



# **Development and Implementation of MDTV Curricula (DIMTV)**

## **WP3- Deliverable 3.3**

### **External evaluation of study programmes by experts Professional Master in Multimedia and Digital Television**

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## 1. I. Review Team

The team of reviewers responsible for the External Evaluation of the “Multimedia and Digital Television (MDTV)”, Bachelor study program in Aleksandër Moisiu University (AMU) comprised the following two (2) expert evaluators:

1. Prof. Marcin Niemiec, Ph.D., University of Krakow, Dept. of Telecommunication, [niemiec@agh.edu.pl](mailto:niemiec@agh.edu.pl)

**Marcin NIEMIEC**, received the M.S. and Ph.D. degrees in telecommunications from AGH University of Science and Technology, Krakow, Poland in 2005 and 2011, respectively. Also, he studied in Carlos III University of Madrid. He joined the Department of Telecommunications, AGH University of Science and Technology in 2009. Currently he is working as a university professor at the Department of Telecommunications. His research interests focus on security and data protection, especially: security services, symmetric ciphers, cryptanalysis, malware, intrusion detection, and quantum cryptography. He is co-organizer of many international meetings, workshops, and conferences. He has/had actively participated in H2020, 6th and 7th FP European programs (ECHO, SCISSOR, BONE, Smooth IT, INDECT, ePhoton/ONE+), Eureka-Celtic (DESYME) and several national projects (INRED, Real Time Billing, INSIGMA, Lider, SWOP). In period 2009- 2014, he participated in INDECT research project with budget 14.8 mil. €, dealing with solutions for intelligent surveillance and automatic detection of suspicious behaviour and violence in urban environments from multimedia network traffic. He is the recipient of the Best Paper Award from IEEE GLOBECOM 2012. He co-authored over 90 publications and reports (papers, deliverables, book reviews, IETF draft, and book).

2. Prof. Peter Pocta, Ph.D., University of Zilina, Dept. of Multimedia and Information-Communication Technology, [peter.pocta@feit.uniza.sk](mailto:peter.pocta@feit.uniza.sk)

**Peter POČTA** was born in 1981. He received his M.S. and PhD degrees from the University of Zilina, Faculty of Electrical Engineering, Slovakia in 2004 and 2007, respectively. During his PhD study, he was awarded with several fellowships. Firstly, he spent 3 months as an Erasmus+ student in the Department of Electrical Engineering and Information Technology, Chair of Telecommunications of the Dresden University of Technology,

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Germany where he collaborated on testing principles over ADSL access lines. Secondly, he was with Alcatel-Lucent, R&D center, Network Integration department, Stuttgart, Germany where he investigated some impacts on speech quality in the WiMAX system. He is currently an Associate Professor at the Department of Multimedia and Information-Communication Technology of the University of Zilina and is involved with International Standardization through the ETSI TC STQ as well as ITU-T SG12. His research interests include speech, audio, video and audiovisual quality assessment, speech intelligibility, multimedia communication and QoE management. He has published over 60 refereed papers in international journals and conferences including Acta Acustica united with Acustica, Advances in Multimedia (Hindawi), AEO - International Journal of Electronics and Communications (Elsevier), Speech Communication (Elsevier), IEEE Transactions on Broadcasting, MESAQIN and QoMEX conferences. He serves as an external reviewer for the Journal of Systems and Software (Elsevier), Computer Standards & Interfaces (Elsevier), Speech Communication (Elsevier), Telecommunication Systems (Springer), Quality and User Experience (Springer) and IEEE/ ACM Transactions on Audio, Speech and Language Processing and several conferences in the area of multimedia quality and communication networks, e.g. QoMEX, QCMan, etc.



## II. Introduction

### 2.1 Study programme

The Professional Master study program "Multimedia and Digital Television", as part of the Department of Information Technology at the Faculty of Information Technology at the University "Aleksandër Moisiu" in Durrës, AMU, has started to be implemented in the academic year 2018-2019. The program aims to meet the needs and preferences for multimedia specialists in a three-year curriculum, in three directions: Production and Post-Production; 3D Animation and Image Processing. Upon completion of the program, graduates have the opportunity to adapt and contribute to the labour market, to realize products and services in audio and audiovisual newsrooms, in PR units, to participate or manage promotional, information and awareness campaigns, as well as in various media and communication sectors.

The opening of this full-time second cycle program of studies has 60 ECTS credits and lasts 1 academic year. The program has been activated as part of the Erasmus + "Development and Implementation of Multimedia and Digital TV Curricula (DIMTV)" project and has been supported by cooperation with European partners such as the University of Ljubljana, University of Tartu and the University of Ostrava.

This evaluation report is developed following the project requirements for an external and independent review of the Professional Master in "Multimedia and Digital Television".

### 2.2 Study program Curriculum

Aleksandër Moisiu University has prepared a labour market study based on the needs of professionals in the field of audiovisual media in Albania and Kosovo. The working group has studied the curricula in Kosovo in their programs. The group has designed a questionnaire in Albanian and English and has developed it in the formats: Word and Excel. Google Forms were also used to present and distribute the questionnaire to bachelor and alumni students, and the rest of the respondents. In the case of industry, MDTV has some special features such as the number of existing organizations/companies and in some cases the lack of desire to provide information due to competition.

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Some of the other information was obtained from surveys conducted by the Audiovisual Media Authority (AMA). The "Multimedia and Digital Television" program in the first cycle of the Bachelor study has been open since 2012 at AMU and has had 180 students enrolled over the years. In the labour market study, 72 participants from this program were surveyed. Another questionnaire was sent to Epoka University students and graduates and was designed according to the same AMU principles. The number of participants was 77 and their study program was either Computer Engineering (CEN) or Electronics and Digital Communications Engineering (EDCE). From the study answers to the first questions it turned out that the question "Why choose this study program?" - most students stated that they choose this field because they had a passion for it. The surveys were supplemented with other questions. A questionnaire was also distributed through the AMA to audiovisual media operators.

According to AMA, 60-80% of experts in multimedia services working in different operators have a bachelor's degree. Due to the digitization process, there is an increase in audiovisual programs offered by operators and this increases the need for MDTV experts. Furthermore, operators in Albania do not have sufficient qualified staff to cover the need for 3D animation, production/post-production and image processing services. According to the AMA, there are three challenges facing media operators:

1. Financial problems. The current media market has a large number of audiovisual operators which makes the financial resources to cover expenses limited;
2. Competition in the market causes operators to invest more in technology, which is changing rapidly;
3. Lack of qualified technical staff in the efficient management of audiovisual broadcasts.

The information gathered from the surveys and discussions led to the opening of the Professional Master program "Multimedia and Digital Television" with profiles:

- a) Production and Post-Production;
- b) 3D animation;
- c) Image processing

The content of the courses of the Professional Master "Multimedia and Digital Television" with profiles: a) Production and Post-Production; b) 3D animation; c) "Image processing" is divided into two semesters and a total of 60 credits. The courses according to the curricula of the study program are:

- a) Basic Courses A
  1. Mathematics for Multimedia

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b) Characteristic Courses B

1. Advanced Multimedia Technologies
2. Multimedia Laboratory
3. Seminar in Multimedia

c) Interdisciplinary / Integrative Course C

1. Film and Media Production
2. Visual Effects / Color Correction and Editing
3. Editing and Mastering Audio / 3D Audio in Multimedia
4. Multimedia Content Compression, Sync and Advanced Video Transfer / Advanced Video Editing

d) Supplementary Course D

1. Project Management

The program ends with a Graduation Exam based on the knowledge gained in both the characteristic B and the interdisciplinary C courses, which are quite suitable with the needed knowledge in the labour market for the professions which are targeted by this Professional Master program in MDTV. The syllabi offered in this study program for all 3 profiles are structured in cooperation with European partners. Also, the institution states that some of the courses have been prepared with the same content as Epoka University and UBT, Prishtina to have joint programs and facilitation for transfer of studies in the future.

Formative activities are quite clearly separated between different subjects. In the first semester, the courses "Seminar in multimedia" and "Laboratory in multimedia" are mainly practical courses. The other three courses have mainly theoretical profile. However, even these courses have combined practice elements for the information provided. The second semester has a greater weight of practical subjects. "Film and Media Production", "Visual Effects", "Audio Editing and Mastering", "Multimedia Content Compression, Synchronization and Transfer" are almost entirely practical subjects. This division of subjects enables the achievement of training objectives as well as the employment of students after the completion of schooling.



### 2.2.1 Learning outcomes and objectives

Based on the regulations of the Professional Master study program, its mission is to provide students with in-depth professional training, after completing a university study program of at least three years (Bachelor) in the field of Multimedia and Digital Television, Information Systems, Information Technology, and Computer Science. The cycle of Professional Master studies in "Multimedia and Digital Television" is a 1-year full-time study program with compulsory attendance, which undertakes to offer in-depth studies in multimedia disciplines. This study program aims to:

- a) provide complete technical training in the following areas: image processing, 3D animation, production and post-production;
- b) ensure that the knowledge and skills acquired in this program qualify students for various practical challenges in their profession and to enable them to contribute to future technological innovations in the field of multimedia;
- c) develop technological skills, taking into account the most suitable tools for multimedia materials;
- d) train students in the design and development of multimedia productions, especially in radio-visual media;
- e) ensure the effectiveness and interactivity of various multimedia productions;
- f) combine theoretical and practical knowledge in the field of multimedia to perform various tasks;
- g) provide theoretical knowledge on digital processing of the multidimensional signal in the field of images (2D) and video (3D);
- h) enable students to analyze and apply various techniques of image coding and compression;
- i) prepare students to continue progress in the field of research and the most advanced scientific qualification.

### 2.3 Teaching Infrastructure

The study program is designed after the project Project No: 586318-EPP-1-2017-1-AL-EPPKA2-CBHE-JP entitled Development and Implementation Of Multimedia and Digital Tv Curricula (DIMTV). This project has helped to create a well-equipped Multimedia laboratory. As a laboratory, it serves both undergraduate students in Bachelor and PM students in MDTV. Professors from partner universities have been invited as guest lecturers in programs giving special seminars in some of the PM programs. This is because they have been part of the project, and have brought experience from their universities. The consortium created

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includes the University of Ljubljana, Slovenia, the University of Tartu, Estonia and the Technical University of Ostrava in the Czech Republic.

This consortium and the experience of these universities are a very good premise for the quality of the study program. The technical capacities are best complemented by two studios dedicated to this program, a computer studio and a television studio. The academic experience gained in other study programs is also utilized in the program. This applies to professors of basic courses A, characteristic courses B and interdisciplinary courses C. In the evaluation reports, the pedagogues have experience in the technical parts from the first cycle of study. The training developed by the staff within the project "Development and Implementation of Multimedia and Digital TV Curricula (DIMTV)" have provided the necessary information to create the continuity of the project.

The basic forms of teaching are lectures, seminars, and a combination of both lectures and seminars offered in modules, as well as professional training when students need specific practical knowledge that can not be accomplished within the university environment. Often are organized open lectures, with invited experts in the field of multimedia, who have come to the multimedia or computer laboratory for the presentation of professional skills, use of applications, and theoretical treatment of related topics. with the dynamics of the development of multimedia and digital television.

Full-time lecturers in the PM curriculum "Multimedia and Digital Television" have a high qualification especially in the subjects of information technology. This helps lecturers to give the necessary theoretical knowledge, especially during the first semester. From the cv of pedagogues is understood the continuous qualification for the subjects of information technology. The academic staff follows the graphs planned by the basic unit for the research and scientific contribution, in the participation in the conferences or the realization of the scientific works. This also applies to support staff engaged in the program that is in focus. The effect of these investments goes in favour of raising the standard of teaching by the teaching staff, encouraging them to update and enrich the knowledge they provide to students.

The specific topics related to multimedia technologies are new in the Albanian market and consequently, there are no specific lecturers for these topics, graduated and specialized in this field. These shortages have been replaced with foreign lecturers coming within the project as well as with lecturers invited by the new and traditional media in the country. These foreign lecturers have also helped train the current academic staff under the ERASMUS + DIMTV project, with funding from EU funds. AMU has signed cooperation

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agreements with other educational institutions in the country and maintains contacts with businesses in the respective fields according to the study programs.

At the Faculty of Information Technology, attention is paid to the organization of professional practices and cooperation with businesses. While for the MP program "Multimedia and Digital Television" although there is no practice specified near businesses, having a multimedia studio is a very good asset to equip students with practical knowledge. Both the computer studio and the multimedia laboratory have academic support staff who manage and take care of their well-being. As described in the regulations and job descriptions, laboratory assistants support the academic staff during the teaching hours in the laboratory. They also support the organization of various activities. Also, the staff of the respective subjects takes care of and directs the work in these laboratories for the development of specific teaching subjects.

The completion of the multimedia laboratory, as well as the computer laboratory, have facilitated the continuation of the program development for the ongoing academic years, significantly increasing the effectiveness of the development of theoretical and practical parts of subjects, enlivening the interactivity in the lesson, as well as in discussion and analysis of concrete tasks performed by students. Students have the opportunity to gain applied knowledge and skills from teachers, and they can work individually or in groups to concretize them. Due to the nature of the program, the presentations used in the auditorium is realized in various forms, such as video demonstration, animation, etc.

Compared to the number of students, the spaces for teaching purposes are functional, sufficient and maintained by the support staff and the students themselves. This element is an aid in the successful realization of the teaching and scientific activity in the program of the second cycle of the Professional Master study "Multimedia and Digital Television". The multimedia and computer laboratory have enough space for the development of the learning process and the realization of various tasks and works by students. Functionality in these environments makes it easy to use for work and realization of quality products. The computer network, as well as the programs installed in computers, create an interactive atmosphere and real-time follow-up of all stages of the development of assignments and works by students. The facilities where the lectures and seminars take place, as well as the application part, are available to the students not only in the schedule set for the program, but they have access to study and practice in other time-spaces, as needed. This allows them to have the infrastructure available for the obligations they have in different subjects and for the engagement with the diploma work. The students also identified the access and effectiveness of the laboratory infrastructure during the conversation that the external evaluation team had with them.

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The Professional Master study program "Multimedia and Digital Television" does not include a professional internship in the curriculum, but those students do in other institutions, based on bilateral agreements that AMU has with them, such as public broadcaster RTSH, and UBT and UP. The two modern laboratories available to the study program, the multimedia and the computer laboratory cannot replace the realization of professional internships inside or outside the territory of AMU. Interactivity through online communication allows students to have access and distance, reviewing and extracting the info they need to follow the dynamics of program development that are registered, as well as the obligations that remain to be realized.

## 2.4 Students

In the first week, at the beginning of the academic year, the faculty organizes an orienting and informative session, where lecturers and students discuss the Professional Master study program "Multimedia and Digital Television". The academic staff of the department provide clarifications and orientations on the structure, organization of the study process, concrete teaching methodology, evaluation of the courses for each semester, etc. On the other side, students have the opportunity to get the necessary information before they register on the official website of the institution.

The Professional Master study program in "Multimedia and Digital Television" with 3 profiles: a) Production and Post-Production; b) 3D animation; c) Image processing does not include professional practice as a course by itself. Students appreciate having a television studio equipped with the latest technology devices. The development of practical subjects in the studio helped them a lot in their professional preparation. The course of "Multimedia Laboratory" is a very important component of the curriculum and vocational training. Professional skills and competencies are created mainly from the subjects of the second semester, but by integrating many of the theoretical concepts learned during the theoretical subjects in the first semester. The multimedia studio, provide the environment for the proper combination of the study program and its clear organization in the service of in-depth professional training of students are guaranteed. AMU has cooperation agreements for the realization of teaching internships depending on the study programs which have internships included in the curricula.

Professional Master study program in "Multimedia and Digital Television" during the first year of implementation, had several invited foreign lecturers to special seminars and on various topics related to the professional side of studies in multimedia and television. The

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guest lecturers conducted workshops and provided certificates to participating students. The Department of Information Technology also designs two different questionnaire formats for students. One of the questionnaires is within the project and EU funding and the other is the questionnaire that the university itself conducts, at the end of each semester. Mainly, the collected information from the questionnaire is on improving the study program from the point of view of the students. The responses and the feedbacks of the students are used for making the necessary changes and improvements in the teaching process



### III. Conclusions and Recommendations

The external evaluators after carefully studying the materials provided by higher education institution may conclude that study program Professional Master in Multimedia and Digital Television, developed in the frame of the Erasmus+ DIMTV project, satisfies most of the quality requirements in terms of program objectives, learning outcomes, curricula development and delivery, student workload, international cooperation and other aspects of reviewing.

The expert team acknowledges the contribution given by project partners on developing the unique innovative study program for the region and encourages AMU to work further on implementing the recommendations derived from this report and other internal and external evaluations in future.

Most of the strong points of this study program are:

- Consistency and continuity concerning vision and strategy;
- Flexible and effective management;
- Standardized and formalized internal procedures;
- Intensification of the use of the opportunities for EU funding to allow better support the different operations of the institution;
- Excellent communication between students and faculty;
- The students are involved in the decision-making process as members of the various Quality Assurance through responses to the questionnaires committees and individually by filling up the questionnaires.
- Good infrastructure with modern laboratories dedicated to the Multimedia and Digital Television study program.



Some of the suggestions are:

1. Ongoing and intensification of internationalization – emphasis on networking, mobility and establishment of collaboration with international institutions;
2. Insufficient number of students;
3. More Memorandum of Understandings with private and public companies in the field of multimedia;
4. Integration of students in more practical projects
5. The department is encouraged to continue nurturing the positive work and study environment it has developed, with emphasis on the needs of its students.

25-10-2020

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30. 10. 2020

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