

The Domino-E Webinar Series: Unlocking the Future of Earth Observation

Webinar Session 3: The Domino Ecosystem
Business Opportunities for SME's

31.03.2025, 10:30 - 12:00 CET

In a Nutshell: Joining the Domino Ecosystem

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www.domino-e.eu



Co-funded by
the European Union



Domino standardized modular architecture

- **Standardized and public GS architecture addressing institutional, defence and export markets**
- **Covering a wide range of system use cases, including new features for increased reactivity & automation**
- **Constellation-ready**
- **Cloud-ready and IT-agnostic**
- **As a service approach whenever relevant**
- **Will to on-board space agencies & industry, facilitating the emergence of an ecosystem of Domino providers**

Added values of modular and standardized architecture



Better value proposition for clients

- Easier to set up the best industrial scheme
- Easier to provide the best technical solution against customer needs
- Less risky to implement evolutions on a complex system
- Increased confidence level
- Easier on CAPEX/OPEX calibration/decision



Derisked schedules if industrial schemes are complex

- Clearer sharing of responsibilities at the start of a program (gains during engineering and integration)
- Less risky engineering and IVV phases, fewer potential escalations
- Derisk development from supply chain
- More secured margins
- Focus on the content (performances) and not on interfaces



Incentivised investments

- Clear and stable technical conditions for the integration of E2E systems
- Facilitated product strategy and reuse maximization
- More accessible maintenance and evolution contracts for the client

Domino architecture - Overview

Targeted deployment

- One "VHR" 2 sat constellation
- One "HR" 8 sat constellation

Domino's perimeter

VHR HR = dedicated to an homogenous constellation

Multi = multi-mission

EXT = external system

Domino's instances

1 = one unique instance of this domino

n = could be many instances deployed

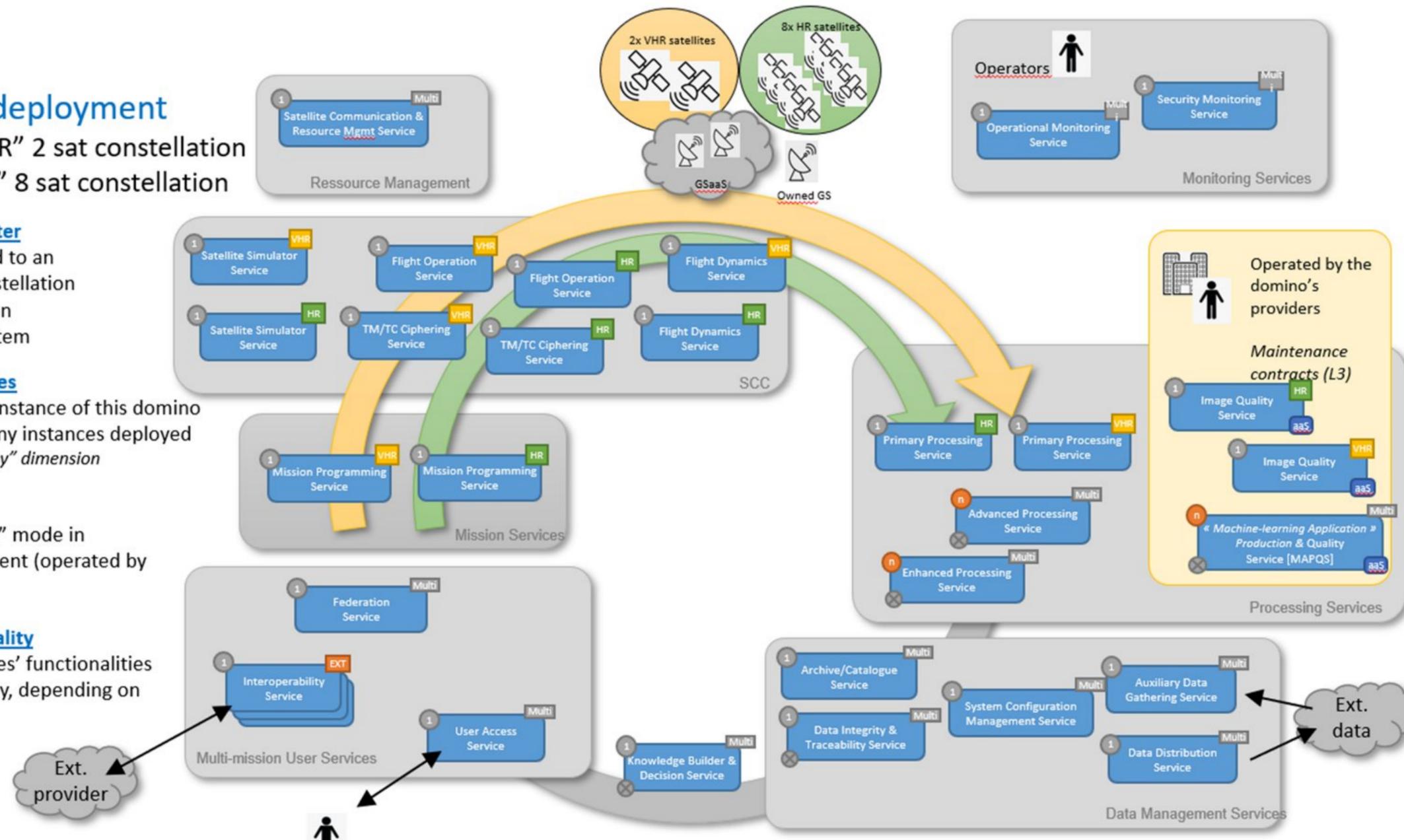
Without "redundancy" dimension

Domino's mode

aaS = "as a service" mode in targeted deployment (operated by an industrial)

Domino's optionality

⊗ = The dominoes' functionalities are not mandatory, depending on the needs

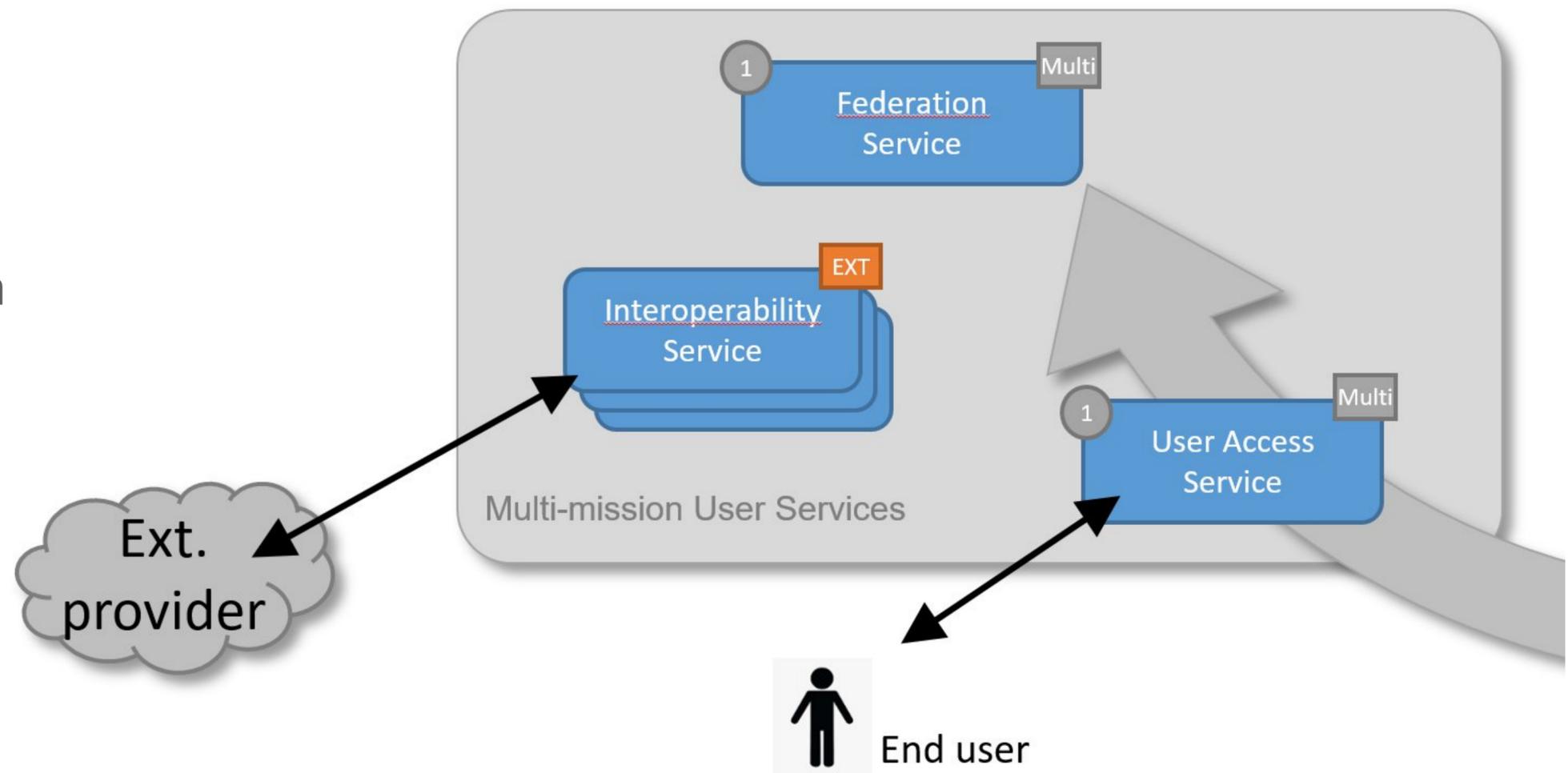


Domino architecture - Overview

> Focus on Federation chain

Central role of the [Federation Service]

- User requests management
- Services discovering of other dominoes
- Organisation of production workflows
- Local and external systems optimisation



Domino architecture - Overview

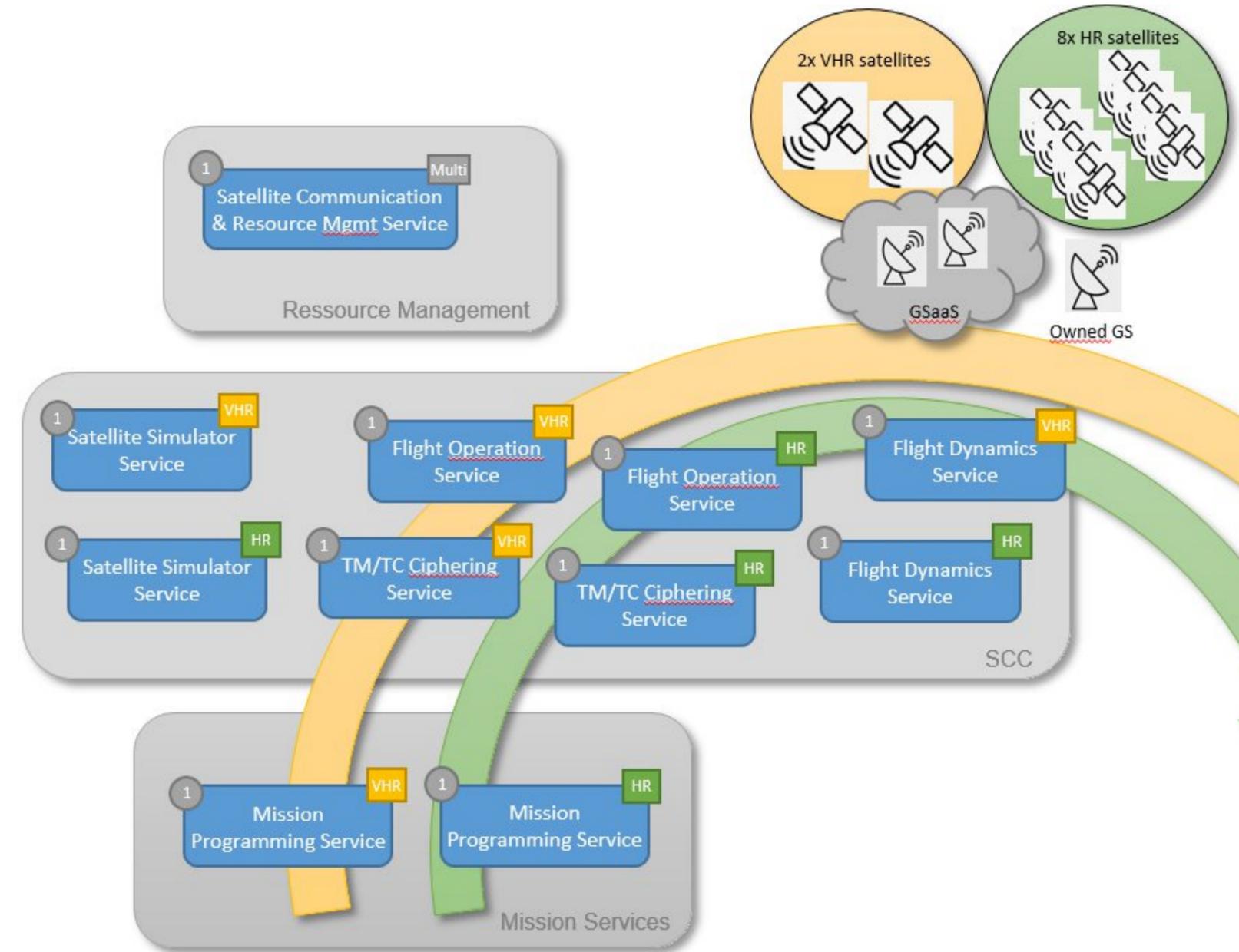
> Focus on Federation chain



Domino architecture - Overview

> Focus on Mission & Control chains

Control chain could be quite “sensible”, particularly the Satellite simulator and TM/TC keys



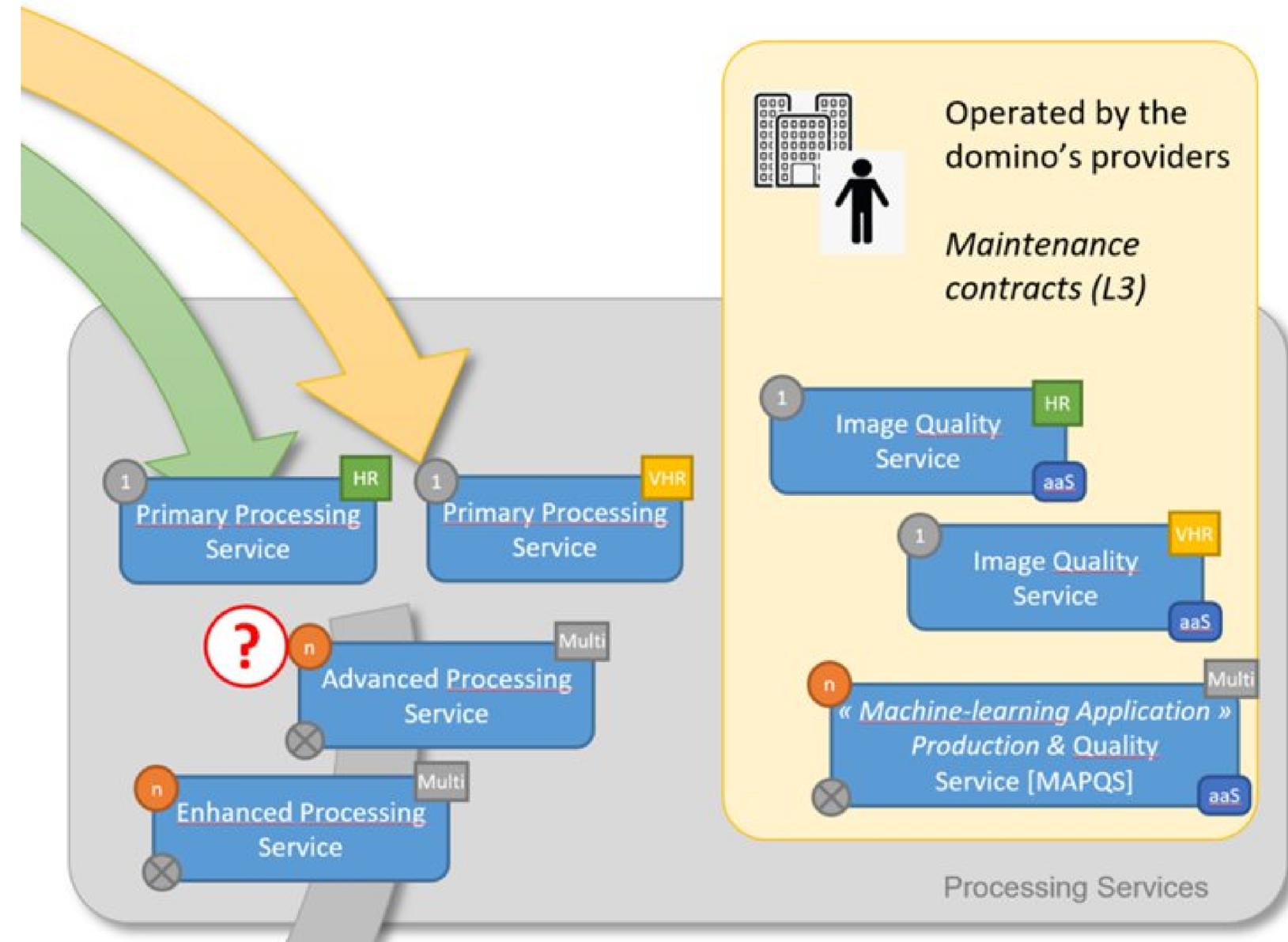
Domino architecture - Overview

> Focus on Image chain

Industrial breakdown of the Image chain:

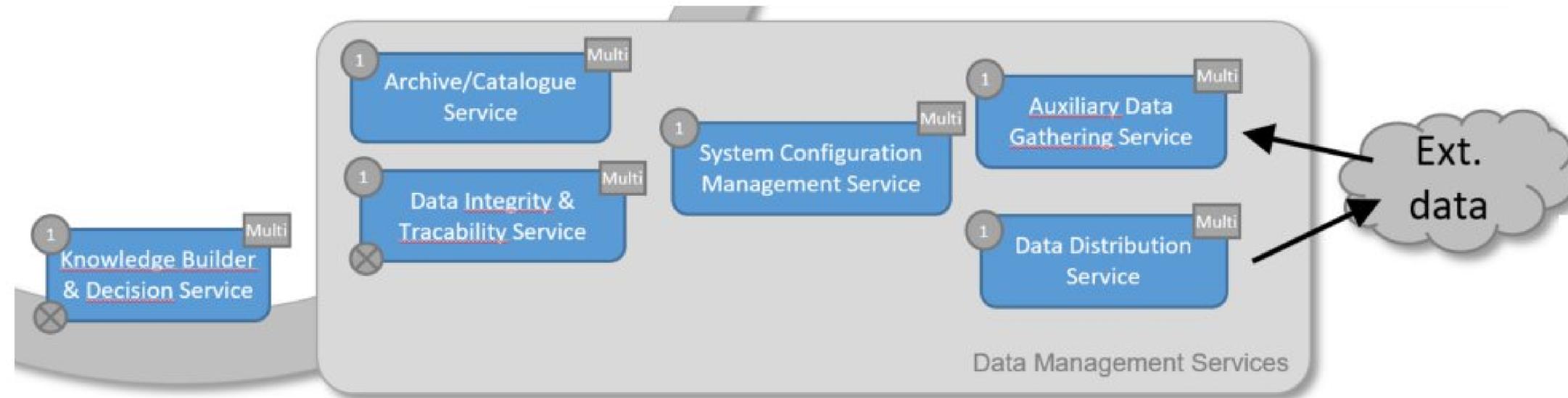
- The **[Primary Processing Service]** dominoes are dedicated to one mission (homogeneous constellation)
- The **[Advanced Processing Service]** and **[Enhanced Processing Service]** are multi-mission

The **[Image Quality Service]** (calibration) and **[Machine-learning Application Production & Quality Service]** (MAPQS) is mainly foreseen “as a service”.

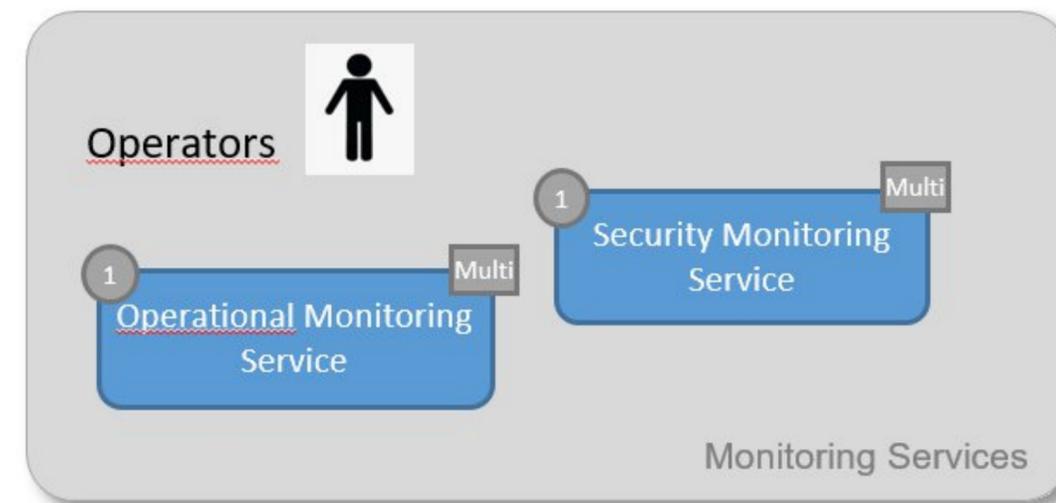


Domino architecture - Overview

> Focus on Data Management



> Focus on Monitoring



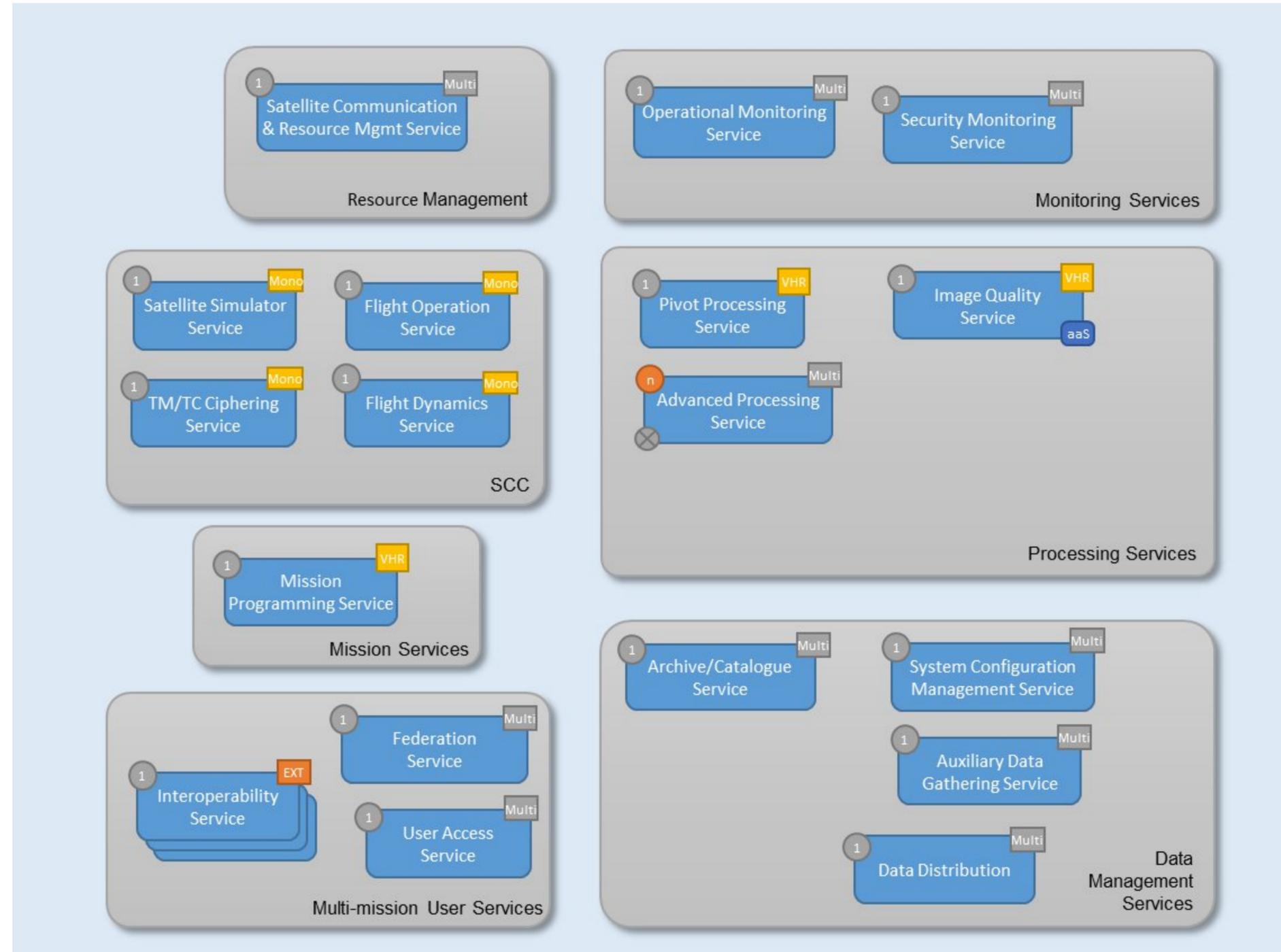
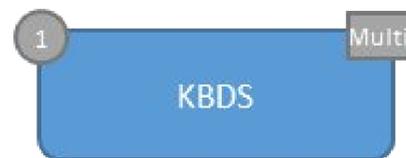
How to use this modular GS?

1. Conops

Particularities of the mission

=> Selection of the needed dominoes

Unselected dominoes:



How to use this modular GS?

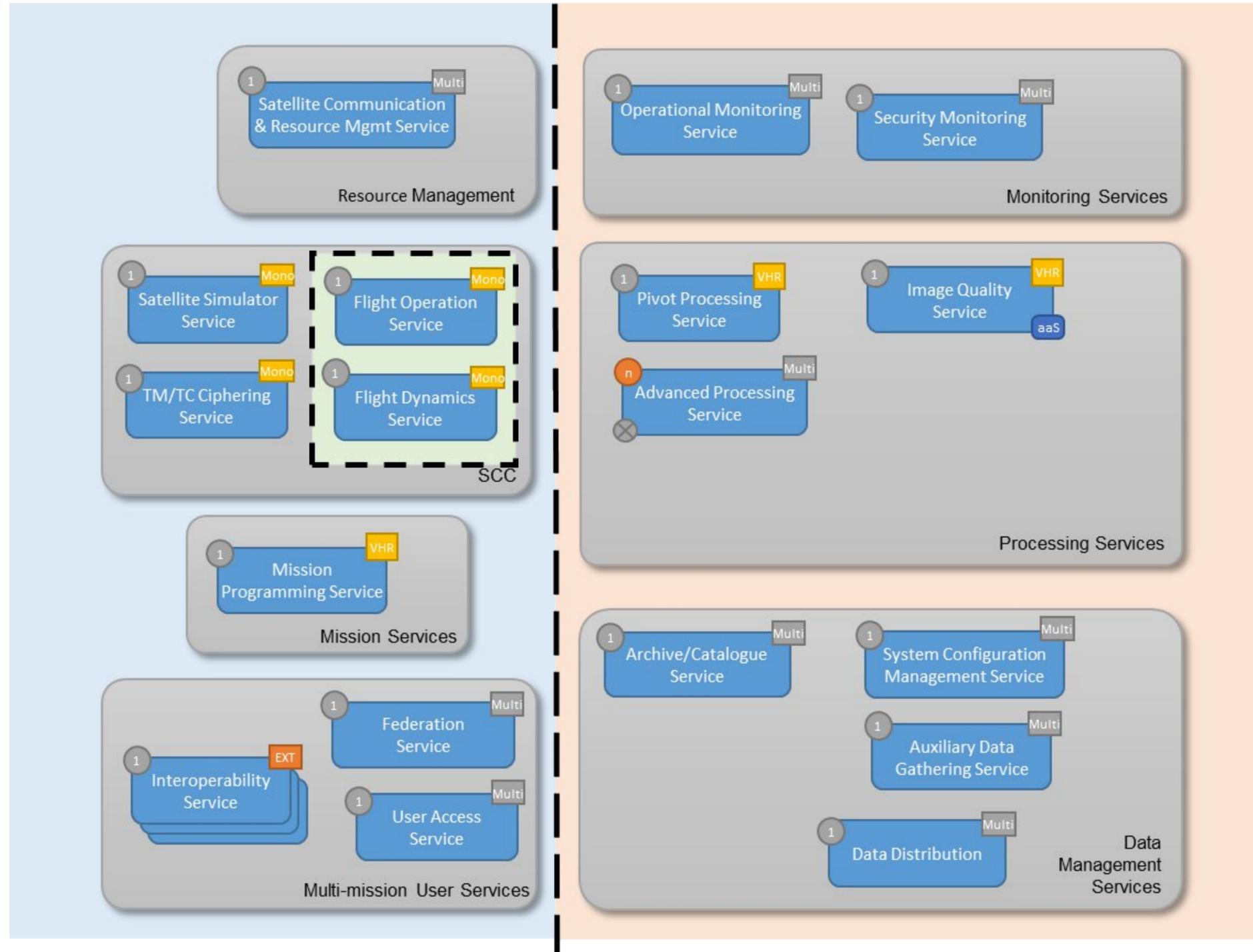
1. Conops

Particularities of the mission

=> Selection of the needed dominoes

2. Industrial strategy

Choice of the dominoes' providers



How to use this modular GS?

1. Conops

Particularities of the mission

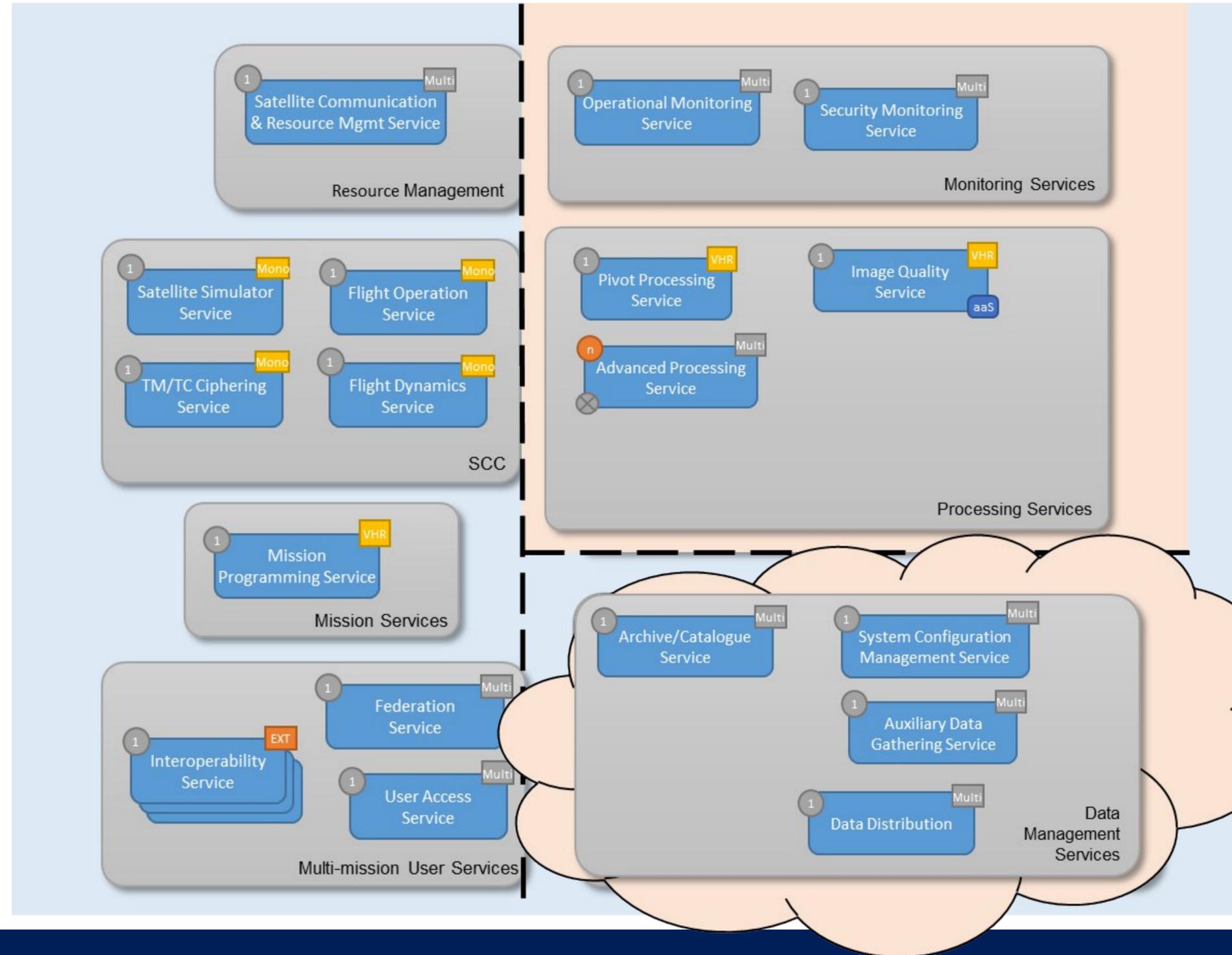
=> Selection of the needed dominoes

2. Industrial strategy

Choice of the dominoes' providers

3. Deployment strategy

Where will we deploy ?



Dominoes open for development – BUY Foreseen

DOMINO'S PERIMETER:

- VHR** dedicated to an homogenous constellation
- HR** dedicated to an homogenous constellation
- Multi** multi-mission
- EXT** external system

DOMINO'S INSTANCES

- 1** one unique instance of this domino
- n** could be many instances deployed Without "redundancy" dimension

DOMINO'S MODE

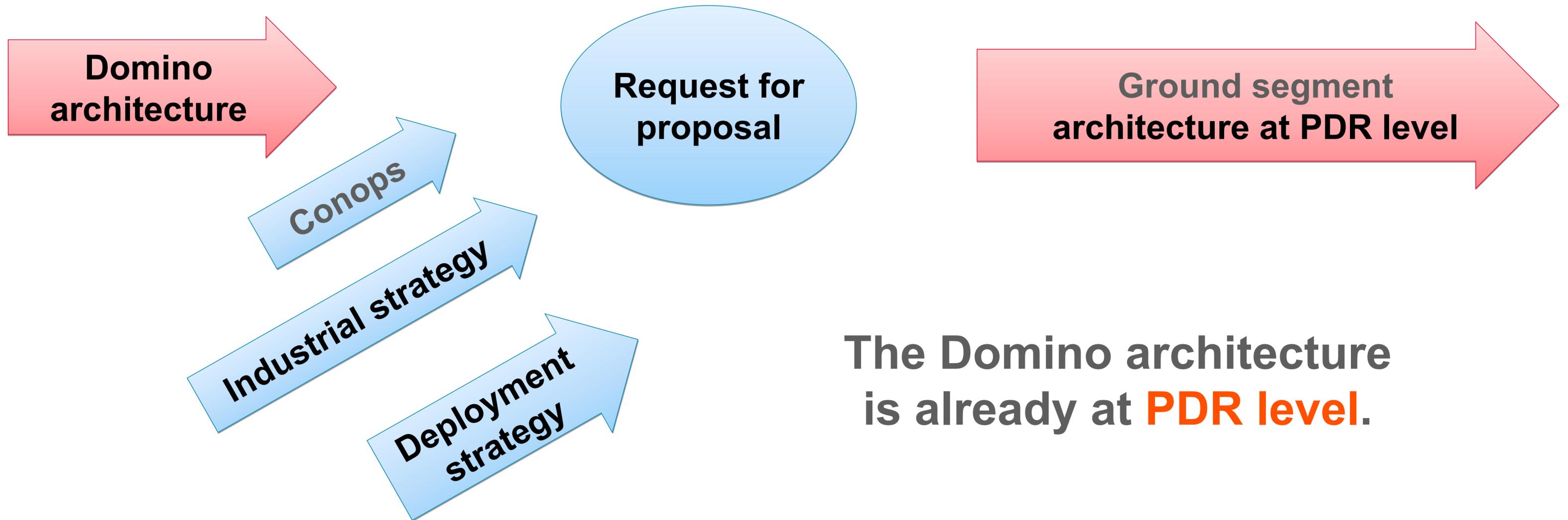
- aaS** "as a service" mode in targeted deployment (operated by an industrial)

DOMINO'S OPTIONALITY

- The dominoes' functionalities are not mandatory, depending on the needs

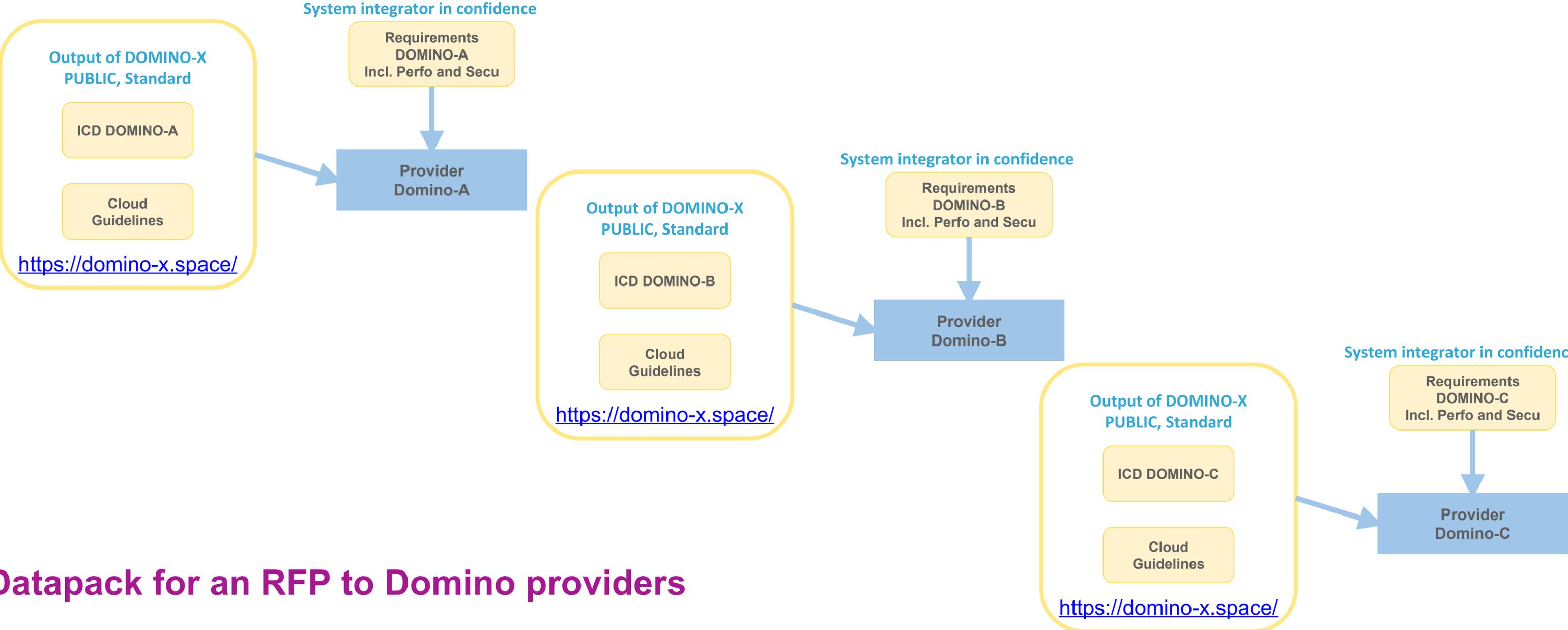


How to use this modular GS?



The Domino architecture is already at **PDR level**.

Technical transformation accompanied by an industrial transformation



Datapack for an RFP to Domino providers

General SWOT applicable to integrators and providers

	Helpful <i>to achieve the objective</i>	Harmful <i>to achieve the objective</i>
Internal origin <i>Attributes of the organisation</i>	Strengths <ul style="list-style-type: none"> Compatibility with ESA projects Reduced recurring cost & planning Agreed with Integrators Ease industrial strategy core/non core strategy Geo return easier 	Weaknesses <ul style="list-style-type: none"> Security Transition roadmap is complex CAPEX NREC Maintenance is more complex Duration of the sales cycle
External origin <i>Attributes of the environment</i>	Opportunities <ul style="list-style-type: none"> GSaaS compatibility CCSDS standardization Evolutivity New market Funding opportunity Extension to SAR, SIGINT capabilities 	Threats <ul style="list-style-type: none"> Limited maturity level Adoption reluctance due to make or buy strategy Difficulty to take a decision

Status of external engagement with key actors

French and German space national agencies: promotion of architecture and raising awareness externally

ESOC/ESA: regular follow up on the projects

CCSDS: presentation to workshops

European Commission: aware and actively manifesting interest and on-going HE funding

End to End Integrators: Airbus (all home countries), TAS involved in Domino-X, OHB Systems and Digital Connect awareness

GS / Subsystem providers: interest from 3 large ones so far from outside the consortia

Domino Saga is to be continued

DOMINO-E (HE EC)
 11/2022-11/2025

Data Management and System Security

Coverage service (Federation Domino)
 Communication booking service (Sat Comm & Res Man Domino)
 Virtual Assistant Service (User Access Domino)

Radar Ground Segment (SAR Dominoes)
 API Governance (Domino Interfaces)
 Immersive environment (OMS Domino)
 PaaS for space operation (FOS Domino)

DOMINO-A (GSTP ESA)
 02/2024-02/2026

DOMINO-X (CNES/DGE)
 11/2021-11/2023

Reference System Service (ESA)
 2021-2025

Adaptative PDGS Evolving Technology

AIRBUS
 SPIDER (EC EDF)
 2024-2026
 +30 EU partners

Interconnect multiple Domino-based systems

Deploy ground segment following
 (at least partially) Domino architecture

Export customers

RFI/RFP In Q3-2025



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Thank you!

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THE FRENCH AEROSPACE LAB

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