

REPORT

Short-term joint staff training events – 3D printing and bio-mechatronics, hosted by BIZZCOM company, in Bucany, Slovakia 8 – 11 May 2023

The Short-term joint staff training events – *3D printing and bio-mechatronics* of the project “EMERALD - European network for 3D printing of biomimetic mechatronic systems”, strategic partnership 21-COP-0019, took place on 8 – 11 May 2023. The event was hosted by **BIZZCOM company, in Bucany, Slovakia**.

The event was attended by 14 representatives of the consortium partners: Technical University of Cluj-Napoca (TUCN) – Romania, University of Agder (UiA) – Norway, Bizzcom s.r.o. – Slovakia, Poznan University of Technology (PUT) – Poland, University Politehnica of Bucharest (UPB) – Romania and other representatives from the BIZZCOM Company.

The activities organized within the short-term joint staff training at BIZZCOM in May 2023 was focused on the use and testing the functionality of e-virtual laboratory (e-learning) platform developed by the EMERALD consortium for teaching activities related to the manufacturing of biomimetic mechatronic systems by 3D printing.



Short-term joint staff training participants at BIZZCOM Company, Bucany, Slovakia



The event started at 8:30 with the participants registration and the event introduction with the staff from the BIZZCOM company. Was presented the main aims, actions and activities of the training.

The short-time joint staff training was addressed to professors which are involved in teaching biomechatronic, CAD, CAE, 3D printing, as to the other people or institutions (stakeholders) involved in teaching and/or research activities related to the developing, manufacturing and testing of new biomimetic mechatronic systems made by 3D printing, for people with special needs.

The detailed agenda/program was:

Iceland Liechtenstein Norway grants		Agenda for Staff training in VR and AR programming BIZZCOM Company, Bučany, Slovakia 8-11.5.2023			bizzcom
Date and time period	08.05.2023	09.05.2023	10.05.2023	11.05.2023	
8:30-8:45 AM	Registration of the participants	BIZZCOM Company Visit (manufacturing and assembling rooms / facilities)	BIZZCOM Company (manufacturing of AR / VR rooms and testing of the facilities in the rooms)	Final test and final presentation realized during staff and training event	
8:45 – 9 AM	Introductory presentation – welcome words + presenting the scope of the training				
9 AM-9:45 AM	Kuula presentation (basic concepts) - lecture	VR presentation (basic concepts) - lecture	AR presentation (basic concepts) - lecture	EMERALD platform (basic concept, vision, organizing into different rooms) - lecture	
9:45 AM-10:30 AM	Kuula seminar (one presentation from A to Z related to its features)	VR application -seminar (presentation from A to Z related to its features of the VR program - Unity)	AR application – seminar (presentation from A to Z related to its features of the VR program - Blender)	EMERALD application – seminar demonstration on how applications realized in AR / VR / Kuula are being integrated into the platform	
10:30AM -11 AM	Coffee break	Coffee break	Coffee break	Coffee break	
11 PM – 12:15 PM	Kuula application – laboratory work on constructing the rooms and links in between rooms in Kuula	VR Unity application – laboratory on realizing programming in VR	AR Blender application – laboratory of programming for realizing apps in AR	EMERALD application – laboratory – uploading the rooms / VR & AR apps on the virtual platform EMERALD application – laboratory – releasing of the draft variant of EMERALD platform on the EMERALD website /	
12:15 AM –12:30 PM	Coffee break	Coffee break	Coffee break	Coffee break	
12:30PM-13:30 PM	Kuula application – laboratory work on adding resources into the rooms (videos, photos, links, VR apps, etc.)	VR Unity application – laboratory on testing with VR googles	AR Blender application – laboratory on generating the QR codes	Testing of EMERALD platform and final feedbacks related to the functionality and content of the platform, next steps about what has to be improved	
13:30 PM – 14 PM	Conclusions, feedbacks and interim evaluation of progress work	Conclusions, feedbacks and interim evaluation of progress work	Conclusions, feedbacks and interim evaluation of progress work	Closing words, releasing of the certificates, final conclusions related to realizing training and future work and closing ceremony	
14 PM – 15 PM	Lunch break	Lunch break	Lunch break	Lunch break	

At this level, EMERALD e-virtual laboratory (e-learning) platform was ready conceived by BIZZCOM company in the first variant, so the attendees has the chance to experience the functionality that the e-virtual laboratory (e-learning platform) has to offer, as well as to experience the facilities of the platform in programming and testing of new biomimetic mechatronic systems for people with special needs at the end including AR/VR applications.



After the experience in using and working on the e-laboratory, important feedbacks was collected, not only on how the platform functionality issues must be improved, but also on how this important tool developed by the EMERALD consortium could be used in personalized teaching method for Higher education.

Developing of applications that are using AR / VR / mixed reality in connection with biomimetic mechatronic systems is also highly foreseen to be identified and developed at this stage.

The e-virtual laboratory platform developed by the EMERALD consortium it could be used for teaching purposes on the 2nd edition of the EMERALD International summer school that will be organized at the University of Agder for the professors and students in September 2023 so as the professors of the EMERALD consortium could have one real feedback about the functionality and use of the e-virtual laboratory (e-learning) platform AR & VR & mixed reality facilities for teaching purposes, to get one step further in including personalized teaching methods and project learning methods in Higher Education for teaching. In this context, the feedbacks collected in May 2023 in using the a-virtual laboratory (a-learning).

The Short-term joint staff training events – *3D printing and bio-mechatronics* of the project “EMERALD - European network for 3D printing of biomimetic mechatronic systems”, strategic partnership 21-COP-0019 was organized during 4 days in Bucany, Slovakia.

May 2023

BIZZCOM Company, Bucany, Slovakia