Module 5: Integrating resources into EOSC: What, why, and how?

Part 1: EOSC as a federation

Hello, my name is Matti Heikkurinen and I am a Senior Strategy and Innovation Officer at EGI.

In this video, I am going to explain the concept of "service onboarding". However, I think "EOSC integration" is perhaps a more intuitive term. In the end, the goal of onboarding is to make your services available and more broadly usable by integrating it with the European Open Science Cloud (EOSC). So, I will use the term "integration" in the rest of this module, but when reading related material it is good to remember that in this context "onboarding" and "integration" can usually be considered synonyms.

"Learning outcomes"

By the end of this module, you will understand the nature of a federated structure, such as EOSC and the role of IT service management in making such structures more robust, and – last but not least – you will be aware of the integration process to bring new resources into EOSC.

"Introduction"

So, let's start with the "why". In a nutshell, well managed EOSC integration can be seen as a **vaccination against customers dragging you to your laptop in the middle of the holiday,** because they can't use your services.

The effectiveness of this vaccination was analysed in a "clinical study" by Gartner research. The result was that 80% of all the major disruptions in IT service operations were due to "people and processes" issues – instead of failing software or hardware. In other words, doing EOSC integration properly means that you will be spared from four out of five complaint calls. And this is the minimum effectiveness: usually a portion of the remaining ones will be handled by EOSC staff (helpdesk, first level support etc).

So, the bottom line is, a proper EOSC integration process will considerably reduce the time and effort you would normally have to put into firefighting – dealing with upset users – when offering your services to new audiences.

"EOSC as a federation"

The word "federation" may sound archaic or pretentious - somehow abstract when all your users want to do seems to be research. "Federation" is also not something your users would ask about explicitly - they just want to perform research in order to publish articles, create startups or innovate otherwise.

However, if you're a service provider and don't want to bring your laptop to the beach, the concept of "federation" and its implementation have some important implications. When users "just want to do research", your service or resource is usually just one piece of the

puzzle. The input data may be a result of complex processing of several data sets from different organisations. This processing may require access to a specialised computing service from another provider and results may be passed on for further processing, using another set of tools and resources. If any of the components of this chain break down, your resource might be seen as being the one "at fault". Thus managing federation in a consistent manner is an important requirement - even if it tends to be hidden from view.

EOSC is emerging as an interdependent network, where the links between service providers can be formed dynamically - or even automatically. This is made possible by lightweight core components and services that support bringing new services to the EOSC ecosystem and coordinating them. So we could say that EOSC has a "hidden center" that addresses the "hidden requirements" related to federation of resources.

These kinds of federated ecosystems are quite common outside the IT service provision, and usually the level of integration determines the consistency of user experience. The loosest level can be like a hotel star-rating: there is usually some correlation between the number of stars and the actual quality of the experience – but you will almost certainly read the reviews before booking a hotel.

Somewhere in the middle of the integration scale, you might go and get your insurance from an agent or broker, with standardised "negotiation phase", followed by a provider-specific delivery. In the most integrated case, for example, buying a computer or a car, all the complexity of supply chain management and after-sales service is hidden from you. Branded service centres provide after sales services in a uniform way anywhere in the world.

To genuinely facilitate open science, EOSC needs to be a quite tightly integrated federation. In addition to finding services in the same place (a portal), the user should be able to trust that the quality of the service and the available support will fulfil common, minimal standards.

To fulfil this requirement, it is necessary to consider resource integration as a series of steps that make your resource a part of the highly integrated federation.