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PROJECT DELIVERABLE REPORT

Project Title:

Advanced personalised, multi-scale computer models preventing osteoarthritis

SC1-PM-17-2017 - Personalised computer models and in-silico systems for well-being

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Contributing partners	ALL
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Revision History

Version	Date	Responsible	Description/Remarks/Reason for changes
1.0	2020/2/27	Axia Innovation	First Draft
1.1.	2020/2/28	UNIC	Review of first draft
1.2.	2020/2/28	LEITAT	Review of first draft
1.3	2020/1/29	UNIC	Review final draft

Table of Contents

1 Summary

This report refers to Deliverable 10.2, which relates to the OActive Work Package (WP) 10 "Dissemination and exploitation routes", and specifically Task 10.5. Organizing the OACTIVE Workshop and training Sessions. Therefore this report describes: i) the purposes of the two planned Training Sessions I and II , ii) an analysis step by step from the organization point of view, the content and the realization of the sessions; and iii) the feedback from the consortium and the end users respectively on the content, the preparation and the execution of the training sessions planned within the GA.

2 Introduction

The presented Report on Deliverable D10.2: Training seminars summarises the training activities organized under the OActive project. Firstly, the process of technology and knowledge transfer was therefore supported by the appropriate focused training of partners. In order to ensure the wide-scale uptake of knowledge and technology generated within the sector, the partners involved structured dedicated training programs for the internal staff. In addition, the efficient transfer of knowledge and expertise from the RTD partners to the rest of the Consortium was also executed. Furthermore, the second training session was organised operating as a driver for the training of future end users.

The main objective of the reported training sessions was to support the prevention, diagnosis as well as delayed progression of OA by providing to key stakeholders (public and private) a background knowledge and awareness on the technologies OActive is using.

The Workshops' target groups involved the representatives of health sector (hospitals, doctors, health related associations), research organization and academia, OA patients, policy makers, stakeholders, investors as well as the general public,

Therefore, the training team has organised two sessions: one training session (and feedback) targeting to technology providers and a second one for elaborating the work performed and the possibilities for end users. The description of such activities is provided below.

2.1 Purpose and Scope

2.1.1 Objectives

The main objective of the Training seminars was to transfer the knowledge acquired under the OActive project to all the interested groups in order to highlight the benefits of the technologies involved and the processes followed during the project to the quality of life of the patients. Under OActive the proposed solution takes a unique, holistic approach to patient-specific predictive model development by extracting and integrating knowledge from scientific research, clinical experiences, observations and available patient data using advanced analytic techniques. Since the Project successfully connects innovative methodologies, including tissue engineering, biomarkers' analysis, mechanistic modelling, deep learning and augmented reality, there was a high interest from all participants, and it was indicated that in many cases there was a lack of awareness about these technologies. Therefore, having better understanding of the technology and its advantages (gained thanks to the training activities) will:

- understand the risk factors for the development and progression of OA
- provide personalised interventions
- simulate and predict optimal treatments, better diagnostics, and improved patient outcomes
- help patients' improved quality of life
- inform health industry on alternative practices
- improve healthcare by transforming and accelerating the OA diagnosis and prediction
- offer both clinical assessment and rehabilitation options, through Augmented reality (AR) practices
- expand & improve the currently limited opportunities for rehabilitation scenarios
- enhance primitive spatial and temporal training scenarios
- addresses staff and facility limitations as well as human factors

2.1.2 Target groups

The main target groups, to whom the training seminars were oriented, involved the representatives of hospitals, rehabilitation centers, medical care centers, medical institutes, health service providers, physicians, caregivers, companies in the health field or/and in the ICT field, general public OA patients and their families, elderly, athletes, medical organisations, orthopaedic associations, regulatory authorities, NGOs, non-profit organizations, public initiatives, medical and ICT universities and research centers, participants in related EU projects, research societies, interested in early diagnosis and prediction of diseases or interested in computer based modelling and simulation tools technologies, cognitive systems or human interfaces.

2.1.3 Topics and Instructors

The training workshops' agendas and training material were prepared by OActive project partners. During individual training sessions (which were held in english languages), particular topics were presented, representing different working groups of the consortium:

- Clinical trials and serum biomarkers
- Environmental biomarkers
- Tissue Engineering
- Multiscale mechanistic modelling and Gait Analysis
- Big data and deep learning
- Augmented reality

The presenters of the first training session were: University of Nicosia, LEITAT, ANIMUS Center, SMARTEX, RIMED, CERTH, LJMU, CETRI, University of Patras and KU Leuven. All training presentations were shared among the partners and the attendees, and they are kept in a freedcamp account managed by the coordination team.

The presenters of the second training session will be completed in month 36.

2.1.4 Number of participants

The number of participants that attended the first Training Session were 23. The participations derived from the internal staff of the entities comprising the consortium and their attendance aimed at familiarising with the technologies across the implementation of all WPs of the project.

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3 Training Session I

3.1 Preparation prior to the meeting

The internal meeting was organized among the project team with the outer goal of better understanding and overview of the technologies that have been developed by partners related to biomarkers and tissue engineering, as well as smart technologies used based on mechanistic modelling, big data analytics and their further applications. To enhance the attempt, a promotional material (Figure 1) was circulated to trigger the partners to participate and assist the efficient transfer of knowledge.

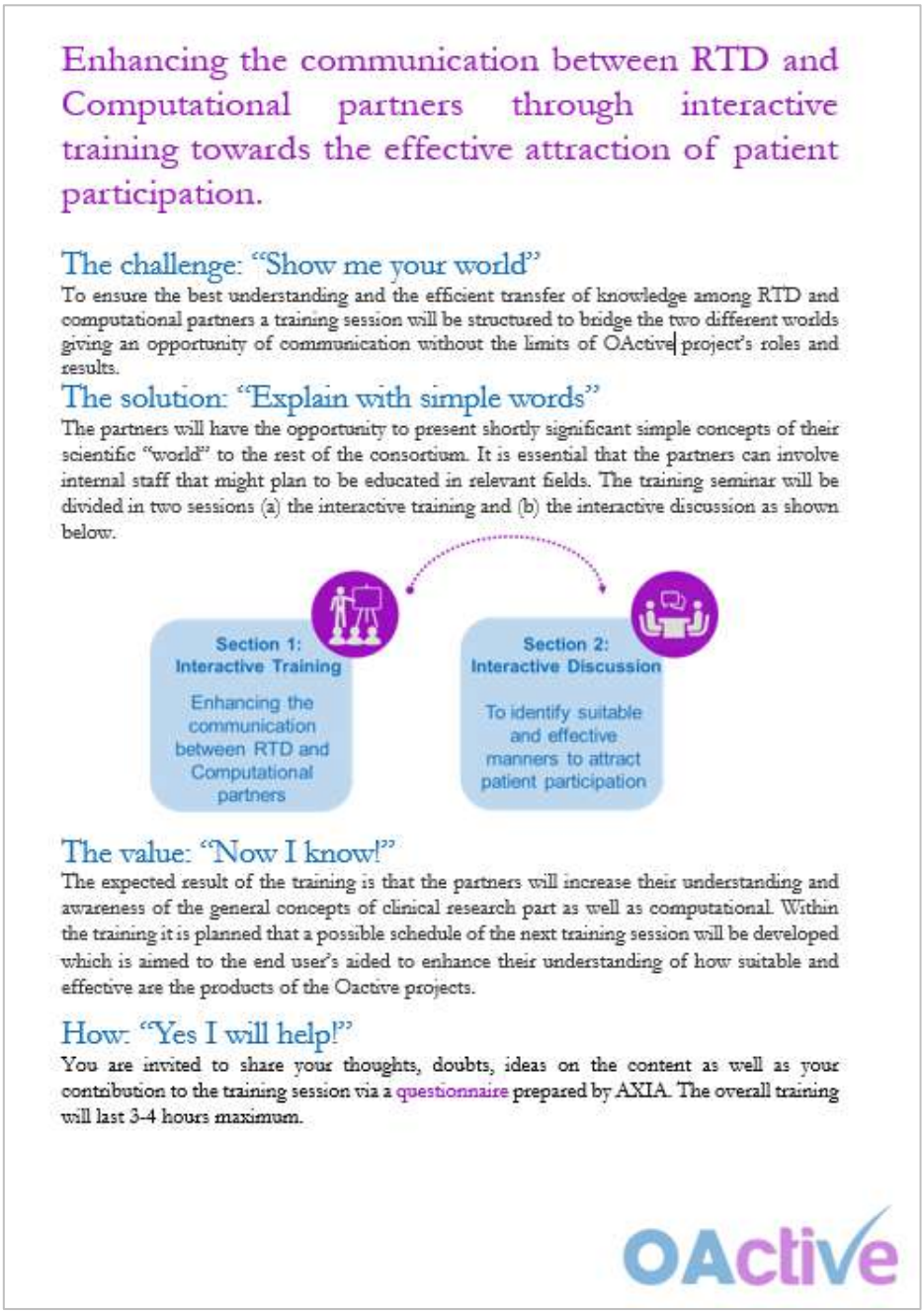


Figure 1: *Internal Promotional Material*

With the view to acquire all the suggestions and needs AXIA developed a questionnaire to make the internal training most beneficial from either the perspective of the trainee or the trainer. The questionnaire was divided in 2 sections as presented in Figure 2 covering via several questions the needs, the thoughts and the expectations of the partners.

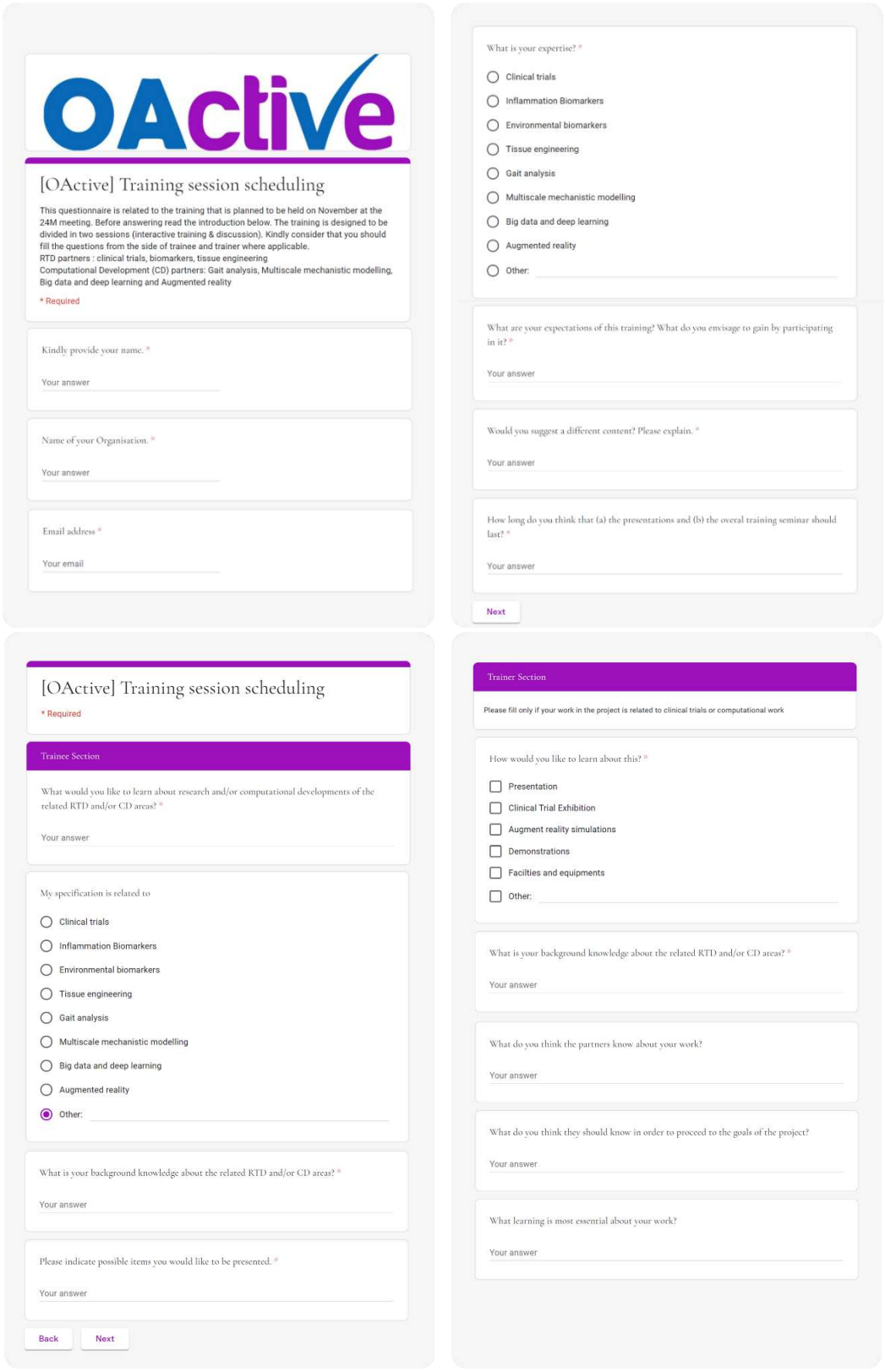


Figure 2a: *Questionnaire (Part 1, 2)*

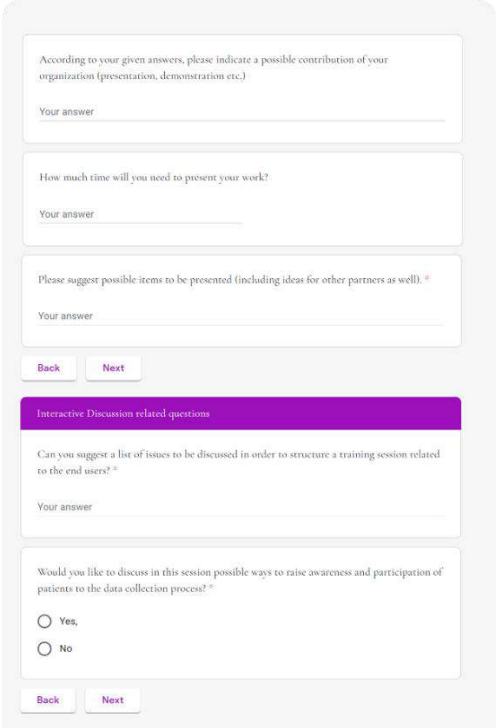


Figure 2b: *Questionnaire (Part 3)*

The participation of the consortium to the online questionnaire provided the appropriate information to set up a structured agenda for the Training. The program was divided in three sections categorizing the partners' work to the respective working groups. From each working group a lead partner would be the responsible to present on behalf of all the group the material that was prepared for the training.

Table 1. *Training Agenda*

Time	Agenda Item	Responsible
INTRODUCTION SECTION		
09.00	Short Introduction	Coordinator
BIOMARKERS & TISSUE ENGINNERING		
09.15	WG1.Clinical trials and serum biomarkers	HULAFE, UNIC, ANIMUS, LEITAT
09.50	WG2.Environmental biomarkers	SMARTEX, CERTH, KULEUVEN
10:25	WG3. Tissue Engineering	RIMED
11:00-11:15 Coffee Break (15 minutes)		
MECHANISTIC MODELING		
11.15	WG4. Multiscale mechanistic modelling and Gait Analysis	LJMU, CERTH
11:50-12:00 Coffee Break (10 minutes)		
BIG DATA & AUMENT REALITY		
12.00	WG5. Big data and deep learning	CERTH, CETRI
12.35	WG6. Augmented reality	UPAT
ROUND TABLE		
13.10	Discussion	All

As the period of the organisation of the training coincided with the 24M meeting of the Consortium it was decided at the regular monthly teleconference to have the training session within the frames of the 24M that was planned to be host at Ri.Med premises in Palermo on 25th and 26th of November. The Training was arranged at the second day of the meeting on 26th to give the opportunity to the participants to exploit and explore the content that would be covered at the Training Session as a separate activity with no links to the progress OActive's meeting. For this purpose Ri.Med team prepared a dissemination flyer containing the overall program of the both days including the special Training Session(Figure 3.)

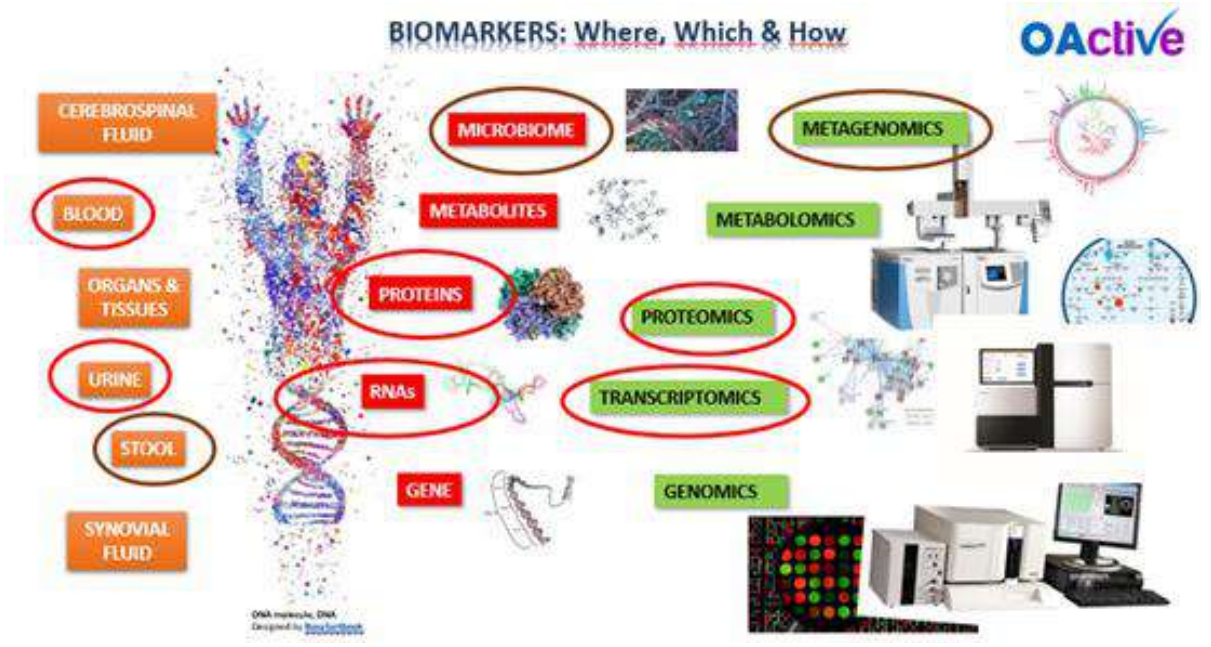
Figure 3: *Meeting Agenda*

3.2 Presentation during the meeting

During the meeting an introduction was given from the coordinator on the content of what the training working groups will cover. The session was insightful, interactive and triggered the interest of all the participants to get involved actively. The anointed trainers brought all the useful material and devices to communicate best their technological advancements. Figure 4 summarizes some of the activities of the team using the devices demonstrated during the meeting. An additional 10 minutes at the end of each presentation of the session was given to address all questions, all concerns and suggestions.

Figure 4: *Activities of the OActive team during the interactive Training Session*

The following Figure includes some slides of the respective presentations provided by the project partners.



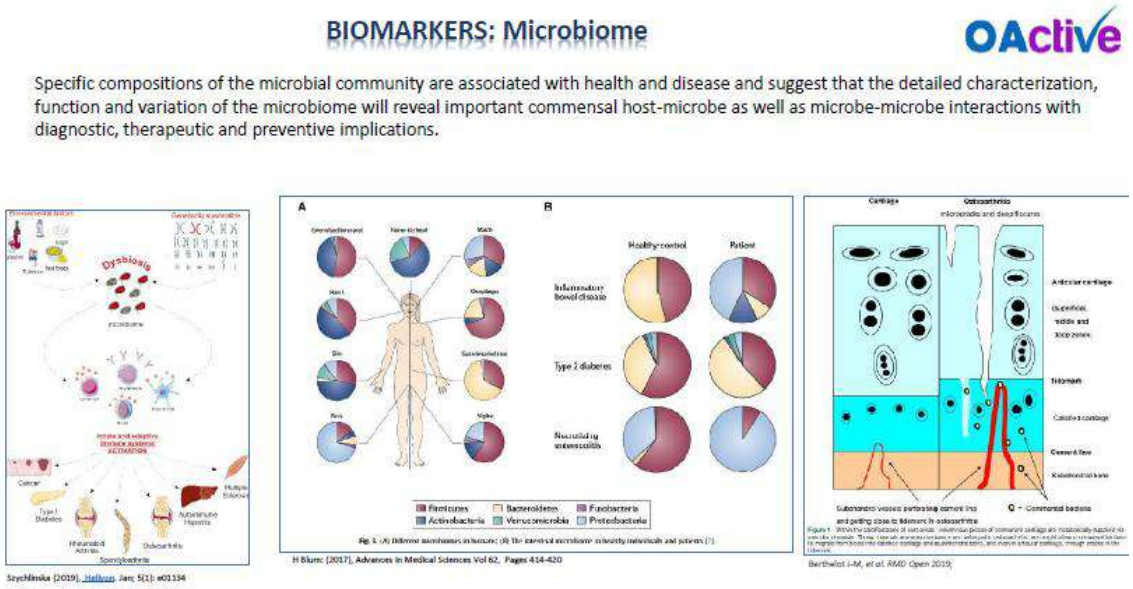


Figure 5: *Indicative presentation slides presented during training Session I of OActive regarding biomarkers*

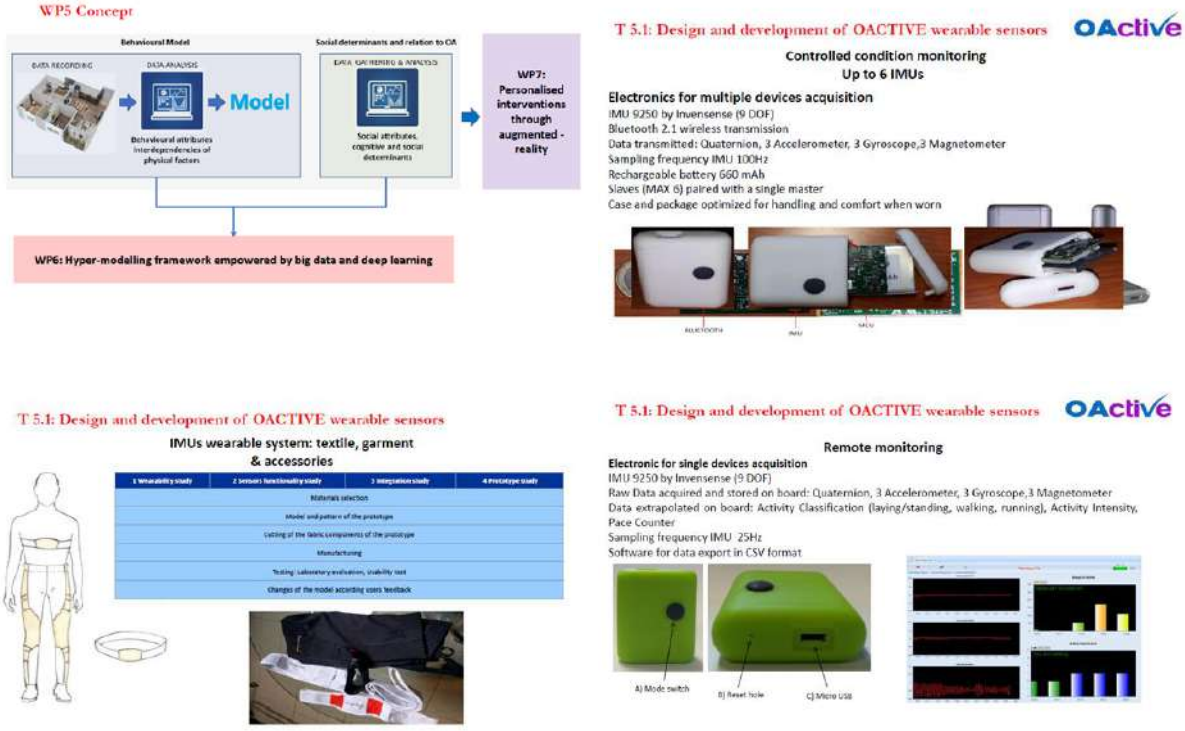


Figure 6: *Indicative presentation slides presented during training Session I of OActive regarding Behaviour modelling and environmental biomarkers*

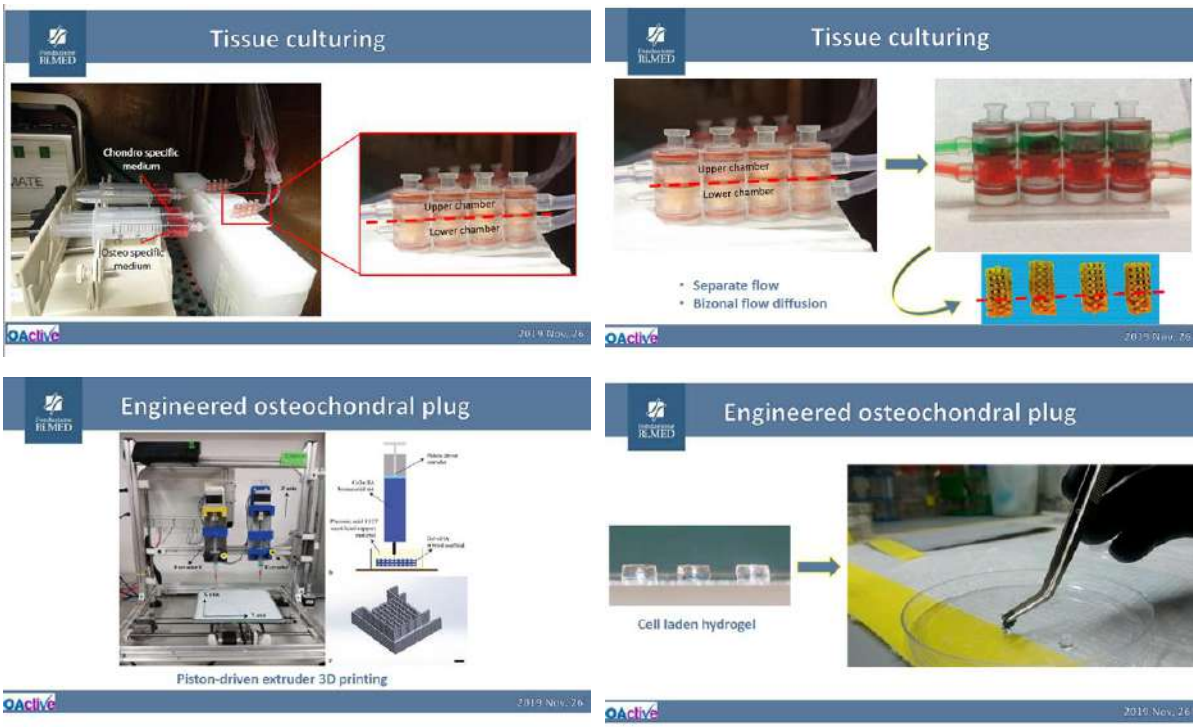
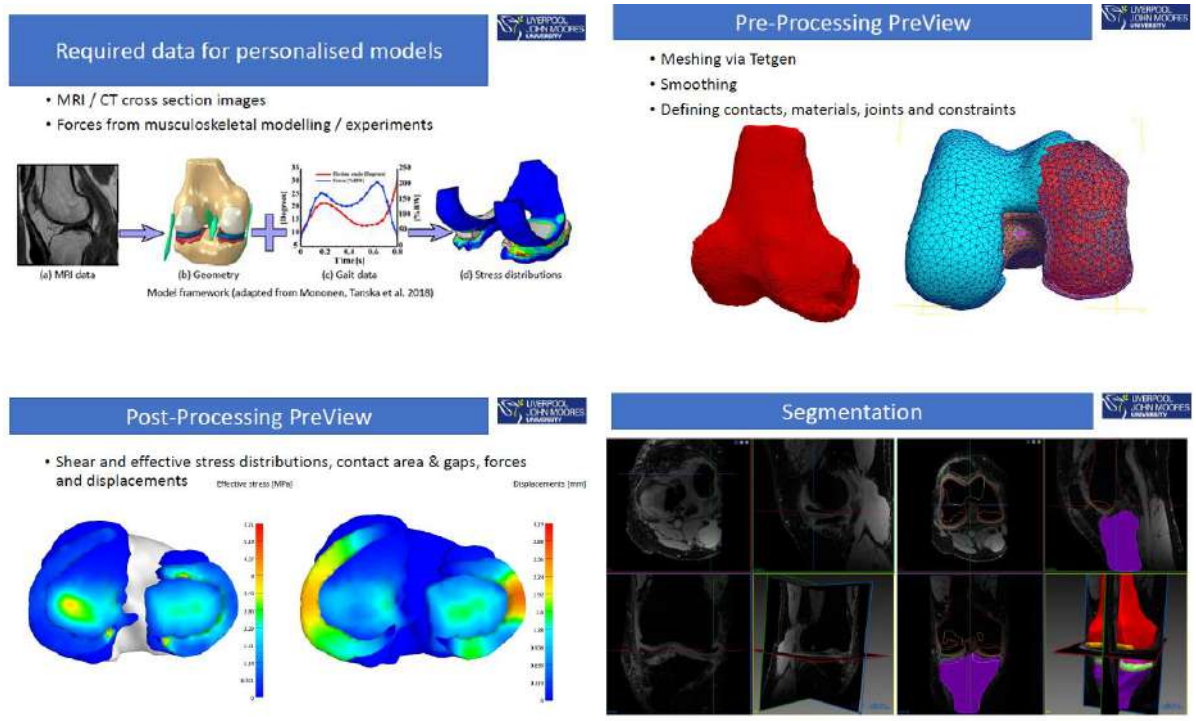


Figure 7: *Indicative presentation slides presented during training Session I of OActive regarding tissue engineering*



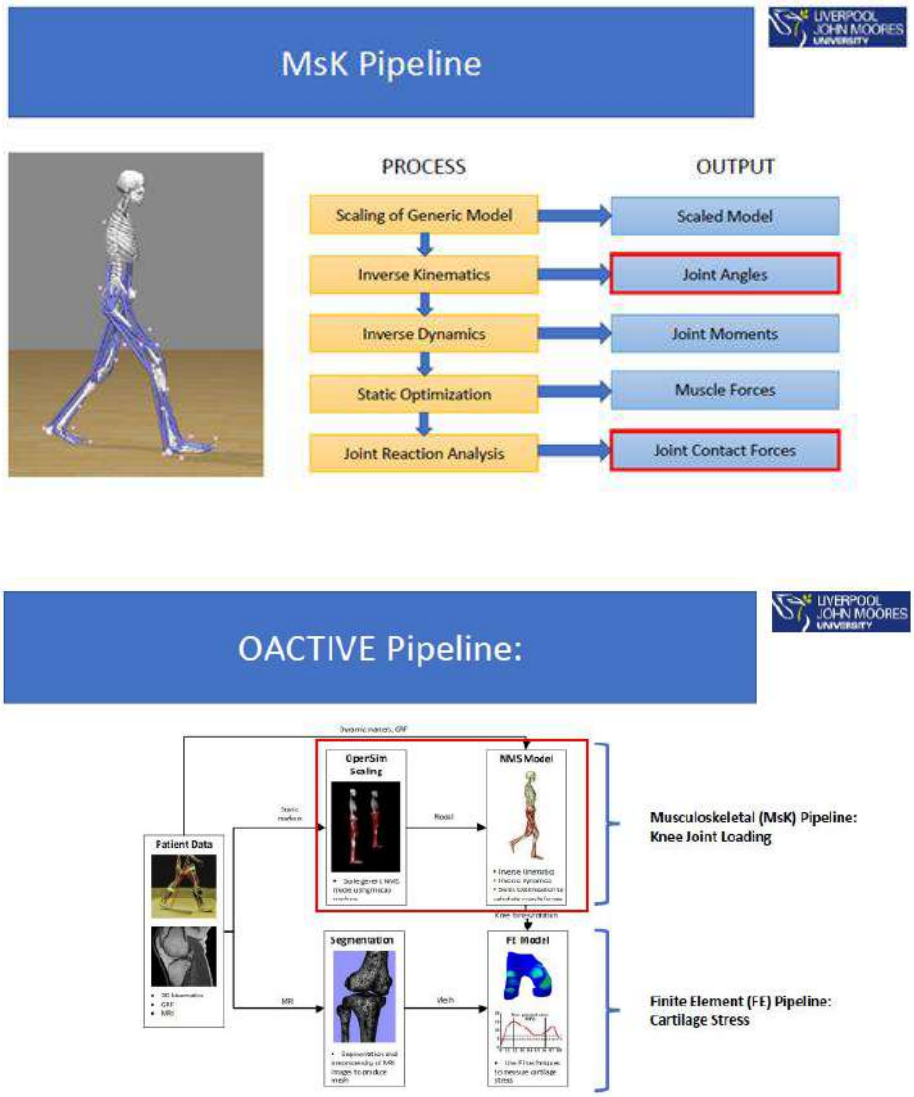


Figure 8: *Indicative presentation slides presented during training Session I of OActive regarding Musculoskeletal (MsK) analysis*

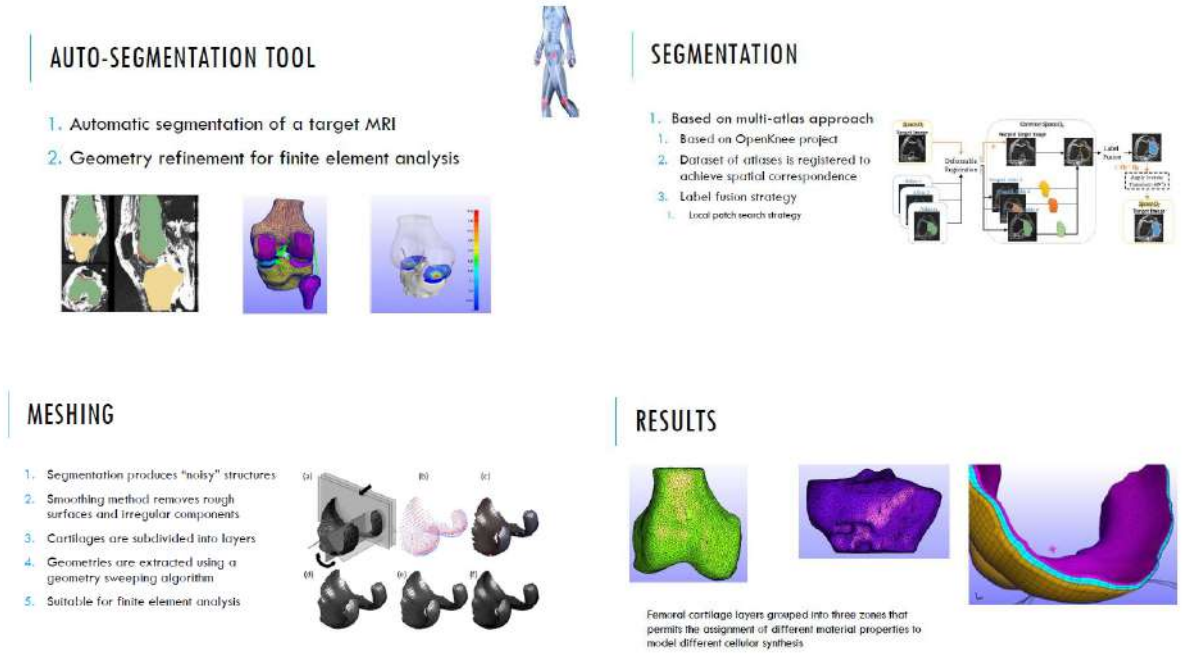


Figure 9: *Indicative presentation slides presented during training Session I of OActive regarding the auto-segmentation tool*

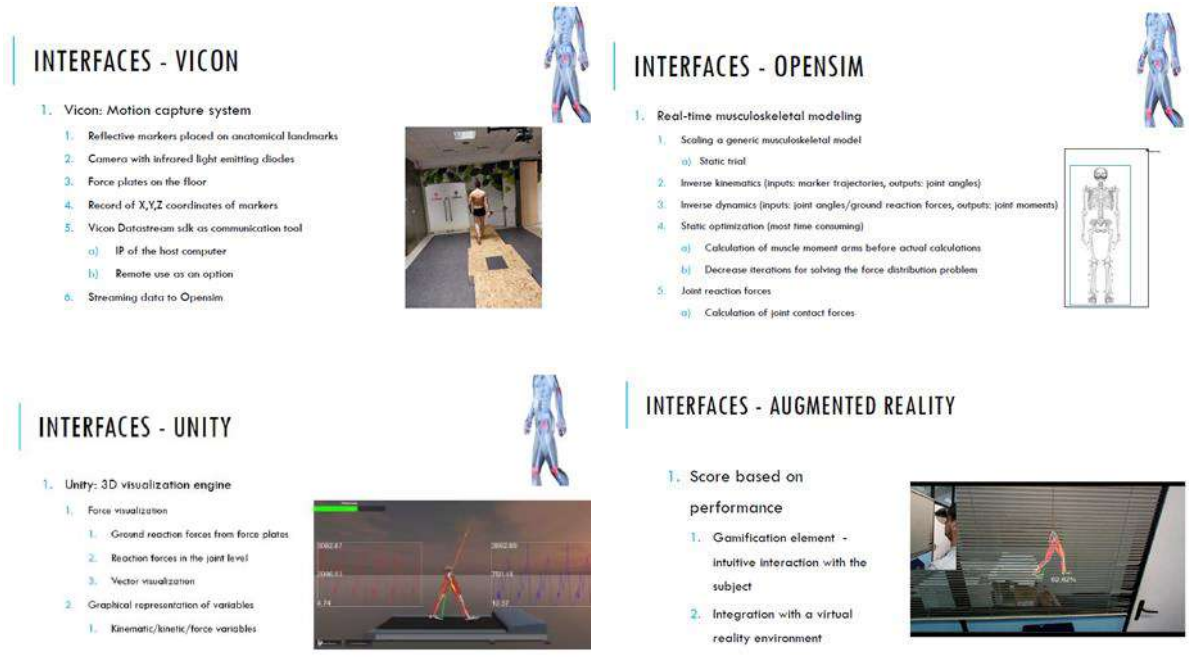


Figure 10: *Indicative presentation slides presented during training Session I of OActive regarding the virtual reality platfrom*

3.3 Comments and feedback

After working together 24 months, our team decided as it was initially planned within the GA to realize a training session that would make all the involved technology providers and scientists to feel more comfortable with the basic concepts of each other's scientific background and their state of the art. The purpose was to boost further effective promotion of the project in events, conferences as well as to further impel collaborations and exploitations of the project results within and out of the project. After and during the presentations each of the project partner took the role of a possible patient with osteoarthritis and had the opportunity to test the services that will be provided to the end users. In general, partners engaged to the content and the feedback during the networking breaks was positive and encouraging. The realization of the Training Session I will set a great start and a good practice to schedule and structure the Session II where the respective actions would have to be addresses towards the end users.

4 Training Session II

To be completed on month 36.

5 Conclusions

The reported Training Sessions refer to training activities targeting to internal staff of the consortium included entities as well as end users of the technologies developed under the OActive project. All presenters fulfilled their role and met assumed objectives. In total, 2 training sessions were held attended by about representatives of the target groups.

In common opinion of participants, the trainings were evaluated as important events, being the most recent source of information on the possibilities, technologies, purposefulness and the need to raise awareness on advanced personalized interventions for combating OA. The attendees indicated high substantial and organization level of the training workshops.

ANNEX I: