Latvijas
Biozinātņu un
tehnoloģiju
universitāte

Digitalization initiatives for study quality improvement in
Latvia University of Life Sciences and Technologies (LBTU)

Dr. Irina Pilvere

**Rector, Professor, Full Member of
Latvian Academy of Sciences**

**Lille, France, ICA,
19-20 October, 2023**

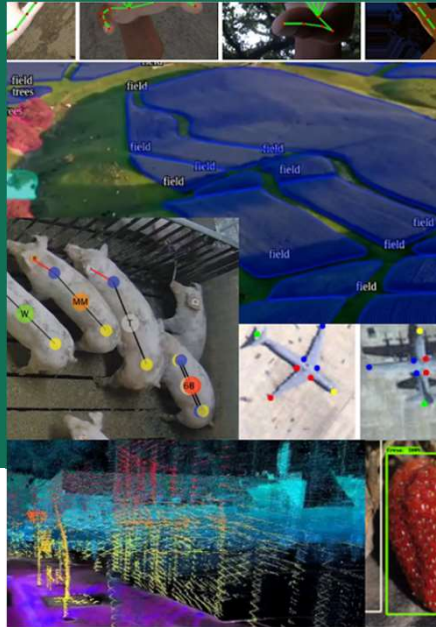A hybrid education strategy for the universities of the future

Natural sciences

Engineering and Technology

Medical and Health Sciences

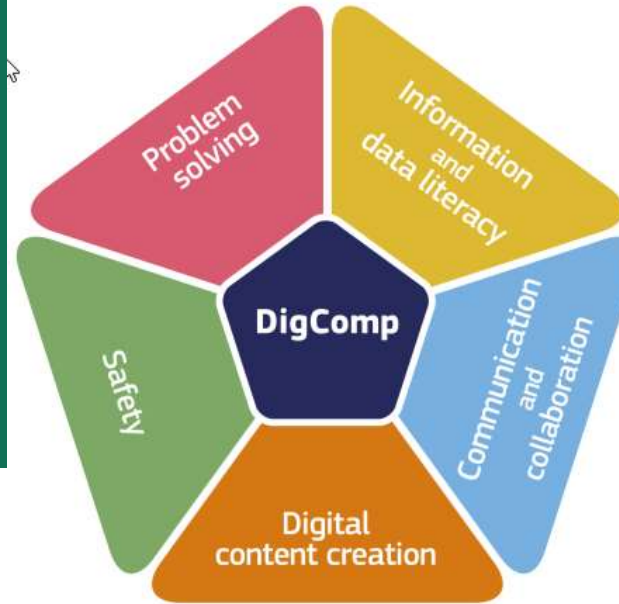Agricultural, forestry and veterinary sciences

Social Sciences

Humanities and arts

◆ Flexibility

◆ Personalized learning

◆ Interactive engagement

◆ Availability

DigComp 2.2. The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes

I. IMPROVEMENT OF STUDENTS' DIGITAL COMPETENCE IN AREAS OF STRATEGIC SPECIALIZATION

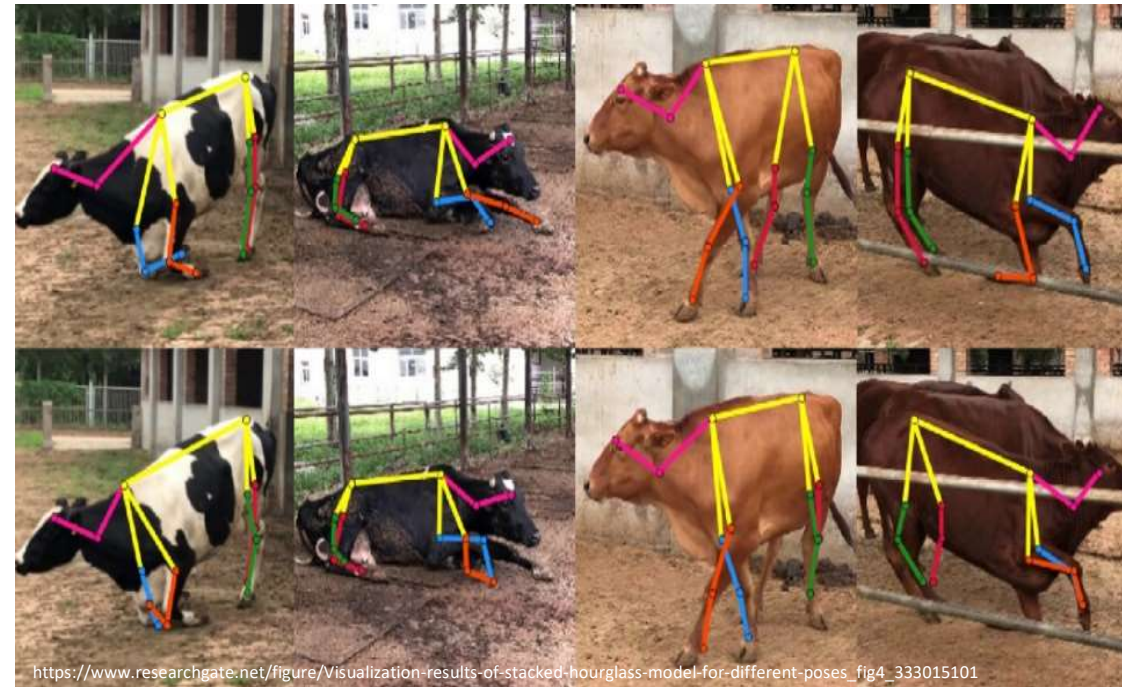II. INTEGRATION OF DIGITAL SOLUTIONS IN THE E-STUDY PROCESS

III. IMPLEMENTATION AND INTEGRATION OF THE DIGITAL SKILLS ASSESSMENT SYSTEM

https://eprasmes.lv/article/digcomp-2-2-eiropas-iedzivotaju-digitalas-kompetences-ietvara-jaunaka-versija-latviesu-valoda/

https://publications.jrc.ec.europa.eu/repository/handle/JRC128415

I. Improvement of students' Digital Competence in areas of strategic specialization

◆ **Development of study courses based on artificial intelligence (AI) and machine learning (ML) technologies.**

◆ Choice of AI/ML solution directions depending on the class of application tasks.

https://www.researchgate.net/figure/Visualization-results-of-stacked-hourglass-model-for-different-poses_fig4_333015101

Agricultural, forestry and veterinary sciences

Engineering and Technology

Social Sciences

Santiago, Aguirre et al. "Strawberry Disease Detection in Precision Agriculture." ICINCO (2021).

Development of study courses based on artificial intelligence (AI) and machine learning (ML) technologies

Horticulture (Bachelor of Vocational Education Program "Agriculture"): Identifying the phases of plant development using images obtained from a mobile device.

Business system analysis (academic master's study program "Economics"): product recognition, depending on the assortment and type of packaging
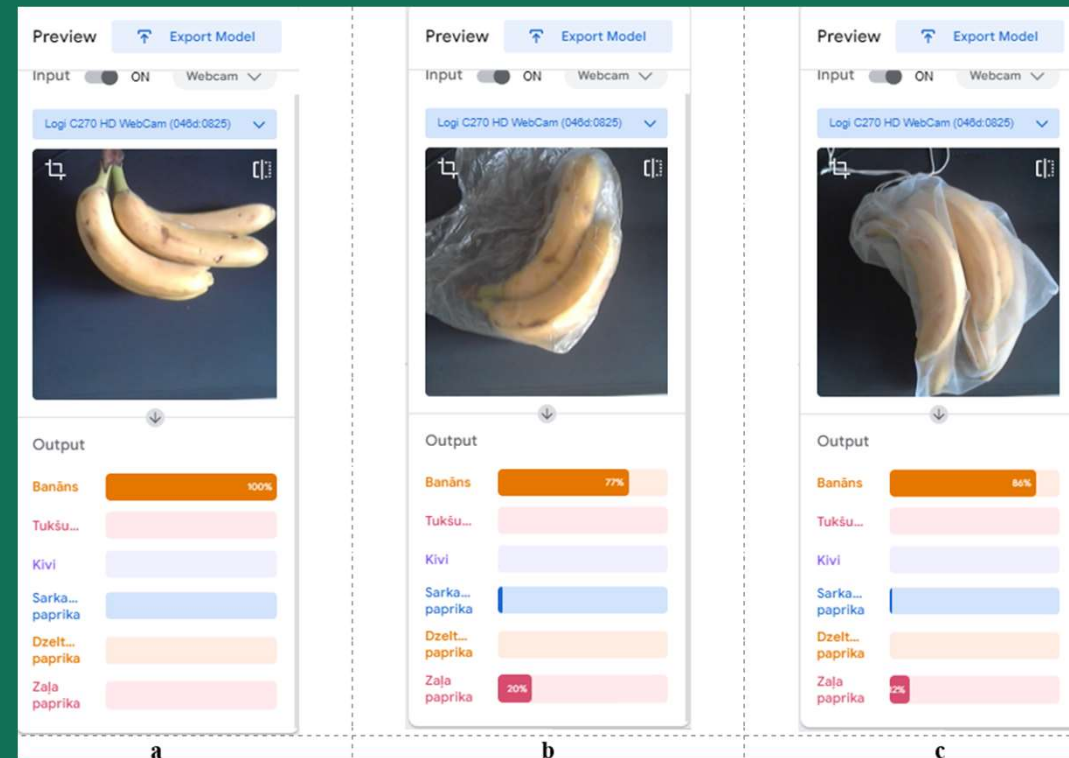
II. Integration of digital solutions in the e-study process

◆ Implementation of remote testing and knowledge assessment technologies.

◆ **In the study process of integrating the electronic means of identification (e-card).**

◆ **Integration of the LBTU certificate (card) with the technical and software requirements of the European Student Card (ESC) implemented by the ESCI project.**

◆ **Creating a multifunctional hybrid audience for the study process, practical and researcho semināru nodrošināšanai.**

Connected Universities

Search: Latvia

Country	HEI / website
Latvia	Riga Technical University
Latvia	Latvia University of Life Sciences and technologies
Latvia	STOCKHOLM SCHOOL OF ECONOMICS IN RIGA SIA
Latvia	Daugavpils University
Latvia	Rezekne Academy of Technologies
Latvia	LATVIJAS KULTURAS AKADEMIJAS AGENTURA LATVIJAS KULTURAS AKADEMIJAS LATVIJAS KULTURAS KOLEDZA

https://europeanstudentcard.eu/latvia/

8.2.3.SAM project

"Digitalization initiatives for the improvement of study quality in strategic areas of specialization of universities" No. 8.2.3.0/22/A/005

LBTU / The European Student Card (ESC)

The new LBTU student card

◆ A card that allows identification of LBTU students and provides access to LBTU services.

◆ Joining the European student card initiative - a card that provides LBTU students with access to European university services during mobility.

◆ Cooperation with the municipality of Jelgava and within the framework of the Mastercard project Citypossible is exploring the possibility of integrating the e-card into national and city-wide services.

citypossible™
Pioneered by Mastercard

Knowledge Partners

THE EUROPEAN
ESC STUDENT CARD

Fira Barcelona

Cities Today

CENTRE for
Liveable
Cities

Sporos
Future Proof Solutions

GOALS HOUSE

Technology & Entrepreneurship
Center at Harvard

iCITIES
SMART CITIES SOLUTIONS

Latvia University
of Life Sciences
and Technologies

https://citypossible.com/cpuserportal/public/cpuserui/home

Architecture

Latvijas Biozinātņu un tehnoloģiju universitāte
Latvia University of Life Sciences and Technologies

ESI:LV-902427570-**IT12345**

Šī studējošā apliecība ir Latvijas Biozinātņu un tehnoloģiju universitātes īpašums. Nozaudētu apliecību lūdzam nogādāt Jelgavā, Lielā ielā 2, 175. kab.
✉ informacija@lbtu.lv ✆ 63005718

This Student Card is a property of Latvia University of Life Sciences and Technologies. Please return found cards to 2 Liela Street, Room 175.
✉ informacija@lbtu.lv ✆ 63005718

www.lbtu.lv

Latvijas Biozinātņu un tehnoloģiju universitāte

Studējošā apliecība
Student card

Vārds Uzvārds
Name Surname
Paraugs Paraudziņš

Matrikulas numurs
Matriculation No
IT12345

Derīguma termiņš
Validity
31.08.2026

LBTU INFRASTRUKTŪRA

Mans.LBTU.LV

LBTU infrastructure

LBTU.LV

Datu apstrādātājs

LBTUIS

LBTU KARŠU PĀRVALDNIEKS

Ārējie servisi

CITI KARŠU IZGATAVOTĀJI UN PAKALPOJUMU SNIEDZĒJI

ESC-R HUB

External services
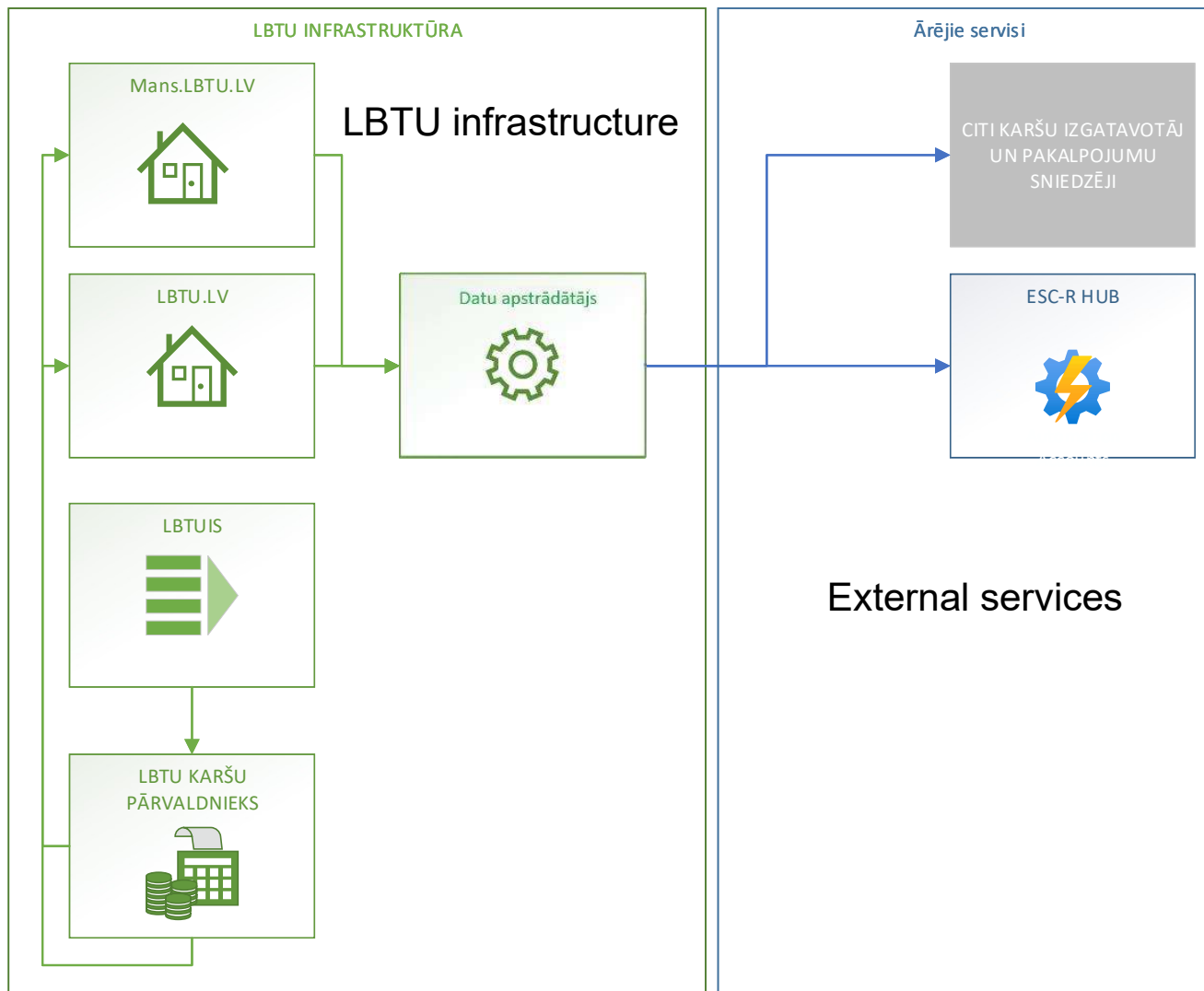
LBTU/ESC preparation and issuance of cards

1. **Data preparation**

2. **LBTU card data entry and printing**

LBTU ESC design

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Activating ESC cards

Activating ESC cards

ESC activation process in LBTU

◆ LBTU generates the necessary attributes (European student card number, European student identifier) in its IT systems, independently of the European student card system, within the framework of the European student card initiatives;

◆ Student ID cards become active as European student cards only after receiving the student's consent;

◆ It is expected that the student gives his consent or cancels it through the "My LBTU" section of the LBTU portal;

◆ A hyperlink to the LBTU homepage is encoded in the QR code, which will initially check on the LBTU side whether it is registered as a European student card and, depending on the result, will redirect to the homepage where it can be activated or will redirect to the European student card systems verification system.

The challenge of the ESC activation process

There is uncertainty at the moment from the maintainers of the European student card system regarding personal data protection issues- until these issues are sorted out, it would not be recommended allow students to apply for the European student card initiative.

As part of the project, LBTU has been registered on the ESC portal, so that ESC attributes can be integrated into the student certificates of both universities in the future.

THE EUROPEAN STUDENT CARD

HOME   PAGES   CONTACT   FRA

LATVIA

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Country	HEI / website

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➤ BACK TO MAP

A multifunctional hybrid learning auditorium was created at LBTU
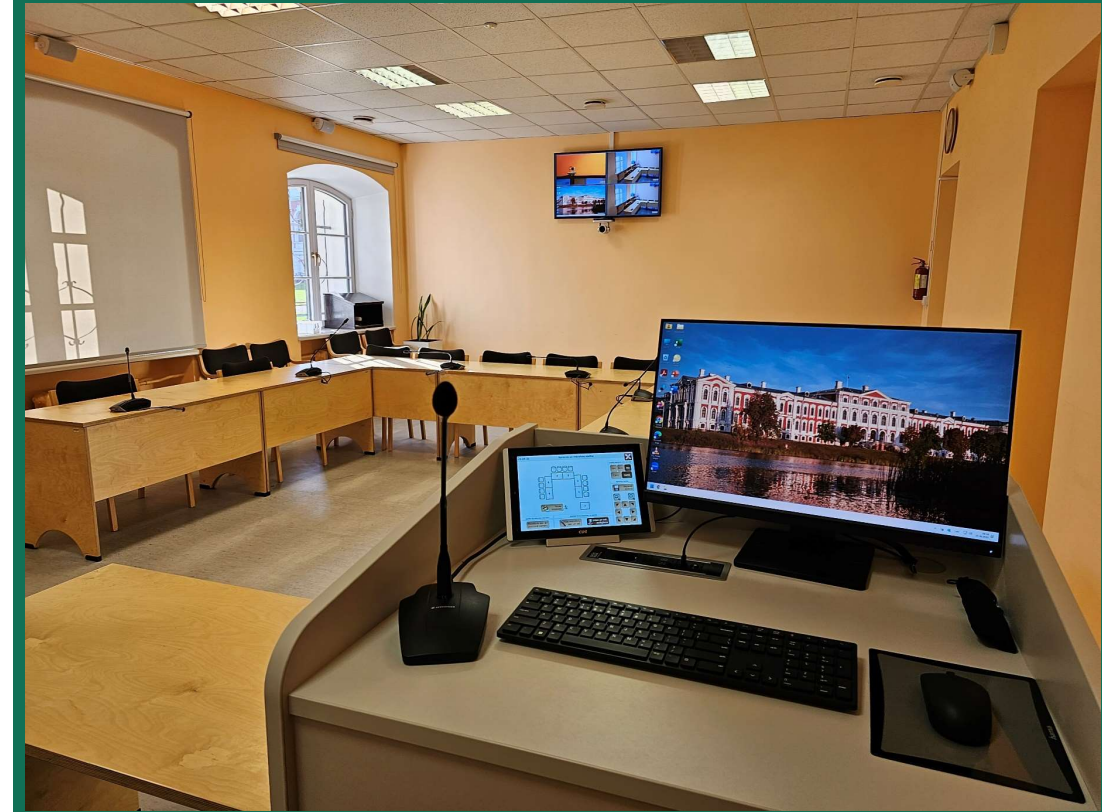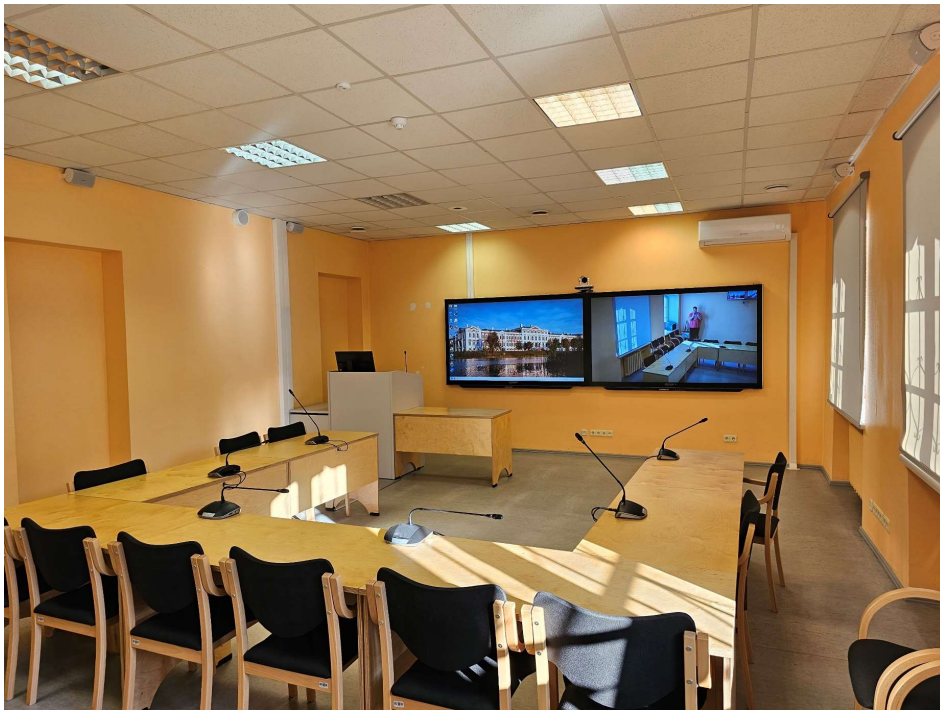
Built in Hybrid Auditorium signal processing and switching equipment

Computer network switch

Wireless microphone controller

Video matrix switcher

Discussion station processor

Audio processor

Video decoder

Audio amplifier

Video encoder

4k recorder/streamer

Conference control computer
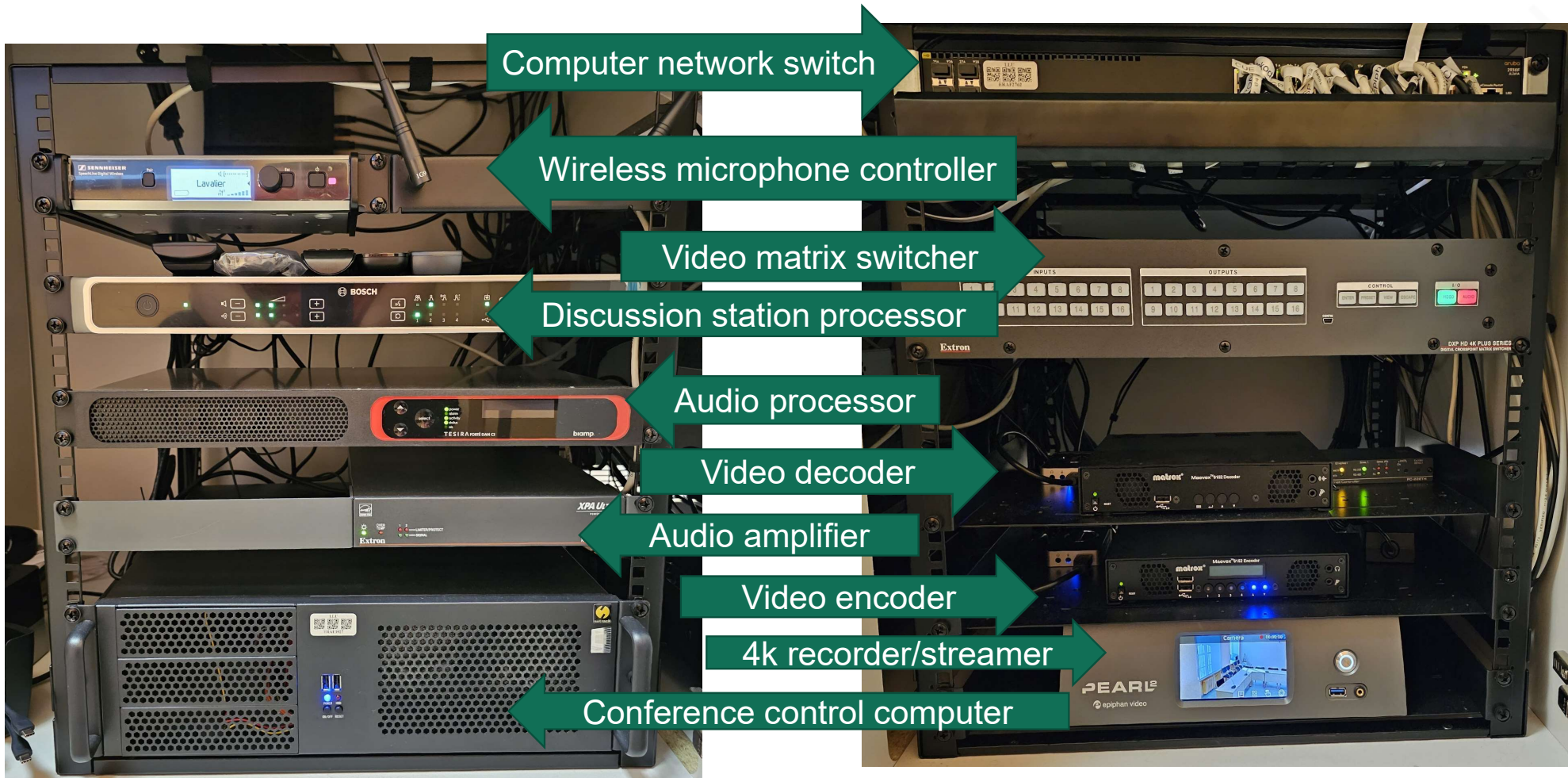
Additional services for using hybrid auditorium

◆ Tutorials for working with hybrid auditoriums in different modes, on the e-studio website specially created for the project https://digi.lbtu.lv;

◆ A video server with the following main components has been created and is being developed: https://opencast.lbtu.lv stores video recordings divided by lectures/events, allows the instructor to perform simple editing - trim the beginning and end, other actions.

◆ Integrated with Moodle. Conference tool https://plugnmeet.lbtu.lv - an alternative to BigBlueButton, similar functions, but more modern.

◆ Allows higher quality recordings, change of camera quality, RTMP streaming to another server and available working integration with Moodle website digi.lbtu.lvConference and video content "backend" https://livekit.lbtu.lv

◆ Video server API used for communication between project partners and Epiphan control / management from the Cue panel - https://media-api.lbtu.lv

III. Implementation and integration of the digital skills assessment system

◆ Initial assessment of student competencies.

◆ Assessment of post-course digital competences.

◆ Assessment of the growth of students' digital competences.
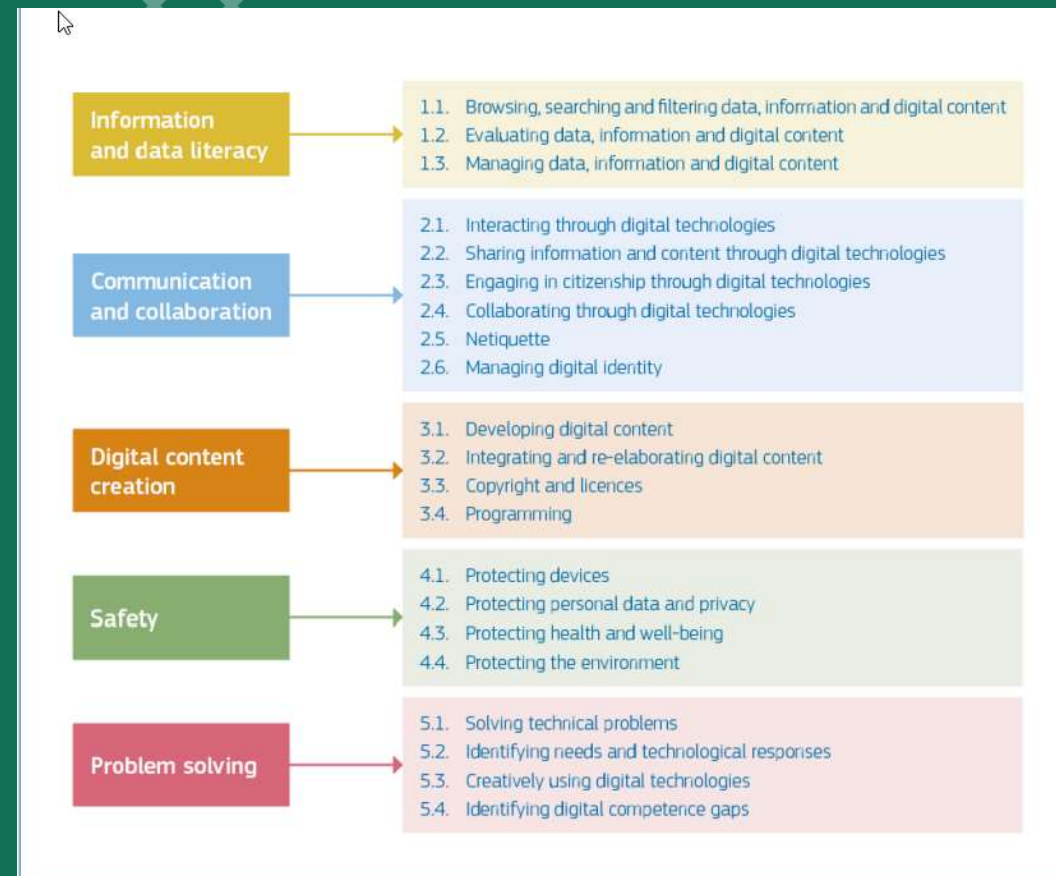
DigComp conceptual reference model

Information and data literacy	1.1. Browsing, searching and filtering data, information and digital content
	1.2. Evaluating data, information and digital content
	1.3. Managing data, information and digital content
Communication and collaboration	2.1. Interacting through digital technologies
	2.2. Sharing information and content through digital technologies
	2.3. Engaging in citizenship through digital technologies
	2.4. Collaborating through digital technologies
	2.5. Netiquette
	2.6. Managing digital identity
Digital content creation	3.1. Developing digital content
	3.2. Integrating and re-elaborating digital content
	3.3. Copyright and licences
	3.4. Programming
Safety	4.1. Protecting devices
	4.2. Protecting personal data and privacy
	4.3. Protecting health and well-being
	4.4. Protecting the environment
Problem solving	5.1. Solving technical problems
	5.2. Identifying needs and technological responses
	5.3. Creatively using digital technologies
	5.4. Identifying digital competence gaps

FIG.1   The DigComp conceptual reference model

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Thank you!

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