A fish in your ear: making sense of European higher education with Edu-API

Ola Ljungkrona, Enterprise Architect
Why Edu-API?
The Ladok Consortium

The Consortium is owned by 40 Higher Education Institutions and the Swedish National Board of Student Aid

The Consortium develops, maintains and operates the Student Information System Ladok

No legal entity
Generally – Standards

Have different domains
  • Human Relation
  • Exchange Invoice Information
  • Economical Transaction
  • Etc

It is defining how to communicate “system to system” platform-agnostically

Initial adoption may be higher – but ROI comes quickly
Separation (loose coupling) makes development easier
Procurement made “easy” – requirements are well defined
Needs a context – needs to be part of your architecture
Why standardisation?

Common language
- Between institutions
- Towards suppliers

Collaboration between institutions and the use of common requirements towards suppliers
- We can place strict requirements on suppliers to support an international standard.

Interoperability
- Easy to move to a new supplier

Cut cost
- Institutions can collaborate around system integrations and lower the total cost

Time to market
- If the interfaces are already defined, you can start working right away
- There's no need to discuss what messages should look like
- More configuration and less development

Life Cycle Management
- Services can change in a structured way

Clear Ownership
- IT-department is not the owner of integrations – The Business is!
Architecture

Integration platform

Responsibility borders

Canvas

System x

System Y

System Z

LIS adapter

Canvas adapter

Adapter

Adapter

Adapter

Ladok

AMQP

AMQP
Ladok LIS adapter

Provides Ladok information in LIS.
  • Learning Information Services (LIS) IMS global

Creates LIS messages based on events in Ladok
  • Collects additional information from Ladok

A part of Ladok
  • Originally developed by Sunet (2018)
Area of usage

LMS (Canvas) ✓
Internship (Praxia) ✓
Digital Exams (Inspera) ✓
Student mobility (MobilityOnline, MoveOn, SoleMove) Ongoing
E-archive Ongoing
Room booking and scheduling (TimeEdit, Kronox) Ongoing
Staff planning (Retendo)
Student unions (Montania)
Alumni (Mira, Microsoft Dynamics)
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<th>Usage</th>
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<td>Internship (Praxia), Digital Exams (Inspera), Student mobility (SoleMOve)</td>
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<td>Uppsala universitet</td>
<td>Test, Production</td>
<td>LMS (Canvas)</td>
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15 INSTITUTIONS
EDU-API
Edu-API
Next step

• Going forward by adapting to EDU-API.

• The asynchronous aspects will be important.

• Involved closely in the EDU-API taskforces

• A prof of concept using Ladok will be developed 2021/2022
Why asynchronous messaging?

Event driven
Supports Pub/Sub (Many consumers for the same event/message)
  • Very easy way to distribute and consume messages
  • Provider can always send a message
  • The consumer reacts on a new message event instead of polling.
Why asynchronous messaging?

Guaranteed delivery (retry/resend not required)

Systems can execute independently
  - Loose coupling
  - One message at a time without keeping connections to the other system
  - Both systems do not need to be online at the same time
Information model mapping

Ladok
Utbildningsinstans
Utbildningstillfällen
Studieperiod
Organisation
Student
Studiedeltagande
Aktivitetstillfällen
Resultat

LIS IMS Global
CourseTemplate
CourseOffering
CourseSection
Group
Person
Membership
LineItem
Result
LIS Pro & Cons?

- **Pros**
  - Standard, Interoperability
  - Common concepts
  - Stability – low rate of change
  - Prevents inventing the wheel again
  - Schema validation of messages
  - Portability

- **Cons**
  - Lacking several attributes vital for Swedish Universities
  - Limited support for repeating elements
  - Limited functionality in extensions
  - Do not support pub/sub
Use case – Edu-API with Ladok

Ladok

Adapter

LIS mapping

EDU-API mapping

Integration platform

• Course Offering
• Enrolment
• Person

AMQP

Canvas adapter

Canvas
More information about Edu-API

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