Project Overview

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Funded by the Horizon 2020
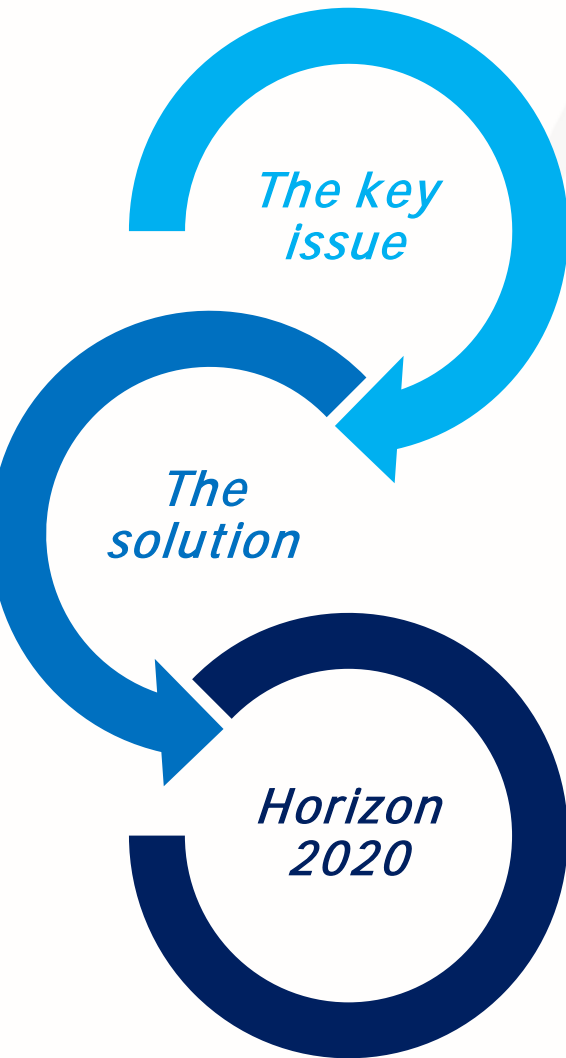Framework Programme of the European Union

Agenda

1 **Where the story starts: SUNFISH main goals and perspectives**

2 **What to solve – use cases stemming from PA problems**

3 **What SUNFISH actually is about**

4 **What to expect and when**

Where the story starts: Let's see an Italian MEF issue

The key issue

- **Almost 2 Mln** Public Sector employees of different entities are managed by the Italian Ministry of Economy and Finance (MEF) **payroll system** (NoiPA)

- Italian Police is also managed by NoiPA, but no technology was available to guarantee privacy and security while the entities exchanged sensitive data

The solution

- **Efficient infrastructure** and **effective security** measures enabled secure **interoperability** within data centres managed by different entities

- Supported directly by Sapienza University of Rome, MEF has been developing technology empowering different players to **federate** their **private clouds**

Horizon 2020

- The Horizon 2020 LEIT-ICT Call was open at that time, in order to develop *Advanced Cloud Infrastructures and Services*

- The **SUNFISH** proposal enables **secure cloud federation as required by Public Sector**, through interoperability and resource sharing
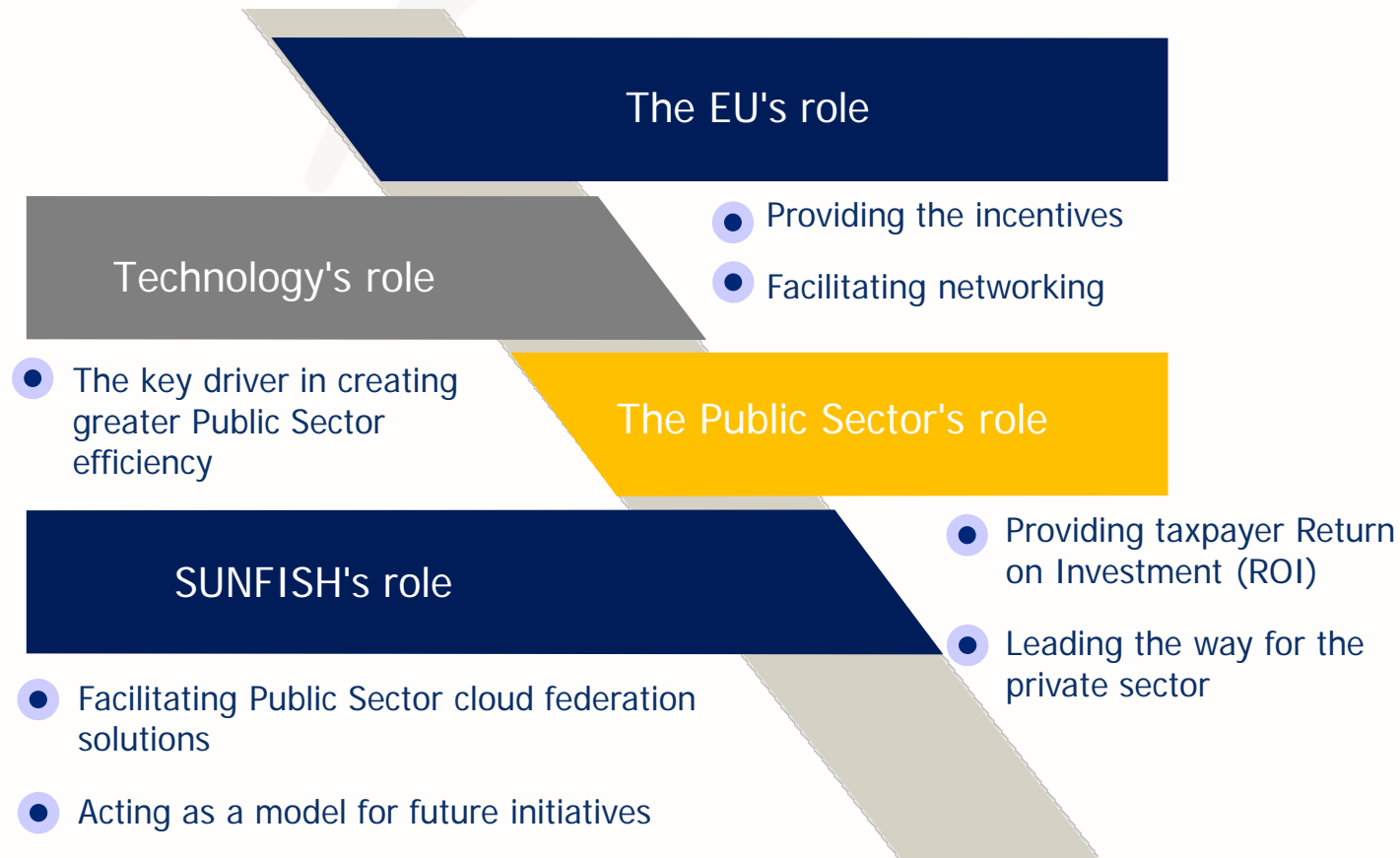
Why Horizon 2020?

Key success factors

- ✔ **International consortium**
- ✔ **Technological innovation**
- ✔ **A strong case for socio-economic impact**

A long-standing interest in complex data management challenges

Internal competencies in managing complex projects

An opportunity to look "outside the window"

Why Horizon 2020?

Customer-oriented approach

Investments in R&D

Budget constraints

SUNFISH: a European Public sector innovation catalyst

The EU's role

- Providing the incentives
- Facilitating networking

Technology's role

- The key driver in creating greater Public Sector efficiency

The Public Sector's role

- Providing taxpayer Return on Investment (ROI)
- Leading the way for the private sector

SUNFISH's role

- Facilitating Public Sector cloud federation solutions
- Acting as a model for future initiatives

Overall, we hope that SUNFISH will prove that, thanks to EU incentives, the Public Sector can act as a catalyst for innovation in technology

SUNFISH's hallmark: a use case coordinating our complementary project Consortium

How we built our consortium

- Based on effective requirements of the EU Public Sector

- MEF networking with other Public Agencies made it clear that there is a need for large cloud-based solutions tailored to the Public Sector
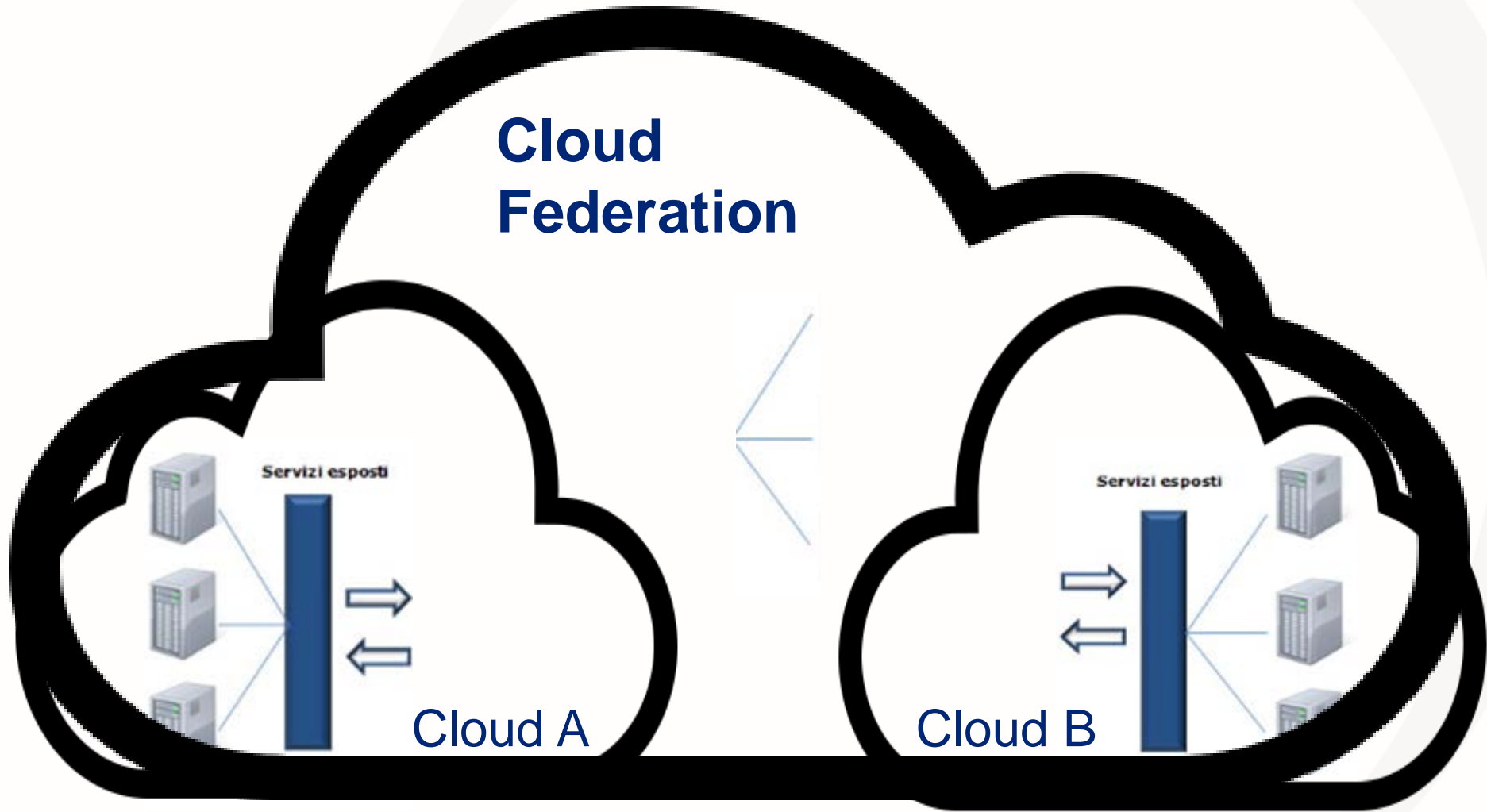
Our strengths

- ✔ Best of breed solution developers
- ✔ Cutting-edge research specialists
- ✔ Multiple comparative Use Cases
- ✔ Public and private sector perspectives

Industry

Public Bodies

Research Institutes

SME
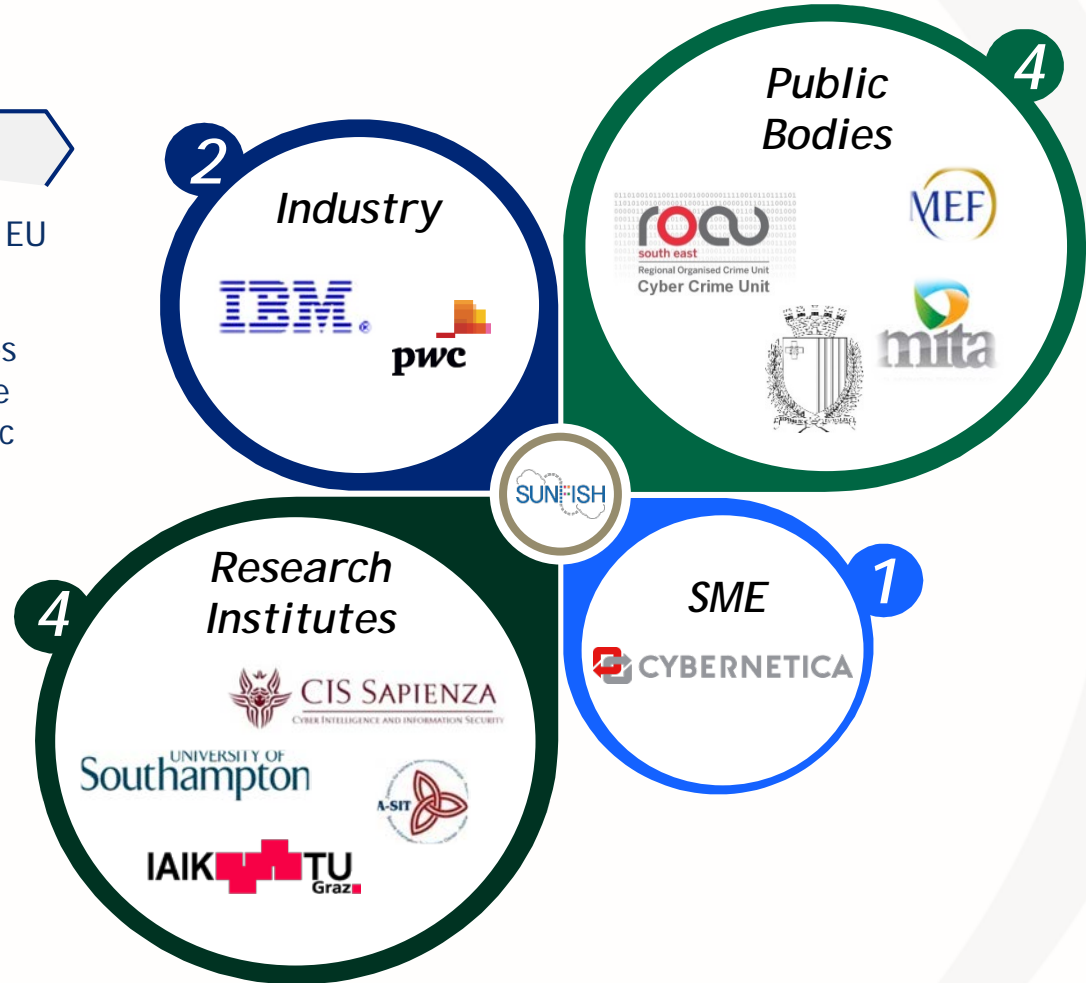
SUNFISH: from IT system cooperation to a cloud based solution
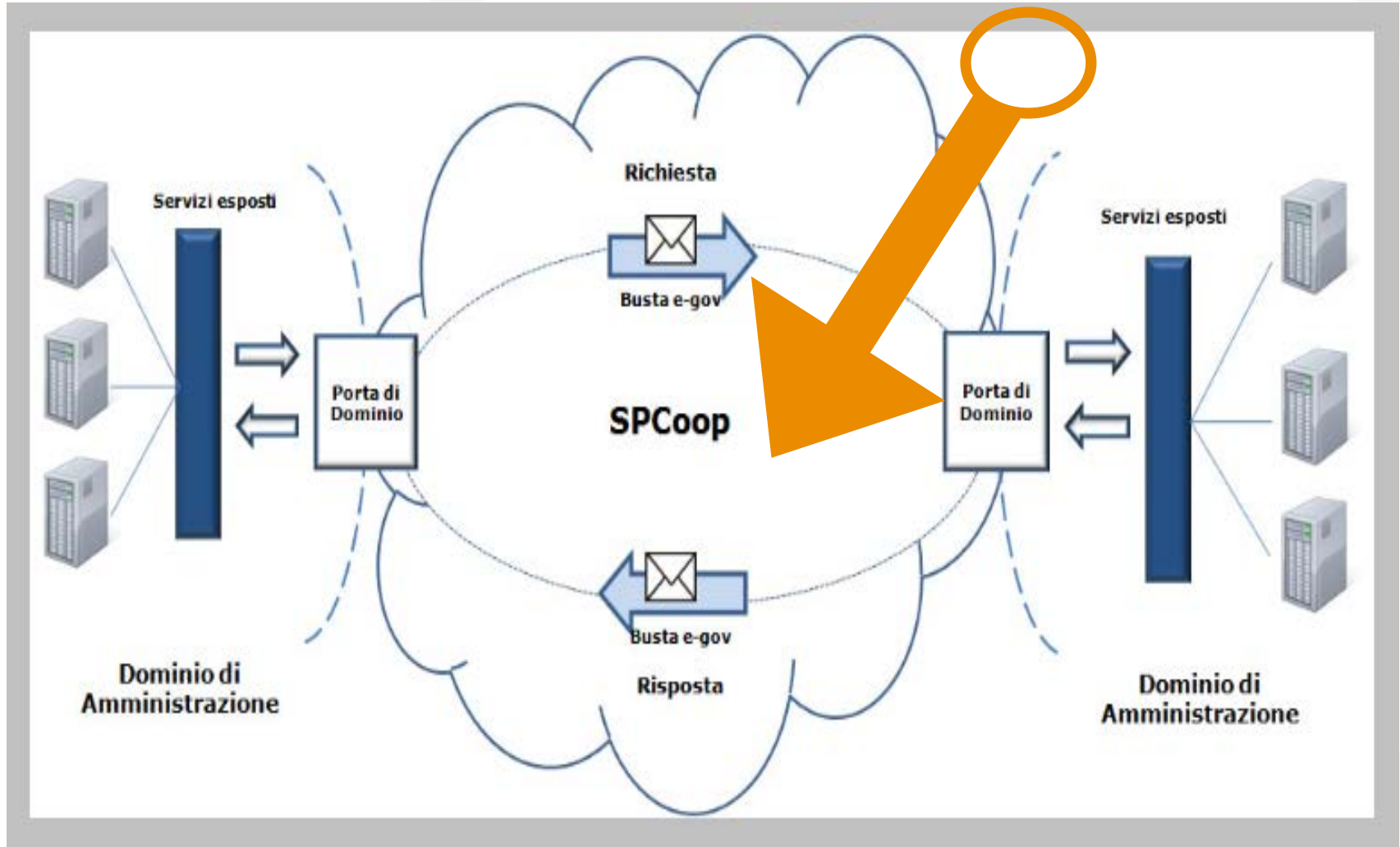
SUNFISH: from simple IT system cooperation to a cloud based solution

Cloud Federation

Servizi esposti

Cloud A

Servizi esposti

Cloud B

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Public sector needs: SUNFISH Use Cases

| Personnel salary accounts	Collecting tax data	Secure cloud storage for data
This use case will enable the **processing of sensitive data** and personally identifiable information hosted in the cloud and shared between Italy's Ministry of Finance and other Ministries (Interior, Defence, etc.).	This use case is aimed to provide **information collection facilities** in a secure and confidential manner from Maltese taxpayers (particularly SMEs), tax practitioners and third party data providers.	This use case concerns **secure cloud storage for data accessible to several end-users** (partners agencies throughout the UK and Europe) with different levels of access rights and through different channels.

Foreseen benefits
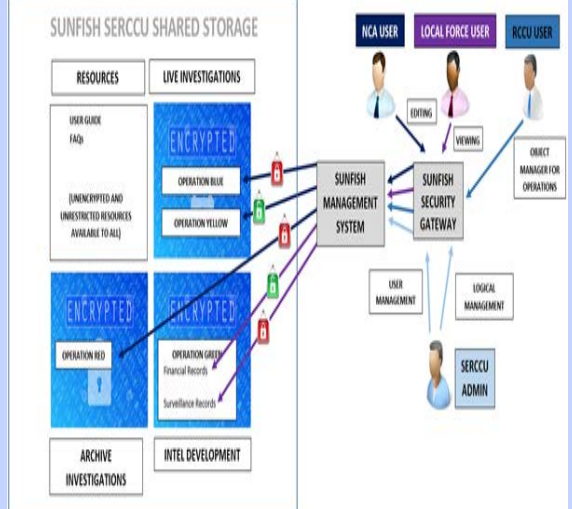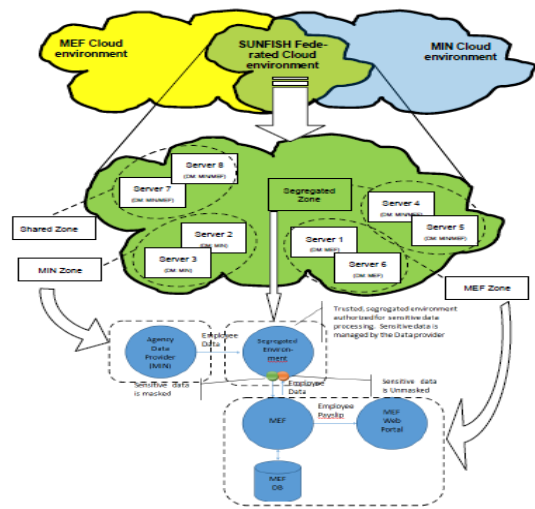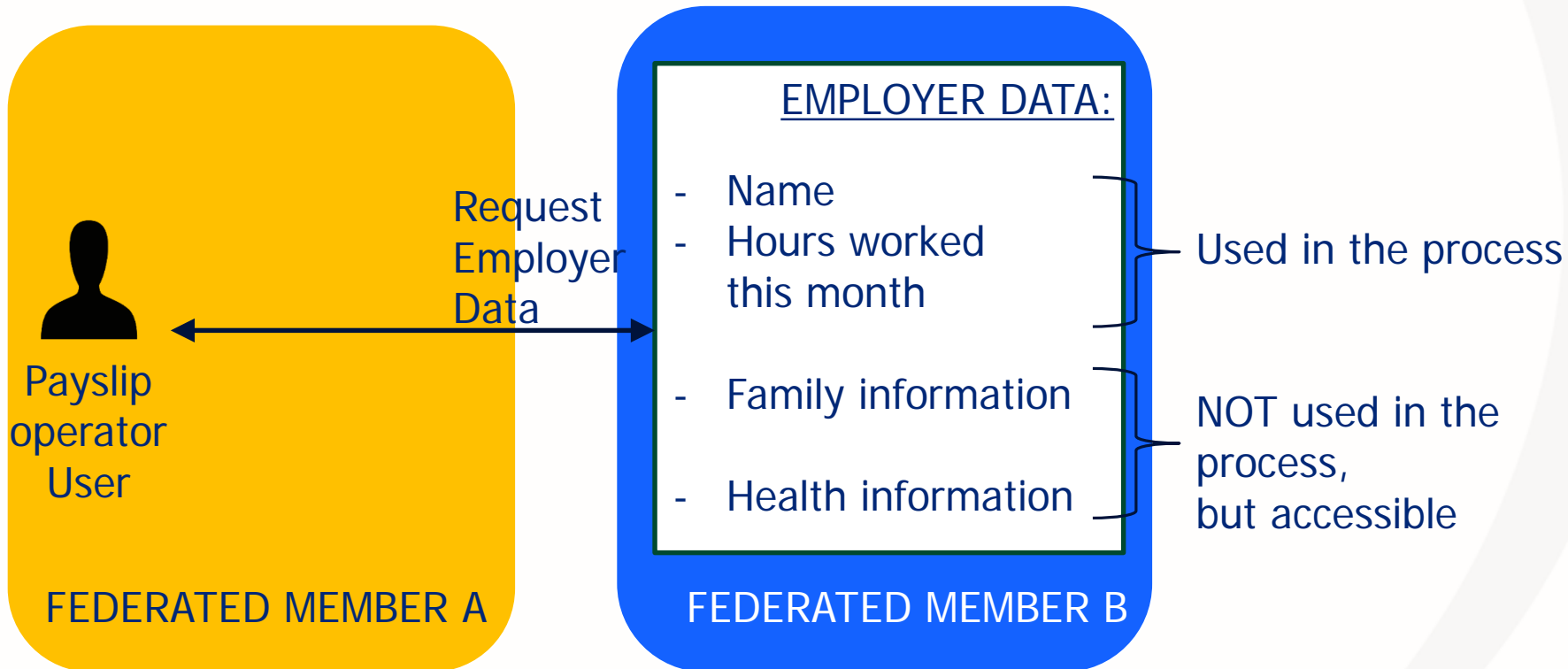
SUNFISH Research Objectives

The project's main objective is to "**Integrate different clouds assuring information security**" which shall be met by:
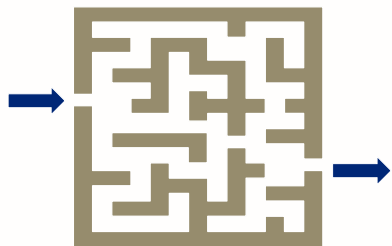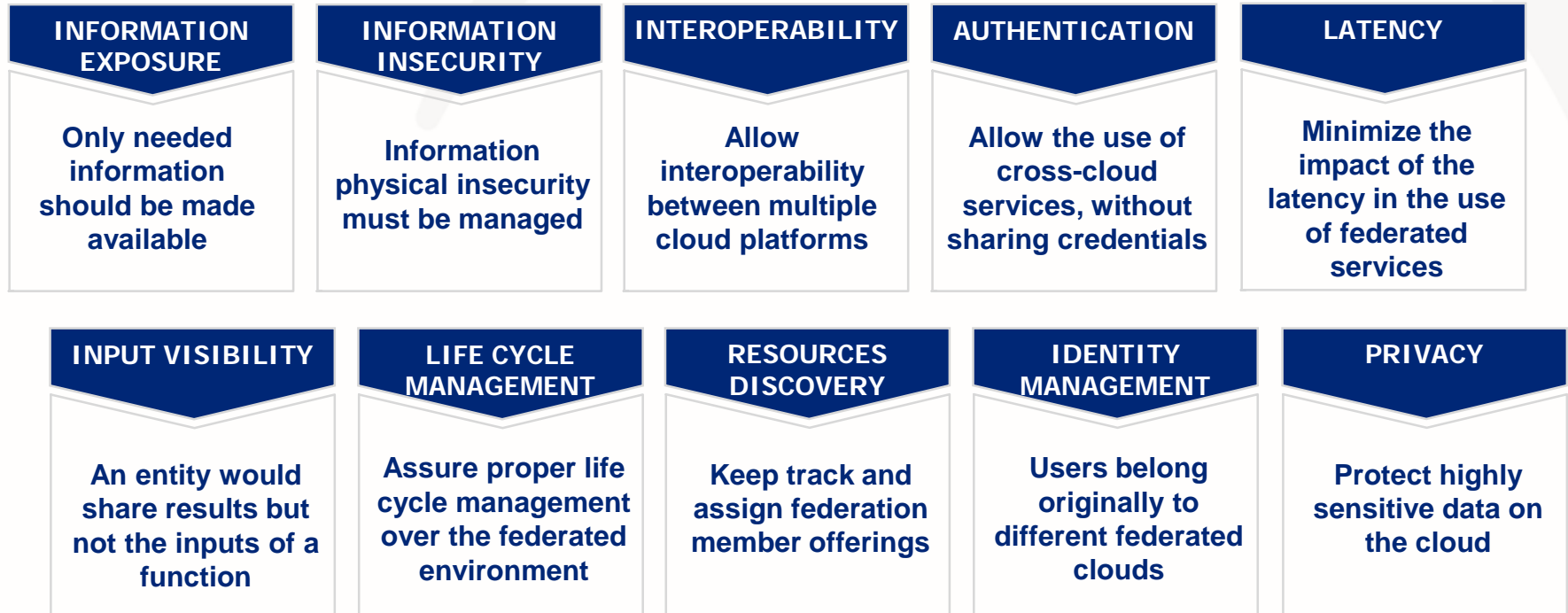
Development of an architecture

Data-masking and data anonymization

Inter-cloud information sharing governance and security policies

Run-time monitoring and detection of security breeches

Identified threats / difficulties to overcome

INFORMATION EXPOSURE	INFORMATION INSECURITY	INTEROPERABILITY	AUTHENTICATION	LATENCY
Only needed information should be made available	Information physical insecurity must be managed	Allow interoperability between multiple cloud platforms	Allow the use of cross-cloud services, without sharing credentials	Minimize the impact of the latency in the use of federated services

INPUT VISIBILITY	LIFE CYCLE MANAGEMENT	RESOURCES DISCOVERY	IDENTITY MANAGEMENT	PRIVACY
An entity would share results but not the inputs of a function	Assure proper life cycle management over the federated environment	Keep track and assign federation member offerings	Users belong originally to different federated clouds	Protect highly sensitive data on the cloud

Furthermore, identified difficulties must be addressed keeping in mind cost minimization, given always tighter budget constraints characterizing the Public Sector across Europe

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What is SUNFISH about?

SUNFISH can be thought as a **lightweight wrapper** that can be installed on the top of any cloud infrastructure that wants to become part of a federation of clouds.
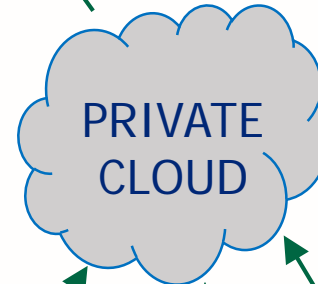It includes many components that can be grouped into three main macro-areas:
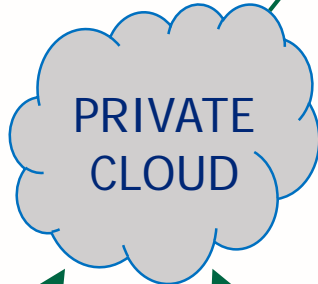1) *Inter-cloud information sharing governance and security policies*
2) *Intelligent workload management for federated clouds, and*
3) *Runtime monitoring and security assurance.*
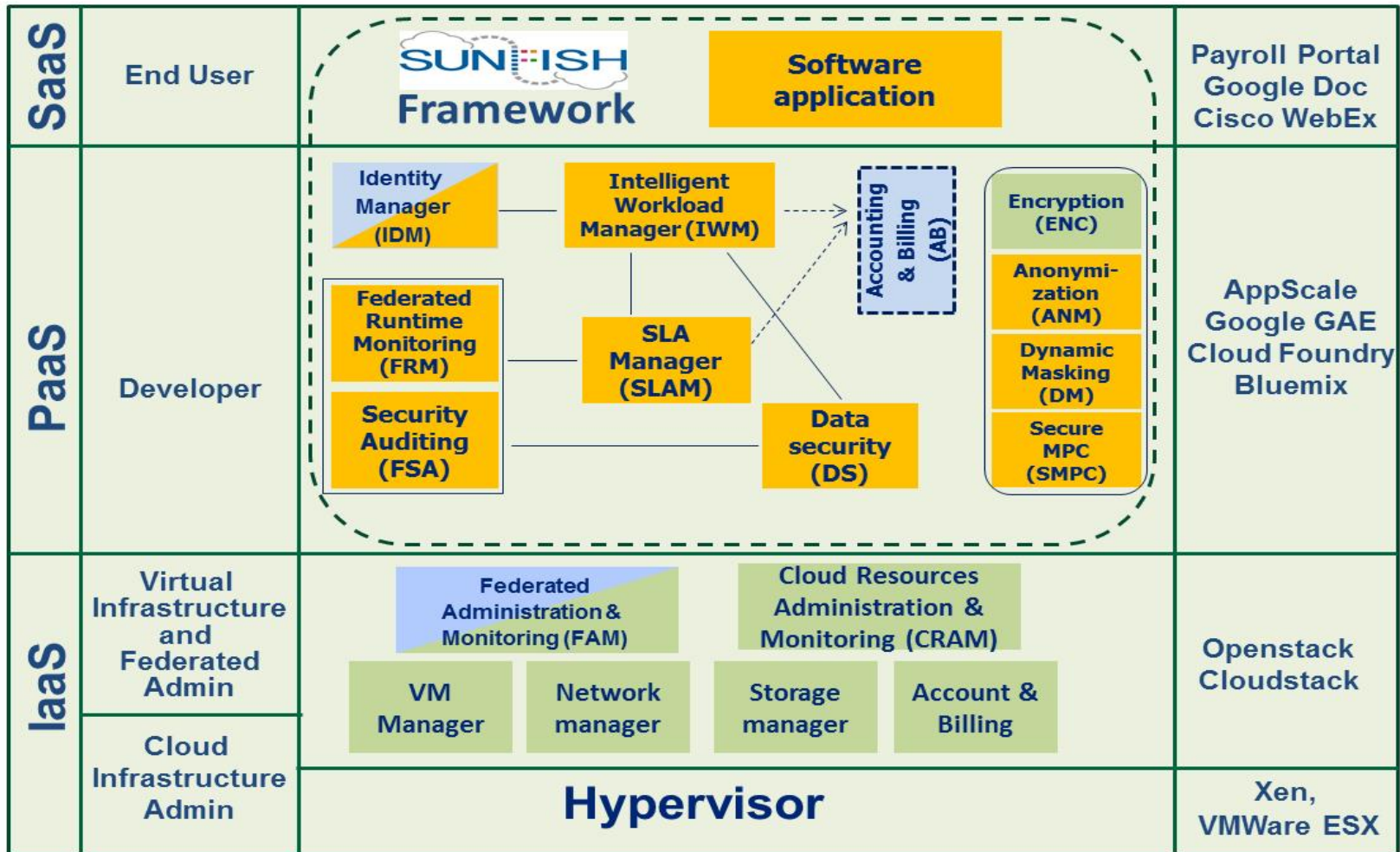
SUNFISH: an extension of clouds

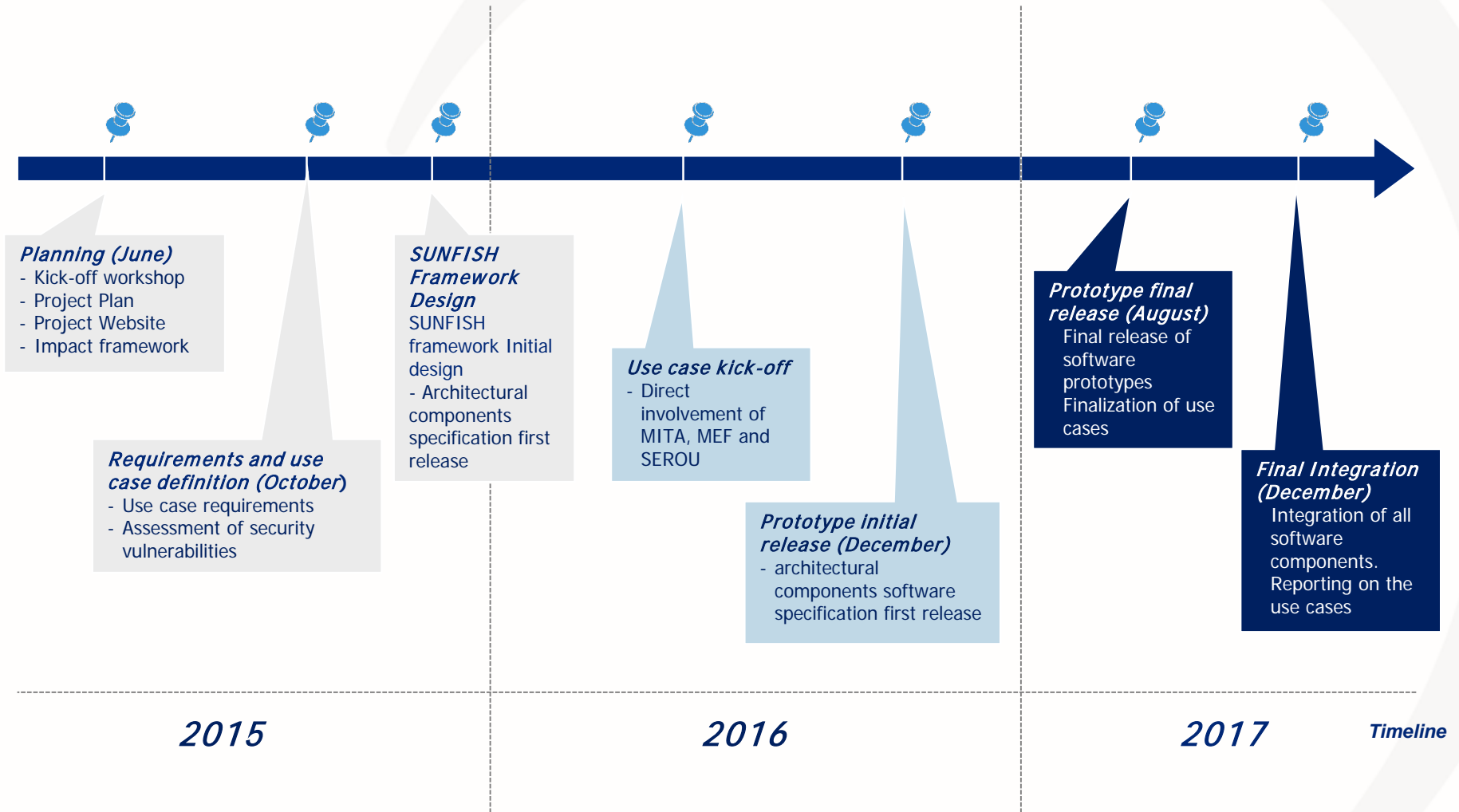# Recursive structure

SUNFISH layers
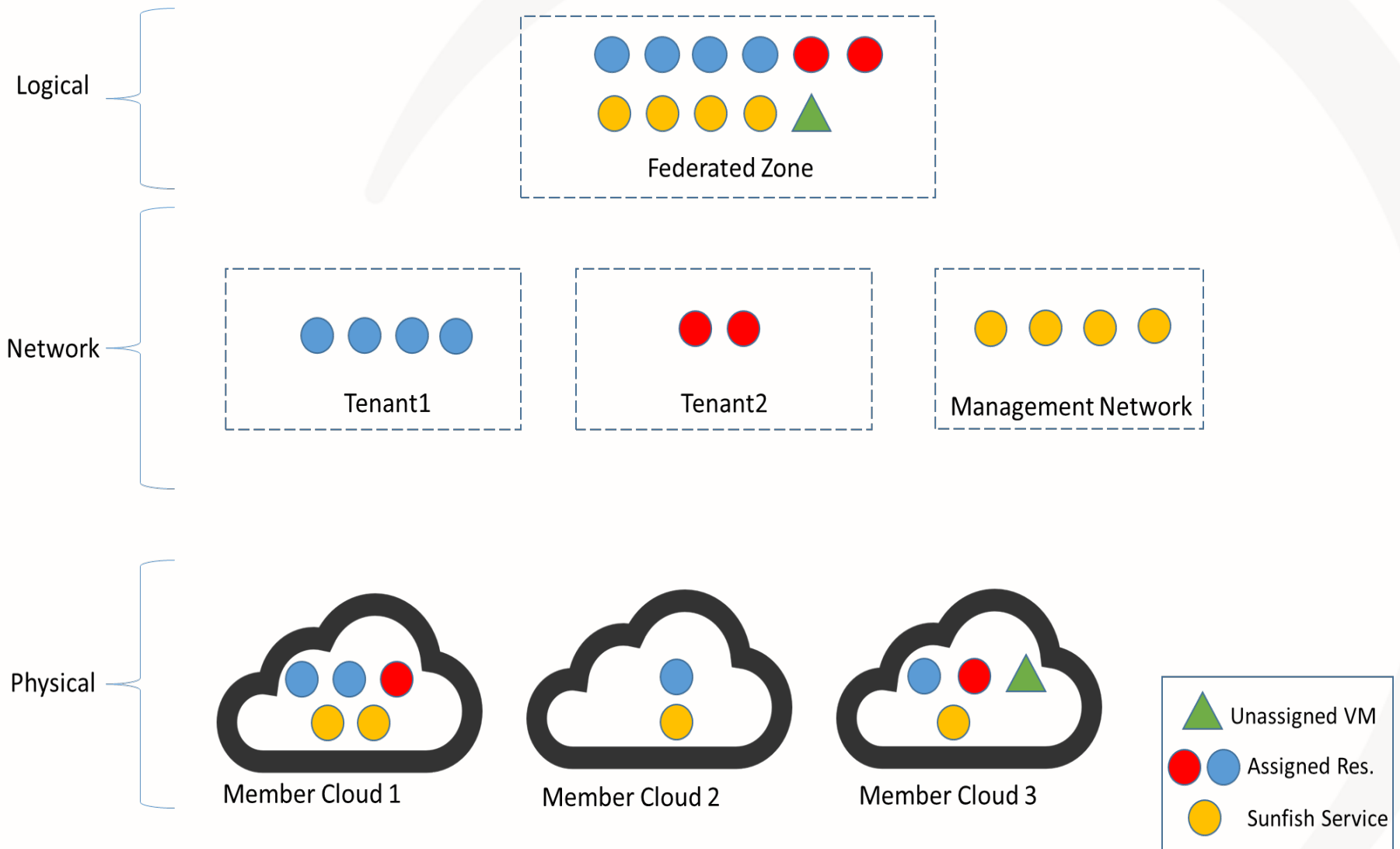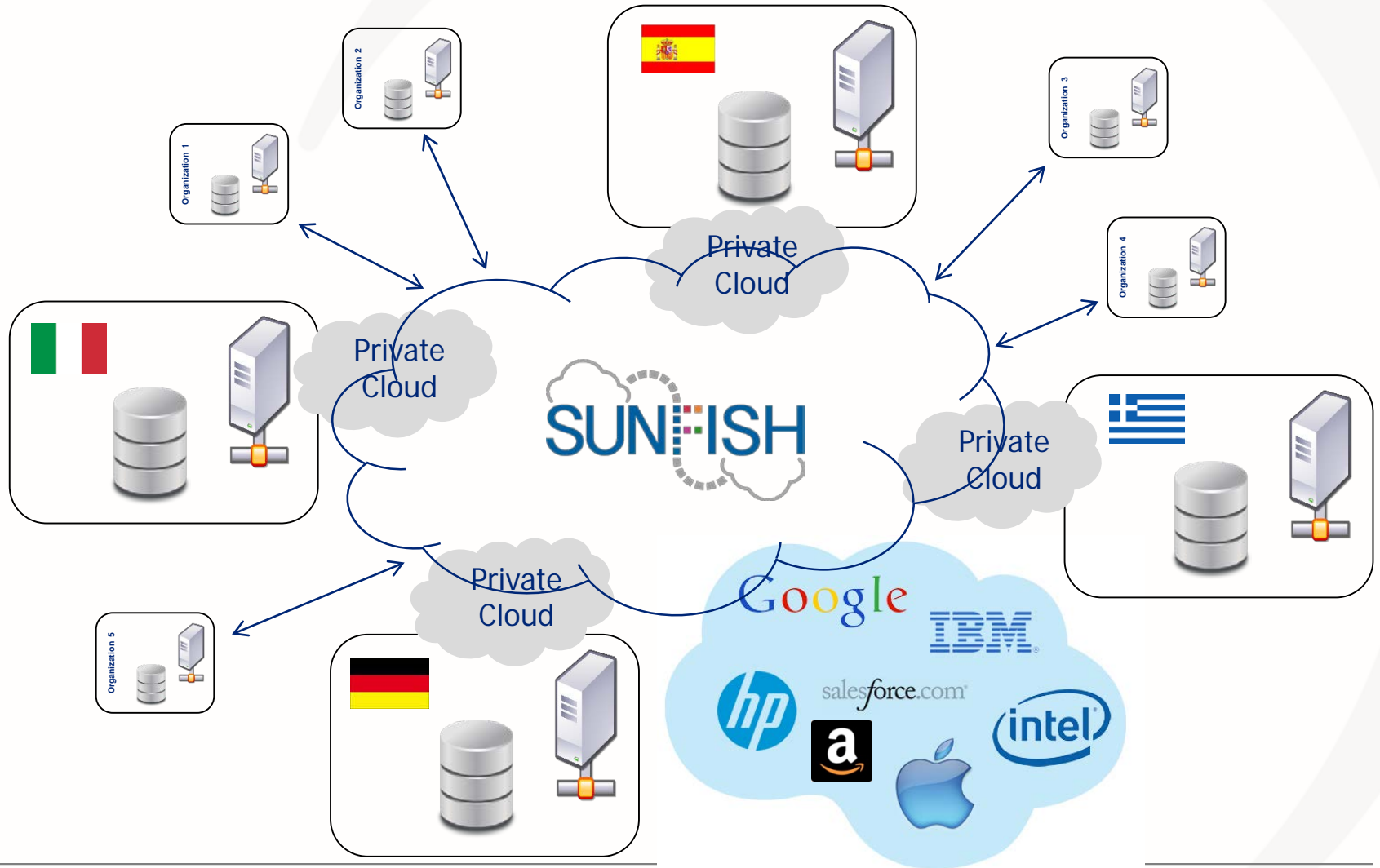
SUNFISH logical Architecture

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What the short-term future has in store

Planning (June)
- Kick-off workshop
- Project Plan
- Project Website
- Impact framework

Requirements and use case definition (October)
- Use case requirements
- Assessment of security vulnerabilities

SUNFISH Framework Design
SUNFISH framework Initial design
- Architectural components specification first release

Use case kick-off
- Direct involvement of MITA, MEF and SEROU

Prototype initial release (December)
- architectural components software specification first release

Prototype final release (August)
Final release of software prototypes
Finalization of use cases

Final Integration (December)
Integration of all software components.
Reporting on the use cases

2015

2016

2017

Timeline

SUNFISH's Long Term Ambition