Lucy Project: Marion Duprez
Special thanks to Ayoub Bousselmi & Sofiane Imadali for the Lucy Playground
Context & Ambition

- Lucy is the Research PF of Orange to experiment 5G

- 5G is key for Orange, with strong expectations by customers towards open & programmable networks
  - de facto standard sw, opensource communities
  - OpenAirInterface, OPNFV, OpenStack, ONAP, Docker, Kubernetes, …

- 5G success depends on a large panel of expertises
  - radio, virtualisation, cloud, software development, security, operations …

  → integrative research

  → in-vivo experimentation, in near-field conditions
Lucy’s goals

→ From « playground » to « 1.0.0 »
  ▪ Propose to research projects the tools & resources needed to build their innovations
  ▪ Do research on these tools to prepare the next steps
  ▪ Favor a reproducible research and downstream reusability of the tools developed by research

→ 5G use case… but not only
  ▪ Notably on the basis of the « 5G - connectivity as a service » demo (uses OAI)
  ▪ Create a self-service dynamic on the available tools, to favor creativity

→ Prepare with operational people the ‘cockpit of the future system’
  ▪ Operational people from build & run : test the most relevant tools for visualisation, interaction, DevOps …
  ▪ Operational people in charge of marketing offers : offer evolutivity (DevOps)
The Lucy Ecosystem

User

- deployment engine
- views
- metrology
- Terms of use

How to use?
Which tools?

Service Developer

Which infra?

Platform Broker & Admin

How to contribute?

Bundle Developer

How to contribute?
**Radio:**
- To be done
- Should be connected to the IT Infra

**IT Infrastructure:**
- Gitlab
- Jenkins/Gitlab-ci
- Artifactory
- Mattermost
- Openwatt
- Limited number of private servers for bare metal

**Atom:**
- Could be anything from a container image, to a VM image to an artefact
- Can be combined with other atoms

**Tools developed so far**
- This is a gist with entries from experiments on the playground (accessible with an API, you could imagine other sources of gist entries)
- Test atoms/molecules on the go, see: [Try with PWD] on the repo, github.com/sofianinho/clearwater-docker
- Already built molecules (RANaaS, IMS, OpenFaaS) inspired by fedoralabs
- Atoms and documentation are created with CI/CD from gitlab

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1. Achievements: tool suite for a self-service reproducible research
   • AtomStore: I publish my developments
   • AtomDocs: I document my developments
   • ToolBox: turnkey systems pre-configured for specific use cases
   • PlayGround: place to test and experiment, Sandbox-like
   • LucyWall: to publish and share the tests results done on the PlayGround

2. Key properties
   • 100% open source (as initial point and target)
   • 100% automatisation: CI/CD from the ground up
   • 100% portable: non adherence to the deployment environment thanks to Docker
   • 100% collaborative: everything is explained online, self-service tutos
2018 perspectives

- Opening to partners
- Live radio emission
- Use case « verticals »
- 5G cockpit

- Demonstrate an end-to-end chain (radio to cockpit)
- Interact with mid/short terms (sandbox)
Thanks for your attention, and see you soon in Lucy’s galaxy!

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