D8.3
CAPACITY BUILDING PROGRAMME AND TRAINING

Grant Agreement nr	**856998**
Project title	Personalised recovery through a multi-user environment: Virtual Reality for Rehabilitation
Project Acronym	PRIME-VR2
Start day of project (dur.)	October 1st 2019 (3 years)
Document Reference	PRIME-VR2_D_WP8_GDIH_D8.3 Capacity Building and Training
Type of Report	PU
Document due date	29/02/2020
Actual date of delivery	27/02/2020
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Document status	Final (reviewed by JR, EB, MD, PF, TA, MS, SB)

Programme co-funded by the European Commission

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Table of contents

VERSION HISTORY

COMMENTS	*RESPONSIBLE*	*VERSION*	*DATE*
First draft of the capacity building programme and training	Roosmarijn Rodenburg	0.10	05/11/ /2019
Updated with comments JR, MS, TA and PF	Roosmarijn Rodenburg	0.20	10/01/2020
Updated with comments JR, EB, MD and PF	Roosmarijn Rodenburg	0.30	14/02/2020
Updates with peer review comments of AW	Roosmarijn Rodenburg	0.40	19/02/2020

EXECUTIVE SUMMARY

This capacity building programme and training strategy outlines a plan which facilitates adoption acceleration activities and human capital development through training. The main focus of these materials lies in the practical use of the integrated digital platform concepts, capabilities, services and offerings. This is a work-in-progress document, meaning that it will be regularly updated during the project such that by the end of the project all Key Performance Indicators are achieved. To clarify, in the first version of this document the training schedule, training content and outlines of the transferability framework will be substantiated.

One of the main WP8 goals is to encourage stakeholders' interest in the end-products of this project. For example, how the digital platform concepts and hardware can be used by an end-user or how they can be integrated in a company. On the one hand, this can be achieved by making stakeholders aware of the advantages of the PRIME-VR2 system in comparison with existing rehabilitation products. On the other hand, these benefits cannot be adopted by the target group when they do not fully understand the practical use of it. Additionally, by training and learning how to make practical usage of the digital platform, controller and VR games/environment you take away the first threshold which is also the first step in a product adoption process. In line with this way of thinking, it is important to understand why and how these products are applicable to stakeholder's own business. To make this part more appealing 'best practices' of the living labs participating in the project will be used to formulate a transferability framework and this will be fed into the development of guidelines, methodologies. The document starts-off with explaining the need of a capacity building programme and training strategy in conjunction with a content description of the three different document versions. In addition to this some basic terminology will be highlighted.

Then the content in relation to the PRIME-VR2 deliverables will be covered. This is followed by a list of end-users, stakeholders and students that need to be reached to meet the KPIs. To serve the target audience in the best possible way, a wide variety of channels will be used. Students may watch the content on University internal communication tools whereas medical practitioners make more usage of the Crowdhelix, website, e-newsletter and conferences to gather this type of content. However, to maintain consistency, the content will be made visible on a website. Preferably the PRIME-VR2 website will be used for this purpose. A couple of sections related to the different end-products will be created. In each section, first a tutorial video will be uploaded. To test participants' level of understanding on the subject, after watching the video, a small quiz will be attached to the section. In addition to this, participants have the possibility to fill in extra questions related to the subject. Lastly, the questions will be answered in the Q&A video. The expected level of understanding of the post training and measurement will also be covered.

In the last part of the document the Key Performance Indicators (KPIs) will be discussed. These are needed to measure the prescribed goals. The KPIs will be linked to the working plan that will indicate the deliverables per month. To conclude, this training capacity building programme and training will be used to keep the stakeholders, end-users, students and many more updated on the end-product development. The information will be focused on both the practical use and product usability.

BACKGROUND

This report is an element of the project communication, dissemination and exploitation activities. It relates to WP8 and is linked to the tasks in this work package including the development of the dissemination strategy and activities, the high impact communication activities and the creation of a VR HELIX for the Crowdhelix platform.

The scope of this deliverable is to report on the development of training tools and materials which aim to support external stakeholders who are interested in using/testing and implementing the PRIME-VR2 platform "VRHAB-IT".

This report may be read with D6.1 'Platform implementation plan' which is a public report describing the plan for platform implementation that includes the basis for system integration by defining scenarios, performance metrics, validation criteria and system architecture for the VRHAB-IT platform implementation.

This report represents the first release of this document and includes:

- Training module content that will be covered during the project.
- Target audience description.
- Content that will be covered in the transferability framework and the first 'best practices' and general experiences gained from the living labs.
- How the training module content will be made visible.
- The channels on which the target audience will be exposed to the content.
- The content in relation to the PRIME-VR2 deliverables will be covered.
- Expected level of understanding post training and the used measured for this purpose.
- KPI's.
- Capacity building working plan month by month.

The final version of this document will be released at M36 and will include:

- Outcomes of all sections of the capacity building programme; number of students/end-users/ stakeholders, level of understanding and feedback.
- Transferability framework will include all 'best practices' gained from the living labs but also the final guidelines and methodologies.
- Appendix, a summary of the brainstorm with the living labs with regard to the 'best practices' and their advice on how to best frame this into guidelines and methodologies.
- Analyzes on the reached KPI's.

1. INTRODUCTION

This capacity building programme and training will be used to keep the stakeholders, end-users, students and many more updated on the end-product development. The information will be focused on both the practical use and product usability. Despite the fact that this content is usable for all people related to PRIME-VR2, the target group will consist of 100 students, 100 end-users and 100 members from organisations, including stakeholders involved in the three Living Labs (as identified in the dissemination stakeholders table).

1.1 WHY? – Main objective and goal

The capacity building programme and training has two goals. Firstly, the development of a transferability framework that highlights the experiences of the Living Labs in implementing technology and helps to communicate best practice to other healthcare providers. Secondly, the development of training materials and tutorials for stakeholders who wish to learn and utilize the VRHAB-IT platform themselves.

These goals will be achieved through the experiences and identification of best practice from the PRIME-VR2 Living Labs which will be used to form guidelines, methodologies and develop bespoke training materials and tutorials. The objective is to develop at least 5 modules (for example 3 online training modules and 2 webinars) and deliver capacity building actions on the features, configuration, use, and operation of the platform for at least 100 end-users (as identified in Table 4), 100 students and 100 members from organizations such as Carelink including stakeholders involved in the Living Labs (as mentioned in the proposal).

The curriculum will cover the following:

a) The analysis of various rehabilitation cases (strokes, hyperkinetic movement disorders, sports injuries) and how VR serious gaming environment within PRIME-VR2 can be used for rehabilitation.
b) PRIME-VR2 integrated digital platform description, scenarios, features.
c) Interoperability and coverage of other applications.

Alongside the main goal to produce a capacity building programme and transferability framework for the practical use of the integrated digital platform concepts, capabilities, services and offerings the material can be used as support as a tool as part of the dissemination strategy. For example, the produced videos can be used to show off the progress of the end products. As mentioned earlier, this is a work-in-progress document that will be updated on a regular basis simply because overtime more 'best practices' from the Living Labs will be gained as well as results on the end-products.

Terminology

Term	Meaning
Stakeholder	A person or a group of people that can affect or be affected by the project.
VR	Virtual Reality (VR) is a simulated experience by which a person wearing VR equipment can look and move in an artificial environment and interact with virtual features.
VRHAB-IT	An end-to-end integrated digital development platform, to facilitate collaboration across stakeholders in the VR ecosystem to produce effective VR rehabilitation (VRR) environments. This consists of a VR gaming space for rehabilitation, user profiling tool, and customized VR

	controllers.
Controller	In relation with the Virtual Reality headset that makes use of "room scale" tracking technology allowing users to move in 3D space, motion-tracked a handheld controller to interact with the environment is used. A motion-tracked handheld controller is a type of game controller that uses accelerometers or other sensors to track motion and provide input.
Q&A video	An online tutorial in which the earlier shared questions uploaded in the contact form will be covered.

2. TRAINING MODULE

2.1. WHAT? – Content

During the project, PRIME-VR2 partners will gather new strategies on how the VR environment can support the healthcare field. The most important information will be gathered from the Living Labs in the form of 'best practices', which will be used as a baseline for guidelines and methodologies. Furthermore, usage of deliverables such as VR serious gaming environment, digital platform, various rehabilitation cases and controllers will be covered in the capacity building programme.

2.1.1. Content covered in the training building programme

In this training module 4 subjects will be covered, each in their own section:
- Digital platform
- Controller
- VR games & environment
- Usage digital platform, VR games & environment, controllers in relation to the different rehabilitation cases: strokes, hyperkinetic movement disorders, sports injuries

Each section will start off with a tutorial video which gives in depth information on the features, configuration, usage and operation. After watching this tutorial video, participants can test their knowledge via a quiz that is also available in the section. Furthermore, for a period of two months after the tutorial video is uploaded people have the opportunity to fill in questions in the contact form, these questions will be analyzed and clustered to 4-6 categories. Then, questions guided by the 4-6 categories will be answered in a Q&A video. However, it might be the case that no or a minimum amount of questions is uploaded in the contact form. When this is the case, Capitola will cover additional background information on the particular section. To decide which background information is the most interesting for the Q&A video, a brainstorm will be scheduled with the WP members related to the particular section.

Additionally, since people are viewing and learning about the different PRIME-VR2 end-products it is useful to gather feedback per section. By doing this, issues will be noticed in an early stage of the project which can help to upgrade the PRIME-VR2 end-products. To make it as easy as possible, people will be given the opportunity to upload feedback comments into the contact form as well. After each section is finalized, the comments will be put in a feedback document on Strathcloud shared space, and the link will be shared with WP members related to the particular section. Furthermore, the training material will also be used at events and congresses so WP members can also insert gathered feedback here to upgrade the document per section.

Appendix 1 provides more background information on the pros and cons why WP8 decided to present the capacity building programme via tutorial and Q&A videos instead of the proposed videos/webinars.

Tutorial and Q&A video - techniques

The content related to the digital platform and VR games & environment will be visualized by making use of in-app screen recordings. The video will be guided by a developer voice-over. This way of presenting is often used when new game features are presented in the game development world.

The different versions of the controller, off the shelf controller such as HTC Vive, prototypes and custom-made controllers can best be presented by showing a person making use of these controllers. This can be done by showing a person interacting with different versions of the controllers alternated by in-app VR game & environment screens. The video will be guided by a voice-over of a developer.

The length of the videos will differ but will approximately contain 5-10 minutes of content visualization. To provide optimal service to the target audience, all PRIME-VR2 partners will have the opportunity to translate the video content to their mother tongue. For example, by making use of subtitles.

In-depth content

The following topic items will be covered in the tutorial sessions.

Digital platform
- Dashboard
- Log-in to the platform
- Digital profiling of the users: process of digitally capturing the users requirements
- Patient progress
- How this is linked to the VR games & environment
- How this is linked to the controller

Controller
- Material on the controller
- Putting on the controller
- Explaining the different features
- Relation to the VR games & environment

VR games & environment
- The onboarding in the VR environment
- Usage of different games
- Relation to the controller

Usage digital platform, VR games & environment, controllers in relation to the different rehabilitation cases: strokes, hyperkinetic movement disorders, sports injuries
- Total user flow visualization, from digital platform until gaming
- Show the differences among the different rehabilitation cases

2.1.2. Content covered in the transferability framework

The goal is to develop a transferability framework that highlights the experiences of the Living Labs in implementing technology and helps to communicate best practice to other healthcare providers. Each Living Lab has a specific rehabilitation focus for which the end-products will be used. For this reason, the experiences gained from the Living Labs will be converted to guidelines and methodologies tailored on the following rehabilitation areas:

- Strokes-> Saint James Hospital (Capua) Ltd
- Hyperkinetic movement disorders-> Nicomed Rehabilitations Center
- Sport injuries-> Global Disability Innovation Hub CIC

The Living Labs have already provided some first insights that they gathered over the last five months (Table 1: first insights Saint James Hospital (Capua) Ltd, Table 2: first insights Nicomed Rehabilitations Center, Table 3: first insights Global Disability Innovation Hub CIC). To clarify, out of this information the training material plan is optimized.

Table 1: first insights Saint James Hospital (Capua) Ltd

Saint James Hospital (Capua) Ltd	
What will be the main challenges of implementing VR in Hospitals, clinics and home?	We believe that a key issue may arise with acceptance from middle age to senior aged population accepting a new way of carrying out rehabilitation. We believe that Universities will need to approve and start teaching about VR treatments to 'normalise' this approach. To do so we will need to set up scientifically proven guidelines. We also believe that costs of hardware and software may be a barrier and also perhaps the physical space required to use equipment
What will be the main advantages of implementing VR in Hospitals, clinics and home?	We will be able to enrich the existing level of physiotherapy pushing it on to a more advanced level. We will be able to build more complex home exercise programs allowing us to follow easily progress. New technology which comes with reasonable price, possibility to use advanced technology to speed recovery, Size of equipment
Which 'best practices' do you expect to gain from the project outcomes?	Out and in patient orthopedic set ups, neuro set ups
Are they current methods that your company expects to replace by outcomes of this project? Please also point out the current methods in order to get the bigger picture.	We see PRIME-VR2 as enrichment and complexity improvement rather than replacement of current systems. We believe exercising programs, proprioceptive programs, precision exercises and strength programs will be largely affected. (from point of orthopedic). We expect a big shift in proprioceptive exercising. We believe it will be easier to rebuild proprioceptive schemes with VR
How will you adopt VR in your company?	We need to create a SOP (standard operating procedure) for VR. We need to prove that its clinically effective and back it up with research. Learning more about VR itself and teaching other physiotherapist how to use and benefit from VR treatments

Table 2: first insights Nicomed Rehabilitations Center

Nicomed Rehabilitations Center	
What will be the main challenges of implementing VR in Hospitals, clinics and home?	For all its benefits, VR Rehabilitation does pose significant challenges for its widespread adoption. The first is clinical acceptance, which is conditioned on proved medical efficacy and a proactive therapist response. The therapist's attitude towards the technology is another challenge. Certain unwise (and short-

	sighted) technologists have proclaimed that VR Rehabilitation will replace the therapists altogether with computers. This misconception needs to be quickly rectified, lest our field is in danger. In truth, VR Rehabilitation is a "force amplifier" for the therapist, allowing him to do more, and with more patients. The VR interfaces currently in use are another challenge. They were not designed as medical equipment, which means they have difficulty being sterilized for repeated use by different patients. Equipment cost has dropped significantly in recent years compared to the hundreds of thousands of dollars that VR systems used to cost less than five years ago. Nevertheless, current prices are still prohibitive for health clinics, or for schools, and these institutions will be hesitant to invest in the absence of subsidies, or a vocal patient advocacy. Since Tele rehabilitation is a newer form of therapy, it is unclear at this time how psychological factors will influence recovery. Certain patients may exercise less without direct therapist intervention, since they feel they get less attention than they deserve. Others will prefer less human contact.
What will be the main advantages of implementing VR in Hospitals, clinics and home?	The advantages associated with the use of Virtual Rehabilitation are numerous. The same VR hardware can be used for various types of patients, as well as for various types of exercises done on those patients. Another advantage present in all forms of VR Rehabilitation is interactivity and motivation. This is especially true in video game-based therapeutic approaches, where the patient competes against the computer. By providing visual and auditory rewards, such as displaying gratifying messages in real time ("Great", "Very Good" etc.), patients are motivated to exercise. VR Rehabilitation systems rely on computers to render and display the exercises, and on sensorized interfaces to mediate the patient's actions. As such data flows naturally to the host computer, at a frequency and resolution that are unmatched by traditional mechanical evaluation tools. The high temporal granularity of data such as joint motion or finger force output is also important. One potential use of this intrinsic capability of Virtual Rehabilitation is to discern whether the patient is "malingering." This medical term describes patients that purposely do not exercise at their capacity, for reasons of medical benefits, worker's compensation and such. Thus, patient data gathered during Virtual Rehabilitation is transparently stored in online databases, without the patient's or therapist's action.
Which 'best practices' do you expect to gain from the project outcomes?	The best practice that we expect to gain from the project outcomes are:

	- Monitor patient progress from the aspect of range of motion, Muscle force or strengthening of a certain muscle, movement coordination, muscular endurance and daily functionality. - Add innovative technology to rehabilitation, modernized the treatment. - Collect patient data in a secure environment. - Add games in a form of treatment including the benefit from game competitiveness. - Adapt to patient condition. - Save patient data. - Usable in chronic stage. - Malingering and compensation detection.
Are there current methods that your company expects to replace by outcomes of this project? Please also point out the current methods in order to get the bigger picture.	The current methods that could be replaced by outcomes of this project are the fine movement exercises (occupational therapy type) which are made to restore the movements of small joints using different type of tools. Methods that were done to re-educate the arm to move, as well as stimulus neuroplasticity process for faster biofeedback to restore and recover the functions of neuro system.
How will you adopt VR in your company?	We are planning to combine the PRIME-VR2 final product with Kinisiforo medical device as an additional exercise in order to keep the motivation of the patient at high level, to be able to attract their attention during the exercise to make it more efficient, to exercise more actively than passively including the positive feedback of the exercise competition. From the business aspect will approach Eastern European organisations such as rehabilitation centres, associations for people with disabilities, rehabilitation products SME, to promote the physical product and our expertise. Our distribution network has good links with Private Hospitals in Europe and middle east countries. By entering the stage of sales of the PRIME-VR2 Kinisiforo ltd distributor network could play a crucial role on sales to medical society market. Finally, KNRC will make attractive offers to our patients allowing PRIME-VR2 free sessions so that they have the opportunity to familiarize themselves with the platform. Thus, PRIME-VR2 will certainly help Nicomed Rehabilitation Center to improve its business and R&I development.

Table 3: first insights Global Disability Innovation Hub CIC

Global Disability Innovation Hub CIC	
What will be the main challenges of implementing VR in Hospitals, clinics and home?	**Hospitals:** integrating into existing care pathways – changing established practice. A good evidence base for clinical effectiveness is likely to be required to justify the additional cost. The evidence base should demonstrate clinical effectiveness and cost effectiveness. **Clinics:** As above. Finding space to put the technology, especially if room installations are necessary. Many clinics operate with smaller multipurpose rooms that may not be able to be dedicated to VR enabled therapy. **Home:** Maintaining and supporting the technology in working order. Requirements for installation into rooms can be challenging. Managing privacy and reassuring users and their families of secure data management. Maintaining ongoing use of the system if the games are boring.
What will be the main advantages of implementing VR in Hospitals, clinics and home?	**Hospitals:** (We hope) better therapeutic outcomes. Patients that are less bored and more engaged with their therapy, both in VR therapy and other therapy. Hospitals have larger equipment budgets and more space to set up VR systems. **Clinics:** (We hope) better therapeutic outcomes. Smaller team will find it easier to make changes to clinical practice when compared to a hospital. **Home:** (We hope) better therapeutic outcomes. VR is a means of maintaining engagement when the therapist is not present, of tracking and rewarding small improvement and thereby maintaining motivation to seek rehabilitation therapy.
Which 'best practices' do you expect to gain from the project outcomes?	Functional outcome measures – the ability to assess the functioning of people with hyperkinetic movement disorders quickly and easily. The ability to integrate VR/AR systems with real physical activities for the purpose of measuring functional capabilities in the real world: AR for assessment.
Are there current methods that your company expects to replace by outcomes of this project? Please also point out the current methods in order to get the bigger picture.	Not this time, but GDIH does not deliver clinical services. We would use this system in research to assess functional ability of disabled people in customizable scenarios. This useful capability could only be achieved at present with real physical environments that cannot be easily changed and adapted or micro-adjusted; or inaccurately using questionnaires or interviews.
How will you adopt VR in your company?	We will look to purchase VR systems on research budgets for use as assessment and functional movement evaluation tools.

In M16, M34 after the Living Labs tried out certain deliverables, a couple of brainstorming sessions will be organized to gather more information and discuss guidelines and

methodologies applicable to other healthcare providers. The document will be updated again and released in M36.

2.2. WHO? Target Audience

The target group for the capacity building programme and training will include 100 students, 100 end-users and 100 members from organizations including stakeholders involved in the Living Labs. Since both the end-users and stakeholders overlap with 'Table 4 of D8.1: list of stakeholders 'of D8.2 it will be used as a reference for the information in Table 4: list of stakeholders and end-users. Table 5: list of students covers the other target. In both tables the sub target groups will be discussed in more detail.

Table 4: list of stakeholders and end-users

Stakeholder	Role	Sector	Stakeholder category	Examples
Patients (Stroke, Sports Injured and Hyperkinetic movement disorder)	Receiving and/or benefitting healthcare	Healthcare Stakeholders	End-users / Knowledge Contributors	Patients from the LLs willing to participate in the project
Family				Close relatives of patients
Employers				Employers of patients
Wider society and communities				VR related communities such as International Society for Virtual Rehabilitation
Taxpayers	Paying for healthcare			Random
Contributors to private healthcare insurance				Random
Insurance companies				Prudential; Legal & General; Aviva; Swiss Life Holding; NN Group; Post Italiane; Banco Mediolanum; Phoenix Group Holding
Healthcare commissioners	Commissioning healthcare	Healthcare Stakeholders	Exploiters	Commissioner for Health and Food Safety: Vytenis Andriukaitis (Lithuania)
Clinical Commissioning Groups				East Lancashire CCG; Oxfordshire CCG; Other CCGs in UK
Trainers/Teachers	Provide healthcare related training		End users	Lecturers, Physiotherapists, etc.
Learners	Receive healthcare related training		End users	Students from Learning Hospitals
Healthcare managers	Managing Healthcare		Exploiters	Healthcare Managers in Public/Private Hospitals/Clinics

Health-related manufacturers (incl. engineers and other personnel working to develop healthcare devices)	Supplying to healthcare			GE Healthcare and Siemens AG
Rehabilitation environment designers			Knowledge Contributors	Clinicians, architects and engineers
Clinicians (incl. Occupational therapists and physiotherapists), carers and support staff	Providing healthcare			Clinicians working in the LLs
Academia – research, knowledge and skills	Improving healthcare	Healthcare / Gaming Stakeholders	End users / Knowledge Contributors/ Exploiters	Universities such as: Futuristic Interactive Technologies Research Group at Turku University of Applied Sciences, Finland and Delft University of Technology, Netherlands; Cost Actions
European/International organisations which are running similar projects on VR and rehabilitation.	Improving healthcare			Funded H2020 Projects in the Area of VR

European or international private/ public or PPP-type of organisations concerned with the provision of technology-based |
Competitors	Competition and setting standards			VR System Manufacturers
Standardisation bodies u regulators	Setting rules and standards	Healthcare / Gaming Stakeholders	Exploiters	ANSI, ISO
Policy makers	Reforming healthcare			Governments or directors of organisations
Consultants and Accreditation bodies	Improving Healthcare			Cost Actions, UK Accreditation Services,

European Association of VR/AR (EuroVR)

International Society for Virtual Rehabilitation |
| Media (journalists) | Report technology updates and experiences of people | Healthcare / Gaming Stakeholders | Facilitators / Disseminators | The Medical Futurist

Road To VR

VR Scout |
| Game Development Companies | Develop games for rehabilitation | Gaming Stakeholders | End users / Knowledge Contributors / | Flying Squirrel Games; Visartech Inc.; Qutech; Hedgehog Lab; VironIT; |

			Exploiters	MobiLab; Skywell Software
VR for Rehab providers specifically for clinics/end-users				VAST Rehab, Poland, VR-Rehab Denmark, Immersive Rehab, Neuro Rehab VR
VR System Manufacturers	Develop platforms and controllers by which to play/perform rehabilitation activities		Exploiters, Knowledge Contributors	HTC, Samsung, Play Station, Oculus
Hosting providers	Provide a depository for game developers and a place from which users can download games		Exploiters	Steam

Table 5: list of students

Students	Study direction	Examples
Bachelor/Master/PhD	Mechanical Engineering, Industrial Design, Industrial Engineering, Mechanical Engineering, Neurorehabilitation, Computer Science and Engineering, Biochemistry, Computer Science.	Students of University of Pisa, University of Malta, University of Strathclyde, University of Oulu, University College London

2.3. HOW & WHERE? Channels

2.3.1. How will the content be made visible?

To maintain consistency, the content will be made visible on a website. Preferably the PRIME-VR2 website will be used for this purpose. When this is not possible the Google Site tool will be used. For both options the content visualization strategy will be the same. A couple of sections related to the different end-products will be created. In each section, a tutorial video will be uploaded. To test participants' level of understanding on the subject, after watching the video, a small quiz will be attached to the section that will pop-up after the video is completed. In addition to this, participants have the possibility to fill in extra questions related to the subject which they can upload via the contact form which link to the same section. Figure 1: section training module including tutorial video, quiz and contact form, provides a basic outline of a section, it gives some clarification on how this can be visualized.
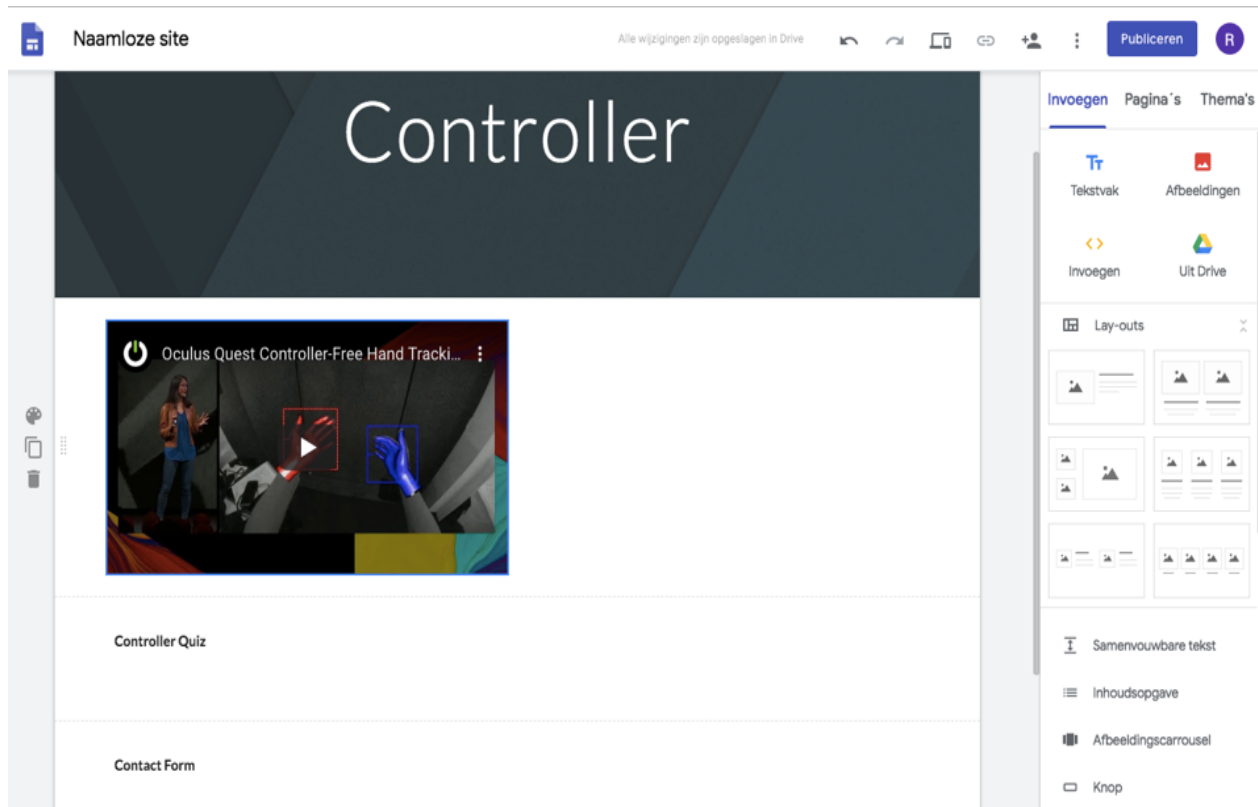
Figure 1: section training module including tutorial video, quiz and contact form

2.3.2. Where will the target audience be exposed to the content?

To serve the target audience in the best possible way, a wide variety of channels will be used. Students may watch the content on University internal communication tools and social media whereas medical practitioners make more usage of the Crowdhelix, website, e-newsletter and conferences to gather this type of content.

Below, each channel will be discussed briefly by highlighting the following points:

- The way the training material will be uploaded on the channel?
- Why this channel is suitable?
- For who this specific channel is suitable?

Crowdhelix – VR Helix

The Crowdhelix Network (CHX) is a pan-European Open Innovation Network that enables Research Technology Organisations (RTOs) and businesses to collaborate, innovate and grow. The network has more than 400+ member organisations from 42 countries and is present in all EU Member State countries. The network membership is reported to have won more than 4.5 billion euros of funding under Horizon 2020, highlighting the quality of its membership base.

The network is structured around virtual technology clusters known as Helixes. There are currently 21 live Helixes in areas such as Digital, Health and Energy etc. The network hosts focused collaborative events for each Helix each year where the aim is to connect organizations across Europe and promote collaboration and open innovation. In addition to hosting and running events, CHX also has its own technology tool called: Crowdhelix. The tool

is designed so people and organizations can profile their expertise and capabilities within a Helix area. It is then used to help organizations post opportunities, which are matched to people's profiles within the platform. Once a match is made the CHX team then helps to facilitate an opportunity so that it then turns into a tangible collaboration.

Crowdhelix created a cluster (Helix) especially for the Virtual Reality (VR) purpose. This VR Helix includes all PRIME-VR2 project partners, as well as relevant stakeholders from the pan-European CHX community that currently has a reach to over 500,000 actors across 42 European countries (EU SMEs, RTOs, Universities and Industries). For this reason, it will be a great opportunity to make use of this VR Helix in order to share messages in which the training materials will be highlighted.

In practice, a message in which the training material is highlighted can be uploaded on the Crowdhelix platform as illustrated in Figure 2: Crowdhelix message example. The great advantage in this case is that members of the Crowdhelix platform are already linked to the 'VR Helix' so they will be automatically exposed to the message.
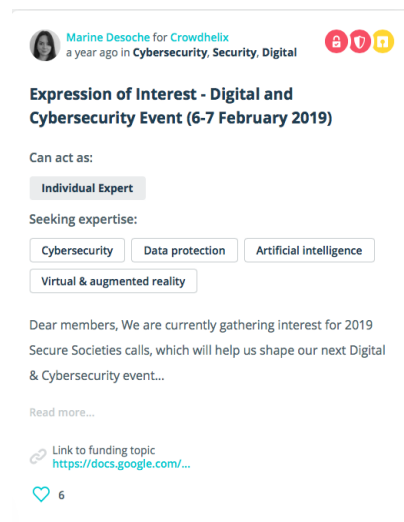

Figure 2: Crowdhelix message example

Apart from making usage of VR Helix members, the Crowdhelix system can share a message to all the Crowhelix partners that are interested in VR, Health, Augmented Reality etc.

Social media – YouTube, Twitter, LinkedIn, Facebook

On a regular basis, posts related to the progress on deliverable of PRIME-VR2 will be shared among spread stakeholders from the world of healthcare, rehabilitation, Virtual Reality and serious gaming. In these posts the training material can easily be added in the message with a link to the training material subpage.

Website

The PRIME-VR2 website offers another media for students, companies and universities who aren't directly linked to the other resources. Here a subpage can be designed for the training material. In addition, on the event page of the website the new material that will be uploaded can be highlighted to create a certain level of curiosity.

University internal communication tools (such as the university student portals)

An important part of the target group that needs to be reached to meet the KPIs are students with different study backgrounds and educational levels (bachelor, master, PhD). Despite the fact that most of these millennials are active on social media platforms on a daily basis, they also frequently check their University communicational channel such as the university student portals simply because it contains important information related to their study. Hence, it will be a great opportunity to make use of these University communication tools to spread the training material.

Fortunately, within this project already five universities are included with whom Capitola can join forces namely: University of Pisa, University of Malta, University of Strathclyde, University of Oulu, University College London.

The advantage of these universities is that they are linked to the PRIME-VR2 project so it will be more appealing for the students to look into research of their own University as opposed to other non-linked universities. Additionally, to motivate the students to participate in the training module program, Universities may offer incentives linked to their current rewards programmes.

(e)Newsletter

A regular Newsletter will be published related to the progress of PRIME-VR2, this will be shared with a wide range of stakeholders from the worlds of healthcare, rehabilitation, virtual reality and serious gaming. In these Newsletters the training material can easily be added in the content, also here they can deep link to the training material subpage.

Conferences & Events

When looking at the dissemination strategy it can be seen that the PRIME-VR2 project will also be promoted on conferences and events. Here the training material can be used to help stakeholders better understand the practical usage of the end-products.

2.4 Expected level of understanding post training (score measurements)

To determine whether participants reached a certain knowledge level after watching a tutorial video, a quiz will be designed and uploaded to the section. In this quiz the following types of questions will be used:
- True/false questions
- Multiple-choice questions
- Matching questions

Each quiz will contain approximately 12-16 questions to test participants' knowledge, these questions will focus on the competency/understanding of features, configuration, usage and operation. The goal is that 60% of the questions are answered correctly.

2.5 Key Performance Indicators (KPIs)

Table 6: KPIs below, indicates the PRIME-VR2 capacity building and training KPIs and targets which must be reached by the end of the project, this in order to manage expectations.

Table 6: KPIs

KPI	Targets
Participation students	at least 100
Participation end-users	at least 100

Participation stakeholders	at least 100
Video content	at least 3 videos
Tutorials	at least 3 videos
Level of knowledge after video participation	at least 60% on average correct

2.6 WHEN? Capacity building work plan

Table 7: capacity building work plan, below provides an overview plan of tasks and activities indicative dates, and expected outcomes for each activity.

Table 7: capacity building work plan

Month	Deliverable/Activity	What and how?
M1-M3	Multiple brainstorm sessions with Crowdhelix and WP8	Brainstorming about the most suitable content and channels with regard to the capacity building programme and training document.
M3	Shared first draft with the WP8 and processed feedback	Google Doc.
M4	Shared questions with the Living Labs	To gather the first 'best practices' and general experiences from the living labs.
M5	**Deliver document Version 1**	
M14	Tutorial video 1: Digital platform usage	Explain the usage of the digital platform and allocated features.
M14-M16	Gathering questions per category via the contact form	Google sites or PRIME-VR2 website.
M16	Q&A video 1: Digital platform usage	Give the target group the opportunity to ask questions about this topic.
M16	Brainstorming sessions with Living Labs	To gather experiences from the living labs related to the first deliverables. Formulation first guidelines and methodologies.
M18-M19	Share an update with the PRIME-VR2 members	
M20	Tutorial video 2: Controller	Explain the usage of the controller for the different patient scenarios.
M20-M22	Gathering questions per category via the contact form	Google sites or PRIME-VR2 website
M22	Q&A video 2: Controller	Give the target group the opportunity to ask questions about this topic.
M26	Tutorial video 3: VR games & environment	Explain the usage of the VR games and environment which are linked of the different patient scenarios.
M26-M28	Gathering questions per category	Google sites or PRIME-VR2 website.
M28	Q&A video 3: VR games & environment	Give the target group the opportunity to ask questions about this topic.

M32	Tutorial video 4: Usage platform, VR games & environment, controllers in relation to the different rehabilitation cases: strokes, hyperkinetic movement disorders, sports injuries	Show usage of both platform, VR games and controllers in relation to the different rehabilitation cases: strokes, hyperkinetic movement disorders, sports injuries.
M32-M34	Gathering questions per category	Google Sites.
M34	Q&A video 4: Usage platform, VR games & environment, controllers in relation to the different rehabilitation cases: Strokes, hyperkinetic movement disorders, sports injuries	Give the target group the opportunity to ask questions with regard to the last phase of the project and related deliverables.
M34	Brainstorming sessions with living labs	To gather experiences from the living labs related to the end-products. Formulation guidelines and methodologies.
M36	**Deliver document Version 2**	

3. CONCLUSION

This document has defined the capacity building programme and training for the PRIME-VR2 project. The deliverable will help all members of WP8, especially UOM who is responsible for the dissemination strategy. Stakeholders that are interested in the PRIME-VR2 end-products can watch tutorials videos and ask questions related to the four sections. Furthermore, they can test their level of knowledge understanding afterwards via the quiz designed for each section. This content will be made visible on a wide variety of channels to which end-users, stakeholders and students are active. A capacity building work plan has been defined to cover all the KPIs over the whole duration of the project.

REFERENCES

Farrugia, p., Balzan, E., Adam, T., Rainbird, J. (2020). D8.1 Communication and dissemination plan, reports and materials.
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Appendix 1: Tutorials instead of Webinars

In the project proposal 'webinars' are mentioned as part of the training module. Capitola discussed the way of giving a webinar internally as well as externally (for example with Martin Scott of Crowdhelix). After which we combined the thoughts emerged from an internal brainstorming which resulted in the conclusion that in this case creating a 4 tutorial videos and 4 Q&A videos will be more useful and effective than creating webinars. The pros and cons of both can be reviewed in Table 8: Webinars,

Table 9: Tutorial video and Q&A video.

Table 8: Webinars

Webinars	
Pros	*Cons*
An online event will be a 'nice to have' for the consortium.	Hosting webinars is not possible at the Crowdhelix platform.
Opportunity to ask questions in a live environment.	It might be a threshold for people to register for the webinar, resulting in a low conversion rate.
	The questions can include non-technical subjects that the seminar presenter may not be able to answer live because that information belongs to a different WP member.
	Revise the webinar in other communication within PRIME-VR2 is limited.

Table 9: Tutorial video and Q&A video

Tutorial video + Q&A video	
Pros	*Cons*
People can send-in questions after watching a video within a particular amount of time.	No possibility to ask live questions.
The questions can be reviewed and proper answers can be prepared. Also looking at non-technical subjects which need to be asked out at the particular WP member that are responsible for that particular topic.	
The tutorial videos can be posted on the CrowdHelix platform.	
People do not need to register to attend which takes away a big threshold.	
Reusable rate is super high throughout entire communication opportunities.	