

The EUDAT Node

Ten years of commitment, and a commitment to another ten years

Alessandro Petrocelli, CTO Trust-IT Services & COMMpla · Technical Architect at EUDAT

EOSC Symposium 2026, Florence · 15 October 2026

10+10 years of operation · **20+** members · **17** scientific domains

From “it does not matter where” to “where is it, exactly”

THE OLD PARADIGM · ABSTRACTION

- **The promise:** you should not need to know where your data is.
- **Abstraction as achievement:** it works, and location is somebody else's problem.
- **The consequence:** legal visibility was quietly lost along the way.

TODAY · LOCATION AND RULES

- **The first question:** where is it, exactly?
- **The second:** under which rules is it governed?
- **What that needs:** independent sites, in known countries, under named rules.

For ten years we have been running a federation of our own.

A PAN-EUROPEAN DATA INFRASTRUCTURE

A non-profit network of European research organisations and data centres

- **A non-profit network** of more than twenty European research organisations and data centres.
- **Generic services** for storing, preserving, sharing and finding research data.
- **Built to fill a gap:** no European layer existed for the data itself. Keep it, replicate it, identify it, find it.
- **More than a national node, more than a thematic node.** The layer underneath seventeen scientific domains.

20+ organisations and data centres

17 scientific domains



WHAT WE SET OUT TO BUILD

One front door, one catalogue, and the resources attached to the service

WHAT IT IS

- **One front door:** sign in, find a service, activate it yourself. No ticket, no waiting.
- **One catalogue:** EUDAT services, other nodes' services, third-party services, on the same path.
- **With the resources attached:** storage, and the computing that has to sit next to the data.

WHO IT IS FOR

- **The researcher:** activates and manages what they use, with their own academic identity.
- **The group or the organisation:** who can activate, who is charged, who can see.
- **The Federation:** our services exposed by default, not through a separate integration.

SERVICES INSIDE THE NODE



B2FIND

B2SHARE

B2DROP

B2HANDLE

B2SAFE

B2ACCESS

The portal is the only interface a researcher needs. Everything else happens behind it.

WHAT SURPRISED US

We expected integration with EOSC to be hard. The missing piece was the front door and the layer behind it

EXPECTATION VERSUS REALITY

- **Expected:** cross-border integration would be the hard technical problem.
- **Reality:** ten years of operation had already solved it.
- **The real bottleneck:** moving from ticket-based ordering to self-service.
- **The scope change:** a portal shows your own services. A node has to run services that are not its own.

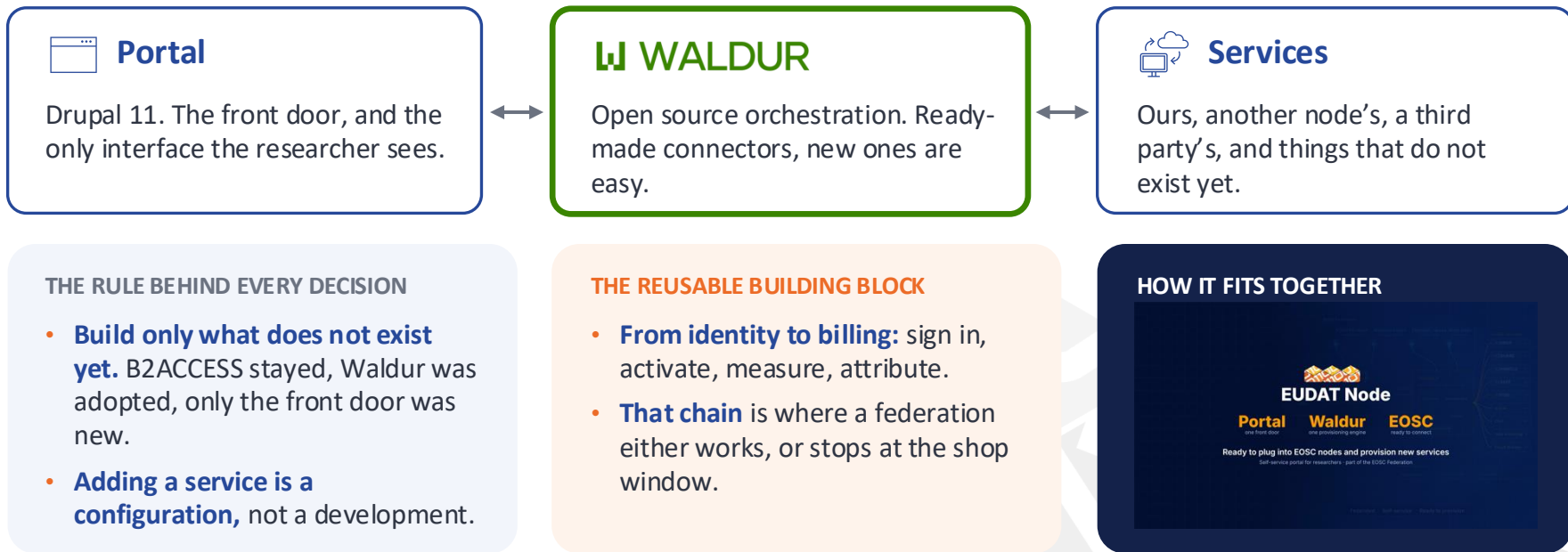
WHAT WE DECIDED, AND WHY

- **One single thing:** the Federation requirements became our own product requirements.
- **Not two projects:** no compliance exercise running next to the product.
- **By default:** every service we build and run has to work inside the federation.
- **We would do differently:** start the portal earlier.

A federation is not held together by its APIs. It is held together by people who keep agreeing. And that was not foresight. Years ago we simply had no other way to work: we had to agree, or we had no service

COMPOSABILITY

Decoupling the front door from provisioning, so services can be chained



Designed for capacity, it answers a question about sovereignty

2016 designed for capacity and resilience

HOW WE DELIVER OUR SERVICES

- **Several independent providers**, in different countries, for one service
- **Chosen for capacity and resilience.** Those were the right reasons
- **Not a special arrangement:** it is how the services have always run

2026 a question of sovereignty

WHAT IT TURNED INTO

- **Ten years later** it answers a question nobody was asking in 2016
- **Often even a choice:** the same service runs in more than one country
- **Not in every country**, but that is already more than most can say

Today, when a community asks where its data will be, **we have an answer**
This is not a EUDAT feature, it comes from being federated

None of these questions has a technical answer

THE QUESTIONS SOFTWARE CANNOT ANSWER

- Who signs the agreement with the researcher, when the storage sits in another country?
- Who is responsible if that data is lost?
- Which rules apply, when two different sets of rules apply?
- Who answers to the researcher when something goes wrong
- **Our order of work:** agree how a service is run first. Then connecting a provider is routine.

WHAT WE DECIDED, AND WHAT IT TAUGHT US

- **No new governance:** we reused the way of running services already agreed across our centres.
- **It had already forced us** to answer the hardest question: how a service must behave.
- **Not wisdom, necessity:** independent centres cannot work together any other way.
- **The same has to happen in EOSC**, with many more parties at the table.

Agreeing how a service will be run comes first, not last. With that agreement, connecting a new provider or a services is routine job.

CAPACITY AND OPERATIONS

Not first a question of resources. First a question of what we can actually offer

CAPACITY, NOT A CATALOGUE

- **A few gigabytes is a demo**, not an infrastructure.
- **What research needs now**: hundreds of TB, GPUs ready to use, AI models, computing next to the data and needs to know where they sit
- **All of it together**, and able to work together through.
- **The good news**: the capacity already exists, in European public research centres. The real question is how we make that normal.

THE PART NO DIAGRAM SHOWS

- **Federation readiness** is onboarding, identity, monitoring, incident coordination, service levels, agreed between organisations that do not report to each other
- **Behind each of those words** there is a person on call, patching servers on a Sunday.
- **A node is a service**, not a project deliverable. The two look identical for two years.
- **We would do differently**: count the operational effort honestly at the start.

Federation readiness is not only technical interoperability
Our members have just signed for another ten years. Sustainability starts with a commitment, not with a plan.

SEE YOU IN PRAGUE

Thank you!

Let's keep talking about EOSC at the
EUDAT Conference 2026.



25–27 November 2026



The Grandior Hotel, Prague



EOSC session: join the discussion



Questions now, or better, over coffee in Prague. The EOSC conversation continues there.