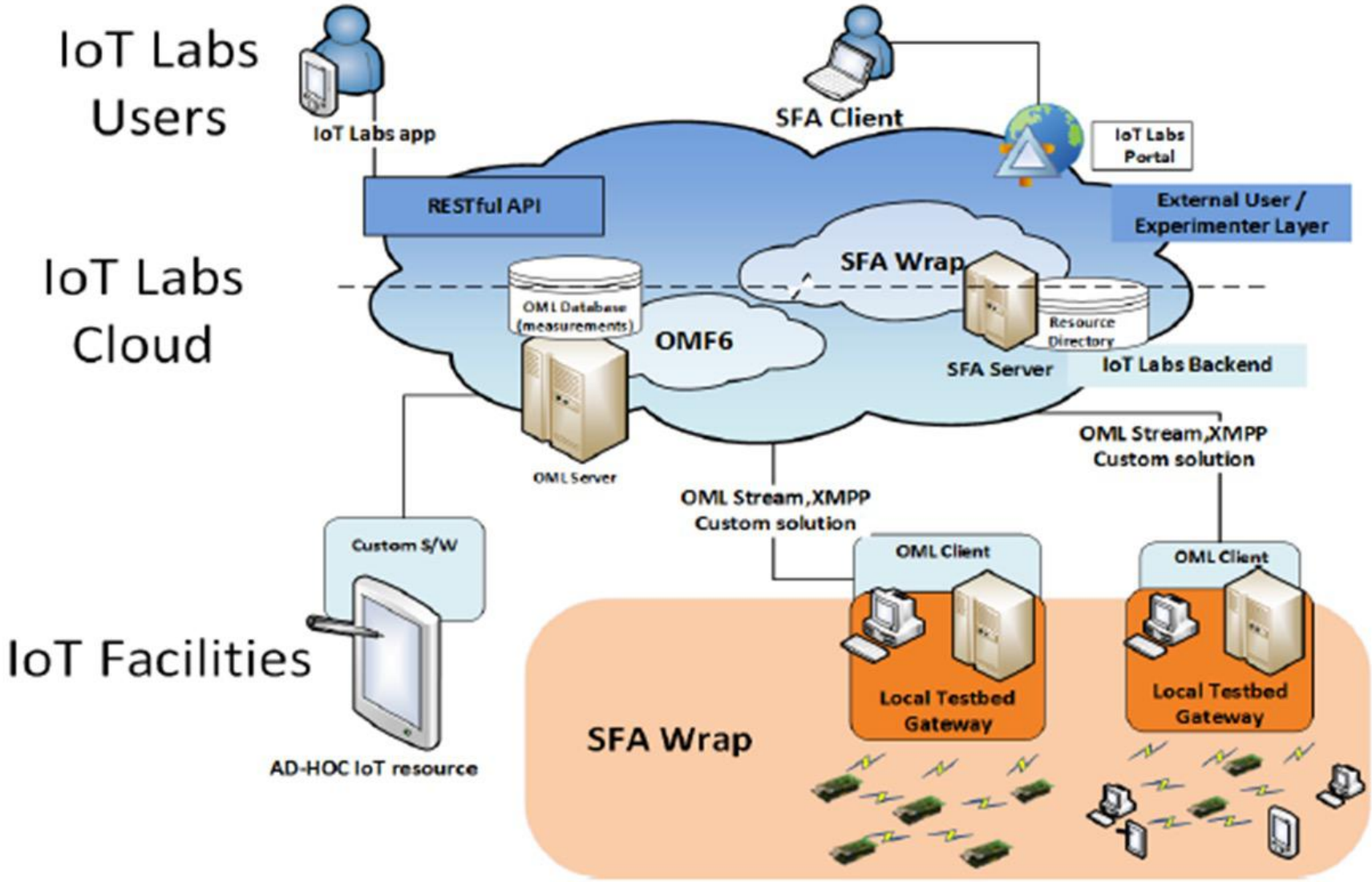
Register/Log in

Start your research

News

# IoT Lab testbed

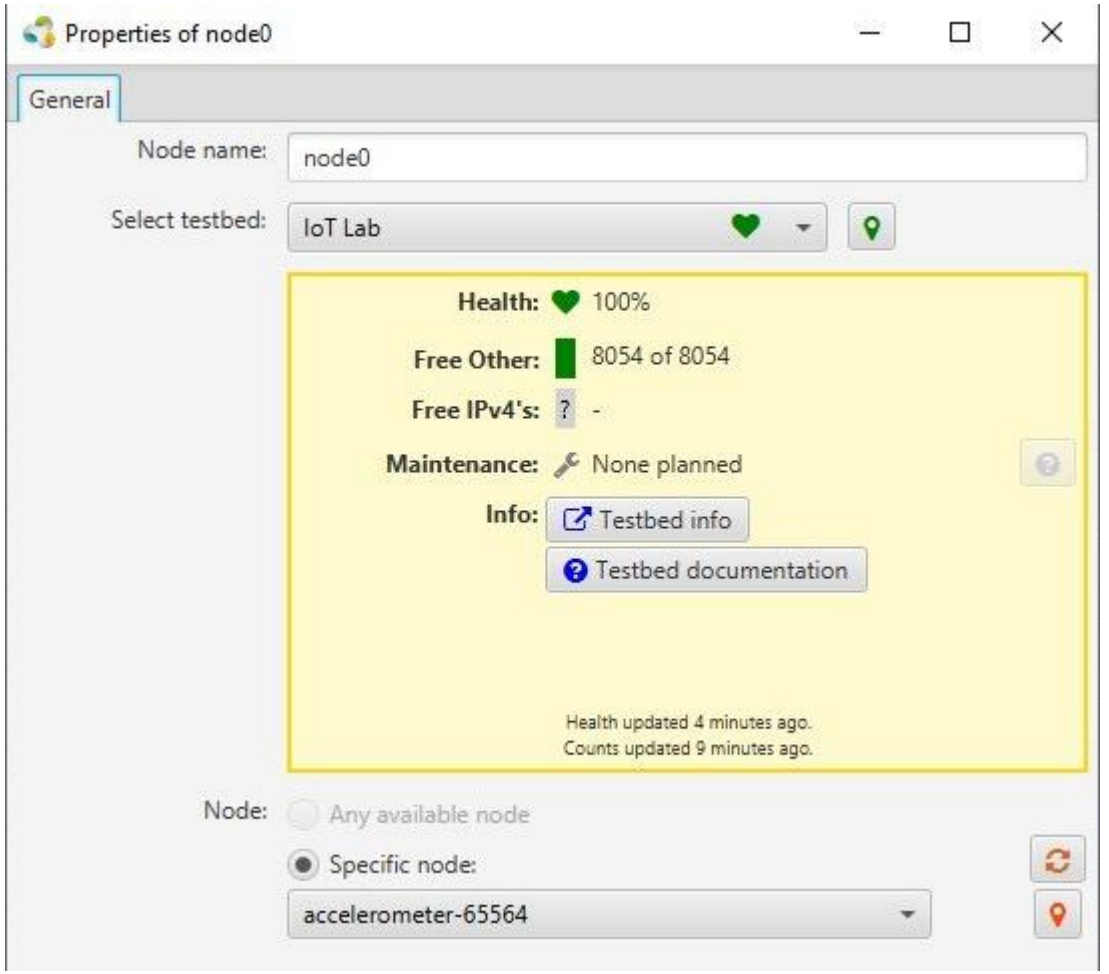




# IoT Lab & Fed4FIRE+



- The IoT Lab testbed has joined the Fed4FIRE+ testbed federation in February 2019.
- The IoT Lab testbed is accessible through:
  - jFed
  - Fed4FIRE+ portal
  - SLICES portal



# New opportunities thanks to Fed4FIRE+



- Our participation to the Fed4FIRE+ project and the integration of the IoT Lab to the Fed4FIRE+ testbed federation brought new opportunities:
  - TM Forum
  - Standardization at ITU-T
  - Data protection

# IoT Lab & TM Forum



- Internal Open Call “Opening Fed4FIRE+ to the Telecom Industry by Making federated testbeds interoperable with the TM Forum Open API”:
  - Demonstrator showing the dual integration between Fed4FIRE+ and TM Forum Open APIs.

=> Implemented in the IoT Lab infrastructure.

# IoT Lab & TM Forum



- TM Forum IoT APIs:
  - TMF908 IoT Agent and Device Component Suite API.
  - TMF914 IoT Service Management API Component Suite.

  => Developed, tested and used in the IoT Lab testbed.

- Awarded TM Forum Catalysts (PoCs):
  - Digital Business Marketplace Phase 3: Outstanding Catalyst – Business Impact (November 2020)
  - Telco Data Space: Best Innovation (October 2021)
  - Digital Business Marketplace Phase 4: Catalyst Industry Contribution to Beyond Connectivity (February 2022)

# Standardisation at ITU-U



- Standardisation of the APIs used for the testbed federation by Fed4FIRE+:
  - Place: ITU-T Study Group (SG11) “Signalling requirements, protocols, test specifications and combating counterfeit products”
  - Outcome 1: Recommendation ITU-T Q.4068 (08/2021) “Open application program interfaces (APIs) for interoperable testbed federations”.

# Standardisation at ITU-U



- Standardisation of the APIs used for the testbed federation by Fed4FIRE+:
  - Outcome 2: ITU-T Focus Group on Testbeds Federations for IMT-2020 and beyond (FG-TBFxG):
    - Next meeting: 19-21 July 2022
    - Any contribution is welcome.
    - https://www.itu.int/en/ITU-T/focusgroups/tbfxg/Pages/default.aspx

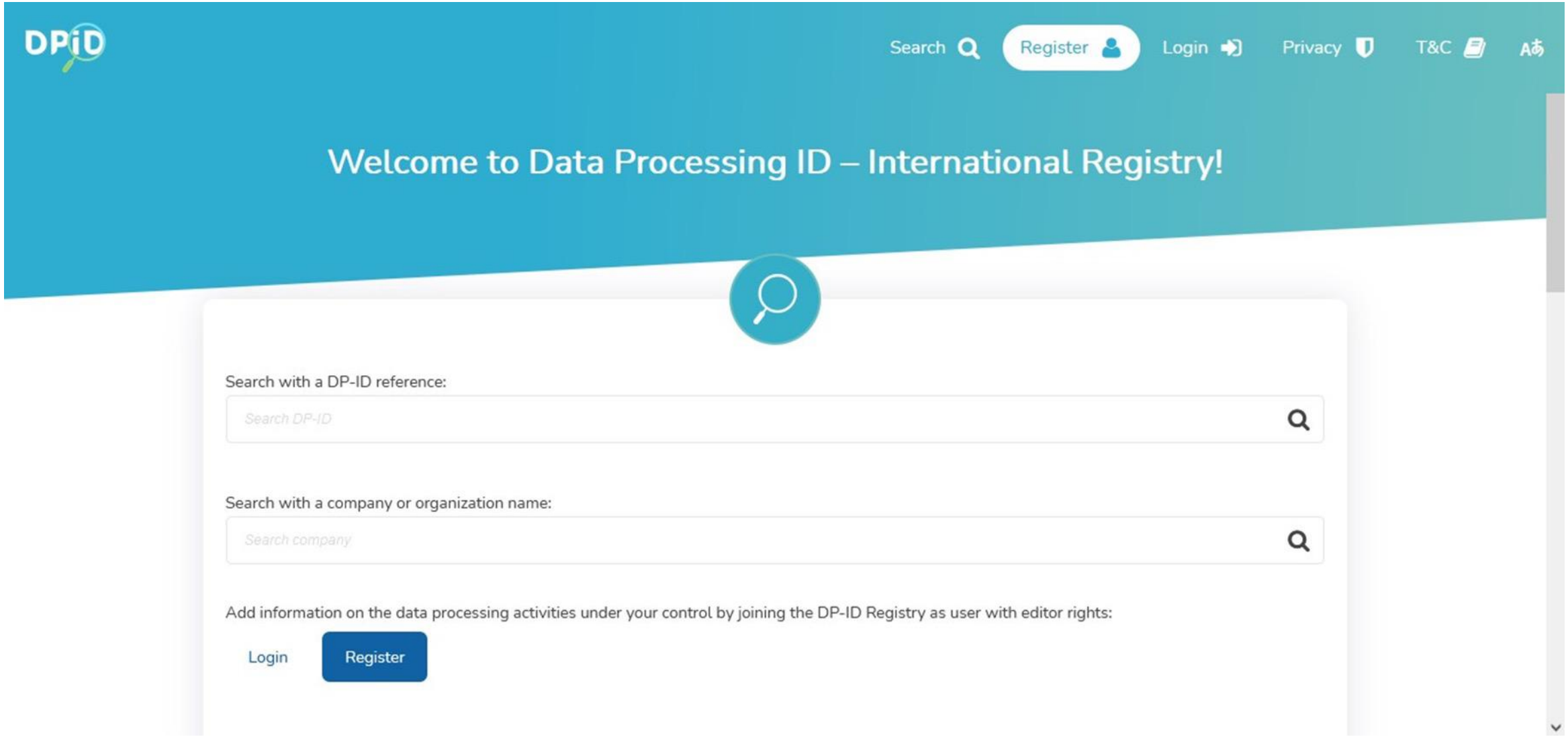
# Data Protection



- A challenge to make testbeds and experiments compliant with the GDPR:
  - DPOs network to solve the issues related to the data protection.
  - Useful material provided by Europrivacy.
  - Specific tools developed to ease the compliance with GDPR:
    - DP-ID Web application.

# DP-ID (https://dp-id.com/)





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# Thank you!

**Find more:**

https://iotlab.com

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