Student Data Interoperability
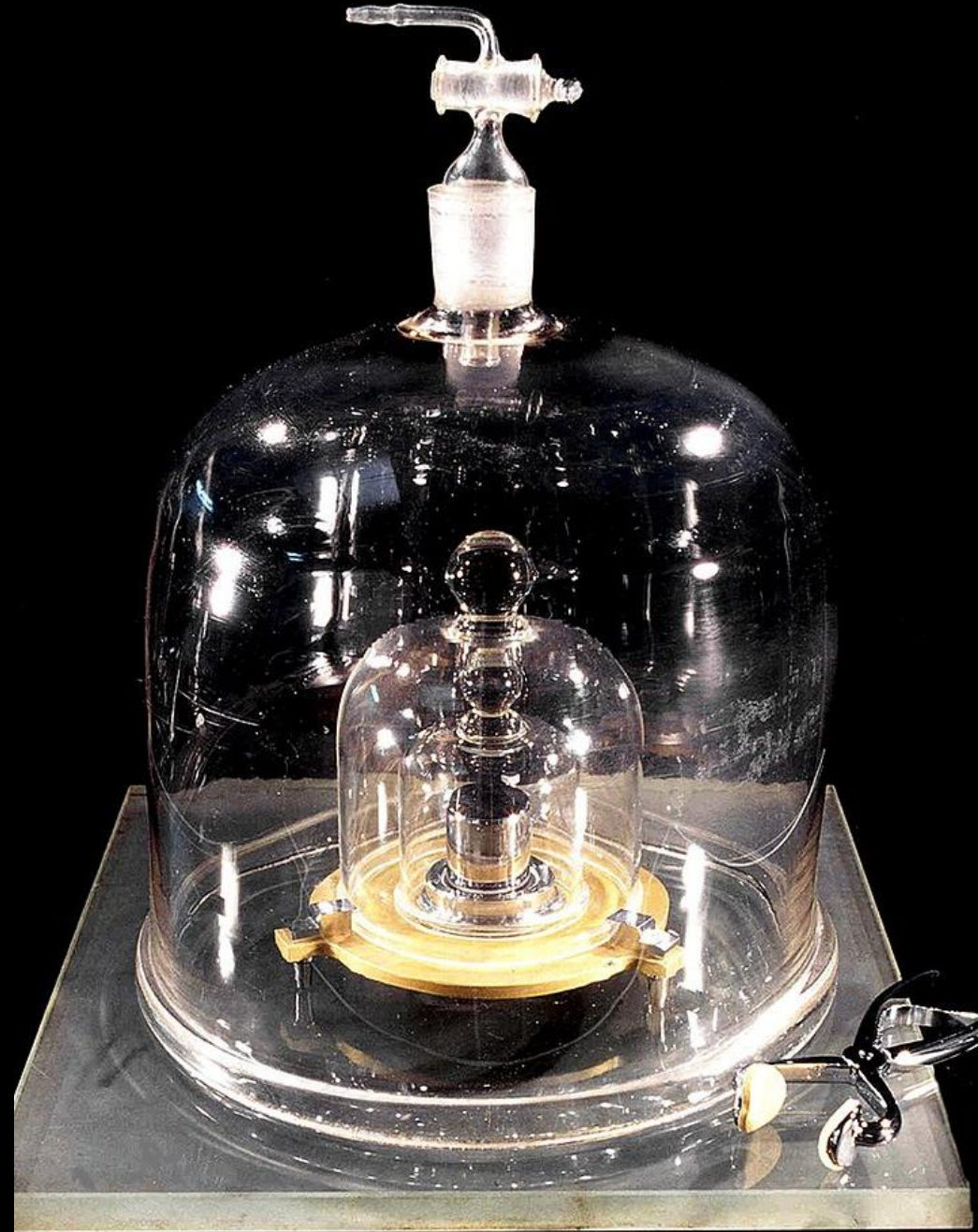
2023-06-15 Mattias Sällström

Interoperability

the ability of computer systems or software to exchange
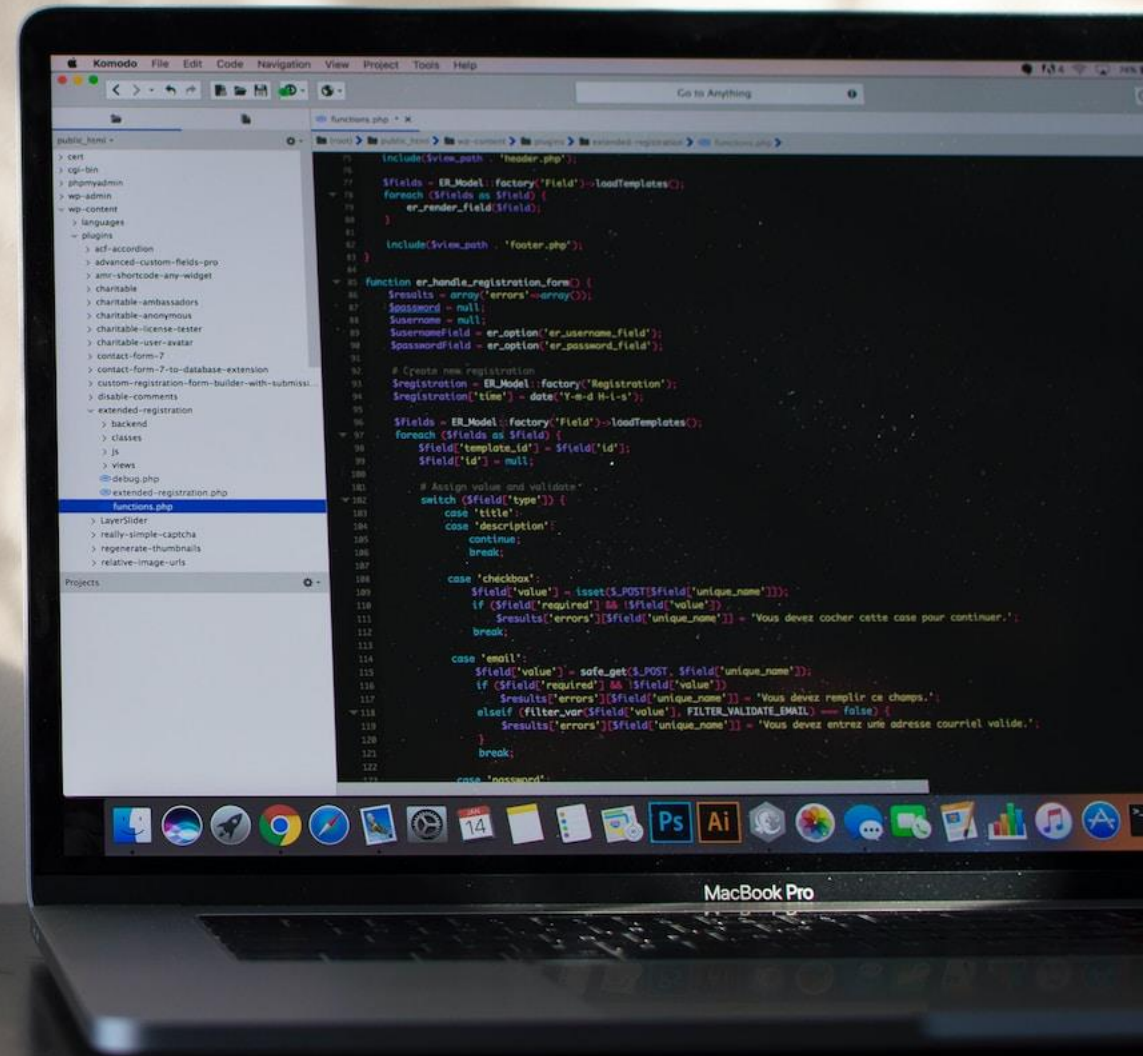and make use of information

Standardization

A common language that both parties
understand and can exchange information with

Mattias Sällström

- National Admission System

- Ladok, National Student Information System

- Involved in the Edu-API standardization

Business Agility

- Flexibility is off essence!
    - new needs or regulations
    - requirements for new tools
    - public procurement acts force us to switch suppliers
- In order to support business change, we need to change processes and system support
- In order to change, we need to control integration
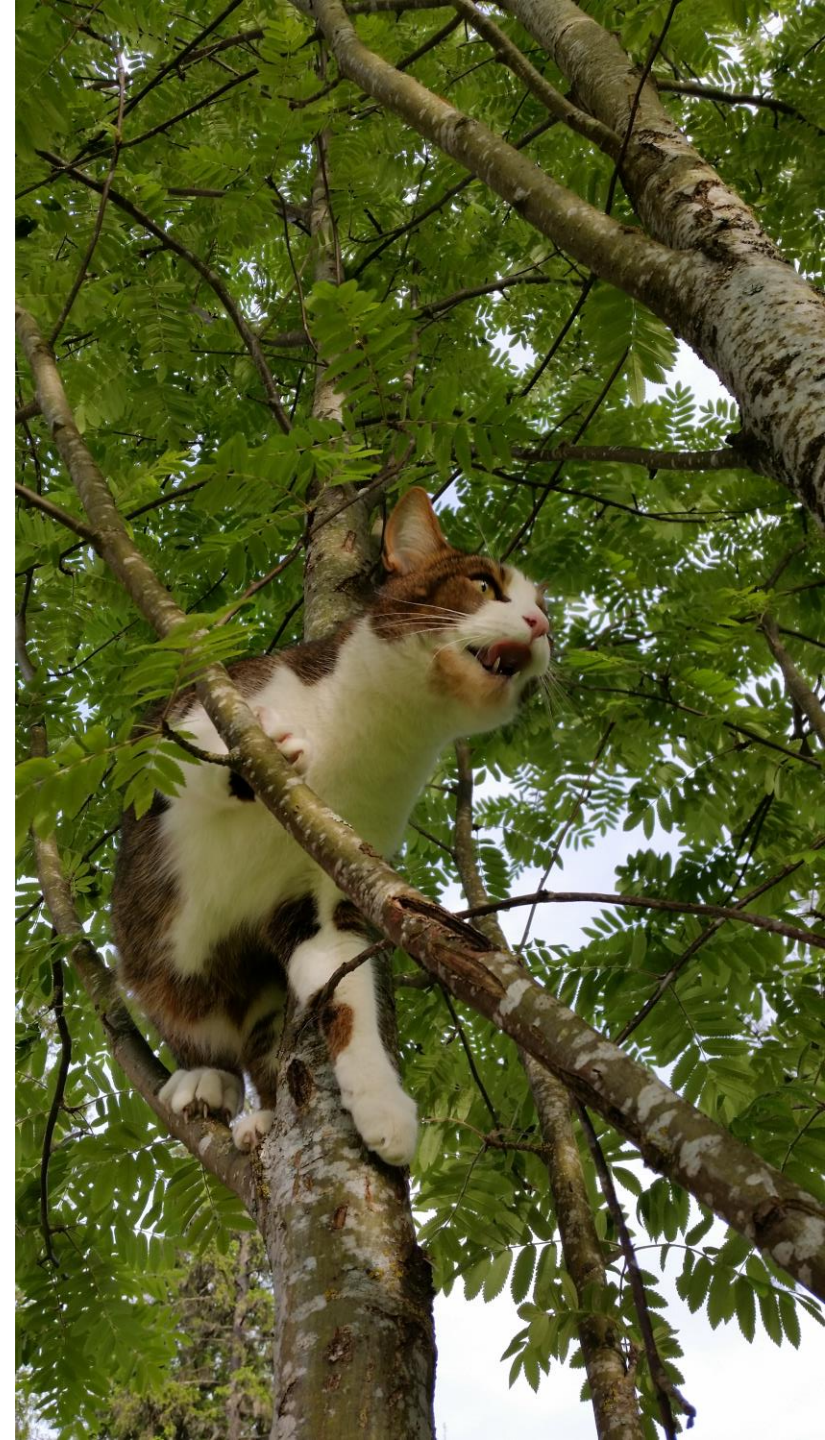
A better learning environment
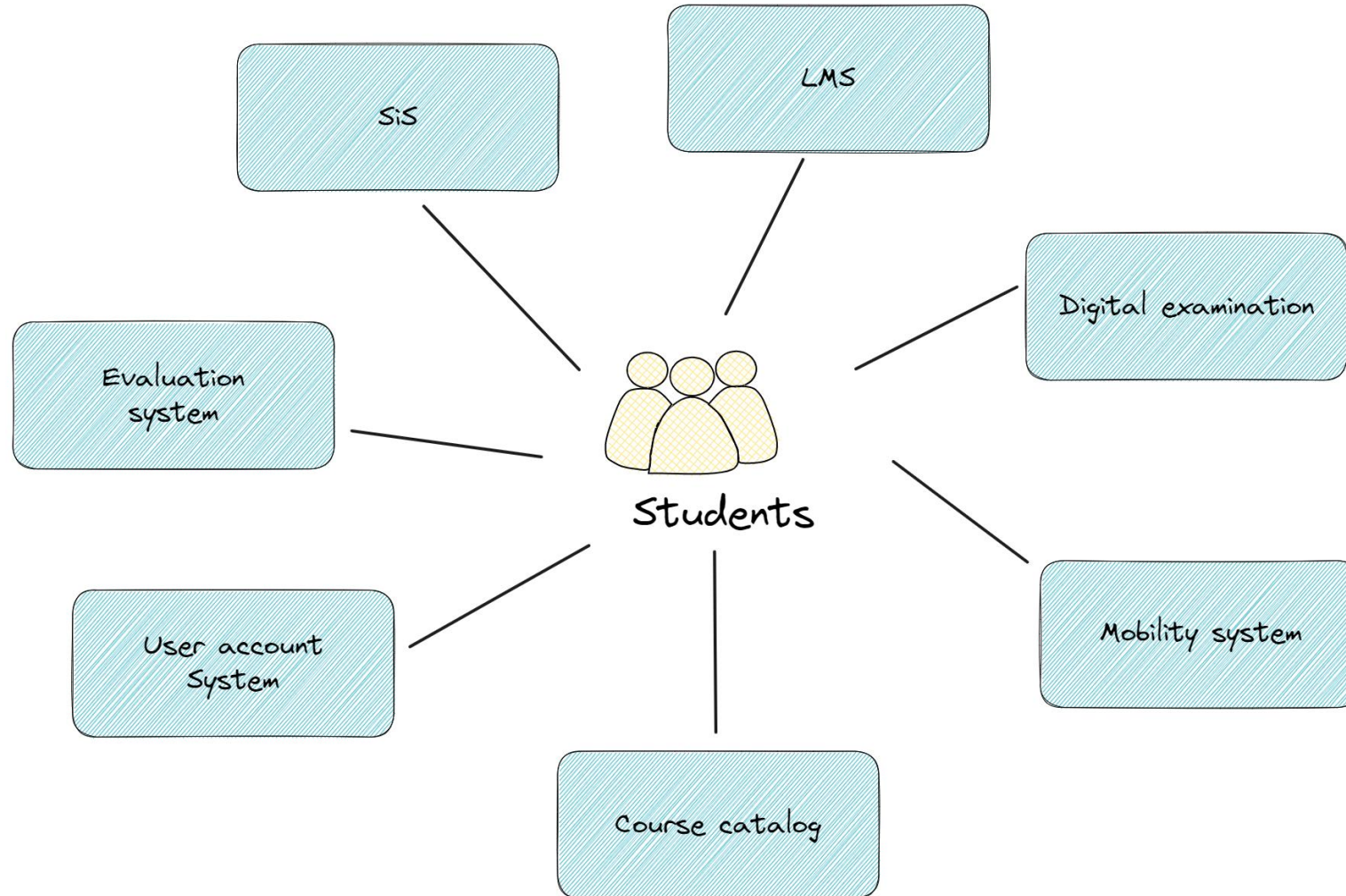
A better learning environment

- Correct information over many system

- Smooth transition between systems

- Common language between systems

Ladok

Efficient and cost effective

- Standards increase portability

- Requirement in procurement process

- Configuration of new integrations

- Cooperation between universities

Ladok

No standard

Tailor made integration for each System

SiS

LMS

Digital examination

Mobility system

Ladok
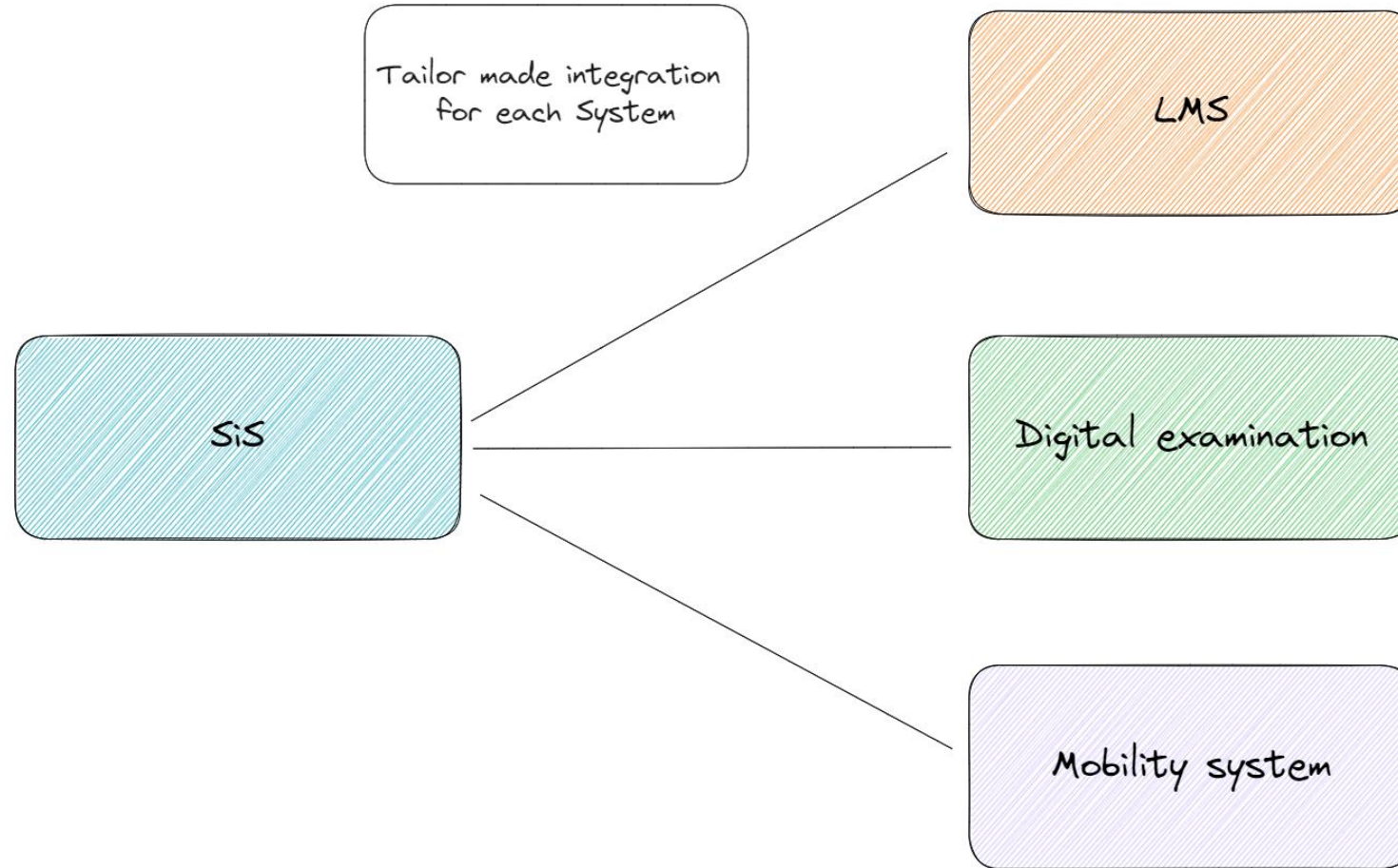
Working with a standard
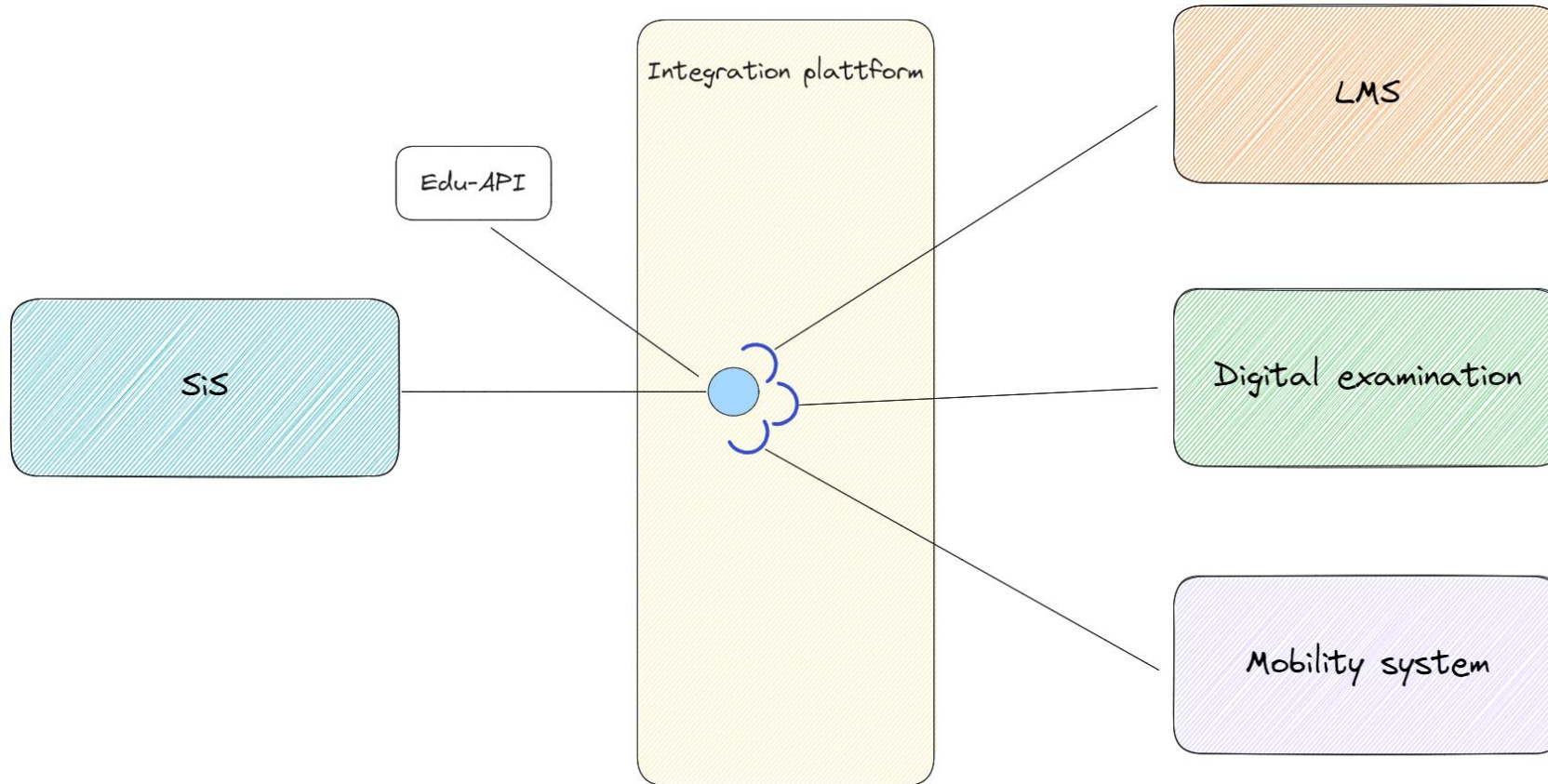
Synchronous communication

- A request and a response

- Direct communication

- Typically implemented with REST

Asynchronous communication

- A signal that something have happened

- Clients empties their mailbox

- Loosely coupled system

1EdTech Consortium

- LIS – Learning Information Services
- LTI – Learning Tools Interoperability
- QTI – Question & Test Interoperability

2010	2012	2014	2015	2016	2017	2018	2019	2020	
Learning Platforms	E-Assessment	Adaptive Curriculum	Learning Analytics	Learning Data	Learning Standards	Digital Credentials	Learning Platforms	Digital Credentials	Data Privacy
Learning Tools Interoperability® (LTI®) enables flexible, agile, and cost-effective learning environments	Question & Test Interoperability® (QTI®) revolutionizes digital assessment quality, cost, and scale	Thin Common Cartridge® dramatically increases granular content access, choice, and ease of integration	Caliper Analytics® is the first real-time, internet-scale semantic data model for digital learning activities	OneRoster® dramatically increases the scale and reduces the cost of integrating hundreds of edtech apps	Competencies and Academic Standards Exchange® (CASE®) opens up learning standards data	Open Badges 2.0 enables interoperability and credential value	LTI Advantage provides the foundation for the next-generation digital learning ecosystem	Comprehensive Learner Record (CLR) enables a cross-sector ecosystem of achievement as currency	TrustEd Apps™ enables trust and transparency between institutions and learning app providers

Ladok

LIS – Learning Information Services

is the definition of how systems manage the exchange of information that describes people, groups, memberships, courses and outcomes within the context of learning.

- Defines response to requests
- Supports REST and .csv

LIS in Sweden

- Created an LIS-adapter between Ladok and Canvas

- Part of Ladoks integration interface

- Generalized to handle other systems than Canvas

- Provides information from Ladok in LIS format

- Asynchronous communication
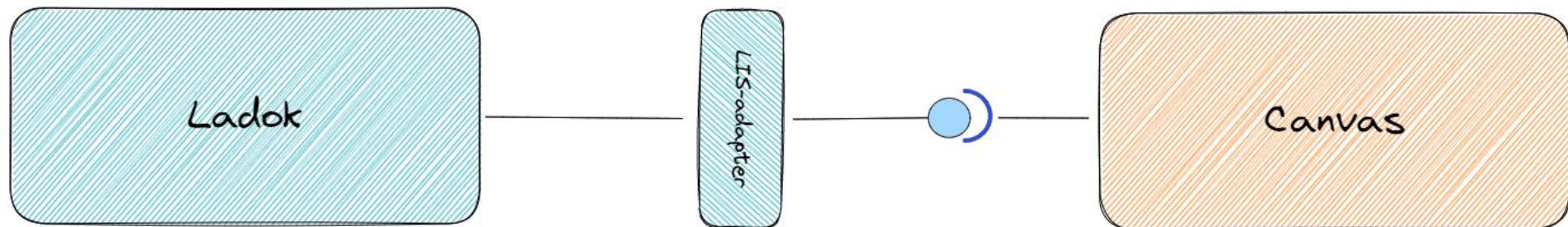
Applications

- LMS
- Business-based training
- Digital Examination
- Student mobility
- Schedule Manager
- Staffing planning
- Alumni system
- Digital archive
- …

Ladok

LIS – challenges

- Missing some attributes for Swedish Universities

- Limited functionality for extension

- No support for asynchronous communications
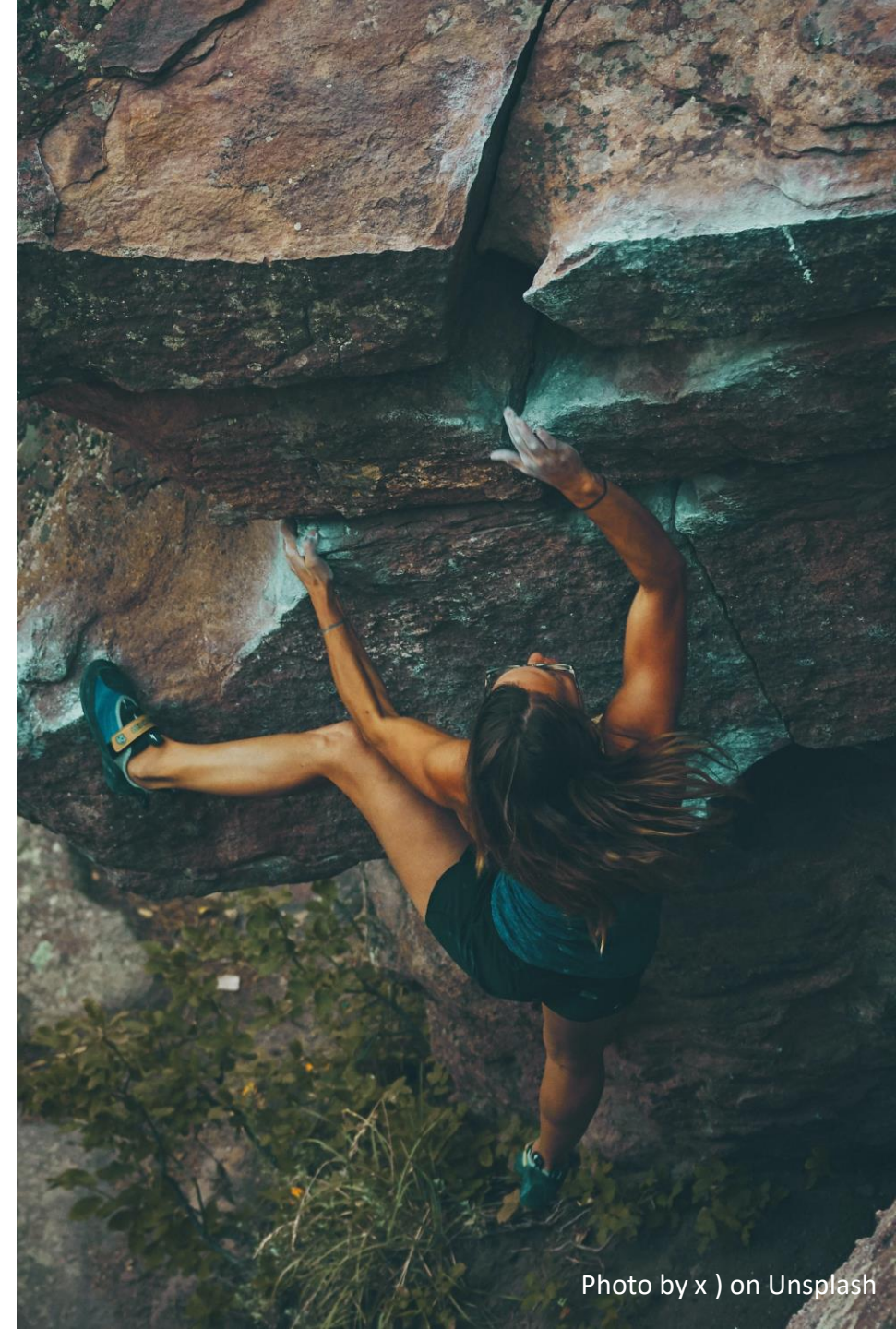
Edu-API

- Meeting the needs of education interoperability

- Future-proofing the solution to ensure long-term sustainability and value.

- Focuses on the payload - emission, not transmission

- Standardized exchange of data

- Not tied to a singular technology platform

- Building on LIS and experience from OneRoster and LTI

Edu-API – Sweden's contribution

- Working with the information model

- Proof of concept – mapping information from Ladok to Edu-API messages

- Identities vs. Code – Organization & Academic Session

- Localization framework

- Asynchronous communication with pub/sub

Edu-API – what's next?

- Candidate final
    - There are issues to solve or decide on
- Certification process
- Implement the specification in order to get certified
- Result and degrees in future versions

Education Templates

CollectionTemplate
- SourcedID
- Organization
- CollectionType
- Children

CourseTemplate
- SourcedID
- Organization
- CourseType
- Parent
- Children

ComponentTemplate
- SourcedID
- Organization
- CollectionType

Comprise (CollectionTemplate — CourseTemplate)
Comprise (CourseTemplate — ComponentTemplate)

Education Templates represent canonical, non-instantiated versions of educational units.

Org
- SourcedID
- Name
- Organization Type
- Parent
- Children

Defines
Offers
Hierarchy

Instantiates

CollectionOffering
- SourcedID
- Organization
- CollectionType
- Children
- Start Date
- End Date

CourseOffering
- SourcedID
- Organization
- CourseType
- Parent
- Children
- StartDate
- EndDate

ComponentOffering
- SourcedID
- Organization
- ComponentType
- StartDate
- EdDate

Comprise (CollectionOffering — CourseOffering)
Comprise (CourseOffering — ComponentOffering)

Education offerings instantiate education templates by binding them to dates/times/locations. Education offerings serve as Edu-APIs the enrollable objects.

Affiliation
- Role
- Organization
- StartDate
- EndDate
- AffiliationStatus

AcademicSession
- SourcedID
- Organization
- SessionType
- Parent
- Children
- StartDate
- EndDate

Educational Offerings happen within an Academic Session. An example of Academic Sessions would be a semester or term.

Contains
Enrolled on

Person
- SourcedID
- Name
- CollectionType
- Children
- Start Date
- End Date

Enrollment
- SourcedID
- Person
- EnrollmentStatus
- educationOffering
- Start Date
- End Date
- Role

Enrolled in

An Edu-API Person can be enrolled in any number of offerings. Examples include from Degree programs (collections), Biology 101 (course), and Biology 101 Labs (components).

Legend
- One — |
- Many — <
- One (and only one) — ||
- Zero or one — O|
- One or many — |<
- Zero or many — O<

Workshop - goals

- get an understanding how Edu-API can help in your local environment

- get an understanding how Edu-API maps to your information model

Workshop - instructions

- Groups of 4-5 as you are sitting

- Take notes on a flipchart page

Ladok

Workshop - questions

- Do you see any challenges with Edu-API in your local environment?

- What advantages do you see with Edu-API

- Are there use cases not covered by the model/api

- What do you see as shortcomings and areas for improvement in the model?

- Do you have a case for moving from synchronous to asynchronous communication?