

# Kick-Off

# Tetra OpenCloudEdge

Op weg naar de cloud met OpenStack

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Projectmedewerkers: Steffen Thielemans, Ruben De Smet,  
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Advisor: Gianluca Reali (University Perugia)

Startdatum: 1 November 2019

# Agenda

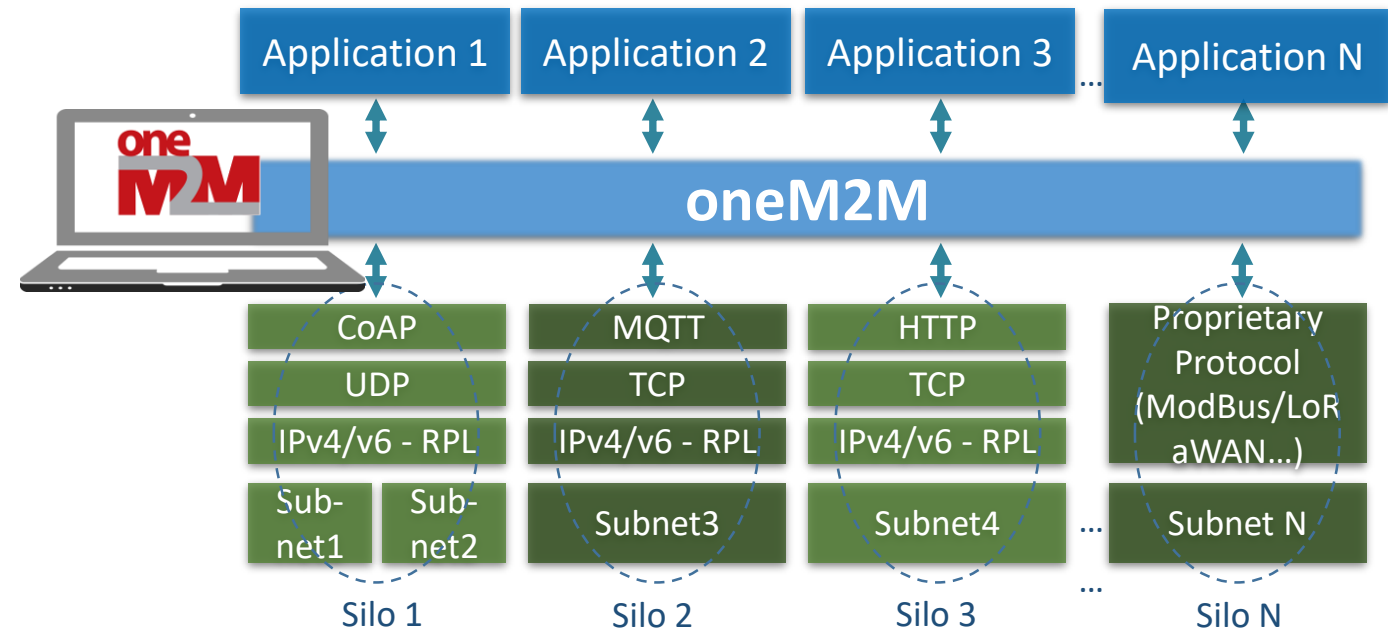
- 15u30 – 15u45: Introduction project
- 15u45 – 16u00: Presentation of group members + input use cases
- 16u00 – 16u40: Exploration of OpenStack and NodeRed
- 16u40 – 17u00: First experiences VUB IT central
- 17u00 – 17u20: First experiences Kangeroot

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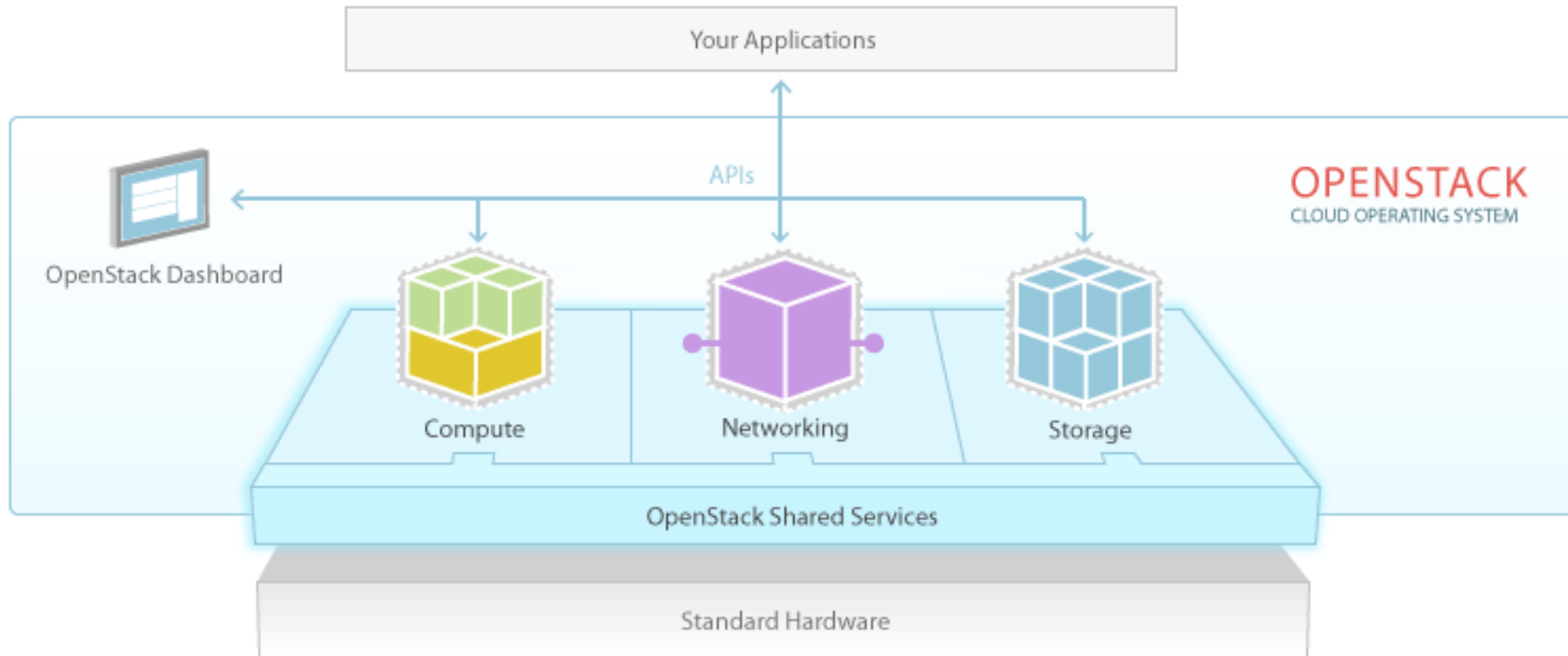
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# Motivation

- IoT needs to be integrated in cloud
- Cloud computing
  - IaaS, PaaS, SaaS
  - Private, Public, Hybrid
- OpenStack Cloud OS
  - Free to use
  - Open source
  - Build own private cloud
  - “Easy” integration with other platforms



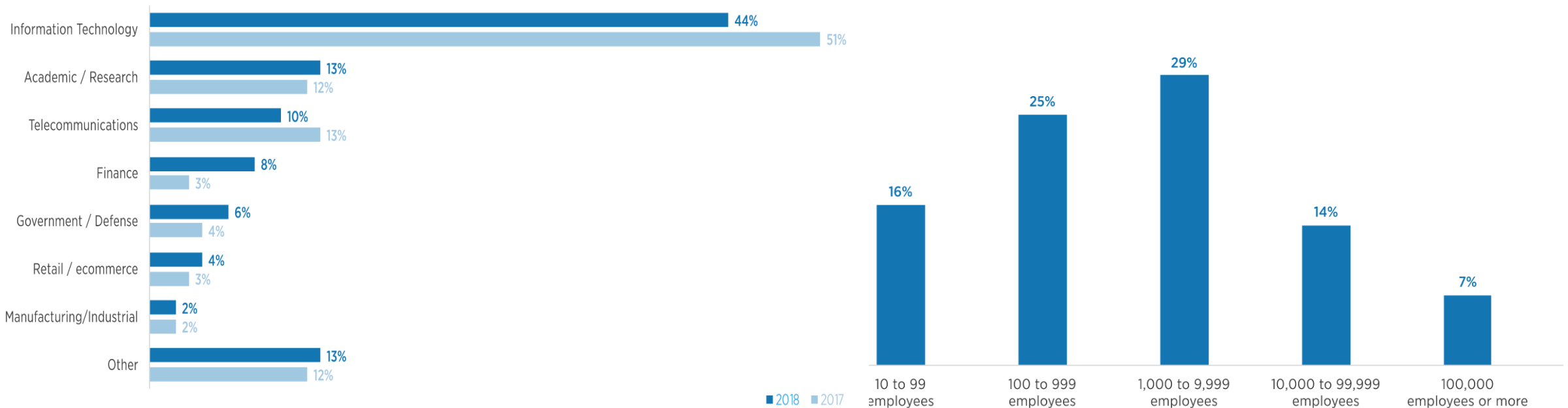
# OpenStack



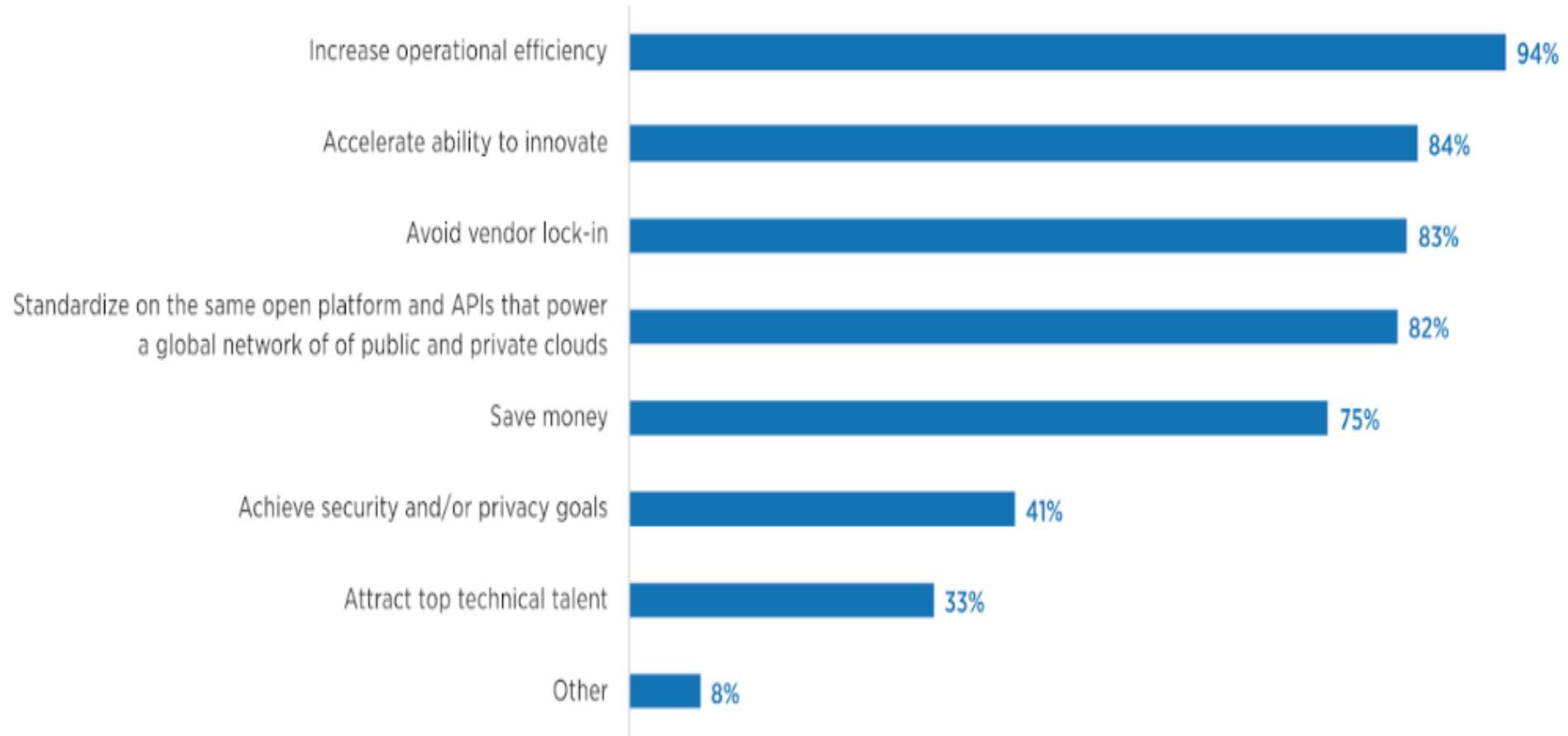
# OpenStack market is significantly growing



# For all types of companies and sectors



# Many different reasons why to use OpenStack





# Objectives

Explore possibilities of OpenStack

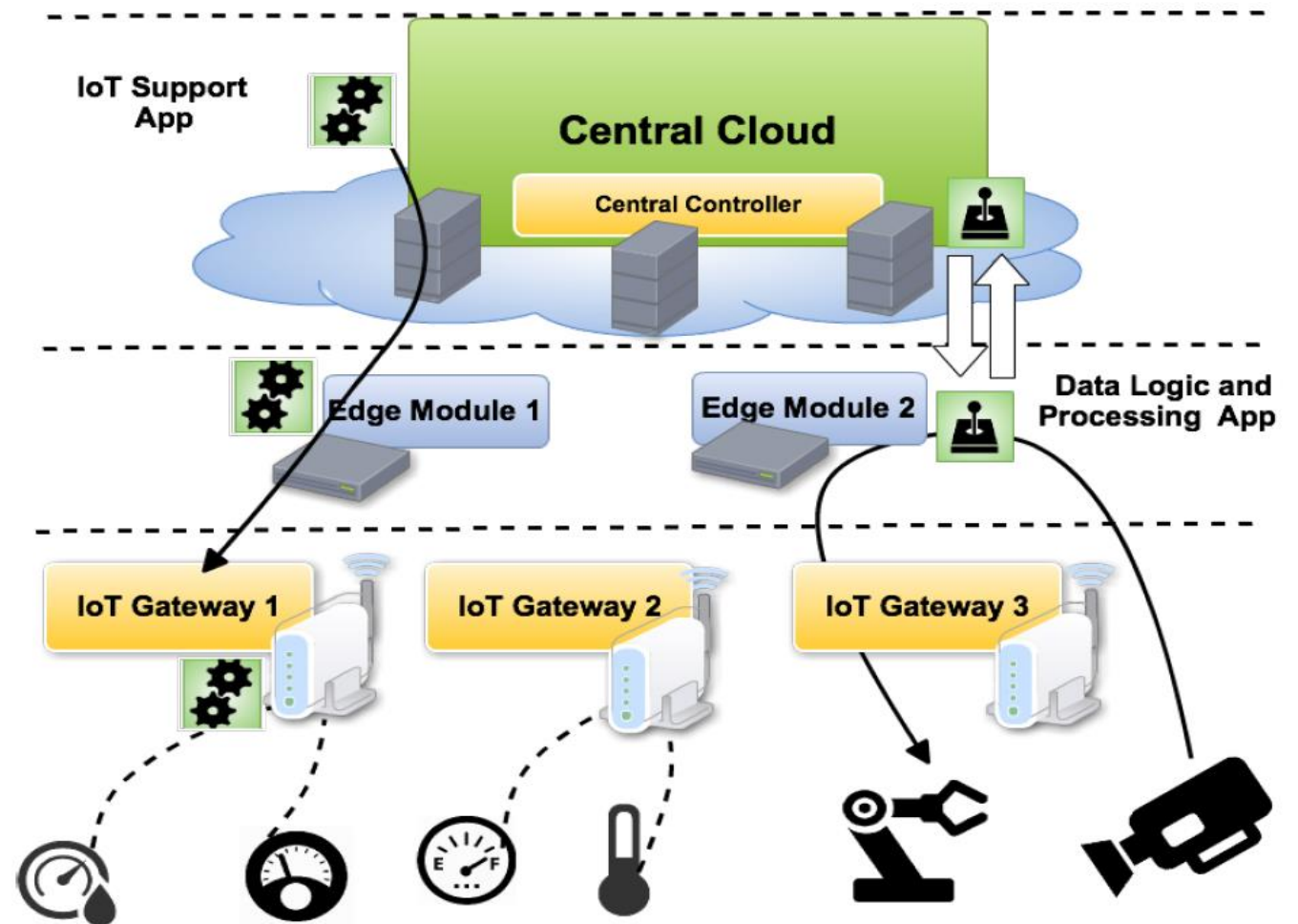
- Follow up and translate different steps required to integrate OpenStack technology with respect to IaaS, PaaS, SaaS in private, public and hybrid cloud
- Implement different use cases to demonstrate components of OpenStack

On-Premises	Infrastructure (as a service)	Platform (as a service)	Software (as a service)
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

# Demonstrator 1

Build up on our OM2M test bed

- Aggregation and processing of sensor data
- Controlling of actuators
- Addition of cameras and computationally intensive algorithms like people counting



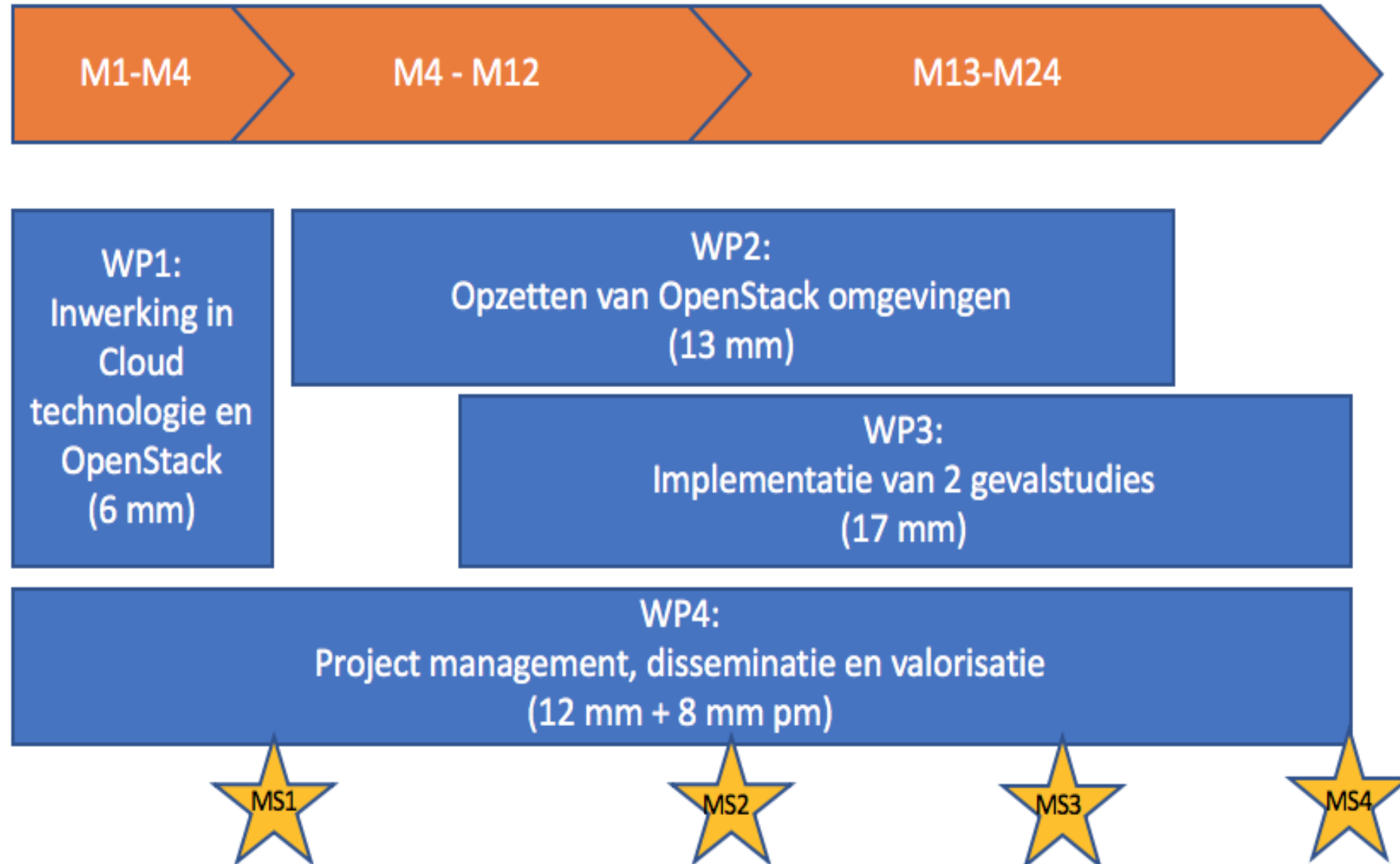
Cloud-Edge-IoT architectuur,

D. Pizzolli et al, Cloud4IoT: a heterogeneous, distributed and autonomic cloud platform for the IoT, *IEEE International Conference on Cloud Computing Technology and Science*, pp. 476-479, 2016.

# Demonstrator 2

- To be defined and input of user committee is welcome
  - Integration of components to run AI algorithms
  - Integration of security components
    - Proxy re-encryption mechanism
    - Security detection mechanisms

# Work plan



# Planned meetings

- 28/11/2019: Kick-off meeting
  - Introduction to content, objectives,...
  - Getting to know each other
- ... (first 12m)
  - Company visit can be asked in order to better understand the needs
- ... (between 8 and 16 months)
  - 2 workshops will be organized
  - Agree on the second demonstrator
- ... (after 24 m)
  - Presentation of final demonstrator
  - Discussion of executed measurements
  - Seminar on related themes (organized by DSP Valley, LSEC)

# User meetings

- Location
  - Standard:
    - Proximus
    - VUB, Pleinstraat 2, Etterbeek
  - Other locations?
- Doodle will be sent  $\approx 1,5$  month before meeting
- Agenda with short technical report of the results will be sent  $\approx 1$  week before meeting

# Communication

- Before meeting:
  - Technical report of realized activities
- After meeting
  - Report of list of attendees
  - Description of interaction/feedback
  - Slides
- Website
  - <http://www.opencloudedge.be>
  - <https://rapptor.vub.ac.be/Projects-OpenStack.htm>

# Contact information

- Project info:
  - Vlaio: 2019.2017
  - Periode: 1/11/2019-31/10/2021
- Project site
  - <http://www.opencloudedge.be>
  - <https://rapptor.vub.ac.be/Projects-OpenStack.htm>
- Projectleiders:
  - An Braeken, [an.braeken@vub.be](mailto:an.braeken@vub.be)
  - Kris Steenhaut, [kris.steenhaut@vub.be](mailto:kris.steenhaut@vub.be)
  - Gainluca Reali, [gianluca.reali@unipg.it](mailto:gianluca.reali@unipg.it)



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