LEONSEGS:
A Federated Multi-Mission EO Ground Segment Platform

LEONSEGS

LARGE EARTH OBSERVATION
NEW SPACE ECOSYSTEM
GROUND SEGMENT

Speaker

Álvaro Núñez Martínez (GMV)

Co-funded by the European Union

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Health and Digital Executive Agency (HADEA). Neither the European Union nor the granting authority can be held responsible for them.

gmv INNOVATING SOLUTIONS

PARIS LODRON UNIVERSITÄT SALZBURG

FGS

AISTECH access to intelligent space technologies

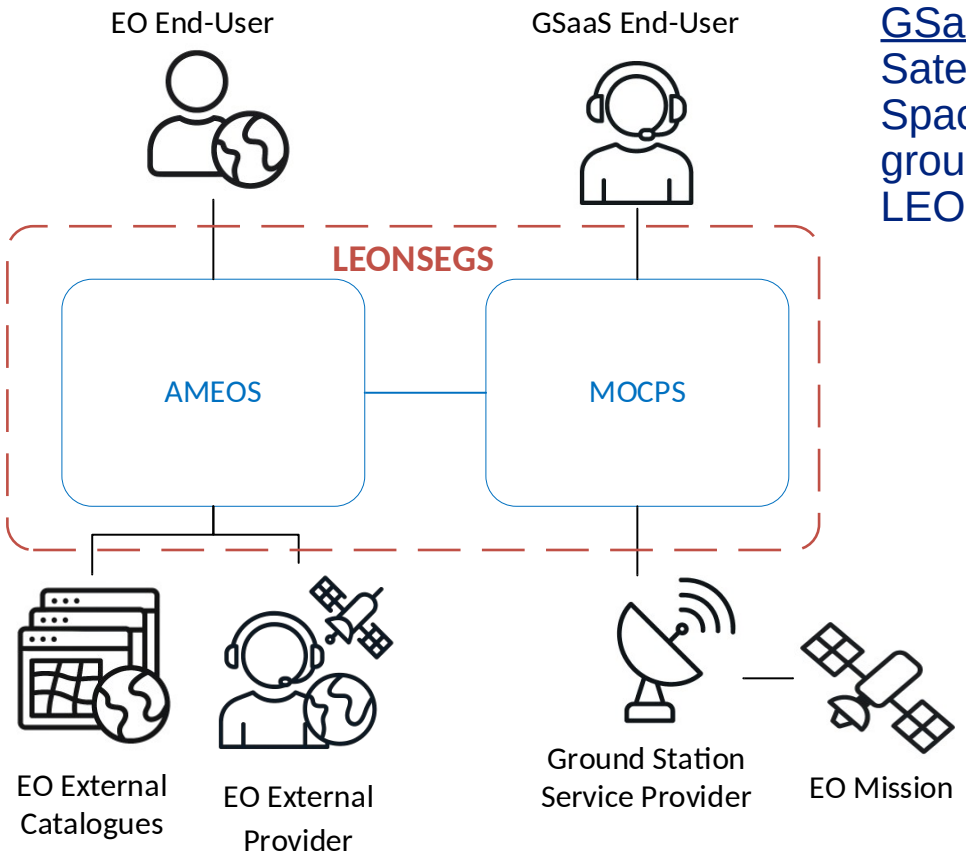
What is LEONSEGS? – Technical View

- LEONSEGS is a federated multi-mission Earth Observation Ground Segment Service Platform.
- Designed to:
  - Orchestrate EO services and end-user requests.
  - Federate heterogeneous EO missions and providers (standardization).
  - Support mission operations through GSaaS capabilities.
- Structured around two main system segments:
  - AMEOS: Automated Multi-mission EO Service.
  - MOCPS: Mission Operations, Control and Processing Service.

LEONSEGS Architecture

EO End-User:
Consumes EO products generated by EO services for operational, scientific or commercial purposes.

GSaaS User:
Satellite operator or New Space company externalising ground segment operations via LEONSEGS.



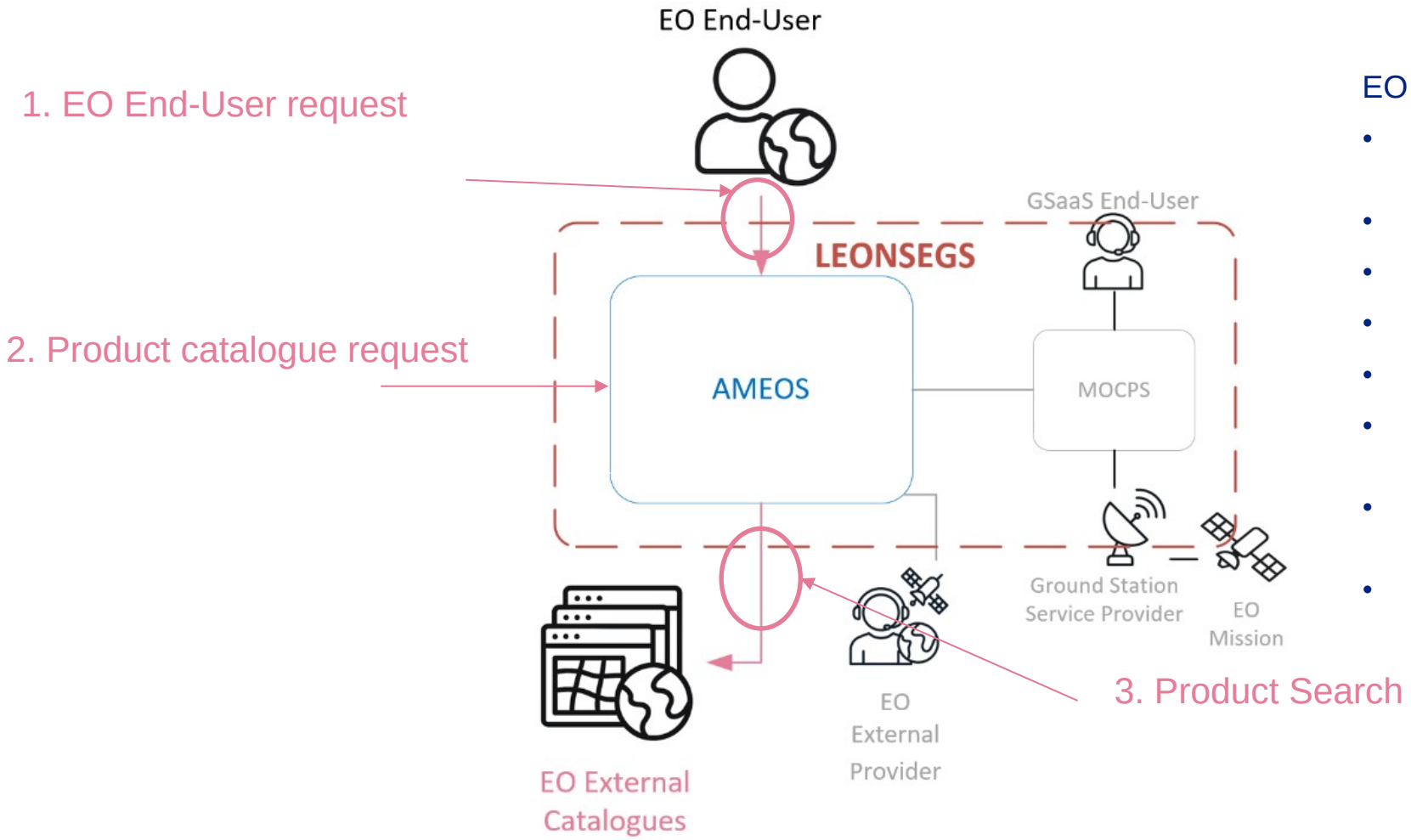
EO Product Provider:
Supplies EO data or products via catalogues, tasking interfaces or processing chains.

Ground Station Provider:
Provides antenna and communication infrastructure for satellite operations.

LEONSEGS Segments (AMEOS & MOCPS)

Segment	Role	Core functions	Key characterist
AMEOS	• EO service-oriented segment of the LEONSEGS platform • Main interface with EO end-users	• EO service request handling • EO data discovery and catalogue access • EO data processing and product generation • Tasking and planning orchestration (multi-mission)	• Automated • Scalable • Multi-mission by design
MOCPS	• Operations-oriented segment of the LEONSEGS platform • Main interface with GSaaS end-users	• Mission planning and scheduling • Flight dynamics • Monitoring, control and execution • Payload data handling and pre-processing	• Standardised • Secure • GSaaS by design

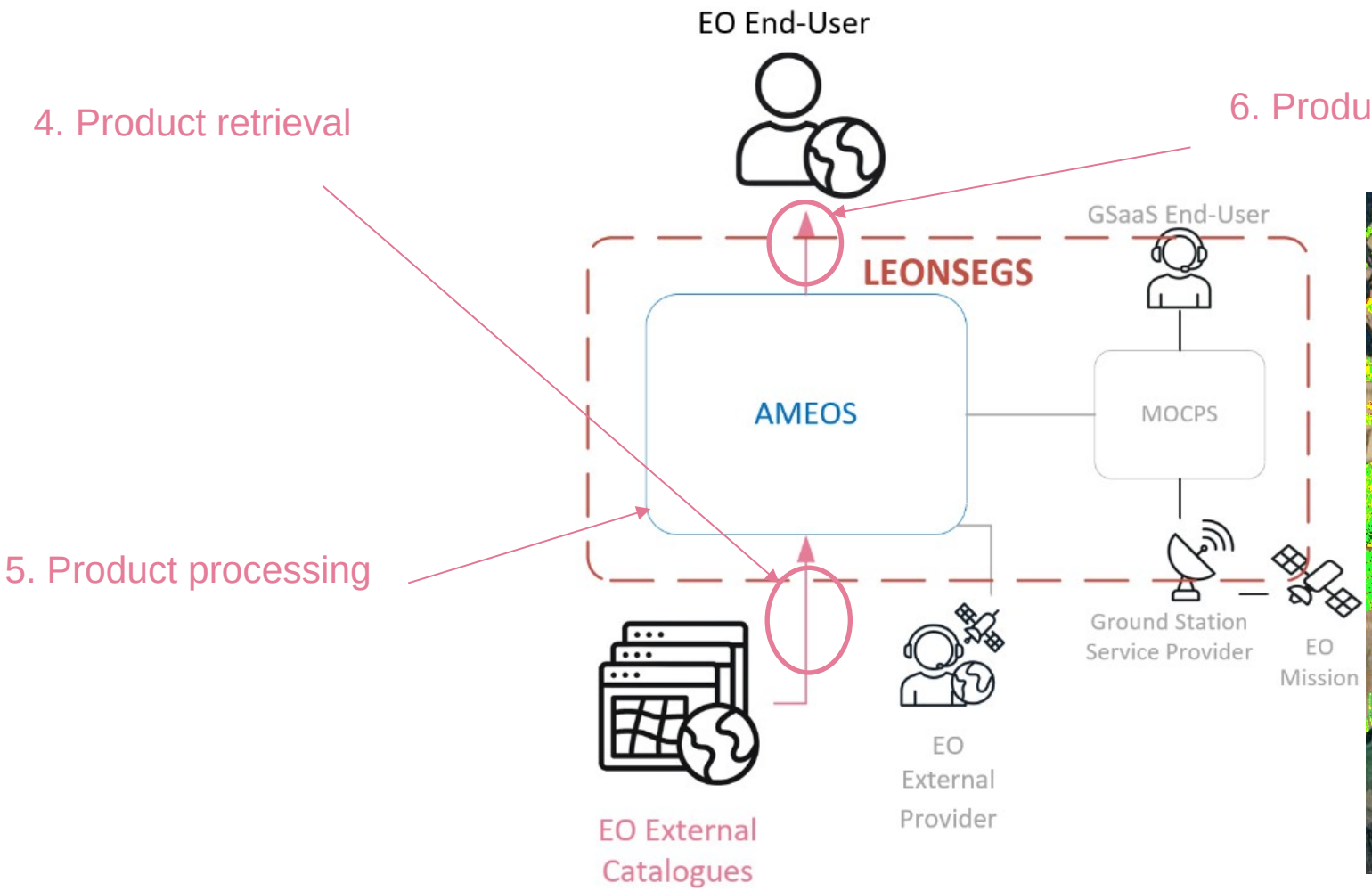
UC: Request for archived images (1/2)



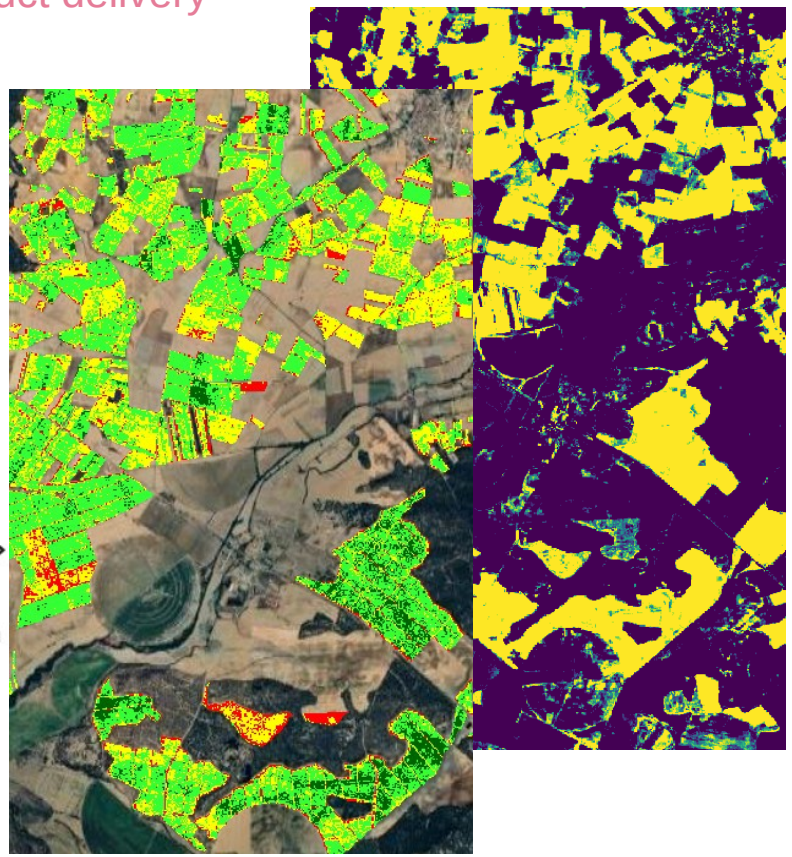
EO Services:

- Leaf Area photosynthesis Status
- Nutritional Status
- Biophysical Status
- Humidity Status
- Vineyards mapping
- Cloud Free Seasonal Composite
- Closest image with/without vegetation
- Closest cloud-free image

UC: Request for archived images (2/2)



Vineyard map



Nitrogen content