Copernicus Data and Information Access Services(DIAS)

DG GROW

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THE BIG DATA CHALLENGE

- **Massive amounts of data**
- **Full, open and free-of-charge**
- **Ease of access and use**

Over 10 Petabyte/year of new data
with just Sentinels-1, -2 and -3 fully operational (data are downloaded **many times over)**

- Different types of **dissemination** infrastructures
- Member States Collaborative GS
- **New technology** developments
- ICT and EO **cross-fertilisation**
- **Interoperability** with non-EO datasets
- Public programmes as enablers
- Growth and jobs in **downstream** sector

What are the goals

- Give to the users the means to access and use unprecedented amount of quality EO data and information
- Mutualising common parts of infrastructure needed by users in particular Member States
- **Open environment – non-discriminatory**
- Serving better all types of users, expand the user base, promote interaction between communities : public authorities, research, industry, EO/non-EO
- Enabling businesses by lowering barriers and costs to set up EO business
- Building ecosystem of service providers and users, support opening up new markets
- Promote European initiatives in EO
- Competition to stimulate innovation and offer choices

Concept building process

- Request from Copernicus Committee/User Forum
- Discussions at EU, ESA & EUMETSAT (Copernicus Committee, IGS Task Force, PB-EO) in 2015/2016
- EU Space Strategy Communication, ESA Ministerial Council, EUMETSAT Council
- Consultation with industry (e.g. Value Chain Workshop in April 2016, Brussels; Workshop on EO exploitation Platforms October 2016, ESRIN)…
- **Defined through common work during 2015/2016**

COPERNICUS INTEGRATED GROUND SEGMENT

TF-2016-05

Copernicus –Roadmap for an Integrated Ground Segment

(Revision 3, as of 30 May. 2016)

I. Background, context and objectives

1. At its meeting on 27.03.2015, the Copernicus Committee agreed to establish a Task Force on the Copernicus Ground Segment and Big Data Governance as a subgroup of Copernicus Committee. The Task Force's terms of reference (Doc. CC-2015-23) stipulate that the Task Force will provide strategic guidance regarding all activities pertaining to the evolution of the Copernicus Ground Segment (GS), including the Copernicus Space Component Core Ground Segment (CSC Co

Annex 4 Task

High level presentation of Options for Copernicus of a

Annex 3 – Copernicus Space Component

Annex 2 – Solutions for NRT/QRT

Annex 1 – Copernicus Integrated Ground Segment Data Distributio

1 INTRODUCTION

1.1 Context

1.2 Scope

1.3 Definitions

Designation	Definition
CN	Contributing Node
CSC	Copernicus Space Component
DAN	Data Access Node
EE	Entrusted Entities
GEANT	GEANT is the pan-European data network for th education community.
GSC	GMES Space Component
GS	Ground Segment

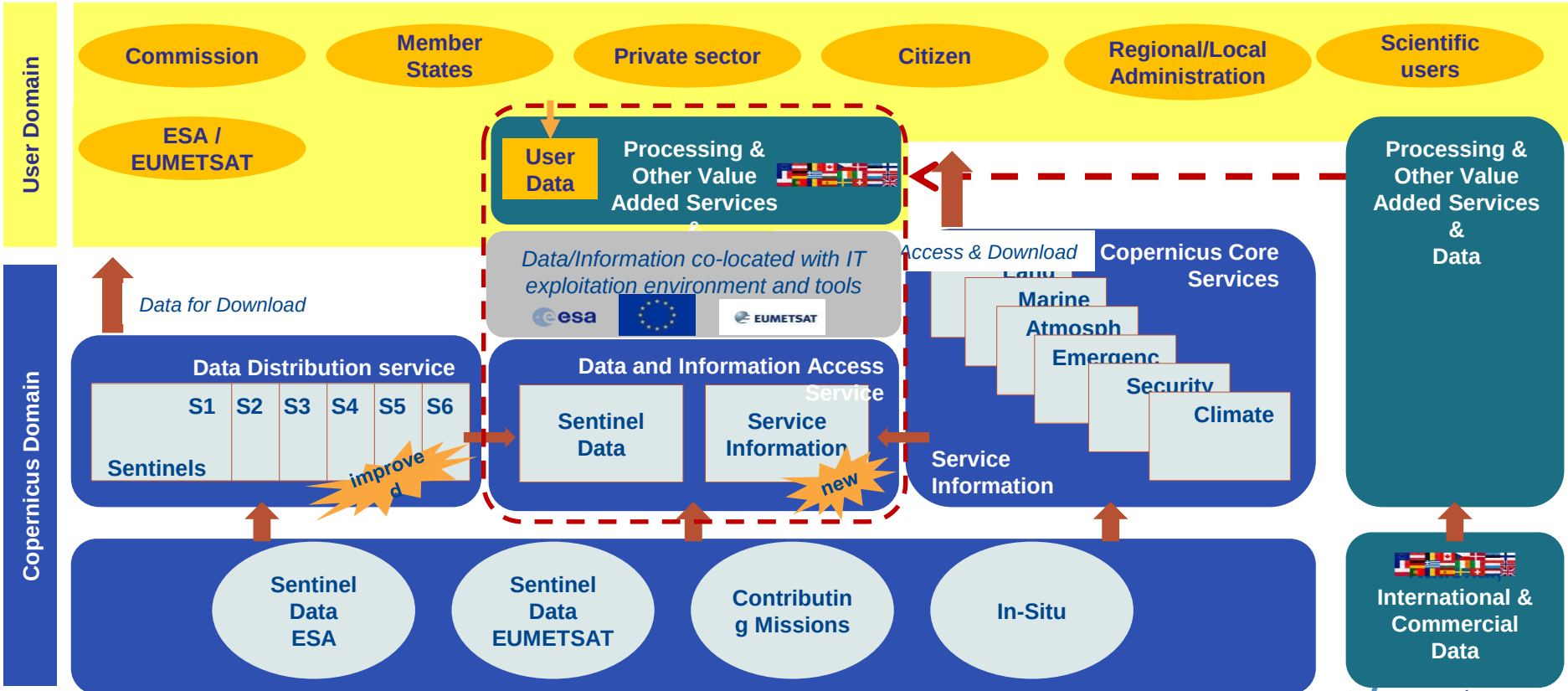
EUROPEAN COMMISSION
Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs
Space Policy, Copernicus and Defence
Space Data for Societal Challenges and Growth

Operational Implementation Plan

Proposed approach to implement the roadmap and annexes of the Integrated Ground Segment and Big Data Governance Task Force

- **Resulting in**
  - **IGS Roadmap and annexes**
  - **Operational Implementation Plan**
  - **Functional Requirements (available on** copernicus.eu**)**
- **Endorsed in 2016**
- Commission requested ESA and EUMETSAT to
  - Strengthen Copernicus Distribution Services
  - Setup of **Data Access and Information Services** (DIAS)

Overview Distribution and DIAS



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General requirements for DIAS

- Access to Copernicus data and information virtually collocated with computing resources
- Operational in terms of reliability, robustness, performance
- Complement traditional distribution system
- Promote projects evolution from research to business without changing exploitation environment

DIAS Data Offer requirements

- All data accessible (but not necessarily all locally available), including Sentinels + Services information
- A significant data offer (Copernicus + third party)
- Free, full and open access to the Copernicus data and information

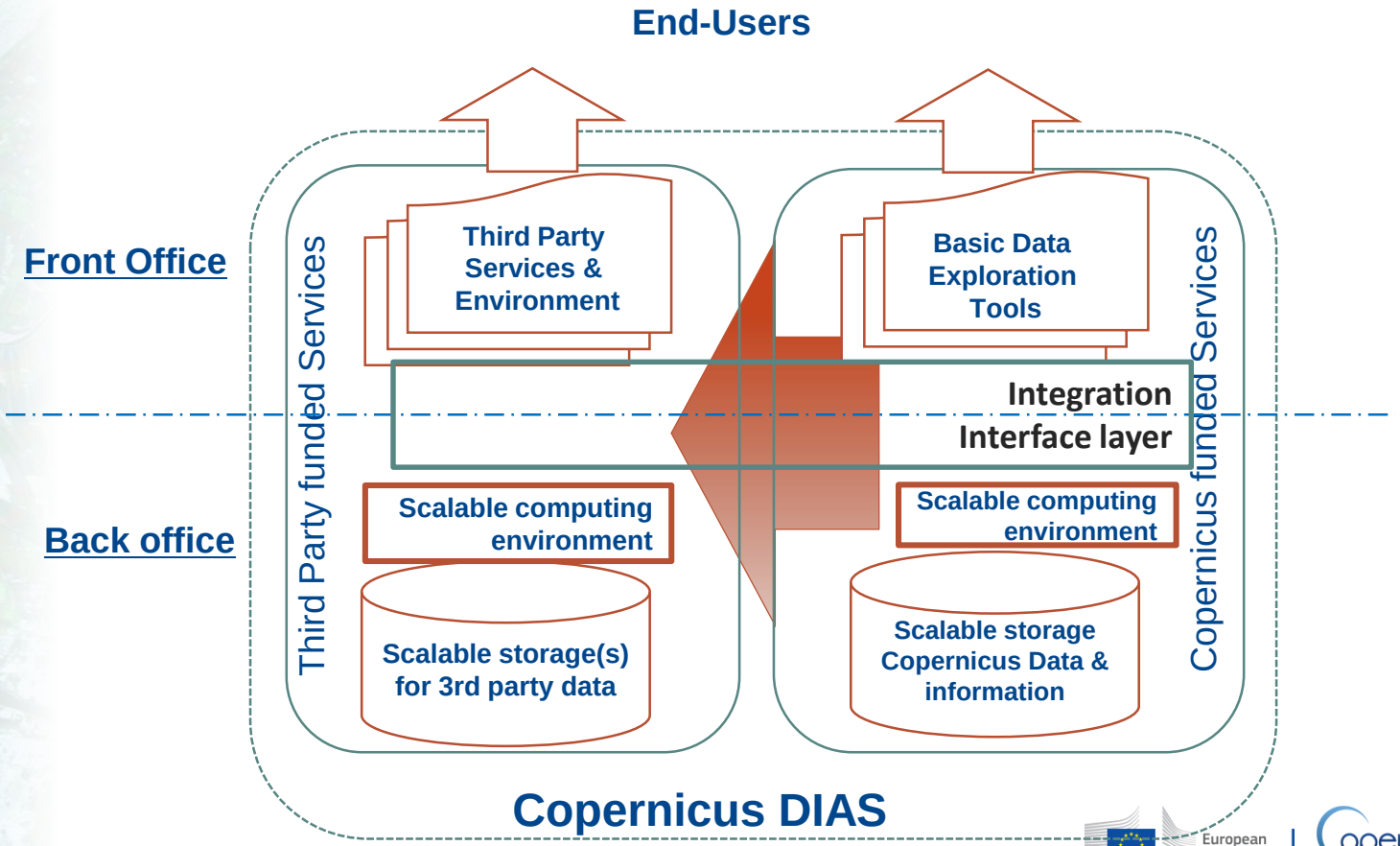
DIAS services requirements

- Non-discriminatory access and use
- Include processing services, viewing, discovery & download
- Data fusion (Copernicus data and information with non-EO data)
- Exploitation of big data analytics tools (intelligence rather than bandwidth)
- Interoperability features (Data/Services)

DIAS requirements to enable Third party use

- Offers storage and processing under commercial conditions
- Providers/third party may offer additional data, tools and services
- Protection of data and IPR, different licences (management, free, paid, …) IPR belongs to the creators
- Provide development environment solutions for applications building. Chaining of services/software/API/etc
- Third parties can offer their front office services on top of DIAS back office.
- Trusting third parties to propose innovative services to non-expert users

DIAS Concept



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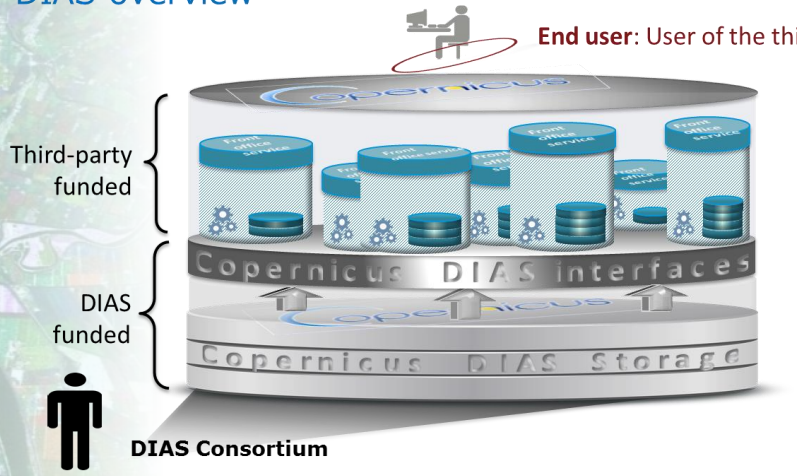
DATA & INFORMATION ACCESS SERVICES

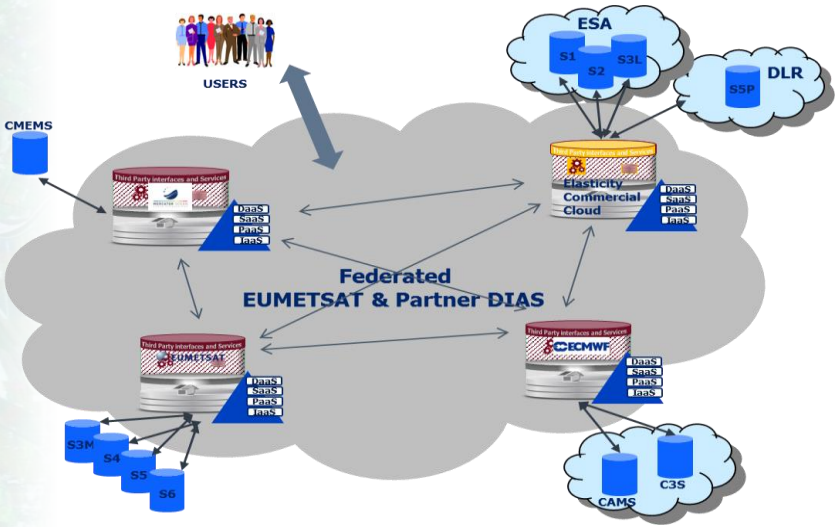
DIAS overview



..up to 4 DIAS Providers (consortia)

- ESA
  - Industry Information day: December 2016
  - Procurement initiated in January 2017
  - Offers received in April 2017
  - Evaluation for June 2017
  - Procurement authorised by COM in July 2017
  - Negotiation on-going
  - Signature in 2017
  - Initial operations Q2 / 2018
- Announcement event: Q1/Q2 2018

DATA & INFORMATION ACCESS SERVICES



- EUMETSAT
  - Work on DIAS v0 on-going
  - Operations v0 starts Q2/2018 for beta tester
  - Public operations end of Q2/2018
  - DIAS Industry Day January 2018 for v1,v2,v3
  - Procurements v1,2,3 starting in Q1/2018
  - v1 operations Q4/2018,
  - v2,v3 released on a 9 month schedule

EUMETSAt / ECMWF / MERCATOR - DIAS

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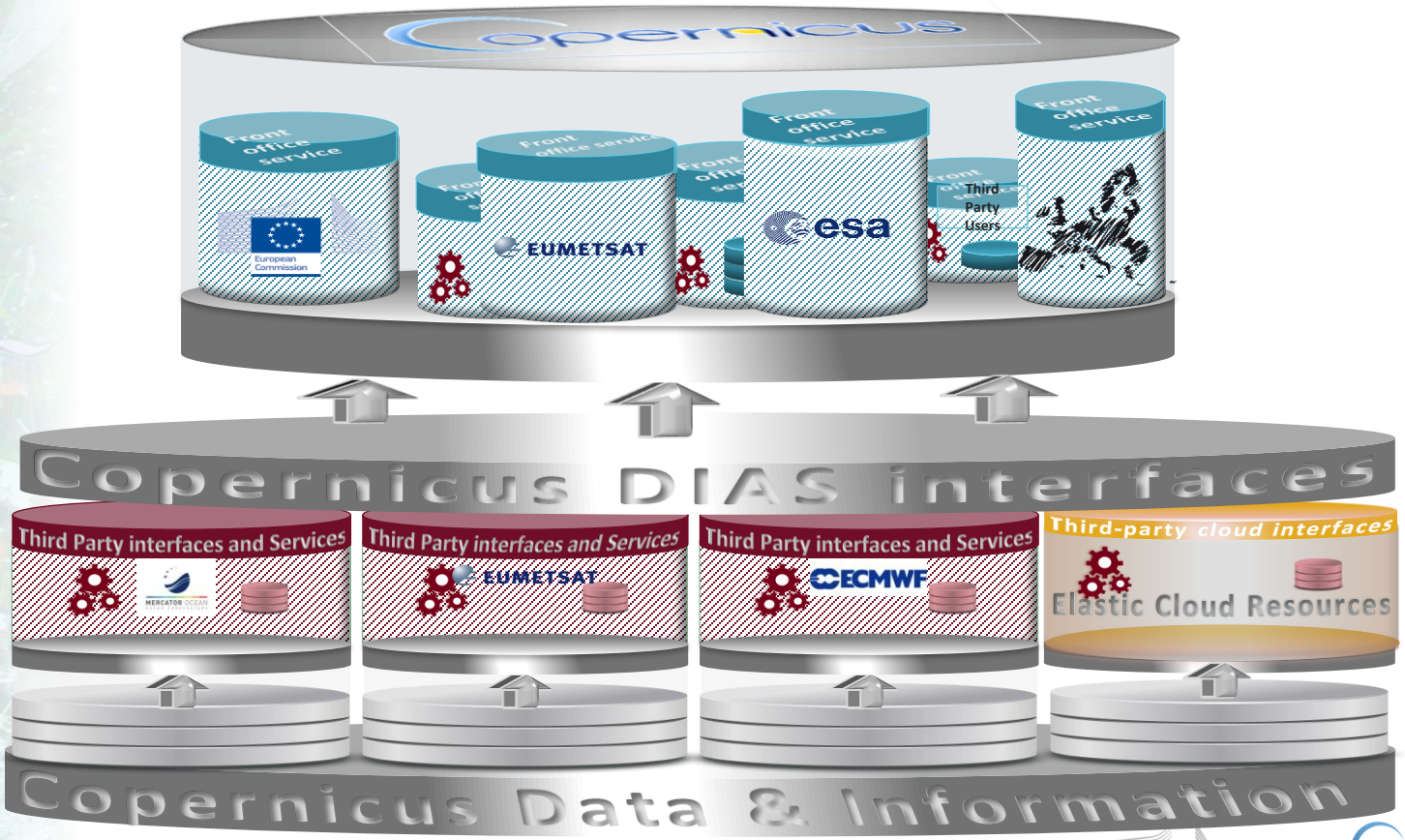

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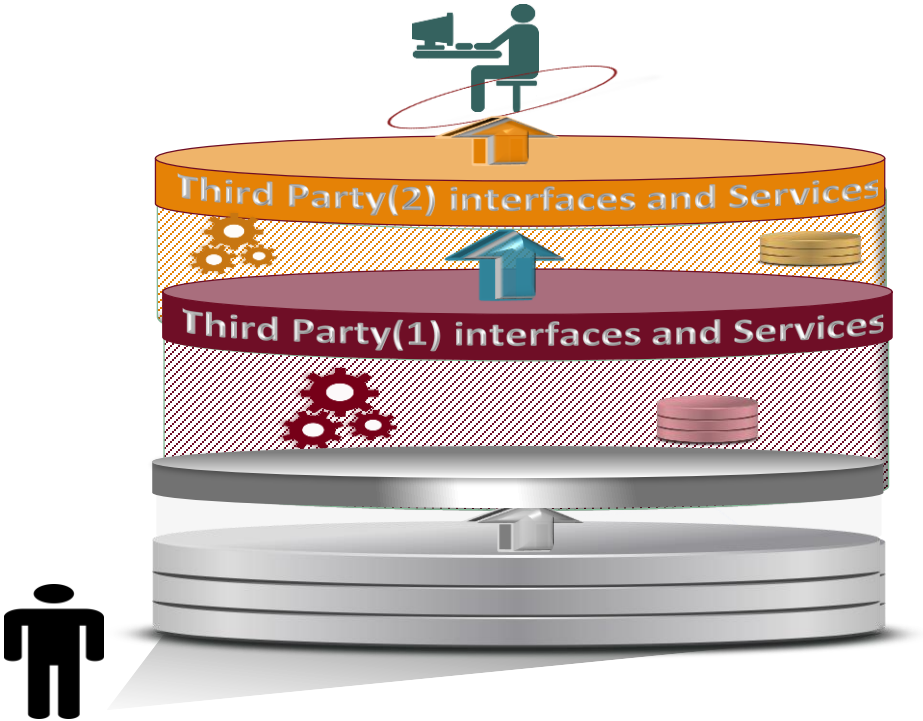
Third-party service provision

Chaining of value adding services between Third Parties is a key feature for a dynamic market ecosystem



DIAS Provider

Multiple DIAS & Interoperability scenario

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1 – MULTIPLE DIAS

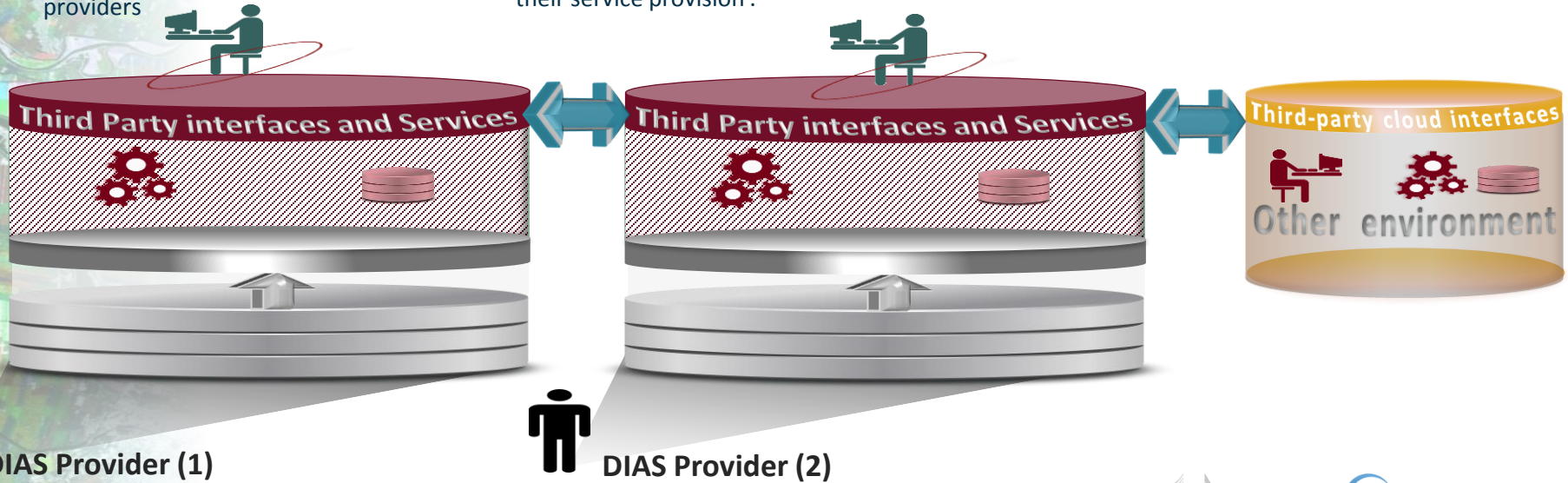
Third Party Service providers may choose between commercial IT offers and from possibly multiple DIAS service providers

2 – INTEROPERABILITY

Interfaces enabling cross-operations (open API) between multiple DIAS and between DIAS and “other environments”.
Third Party Service providers may integrate data/information from “other environment” in their service provision .

3 – EXTERNAL RESOURCES

Third Party may provide services based on Copernicus data on “other environments”



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Complementarity with other public initiatives

- COM H2020
  - DG/GROW, RTD and CNECT
  - EOSC
- ESA Programmes
  - TEPs
  - Toolboxes
  - Development initiatives
  - ….
- EUMETSAT Pathfinders
- ECMWF initiatives
- National initiatives
  - Collaborative Ground Segments
  - …

Conclusions and timeline

- Long lasting and sustainable exploitation services
- In coordination with other initiatives (ESA, EUMETSAT, H2020, EOSC)

- Implementation through ESA and EUMETSAT according to the same functional specifications document
- All DIAS to be generic, freedom for third parties to act.
- Business are expected to provide services through DIAS

- Operational by Q2 2018
- Increase data offer over the following 12 months