

BRIGHT

Erasmus+ strategic partnership for Higher Education
**BOOSTING THE SCIENTIFIC EXCELLENCE AND
INNOVATION CAPACITY OF 3D PRINTING METHODS IN
PANDEMIC PERIOD**

E1 REPORT

Project Title	Boosting the scientific excellence and innovation capacity of 3D printing methods in pandemic period 2020-1-RO01-KA226-HE-095517
Output	E1 – Multiplier event - BRIGHT research base learning method for teaching
Date of Delivery	29th of September 2021
Authors	Miloš Simonović, Milan Banić (UNI)
Version	V3, 28.09.2021

1. Description of BRIGHT Project

The main objective of the BRIGHT project is to provide teaching resources & methods for professors coming from Higher Education institutions that are interested to find ways in providing their students relevant knowledge, skills & competences in the field of 3D printing methods used for producing medical parts, by providing e-courses that sustains the BRIGHT project curriculum, e-toolkit manuals for digital learning which are the required steps to follow starting from CAD, CAE & continuing with 3D printing & testing.

Erasmus+ is the European program focused on education, training, youth and sport in the period 2014-2020. The project has been funded under Key Action 2, Cooperation for innovation and exchange of good practices in Action type Strategic partnership for higher education.

The 1st multiplier event has been organized by University of Nis during one day.

2. Summary of the multiplier event

The Multiplier Event (E1) organised and facilitated by UNI was held on 17th September 2021 at Science Technological Park, NIŠ to present the results of the intellectual output IO1 of BRIGHT project to an invited audience composed of academic institutions representatives and industry experts affiliated mainly to regional companies.

The target groups of the Multiplier event were colleagues involved in teaching 3D printing/ CAD / CAE / Materials Science and Strength of Materials / Flexible manufacturing systems/ Process optimization and software control / Medical Engineering, including teaching staff, students as well as other people involved in teaching 3D printing in Higher education in their respective organizations.

The 1st Multiplier event has also been opened to business partners that are interested about developing, producing, and testing of parts by 3D printing methods (not just medical institutes, clusters, City Hall institutions) in order to ensure a maximum audience.

The objective of this multiplier event was to present and share the results reached in intellectual outputs 1 and 2, and BRIGHT summer school held in Cluj-Napoca in July 2021, related to the course modules developed to sustain the BRIGHT curriculum and e-toolkit manual about case studies related to the development of different products coming from the medical sector, from CAD stage, to pre-validation using finite element methods, manufacturing of part by 3D printing methods and testing of these parts for final validation right at the end.

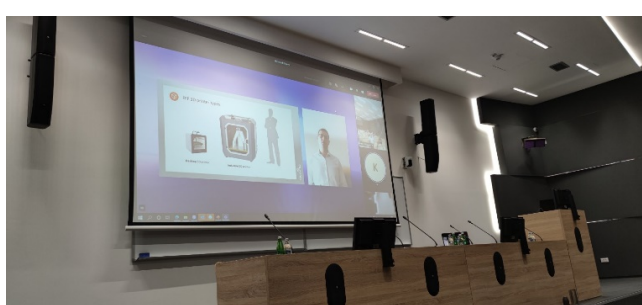
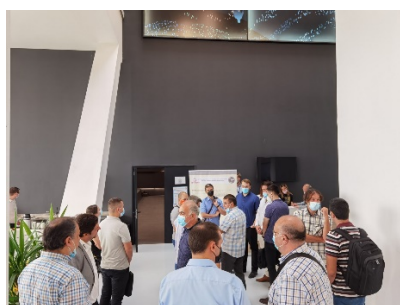
The Multiplier event was planned to have six main presentations which were held by the TUCN, UNI and 4 business representatives. The presentations were focused on BRIGHT Project objectives explanations, learning experience of BRIGHT summer school held in Cluj-Napoca during the summer and the first results obtained during this project.

The focus in presentations was also on implementation of some topics directly in business community.

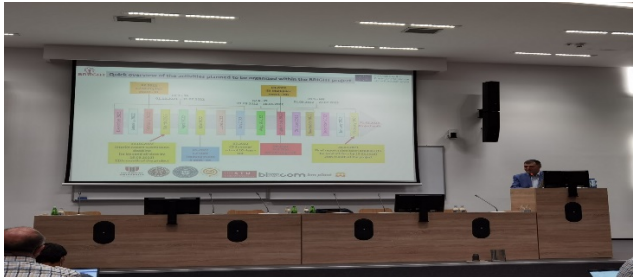
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There were over sixty participants from nearly 30 different institutions and companies. The adopted agenda for multiplier event has been shown below.

09:00 – 10:00	Registration
10:00 – 10:15	Welcome speech Prof. Miloš Simonović, BRIGHT coordinator on behalf of University of Niš Aleksandar Miličević, Director of Regional Chamber of Commerce
10:15 – 11:00	Using 3D printing methods in pandemic period – BRIGHT experience Prof. Razvan Procarar, Technical University of Cluj-Napoca, BRIGHT coordinator
11:00 – 11:45	OMNI3D – Poznan, Poland 3D Republika, Belgrade, Serbia
11:45 – 12:30	Solfins 3D Company, Belgrade, Serbia Authorized partner of Dessault systems, SolidWorks, SolidCam and Swood for Serbia, Montenegro and North Macedonia
12:30 – 12:45	Coffee break
12:45 – 13:30	LMB Soft, Niš, Serbia expert in blood banking solutions with more than 35 years of experience
13:30 – 14:15	Kvalitet a.d. Niš, Serbia - Certification of medical devices Joint stock company for quality testing National Certification Body within the IECEE CB Scheme
14:15 – 15:00	3D printing methods – case studies in orthopedy Prof. Nikola Vitković, Faculty of Mechanical Engineering University of Niš
15:00 – 15:45	Lunch
15:45-16:15	Feedback for the multiplier event - Presentation of self-assessment procedure and distribution of questionnaires
16:15-17:00	Discussion and conclusions
17:00	End of multiplier event



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3. Attendance



For inviting participants, UNI and Chamber of Commerce sent e-mails directly to regional companies and regional HE Institutions who could be interested in the project and for academic staff and students, a press release was published on the UNI - FEM website.

The following HE institutions and companies were present at the event:

- Faculty of Mechanical Engineering Nis
- Faculty of Electronic Engineering Nis
- Faculty of Technical Science Novi Sad
- Institute Mihajlo Pupin Belgrade
- Technical University of Bremen, Germany
- Technical University of Berlin, Germany
- Visoka tehnicka skola, Nis
- University of Nis
- Technical University of Cluj-Napoca, Romania
- JP Železnice Srbije, Belgrade
- Mikrotehnika doo, Nis
- COMING Computer Engineering, Belgrade
- Veriest, Nis
- Cegar In, Nis
- Science-Technological Park, Nis
- Zumtobel Group, Austria
- Privredna komora Srbije
- LMB Soft, Germany – Nis
- Neomedica, Nis
- Put inženjering, Nis
- Mickelsen Electronic, Denmark – Nis
- 3D Republika, Belgrade
- Solfins, Belgrade
- Omni 3D, Poland (online)
- UNIPU, Croatia
- BM Plast doo, Croatia

The list of the registered attendees at the beginning of the multiplier event (E1) is presented below.

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Erasmus+ Programme – Strategic Partnership
 Project Nr: 2020-1-RO01-KA226-HE-095517
 Event host organization: University of Niš
 Date and Place: 17.09.2021

PARTICIPANTS LIST
Multiplier event E1

Nr.	Name	Organization	Organization's address	Signature
1	SEVILA BABIĆ	B.M. PLAST DOO	DE ANTE MANUFACT. OPTIM	[Signature]
2	MATE BABIĆ	B.M. PLAST DOO	DE ANTE MANUFACT. OPTIM	[Signature]
3	Miodo Vrtović	UNI	A. MEDVEDOVA 14	[Signature]
4	Hukana Kopytovich	UNI	— 11 —	[Signature]
5	Đurđica Jovanović	Mikrotehnika DOO	VRŠIĆI PUT B.B.	[Signature]
6	Mikić Marija	COMING	NTP	[Signature]
7	Stanić Jovana	Coming	NTP	[Signature]
8	VASOVIĆ VALENTIN	LABSOFT	RAĐNA ZONA D.MED	[Signature]
9	Aleksandar Mihaljević	PIK - Herce	DOBRINJA 2	[Signature]
10	Marija Mihaljević	HD SOVA - Germany	EI	[Signature]
11	Đorđica Mihaljević	HD SOVA - Germany	EI	[Signature]
12	Čedojević Jolekica	Mikrotehnika DOO	VRŠIĆI PUT B.B.	[Signature]
13	Štanić Mileva	PUT KUPČIJSKI 16 NIŠ	KUPČIJSKI PUT 16	[Signature]
14	Lečić Đurđica	Neomedica NIŠ	Vranjica ulica	[Signature]

Host organization	University of Niš
Name of the legal representative	Prof. dr. Đorđica Antić
Signature of the legal representative	[Signature]

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PARTICIPANTS LIST
Multiplier event E1

Nr.	Name	Organization	Organization's address	Signature
1	Marek Milošević	ELFAK	Aleksandra Medvedova 14	[Signature]
2	Miroslav Milošević	ELFAK	Aleksandra Medvedova 14	[Signature]
3	Miodrag Stasić	ELFAK	Aleksandra Medvedova 14	[Signature]
4	Sasa Hukla	ELFAK	Aleksandra Medvedova 14	[Signature]
5	Nikola Đanić	ELFAK	Aleksandra Medvedova 14	[Signature]
6	Marija Jolekica	ELFAK	Aleksandra Medvedova 14	[Signature]
7	Stanić Jovana	ELFAK	Aleksandra Medvedova 14	[Signature]
8	Dusan Petrović	COMING	Aleksandra Medvedova 14	[Signature]
9	Jevona Stanić	COMING	Aleksandra Medvedova 14	[Signature]
10	Marija Mihaljević	COMING	Aleksandra Medvedova 14	[Signature]
11	Božan Kostić	COMING	Aleksandra Medvedova 14	[Signature]
12	Đorđica Stanić	VERIOT	— 11 —	[Signature]

Host organization	University of Niš
Name of the legal representative	Prof. dr. Đorđica Antić
Signature of the legal representative	[Signature]

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PARTICIPANTS LIST
Multiplier event E1

Nr.	Name	Organization	Organization's address	Signature
1	Aleksandar Zlatkovic	Veriest	NTP	[Signature]
2	Uma Dimitejevic	Veriest	NTP	[Signature]
3	Milica Batak	MFN	NiS	[Signature]
4	Sveva Maricic	UNI PV, Croatia	Bozardice 30, Rb.	[Signature]
5	Milica Becevic	MFN	NiS	[Signature]
6	Peboza Annonic	MT-NiS	AL. NIKOLIC 11	[Signature]
7	Jelena Annonic	FTU Niš	Al. Nikolic 11	[Signature]
8	Dragan Maricic	Coming Beograd	A. Mergeska 110	[Signature]
9	Čedomir Petrović	LMB Soft	RZUNA D. MEST.	[Signature]
10	Carina Maricic	FTK-S-PiK HUB	DOBRIČKEB. 2	[Signature]
11	Aleksandar Zlatkovic	Football Group	Antona 1	[Signature]
12	Enika Petrovic	Mosinski Fakultet	Aleksandar Nikolic 11	[Signature]
13	Milica Batak	COLFUNE DoS	NAŠA PEVAČICA BEOGRAD	[Signature]
14	Nenada Annonic	E1 Cozer In	IVANA MILUTINOVIC 11	[Signature]

Host organization: University of Niš
 Name of the legal representative: Prof. dr Dragan Antic
 Signature of the legal representative: [Signature]

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PARTICIPANTS LIST
Multiplier event E1

Nr.	Name	Organization	Organization's address	Signature
1	Danijela Ristic-Duranc	IAT - University of Bremen	Bremen, Germany	[Signature]
2	Dragan Maricic	TU Berlin, Germany	Berlin, Germany	[Signature]
3	Stevan Stankosic	FTU Novi Sad	Novi Sad, Serbia	[Signature]
4	Tonkara Orosovic	FTU Hobi Lag	Hobi Lag, Srbija	[Signature]
5	Aleksandar Zlatkovic	FTU, Croatia	Bratstvo, Srbija	[Signature]
6	Carina Maricic	FTU Aleksandra Gajce	Bratstvo, Srbija	[Signature]
7	Milica Batak	NTP NiS	NTP NiS, Srbija	[Signature]
8				
9				
10				
11				
12				
13				
14				

Host organization: University of Niš
 Name of the legal representative: Prof. dr Dragan Antic
 Signature of the legal representative: [Signature]

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PARTICIPANTS LIST
Multiplier event E1

Nr.	Name	Organization	Organization's address	Signature
1.	ALEKSANDAR MILUTEHOVIĆ	UNI	A. Medvedeva 14, Niš	<i>[Signature]</i>
2.	DRAGAN AJTAHAŠEVIĆ	EI CEGAR IX	Trava Nulaković 30	<i>[Signature]</i>
3.	MILAH BANIĆ	UNI	TRG UNIVERZITETSKI 2 Niš	<i>[Signature]</i>
4.	Jovana Arandjelović	UNI	A. Medvedeva 14, Niš	<i>[Signature]</i>
5.	Bajro Turdija	UNI	A. Medvedeva 14, Niš	<i>[Signature]</i>
6.	Damjan Rangelov	UNI	A. Medvedeva 14, Niš	<i>[Signature]</i>
7.	Marko Perić	UNI	A. Medvedeva 14, Niš	<i>[Signature]</i>
8.	Mikaelson Electronic	Mikaelson Electronic	Čamurlijevi put 66	<i>[Signature]</i>
9.	Mikić Aleksandro	Mikaelson Electronic	Čamurlijevi put 66	<i>[Signature]</i>
10.	SVE TO ZAR KOLICAR	3D REPUBLICA		<i>[Signature]</i>
11.	Alexandru Mihailovici	UNI	A. Meşlegela 14, Hun	<i>[Signature]</i>
12.	PACURAR RAVAN	TUCN	MEMORANDUMULUI 28	<i>[Signature]</i>
13.	BORZAN CRISTINA	TUCN	MEMORANDUMULUI 28 cai	<i>[Signature]</i>
14.	BELOKO DEJANT	VERIEST	A. MEDVEDOVA, NTP	<i>[Signature]</i>

Host organization	University of Niš
Name of the legal representative	Prof. dr. Dragan Antić
Signature of the legal representative	<i>[Signature]</i>

3. Questionnaire/Inquiry data and results

The attendees were kindly asked to complete anonymously the following questionnaire. In this questionnaire were included questions about the organizational part of the event, about the materials that were presented and the overall impressions about attending the Multiplier Event E1. Also, the attendees could give suggestions about the aspects that can be improved.

Instructions: Please indicate your level of agreement with the statements listed below, on a scale from 1 to 5, where:

- 1 - Strongly disagree 3 – Neutral 5 – Strongly agree
2 – Disagree 4 – Agree

A. Objectives of the meeting

Statement	Score				
	1	2	3	4	5
1. The objectives of the meeting were clearly defined.					
2. The objectives were met during the meeting.					

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3. All the relevant topics were covered during the meeting.					
4. The content was well organized and easy to follow.					
5. I obtained useful information and knowledge that will help me in my activity at work.					

B. Organization of the meeting

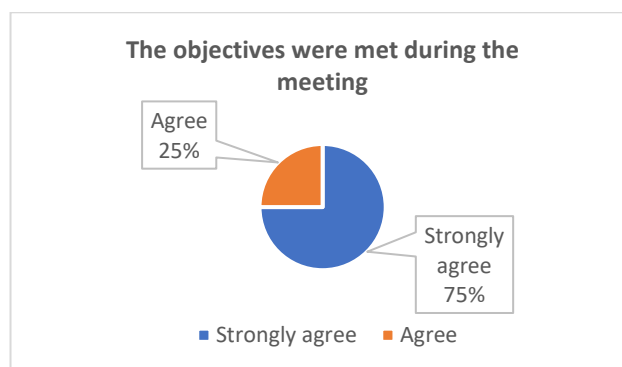
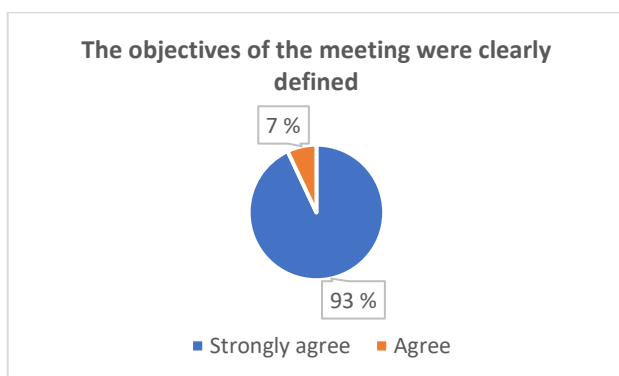
Statement	Score				
	1	2	3	4	5
6. The meeting was well organized.					
7. The facilitators were knowledgeable about the discussed topics.					
8. The facilitators were dedicated and supportive.					
9. Participation and interaction were encouraged.					
10. The schedule and the agenda were observed throughout the meeting.					
11. The materials distributed were useful.					
12. The time allocated for the meeting and for the activities, was sufficient.					
13. The meeting room and facilities were adequate and comfortable.					

14. What did you like the most about how the meeting was organized?

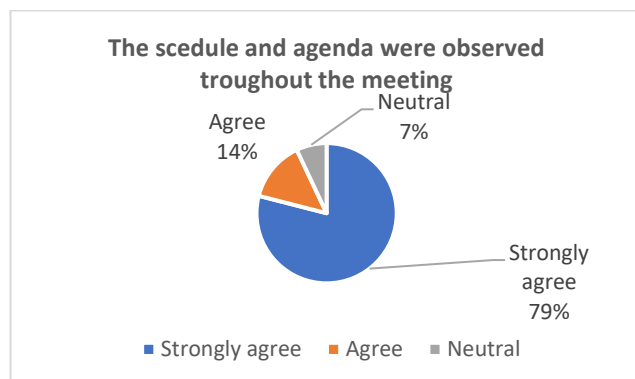
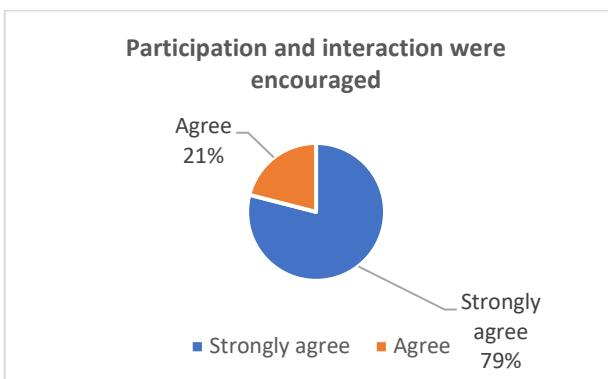
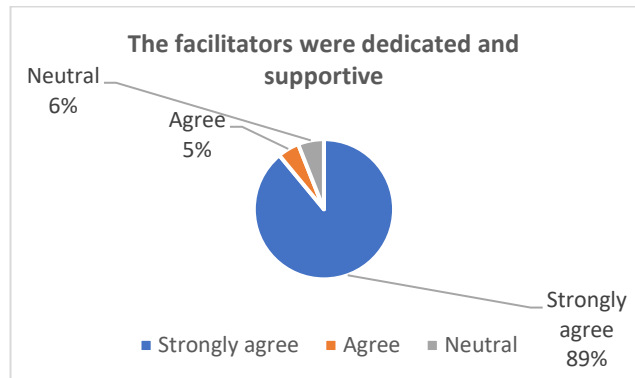
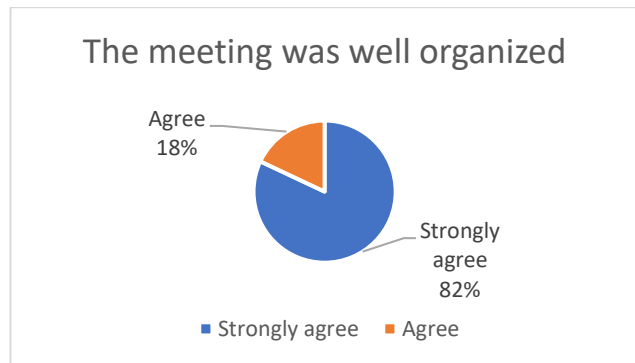
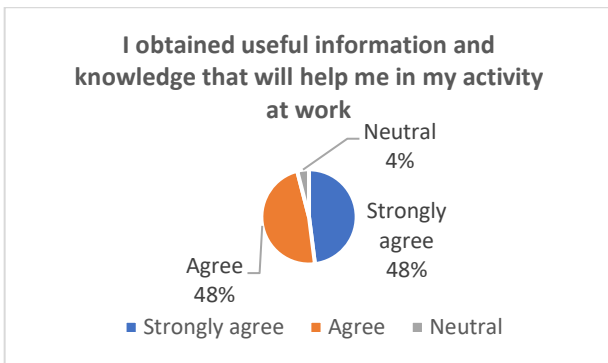
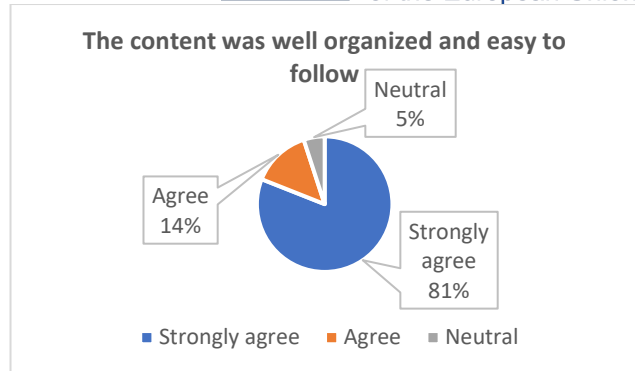
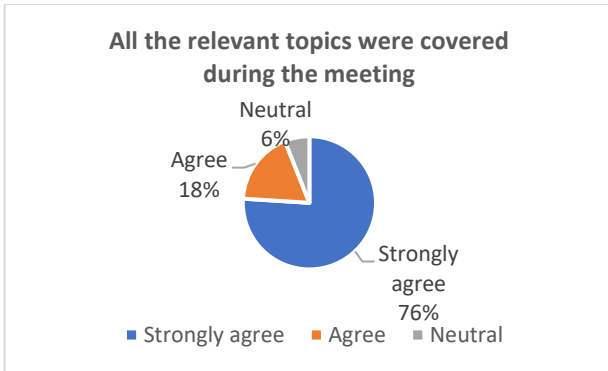
15. What aspects of the organization could be improved?

16. Please share other comments and suggestions that were not covered in the previous questions:

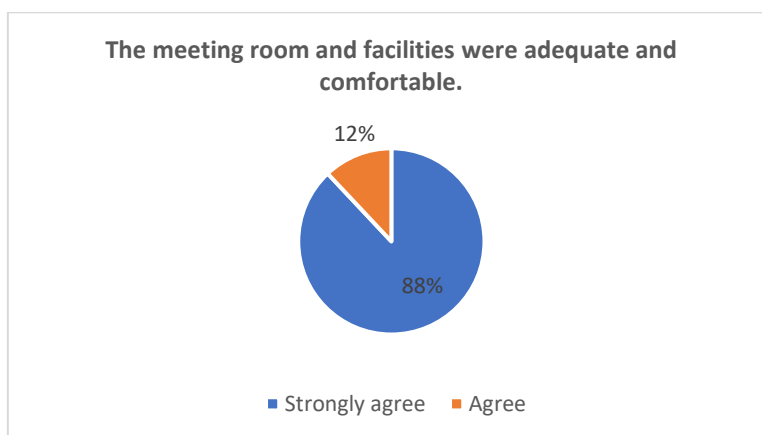
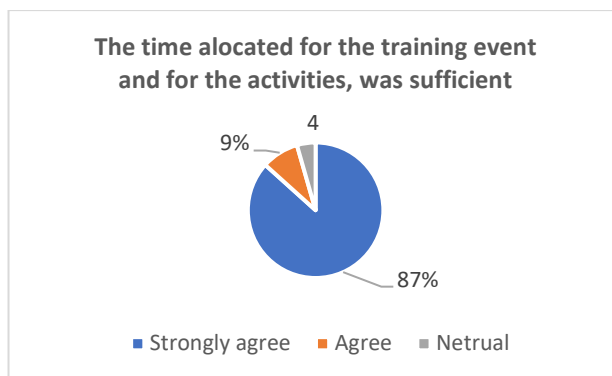
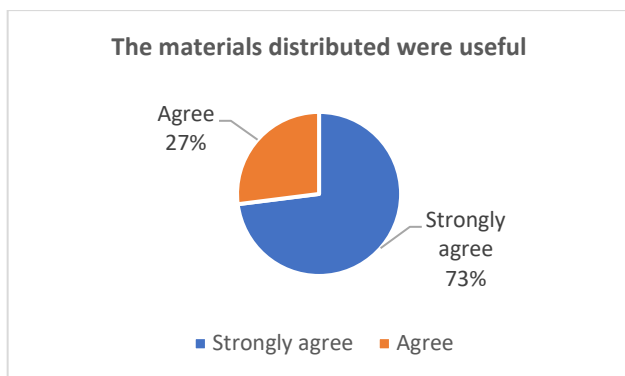
A total of 34 participants completed the feedback questionnaires and the result is presented in the following graphs:



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For the questions 14, 15, 16 the answers were:

What did you like the most about how the meeting was organized?

- The diversity of covered subjects and professionalism of the facilitators
- I like how the meeting was organized
- Venue, covered subjects and agenda
- Nice location and a lot of people in spite of pandemic situation
- The strong collaboration and relationship between project partners
- Knowledgeable and professional lecturers
- Content of presentations and covered subjects
- The presenters were dedicated and answered all the addressed questions

What aspects of the organization could be improved?

- More interesting projects can be presented
- More topics could be covered
- The project should be advertised more
- More time meeting like this

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Please share other comments and suggestions that were not covered in the previous questions:

- This kind of events should be organized more often
- Thank you for the invitation
- Organize the meeting in different period of time
- Organize this kind of meeting more often by online since Covid-19 exists

4. Conclusion

The results of the questionnaire show that the attendees were mostly satisfied with the organization part of the event (the place and time), the objectives of the Multiplier Event were clearly presented and achieved at the end of the event (according to the answers of the question 2).

Also, the materials of the presentations were well structured, and it was easy to follow the aspects that was discussed, even for the participants that weren't familiar to producing medical devices.

About the improvements that can be done, it was mentioned the lack of advertising, so for the next events, the organizations will take it into account and will be more active also on social media platforms.

It is needed to be mentioned that plenty of questions were received during the Q&A session about BRIGHT summer school and possibility to organize similar events not just for students but also for selected engineers from business community where implementation of 3D printing methods can be useful in the future.

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