



European Commission
**PROJECT 2024-1-LV01-KA220-
HED-000255929**

“Biomedical Innovations through Digital
Transformation of Additive Technologies and
Knowledge Exchange”

Subject: Minutes on the Staff Training Event on Digital Transformation for Biomedical Engineering

Date: 3-5 December, 2024

Place: Leuven, Belgium

**Staff Training Event on Digital Transformation for Biomedical
Engineering
3-5 December, 2024
Leuven, Belgium**

Minutes

Objectives:

- 12 professors + 4 company representatives trained on the latest CAD / CAE solutions on 3-matic & MIMICS software CAD / CAE programs for biomedical engineering;
- Identification of 5 potential applications for CAD / CAE methods for biomedical engineering;

Activities:

- are presented by the attached Agenda (see please the Annex I) of the meeting; the Agenda had been discussed in advance by the Persons in Charge (via Internet) and finally had been approved at the meeting start.

Participants:

The following persons had attended the meeting:

from RTU:

Mr. Jurijs Dehtjars (Project Coordinator, Person in charge),

Mr. Marks Gorohovs (Project administrator),

from TUCN:

Mr. Razvan Pacurar (Person in charge),

Mrs. Ancuța Păcurar,

Mr. Alin Pleșa,

Mrs. Luminița Pleșa;

from PUT:

Mr. Michał Rychlik,

Ms. Magdalena Żukowska,

Ms. Agata Mrozek-Czajkowska;
Mr Filip Gorski (remotely for discussions)

from UPCT:

Mrs. Dolores Ojados González,
Ms. Lucía Martínez Abellan;
Mr Filip Gorski (remotely for discussions)

from NIS:

Mr. Nikola Korunović,
Mr. Jovan Arandjelovic;

from UNIPU:

Mr. Sven Maričić (Person in charge);

from Materialise NV:

Mr. Radu Popa (Person in charge),
Mrs. Brigitte de Vet-Veithen (CEO, Materialise NV),
Mr. Arsham Makaryan,
Mr. Laurens Beelen,
Ms. Giulia Rosellini,
Ms. Marijana Stancovic;

from ViscoTec GmbH:

Mr. Raphael Lichtnecker (Person in charge);

Synopsis

A WP2 staff training for the BIOMEDIX project took place in Leuven, Belgium, on December 3-5, 2024, at headquarters of Materialise NV. Representatives from all participating partner institutions attended in person, including: Mr. Jurijs Dehtjars (Project Coordinator, Person in Charge), Mr. Marks Gorohovs (Project Administrator) from RTU; Mr. Razvan Pacurar (Person in Charge), Mrs. Ancuța Păcurar, Mr. Alin Pleșa and Mrs. Luminița Pleșa from TUCN; Mr. Michał Rychlik, Ms. Magdalena Żukowska, Ms. Agata Mrozek-Czajkowska from PUT; Mrs. Dolores Ojados González, Ms. Lucía Martínez Abellan from UPCT; Mr. Nikola Korunović, Mr. Jovan Arandjelovic from NIS; Mr. Sven Maričić (Person in charge) from UNIPU; Mr. Radu Popa (Person in charge), Mrs. Brigitte de Vet-Veithen (CEO, Materialise NV), Mr. Arsham Makaryan, Mr. Laurens Beelen, Ms. Giulia Rosellini and Ms. Marijana Stancovic from Materialise NV; Mr. Raphael Lichtnecker (Person in charge) from ViscoTec GmbH.

The Staff training had been divided into *Consortium meeting* and *Training* sessions.

On the morning of the 3rd of December *Consortium meeting* took place at the Showroom A0.06 on Technologielaan street 15, Leuven.

CEO of Materialise NV, Mrs. Brigitte de Vet-Veithen had delivered the opening address and presented the hosting organization.

Mr. Radu Popa presented the agenda of the training, its aims and expected results.

Mr. Razvan Pacurar moderated the discussions on the project implementation, continue discussions on WP2 activities and expected results.

Partners discussed e-Book chapters and VR/AR applications. Finalizing division of responsibilities for e-Book writing and finalizing draft titles for AR/VR applications.

The *Consortium meeting* for the first day, 3rd December, had become over before lunch.

After lunch, *Training* session begun, moderated by Mr. Arsham Makaryan with assistance of Mr. Laurens Beelen and Ms. Giulia Rosellini.

During this session, the participants used Mimics software provided by Materialise and get the practical skills to work with program, make a segmentation to create 3D models of anatomical structures, segment both bone tissues and soft tissues from CT scans, clean and refine segmented 3D models.

After the *Training* session ended, the partners attended the dinner at Restaurant “Notre Dame”, 11 Grote Markt str, where had non-formal face-to-face discussions.

The following day, 4th December 2024 continued with *Training session*, moderated by Mr. Arsham Makaryan with assistance of Mr. Laurens Beelen and Ms. Giulia Rosellini.

During this session, the participants used 3-Matic software provided by Materialise and get the practical skills to work with program, import segmented 3D models; clean, refine and measure 3D models; design personalized cranial implants. This session had become over before lunch.

After lunch, the participant attended the guide tour around the Materialise facilities, guided by Mr. Arsham Makaryan ~~and ...~~ showcasing the available 3D printing equipment, explaining processes of 3D printed devices manufacturing, including medical devices.

Tour continued with another *Training session*.

During this session, the participants used both Mimics and 3-Matic software provided by Materialise and get the practical skills to prepare models for FEA analysis and analyse the pre- and post- operated anatomical parts to evaluate the results of surgeries.

The last day, 5th December 2024 started with presentation and hands-on demonstrations of Materialise AR/VR applications for surgery planning and surgeries.

AR/VR demonstrations continued with *Consortium meeting*.

Mr. Filip Gorski from PUT, coordinator of WP2, connected to discussion remotely via MS Teams.

Mr. Radu Popa presented the academic version of Mimics software for consortium members, its features and price.

Mr. Jurijs Dehtjars suggested to switch places for WP5 strategy meeting planned for February 2025 at RTU with WP2 Hackaton planned in April 2025 at UPCT. Instead arrange WP5 strategy meeting at UPCT, but Hackaton at RTU. Partners agreed, but the question is to be discussed with Mr. Joaquin Roca-Gonzalez (Person in charge from UPCT).

Mr. Filip Gorski suggested to organize meetings via MS Teams with coordinators of e-Book chapters to track the process of its development around 10 of January 2025.

Mr. Jurijs Dehtjars and Mr. Filip Gorski suggested not to publish e-Book in ISI paper, but organize external peer-reviews by each chapter's coordinators. Mr. Razvan Pacurar pointed that e-Book must have ISBN number.

Mr. Razvan Pacurar and Mr. Filip Gorski discussed the licenses for software used for development of applications and writing publications and e-Book. Discussed options for use free and academic licenses.

Mr. Jurujs Dehtjars continued discussions, mentioning the KPI of the project – 18 ISI papers published, meaning there will be 6 publications a year, 1 by each HE partner a year. For that, need to prepare titles, authors and abstracts by 1st of February 2025 for 6 publications and discuss this matter on WP5 Strategy workshop.

Mr. Razvan Pacurar and Mr. Filip Gorski continued discussions about Summer school organisation, proposing to create a separate list of attendees to keep track of reaching KPI. The budget was discussed, concluded that it is not sufficient to reach KPI for students, needing external funding. This matter is to be discussed by RTU with Latvian agency.

As conclusion of the *Staff training*, partners discussed potential applications for CAD / CAE methods for biomedical engineering as KPI of the meeting. Total 5 applications identified:

- Segmentation and reconstruction of soft tissues for manufacturing of anatomical models.
- Designing of the plate for bone restoration with enhanced osseointegration.
- Influence of lattice structure mesh and physical properties for skull implants.
- Multi-material design for orthosis and prosthesis.
- Flow simulation in anatomical models to study aneurism.

On 6th of December, in Riga, Mr. Jurijs Dehtjars and Mr. Marks Gorohovs meet Mr. Joaquin Roca-Gonzalez to discuss possible switch of locations for upcoming activities by RTU and UPCT. Mr. Joaquin Roca-Gonzalez agreed, but needs to discuss with UPCT administration.

[RTU needs to discuss with the Agency](#)

Project Coordinator:

Mr. Yuri Dekhtyar

[Project Administrator](#)

[Marks Gorohovs](#)

Annex I

**Staff Training Event on Digital Transformation for
Biomedical Engineering
3-5 December, 2024
Leuven, Belgium**

Agenda and time table**3 Dec 2024**

Time	Event	Location
10:00-10:30	Welcome Introduction Radu	Showroom (A0.06)
10:30-12:00	BIOMEDIX Consortium meeting E-book and Digital Tools (VR / AR applications) for the e-book status meeting and planning (moderator: Razvan)	Showroom (A0.06)
12:00-13:00	Lunch	Cafeteria C
13:00-17:00	Training Introduction to software portfolio Introduction to segmentation	Showroom (A0.06)
18:00-20:00	Dinner	Notre Dame (Leuven Center, next to the weird city hall)

4 Dec 2024

Time	Event	Location
10:00 – 12:00	Training Introduction to STL fixing Designing a cranial implant	Co-Creation Room (meet at 9.55 at the reception)
12:00 – 13:00	Lunch	Cafeteria C
13:00 – 15:00	Company tour	Start from the reception (drop off bags/jackets downstairs, near the reception)
15:00 – 17:00	Training Preparing a file for FEA Pre- and post-op comparison of a knee	Showroom (A0.06)

5 Dec 2024

Time	Event	Location
10:00 – 12:00	Innovation / XR	Showroom (A0.06)
12:00 – 13:00	Lunch	Cafeteria C
13:00 – 14:30	BIOMEDIX Consortium meeting Strategic discussion concerning the future key activities to be organized in 2025 on BIOMEDIX (moderator: Razvan)	Showroom (A0.06)
14:30-15:00	Closing, main conclusions of the event and collecting of feedbacks	Showroom (A0.06)