

Digital assessment

A National coordination project

Freddy Barstad, National coordinator Digital Assessment, eCampus UNINETT

Bernt Smilden, Special Advisor, The Norwegian Business School

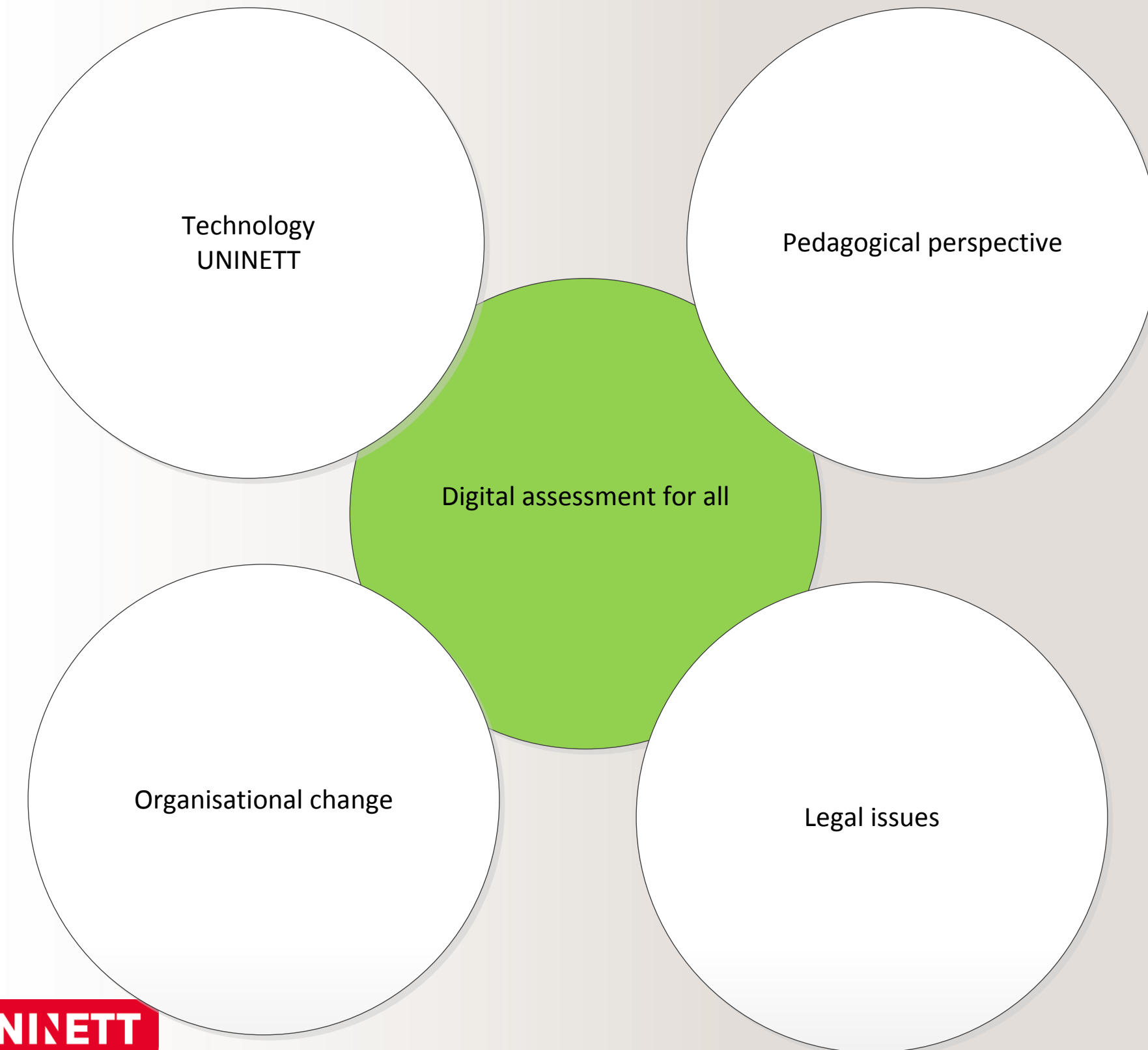
etlf workshop at EUNIS conference

Dundee, 2015-06-07

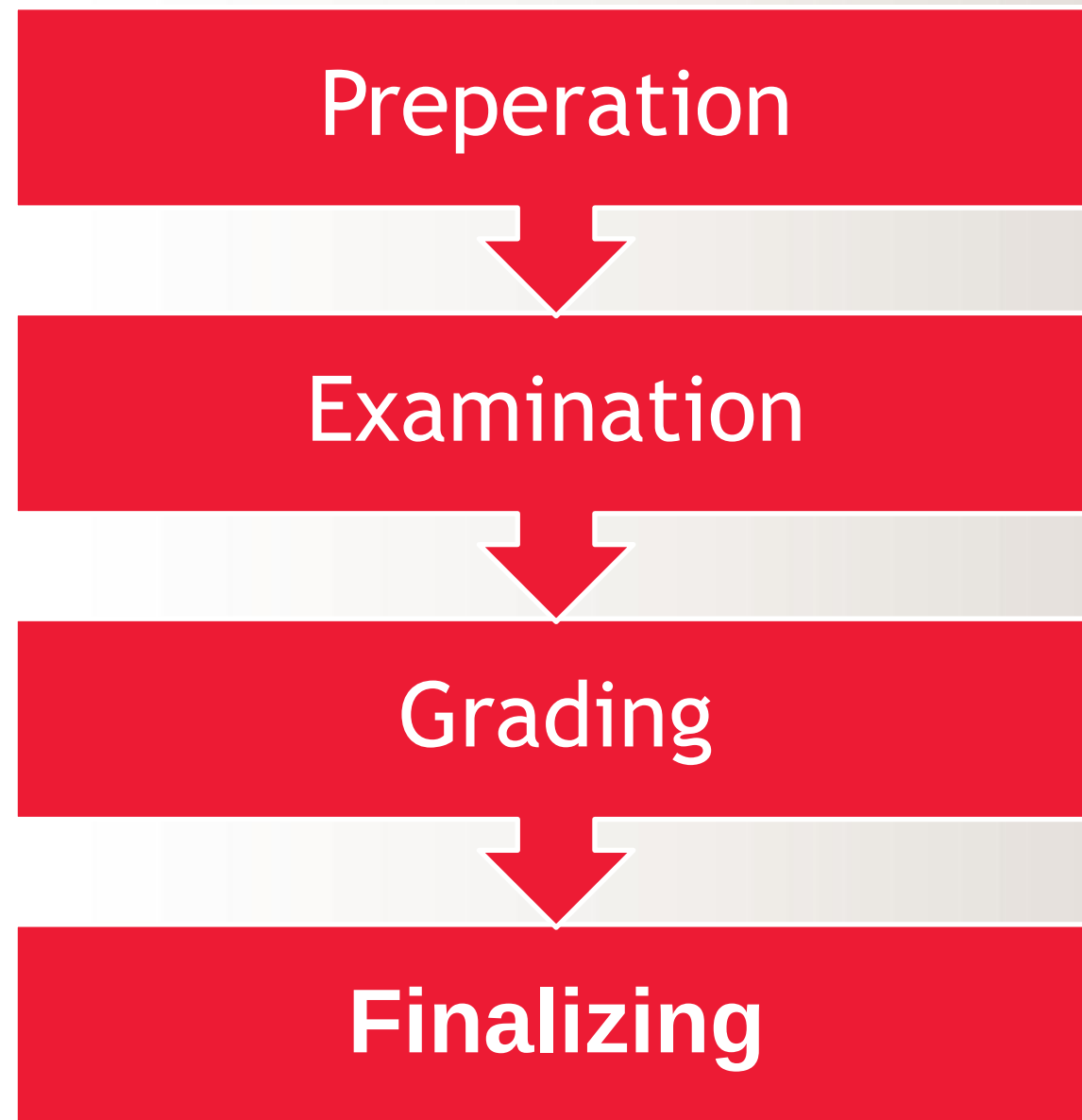
The UNINETT logo is a red rectangular button with the word "UNINETT" in white, bold, uppercase letters. The background of the slide features a large, stylized geometric graphic on the right side, composed of several triangles in shades of pink and red, creating a 3D effect.

UNINETT

Digital assessment as a whole



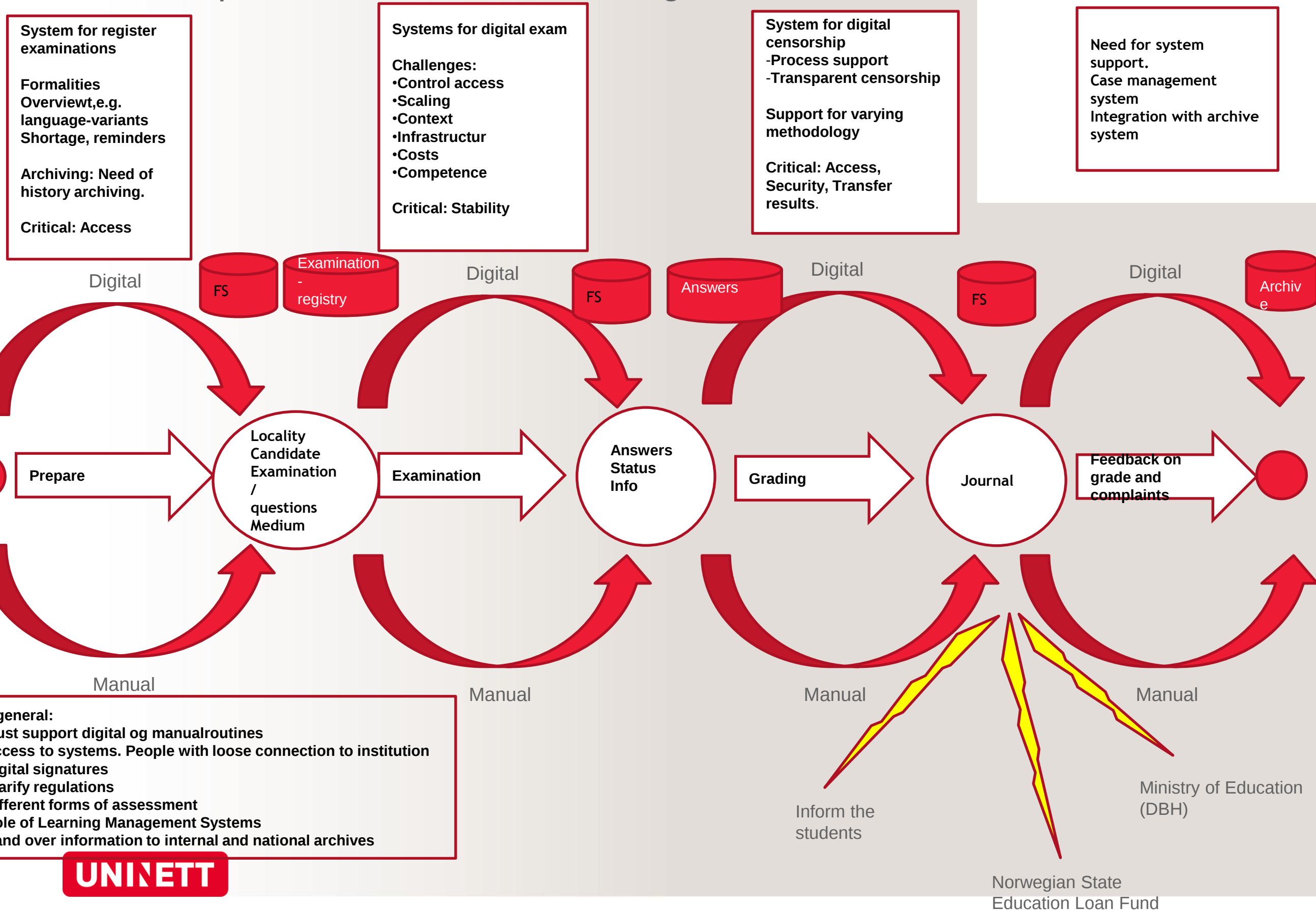
Assessment process



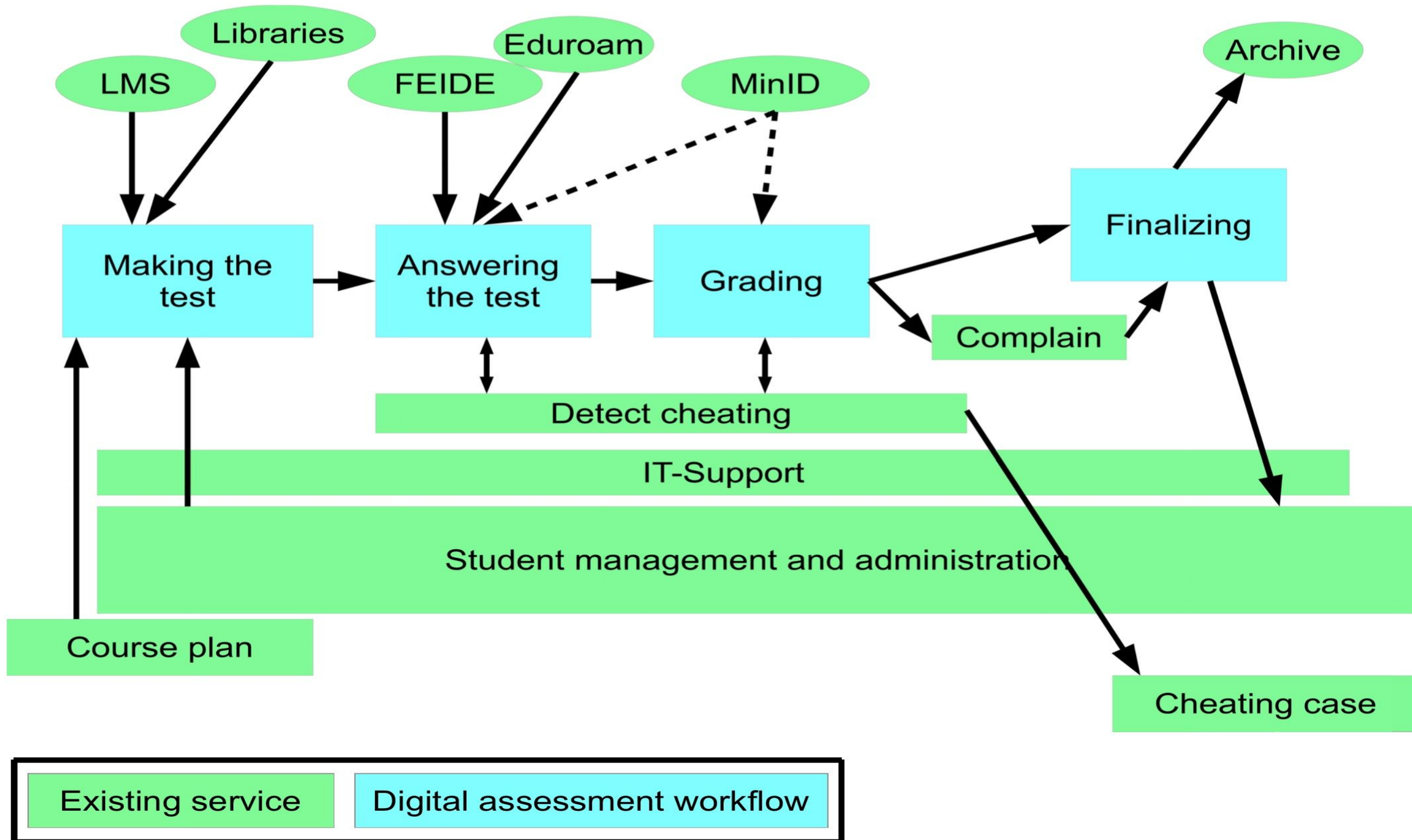
UNINETT



Assessment process: From manual to digital routines



What is Digital Assessment?



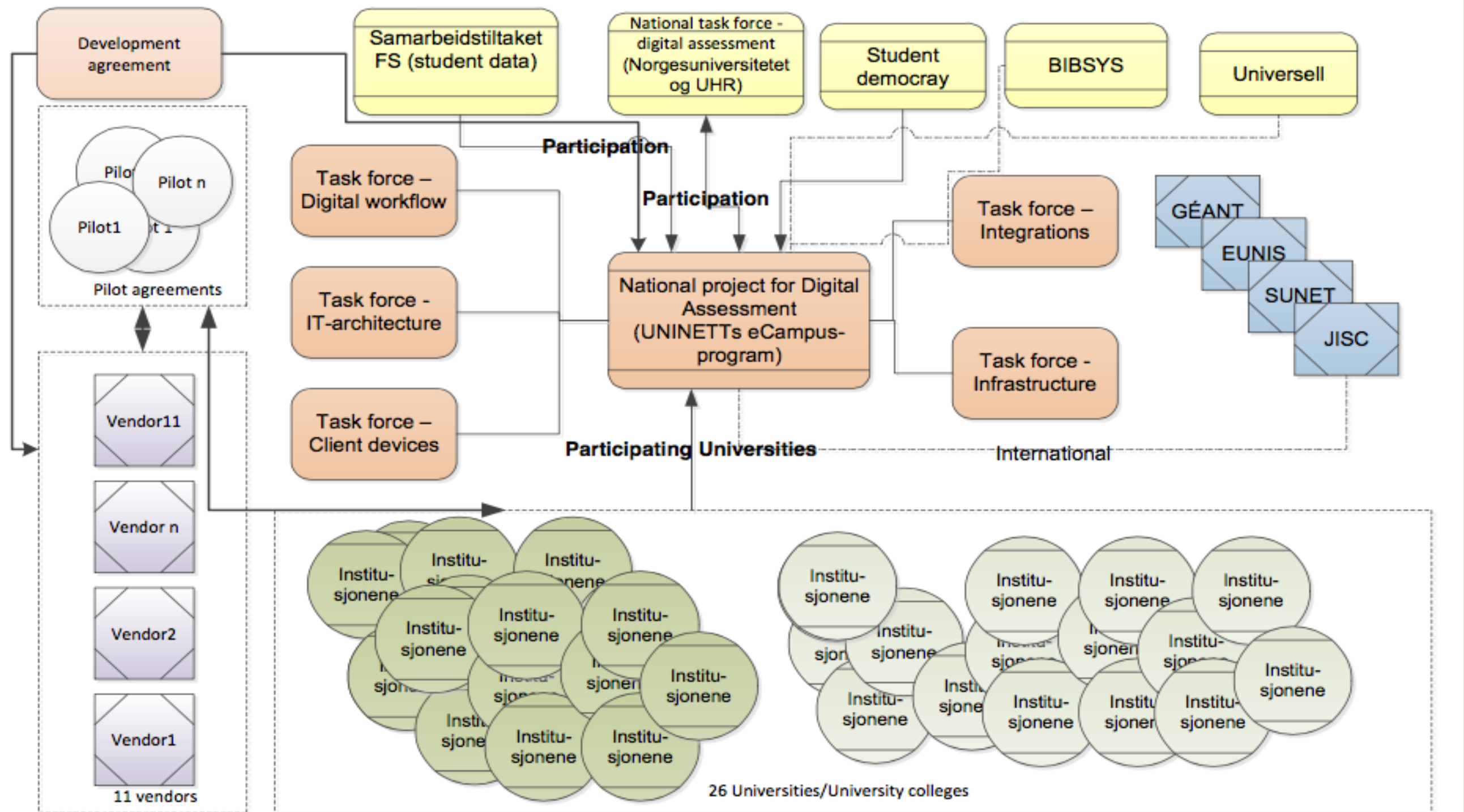
Why Digital Assessment project?

- **Digital assessment is about working smarter**, moving from paper based assessment procedures to digital procedures, reducing the time and energy spent, and improving the quality of the old written assessments procedures.
- To change from paper-based procedures to digital procedures requires change in the **operations procedures** at the university, **the assessment regulations** at the university and the **perception or understanding of the assessment processes**, among both students and staff at the university.
- Students of today can't write by hand anymore, **they using PCs in their study, why can't they use PCs on exams?**
- **There is no turnkey product**, immature solutions from vendors, several promising solution but lacking features supporting workflow.

How is the Digital Assessment project organized?

- The digital assessment project, is a part of the eCampus program
- UNINETT has established a national project to ensure that students get access to digital examination.
- All universities and university colleges was invited to participate in the project.
- Created several working group, with participation from the universities.
- Lots of coordination of existing activity
- Facilitating exchange of experiences
- Writing specifications (CBP)

Project organization



Project deliveries

- Sharing knowledge
- Market development
- Pre-standardization descriptions (CBP-documents)
- Establish necessary infrastructure
- Prepare procurement(s)

Sharing knowledge

Seminar series; <https://www.uninett.no/digitaleksamen/arrangementer-om-digital-eksamen>

Web-site:

<https://www.uninett.no/digitaleksamen>

Participation: <https://www.uninett.no/digitaleksamen/nasjonal-prosjektgruppe-digital-eksamen>

Experience reporting:

<https://www.uninett.no/digitaleksamen/status-mars-2014>

International collaboration

[jisc](#) & [GEANT](#) & [EUNIS](#)(ELTF) & [SUNET](#)

Market development

- Pre-commercial Procurement (PCP)
- Dialog conference
- Vendors day at seminar

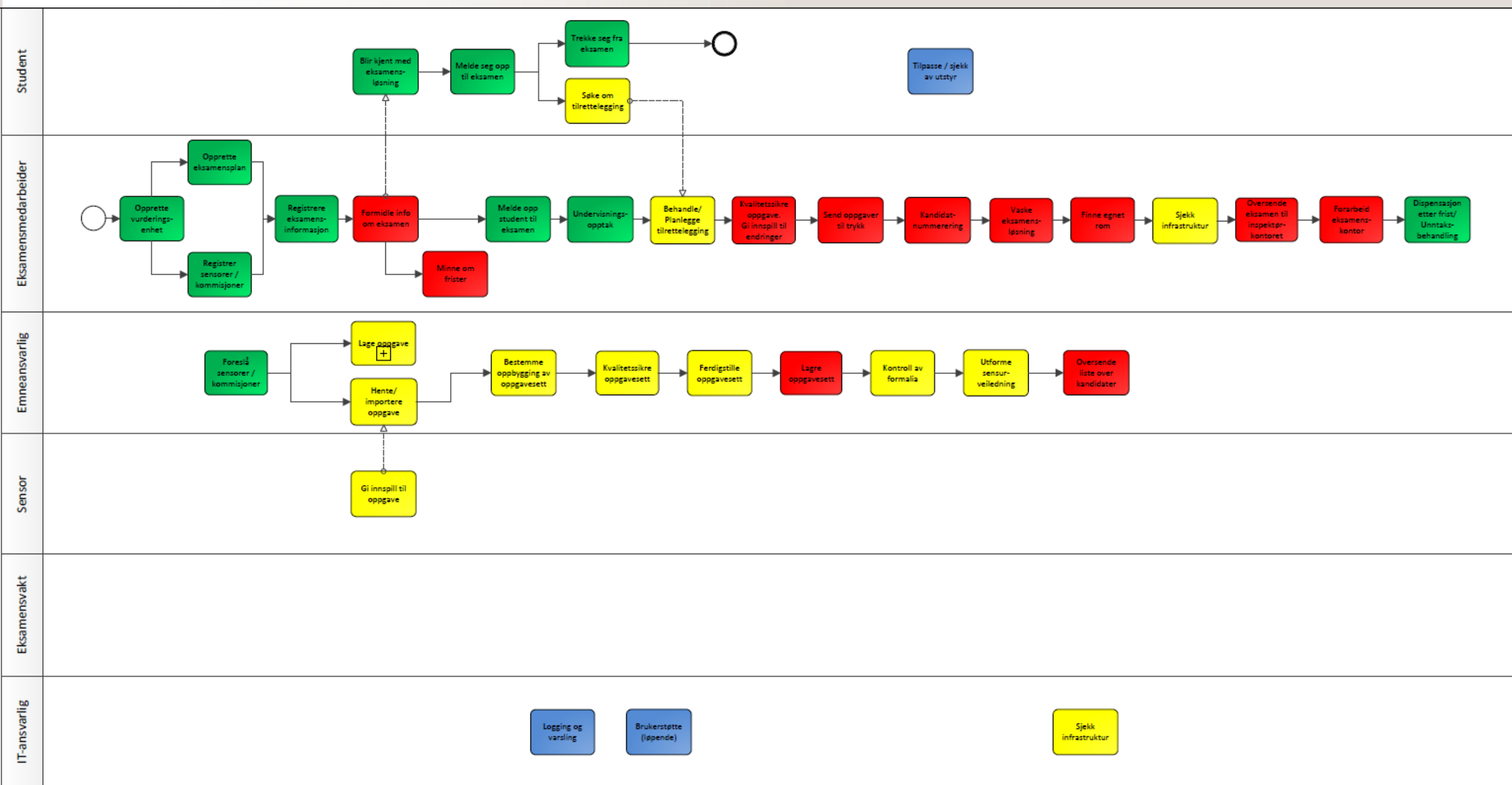
<https://www.uninett.no/seminar-om-digital-eksamen/leverand%C3%B8rer>

- Development agreements
- Sharing results
- Establish and testing integrations

Pre-standardization descriptions - CBP documents

- The digital assessment market is immature, we use Current Best Practice (CBP) documents, and other reports as pre-standardization descriptions to generate common understanding of needs and requirements for digital assessment.
- CBP documents gives us a common understanding of digital assessment, common definitions, and a common starting point for future work.
- CBP - Infrastructure ([Norwegian](#) / English)
- CBP - Integrations (both in september 2015)
- CBP - Client devices (Norwegian / English)
- CBP - Digital assessment process & IT-architecture (Norwegian / translated to English in June 2015)
- CBP - Logging and monitoring in digital assessment

Workflow analysis



Fargekoder:



Som i dag



Endret
(f.eks. digitalisert)

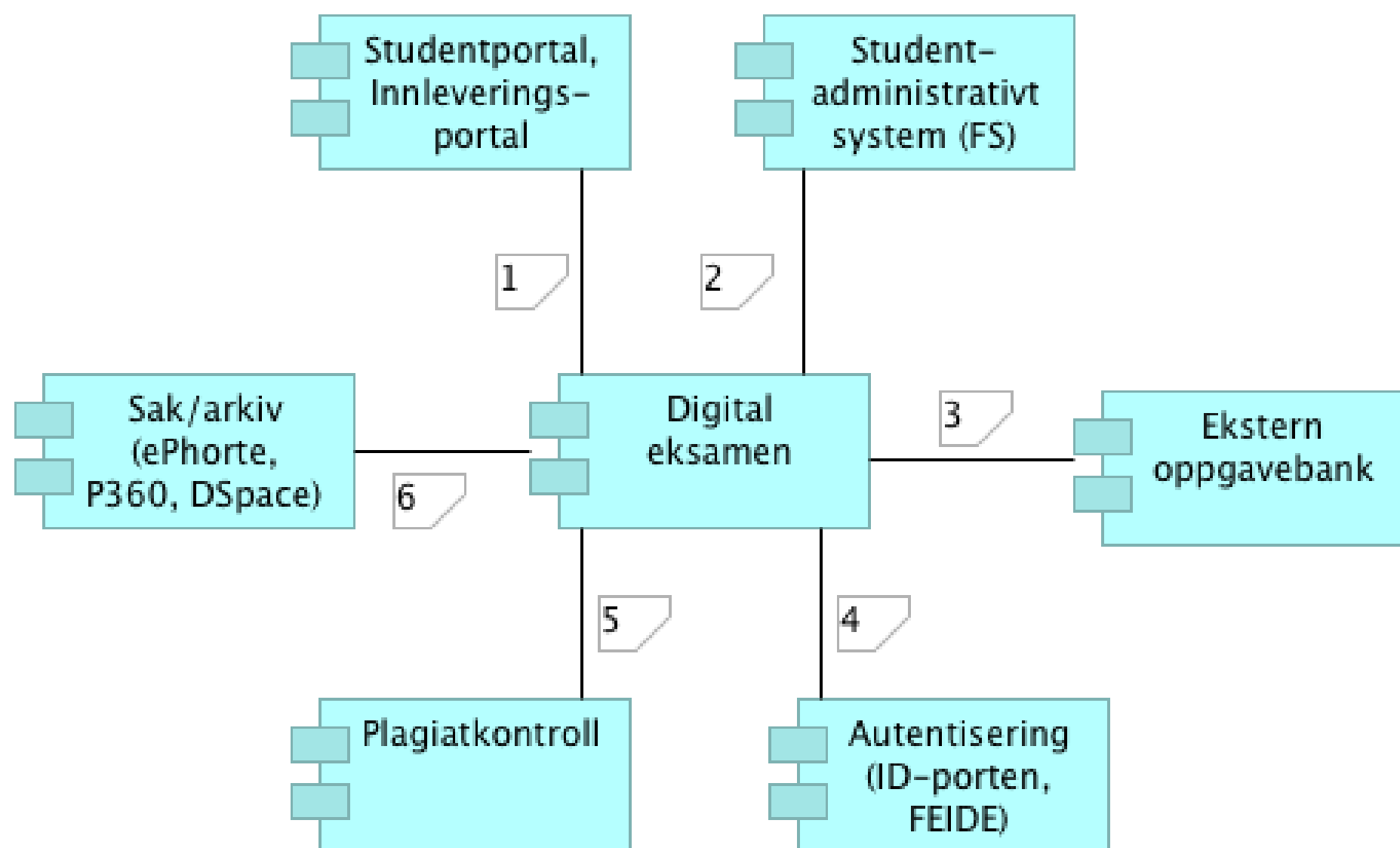


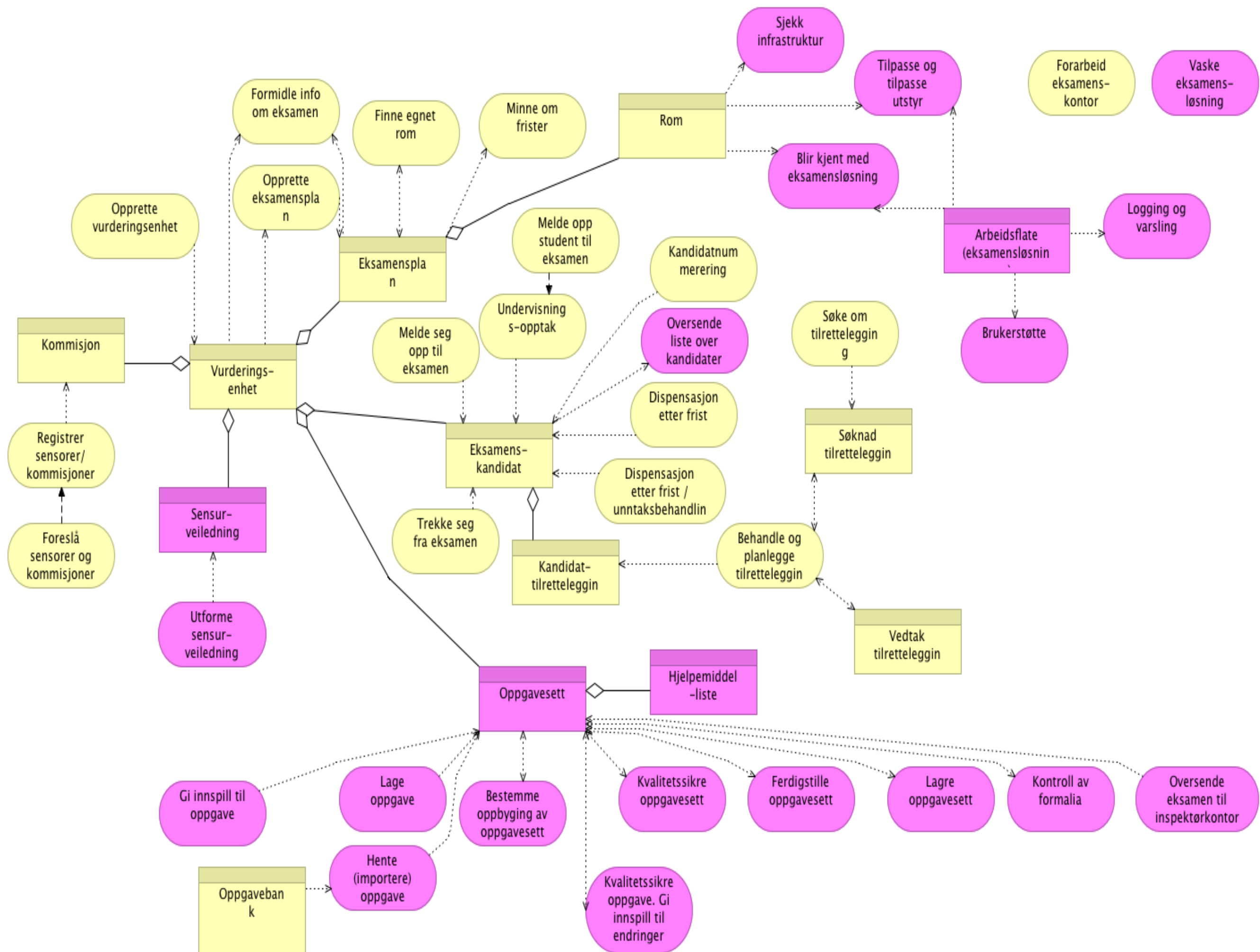
Utgår
(f.eks. automatisert)



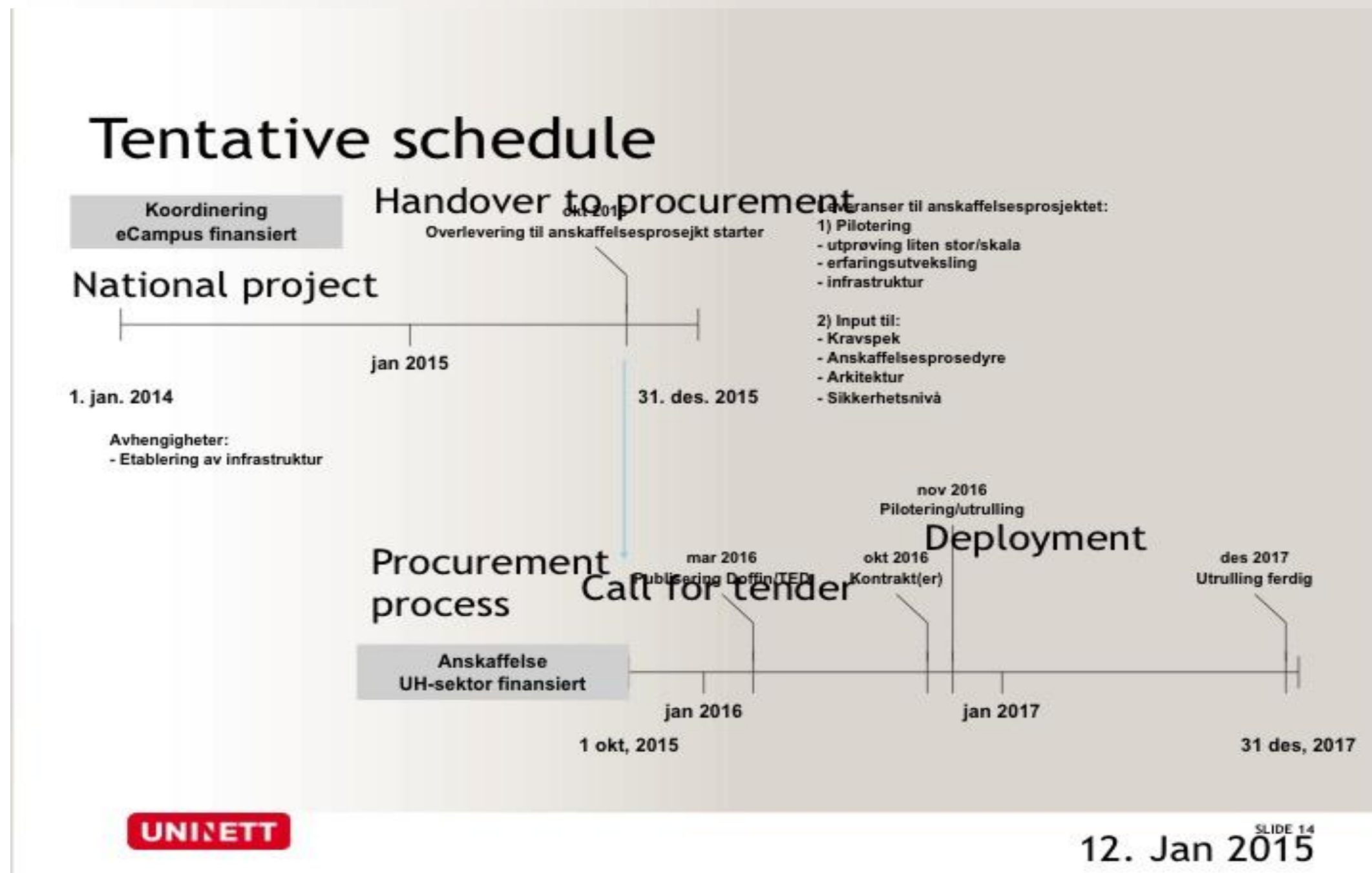
Ny aktivitet

Applikasjonskart





Prepare procurement(s)



National Norwegian architecture for digital summative assessments

Bernt Smilden, Norwegian Business School



UNINETT



Agenda

- Drivers
- Scope of architecture
- Methods and inspirations to the approach
- The architecture work
- Further work

Drivers

- Technology drive
- Political drive for mergers
- Common legal regulations
 - Legal aspects of digital summative assessments
- Requirement for equal treatment
- Drive towards self service => digitalization of services
- Bologna-process, ECTS
- Shared learning objectives
 - National plans for learning
 - National exams
- Collaboration on curriculum
- Shared use of data across the sector

The drivers put heavy requirements BOTH to business and IT!

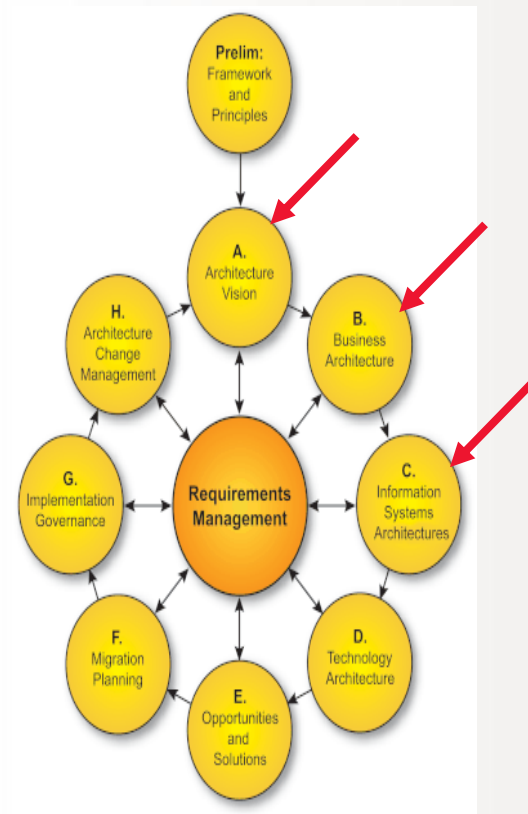
Scope of the reference architecture work



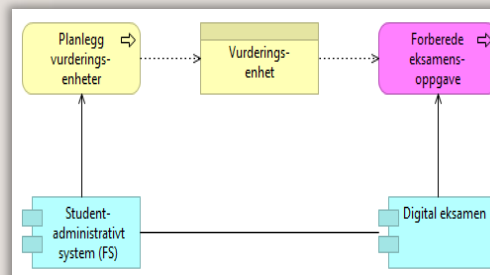
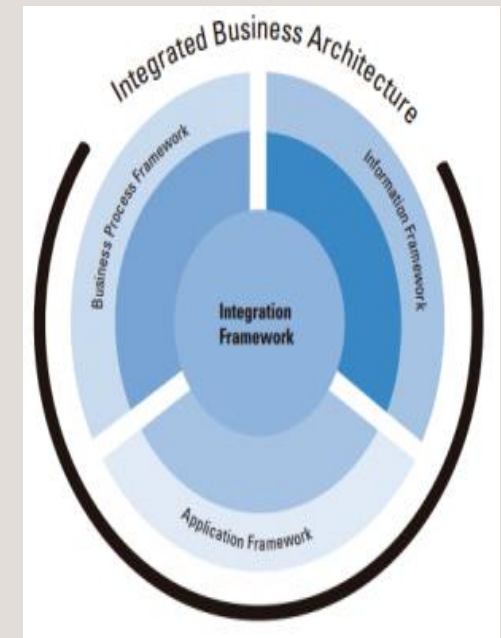
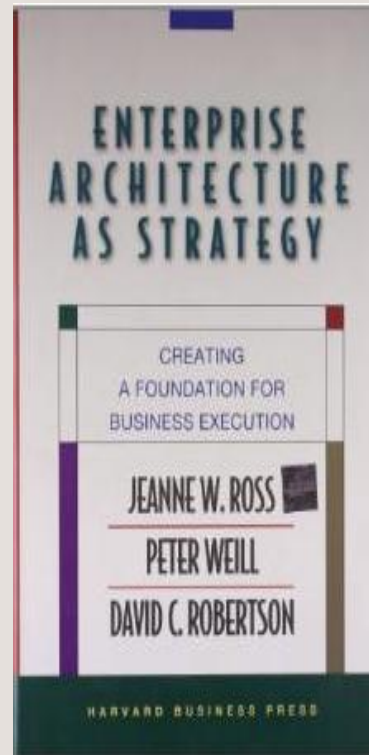
A word cloud illustrating the scope of reference architecture work. The words are arranged in a circular pattern, with 'Business' and 'Academic' being the largest. Other prominent words include 'Exam-forms', 'Standardisation', 'Project-planning', 'Project-execution', 'Infrastructure', 'Application-integration', 'Application-functionality', 'Application-landscape', 'Project-implementation', 'Processes', and 'Quality'.

Project-execution Infrastructure
Application-integration
Application-functionality
Project-planning **Business**
Exam-forms
Standardisation
Academic
Project-implementation
Application-landscape
Processes
Quality

Methods and inspirations to the approach

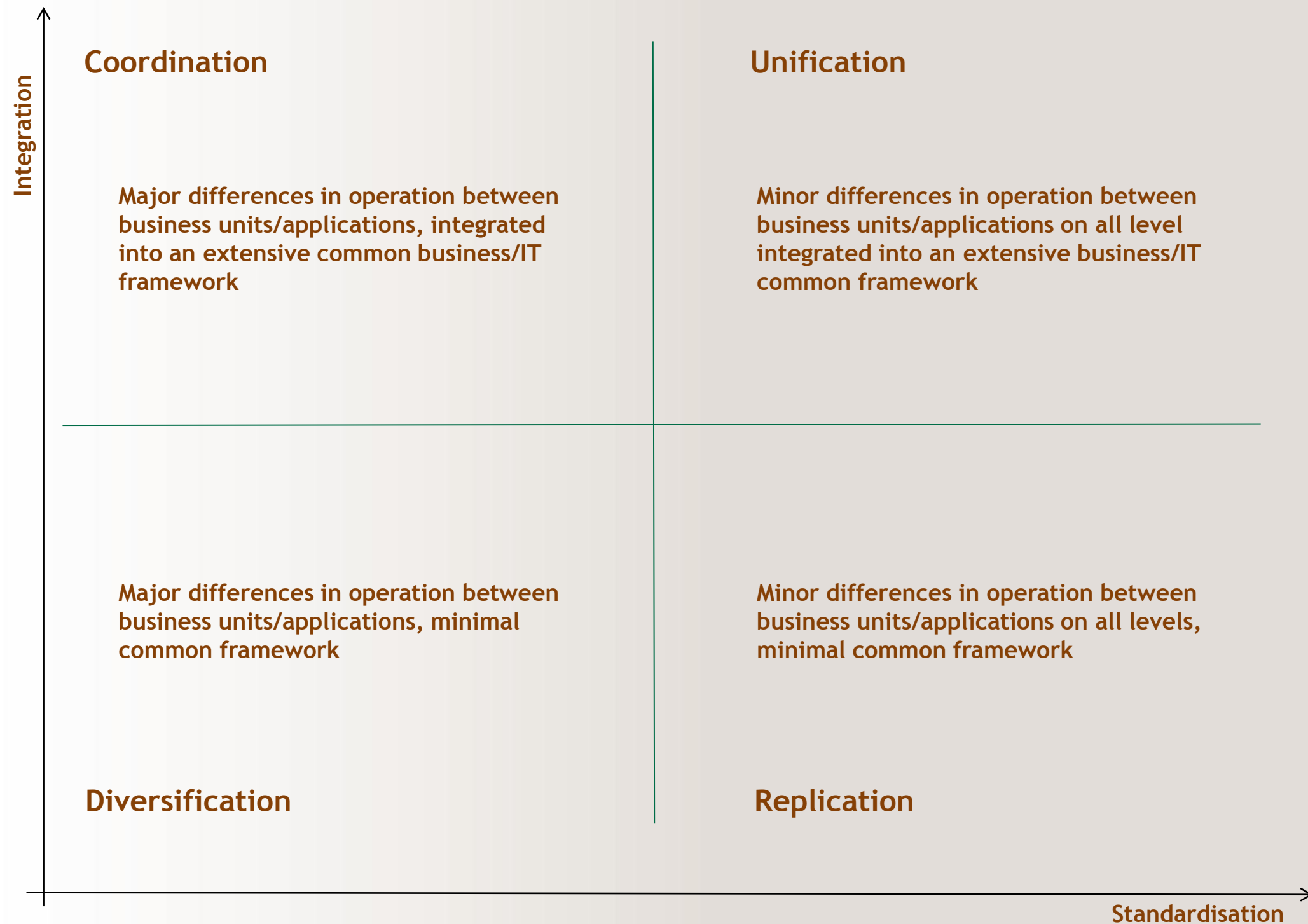


TOGAF® Architecture Development Method(ADM) from Open Group

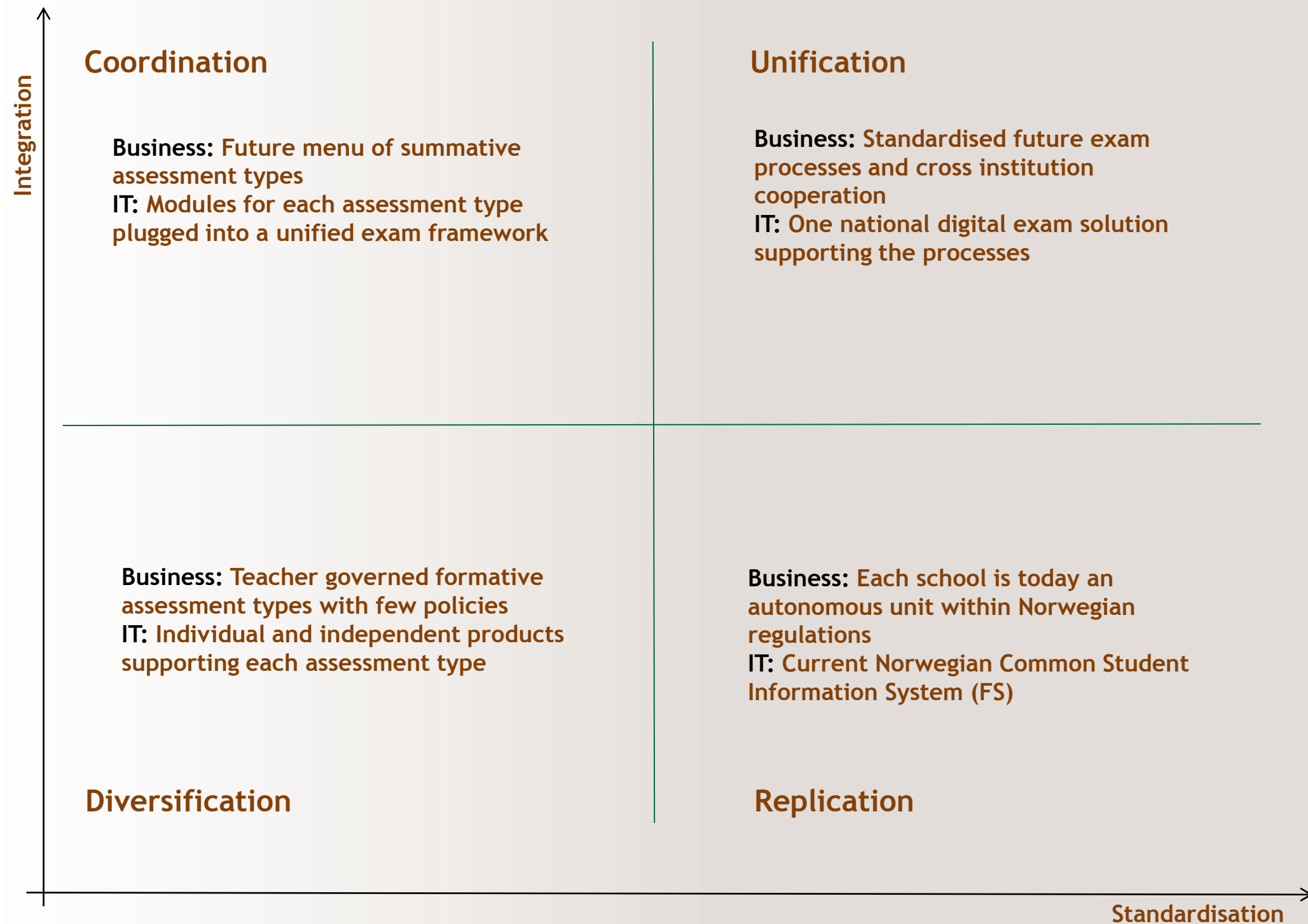


Archimate® from Open Group
Archi Enterprise Architecture tool

Standardisation and integration



Relevant examples and recommendations



Detailed aspects of the architecture

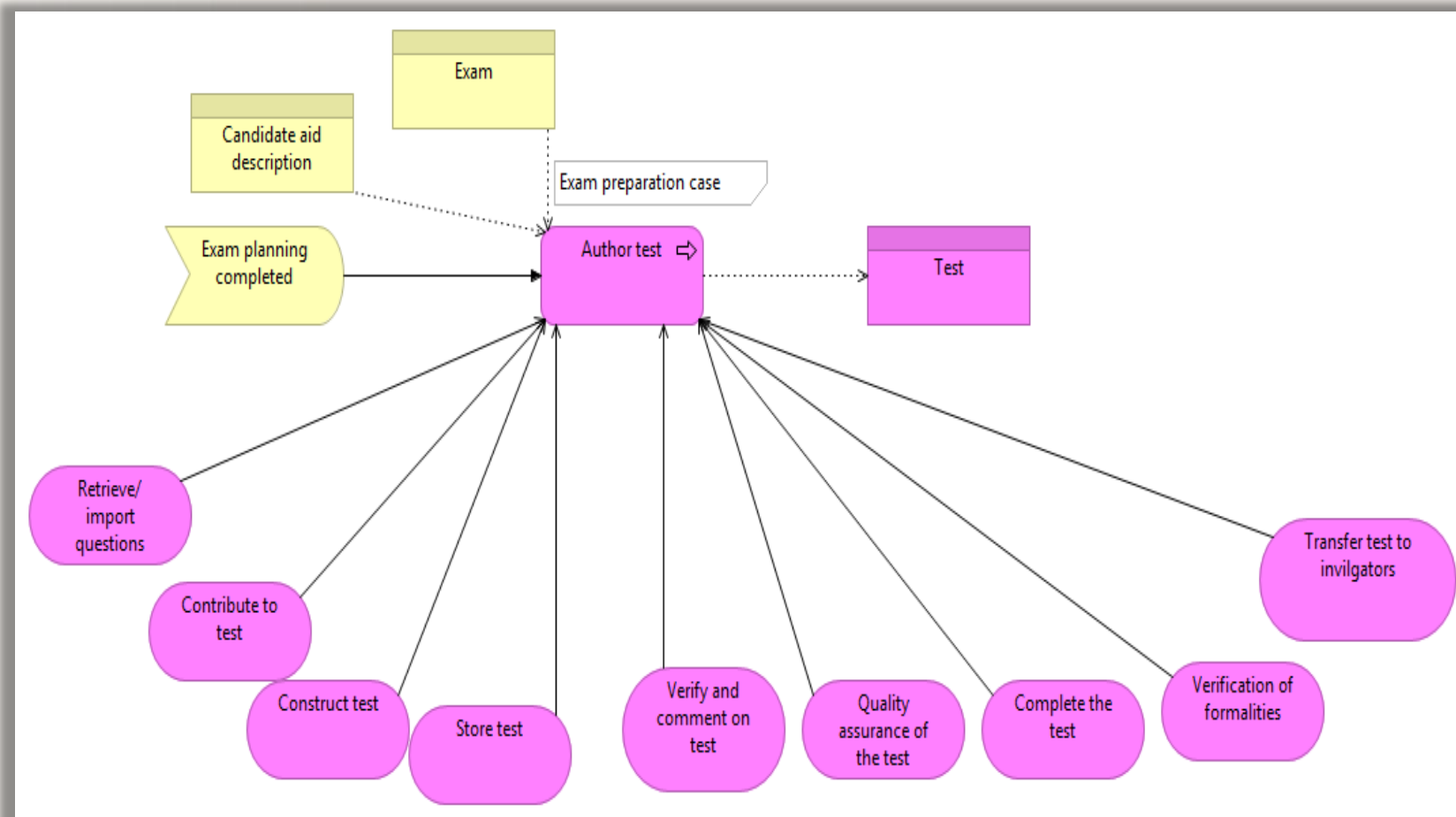
- Definition of specific processes
- Information systems that support the processes
- Information flows in and out of processes
- Information accessed by the processes/activities
- Information model
- The application landscape in the neighbourhood of a digital exam solution

Definition of processes

➤ Grouping of activities in specific processes characterised by:

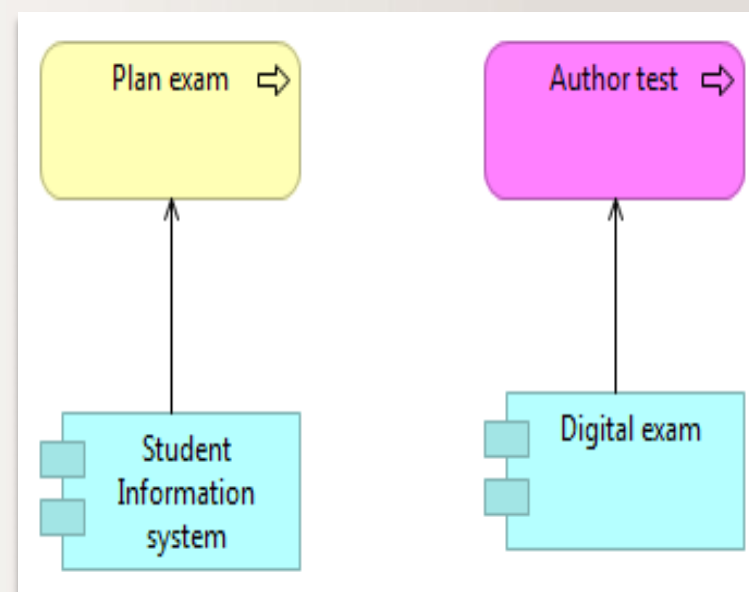
- Has a trigger
- Uses input covered by the information model
- Produces a result covered by the information model
- Has a well-defined case being the information carrier for a process instance
- Is significant enough to have a process manager with a follow-up responsibility

➤ Example: Author test



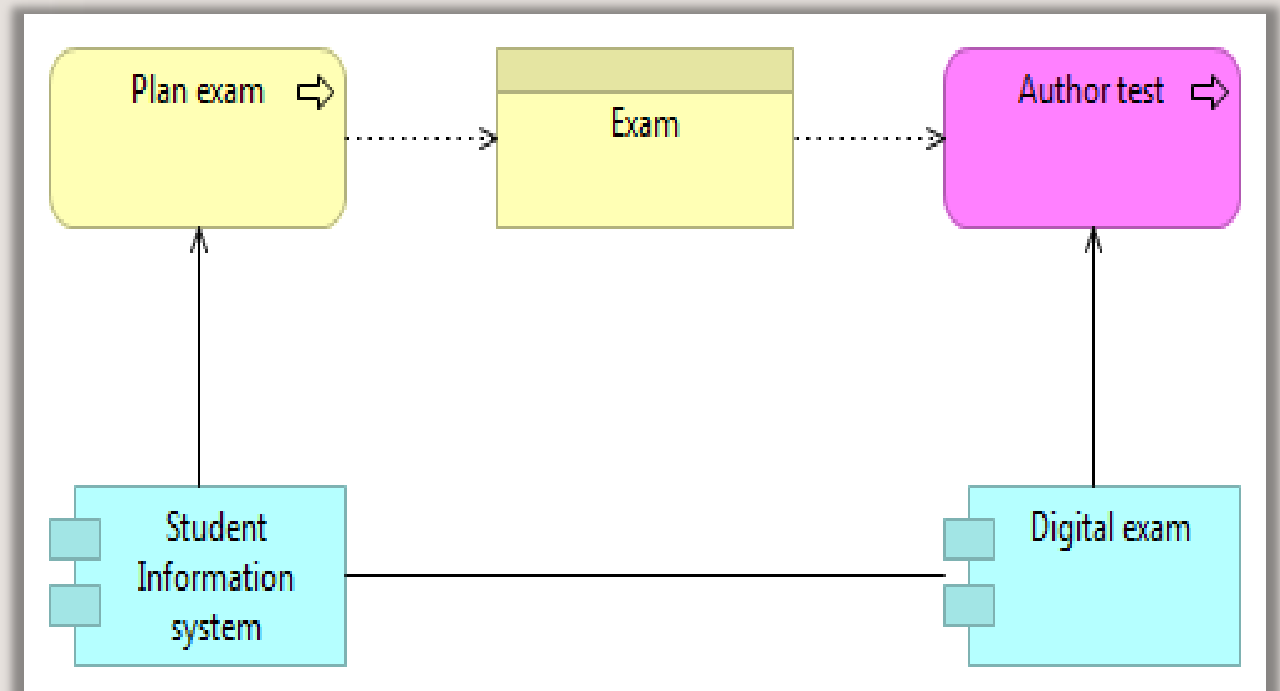
Applications supporting the processes

- Describes applications supporting the processes
- Defines the footprint for the digital exam solution
- High-level requirements to the digital exam solution - What work will the solution support
- Defines footprint for surrounding applications - new requirements?



Process input and output

- Describes the business' process integration, putting requirements to the integration between applications and the information to flow through the integration
- Describes the information formally
- Is a significant input to and verification of the completeness of the information model
- Example: Plan exam and Author test



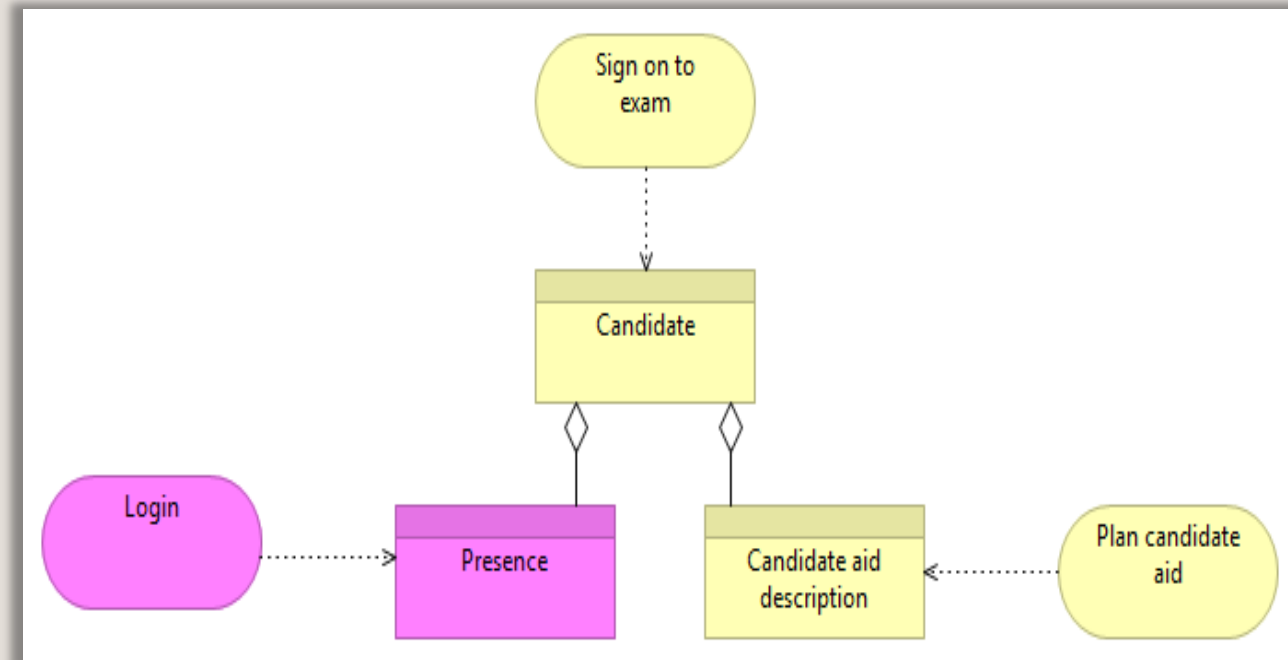
Information model

➤ Focus:

- Identify the information elements accessed by processes/activities
- Supports the description of information flow over interfaces
- Time aspect of information

➤ Later (not focus now)

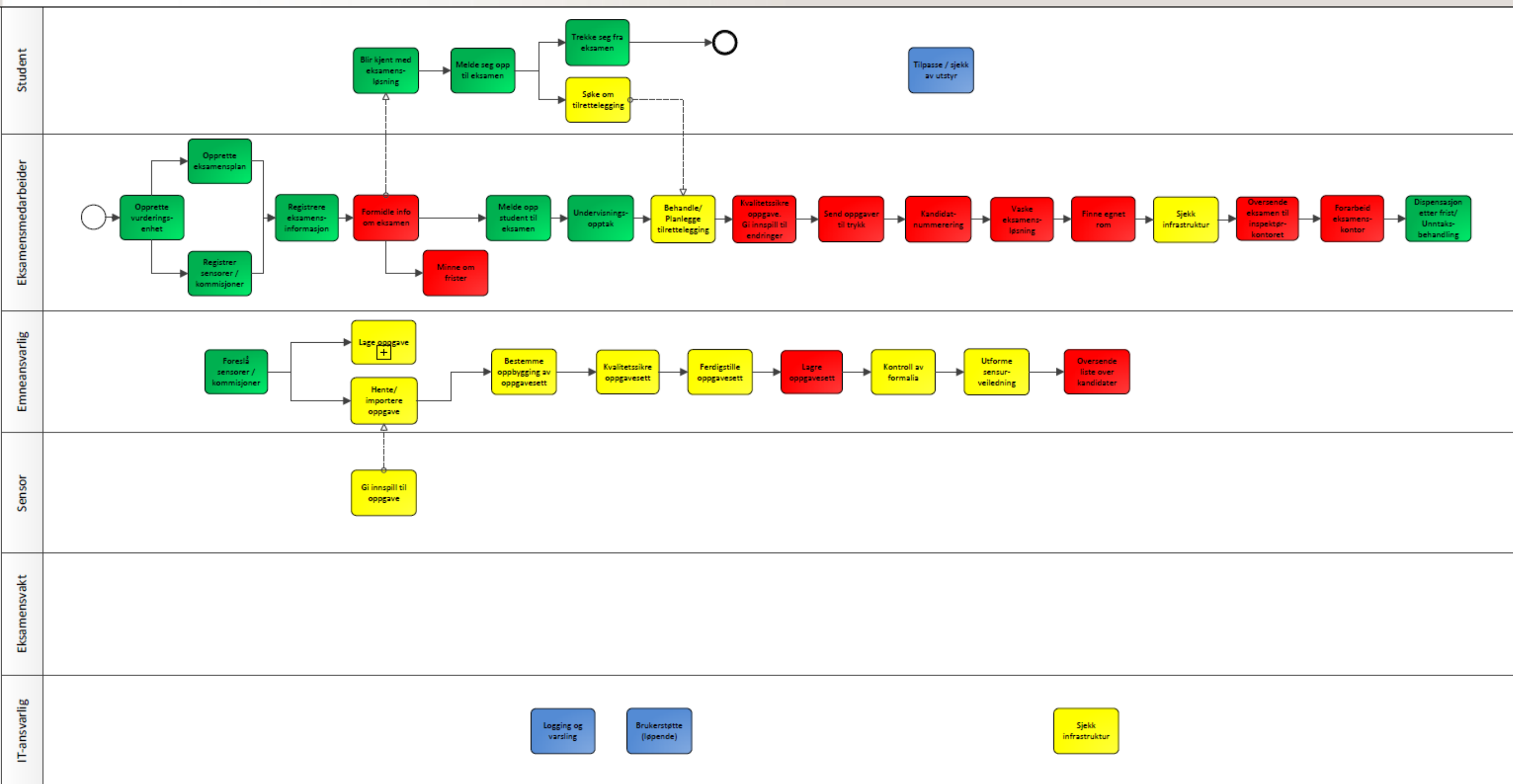
- Accurate entity relationships
- Detailed entities
- Field level
- Application of standards as solution components



➤ Example: Candidate/candidate special aid description/ presence:

- A candidate is created upon sign-on
- Candidate special aid description is created by the detailed exam planning
- Presence is created upon authentication of the candidate in the exam location
- There is a 1:1 relationship between these but they are still distinct information elements

Work flow analysis (Norwegian)



Fargekoder:



Som i dag



Endret
(f.eks. digitalisert)

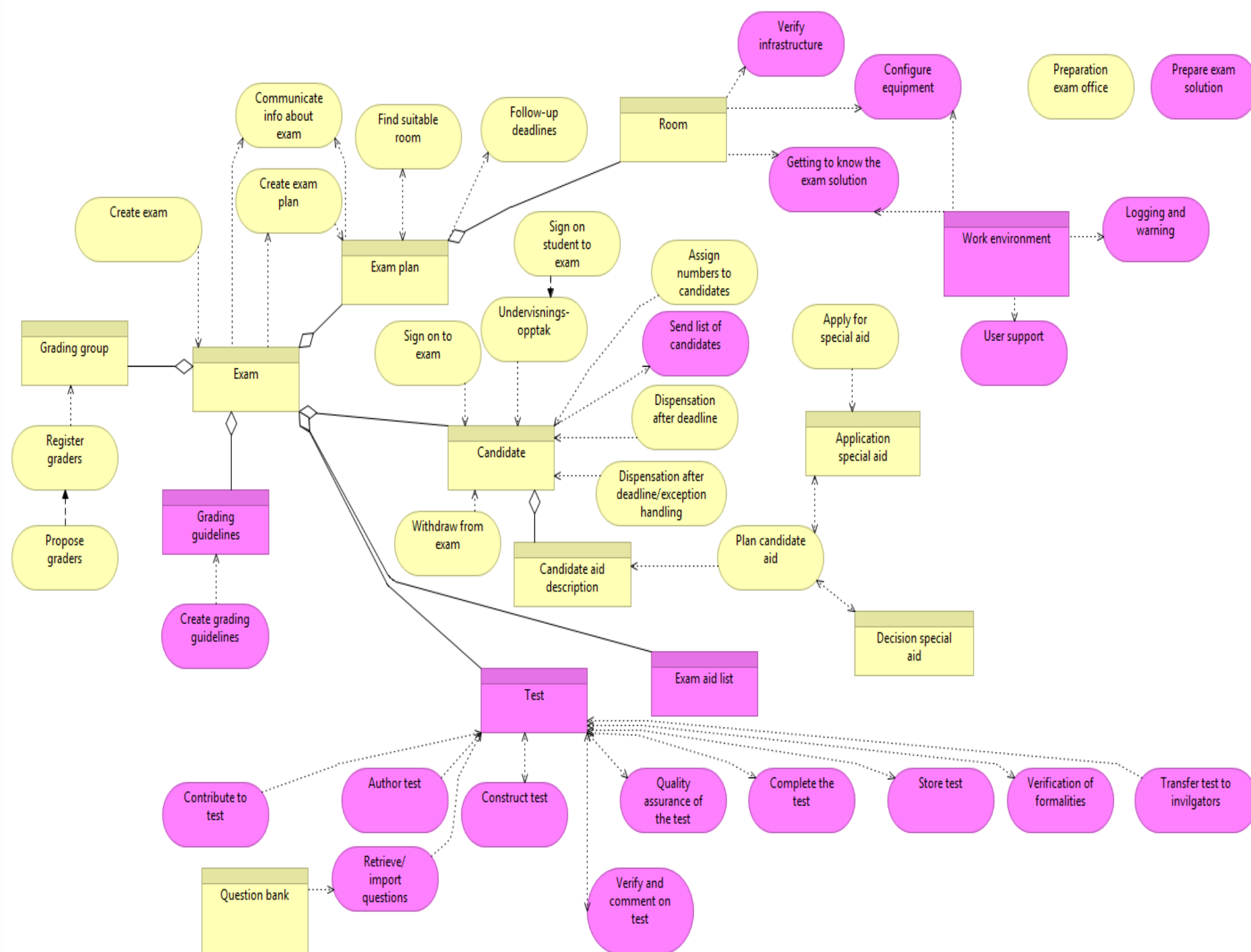


Utgår
(f.eks. automatisert)

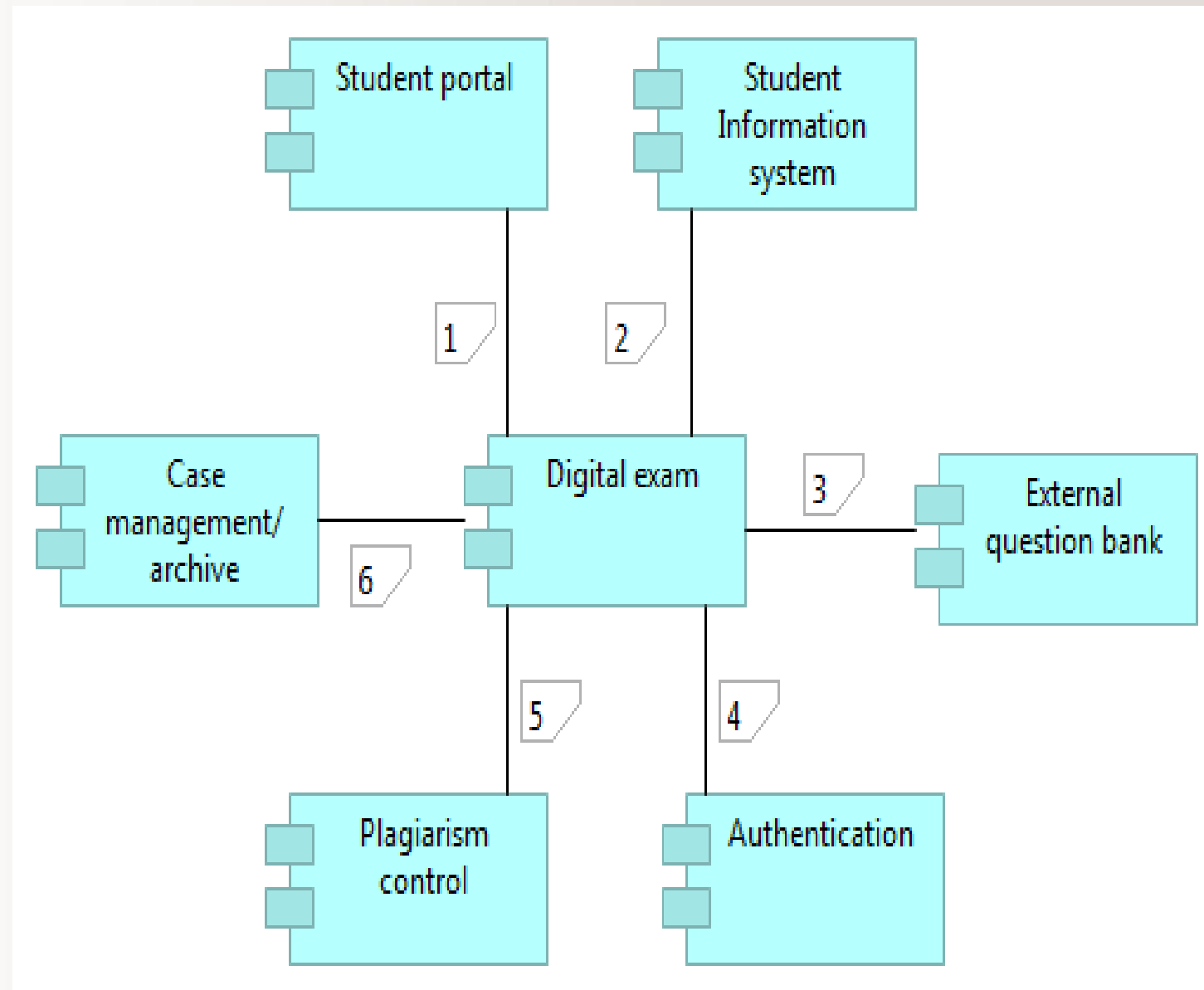


Ny aktivitet

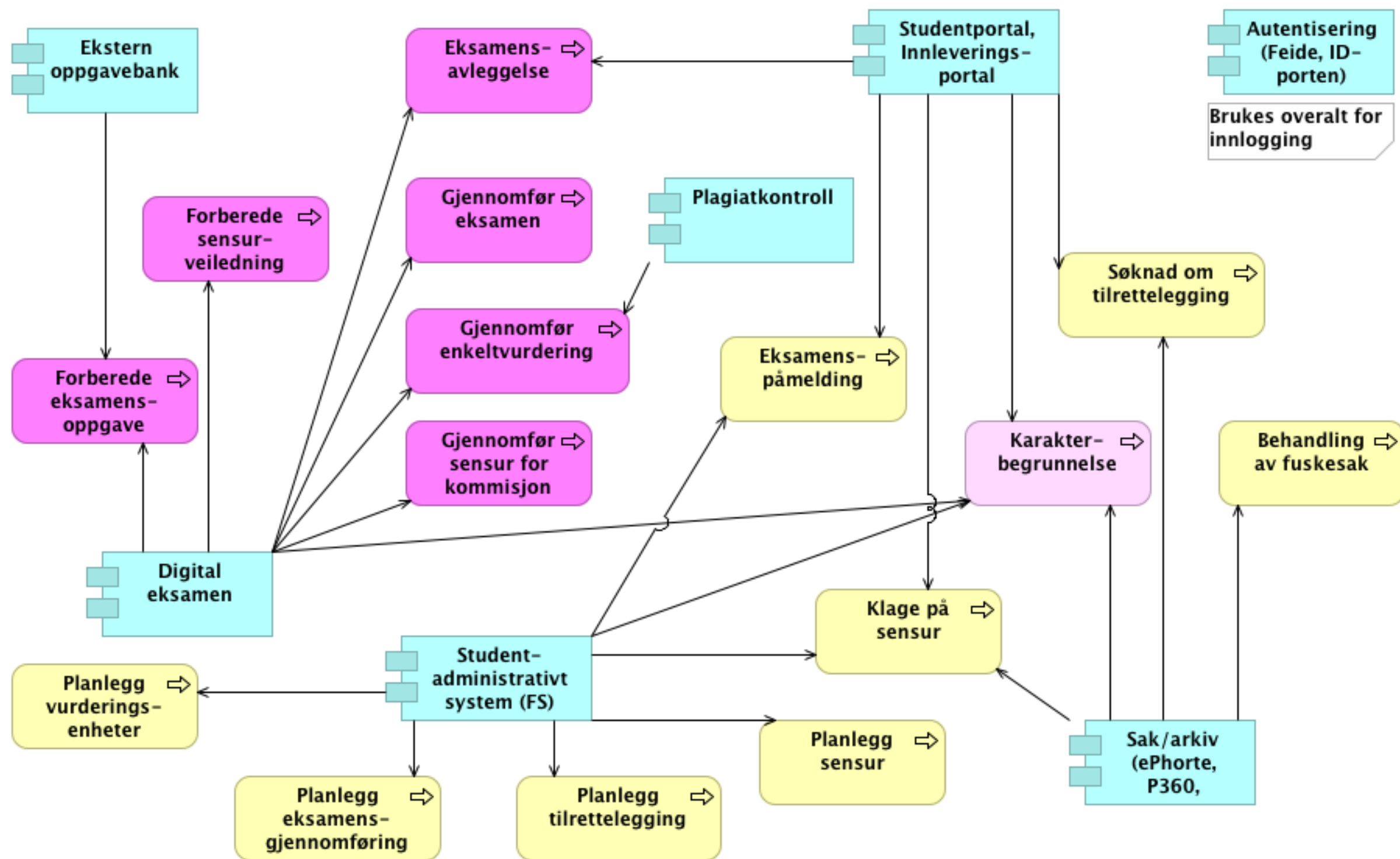
Prepare exam



Application map



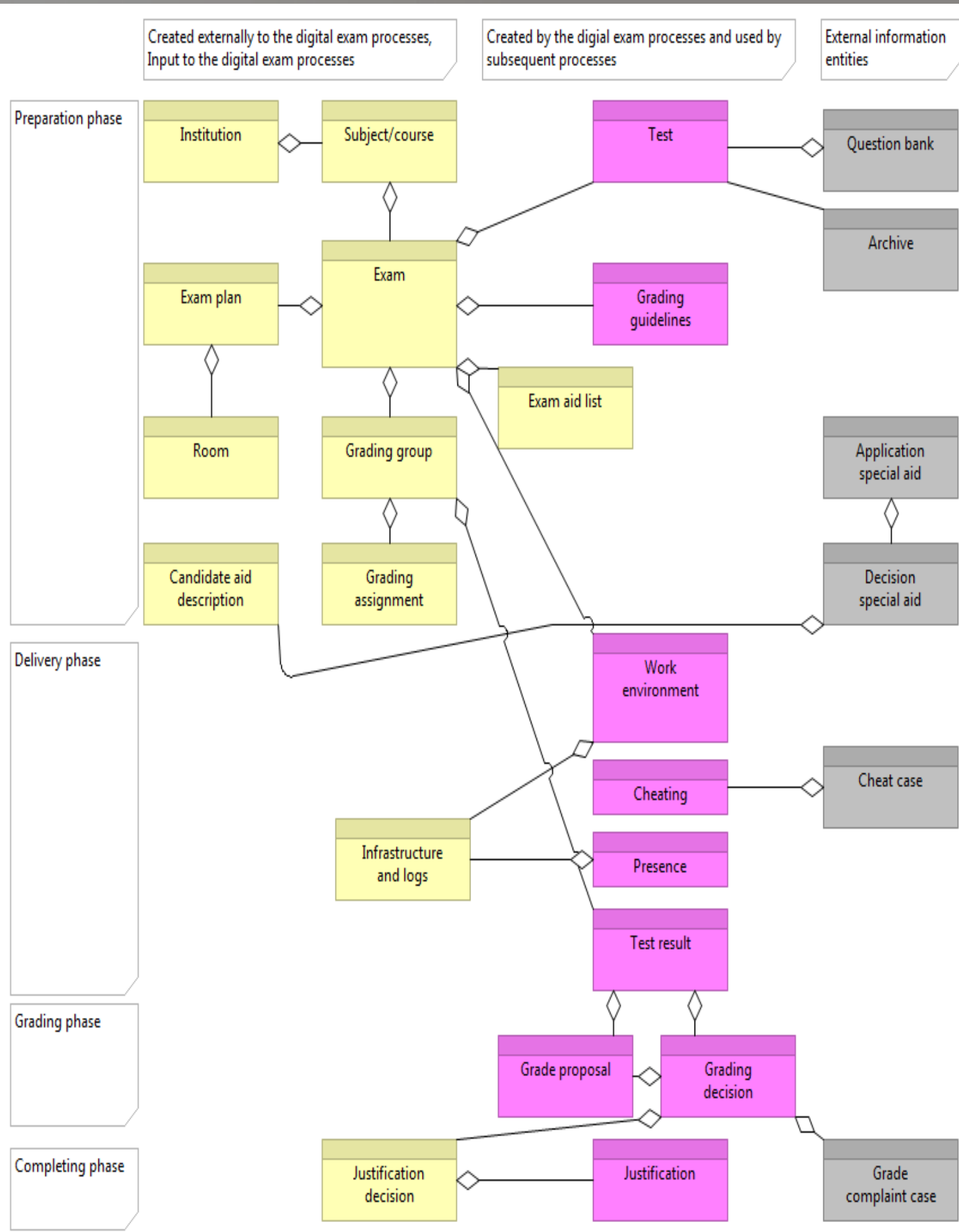
Process and applications (Norwegian)



Gul - Oppstår i annen applikasjon, brukes av eksamensløsning
 Rosa - Oppstår i eksamensløsning, overføres til andre applikasjoner
 Lys blå - Applikasjoner

Information architecture

UNINETT



National project: Further work

- Use the reference architecture: Verification & validation
- Details for further architecture work:
 - ☐ Integrations
 - ☐ Additional specifications of collaboration between portals, LMS, question banks and exam
- Requirement specification work

Institutions: Candidate areas for further work

➤ Analysis of as-is situation:

□ Administrative processes:

- Are the processes clearly defined?
- Are they harmonised within the sector?

□ Surrounding IT solutions:

- Are they in use?
- Do they actively support the processes covered by the architecture?
- Are they ready for integration with a digital exam solution?

□ Digital exam solution vendors:

- Does the solution support the processes in the architecture?
- How complete is the information model?
- Which integrations do they support?

➤ Activities to close gaps between as-is and to-be architectures:

□ Administrative processes:

- Roll out standardised processes

□ IT solutions:

- Roll out available shared sector solutions to support the processes covered by the architecture
- Ensure that individual solutions collaborate to reach the goals

The activities simplifies roll-out of a shared digital exam solution

UNINETT

UNINETT supports and coordinates the work

Sharing — is caring



A mature HE-sector and a
mature market

UNINETT

<https://www.uninett.no/digitaleksamen>

UNINETT

