Deliverable

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D1.2- Ethical considerations and Data Management Plan

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P	Public	X
C	Confidential, only for members of the consortium and the Commission Services	

Abstract:
This document provides information on the ethical procedures and a first version of the Data Management Plan for project IMAC

REVISION HISTORY

Revision	Date	Author	Organisation	Description
0.1	27-10-2017	Anna Matamala	UAB	Structure of document proposal
0.2	06-11-2017	Jose Miguel Sanjuan	I2CAT	Structure confirmed
0.3	20-11-2017	Pilar Orero	UAB	First draft sections 1 & 2
0.4	18-12-2017	Jose Miguel Sanjuan, Themistoklis Karavellas	I2CAT	Adding section 3 DPM
0.5	19-12-2017	Pilar Orero	UAB	Consolidation
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0.7	13-01-18	Pilar Orero / Jose Miguel Sanjuan	UAB/I2CAT	General Revision
0.8	14-01-2018	Pilar Orero	UAB	Final Revision
0.9	14-1-2018	Jose Miguel Sanjuan	I2cat	Final versión submitted
1.0	23-4-19	Jose Miguel Sanjuan	I2cat	New version with update DMP

EXECUTIVE SUMMARY

This deliverable consists of two main sections after the introduction. Chapter 2 describes procedures implemented for ImAc to ensure compliance with the **Ethical Considerations** in the project. It offers all the information regarding permissions and forms approved by the UAB Ethical Committee to be taken into account during ImAc when performing any end user interaction to gather information: specifically, during the activities in WP2 (focus groups, user requirements) and during the pilots in WP5. It also deals with the permissions required when taking pictures or filming end users. Chapter 3 describes the management of data gathered in the scope of the project (**Data Management Plan**): provisions taken in ImAc for the **data sharing, protection and exploitation**. In the current version (1.0) the DMP has been updated with the information generated by the consortium up to December 2018 and has followed the recommendations of the reviewers regarding the use of the languages. The annexes gather all the original documents approved and ready to be used when interacting with end users in English. Documents are also translated into Spanish Catalan and German, the three languages which will also be used during consultation with end users and pilots.

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LIST OF ACRONYMS

Acronym	Description
EA	Ethical Advisor
ECGA	Grant Agreement
CA	Consortium Agreement
DMP	Data Management Plan

1. INTRODUCTION. ETHICAL CONSIDERATIONS AND DATA MANAGEMENT IN IMAC

Ethics is a vital part of research for all projects funded by the European Union. The ImAc project will carry out research involving work with human beings and will generate data, therefore ethical procedures need to be followed and a data management plan (DMP) has been developed.

Special care needs to be taken when dealing with ethical considerations and data management in ImAc. This is due to the fact that the project deals with:

- Immersive environments, in which health and safety issues must be taken into account. Virtual reality is not recommended for individuals with claustrophobia, heart conditions, back conditions, a history of seizures, epilepsy, and/or sensitivity to flashing lights
- Human participants, mostly from vulnerable groups, which will participate in different tests. They will be volunteers for social or human sciences research, which does not involve physical interventions on study participants.
- The need to protect data following the latest EU directives, since test and its results are mainly from vulnerable groups.

ImAc research will comply with ethical principles and applicable law, guaranteeing that the rights of research participants are ensured and that research methodologies do not result in discriminatory practices or unfair treatment. Special attention will also be paid to privacy, data protection, data management, and health and safety of participants. Every project team needs to plan in advance every action that needs to be performed in order to develop an ethically correct and integral research in all aspects of its process. An ethical approach must be adopted from a legal point of view, but also regarding quality of research and excellence.

As described in D1.1. (Consortium Operating Procedures), ImAc has appointed Pilar Orero (UAB) as Ethical Advisor (EA). The EA is responsible for the proper management of all ethics procedures, and most specifically of:

1. Ensuring the proper management of all ethics procedures
2. Supervising all actions related to users
3. Providing advice and recommendations on ethics to all Parties and the Coordinator.

The choice of UAB as responsible partner for Ethical consideration is based on the fact that UAB already has been successfully doing this task in two previous EC funded projects (DTV4ALL and HBB4ALL), and UAB has an Ethics Committee on Animal and Human Experimentation CEEAH (http://www.uab.cat/web/ethics-committee-on-animal-and-human-experimentation-1of345735628829.html).

CEEAH was set up by the UAB Governing Board on 25 January 2001, and is responsible for lending support to the scientific research performed at the UAB. This committee evaluates animal experimentation procedures (through the Ethics Committee on Animal Experimentation: CEEA) and procedures that involve experiments or research with humans, and it trains and advises research staff on the ethical dimension of their work. For example, the CEEAH was behind the ruling of the Governing Council on 30 January 2013 which approved the Code of Good Practice in Research: a set of recommendations to ensure rigour, honesty and responsibility in research carried out at the UAB.

The CEEAH has been a member of the Network of Ethics Committees in Universities and Public Research Centers in Spain (RCE) (http://www.ub.edu/rceue/) from its beginnings.

The deliverable also defines an initial DMP with the objective to provide a common understanding of the data produced, establish mechanisms on how shared data will be exchanged and stored within the consortium tools and how and what will be publically available. The DMP will be reviewed at least twice in the project: in the first reporting period and before the end of the project.

2. ETHICAL CONSIDERATIONS

The following sections present an overview of the research ethical framework and the specificities of dealing with human subjects from vulnerable groups. It also describes how ethical procedures are approached in H2020 projects, and more specifically in ImAc. Special emphasis is put on communication with vulnerable participants and health and safety issues. A special section is devoted to personal data protection in the project.

2.1. Research ethical framework

Ethics is an integral part of research and is given a high priority in EU funded research[1]. ImAc will comply with existing regulations and codes of conduct. Some of the most relevant documents are the following.

2.1.1. Charter of Fundamental Rights of the European Union[2]

This document gathers the fundamental rights to be shared, fostered and protected by every Member State of the European Union. The first draft was created by the European Convention in 2000 and was solemnly proclaimed by the European Parliament, the Council of Ministers and the European Commission during the same year. However, it was not legally binding until the entry into force of the Treaty of Lisbon, on 1st December 2009. The Charter contains 54 articles divided in seven titles: dignity, freedoms, equality, solidarity, citizens' rights, justice and general provisions governing the interpretation and application of the Charter. This Charter must be abode by Member States when applying European Union law.

The Charter sets the starting point for any research or action conducted within the context of the European Union. Every article needs to be taken into consideration in order to develop a study within an ethical framework, such is the case of any project supported and funded by the European Union. There are certain specific articles that are of high importance when developing the methodology to conduct a research in Social Science. For example, Article 8, Title II (European Parliament, Council and Commission, 2012), on Protection of personal data, which literally states that:

1. Everyone has the right to the protection of personal data concerning him or her.
2. Such data must be processed fairly for specified purposes and on the basis of the consent of the person concerned or some other legitimate basis laid down by law. Everyone has the right of access to data which has been collected concerning him or her, and the right to have it rectified.
3. Compliance with these rules shall be subject to control by an independent authority.

Also, in relation to ImAc project, the Article 26, Title III on integration of persons with disabilities needs to be considered when defining the general vision of the project and its entire development (European Parliament, Council and Commission, 2012): “The Union recognises and respects the right of persons with disabilities to benefit from measures designed to ensure their independence, social and occupational integration and participation in the life of the community.”

Any action taken within ImAc project needs to be compliant with all fundamental rights enshrined in

[1] http://ec.europa.eu/research/swafs/index.cfm?pg=policy&lib=ethics. Retrieved 06/11/2017
[2] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012P/TXT&from=EN. Retrieved 06/11/2017

this Charter.

2.1.2. European Code of Conduct for Research Integrity[3]

The Code of Conduct for Research Integrity was created by the European Federation of Academies of Sciences and Humanities and has been recently revised and republished in 2017. This document contains a set of rules to self-regulate academic research through European territories and it is designed to be used across all scientific fields, without distinction. It includes the principles to preserve research integrity, a list of good practices and some guidelines about violations of research integrity (the most serious being fabrication, falsification and plagiarism) and procedures to be followed in the event of those violations.

According to this Code of Conduct, the principles to preserve research integrity are (ALLEA, 2017):

Reliability in ensuring the quality of research, reflected in the design, the methodology, the analysis and the use of resources.

Honesty in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair, full and unbiased way.

Respect for colleagues, research participants, society, ecosystems, cultural heritage and the environment.

Accountability for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts.

The document describes good research practices in various contexts: research environments; training, supervision and mentoring; research procedures; safeguards; data practices and managements; collaborative working; publication and dissemination, and reviewing, evaluating and editing.

Among other good practices and recommendations, the document establishes:

"Researchers handle research subjects, be they human, animal, cultural, biological, environmental or physical, with respect and care, and in accordance with legal and ethical provisions." (ALLEA, 2017: 6)

An explicit mention of ethical practices is also made under the section "Violations of Research Integrity", where the document states:

"It is of crucial importance that researchers master the knowledge, methodologies and ethical practices associated with their field. Failing to follow good research practices violates professional responsibilities. It damages the research processes, degrades relationships among researchers, undermines trust in and the credibility of research, wastes resources and may expose research subjects, users, society or the environment to unnecessary harm." (ALLEA, 2017: 8)

This document is especially important for all researchers participating in Horizon 2020 funded projects, since it has become a reference document.

[3] http://www.allea.org/wp-content/uploads/2017/05/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf. Retrieved 06/11/2017

2.1.3. Specific guidance on social sciences and humanities[4]

The interdisciplinarity inherent in Social Science and Humanities (SSH) research hinders the elaboration of clear patterns to develop an ethical framework to be followed by every researcher in this field. The methodologies vary from one discipline to another and the ethical implications also differ. This discussion has been held for many years in international fora, worldwide and within the European Union. On a document which provides specific guidance for the SSH field, it is stated that the basis to ensure an ethical research is provided by the following tools: informed consent, data protection and privacy, and impact of the research results (European Commission, 2010).

The document acknowledges that "[w]hile in some instances, the research activity itself could produce psychological discomfort or harm, in most cases the biggest risk in SSH research relates to the disclosure of a person's identity and insufficient protection of private information which may then lead to discrimination or stigmatization" (European Commission, 2010: 9).

2.2. Research with human subjects from vulnerable groups

ImAc will carry out research with human subjects, some can be considered to be part of vulnerable groups.

According to the European textbook on ethics research (European Commission, 2010: 53)[5], vulnerability is a very complex concept and the following indicators could be used to define vulnerable groups:

> "1. Subjects who lack competence will be unable to protect their interests by choosing to give or withhold consent (as discussed in Chapter 2).
>
> 2. If the voluntariness of the subjects' consent is compromised, this may similarly prevent them from choosing to give or withhold consent in a way that would protect their interests.
>
> 3. The physical (or psychological) condition of some subjects leaves them especially liable to harm, for example as a result of frailty through age, disability, or illness."

Part of the participants in the pilots for the ImAc project (i.e. people with disabilities, the elderly) will fall within the third group, hence special care should be taken to guarantee their rights, which has been done in the ImAc ethical forms and consent, and the data protection provisions elaborated to this aim.

2.3. Ethics in H2020 projects

Ethical compliance is seen as fundamental in research projects funded by the European Union. As explained in http://ec.europa.eu/research/swafs/index.cfm?pg=policy&lib=ethics, ethics is dealt with in the Horizon 2020 legislation at various levels. There are also a specific Ethical Appraisal Procedure in Horizon 2020 projects.

[4] http://ec.europa.eu/research/participants/data/ref/fp7/89867/social-sciences-humanities_en.pdf. Retrieved 06/11/2017

[5] https://publications.europa.eu/es/publication-detail/-/publication/0f37f142-c333-40a8-90a7-bba25c314720/language-en. Retrieved 09/11/2017

The Horizon 2020 Rules for Participation[6] determine that proposals cannot contravene ethical principles and that the Commission shall systematically carry out ethics reviews for proposals (Article 14).

The Horizon 2020 Regulation of Establishment[7], establishes in Article 19 (Ethical principles) that:

"1. All the research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant national, Union and international legislation, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols. Particular attention shall be paid to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination and the need to ensure high levels of human health protection."

More specific dispositions are found in the Grant Agreement, as described in the next section.

2.3.1. Grant agreement dispositions

Article 34 in section 4 of Grant Agreement no 761974 establishes the obligations concerning "Ethics and research integrity". Its subsections discuss (1) obligation to comply with ethical and research integrity principles, (2) activities raising ethical issues, (3) activities involving human embryos or human embryonic stem cells, and (4) consequences of non-compliance (Grant Agreement, pp. 51-53).

Summaries of the respective subsections are provided below, but project participants are encouraged to read the relevant sections in the ECGA.

Article 34.1. puts forward the obligation of the beneficiaries to carry out the action in compliance with (1) ethical principles, and (2) applicable international, EU and national law. It also stresses when funding will not be granted.

It addresses the question of research integrity, already discussed above, and enumerates principles that the beneficiaries must respect, namely: honesty, reliability, objectivity, impartiality, open communication, duty of care, fairness, responsibility for future science generations. It also discusses how these values should be implemented while conducting research activities (see ECGA, page 52).

Article 34.2 tackles the question of activities raising ethical issues. It states that they need to comply with ethical requirements considered as deliverables presented in the Annex 1 (description of the action) of the Grant Agreement.

It also states obligations before beginning any activity raising an ethical issue, namely obtaining ethics committee opinion required under national law or obtaining notifications or authorisations required by national/European law (see ECGA, page 52). These documents must be kept on file and submitted if requested, as indicated on ECGA (page 53).

Article 34.4 refers to the consequences of non-compliance, which may result in reduction, termination of the grant, or other measures (see ECGA, page 53).

Article 41.2 also establishes that each beneficiary must submit to the coordinator in good time the "ethics committee opinions and notifications or authorisations for activities raising ethical issues" (see ECGA page 59).

[6] http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/rules_participation/h2020-rules-participation_en.pdf#page=10. Retrieved 09/11/2017

[7] http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/fp/h2020-eu-establact_en.pdf#page=11. Retrieved 09/11/2017

2.3.2. Ethics Appraisal Procedure

The Ethics Appraisal Steps in H2020 projects include:

- Ethics self-assessment
- Ethics pre-screening/screening
- Ethics assessment (for specific proposals)
- Ethics Checks/Audit

During the proposal stage, ImAc followed recommendations from Ethics Self-assessment[8], which was the basis for Section 5 of the proposal, which is further developed in this deliverable. This assessment identified that ImAc will be doing tests with human subjects and that some participants may belong to vulnerable populations, it also mentions the effects produced by virtual reality (VR) in some humans.

Horizon 2020 rules also establish that all proposals considered for funding also undergo an Ethics Review. It starts with an Ethics Screening and, if needed, an Ethics Assessment is performed. It may result in ethics requirements that become contractual obligations. In the ImAc project no contractual obligations are set forth in the ECGA (see previous section).

During the Ethics Screening/Assessment, some projects are considered to be in need of an Ethics Check during the course of the project, and it will be the role of UAB to check if the technical developments and tests and pilots fulfil the initial previsions drafted in the Ethical Consent and project Information forms. If changes are identified, all relevant forms will be changed accordingly.

Concerning ethics audits, the European Commission can check, review, investigate the proper implementation of the ImAc project and its compliance with the Grant Agreement both during the implementation of the project and afterwards. For this all signed forms and data will be stored up to two years after the completion of the project locked in UAB. According to the H2020 website and to the provisions of the Grant Agreement (Article 22 of the Grant Agreement, p. 36), an audit of the grant can be ordered by the European Commission up to 5 years after the final payment[9]. This includes ethical principles and research integrity.

2.4. ImAc Ethical Procedures

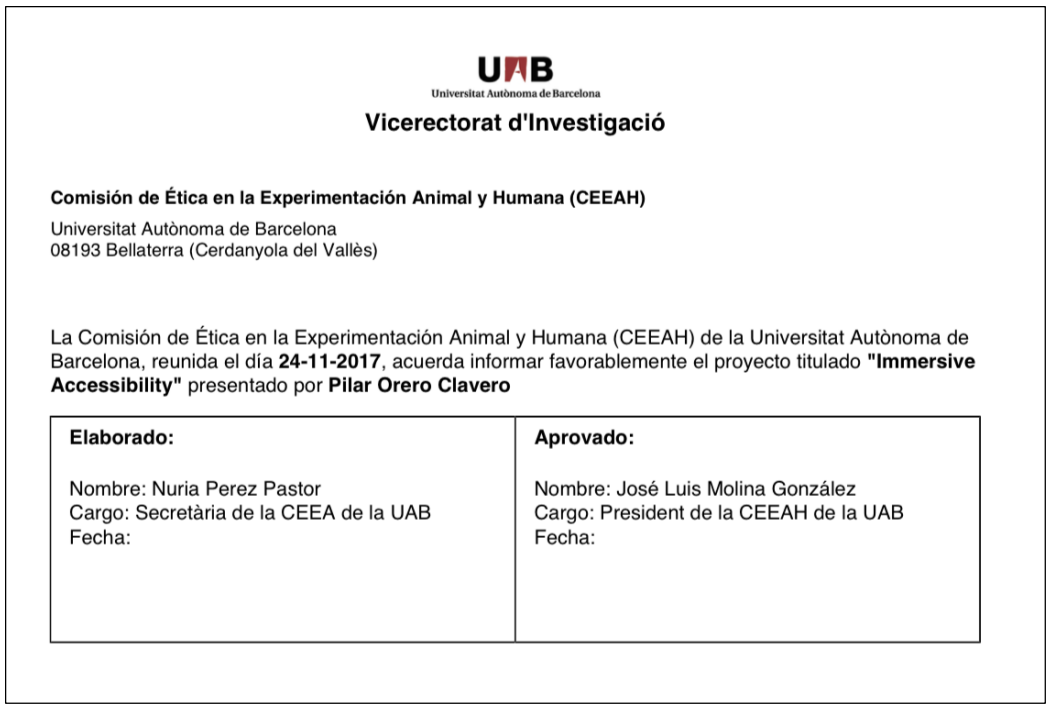
Section 5 of Annex 1 in the ECGA describes the general ethics approach in ImAc, which is developed and specified in the next sections.

Ethical procedures in ImAc have adopted a holistic approach. ImAc will implement different methodological approaches and tools: focus groups, interviews, experiments, questionnaires, etc. However, a unified approach to ethical procedures has been favored as a general framework for the project. To support this, UAB has drafted a list of possible research methodologies, apparatus, stimuli, and possible side effects from end users being exposed to VR environments. The different possible users, some considered as vulnerable groups, are also taken into consideration, as well as the fact of the different languages and ways to interact with the consent form. For example, for persons with sight or low sight conditions spoken information and consent forms have been designed, and approved. When interacting with persons with sign language as their mother language, this will be the language of interaction.

[8] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf. Retrieved 09/11/2017

[9] http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/grant-management/checks-audits-reviews-investigations_en.htm. Retrieved 07/11/2017

After understanding who will be the users in both interactions at WP2 and WP5 (D2.2 and D5.1), permission was requested to the UAB Ethical Committee on 30/10/2017 obtaining the reference CEEAH 4025, see Figure 1.



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Vicerectorat d'Investigació

Comisión de Ética en la Experimentación Animal y Humana (CEEAH)

Universitat Autònoma de Barcelona
08193 Bellaterra (Cerdanyola del Vallès)

La Comisión de Ética en la Experimentación Animal y Humana (CEEAH) de la Universitat Autònoma de Barcelona, reunida el día **24-11-2017**, acuerda informar favorablemente el proyecto titulado **"Immersive Accessibility"** presentado por **Pilar Orero Clavero**

Elaborado:	**Aprovado:**
Nombre: Nuria Perez Pastor Cargo: Secretària de la CEEA de la UAB Fecha:	Nombre: José Luis Molina González Cargo: President de la CEEAH de la UAB Fecha:

Figure 1 Certificate of ethical procedures for ImAc

This permission was needed to start gathering info for D2.2 (“User Requirements”).

UAB Ethical Commission requests the following information:

- Title of action
- Short description of project
- Research area for human experimentation
- Personal data from PI researcher
- Research objectives with the experiment
- Research methodology
- Information to participants
- Compensation
- Gathered Data Management
- Feedback
- Data registration

And this information from ImAc was evaluated, a first request was sent with corrections, and once sufficient information was presented a certificate is issued (Figure 1) which is kept at UAB along all the rest of ImAc data.

2.4.1. Recruitment processes for experimental testing

Participants in ImAc tests will be volunteers that will be recruited through official channels, for instance sending information to associations and institutions related to persons with disabilities. Since UAB (TransMedia Catalonia Research Group) has participated and lead many research projects on media accessibility testing end users, we already have a close collaboration with both individuals and end user associations. At EU level, when the need arises to contact users from across Europe, we shall ask the EDF (European Disability Forum) to help out establishing contacts. EDF signed a letter of support for the ImAc project proposal, and they will be following the project and its progress. In ImAc we also have a partner (RNIB, Royal National Institute of the Blind) who is an end user association in the UK and who will also help when recruiting. Finally, both broadcasters in the project RBB and CCMA have a long tradition of testing with end users, have performed tests and pilots in previous EU funded projects DTV4ALL and HBB4ALL, and thus recruitment channels for experimental testing are well established.

Testing with persons with disabilities is a taxing activity due to the interaction with end users and the need to personalise from travelling to and from the place for testing, to communicate or explain and read the information, and to help with the tests. From our experience in other EU funded projects, before a test starts a period of over 15 minutes is spent welcoming each user prior to testing, and the same can be said after the test is finished. Specific details about the recruitment processes for experimental subjects and about the inclusion and exclusion criteria will be defined for each specific test.

Two very different recruitment processes for experimental testing will be taken into consideration in ImAc. Recruitment for T2.1 performed at the very start of the project (M1-M3) was through personal invitation to known “expert” end users. These expert end users and professional users required a level of expertise in media access services and technology to take part in a very controlled Focus Group (D.2.1). Recruitment for the pilots (WP5) will be performed through end user associations, and contacts with informants at RBB and CCMA.

2.4.2. Informed consent procedures

All participants in tests will be given a detailed information sheet and an informed consent form, as shown in 2.4.2.1. Both documents will be written in terms participants can understand. They describe the aims, methods and implications of the research, and any risks or discomfort that may happen (see section 2.6.).

Participation in ImAc tests will always be voluntary and participants will explicitly be informed that they can refuse to participate or withdraw their participation at any time without any consequences.

Steps will be taken to ensure that participants are not subjected to any form of coercion and alternative communication means will be provided if necessary (see section 2.5.).

Participants will be informed that they can request additional information about the project results in case they are interested.

Consent forms will be produced and approved in English, and then translated into the other languages of the project: Catalan, German, and Spanish.

The procedures that will be followed to obtain informed consent are:

- Participants will be welcomed
- Participants will be informed about the project and the specific test in which they are involved (information sheet, see Annex I), in an appropriate format according to their needs and the approved models of UAB’s ethical committees

- Participants will be requested to give their consent (consent form, see Annex II).

The consent form and information sheet should be included on a single piece of paper (both sides, if needed).

Once the test is finished, both the information sheet and the signed consent form will be sent by recorded mail to Pilar Orero, or taken to her at the next ImAc project meeting. All forms will be kept in a locked room in a secure building at UAB. A short video was filmed (http://www.imac-project.eu/immersive-corner/tutorials/) to be shared among partners and guarantee information regarding Ethics and stress the need to use all forms when interacting with humans to gather information for the project.

2.4.2.1. Samples of information sheets and informed consent forms

The information sheets and informed consent forms have been approved by UAB's ethical committee, and must be used for any types of user testing (focus group, experiments, interviews, etc.) They were approved in English (Annex II and Annex III) and were translated also to the two other languages where the Focus Groups take place: Spanish, Catalan and German.

2.5. Communication with vulnerable participants

Information sheets and informed consents will be generally provided in writing. However, if consent cannot be given in writing, non-written consent will be formally documented.

Appropriate efforts will be made to ensure fully informed understanding of the implications of participations, providing alternative communication means if necessary.

Information sheets and consent forms have been written in a way that participants can fully understand. However, specific adaptations will need to be made to adapt to the specific user needs. More specifically,

- An oral information sheet and consent form can be administered orally if this is better suited for end user needs (a sample is provided in Annex III).
- Sign Language versions can be provided if needed.

This means that information sheets and informed consents will be generally provided in writing.

2.6. Health and safety of participants

Avoiding any harms that might occur and ensuring the participants' health and safety is a priority in ImAc testing.

The only known risk is related to the fact that immersive environments are not recommended for individuals with claustrophobia, heart conditions, back conditions, a history of seizures, epilepsy, and/or sensitivity to flashing lights. Therefore, participants will be informed about these risks through the information sheet and the consent form. Appropriate measures will be taken to guarantee the participants' safety and well-being.

Participants thought to be unstable or under the influence of drugs or alcohol will not be admitted to the experiments.

2.7. Personal data protection: EU regulations

Data protection regulations In ImAc are in line with GDPR. The project takes on board EU data protection policies following the European Directive 95/46 with date 24/10/1995, and also national policies for the three countries where tests will be performed: The German Federal Data Protection Act (BDSG) or the Spanish Organic Data Protection Law 15/1999, and the Data Protection Act 1998 for the UK.

2.8. Personal data protection in ImAc

Regarding personal data at ImAc we shall follow for the time being, and until the new EU law is published, the Spanish Organic Data Protection Law 15/1999, since UAB is under Spanish jurisdiction and we are following guidelines from the UAB Ethical Committee which fulfils EU guidelines. The Law requires files containing data to be declared to a data protection agency and guarantees the rights of access, rectification, cancellation and objection (known as ARCO) rights.

Right of information: When the personal data is collected, the interested party must be previously informed in an express, precise and unequivocal manner of, among others, the existence of a file, the possibility of exercising their rights and the person in charge of the treatment.

Right of access: The right of access allows the citizen to know and obtain free information about their personal data subjected to treatment.

Right of rectification: This right is characterized because it allows correcting errors, modifying the data that prove to be inaccurate or incomplete and guaranteeing the certainty of the information being treated.

Right of cancellation: The right of cancellation allows the deletion of data that prove to be inadequate or excessive, without prejudice to the blocking duty included in the LOPD.

Right of opposition: The right of opposition is the right of the affected party not to carry out the processing of their personal data or to cease it.

ImAc has taken the approach to anonymise personal data. In the Focus Group (T2.1) end users filled in and sign the Consent Form, but this information will not be associated to any comment made by any user during the focus group. When end users take part in the pilots (WP5) they will be asked to reply a questionnaire usually containing questions to be replied in Likert scales. These written forms will be anonymous, hence following ARCO rights.

2.8.1. Video recordings rights

The European Union adopted in February 2014 the Directive on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online uses in the internal market (CRM Directive). The CRM Directive is an essential part of Europe's copyright legislation.

The CRM directive (2014/26/EU) aims at ensuring that right holders have a say in the management of their rights, and at improving the functioning and accountability of Collective Management Organisations (CMOs).

ImAc will follow CRM directive using exclusively videos for testing produced by the project partners, mainly the two broadcasters (RBB and CCMA), as well as other open access audiovisual content.

2.8.2. Video recordings and promotional material

It has been established in WP6 (Dissemination) to generate at least one ImAc short movie, but ImAc aims at creating many short movies to follow the development of the services and offer different types of content. Anyone being recorded for dissemination processes will sign a release and consent form that grants photo, video and sound recording rights to UAB (see Annex IV). This form will be stored at UAB for the duration of the project and five years after the end of the project in a locked room in a secure building.

UNIVERSITAT AUTÒNOMA DE BARCELONA PHOTO, VIDEO AND SOUND RECORDING RELEASE AND CONSENT FORM

By signing this Photo, Video and Sound Recording Release and Consent Form, you are irrevocably giving permission to the Regents of the UAB officers, agents, employees, successors, licensees, and assigns to take and use photographs, video or sound recordings of you for the following project: ImAc. This is completely voluntary and up to you.

Your consent to the use of the photographs, video and sound recordings and your image, likeness, appearance, and voice is for forever. You will not receive compensation for the use of your image, likeness, appearance, and voice now or in the future. The University may use the photographs, video and sound recordings containing your image, likeness, appearance and voice in any manner or media, including use on web pages. The photographs, video and sound recordings may be used in whole or in part, alone or with other recordings. The photographs, video and sound recordings may be used for any educational, institutional, scientific or informational purposes whatsoever, but not for any commercial uses. The University has the right and may allow others outside the University to copy, edit, alter, retouch, revise and otherwise change the photographs, video and sound recordings at the University's discretion. All right, title, and interest in the photographs, video and sound recordings belong solely to the Regents of the UAB.

You further give permission to the University to use your name, biography, and any other personal data, events, or other material in or in connection with any such uses of the photographs, video and sound recordings.

I understand and agree to the conditions outlined in this photograph, video and sound recording release and consent form. I irrevocably give consent to the Regents of the UAB and the University's officers, agents, employees, successors, licensees, and assigns forever to make use of my image, likeness, appearance, and voice in photographs, video and sound recordings as described above. I acknowledge that I am fully aware of the contents of this release and am under no disability, duress, or undue influence at the time of my signing of this instrument.

_____

Printed Name of Participant

_____ _____

Signature of Participant Date

2.8.3. Website

Only project information considered as PUBLIC will be published on the ImAc website[10]. No personal data will be obtained through the website. An effort has been made so that user interaction will be anonymous: there is not a contact form but information on how to contact the project coordinator. And comments and posts on the section “News” are posted anonymously.

[10] www.imac-project.eu

3. DATA MANAGEMENT PLAN (DMP)

This section defines an initial version of the management plan for data generated during the project, the legal framework that ought to be considered and the commitments include in the ECGA and in the CA. The section is divided in two parts. The first part reviews the legal framework of the project regarding use and capture of the data and the second addresses the DMP itself.

The current version of the document (v1.0) comprises the information generated by the consortium up to December 2018.

3.1. Legal framework

The three points to consider when dealing with data in ImAc are: The Open Access of publications, the obligations derived from the inclusion of the project as Research Data Pilot and the IPR restrictions included in the ECGA and the CA. A non-exhaustive list of the main points to consider is included below.

As a general rule partners must take into account that unless it goes against the legitimate interest of the beneficiaries the results must be disseminated by disclosing them. This means that the beneficiaries have the right to protect the results in case the institution plans to protect or exploit the results.

3.1.1. Open Access in H2020

Open access (OA) refers to the practice of providing, free of charge to any user, online access to all peer-reviewed scientific information and all the research data. In consequence as indicated in article 29.2 of the ECGA the members of the consortium must:

(a) As soon as possible and at the latest on publication date, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications; Moreover, the beneficiary must aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.

(b) Ensure open access to the deposited publication — via the repository — at the latest:

On publication, if an electronic version is available for free via the publisher,

Or within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.

(c) Ensure open access — via the repository — to the bibliographic metadata that identify the deposited publication.

To ensure open access, it has been agreed to use OpenAIRE (OpenAire: ImAc) to link different Zenodo repositories, containing the stored research publications as well as the public repository of UAB[11].

3.1.2. Open Data in H2020

As stated in the ECGA (article 29.3) the project ImAc is part of the Research Data Pilot. In consequence and regarding the digital research data generated in the action ('data'), the beneficiaries must:

[11] https://ddd.uab.cat

(a) deposit in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the following:

(i) the data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible;

(ii) other data, including associated metadata, as specified and within the deadlines laid down in the 'data management plan' (see Annex 1);

(b) provide information — via the repository — about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (and — where possible — provide the tools and instruments themselves).

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, the security obligations in Article 37 or the obligations to protect personal data in Article 39, all of which still apply.

As an exception, the beneficiaries do not have to ensure open access to specific parts of their research data if the achievement of the action's main objective, as described in Annex 1 to the ECGA, would be jeopardized by making those specific parts of the research data openly accessible. In this case, the data management plan must contain the reasons for not giving access.

Taking into account this article, this DMP will define what data will be publicly disclosed, which not (and why not), and how will the data generated in the frame of the project (foreground) will be shared.

3.1.3. IPR commitments in ImAc

Apart from the commitments regarding the Open Access and the Open Data, the other main commitments linked with the IPR included in the ECGA and the CA are the following:

The ECGA defines in article 26 the ownership of the project results. These results are any tangible or intangible output of the actions including data and information and are owned by the institution that generates them. In case the results are generated by two or more institution rules defined in article 26.2 of the ECGA and article 8.2 of the CA must be applied.

As defined in the article 8.4 of the CA 45 calendar days prior to any publication notice must be given to the other parties. Objections must be raised in writing at least 30 days after the receipt of the notice.

3.2. Data Management Plan

This section addresses the DMP itself. This first version of the DMP will define how the data that the project will generate will be stored, localized, preserved and in which cases will be publicly disclosed.

This DMP follow the guidelines of the Digital Curation Center (www.dcc.ac.uk) on how to implement DMP and the recommendations of the EC as published in the *Guidelines on FAIR (*findable, accessible, interoperable and reusable) *Data Management in Horizon 2020* version 3.0[12].

[12] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

3.2.1. Data summary

Purpose of the data collection & Relation to the objectives of the project. The data generated in the project will be created through pilots, workshops and publications, and is related with the project objectives in the following way:

- Objective 1: Create accessible and fully personalised services for all citizens, will be addressed in WP3: "Immersive Platform" and WP4: "Accessibility service tools" through the development of the project's technological components.
- Objective 2: Deliver novel resources for the broadcasting industry to provide adapted content ensuring accessibility in immersive environments will be addressed in WP3: "Immersive Platform" and demonstrated in WP5: "Demonstration Pilots".
- Objective 3: Demonstrate the tools and platform in open pilots will be addressed in WP5: "Demonstration Pilots", where the project's technology components and functionalities will be validated through 2 large scale open pilots and one cross-national semi open pilot.
- Objective 4: Work towards standardisation of accessibility data in an immersive content environment is addressed in WP6: "Innovation, Dissemination and exploitation" through the tasks associated with exploitation of the use of the research results.
- Objective 5: Maximize impact on society, will be addressed in WP6: "Innovation, Dissemination and Exploitation" through the dissemination of the project's results, scientific paper publication, contribution to standardization bodies and submission to the European and global audiovisual market through the commercial partners of the project.

Along the project's runtime data will be collected, processed and/or generated. In this sense, we can identify three distinct categories:

a. Deliverables: all the captured (written or other forms) information about the project's execution together with descriptive tests.
b. Content: the content used in the pilots and other media parts of the project. This is created for the purposes of the project.
c. User data: the data gathered from users taking part in the pilots or in exhibitions where the project is presented.

3.2.2. Type and format of the data

Data of the three categories can vary in type and formats. The "Deliverables" are expected to consist of text, image and presentation data; the "Content" includes pre-generated video and audio files that will be used in the pilots to showcase the functionalities realized within the project; "User data" includes both the subjective (questionnaires, evaluations, etc.) and objective (point cloud, mesh, voice recording, etc.) user generated data.

As far as possible ImAc partners will use non-proprietary and open formats with documented standards. Format selection will favor the formats used by the project partners as well as the research community interested in the results.

3.2.3.1. Origin of the data

Depending on the category, data can be generated by:

- project partners during its execution (deliverables and content)
- third party organisations (deliverables and content)
- professional or end-users taking part in workshops, requirements definition sessions, exhibitions (User data)

Project execution, experiments and pilots will be executed in different locations. Tasks will run concurrently in many cases and data of all three categories will be created.

3.2.3. Size of the data

Expected datasets are:

- Deliverable documents, expected size: small
- Software components source code, expected size: large
- Focus reports, expected size: small
- Evaluation questionnaires, expected size: small
- Raw and edited video and audio content, expected size: large
- Content enrichments (subtitles, sign language, audio description), expected size: large

3.2.3.1. Data utility

ImAc will pursue the highest possible visibility for the project and maximisation of the exploitation of the results, looking towards its long-term impact and other opportunities. Data generated in the project will follow the FAIR guidelines provided by the European Commission and be published and distributed in relevant repositories. Furthermore, all new knowledge generated will be published in local and international scientific conferences, ensuring that all interested researchers are aware of the projects execution, status and results.

3.3. Data localization and metadata

3.3.1. Platforms used for storing the data

The project will use zenodo as platform for storing and managing the data generated, Open Aire for linking the databases and publications, and the public repository of the UAB for the academic publications.[13] In addition, the project will disseminate through its website and the social media the public data. As zenodo provides unique digital object identifiers (DOI), all the data produced in the project will have a unique identifier. Each partner will decide which keywords have to be linked with the dataset.

3.3.2. Naming convention used

Each set of data produced (dataset, deliverables, video footage…) will be named in a uniform way and will include a table with a version control.

For deliverables: **Dx.y - [Name of the deliverable as described in the DoA]** being x - work package assigned to the deliverable y - the number of deliverable within the work package i.e.: D.1.2 - Ethical considerations and Data Management Plan.

[13] Link to the repository in the UAB: https://ddd.uab.cat; to zenodo: https://zenodo.org/; to Open Aire: https://www.openaire.eu/search/project?projectId=corda__h2020::f193edfe34ea1d29ea7be177cc87183e

For datasets: **WP [Work Package number] P [Pilot number; pilot activity number] - [description of the activity]** i.e.: WP5 P1.3 - Sign Language video on 360 video.

For Video footage: **WP2 T2.4 MEDIA T0x (short description).**

The table for controlling the version will include the following fields:

- Revision: number (starting from 0.1) of the version. Always following the order.
- Date: date on which that version was available.
- Author: person who prepared that version.
- Organization: entity in charge of that version.
- Description: summary of main changes in that version.

For the video footage, it is not expected to use versioning, but in case it is necessary, clear versioning will be provided, as well as a "readme text" stating what are the improvements regarding the previous version.

3.3.3. Identification of the data stakeholders

Data stakeholders within the project can come from many different backgrounds and with different intentions. Depending on their importance to the project's execution, decisions will be made by the GA of ImAc in order to increase ease of access. The most important and easily identifiable stakeholders are:

- Project partners
- European Commission
- Research community
- Virtual Reality specialists
- Media content producers
- Media industry

3.4. Making data openly accessible

3.4.1. Which data will be openly available and which not

ImAc has the objective of making data available publically as much as possible. In this sense an initial array of datasets that will become available has been identified (see below). Its publication will be evaluated taking into account the possibility of exploiting the data, and the ethical considerations described in the first part of this document.

In this regards, the project will progressively distinguish between:

- **internal datasets** that will not go public and that either can shared in the consortium or not. This decision will be taken on a case by case basis.
- **open datasets** that will be provided with full access to the project results, allowing academia to reuse them.

The results up to December 2018 are the following:

Partner responsible	Type	Description	Format	File Type	Owner	Open (Y/N)	Licensing	Repository
ALL	Report	Public deliverables	Document	PDF		Y	CCP	zenodo
ALL	Articles and book chapters reporting project activities and results	Digital	Text		Authors	Y	Following journal's policy, pre or postprints or published versions will be available	DDD (UAB's open access repositor); Zendo
i2CAT	Player	Source code of the 360 player developed in the ImAc project by i2CAT	Software	Java Script, HTML, CSS	i2CAT	Y	TBD (LGPL|MIT)	TBD (Zenodo or Github)
i2CAT	Beehavioural and performance data	Data Set containing objective data that describes the behavoour of end users and the performance of the system in specific scenarios	Data Set	Text	i2CAT	Y	No	Zenodo
IRT	Software	Framework for object-based rendering in browsers (bogJS)		Java Script software package	IRT	Y	MIT License	https://github.com/IRT-Open-Source/bogJS
IRT	Software	Software for creating and editing object-based audio scenes (including real-time rendering)		C++/QT	IRT	**N**		
				software package				

IRT	Software	Framework for generating and editing XML-based subtitles		XSLT/Java Script software package	IRT	tbd	tbd	tbd
IRT	Software	The Subtitle Conversion Framework converts various XML based subtitle file formats.		XSLT/Python software package	IRT	Y	Apache License 2.0	https://github.com/IRT-Open-Source/scf
MSE	Software	Imackager: the ImAc packager for distributing accessibility content		Python	MSE	Y	MIT License	https://github.com/RodolpheFouquet/Imackager
UAB	Dissemination videos	Digital	Video file		Uab	Y	Y	zenodo
UAB	Data gathered from experiments through questionnaires, focus groups, etc	Paper, digital, etc	Excel, word, etc.		UAB	**N**	Data is confidential and anonymous, will not be shared	
UAB	Questionnaires for focus groups	Paper, digital, etc	Text		UAB	Y	Y	zenodo
UAB	Ethical forms	Paper, digital, etc	Text		UAB	Y	Y	Part of D1.2
UAB	Standard docs	Digital	pdf		Standarisation agency	N	No	
RNIB	Type of Data Sets (video, research etc)	Description	Format	File type	Owner	Open (Y/N)	Licensing	Link to repository

RNIB	User preferences (focus groups)	Feedback from a focus group on proposed solution for audio description in immersive content	Report	Word, PDF	IMAC board (?)	Y	likely no	zenodo
RNIB	User personas / profiles (focus groups)	Profile of people participating in a focus group on proposed solution for audio description in immersive content	Report	Word, PDF	IMAC board (?)	Y	tbd	zenodo
RNIB	User feedback from cross national pilot	Feedback from end users on proposed solution on immersive accessibility	Report	Word, PDF	IMAC board (?)	tbd	tbd	
RBB	subtitle files	German subtitles for the video content	-	EBU-TT-D	RBB	N	tbd	
RBB	sign language video	German sign language video for video content	Video file	H264	RBB	N	tbd	
RBB	research	anonymous demographic user data from focus group and pilots	Text and tables	Excel, Word, PDF	RBB	Y	Y	
USAL	software	ponsive Subtitle library	Javascript documents	JavaScript Library	USAL	Y	MIT	Will make available on github

In case access to restricted or private data-sets is needed by external users, a request can be done through the Project Coordinator who will forward the request to the responsible.

3.5. Making data interoperable

The interoperability of the project's data is directly related to the impact of the project and the possibilities of re-use, migration on different platforms and extrapolation of results in different applications. Thus, interoperability is in fact a design principle for the project partners. As far as this is possible, open file formats, open vocabularies and other relevant standard will be used in order to maximize interoperability.

3.5.1. License of the data: how and when

Data generated and used within the project will be made publicly available, in the cases that this is possible, following the FAIR data directive. When this is not possible, licensing options will be examined on a case by case basis, taking into account all applicable factors. Research publications, questionnaires, video footage and audio content will be licensed under Creative Commons Attribution-NonCommercial 4.0 (strictly forbidden to use it, totally or partially, for commercial purposes).

3.5.2. Data quality assurance process

All the project's deliverables, audiovisual content and scientific publication will be peer-reviewed by the project partners and in some cases by external reviewers as well. Through this approach we expect to ensure high data quality within the project, promoting project data reuse and sharing.

3.6. Data security

In order to prevent unauthorized access, modification, replication or destruction of the project's data a number of measures have been put in place. These include:

Identification security: Data is stored in online repositories which are password protected and/or grant access only upon correct identification. Different layers of security are implemented in order to protect data of higher sensitivity (users' personal data, etc.)

Location security: Access to the premises of the partners, where the project is being developed, is restricted.

Workstation security: People working on the project are strongly encouraged to remain protected against a possible data breach by password protecting all computers and through the use of an up to date antivirus software. Additionally, the sharing of confidential information via email is highly discouraged.

All data use in the project will be regularly backed up and in most cases, will be residing on cloud storage facilities, preventing this way the possibility of loss of data due to hardware failure.

ANNEX I- INFORMATION SHEET

ImAc Immersive Accessibility	ECGA: 761974

INFORMATION SHEET

Project: ImAc (Immersive Accessibility)

Main researcher: NAME SURNAME (COMPANY)

Ethical adviser: Pilar Orero

The aim of the tests is to get feedback on how access services can be implemented in immersive media. This will allow us to identify the needs of diverse audiences and research how the quality of experience and the quality of the service can be improved.

During the test, which can take various forms (experiment with questionnaire, focus groups, interviews, etc.), you will be asked to provide some demographic data. Then, you will be asked to watch an input, perform a task or give your opinion on various aspects. If needed, objective data will be recorded during the session. The researcher will give you more details of the specific test assigned to you and the data collection methods. Please ask as many questions as needed to clarify the procedure.

Virtual reality may produce some sort of discomfort such as virtual reality sickness when visualizing virtual reality contents, information will be provided and appropriate measures will be taken to guarantee the participants' safety and well-being. Immersive environments are not recommended for individuals with claustrophobia, heart conditions, back conditions, a history of seizures, epilepsy, and/or sensitivity to flashing lights. Also participants thought to be unstable or under the influence of drugs or alcohol will not be admitted.

In the case that some physiological or eye-tracking apparatus are used to gather data, you will not experience any discomfort, since the apparatus used are the latest generation and are not invasive.

Now please read the consent form.

ANNEX II-CONSENT FORM

ImAc Immersive Accessibility	ECGA: 761974

CONSENT FORM (written version)

Project: ImAc (Immersive Accessibility)

Your participation in the tests is absolutely voluntary.

You can discontinue your involvement in the study at any time without prior justification. This shall have no repercussions or negative consequences of any sort.

In the case that some physiological or eye-tracking apparatus are used to gather data, you will not experience any discomfort, since the apparatus used are the latest generation and are not invasive.

Virtual reality may produce some sort of discomfort such as virtual reality sickness when visualizing virtual reality contents, information will be provided and appropriate measures will be taken to guarantee the participants' safety and well-being. Immersive environments are not recommended for individuals with claustrophobia, heart conditions, back conditions, a history of seizures, epilepsy, and/or sensitivity to flashing lights. Also participants thought to be unstable or under the influence of drugs or alcohol will not be admitted.

The information you provide will be used in the project but it will remain anonymous.

ImAc is a European project led by Sergi Fernández, from the company i2Cat. The ethical adviser responsible of ethical procedures is Pilar Orero. You can contact Pilar Orero at pilar.orero@uab.cat and ask for more information about the project and the project results.

The researcher administering the test is (NAME and SURNAME).

If you are willing to participate, please confirm the following statements by signing at the end of this

document.

- I have read and understood the information given for this research or have had the information read to me,
- I have had the opportunity to ask questions about the research.
- I consent to take part in the research sessions.

_____

Name of the participant Date Signature

_____

Name of the researcher Date Signature

Signed by Pilar Orero (UAB IP ImAc)

ANNEX III-CONSENT FORM (ORAL)

CONSENT FORM (alternative oral version, to be recorded)

Project: ImAc (Immersive Accessibility)

Your participation in the tests is absolutely voluntary.

You can discontinue your involvement in the study at any time without prior justification. This shall have no repercussions or negative consequences of any sort.

The information you provide will be used in the project but it will remain anonymous.

ImAc is a European project led by Sergi Fernández, from the company i2Cat. The ethical adviser responsible of ethical procedures is Pilar Orero. You can contact Pilar Orero at pilar.orero@uab.cat and ask for more information about the project and the project results.

The researcher administering the test is (NAME and SURNAME).

If you are willing to participate, please reply at the end of each question:

- Have you been read the information about the project and have you understood it? Please reply yes or no. (oral reply)
- Have you had the opportunity to ask questions about the research? Please reply yes or no. (oral reply)
- Do you consent to take part in the research sessions? Please reply yes or no. (oral reply)

Please indicate your name: (oral reply)

Please indicate the date: (oral reply)

Please indicate the researcher's name: (oral reply)

Signed by Pilar Orero (UAB IP ImAc)

<END OF DOCUMENT>