

Report on network-wide training events

DELIVERABLE

4.6

Date: 31.10.2020

Prepared by: UPV

RHUMBO

modelling and pRedicting Human decision-making Using Measures of subconscious Brain processes through mixed reality interfaces and biOmetric signals

From November 2018 to October 2022


Grant agreement: 813234

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Rhumbo



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Dissemination level	
X	PU = Public
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ABBREVIATIONS

ESR: Early Stage Researcher

CDP: Career Development Plan

VF: Virtual Fieldtrip

EAB: External Advisory Board



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INTRODUCTION

This document is a report on networking-wide training events after 24 months since the beginning of the project.

In D4.5, a detailed description of the network-wide training events done in the first twelve months of the project was provided. In this document, the information is updated and a detailed description of Virtual Fieldtrip 2, the 1st Training Week and an online Webinar hosted by AAU is provided.

In relation with the networking-wide training events, the document describes the activities carried out in these 24 months of the project, although it should be noted that the enrolment of most of the ESRs occurred in September 2019.


Deliverable 4.6. is under the following task within the DoA of RHUMBO project: T4.2. Implementation of network training activities.

1 PLANNING

The initial planning for the training activities within RHUMBO project was the following:

RHUMBO Project			Leader/ Host	Topic	2018	2019				2020				2021				2022			
					Nov	jan	may	oct	jan	apr	oct	jan	may	oct	jan	apr	ago	oct			
					M1	M3	M7	M12	M15	M18	M24	M27	M31	M36	M39	M42	M46	M48			
TRAINING - WP4																					
On-line networking training	Virtual Fieldtrips (VF)																				
	VF1	UPV	Introduction to RHUMBO's partners' expertise and disciplines with participation of all ESRs supervisors and co-supervisors.																		
	VF2	UKB	Women contributions to neuroscience																		
	VF3	AAU	How do neuroscience contributes to shape the future of businesses																		
	VF4	AMS	Presentation of ESRs advances																		
On-site networking training	Training Schools																				
	Technical Lectures 1	UPISA	Establishing the fundamentals																		
	Technical Lectures 2	UVEG	Consumer neuroscience																		
	Technical Lectures 3	GTEC	Neuro-business applications																		
	Workshops																				
	Workshop 2	UPISA	Project Management and Research Communication																		
	Workshop 1	UPV	Responsible Research and Innovation (RRI) I																		
	Workshop 3	NEUR	Career Management																		
	Seminars																				
	Seminar 3	AMS	Standardisation, certification and regulation of devices																		
Seminar 2	UVEG	Responsible Research and Innovation (RRI) II																			
Seminar 1	AAU	Research Epistemologies and Methods																			
Seminar 4	UPV	European research funding opportunities																			
DISSEMINATION AND EXPLOITATION - WP5																					
Workshop at Conferences																					
Workshops at Conferences & Seminars	HCI 2020	GTEC	Open workshop + satellite event																		
	BCI Conference 2021	GTEC	Open workshop + satellite event																		

Fig. 1. Plan of the training activities of RHUMBO project

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As it is shown in the planning, during the first 24 months the network-wide training activities planned were:

Training activity	Host	Planned Month
Virtual Fieldtrip I	UPV	M7
Technical Lectures I	UPISA	M12
Virtual Fieldtrip II	UKB	M15
Technical Lectures II	UVEG	M24
HCI 2020	GTEC	M15-M24

Table 1. Planned training activities

The planning has been fully completed. Moreover, an online webinar was organized by AAU although it was not foreseen in the proposal. At the time of completion of this deliverable, the actions taken have been the following:

Training activity	Host	Month	Dates of completion
Virtual Fieldtrip I	UPV	M11	Sep, 5 th , 2019
Technical Lectures I	UPISA	M13	Nov, 11-14 th , 2019
Virtual Fieldtrip II	UKB	M16	Feb, 13 th , 2020
Technical Lectures II	UVEG	M25-M26	Nov, 30 th – Dec, 3 rd , 2020 (planned)
HCI 2020	GTEC	M21	Jul, 19-24 th , 2020
Online Webminar	AAU	Not planned (M20)	Jun, 22 nd , 2020

Table 2. Networking-wide training activities till M24.


2 TRAINING PROGRAMME

As set out in Annex 1 (part B) to the Grant Agreement (see page 124), the training programme of the project was designed to combine scientific investigation and with the goal of providing ESRs with enhanced career perspectives in both the academic and non-academic sectors through international, interdisciplinary and inter-sectoral mobility combined with an innovation-oriented mind-set with training in key professional skills.

RHUMBO's training philosophy is based on the EU principles for Innovative Doctoral Training, where ESRs receive solid theoretical foundations, acquire hands-on expertise in a wide spectrum of technical disciplines and enhance their innovation capability through transferable skills training courses.

The aims of RHUMBO training activities are the following:

- To develop an Innovative Training Network of host institutions delivering a structured state of the art training programme to support ESR career development based on customised training

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programme for each ESR, aligned with the corresponding IRP and reflected in a Career Development Plan (CDP) that comprises: 1) multi-disciplinary modules, 2) intersectoral components and 3) a wide range of transferable skills courses to support the ESRs' employability.

- High-level local training at the hosting institutions where they will perform training through research, enrolment in a PhD programme, secondments and training in technical and transferable skills.
- To develop a network of highly employable, highly skilled scientists with academic and entrepreneurial skills by providing a complete set of network training activities, both in technical and transferable skills aspects, to complement the local aspects and provide the opportunity to disseminate ESRs' advances and contact with stakeholders outside the network. Emphasis on gender aspects will be done from the methodological point of view, but also to promote and achieve a better participation of female scientists in neuroscience.
- To create a networking and collaborative legacy beyond the ITN project period.


As described before, after 24 months of the project, training activities are being developed as it was planned. As described in section 1, all the changes to the original plan are caused by the SARS-COVI-19 pandemic, which has led to the planned face-to-face events have finally been developed online or simply have not taken place, being postponed for later editions.

Next sections will describe the activities developed from M12 to M24, as those done in the first 12 months of the project were described in D4.5. Report on network-wide training events (M12) and submitted in Oct, 2019.

3 NETWORK-WIDE TRAINING ACTIVITIES

RHUMBO aims to provide ESRs with the opportunity to gather and share the knowledge within and outside the network, to receive highly targeted training, and to compare different approaches to research problems. Interactions at these events help them to exchange knowledge among themselves, with the supervisors, trainers and external participants from different sectors. The networking training programme has been conceived to assure that ESRs get maximum advantage of the activities programmed as a support for their IRPs.

3.1 On-line networking training

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The aim of this training is to provide support and background to the ESRs to define and develop their CDPs at critical development moments. On-line training is structured around **Virtual Fieldtrips (VF)**. Moreover, all ESRs will hold a series of programmed online interactive meetings with scientists both inside and outside RHUMBO project to provide insights on technical aspects or about their careers.

The first VF took place immediately after ESRs recruitment has finished, that is in 2019, Sep, 5th. It was hosted by UPV and the tool ZOOM was used for the videoconference (<https://www.zoom.us/>). It was described in D4.5. Report on network-wide training events (M12).

Virtual Fieldtrip 2

Virtual Fieldtrip 2 was hosted by UKB in Feb, 13th, 2020. The topic was “*Women in Neuroscience*” and a set of very interesting talks were given by women experts in neuroscience during two hours.

The agenda of the event was the following:

Schedule	Subject	Speaker
11:00 – 11:05	Introduction to the session and presentation of the speakers	Johannes Schultz
11:05 – 11:30	Girl up! (Presentation)	Qëndresa Rramani
11:30 – 12:00	Some famous female neuroscientists and their contribution to neuroscience (Presentation)	Diana Shih
12:00 – 12:30	The role of Oxytocin for marketing placebo effects (Presentation of a completed MSc project)	Daniela Schelski
12:30 – 13:00	Roundtable discussion	Qëndresa Rramani, Daniela Schelski, Diana Shih


Fig. 2. Agenda of Virtual Fieldtrip 2

The profile of the speakers selected were very suitable for the project.

The first talk was given by **Qëndresa Rramani**, PhD Student at the Center of Economics and Neurosciences (CENs). Her talk was focused on the evolution in the last few years of the participation of women in neurosciences projects.

She is Master in Neurosciences by the University of Bonn and her research interest are self-control and decision making in the nutritional context, emotions induced via social situations and their effect on decision processes and also implicit measurements to study food choice.

Second talk was given by **Diana Shih**, ESR 4 in RHUMBO Project, who made a summary of the biographies of the most relevant women experts in neuroscience.

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Then **Daniela Schelski**, another PhD Student at the Center of Economics and Neurosciences (CENS) described a very interesting study she has developed in the role of oxytocin for marketing placebo effects

After the three talks there was some time for exchanging opinions and questions.

Virtual Fieldtrip 2 was attended by all the ESRs and also by some of the supervisors of the project. The following pictures show two photos of the virtual session:

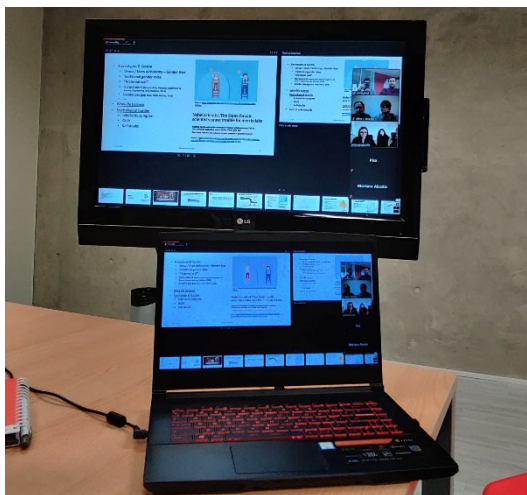
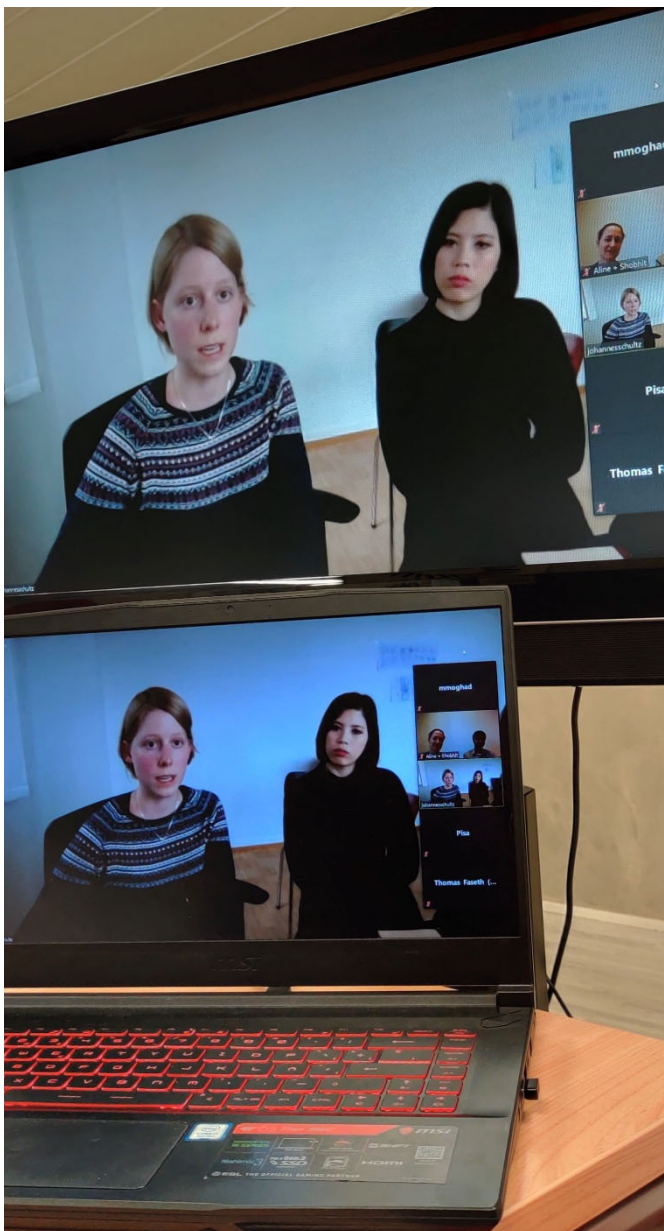



Fig. 3 and 4. Photos of the presentations done in VF2.



Annex I is the presentation of the different talks given by the speakers.

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3.2 On-site networking training

RHUMBO's on-site training is planned to be organised after each project's Annual Progress Meeting. The training programme is customised on different topics to assure that each year ESR receives precisely the contents that will be relevant for the development of their next IRPs period.

Networking events in RHUMBO are arranged as **Training Schools** that last 2-4 days and consist on a set of mandatory technical and transferable skills activities, including a set of:

- 1) Technical lectures around selected topics
- 2) Workshops and seminars to cover relevant transferable skills issues.

Training is given by consortium members and invited speakers. There are also master classes given by External Advisory Board members and relevant researchers from Academia and the corporate world. Training schools are open to participants outside RHUMBO network to improve the project's impact, receive additional feedback from researchers working in the field and to widen ESRs' network. At the end of each Training School, all the ESRs make an oral presentation to the rest of the attendees to show their challenges and progress.

It is planned that PhD students outside RHUMBO project will have the chance to present also brief communications related with the school contents.

TECHNICAL LECTURES I, Pisa (Italy).

Technical Lectures I took place in Pisa, Italy, in November 2019, from 11th till 14th. It was hosted by UPISA and it took place in a very nice venue that belongs to the University of Pisa.

This event was announced in the project website as well as in the social media sites of the project:

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The agenda of Technical Lectures I was the following:

1 st ON-SITE NETWORKING TRAINING WEEK & REVIEW MEETING									
Monday		Tuesday		Wednesday		Thursday		Friday	
Schedule	Nov, 11th	Schedule	Nov, 12th	Schedule	Nov, 13th	Schedule	Nov, 14th	Schedule	Nov, 15th
	ARRIVAL ON PISA	8:30 - 10:30	Technical Lectures: VR and presence fundamentals Frank Biocca	9:00 - 11:00	EAB meeting ESRs side event	8:30 - 11:15	11 ESRs Oral Presentations (15 min each)	9:00 - 11:00	EC Review Meeting Introduction (5 min) Tour de table (30 min) REA Project officer presentation (20 min) Coordinator's report (1 h)
		10:30 - 11:00	Coffee break	11:00 - 11:30	Coffee break	11:15 - 11:30	Coffee break	11:00 - 11:30	Coffee break
		11:00 - 13:00	Technical Lectures: Machine learning Mario Cimino	11:30 - 13:00	Technical Lectures: Brain Activity capturing techniques Nicola Vanello	11:30 - 12:30 13:30 - 13:30	1. Ethics & gender committee 2. IPR Committee 3. BSPQMC 4. ToT Committee	11:30 - 13:30	EC Review Meeting Fellows' individual presentation Restricted session with the fellows (1-3 h)
		13:00 - 14:30	Lunch	13:00 - 14:30	Lunch	13:30 - 14:30	Lunch	13:30 - 15:00	Lunch
		14:30 - 17:30	Technical Lectures: Advanced Biosignals Processing Ricardo Barbieri	14:30 - 17:30	Workshop II: Project management and research communication Federico Niccolini	14:30 - 17:30	SB meeting	15:00 - 16:00	EC Review Meeting Restricted session with the fellows (1-3 h)
16:00 - 17:30	Introduction session: Project General Overview (UPV)							16:00 - 18:00	EC Review Meeting Restricted session PO+Coordinator (30 min) Feedback and open discussion
17:30 - 17:45	Coffee break	17:30 - 17:45	Coffee break	17:30 - 17:45	Coffee break	17:30 - 17:45	Coffee break		
17:45 - 19:15	Technical Lectures: Valerie Shute (videocall) "Stealth-assessment"	17:45 - 19:15	Technical Lecture: Statistics and modeling in biomedicine Gaetano Valenza	17:45 - 19:15	Workshop II: Project management and research communication Joanne Spataro	17:45 - 19:15	SB meeting + Rehearsal meeting		
19:30 - 21:30	Ice-Breaker event (all)					20:30 - End	SB Members and PO Dinner		

Fig. 5. Agenda of Technical Lectures I

As it is shown in the agenda, the week was structured as following:

- Introduction session with a project overview given by the coordinator, that is, UPV.
- 2 days of technical lectures
- 0,5 days for Workshop II.
- 0,5 days for ESRs oral presentations and committees meetings'.

Last day was focused on the EC Review Meeting with the Project Officer

Introduction session

In the introduction session, Prof. Gaetano Valenza welcomed the attendees as he was the host of the event and UPV (Mariano Alcañiz, Alejandra del Valle), as coordinator of the project gave a quick look at the general goals of the project and introduced the members of the EAB and supervisors that attended the meeting to the ESRs and the rest of attendees.

ESRs had the opportunity to meet them all in person for the first time.

The following pictures show some of the moments of the session.


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Fig.6 Prof. Valenza opening the session



Fig. 7. ESRs attending the introduction session



Fig. 8 and 9. Two moments of the introduction session

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Technical Lectures.

Technical Lectures were given by members of the External Advisory Board (Valerie Shute, Frank Biocca and Paul Verschure) and other relevant speakers. This first edition of technical lectures was called “*Technical lectures I: Establishing the fundamentals*” and was focused on the topics: Virtual reality, output and input devices, concept of presence, interaction and navigation metaphors, and 3D user interfaces, evaluation techniques, advanced signal processing techniques, brain activity capturing techniques (EEG, fNIRS, fMRI) and machine learning algorithms. All the sessions were planned to fulfil these objectives and relevant experts of the different fields were contacted for the training.

The topics of the lectures and the speakers were the following:


- **Prof. Valerie Shute** with the talk called “*Stealth-assessment*”. Prof. Shute made her presentation using a videocall as she could not travel due to health problems. Her talk was very interesting and it finished with a game for the ESRs to check the impact of the message she gave in the talk.

Val Shute is the Mack and Effie Campbell Tyner endowed professor of education at Florida State University. Before coming to FSU in 2007, she was a principal research scientist at Educational Testing Service (2001-2007) where she was involved with basic and applied research projects related to assessment, cognitive diagnosis, and learning from advanced instructional systems and where she generally honed her psychometric skills. Prior to ETS, Val worked in industry for two years, and before that, she was enthusiastically employed at the Air Force Research Lab in San Antonio, Texas (1986-1999). She and her colleagues are developing a suite of model-based tools that are used to assess understanding and provide the basis for informative and reflective feedback during instruction.

She earned a Ph.D. in cognitive/educational psychology from the University of California, Santa Barbara (1984), and held a two-year postdoctoral fellowship at the Learning Research and Development Center.

- **Prof. Frank Biocca**, “*VR and presence fundamentals*”. Professor Biocca, who is a member of the EAB as well, attended all the Lectures and meetings of the week. He gave a master class on VR and presence fundamentals. He is a worldwide known expert on VR. He directs the networked Media Interface and Network Design (M.I.N.D.) Lab. And his research is focused in how mind and media can be coupled to extend human cognition and enhance human performance. His current projects include research on the psychology of presence in virtual environments, spatial cognition and information organization in high-bandwidth and mobile system collaborative augmented reality systems, and work on adapting interfaces to cognitive styles and sub-cultural differences. Among his books is the award winning, *Communication in the Age of Virtual Reality*.

Dr. Biocca has patents on augmented reality technology, over 150 publications, and participated in the introduction of the first portable computer. Dr. Biocca is on the

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editorial board of several journals including MIT Presence: Teleoperators and Virtual Environments, Journal of Communication, Media Psychology, the Journal of Computer-Mediated Communication, and other international journals. Dr. Biocca has been a professor, researcher, or lecturer at the University of California-Berkeley, Stanford, University of North Carolina, and University of Wisconsin.

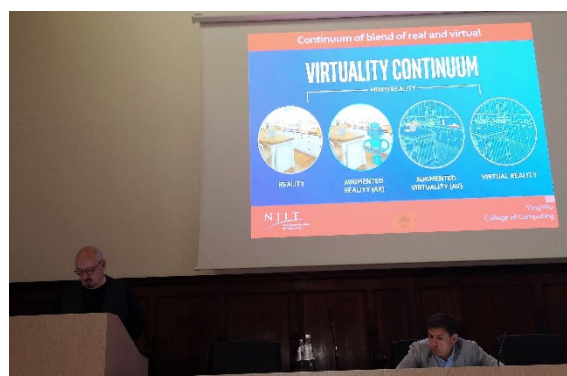
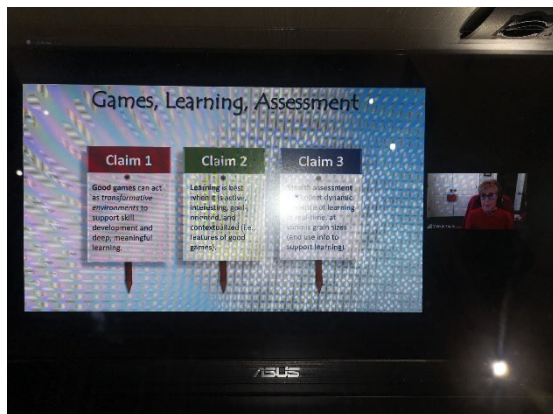



Fig. 10 and 11. Prof. Shute and Prof. Biocca giving their talks.

Other technical lectures given were:

- Prof. **Mario Cimino** gave a talk on “*Machine Learning*”. Prof. Cimino is an Associate Professor at the Department of Information Engineering of the University of Pisa (Italy). He received the Ph.D. degree in Information Engineering from the University of Pisa in 2007. From 2003 to 2006, as a Ph.D. student he joined the Department of Information Engineering of the University of Pisa, working on computational intelligence and information systems. Since April 2006, he spent six months as a visiting scholar at the Electrical & Computer Engineering Department of the University of Alberta, Edmonton (Canada), under the supervision of Prof. W. Pedrycz, for a research activity on neurocomputing and granular computing. He has taught several academic courses as a teaching assistant, a Professor and a seminar lecturer. He has been BS and MS thesis advisor on Artificial Intelligence, Data Engineering, Computer Engineering and Management Engineering. He has also taught courses in private software companies. Mario G.C.A. Cimino has been reviewer for many international conferences and international journals and is member of the Technical Program Committee of many international conferences.
- Prof. **Ricardo Barbieri**, spoke about “*Advanced Biosignals Processing*”. Prof. Barbieri is a member of the EAB of RHUMBO Project. Riccardo Barbieri is Associate Professor at the Politecnico di Milano. Before coming to Politecnico in 2015, he was a faculty member at the Harvard Medical School, the Massachusetts General Hospital, and the Massachusetts Institute of Technology. He earned the M.S. degree in Electrical

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Engineering from the University of Rome “La Sapienza”, Rome, Italy, in 1992, and the Ph.D. in Biomedical Engineering from Boston University, Boston, MA, in 1998.

Prof. Barbieri’s broad research interests are in the development of signal processing algorithms for the analysis of biological systems. He has focused his studies on computational modeling of neural information encoding, and on application of advanced nonlinear and multivariate statistical models to characterize heart rate variability and cardiovascular control dynamics. He is author of more than 150 peer-reviewed publications in these fields since 1994. Prof. Barbieri is a Member of the American Association for the Advancement of Science, the European Society of Hypertension, the Society for Neuroscience, and Senior Member of IEEE and the Engineering in Medicine and Biology Society.



Fig. 13. Prof. Riccardo Barbieri starting his lecture.

- **Prof. Gaetano Valenza** gave a talk in “Statistics and modelling in biomedicine”. He was the host of the event and he is the main researcher in RHUMBO in UPISA.

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- **Prof. Nicolla Vanello** spoke about “*Brain Activity capturing techniques*”. Nicola Vanello, PhD, is an Assistant Professor in the Dipartimento di Ingegneria dell’Informazione and in the Research Center “E. Piaggio” at the University of Pisa. He received his Degree in Electronic Engineering, with a curriculum in Biomedical Engineering, in 2001 from the University of Pisa, Italy. He received his PhD in Automatics, Robotics and Bioengineering from the Department of Electrical Systems and Automation of University of Pisa, on 2006.



Fig. 14. Prof. Nicola Vanello

His research activity is related to models and methods for biomedical signal and image processing. In particular, his skills concern the study of cerebral functions in complex cognitive tasks, and the development of exploratory and confirmatory models for data analysis, using electroencephalography and magnetic resonance imaging (MRI).

- **Prof. Paul Verschure** gave a talk with the topic “Living Machines. The Brain in XR: from science to the real world and back”. Prof. Verschure is a member of the EAB of RHUMBO project. He is a Research Professor with the Catalan Institute of Advanced Studies, Director of the Synthetic Perceptive, Emotive and Cognitive Systems Laboratory (specs-lab.com) at the Barcelona Institute of Science and Technology and the Institute for Bioengineering of Catalunya. Paul received his MA and Ph.D. in Psychology and pursued his research at different leading international institutes: The Neurosciences Institute and The Salk Institute, both in San Diego, the Univ. of Amsterdam, Univ. of Zurich and the Swiss Federal Institute of Technology-ETH.

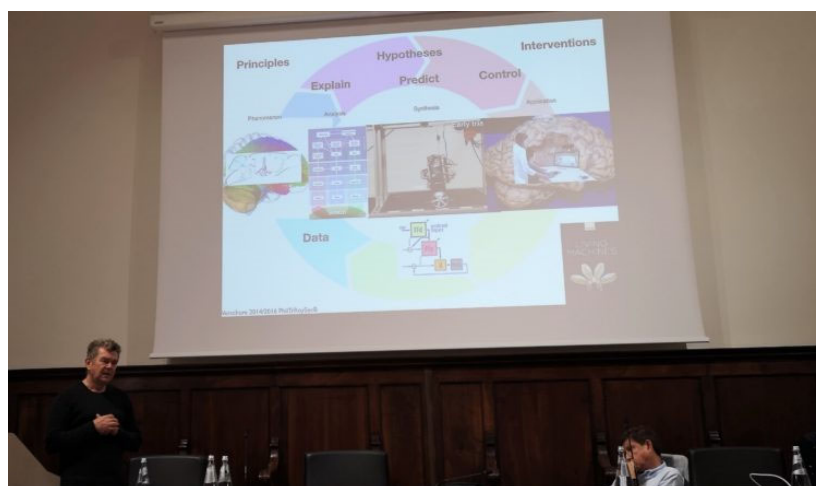



Fig. 15. Prof. Paul Verschure

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ESRs Oral Presentations

All the ESRs had the chance to briefly present their Individual Research Project. A template was prepared and previously sent to all of them by the coordinator to unify the information to be explained in Pisa.

The oral presentations were made in Nov, 14th and it took about 10 minutes for each ESR to make their presentations.

Committees meetings

In Nov, 14th, 2019 there took place all the Committees Meetings of the project. In some cases, some of the ESRs belong to those committees and so the selection was made.

Social events

During the week there took place two social events: an ice breaker event on the first day and also a gala dinner.

- **Ice breaker event.** An icebreaker is an activity designed to welcome attendees and warm up the conversation among participants in a meeting, training class, team-building session, or other activity. As ESRs had not meet previously, a special event with the goal of promoting the interaction with each other was planned.

It consisted in a special catering at the end of the first day of the week in which all the ESRs and the rest of attendees had the chance to interact with each other.



Fig. 15. Ice breaker event

- **Gala dinner.** On Thursday, Nov, 14th took place a dinner of all the attendees to the meetings and training sessions of the week. The venue was a marvellous building that belongs to the University of Pisa.

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Fig. 16. Gala dinner

TECHNICAL LECTURES II, Valencia (Spain), online.


Technical Lectures II will be hosted by UVEG in Valencia (Spain) in Nov, 30th till Dec, 3rd, 2020.

This training activity was originally planned to be done in Oct, 2020. The reason why the activity has been finally planned in November is that UPV is the organizer of the 17th edition of EuroXR Conference 2020 (<https://www.eurovr-association.org/news/eurovr-2020-conference-1st-call-for-contributions/>) which was supposed to be celebrated in the facilities of UPV in Nov, 25-27th, 2020. As this Conference is a very important one for the ESRs to participate in, it was planned to set the dates of Technical Lectures II below. So it was a great opportunity to attend the conference and the lectures in the same travel to Valencia (Spain).

In the Supervisory Board meeting held in Sep, 2020, it was decided to held Technical Lectures II online due to the health crisis that prevents normal travel and restrictions in the capacity of public places. The decision was made by majority.

The tentative agenda for Technical Lectures II is shown in the following figure. The activity will be properly described in D4.7. Report on network-wide training events (M36)

Tentative Schedule	Monday	Tuesday	Wednesday	Thursday
	Nov., 30 th	Dec., 1 st	Dec, 2 nd	Dec., 3 rd
9:00 - 11:00	Welcome & Introduction session: Project and Experiments Overview (UPV)	Technical Lecture (iv): Consumer behavior and VR	EAB meeting ESRs side event	8 ESRs Researchers' update (15 min each)
11:00 - 11:30	Coffee break	Coffee break	Coffee break	Coffee break

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11:30 - 13:30	Technical Lecture (i): Consumer behavior	Technical Lecture (v): E-retail	Seminar II: Responsible Research and Innovation II: Governance	3 ESRs Researchers' update (15 min each) Ethics & Gender Committee + BSPQMC + IPR Committee
13:30 - 15:00	Lunch	Lunch	Lunch	Lunch
15:00 - 17:00	Technical Lecture (ii): Consumer neuroscience (a)	Technical Lecture (vi): Future directions in VR	Seminar II: Responsible Research and Innovation Science Education	Women on Neuroscience Event (UPV) <ul style="list-style-type: none"> Hannah Kum-Biocca: <i>User Experience</i> Noemí Álvarez: <i>Decision-making in risk situations</i> TBD
17:00 - 17:30	Coffee break	Coffee break	Coffee break	
17:30 - 19:30	Technical Lecture (iii): Consumer neuroscience (b)	Workshop <u>Responsible Research and Innovation (RRI) I</u>	SB meeting + Rehearsal meeting	

Fig. 16. Tentative agenda for Technical Lectures II in Valencia (Spain)

Webinar on FAIR Principles.


AAU hosted a 3-hour duration webinar of FAIR principles in 22th of June 2020.

The Supervisory Board of the project detected that there was not a specific training on data handling and that there was some ignorance and confusion regarding data management and the principles that the REA states for the projects. AAU decided to host this training and invited Karsten Kryger Hansen, who is Senior Consultant in Aalborg University Library, CLAAUDIA (<https://www.linkedin.com/in/karstenkryger>) and has more than 10 years' experience in data management consultancy.

A Data Management Plan is a document describing the data handling process, making reflections for the entire lifecycle for data. So this document is part of ensuring code of conduct in the ESRs' research, especially the part about utilizing a tool as part of the planning process and addressing the section on Data Administration. The webinar took the first steps in enabling the ESRs to create a data management plan as part of their PhD.

The program of the webinar was the following:

1. What is a data management plan, and how does it relate to research processes?
 - Themes in a data management plan:
 - Data Collection
 - Documentation and Metadata
 - Analysis methods
 - Ethics and Legal Compliance
 - Storage, backup, restore and versioning

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- Selection and Preservation
- Licensing and rights
- Publication and sharing
- Responsibilities and duties.

2. Introduction to DMP online
3. FAIR principles; making data that is Findable, Accessible, Interoperable and Reusable

The webinar was attended by all the ESRs, some supervisors and co-supervisors and other members of AAU.

Human Computer Interaction (HCI 2020)

GTEC planned a tutorial and a parallel session for RHUMBO project in the 17th edition of the human Computer Interaction Conference (HCI 2020). Both proposals were submitted and accepted by HCI International 2020, which was planned to held on 19-24 July, 2020 in Copenhagen, Denmark.


The topics of the events were the following:

- 1) Tutorial: Non-invasive Brain Computer Interfaces for stroke rehabilitation and consciousness assessment
- 2) Rhumbo parallel session: Multi-modal Assessment of Subconscious Brain Processes for Neuro Business: Combining fNIRS, EEG and mixed VR: the RHUMBO project

However, due to COVID-19, HCI International 2020 was held virtually. The tutorial was unfortunately cancelled, and the parallel session was changed to an online session.

Six papers were accepted by HCI international 2020, as shown in the Table below. For each contribution, an abstract with 300 words was first submitted, and once accepted after review, an extended paper of 4-8 pages was uploaded for publication.

Order	Paper Title	Authors
1	EEG-based Methods to Characterize Memorised Visual Space	Mauro Nascimben, Thomas Zoëga Ramsøy, Luis Emilio Bruni
2	Optimizing virtual reality eye tracking fixation algorithm thresholds based on shopper behavior and age	Jaikishan Khatri, Masoud Moghaddasi, Jose Llanes-Jurado, Luciano Spinella,


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Order	Paper Title	Authors
		Javier Marín-Morales, Jaime Guixeres, Mariano Alcañiz
3	Segmentation of Areas of Interest inside a virtual reality store	Masoud Moghaddasi, Jaikishan, Jose Llanes-Jurado, Luciano Spinella, Javier Marín-Morales, Jaime Guixeres, Mariano Alcañiz
4	Influence of Ad Congruence and Social Cues on the Probability of Choosing a Restaurant	Aline Simonetti, Shobhit Kakaria, Enrique Bigne
5	Online Classification of Motor Imagery using EEG and fNIRS: A hybrid approach with real time Human-Computer Interaction	Gerald Hirsch, Matilde Dirodi, Ren Xu, Patrick Reitner, Christoph Guger
6	Perceived Usefulness of e-WOM Attributes on Buyer's Choice	Shobhit Kakaria, Aline Simonetti, Enrique Bigne

The organization work for the RHUMBO parallel session was done mainly by GTEC, with the support of UPV as Project Coordinator. GTEC was in charge of the communication with the HCI organizer, so as to provide guidelines to the ESRs for their paper submission and presentation preparation, and also to deliver requests from ESRs to the organizer for clarification.

Tasks done are listed below:

- 1) A call-for-paper was sent to all ESRs, to encourage all of them to contribute to the parallel session.
- 2) A reminder for abstract submission was sent two weeks before the deadline to those ESRs who committed for a contribution.
- 3) After all abstracts were received, two independent reviewers were assigned by GTEC. They provided their comments on the abstracts, which were sent as feedback to the authors of the abstracts.
- 4) The session was held online at 17:00 – 19:00 CEST on 19 July 2020. Dr. Ren Xu from GTEC was the session chair who hosted the session. Each ESR had 20 minutes, including 15 minutes for their presentation and 5 minutes for Q&A. The session went smoothly and on time. A lively discussion went throughout the session, with questions raised from the audience as well as the host.

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HCI2020 events for RHUMBO were disseminated through the project website and social media as well.

3.3 Conferences & Workshops

Results

During these 24 months of the project, ESRs have attended several Conferences, participating in them and publishing several conference papers. This Conference papers are detailed in the project's website (<http://rhumbo.eu/webs/rhumbo/results/>).


Since the COVID-19 pandemic Conference are being held virtually. Nevertheless the ESRs have been very active and 19 Conference papers have been published.

Publications have been grouped according to the types defined in D2.1. Theoretical Framework, hypothesis and Technical Requirements. Details are shown in the list below:

Topic	Partner	Date	Authors	Supervisor	Name of the Journal/Book/Conference	Name of the Publication
Consumer biomarkers using VRC-complex modulating M1 group of mediators	UVEG	03-07-20	Enrique Bigné, Aline Simonetti, Carla Ruiz, Shobhit Kakaria	Enrique Bigné	11th Academy of Innovation, Entrepreneurship, and Knowledge Conference (ACIEK)	How online advertising competes with UGC in TripAdvisor. A neuroscientific approach.
Consumer biomarkers using VRC-complex modulating M1 group of mediators	UVEG	03-07-20	Enrique Bigné, Carla Ruiz, Aline Simonetti, Shobhit Kakaria	Enrique Bigné	European Marketing Academy (EMAC)	Advertising effectiveness in TripAdvisor: a neurophysiological study
Consumer biomarkers using VRC-complex modulating M4 group of mediators	UVEG	03-07-20	Aline Simonetti, Shobhit Kakaria, Enrique Bigné	Enrique Bigné	HUMAN-COMPUTER INTERACTION (HCI)	Influence of Ad Congruence and Social Cues on the Probability of Choosing a Restaurant
Consumer biomarkers using VRC-complex modulating M1 group of mediators	UVEG	03-07-20	Shobhit Kakaria, Aline Simonetti, Enrique Bigné	Enrique Bigné	HUMAN-COMPUTER INTERACTION (HCI)	Impact of E-WOM attributes on buyer's choice

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Consumer biomarkers using VRC-complex modulating M4 group of mediators	UVEG	03-07-20	Aline Simonetti, Enrique Bigné, Shobhit Kakaria	Enrique Bigné	Association for NeuroPsychoEconomics (ANPE)	Do I keep my choice regardless of inconsistency and social influence?
Consumer biomarkers using VRC-complex modulating M1 group of mediators	UVEG	03-07-20	MichelWedel, Enrique Bigné, Jie Zhang	Enrique Bigné	International Journal of Research in Marketing	Virtual and augmented reality: Advancing research in consumer marketing
General methodological aspects	UVEG	10-07-20	Aline Simonetti, Enrique Bigné, Shobhit Kakaria	Enrique Bigné	XXXIV AEDEM Annual Meeting	Research on Marketing Communications with Neurophysiological and Virtual Tools
Consumer biomarkers using VRC-complex modulating M1 group of mediators	UKB	10-07-20	Diana Shih, Aline Simonetti, Enrique Bigné	Johannes Shxultz	18th Annual Meeting of the Society for NeuroEconomics	The Effects of Psychological Perceptions on Brand Names Associated to the Coronavirus Pandemic
Consumer biomarkers using VRC-complex modulating M1 group of mediators	NEUR	24-07-20	M. Nascimben, T.Zoëga Ramsøy, L.E. Bruni	Thomas Zoëga	Proceedings 19th IEEE International Conference on Bioinformatics and Bioengineering	User independent classification of emotions in a mixed arousal-valence model
General methodological aspects	NEUR	24-07-20	M. Nascimben, T.Zoëga Ramsøy, L.E. Bruni	Thomas Zoëga	Proceedings of 22nd International Conference on Human-Computer Interaction	An EEG-based metric to characterize memorized visual space
General methodological aspects	UPV	23-09-20	Jaikishan Khatri, Masoud Moghaddasi, Jose Llanes-Jurado, Luciano Spinella, Javier Marín-Morales, Jaime Guixeres, Mariano Alcañiz	Mariano Alcañiz	22nd International Conference, HCII 2020, Copenhagen, Denmark, July 19–24, 2020, Proceedings, Part II	Optimizing Virtual Reality Eye Tracking Fixation Algorithm Thresholds Based on Shopper Behavior and Age
General methodological aspects	UPV	23-09-20	Masoud Moghaddasi, Jaikishan Khatri, Jose Llanes-Jurado, Luciano Spinella, Javier Marín-Morales, Jaime Guixeres, Mariano Alcañiz	Mariano Alcañiz	22nd International Conference, HCII 2020, Copenhagen, Denmark, July 19–24, 2020, Proceedings, Part II	Segmentation of Areas of Interest Inside a Virtual Reality Store
General methodological aspects	UPISA	14-09-20	Diego Candia-Rivera ; Vincenzo Catrambone ; Gaetano Valenza	Gaetano Valenza	42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC) 2020	Methodological Considerations on EEG Electrical Reference: A Functional Brain-Heart Interplay Study


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Consumer biomarkers using VRC-complex modulating M1 group of mediators	UPISA	14-09-20	Diego Candia-Rivera ; Vincenzo Catrambone ; Gaetano Valenza	Gaetano Valenza	11th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO) 2020	The Role of EEG Electrical Reference in the Assessment of Functional Brain-Heart Interplay: A Preliminary Study
General methodological aspects	UVEG	23-09-20	Shobhit Kakaria, Aline Simonetti, Enrique Bigné	Enrique Bigné	ACR Conference 2020 - The Association for Consumer Research (51st Annual Conference)	Bibliometric Analysis of Immersive and neurophysiological Tools in Retailing
Consumer biomarkers using VRC-complex modulating M3 group of mediators	UVEG	23-09-20	Aline Simonetti, Enrique Bigné, Shobhit Kakaria	Enrique Bigné	EuroVR 2020 Conference	Shopping with virtual hands
Consumer biomarkers using VRC-complex modulating M1 group of mediators	UVEG	28-09-20	Aline Simonetti, Enrique Bigné	Enrique Bigné	6th International AR and VR Conference	Augmented Engagement? A Pilot Study
Consumer biomarkers using VRC-complex modulating M1 group of mediators	NEUR	27-10-20	Nascimben M, Ramsøy TZ, Dahl S, Bruni LE	Thomas Zöega	CREATE Copenhagen, 2020	Studying working memory for biomarker identification -- Connectivity in source space.
General methodological aspects	NEUR	27-10-20	Rupp G, Berka C, Meghdadi A, McConnell M, Ramsøy TZ, Verma A	Thomas Zöega	Human Computer Interaction International Copenhagen, HCII 2020	Integrated EEG with VR Administration of Resting State, Attention, and Image Recognition Tasks: A Feasibility Study.
General methodological aspects	NEUR	14-07-20	S.Willemsen, A.-S. Horvath, M. Nascimben	Thomas Zöega	17th Sound and Music Computing Conference (SMC 2020)	Digidrum: a haptic-based virtual reality musical instrument and a case study

3.4 Conclusions

Network wide training activities developed during the first two years of RHUMBO project have been very successful. The training goals have been achieved and activities have been planned according to the initial plan.

Small changes in the initial planning are due to justified reasons: some of them were initially planned to be done on-site but they were finally held online due to the coronavirus pandemic or the realtion month fitted better in the partners' agendas.

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This report will be shared with the project External Advisory Board and Supervisory Board and used to inform the decisions of the Working Group responsible for design and delivery of each of the future RHUMBO Training Activities

Where ESR feedback is used to inform the design of future activities (e.g. open sessions to allow development of collaborative IRP activities) this will be highlighted in advance, to encourage ESR engagement with the training events. Electronic copies of supporting materials are made available to both ESRs and their supervisors to inform continued development of the Personal career Development Plan (PDP) for each ESR. In particular, it is noted that the enthusiasm of the ESRs to participate in longer training activities such as Technical Lectures I, which are all scheduled to take place over a full week. The timing of these activities also means that all ESRs are well engaged with the focus of their IRP and are better placed to develop concrete plans for collaborative research activities.