# FLUIDOS @MetaOS Workshop

Flexible, scaLable, secUre, and decentralIseD Operating System

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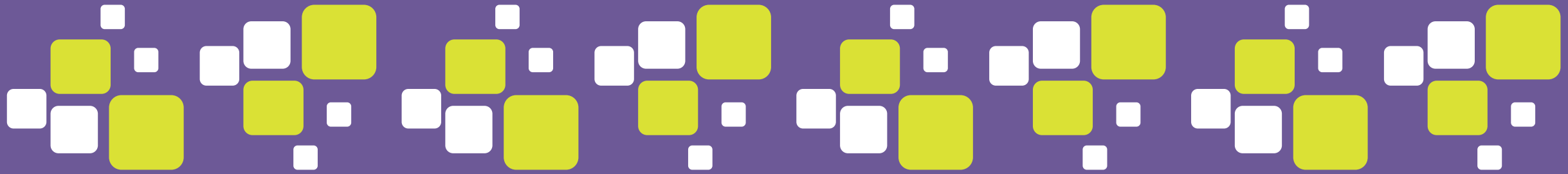


# Many silos

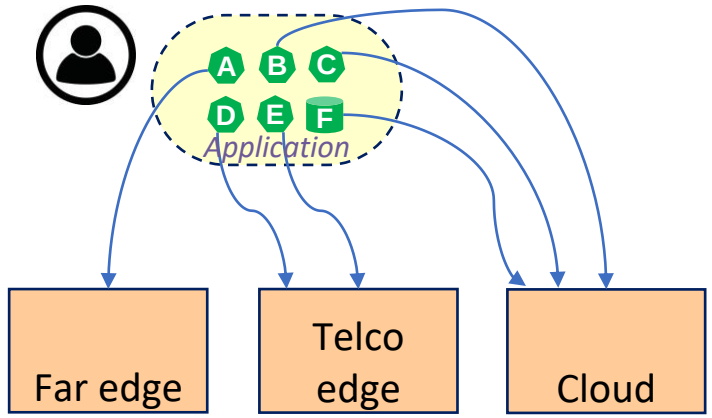
IoT/Edge

OVHcloud
Tencent Cloud
Google Cloud
aws
ORACLE CLOUD Infrastructure
Alibaba Cloud
DigitalOcean
IBM Cloud
Akamai
Microsoft Azure

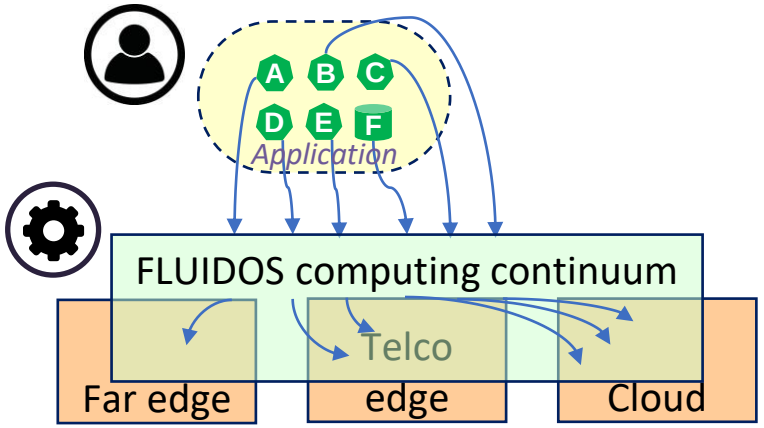
Cloud

FLUIDOS

# FLUIDOS is all about transparency




a) Current silos-based computing continuum



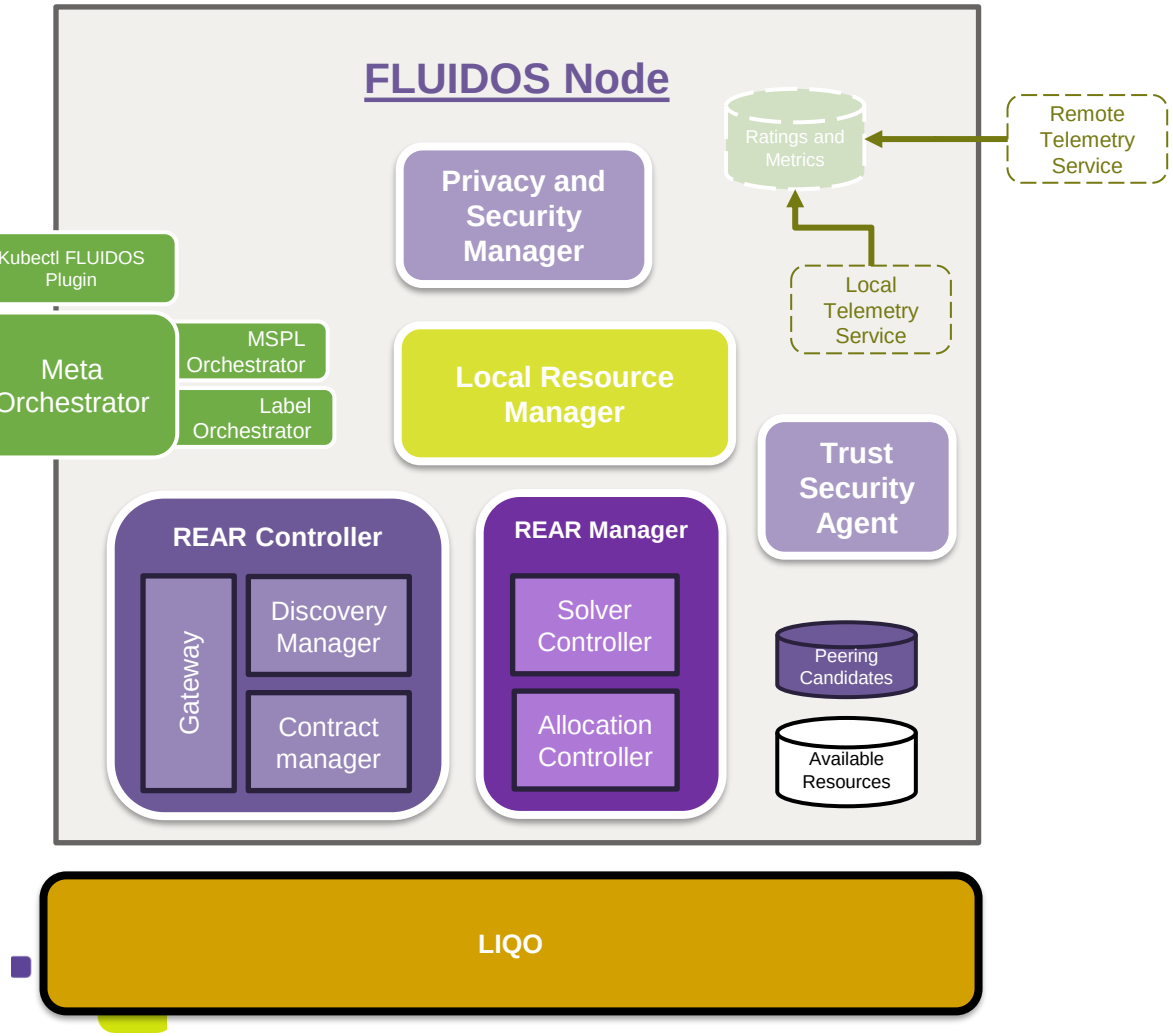

b) FLUIDOS computing continuum

The **FLUIDOS computing continuum** defines *multiple*, *dynamic, secure* **virtual spaces**, spanning across multiple *technological* domains and *administrative* boundaries, with ***deployment* transparency, *communication* transparency, and *resource* transparency**.

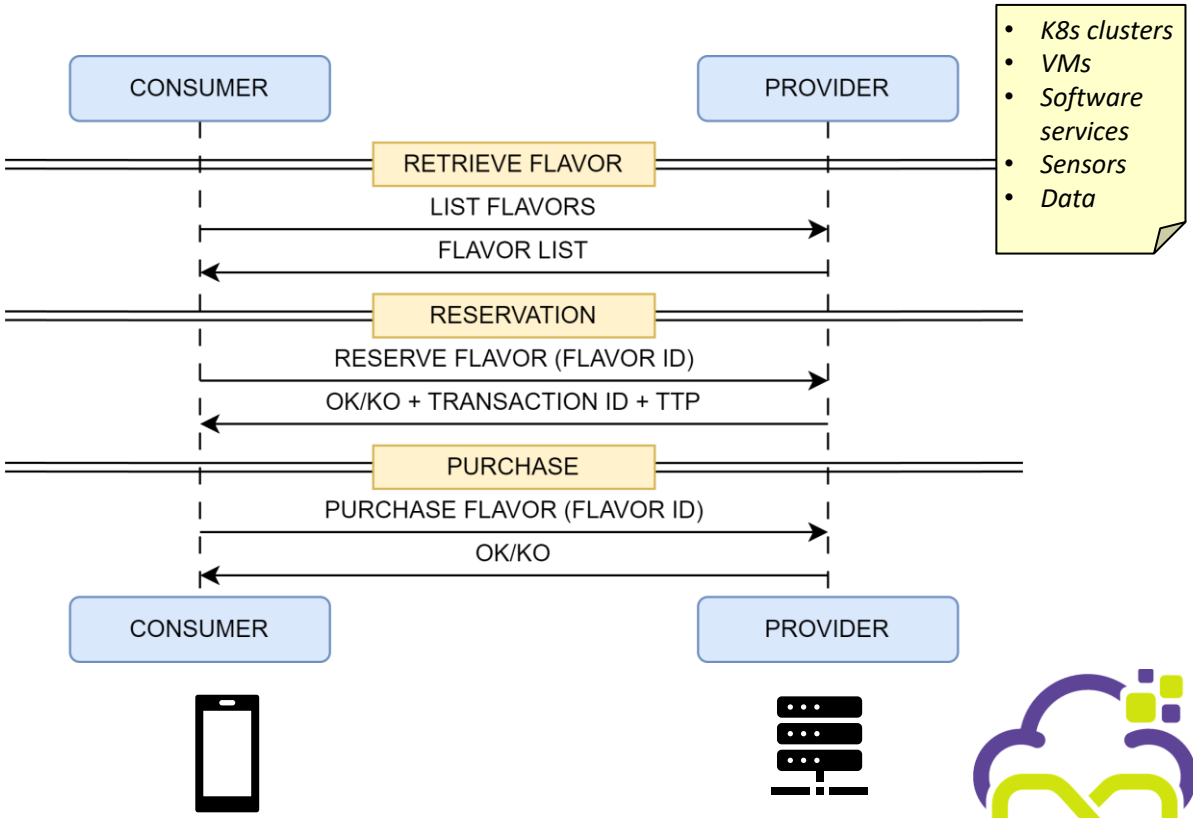
# FLUIDOS technological pillars

- Node and Protocols
- Meta-orchestrator
- Security
- Energy
- Open-source

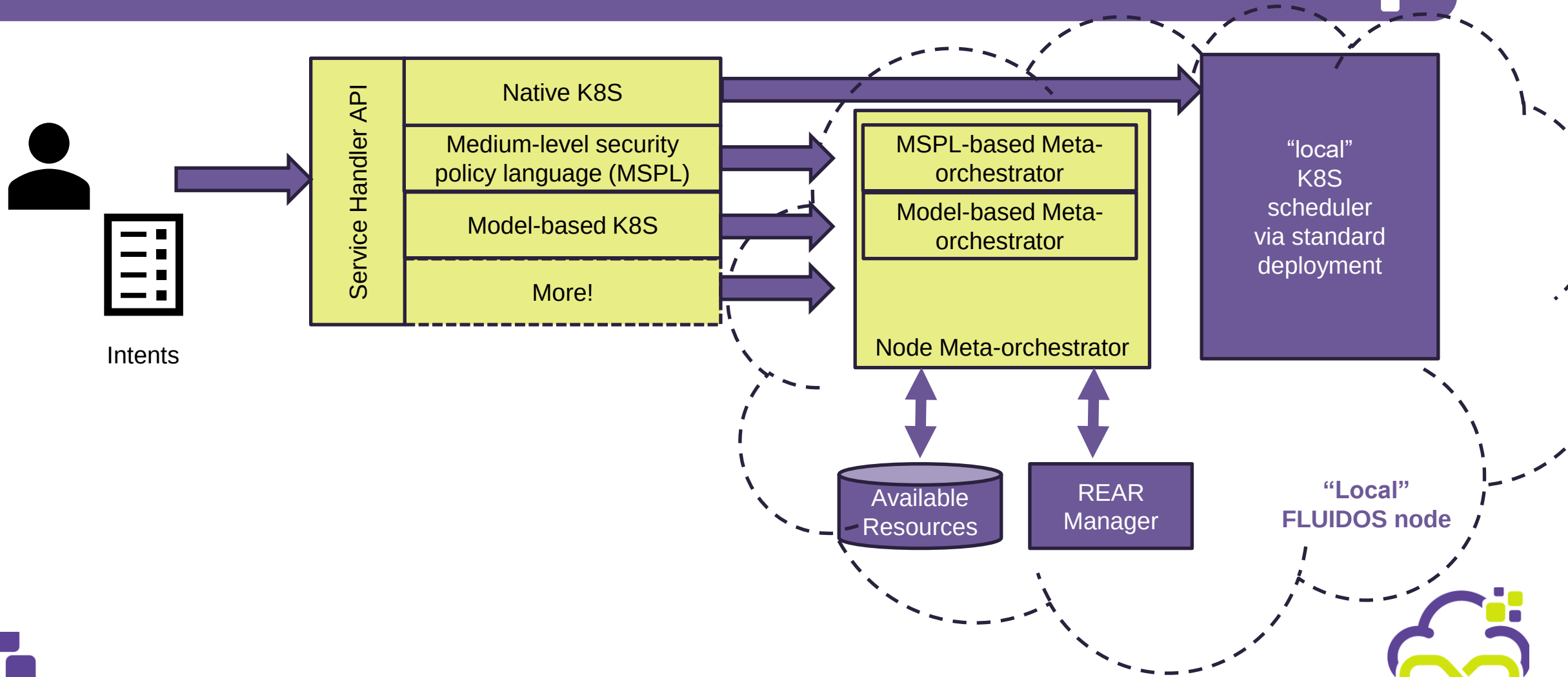
# (1) FLUIDOS node and Protocols



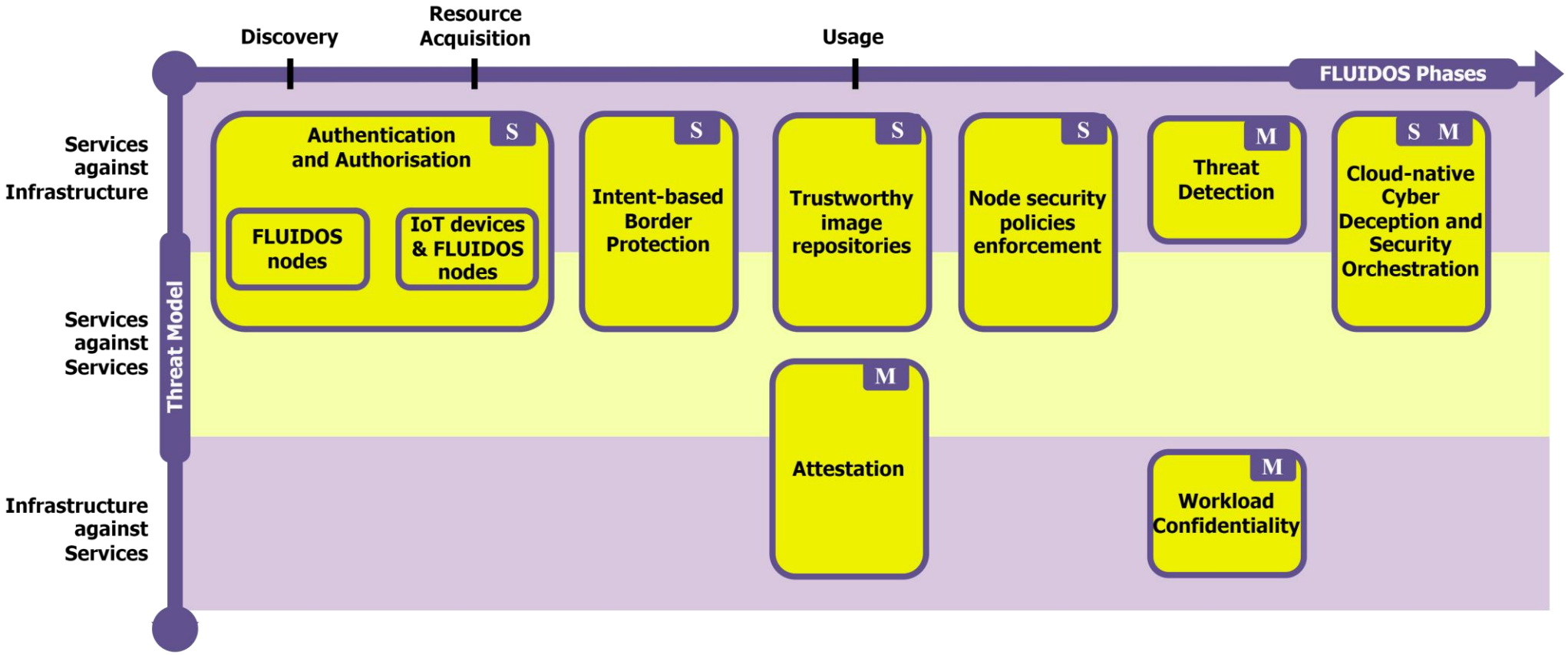

## REsource Advertisement and Reservation protocol (REAR)



# (2) Meta orchestrator



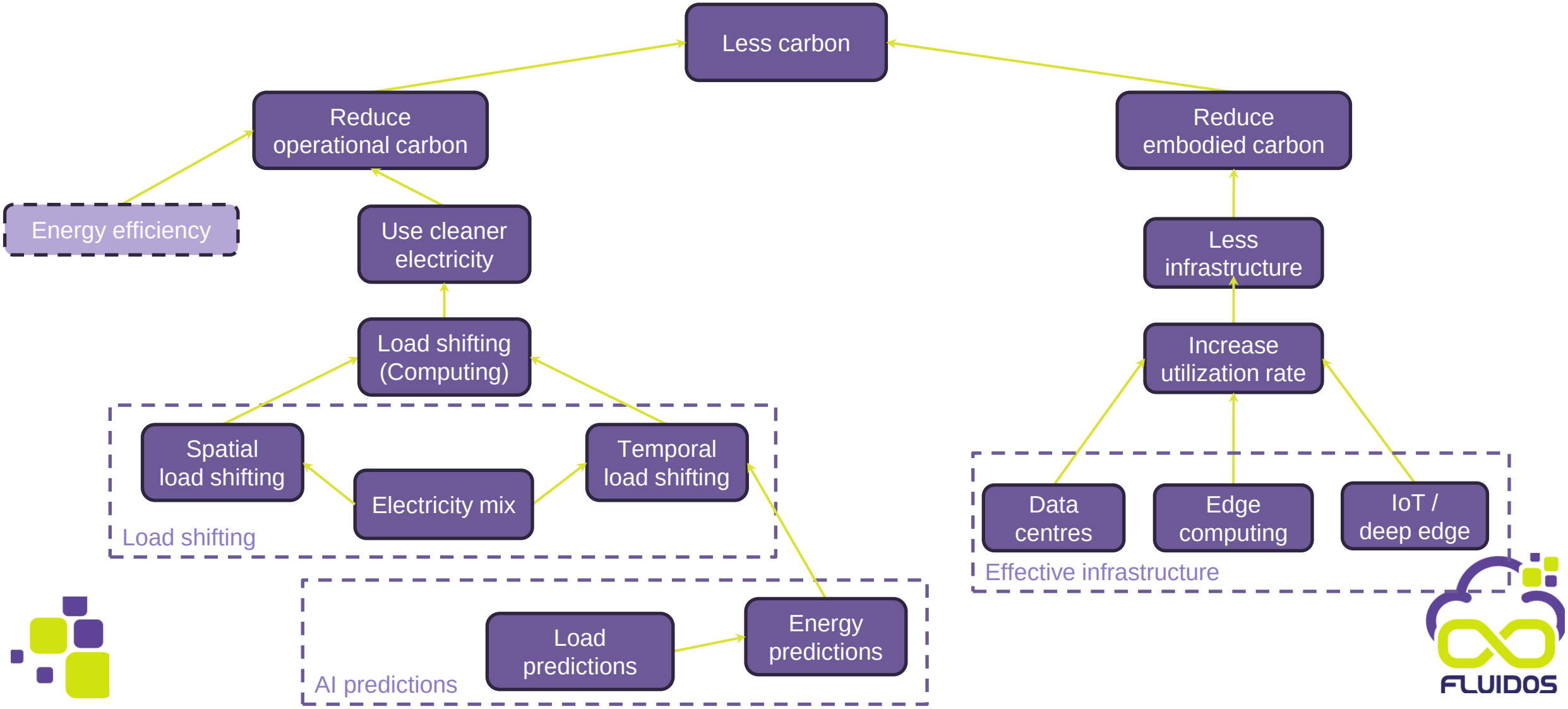
# (3) Security




S Software tool

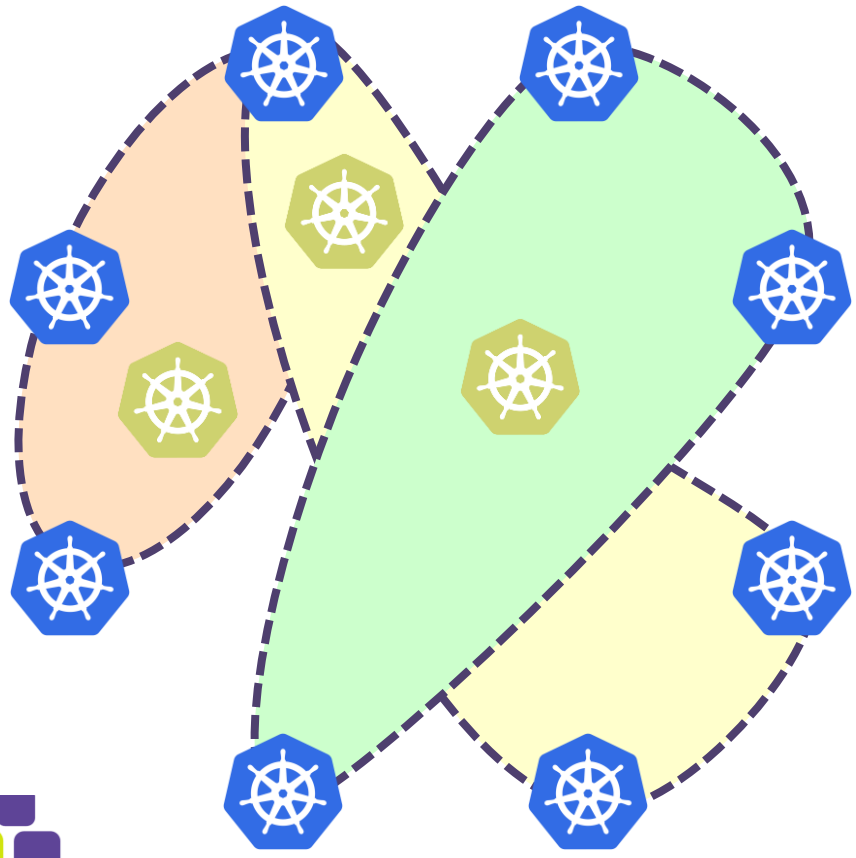
M Method (Algorithm, Protocol, Policy, etc.)

# (4) Energy


Less carbon
Reduce operational carbon
Reduce embodied carbon
Energy efficiency
Use cleaner electricity
Less infrastructure
Load shifting (Computing)
Increase utilization rate
Spatial load shifting
Electricity mix
Temporal load shifting
Load shifting
Data centres
Edge computing
IoT / deep edge
Effective infrastructure
Load predictions
Energy predictions
AI predictions

# (5) Open-source

Kubernetes (K8s, K3s, etc), Liqo, KubeEdge



https://github.com/fluidos-project

Repositories

Find a repository... | Type | Language | Sort | New

**node** Public
FLUIDOS Node and its essential components
Go 3 Apache-2.0 4 0 0 Updated last week

**REAR-data-models** Public
Shell 0 0 0 0 Updated last week

**quick-start-guide** Public
Quick start guide
3 BSD-3-Clause 4 0 1 Updated last week

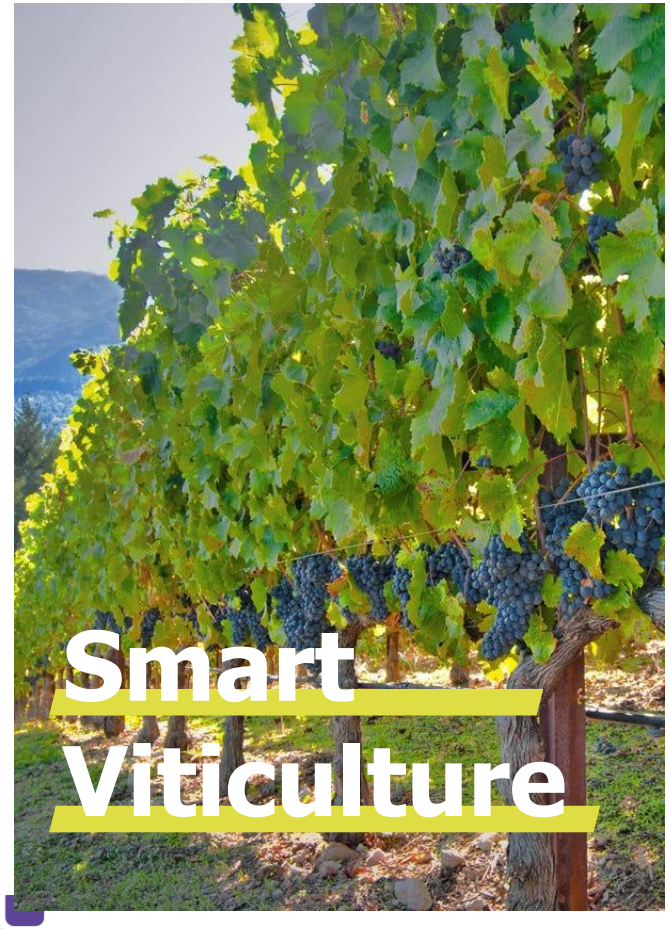
**fluidos-edge** Public
Basic setup for managing Edge nodes and devices, and is designed to meet Fluidos project requirements
C 0 Apache-2.0 0 0 0 Updated 2 weeks ago

**fluidos-modelbased-metaorchestrator** Public
FLUIDOS meta-orchestrator for a geo-distributed continuum
Python 3 Apache-2.0 0 7 0 Updated 2 weeks ago

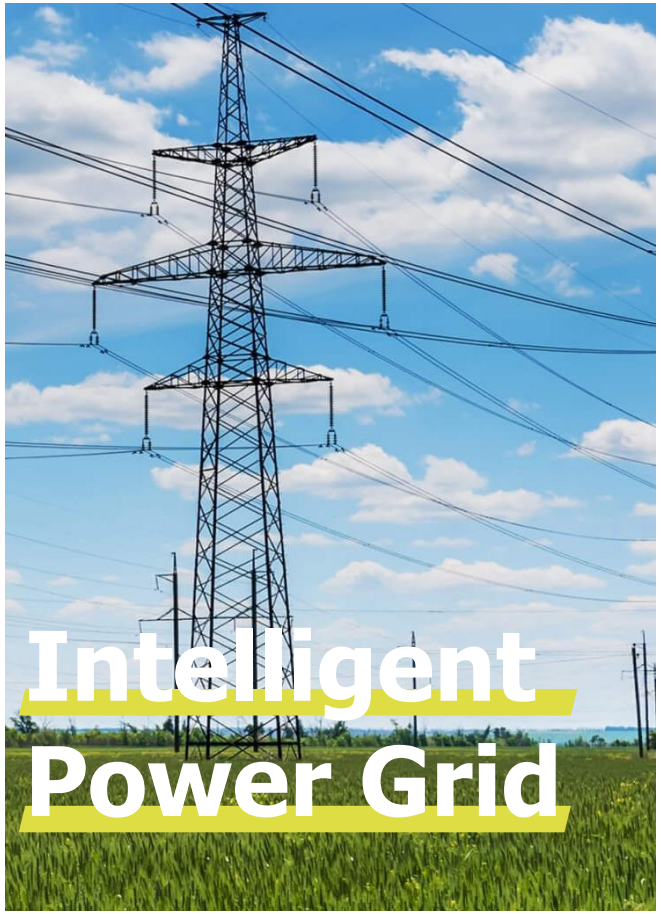
**idm-fluidos-aries-framework-go** Public
FLUIDOS idm, Aries agent modified for use dp-abc cryptography combined with Hyperledger Fabric as VDR to provide a very powerful interface when working with DID's, issuing VCredentials or using smart contracts
Go 1 Apache-2.0 0 0 0 Updated 3 weeks ago

**intelligent-power-grid-use-case** Public
0 Apache-2.0 0 0 0 Updated 3 weeks ago

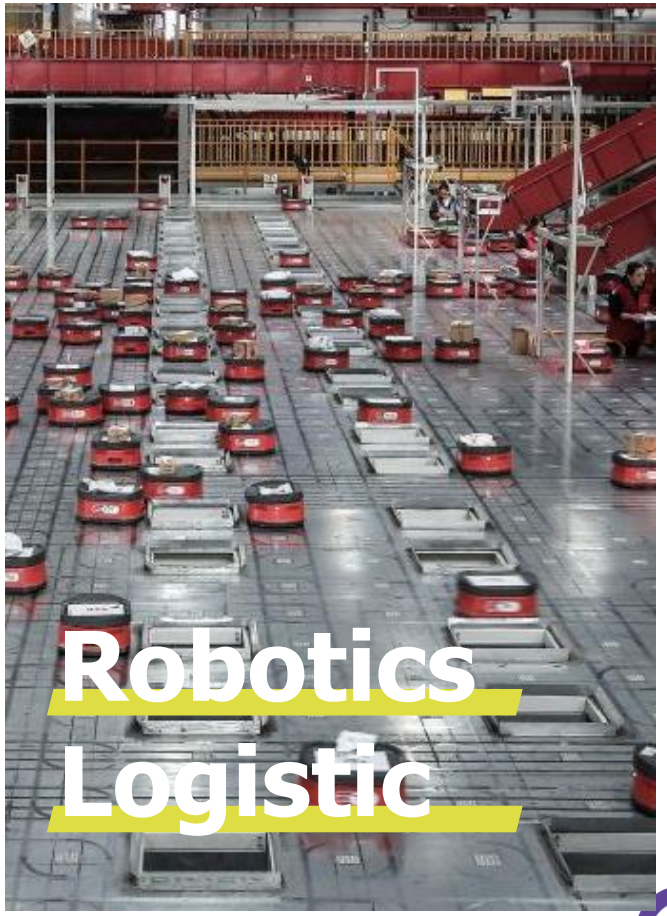
# Use cases




Seamless deployment of services at device/edge/cloud level, with reduced devops overhead




Increased resiliency and survivability properties of critical ICT services for smart grids




Improved battery usage and decreased hardware cost through processing offloading

FLUIDOS

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