



FutureNEM

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FutureNEM

D3.3.4 Report on the promotion made for the new master level activity on NEM technologies and services

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Abstract

Higher education is recognized as a basic asset in every Society. In particular, and related to the NEM field, education and training is a basic pillar to promote important social changes and, as a second derivative, to push technology to reach higher levels beyond the current limits. This report describes, very briefly, the creation process of the new Master in Audiovisual Systems and Services that tries to answer the new requirements and needs of the professionals in the field, and the promotional activities carried out to let the international community know about its existence and possibilities of collaboration, either as participant student or teaching member.

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1. Introduction

NEM activities could not be complete if education and training in the field is not covered. Education has always been considered as one fundamental issue to address by every society, as it gears the evolution and progress of the society, and even conditions the behaviour and attitude of the people, in particular related to innovation. Higher education is recognized as a basic asset in every Society. In particular, and related to the NEM field, education and training is a basic pillar to promote important social changes and, as a second derivative, to push technology to reach higher levels beyond the current limits.

Today, we are living a very important moment, in which several sound changes are happening in the educational sector. The students are changing, the technology is evolving very quickly (and the society is evolving with it at the same speed!), and the methodologies to teach have to change too. Social networks are becoming an important active in the society (as the whole country of Egypt showed to the rest of the world quite recently), and higher education can not be currently conceived without an active community of teachers and students, continuously connected, and sharing information, works, doubts and recommendations. Besides all this, the borders of the countries seem to be diminishing, and the mobility of the students has increased very significantly in the last years. Grant programs such as Erasmus or Erasmus MUNDUS have helped creating a global educational space for Europe, where cultural differences are progressively disappearing.

Within the framework of the Future NEM project, an important effort has been made to create, shape and promote a new Master program in Audiovisual Systems and Services (MASS), trying to gather all the requirements and needs provided by the NEM members, either multinational big companies or SMEs.

This report describes, very briefly, the creation process of the new Master in Audiovisual Systems and Services, and the promotional activities carried out to let the international community know about its existence and possibilities of collaboration, either as participant student or teaching member.

Chapter 2 justifies the need of a change in the educational and training field, while chapter 3 provides some short information about the new methodologies and the Bologna Declaration. Chapter 4 describes the Master creation process and contents. Finally, chapter 5 provides information about the promotional activities carried out about the MASS. Chapter 6 provides some final conclusions.

2. Education as another social challenge

NEM is creating an innovation partnership geared around the grand societal challenges. Among those challenges, education is one of the fundamental pillars and starting link of the innovation chain. Without a solid, comprehensive and stimulating educational period, NEM will not evolve as the whole Europe is expecting, neither in speed, nor in quality or number of researchers.

For each Country, higher education is a great national asset, contributing to the social well, and empowering the economy. As a matter of fact, every new government in every country establishes, as one of the basic elements to review, the educational program. The reason for that to happen is very simple: according to the recognized study by EDUCASE [EDUCASE 2010] about “The future of higher education” of 2010, education is one of the main drivers of change and evolution for any country, and conditions its innovation and development capabilities in the medium and long term planning.

The society is continuously evolving. The environmental and technological framework of our young students has changed dramatically compared to the one we had 20 years ago. The set of requirements are different, from the sociological, economic or technological points of view. And this change has to be transmitted to the way education is applied, both in the content (educational programs) as well as in methodologies.

Several worldwide recognized specialists have tried to justify the need for a sound change in the educational procedures. Following Marc Prensky’s naming ideas [M. Prensky1] [M. Prensky2], our current students are “Digital Natives”. They were born and have grown up surrounded by technology. They are used to receive up-to-date information, they prefer graphics to text, and they are used to hypertexts and random linking searches, multitasking and parallel processes. They do better and over-perform when they work in groups, interconnected. They do not need to “learn” the special “language” of current technology, language that the “Digital Immigrants” (not “natives”) need to learn, in manuals and user guides that the Digital Natives scarcely look up. This new profile of students need new teaching procedures, new ways of communicating knowledge that take into account more participation, more self-search, and learn by practice.

NEM imply technology with a fast obsolescence cycle, and with a special need for actual professionals in specific ephemeral fields, participating in the teaching activities. As a consequence, the students should be more deeply involved in the day-by-day activities of the companies, to experience the dizziness of the idea-design-implementation-selling short cycle. Therefore, new teaching procedures and Master programs should be launched or updated to cope with the current needs, and appropriately prepare our students for the future.

But this new education should also be sustainable, in terms of costs and environmental impact. The new teaching mechanism should be design to preserve the social, economic and environmental ecosystem.

The future shape of higher education will be influenced by new structures and new business models, enabled by information technology. But currently, many are driven by cost, access, or novel approaches. The student engagement and stimulation should be achieved through content interaction, problem solving, and reflection. The educational experience is increasingly connected, experiential, flexible, and driven by individual preferences and needs. Social networking tools enable connections and collaboration, whether social, or scientific, and should be considered as a basic tool for human relation and knowledge interchange. On top of all the previous, international mobility and sharing of experiences and learning procedures clearly benefit both students and professors. The today international networks of students will become the future international networks of researchers.

3. New models for education

As students become more diverse and as learners' needs expand across a lifetime, more flexible models for education are emerging. Online learning and accelerated programs provide greater flexibility than traditional campus programs. To promote international exchange, transferability of credits from one institution to another becomes necessary, as time-to-degree increases and lifelong learning grows. To ease this international exchange and transferability of credits among institutions and countries, the Bologna Declaration was signed among 29 countries to reform the structures of their higher education systems in a convergent way. This declaration [Bologna-Declaration] is a commitment freely taken by each signatory country to reform its own higher education system or systems in order to create overall convergence at European level. The Bologna Declaration is not a reform imposed upon national governments or higher education institutions. Any pressure individual countries and higher education institutions may feel from the Bologna process could only result from their ignoring increasingly common features or staying outside the mainstream of change.

Next to the need to “achieve greater compatibility and comparability in the systems of higher education” (mainly an intra-European issue), the Declaration wants “in particular” to increase “the international competitiveness of the European system of higher education”. It says that the “vitality and efficiency of any civilization can be measured by the appeal its culture has for other countries”. The signatory countries explicitly express their goal to “ensure that the European higher education system acquires a worldwide degree of attractiveness equal to [Europe's] extraordinary cultural and scientific traditions”.

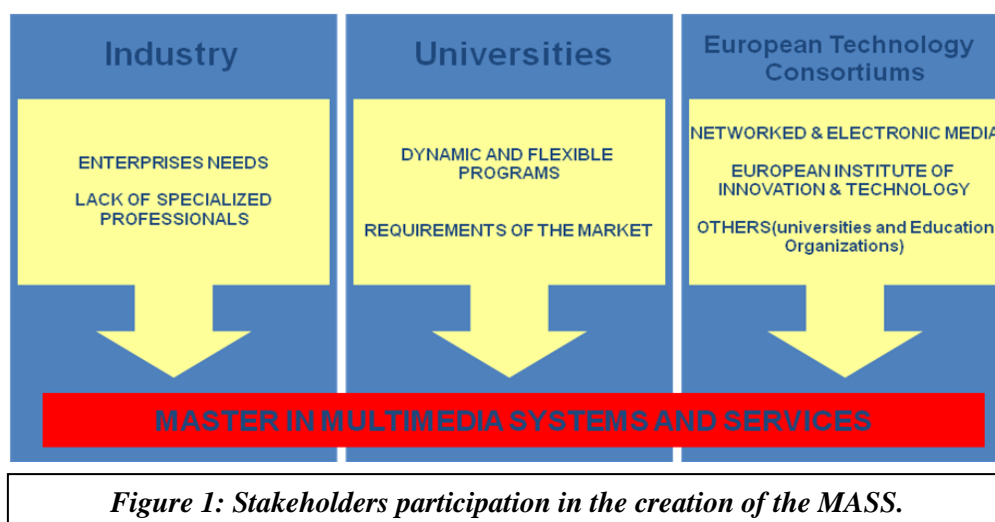
The creation of the new educational model requires the collaboration across organizational and national boundaries, bringing together the collective intelligence of people from backgrounds including education, corporate, and government. New educational programs should be created, with new profiles and fields of expertise, following (and promoting) the innovation strategies of the NEM companies.

The Master in Audiovisual Systems and Services (MASS) of the Universidad Politécnica de Madrid (UPM), promoted by the NEM environment, is one example of a new model for higher education, in which the whole set of actors have been involved: Industry, European Technological Consortiums, Stakeholders, and International Universities. The basic target is to obtain new professionals with a deep knowledge of the wide NEM sector, its needs, closed to the market, with a special emphasis in the need of innovation and creativity, to support the development of new systems and new services, according to the social evolution.

4. The new Master in Audiovisual Systems and Services (MASS)

The new Master in Audiovisual Systems and Services (MASS) was created with the following set of basic objectives:

- To form professionals with innovation skills in multimedia systems and services as industry demands
- Technology oriented, with a management component
- To have strong links between education and European Technology Platforms
- Professional sector oriented
- To be a National and International referent



From the very beginning, **the MASS concept definition has been linked to promotional activities**. Before it was even launched, a consultation to a small group of relevant Spanish companies and stakeholders in the field (some of them with international projection) was done, including:

- Broadcasters
- Network operators
- Regulators
- Content producers
- Equipment manufacturers
- Software/service developers
- Independent consultants

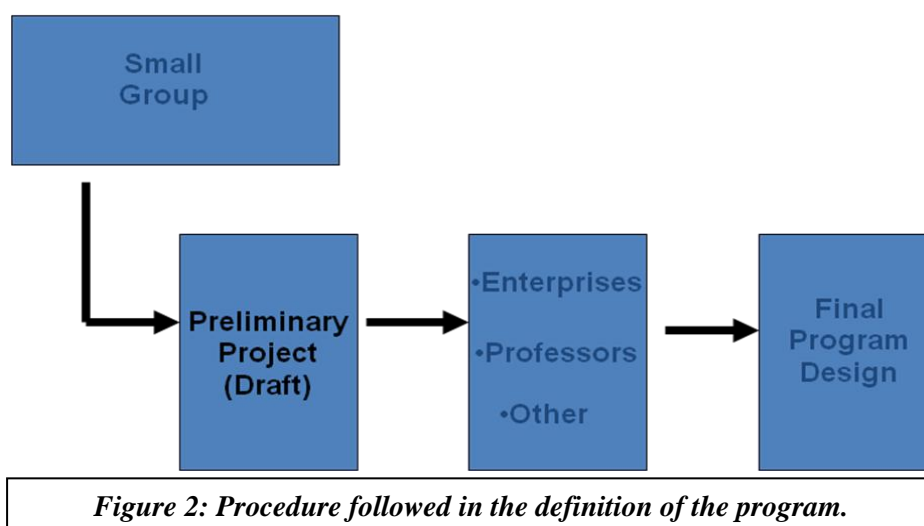
As conclusions, the consultations made to this small group agreed on the need to define a specific education and training program, considered as a Preliminary Project, with the following features:

- The program should allow to receive a UPM's Master Diploma, title that will progressively be reinforced by the Diploma of the international Universities who join the program
- It should be professionally oriented
- A project oriented methodology, following the standard PBL (Project Based Learning) paradigm, in which a multimedia project development is articulated and sustained by team working dynamics
- In order to support the project development, the Master includes masterly classes and laboratories.

- As a principal link among students, professors and tutors, a web platform should be used, which is fast, flexible, and commonly very well accepted by the university environment
- It should include 60 ECTS, following the European Higher Education Space and the Bologna Declaration
- It must be of international nature
- Due to its professional orientation, it should be schedule in the afternoons, allowing some compatibility between ordinary work and Master classes
- The number of students per class should be reduced to a number between 25 to 30
- The sponsoring scheme should rely on participant enterprises, and allowing the participation of any company declaring its willingness to join the program
- The set of teachers should include staff (Professors) from all the participant Universities: UPM (for the launching of the program), accompanies and the best experts throughout the world to give a strong professional component

The entry required profile should be a graduated diploma from an Engineering Program (or equivalent) in:

- Telecommunication
- Computer Science
- Electrical/electronics
- Information technology
- Related disciplines



This preliminary Project was introduced to a wider set of relevant companies and stakeholders in the field, applying some minor corrections and modifications according to the suggestions made and proposal given. This second public and wider presentation was, again, a **sound promotional event** of the MASS, as it was presented and offered for collaboration to a wider set of possible collaborating companies in the field. Among the participants and interested entities, the following can be highlighted:

- Radio Televisión Española
- Sogecable (Canal + España)
- Astra
- Hispasat
- Telefónica
- Abertis Telecom
- Mirada TV
- Sony
- Impulsa TDT

- Telemadrid
- Albalá Ingenieros
- AMETIC (Spanish Association of companies in the field)
- Ministerio de Industria, Turismo y Comercio
- Aragón Telecom
- European Comssion
- Future NEM
- Etc.

Finally, the complete program was produced, and presented for approval to the administrative and academic authorities of the Universidad Politécnica de Madrid of its official approval.

The program is structured in three basic modules, each one with a different objective:

- A first module of 18 ECTS, dealing with fundamental and basic subjects, aiming at creating a common baseline to all the students, independently of their entry profile
- A second module of 22 ECTS, including the core courses that provide the deep knowledge in the field
- A third module of 15 ECTS, where the acquired knowledge is applied, and the students have the opportunity to participate in real companies with well defined projects

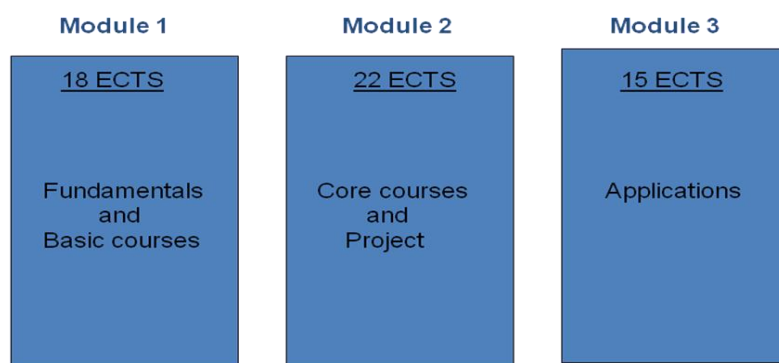


Figure 3: MASS program structure.

The final program, ECTS distribution and subjects are shown in figure 4.

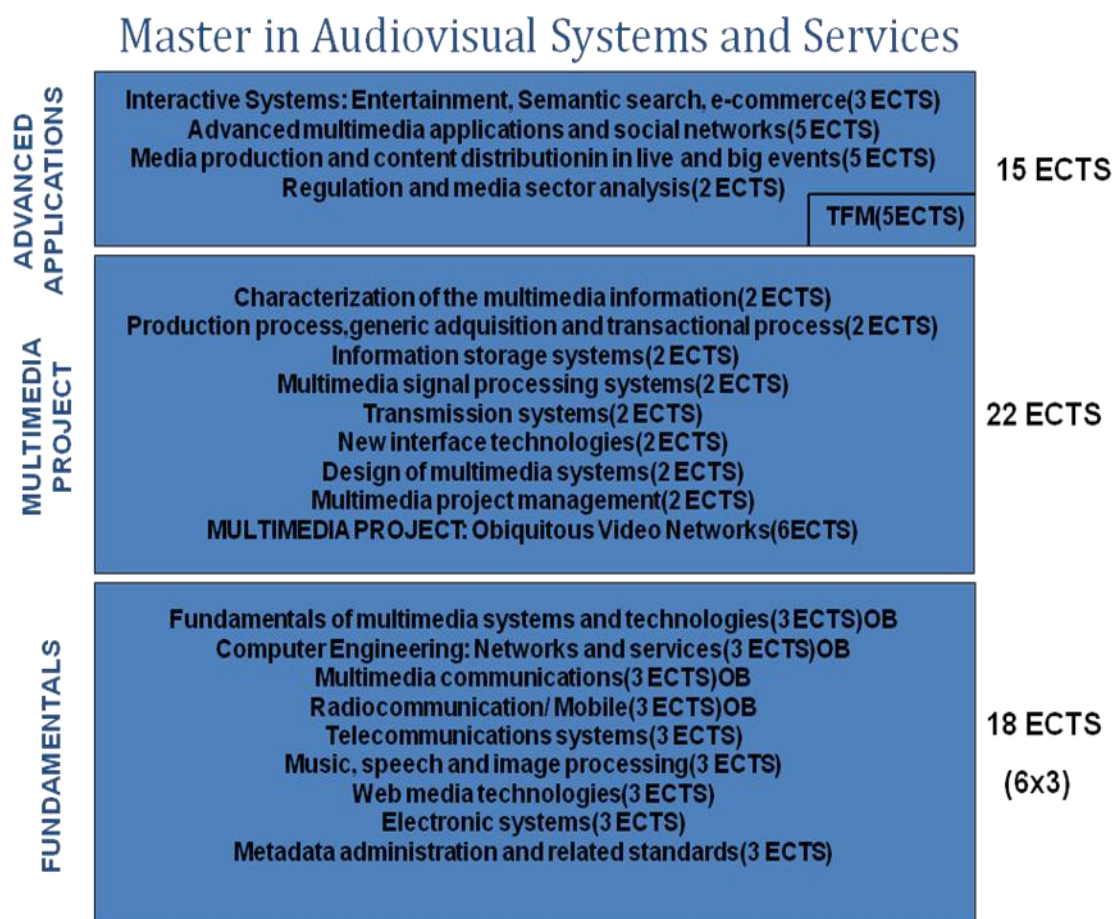


Figure 4: Detailed program of the MASS.

5. Promotion of the MASS

As it has been commented before, the creation of the MASS has implied the organization of promotional activities among companies and different stakeholders in the field of NEM from the very beginning. Since then, several and varied mechanisms have been used to promote the participation of students in the MASS. As a summary, the following can be highlighted:

- The first and more important promotion event took place when the first draft of the MASS program was presented to the wider set of companies and stakeholders, in February 2010. Figure 5 shows the people that participated in the presentation, including Mr. Javier Uceda (Rector of UPM), Mr. Guillermo Cisneros (Director of the Telecommunication Engineering School), Mr. Bernardo Lorenzo (Secretary of State of the Spanish Ministry of Industry), Mr. Bartolomé Arroyo (European Commission), and Mr. Yves-Marie Le Pannerer (FutureNEM).



Figure 5: MASS official presentation.

- After the official presentation, the MASS has been promoted in several events of national and international projection. Among them, the following can be mentioned:
 - At the NEM Open Media Forum, in October 2010, in Barcelona (Spain)
 - At the II National Conference on Telecommunication (CONATEL) in Arequipa (Perú), in May 2011.
 - At the International Emergency Management Society 17th Annual Conference, TIEMS 2010, in Beijing (China), in June 2010.
 - At the 2nd International Conference on User Centric Media, in Palma de Mallorca (Spain), in September 2010.
 - At the INFOCOM 2011 International Workshop on Future Media Networks and IP-based TV, in Shanghai, in April 2011.

In all the previous events, some speech presentation was provided (when possible), and the brochure shown in figure 6 was distributed.

- There is a dedicated web page for the MASS, with complete information about the program and administrative issues, as shown in figure 7 (url: www.upm.es/MASS)
- The UPM has its own web page and promotional channels for the set of undergraduate, master program and PhD programs that are currently on track, as shown in figure 8 (url: http://www.upm.es/institucional/FuturosEstudiantes/Estudios_Titulaciones/Estudios+Propios+de+Postgrado).

MASS
MASTER IN AUDIOVISUAL SYSTEMS AND SERVICES

OBJECTIVE: The Master in Audiovisual Systems and Services has been designed to offer a structured multidisciplinary training framework to our students. We offer the integration of all disciplines needed for becoming a highly qualified professional, able to develop and manage audiovisual technology projects, with a strong technology and innovation orientation. Training in both systems and services areas will provide our students with the ability to cope with the needs and requirements of the audiovisual sector industry.

This Master equips the students with the skills and abilities to fill responsibility positions in the following areas:

- Design and dimensioning of audiovisual systems, covering both signal processing and computing.
- Creation and analysis of possible new products and audiovisual services, covering both technical and economical feasibility analysis.
- Management and operation of audiovisual systems.
- Technical and economical leadership of audiovisual projects.
- Relationship with operators, manufacturers, standardization organizations and policy makers.

ADDRESSED TO:

- Professionals from the audiovisual sector graduated from a high degree program and interested in systems and management of audiovisual projects.
- Telecommunication, electrical and computer science engineers mainly (other specialities may be considered) who wish to orient and develop their professional carrier in the audiovisual sector.
- Graduated students in similar disciplines.

DIRECTOR:
Dr. Jose Manuel Menendez

ACADEMIC SECRETARY:
Dr. Federico Alvarez

STARTING DATE: February 27th, 2012

STUDENTS MAXIMUM NUMBER: 30
The students selection process will be done based on the academic background and CV.

FACULTY:

- Professors from the Technical University of Madrid, Telecommunications school.
- Professors from international Universities
- Experts from the audiovisual industry

PLACE:
Escuela Técnica Superior de Ingenieros en Telecomunicación
Universidad Politécnica de Madrid
Av. Complutense 30, E-28040, Madrid (Spain)

METHODOLOGY:
Lectures are given in Spanish and practical sessions and seminars, given by experts from industry and audiovisual sector institutions, can be in English or Spanish. Documentation will be provided in English. Students will have the opportunity to develop an audiovisual project in teams, using the methodology and phases of real-life projects.

ENROLMENT:
To fill out the admission form in our web-site: <http://www.upm.es/MASS> or via e-mail to: postgrado@master-etsit.upm.es attaching the following documentation:

- Certification of marks, of a University degree.
- Curriculum vitae and one photo (small size)

Students can enrol in single modules. However, 60 ECTS are needed to obtain the Master degree.

CALENDAR: From February 27th, 2012 to January 18th, 2013, from 17 to 21h

ENROLMENT FEES: 8000 € (Full Master)

SCHOLARSHIPS: Sponsoring enterprises offer a limited number of scholarships.

ENROLMENT DEADLINE: February 11th, 2012

INFORMATIVE SESSION:
This Master will be presented in informative sessions. For more information, please check the Master web-site: <http://www.upm.es/MASS>

PROGRAM SECRETARIAT:
ETSI de Telecomunicación - Universidad Politécnica de Madrid
Edificio B - Despacho 05 - Ciudad Universitaria, s/n. 28040 Madrid (España)
Teléfonos: +34 91 336 73 64, +34 91 549 57 00 ext. 8000/8001
Fax: +34 91 336 73 63
E-mail: postgrado@master-etsit.upm.es

Figure 6: Brochure distributed of the MASS.

MASS
MASTER IN AUDIOVISUAL SYSTEMS AND SERVICES

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Fax: +34 91 336 73 63
E-mail: postgrado@master-etsit.upm.es

Figure 7: MASS web page.



Figure 8: UPM Master programs web page.

Apart from the previous public activities, some further contacts have already been established with Queen Mary University in London, the Universidad Nacional Autónoma de México, Universidad de la República of Uruguay, Universidad de Antioquia of Colombia, and with the Universidad de Buenos Aires in Argentina.

6. Launching of the program

The starting of the program was agreed to be delayed for one and half years with the supporting companies and research institutions, taking into account the global difficult situation of the Audiovisual environment at international level and, in particular, at European level. All the components of the Advisory Board, both from the research centers and the companies, agreed on the convenience to consolidate a good basis in terms of number of students, operative and economic support from the participant companies to guarantee a successful launching of the program. For such purpose, the starting was done, initially, with international postgraduate students, coming from Europe (Finland and Spain), America (Colombia) and Asia (India and China). These students are currently defining a particular research project that will start at the University, and will complete in one of the supporting companies.

In the second semester of the course 2011-2012, the undergraduate program will start. The pre-booking period was opened in October 2011 until February 2012, and since then the number of application has slowly increase until 10 students. It is expected to raise a minimal figure of 12 to configure a solid basis for program operation.

7. Conclusions

A new Master program has been created, trying to gather all the needs and requirements of the NEM members, taking into account both big multinational enterprises and SMEs. The Master content has been carefully designed, involving university professors and professionals from the NEM member companies. The outcome seems to satisfy all the parts, and the expectations are good and promising.

Several promotional activities have been carried out, as described in chapter 5. From this dissemination task, it can be concluded that the Master is attractive not only for European students, but also in Latin America, where the NEM local community is growing, in parallel with their economies. Some bilateral agreements are currently under discussion with several universities from different Latin America countries, to share both students and professors. The contacts are really strong, especially with Mexico, Uruguay and Colombia, and the expectations include the possibility to create a common technological infrastructure to share for cross-Atlantic experimentation.

The starting of the program was agreed to be delayed for one and half years with the supporting companies and research institutions, taking into account the global difficult situation of the Audiovisual environment at international level and, in particular, at European level. Due to that reason, the starting was done, initially, with international postgraduate students, coming from Europe (Finland and Spain), America (Colombia) and Asia (India and China). The undergraduate program is expected to start in February 27th, 2012, with a minimal figure of 12 students.

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