

# Intellectual Output - 2 Developed VR System

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### List of Life Skills VR Beneficiaries

No.	Participant Organisation Name	Participant Short Name	Country
1	Centre for Factories of the Future Ltd	C4FF	UK
	AINTEK SYMVOULOI EPICHEIRISEON EFARMOGES		
2	YPSILIS TECHNOLOGIAS EKPAIDEFSI ANONYMI	ADIK	GR
	ETAIREIA		
3	Fondazione Polo Universitario Grossetano	POLO	IT
4	Mediterranean Maritime Research and Training CentreCoop. Soc. Ltd.	MMRTC	MT
5	ARTES 4.0 Advanced Robotics and enabling digital	ARTES	IT
	TEchnologies& Systems	/	
	INESC TEC - INSTITUTO DE ENGENHARIADE		
6	SISTEMAS E COMPUTADORES, TECNOLOGIA E	INESC	PT
	CIENCIA		

## List of Output Contributors

No.	Participant Organisation Name	Participant Short Name	Country
1	Centre for Factories of the Future Ltd	C4FF	UK
	AINTEK SYMVOULOI EPICHEIRISEON EFARMOGES		
2	YPSILIS TECHNOLOGIAS EKPAIDEFSI ANONYMI	ADIK	GR
	ETAIREIA		
3	Fondazione Polo Universitario Grossetano	POLO	IT
4	Mediterranean Maritime Research and Training CentreCoop. Soc. Ltd.	MMRTC	MT
-	ARTES 4.0 Advanced Robotics and enabling digital	ADTEC	17
5	TEchnologies& Systems	ARTES	IT
	INESC TEC - INSTITUTO DE ENGENHARIADE		
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	CIENCIA		

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## 1. Introduction

### **1.1. Document Purpose**

This document provides an overview of a virtual reality environment specifically designed for youth, offering them a unique opportunity to discover their strengths, enhance missing skills, and build confidence. By combining VR technology with John Holland's RAISEC personality criteria, the VR system aimed to assist young individuals in avoiding mental health issues.

Furthermore, IO2 focused on the development of key skills that are crucial for job seekers. These skills included:

- 1. Developing and managing oneself.
- 2. Working as a member of a team.
- 3. Communicating effectively.
- 4. Managing time.
- 5. Defining and solving problems.

Through the implementation of the VR system, young people were provided with an immersive and interactive experience to explore their interests, strengthen necessary skills, and increase their chances of success in the job market.

### 1.2. Approach Applied

The VR system was developed based on the findings and insights gathered from the need analysis report. Through collaborative efforts, the project partners identified five key life skills that were derived from the research study. These life skills, which include developing and managing oneself, working as a member of a team, communicating effectively, managing time, and defining and solving problems, form the foundation of the project's objectives.

To bring the VR system to life, all partners actively contributed to creating the scenarios for the virtual reality experience. Each partner took the lead in developing the training materials for a specific life skill. For instance, IDEC focused on time management, INESCTEC worked on teamwork, MMRTC handled problem-solving, C4FF took charge of self-development and management, and POLO concentrated on effective communication.

Once the scenarios were established, the technical team proceeded with implementing them into a VR game. This process involved careful attention to detail and ensuring that the virtual experience aligned with the project's goals and objectives.

To ensure the quality and effectiveness of the VR system, thorough testing was conducted. Internal testing was carried out by the project partners themselves, allowing for valuable feedback and refinements to be made. Subsequently, the target groups were actively involved in the pilot testing workshops conducted by the partners in their respective countries. The feedback obtained from these sessions played a crucial role in enhancing the VR system further, addressing any identified issues, and improving the overall user experience.

The iterative process of testing and refining the VR system was instrumental in creating a robust and usercentric solution. By incorporating feedback from both internal and external sources, the partners were able to make necessary adjustments and improvements to ensure that the final VR system met the desired standards and effectively supported the exploration of suitable occupations by the target audience.

## 2. VR System Overview

This VR System provides a virtual reality environment specifically designed for youth, offering them a unique opportunity to discover their strengths, enhance missing skills, and build confidence. By combining VR technology with John Holland's RAISEC personality criteria, the VR system aimed to assist young individuals in avoiding mental health issues.

The RAISEC model classifies individuals and work environments into six basic types: Doers (Realistic), Thinkers (Investigative), Creators (Artistic), Helpers (Social), Persuaders (Enterprising), and Organizers (Conventional). IO2 integrated this model into the VR system, enabling young people to gain insights into their inclinations for success in different areas. By aligning their strengths and interests with suitable job opportunities, the application of the RAISEC model aimed to enhance the chances of job applicants finding and maintaining employment.

Furthermore, IO2 focused on the development of key skills that are crucial for job seekers. These skills included:

- 1. Developing and managing oneself: This involved personal growth, self-awareness, and the ability to set goals and make informed decisions.
- 2. Working as a member of a team: Emphasizing the importance of collaboration, effective communication, and cooperation within a team setting.
- 3. Communicating effectively: Enhancing verbal and non-verbal communication skills, including active listening and conveying information clearly.
- 4. Managing time: Teaching effective time management techniques to optimize productivity and meet deadlines.
- 5. Defining and solving problems: Equipping individuals with problem-solving skills, critical thinking abilities, and the capacity to identify and address challenges in a resourceful manner.

Through the implementation of the VR system, young people were provided with an immersive and interactive experience to explore their interests, strengthen necessary skills, and increase their chances of success in the job market. By incorporating the RAISEC model and focusing on key skill development, the second output of the project aimed to empower youth and support their career aspirations.

The following diagram shows the workflow of VR system.



Figure 1 - VR System Worksflow

### 2.1. Avatar List

Name	Gender	Ethnicity	Role	Traits	RIASEC Personality	Task	Voice
Jayla Spencer	female	afro- american	Captain	direct, calm, a real leader, loves pets and she has a cat and dog with her. She is a vegeterian and a tea addict who in her free time does yoga	Enterprising	0	en-US- Wavenet- C
Juana Hernandez	female	hispanic	Scientist / Data Analyst	clever, funny, piano player, coffee addict and a book lover	Artistic	4	en-IN- Wavenet- D
Haru Tanaka	male	asian	Engineer	practical, self-confident and knows martial arts. He is also hyperkinetic and always has something in his hands (rubik's cube, rosary beads, etc)	Realistic	1	en-US- Wavenet- J
Horace Davies	male	caucasian	Doctor	serious, problematic, chess player and hypochondriac. Gives directions only once and does not repeat them	Conventional	2	en-GB- Wavenet- B

### Figure 2 List of Avatars

## 2.2. Scenario for RIASEC Test

Scene:		Inter	Interview with the crew					
Lifeskil Is:		RIA	SEC					
Enviro nment:		Mair	n Hall					
Actors :		Juar	na, Jayla, Horace, Haru, Annaliese, Ari					
Descri ption			Trainee must go through a series of stater er understand their profile based on RIASE					
step	speech	act or	description / speech	choice / condition				
1	riasec_ja yla_01	Jay la	Hello Trainee, in order to get to know you and analyse your profile you will go through a series of statements with the crew officers.					
2	riasec_ja yla_02	Jay la	The goal is to to better understand what interests you more and define your profile based on the Holland code (RIASEC - Realistic, Investigative, Artistic, Social, Enterprising, Conventional)					
3	riasec_ja yla_03	Jay Ia	Do you want to know more about these styles of operating?					

	- Yes => Go to 4 - No => Go to 12
4	Open a list of choices in the holopad
5	1) Realistic => Go to 6 2) Investigative => Go to 7 3) Artistic => Go to 8 4) Social => Go to 9 5) Enterprising => Go to 10 6) Conventional => Go to 11 7) Exit => Go to 3
6	Realistic people are often good at mechanical or athletic jobs. Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.
7	Investigative people like to watch, learn, analyze and solve problems. Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.
8	Artistic people like to work in unstructured situations where they can use their creativity. Artistic occupations frequently involve working with forms, designs and patterns. They often require self-expression and the work can be done without following a clear set of rules.
9	Social people like to work with other people, rather than things. Social occupations frequently involve working with, communicating with, and teaching people. These occupations often involve helping or providing service to others.
10	Enterprising people like to work with others and enjoy persuading and and performing. Enterprising occupations frequently involve starting up and carrying out projects. These occupations can involve leading people and making many decisions. Sometimes they require risk taking and often deal with business.
11	Conventional people are very detail oriented, organized and like to work with data. Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas.

			Usually there is a clear line of authority to follow.	
12	riasec_ja yla_10	Jay la	After completing all 5 question sections we will provide you with your top 3 interests according to your choices. Based on the selected interests you can further explore the relevant career paths.	
13	riasec_ja yla_11	Jay la	Let's begin with 10 quick questions. To indicate that you agree press on each question to highlight it	We need a % of completion of the self- assesment test to be visible somewhere throughout the interviews
14			<ol> <li>I like to work on vehicles - R</li> <li>I like to do puzzles - I</li> <li>I am good at working independently - A</li> <li>I like to work in teams - S</li> <li>I am an ambitious person, I set goals on myself - E</li> <li>I like to organise things (files, desk/office) - C</li> <li>I like to read about arts/music - A</li> <li>I like to have clear instructions to follow - C</li> <li>I like to try to influence or persuade people - E</li> </ol>	The RIASEC codes next to each question are for results analysis and should not be visible to the user. By pressing on each question/statement, it highlights and it means that the user agrees
15	riasec_ja yla_12	Jay Ia	Thank you for your answers. Now please proceed to Haru for the next set of statements.	
16	riasec_h aru_01	Har u	I like that you leave nothing to chance. Defining your profile and the corresponding career paths is a major step.	
17	riasec_h aru_02	Har u	Please provide me with some feedback on the following statements.	
18			<ol> <li>I like to do experiments - I</li> <li>I like to teach or train people - S</li> <li>I like trying to help people solve their problems - S</li> <li>I like to take care of animals - R</li> <li>I wouldn't mind working 8 hours per day in an office - C</li> <li>I like selling things - E</li> <li>I enjoy creative writing - A</li> <li>I enjoy science - I</li> <li>I am quick to take on new responsibilities - E</li> <li>I am interested in healing people - S</li> </ol>	The RIASEC codes next to each question are for results analysis and should not be visible to the user. By pressing on each question/statement, it highlights and it means that the user agrees
19	riasec_h aru_03	Har u	Good luck with your next set of statements.with Horrace. I am certain you will do great.	
20	riasec_h orace_01		Hello Trainee, to proceed I need your opinion on the following 8 statements.	
21			<ol> <li>I enjoy trying to figure out how things work - I</li> <li>I like putting things together or assembling things - R</li> <li>I am a creative person - A</li> </ol>	The RIASEC codes next to each question are for results analysis and should not be visible to the user. By pressing on each question/statement,

			<ul> <li>4) I pay attention on details - C</li> <li>5) I like to do filling or typing - C</li> <li>6) I like to analyze things (problems/situations) I</li> <li>7) I like to play instruments or sing - A</li> <li>8) I enjoy learning about other cultures - S</li> </ul>	it highlights and it means that the user agrees
22	riasec_h orace_02	Hor ace	Thank you for your feedback. Now go and answer Annaliese's statements.	
23	riasec_ja yla_13	Jay Ia	Now that we have a better understanding of who you are, I will need your honest opinion on the following matters.	
24			<ol> <li>I would like to start my own business - E</li> <li>I like to cook - R</li> <li>I like acting in plays - A</li> <li>I am a practical person - R</li> <li>I like working with numbers or charts - I</li> <li>I like to get into discussions about issues - S</li> <li>I am good at keeping records of my work - C</li> </ol>	The RIASEC codes next to each question are for results analysis and should not be visible to the user. By pressing on each question/statement, it highlights and it means that the user agrees
25	riasec_ja yla_14	Jay Ia	You are very helpful! To conclude the interviews fo to Juana.	
26	riasec_ju ana_01	Jua na	I am sure you have many more talents waiting to be discovered. Perhaps I can help you with that!	
27			<ol> <li>I like to lead - E</li> <li>I like working outdoors - R</li> <li>I would like to work in an office - C</li> <li>I am good at math - I</li> <li>I like helping people - S</li> <li>I like to draw - A</li> <li>I like to give speeches - E</li> </ol>	The RIASEC codes next to each question are for results analysis and should not be visible to the user. By pressing on each question/statement, it highlights and it means that the user agrees
28	riasec_ju ana_02		Now that you finished all 5 statement sections, please go and speak with the Captain. She will have a report to give you.	
29	riasec_ja yla_15	Jay la	Well done trainee. According to your answers your top 3 styles of operating are:	
30			Show the 3 top interests	
31	riasec_ja yla_16	Jay la	If you want to know more about the corresponding occupations based your answers, we can access from here the database maintained by the United States Department of Labor Employment and Training Administration.	
32	riasec_ja yla_17	Jay Ia	Do you want to know more about the career paths related to these interests? - Yes => Go to 33 - No => Scene fades => Go to Intro => Go to Step 15	

		According to the users answers and the code he gets (for example ISR, or RES) the link must change each time.
33		The first part remains the same https://www.onetonline.org/explore/interes ts/ and then instead of Xxxxxx you add the 3 interests categories divided by /
	Open a browser window	
	=> Visit:	Examp <u>le</u>
	https://www.onetonline.org/explore/inter	https://www.onetonline.org/explore/interes
	ests/Xxxxxxx/Xxxxxxx/Xxxxxxx/	ts/Social/Enterprising/Conventional/

## **2.3.** Introduction to the Environment

Scene:	Intro - Task 0	Intro - Task 0						
Lifeskills:	Time Managem							
Environment:	Main Hall							
Actors:	Juana, Jayla, H	orace, H	łaru, Annaliese, Ari					
Description	find work one m his/her characte through simulati space stations v famous one is s million light year The player (a ju occupation is be undertake a ser important lifeski threaten the spa							
			4 different rooms: Engine room, Main raining room & Sick bay/medical room					
step	speech	actor	description / speech	choice / condition				
			Display email form to collect user email.					
		UI Panel: "Go near Juana" -> Teleport						
	intro_juana_01	Juana	Hello! I am very glad to get to know new apprentices! They told me you are a very good learner. Hopefully there's not too much to do these days, we are in geo-stationary orbit while we conduct some experiments hey, here's the Captain!	Skip button appears => Go to A15				

			Jayla (captain) enters the scene from the stairs and starts talking as she walks towards the player	
	intro_jayla_01	Jayla	Nice to meet you trainee. I see you already got to know our Science officer, Juana.	
			Jayla moves to the <b>window</b> and looks at the <b>planet</b> .	move the character near the window
	intro_jayla_02	Jayla	Look! We came a very long way to find an exoplanet that we can inhabit. We have so much to do here but first we must get to know you better. Then we will decide on how you can help us.	
			Horace, Haru, Annaliese also enter the room	
	intro_jayla_03	Jayla	Please meet the other crew officers. Horace is our doctor, a bit strict but fair, and over here is Haru, our engineer and problem solver. Finally, you met Juana, our science officer and piano player.	
	intro_jayla_04	Jayla	Space Station Venus is the perfect place for you to learn about your personality, and which career paths are more suited to your profile.	
	intro_jayla_05	Jayla	Whilst you are here we will train you to master Lifeskills like Time Management, Problem Solving, Developing Oneself, Communicating Effectively and Working as a Member of a Team.	
	intro_jayla_06	Jayla	We have arranged for you to perform a series of tasks to test these Lifeskills.	
	intro_jayla_07	Jayla	Please remember that you can stop at any time by taking off the headset. When you put it back on you will continue from the point you left.	
	intro_jayla_08	Jayla	But if you terminate the application or run out of battery, then all your progress will be lost and you must start from the beginning.	
A15	intro_jayla_09	Jayla	Please choose what you want to do next	1) Take the Interview (to check which Carrer Paths are more suitable to your profile) => RIASEC 2) Follow the Lifeskills Training Course => training room 3) On the job Lifeskills training simulation => Task 1

## 2.4. Scenario 1 - Time Management Scenario

Scene: Task 1	
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Lifeskills:	Time Managem	ent		
Environment:	Main Hall			
Actors:	Jayla			
Description	Prioritize tasks a	according to	o Time Management principles	
step	speech	actor	description / speech	choice / condition
			Theoretical Background Time Management has as a base the 4 quadrants theory from Eisenhower, https://asl.co.nz/timemanagement/ - Quadrant 1: Urgent and important - do it now - Quadrant 2: Not urgent and important – decide when to do it - Quadrant 3: Urgent but not important – decide when to do it / delegate - Quadrant 4: Not urgent and not important – delegate/park it The correct order is 1, 3, 2, 4	
	task1_jayla_01	Jayla	Hello Trainee, no time to waste, it is time to start testing your Lifeskills! Please remember that everything you will experience here is a simulation. The goal is to test your LifeSkills in a real life environment. You will have the option to fail and try again until you can master your skills.	
	task1_jayla_02	Jayla	But before we start I must ask you, are you familiar with Lifeskills Theory and especially Time Management?	Yes => Go to A1 No => Go to A2
A2	task1_jayla_03	Jayla	If you need refreshing first go to the training room and take the short course on Time Management.	Go to Training Room ? Yes => Training room No => continue
A1	task1_jayla_04	Jayla	Since you have the basic knowledge of Time Management we will provide you with a series of tasks which you can find by accessing your Holo tablet.	
	task1_jayla_06	Jayla	You must finish them all today so we will need you to divide them according to time management principles.	
	task1_jayla_05	<del>Jayla</del>	You have task list uploaded onto your Holo Tablet, you will always find it in front of your belt. Touch it to access the task list.	

A3.2	task1_jayla_E2	Jayla	correctly according to time management principles. Do you want to try again?	Yes => Go to A3 No => exit or skip ?
		Holotablet	successful order: Task 2 (Engineer - climate generator) - urgent/important Task 4 (Captain - oxygen level) - not_urgent/important Task 3 (Doctor - medical supplies) &/or (Training) - urgent/not_important Task 5 (Science officer - plants) - not_urgent/not_important You did not prioritize the tasks	Success => Go to A4 Failure => Go to A3.2
A3.1	task1_jayla_H1	Jayla	Do you need some help with this task?	(optional: if the user failed > 2 times ) Yes => (show the solution) Go to A4 No => continue
A3	task1_jayla_08	Jayla	Now that you have divided them, please prioritize them according to their importance and urgency. If you succeed, you will then begin the tasks.	
A1.2	task1_jayla_E1	Jayla	You did not divide the tasks correctly according to time management principles. Do you want to try again?	Yes => Go to A1.1 No => exit or skip ?
		Holotablet	<ul> <li>Support the Scientist in treating the stations plants (task 5)</li> <li>Go and follow your favorite Lifeskills short courses to update your knowledge (training)</li> <li>Help the Captain to check the oxygen level sensors (task 4)</li> <li>Assist the Doctor with sorting the new medical supplies (task 3)</li> <li>Help the Engineer repair a module of the environmental climate regulator (task 2)</li> </ul>	The correct division of tasks per panels is: Task 2 (engineer) = urgent/important Task 3 (doctor) & Task 5 (training) = urgent/not_important Task 4 (captain) = not_urgent/important Task 5 (Science officer) = not_urgent/not_important Success => Go to A3 Failure => Go to A1.2
	task1_jayla_H1	Jayla	Do you need some help with this task?	(optional: if the user failed > 2 times ) Yes => (show the solution) Go to A3 No => continue
A1.1	task1_jayla_07	Jayla	There are 4 panels in front of you, where you can divide the tasks according to time management principles:	

A4	task1_jayla_09	Jayla	Congratulations on finishing your first lifeskills assignment!	
	task1_jayla_10	Jayla	Now please go to Haru in Engineering, and do the tasks he wants you to do.	Scene fades and we go to task 2 / or open the holotablet to choose the next task

## 2.5. Scenario 2 - Working as a member of team

Scene:	Task 2				
Lifeskills:	Working as a	member of team - Demetrius - demetrius.l.silva@inesc	tec.pt		
Environmen t:	Engine Room - Place with side panels and a central area where the repair task will be carried out on the ship's modules.				
		https://assetstore.unity.com/packages/3d/environment s/sci-fi/stylized-sci-fi-interior-219970			
		https://assetstore.unity.com/packages/3d/environment s/pro-tek-sci-fi-pbr-laboratory-interior-with-hologram- 67808			
Actors:	Haru				
Description	Generator mo for tasks that	orking on the maintenance of the station's Environment dules. You need to help the engineer. Instructions will b need to be done to help the engineer. Tasks include ide helping to fix them.	be displayed		
	storyboard	https://dlacet.com/inesctec/lifeskillsvr/Task1_Flowchar t.pdf			
step	speech	actor	description / speech	choice / conditio n	
			Engineer Haru is in the engine room when the trainee enters		
	task2_haru_ 01	Haru	Hello trainee, this is the engine room. Here we maintain the station's modules to avoid problems in the future. Want to help with the Environment al Climate Generator, or do you need some training first?	Go to Training Room ? Yes => Training room No => continue	
A2	task2_haru_ 02	Haru	Great! Let's start		

		checking the modules.	
A2.1	task2_haru_ 03	Here we have two important module types, they are actually filters. Oxygen modules and water modules. I need you to help me check the status of the modules. We will check now for obstructions.	
A3		A panel appears with 6 small images side by side (as if they were video screens). Each image has a number, which corresponds to a module on the panel in the room. The top 3 are for the oxygen module and the bottom 3 are for the water module. In the second water module, a situation of obstruction clearly appears. The only button it has is to close.	
	task2_haru_ 04	Haru Did you see if something is wrong?	1 - For now nothing to worry

				about => A5 2 - Yes, there is a problem that needs to be checked. => A7
A5	task2_haru_ 05	Haru	OK. If you there are no obstruction let's check the power levels of the modules.	go to A7.3
A7	task2_haru_ 06	Haru	Show me which module you think has a problem.	
			The panel appears again and the user must choose the module he thinks has a problem. According to its choice the user is teleported near the chosen module. After teleport Haru reaches the position near that module.	Show modules Panel
	task2_haru_ 07	Haru	Please, Help me get it out.	Une
			The user is presented with a single button "Open" that will exit the module. Only the damaged module will have a clearly burnt part.	Success => A7.1 Failure => A7.3

A7.3	task2_haru_ 08	Haru modu fully opera need	to	1 - Exit => A8 2 - Check again => A7
A7.1	task2_haru_ 09	traine Look Haru Haru be th probl	s like could ne lem. I eplace	
		part prob conti (anin actio	laces the but the lem inues mation of ons near proken	
A7.2	task2_haru_ 10	Haru why, seem wasr only probl Ther be some else affec Clima gene and v to fin Let's the p	erstand but it ns that n't the lem. e must ething ething ting the ate erator we have od it! check power s of the	1 - Exit => A8 2 - Continue => A7.3
A7.3	task2_haru_ 14	be al	should bove the ercent. se k	
A4		6 sm imag by si they video scree	ears with nall ges side ide (as if were o	

		has a number, which corresponds to a module on the panel in the room. The top 3 are for the oxygen module and the bottom 3 are for the water module. In the third water module, the level is very low. The only button it has is to close.	
	task2_haru_ 04	Haru Did you see if something is wrong?	1 - So far nothing to worry about => A8 2 - Yes, there is a problem that needs to be checked => A10
A10	task2_haru_ 06	Haru Haru bink has a problem.	
		The panel appears again and the user must choose the module he thinks has a problem.	Show modules Panel and wait for user to choose one Success => A10.1 Failure => A10.2
A10.1	task2_haru_ 11	Haru Haru Well done trainee. The level is really low. I usually get an alert. I don't know	

				why I didn't get it. I will do the repair. Thanks for your help.	
	A10.2	task2_haru_ 12	Haru	oxygen level is OK, need	
A	.8	task2_haru_ 13	Haru	Thank you for your help trainee! Let's move on to the next Task.	move to next task or experienc e ends

## 2.6. Scenario 3 - Defining and Solving Problems

Scene:	Task 3		
Lifeskills:	Defining and Solving Problems		
Environment:	Medical Bay		
Actors:	Horace		
Description	The doctor states that the projected needs for the next period are higher than usual and he must organise supplies to cover these needs. The orders from central command state that there must be enough supplies for 6 days and at to potentially cover 4 surgeries. The doctor prefers to be extra careful though, and plans for 9 days to be cautious. Therefore the doctor asks for the trainee to plan supplies accordingly. Then the user must select the supplies to be put in the shelve(s)		

step	speech	actor	description / speech	choice / condition
			The User enters the medical bay. He sees 2 shelves labelled long term supplies and short term supplies. He also see a pile of supplies. - Supplies have 2 different colors ® Red color expires in 1 months (short term) ® Green color expires in 3 months (long term) - Supplies have 2 different shapes ® Cylindrical shape for supplies needed for generic medications ® Box shape for supplies used for surgeries - We have only two shelves. These shelves have labels:	Boxes: - 4 green boxes - 4 green round - 4 red boxes - 4 red round

			<ul><li>® short term medical supplies</li><li>® long term medical supplies</li></ul>	
	task3_horrace_01	Horrace	Welcome to medical bay trainee. It is good to see a new faces around here.	
	task3_horrace_02	Horrace	Before we start I want you to know, that I am very easy to work with, as long as you do exactly as I tell you. I am not very talkative, though, and hate repeating myself. So please pay attention.	
	task3_horrace_03	Horrace	Are you familiar with Lifeskills Theory, and especially with Defining and Solving Problems?	i. Yes => Go to A1 ii. No => Go to A2
A2	task3_horrace_04	Horrace	If you need refreshing, first go to the training room, and take the short course on Defining and Solving problems.	Go to Training Room - Defining and Solving Problems
	task3_horrace_05	Horrace	Our task today, is to sort out the medical supplies, needed for our new medical room. Supplies do not come very often, and the space in the medical room is very specific and limited, so we must be extremely careful.	
A1	task3_horrace_06	Horrace	Supplies come in different colors, and different shapes. Different colours, mean different expiration dates. Red colour means it expires in 1 month (short term), while Green colour it expires in 3 months (long term).	
	task3_horrace_07	Horrace	Please divide the supplies according to their expiration date.	
	task3_horrace_h1	Horrace	Do you need some help with this task?	(optional: if the user failed > 2 times ) Yes => (show the solution) Go to A3 No => continue
		Holotablet	A panel appear to have the user divide	Each of the supply should be in a crate with the right expiration (even if different purpose) Success => A3 Failure => A1.2
A1.2	task3_horrace_h2	Horrace	the supplies in four crates (2 categories) You did not divide the supplies correctly. Do you want to try again?	Yes => Go to A1 No => exit or skip ?
	task3_horrace_08	Horrace	Well done! Also the supplies comes in prearranged boxes, of different <b>shapes</b> according to their <b>purpose</b> . Square boxes are special supplies for surgeries, and Round boxes are for generic medications.	

A3	task3_horrace_09	Horrace	Please divide the supplies according to both their purpose, and expiry, into the four crates.	
	task3_horrace_h1	Horrace	Do you need some help with this task?	(optional: if the user failed > 2 times ) Yes => (show the solution) Go to A4 No => continue
				Each of the 4 crates should have the right category of supplies
			A panel appear to have the user divide the supplies in four crates	Success => A4 Failure => A3.1
A3.1	task3_horrace_h2	Horrace	You did not divide the supplies correctly. Do you want to try again?	Yes => Go to A3 No => exit or skip ?
A4	task3_horrace_10	Horrace	Now that you finished sorting them out, and you know which is which, we must decide which supplies to put into the 2 shelves in the room. Left shelve is for <b>long term supplies</b> , and right shelve is for <b>short term</b> <b>supplies</b> .	
A4.1	task3_horrace_11	Horrace	According to central command, we must plan the next 3 months of the mission. 2 important surgeries have to be done right before the journey back, and 1 in the very next week. Also, we should have at least 2 normal medications, for each month of the mission.	right shelve: - 2 green boxes - 4 green round left shelve: - 1 red box - 2 red round
	task3_horrace_12	Horrace	Please, choose wisely from the crates of supplies you have filled.	2 panels 1 question: choose shelve (middle key DONE) 2 question: choose type (gb,gc,rb,rb)
	task3_horrace_h1	Horrace	Do you need some help with this task?	(optional: if the user failed > 2 times ) Yes => (show the solution) Go to A5 No => continue
			A papel appear to have the user divide	Each of the 2 shelves should have the right category of supplies
			A panel appear to have the user divide the supplies in the two shelves	Success => A5 Failure => A4.1
A4.1	task3_horrace_h2	Horrace	You did not divide the supplies correctly. Do you want to try again?	Yes => Go to A4.1 No => exit or skip ?

A5	task3_horrace_13	Horrace	Bravo Trainee! You have done a perfect job. I love working with people that have strong problem solving skills and are active listeners.	
	task3_horrace_13	Horrace	Now we are ready to deal with any emergency! Pleas go to the Engine room.	Go to Task 4

## 2.7. Scenario 4 - Developing and Managing Oneself + Time Management

Scene:		Task 4		
Lifeskills:		Develop	ing and Managing Oneself + Time	Management
Environment:		Engine F	Room	
Actors:		Captain		
Description		Scenario • This scenario takes place after the user checks the Oxygen levels and finds out that there is a problem, they are really low. • At some point an alarm goes off about the low oxygen • We have to choose: § Whether we will save ourselves without caring for anybody else § Whether we will take the responsibility to fix the problem but with each second people die from the lack of oxygen § Whether we will follow the orders of the Captain (who favors others or us) because she knows best and have the responsibility to save the cre		
step	speech	actor	description / speech	choice / condition
Stop	Specon	dotor		
			Theoretical Background The task is Developing and managing oneself + Time Management When someone is relaxed they can manage themselves easily. Problems can arise if a person feels uncontrolable emotional responses in an emergency (such as extreme sadness, fear, panic, anxiety, complete shutdown or freeze), which inhibits their rational response in an emergency.	
	task4_jayla_01	Captain	Hello trainee. I am here to support you. Around me you can act freely and I hope we can even have a bit of fun while you learn.	
	task4_jayla_02	Captain	Are you familiar with Lifeskills Theory and especially with Developing and Managing Oneself?	i. Yes => Go to A1 ii. No => Go to A2

A2	task4_jayla_03	Captain	If you need refreshing first go to the training room and take the short course on Defining and Solving problems	Go to Training Room - Developing and Managing Oneself
A1	task4_jayla_04	Captain	One of our task is to ensure that the environment of the station is maintained at optimum levels. Otherwise our lives may be in danger!	
	task4_jayla_05	Captain	We check the oxygen levels many times a day to ensure this. The controls are in the engine room and since you are now a member of the crew you must learn to check it as well.	
			User goes near the first module and checks the oxygen level displayed on the monitor, <b>it is</b> <b>very low and the mark is in the</b> <b>red area</b>	The oxygen level is very low and the mark is in the red area
	task4_jayla_06	Captain	What did you find?	
			A choice panel appears: 1) No problem, everything is ok 2) The oxygen is very low! We must act now! 3) The oxygen is rather low, we should inform the engineer.	In any answer go to A3
A3			The alarm goes off (starts)	alarm starts 2 or 3 seconds after panel close
A10	task4_jayla_07	Captain	The alarm went off! We must hurry! If we do not act fast and correct the oxygen module the station and the crew will be in danger! Trainee please do exactly as I tell you! We have exactly 1 minute available!	<ul> <li>"i. Trust Captain 100% and follow her orders (save 0%-100% of the crew members) =&gt; Go to A4</li> <li>ii. Directly leave the engine room (you live but all the members of the engine room die, Captain dies and 55% of the total crew dies) =&gt; 1) Jayla appears: Trainee I am very disappointed at your performance. Your actions resulted in many deaths and complete lack of empathy towards you fellow crew members. =&gt; Go to A10</li> <li>iii. Do not trust Captain and try to fix the problem with the oxygen module on my own (unknown number of casualties 0-100%) =&gt; Go to A5 with 50"" to finish the oxygen module"</li> </ul>
			A choice panel appears:	1 => A4
				2 => A11 3 => A5 (50 secs)

			her orders 2) Need to escape from the engine room! 3) I'll try to fix the problem myself	
A4	task4_jayla_08	Captain	Took you long enough to decide. There is a list of actions that we must follow. First we must initiate the sequence to prepare the escape pods	<ul> <li>"i. (I keep feeling confident about Captain but this will cost 10 seconds) Prepare the escape pods =&gt; Go to A6</li> <li>ii. (I am scared and I do not believe that we will make it, 20 seconds are needed to save myself!) Leave the engine room and save myself =&gt; 1) Jayla appears: Trainee I am very disappointed at your performance. Your actions resulted in many deaths and complete lack of empathy towards you fellow crew members. =&gt; Go to A10</li> <li>iii. (I am really anxious and I do not believe this is the best course of action) Stop following the orders and try to fix the problem with the oxygen module]</li> </ul>
			User goes to the escape pods module. A choice panel appears	
			<ol> <li>Trust the Captain and prepare the Escape Pods (10 secs)</li> <li>I am scared! Need to save myself! (20 secs)</li> <li>I am anxious, need to try to fix the Oxygen Module first (10 secs)</li> </ol>	1 => A6 2 => A11 3 => A5 (40 secs)
A6	task4_jayla_09	Captain	Ok! We need now to redirect all the power available to the environmental climate regulator even though the oxygen module does not work.	<ul> <li>i. (I remain confident about Captain but this will cost another 10 seconds) Reroute all the available power =&gt; Go to A7</li> <li>ii. (I am scared and I do not believe that we will make it, I can only make it if I leave now, 20 seconds are needed to save myself!) Leave the engine room and save myself =&gt; 1) Jayla appears: Trainee I am very disappointed at your performance. Your actions resulted in many deaths and complete lack of empathy towards you fellow crew members. =&gt; Go to A10</li> </ul>

A8	task4_jayla_11	Captain	Perfect trainee, but let's hope that all your actions were not for nothing. We probably do not have enough time left but you should be proud that you did everything you could to save	i. (I trust Captain and I will continue to do so even though I am left with only 20") I will try to fix the oxygen module => Go to A5 If user chooses i) (the oxygen
			User goes to the oxygen masks module. A choice panel appears 1) Trust the Captain and prepare the oxygen masks (10 secs) 2) I am scared! Need to save myself! (20 secs) 3) I am anxious, need to try to fix the Oxygen Module first (10 secs)	1 => A8 2 => A11 3 => A5 (20 secs)
A7	task4_jayla_10	Captain	Now trainee go fast and release the portable oxygen masks to all crew members	<ul> <li>i. (I will follow Captain till the end, she knows what she is doing and I believe in her) I release the oxygen masks =&gt; Go to A8</li> <li>ii. I leave the engine room and save myself =&gt; 1) Jayla appears: Trainee I am very disappointed at your performance. Your actions resulted in many deaths and complete lack of empathy towards you fellow crew members. =&gt; Go to A10</li> <li>iii. I stop following her orders and try to fix the problem myself =&gt; Go to A5 (not releasing the portable oxygen masks costs 10", you have 20" remaining to finish the oxygen module)</li> </ul>
			User goes to the power module. A choice panel appears 1) Trust the Captain and route the power (10 secs) 2) I am scared! Need to save myself! (20 secs) 3) I am anxious, need to try to fix the Oxygen Module first (10 secs)	take action now!) Stop following the orders and try to fix the problem with the oxygen module => Go to A5 (not rerouting the oxygen costs 10", you have 30" remaining to finish the oxygen module) 1 => A7 2 => A11 3 => A5 (30 secs)
				iii. (I am really anxious and I cannot give extra power to module that are fried! I need to

			your fellow crewmates. Your final act is to try to fix the oxygen module. The problem is that as available time decreases more and more areas of the station are left without oxygen. You must save as many crew members as possible!	masks give you 70" seconds of additional air, so now you have 90" remaining to finish the oxygen module) ii. (I am extremely scared for my life, Annalies betrayed me by prioritizing others and left me with only 20" to fix a problem that could have been fixed from the start with enough time available) I leave the engine room and save myself => 1) Jayla appears: Trainee I am very disappointed at your performance. Your actions resulted in many deaths and complete lack of empathy towards you fellow crew members. => Go to 10
			A choice panel appears with the title "20 seconds left" 1) Trust the Captain and fix the oxygen module 2) I am scared! Need to save myself!	1 => A5 (90 secs) 2 => A11
A5	task4_jayla_12	Captain	You see that the oxygen module is destroyed. You must assemble a new one from the different parts available. Every second counts as more people are lost due to the lack of oxygen!	
			A panel appear with a puzzle game to assemble the oxygen module	<ol> <li>1) Successfully assemble the oxygen module =&gt; A5.1</li> <li>2) Failure to assemble the oxygen module on time =&gt; A12</li> </ol>
A5.1			A panel appears with the positive outcome of the simulation: You saved your crew!	
A9	task4_jayla_13	Captain	I am very proud on how you developed yourself while actively managing time throughout this crisis. To move forward please reach the crew in the aeroponic lab.	Go to task 5
A11	task4_jayla_14	Captain	Trainee I am very disappointed at your performance. Your actions resulted in many deaths and complete lack of empathy towards you fellow crew members	
			A panel appears with the negative outcome of the	Go to task 5

			simulation: you live but all the members of the engine room die, Captain dies and 55% of the total crew dies	
A12	task4_jayla_14	Captain	Trainee I am very disappointed at your performance. Your actions resulted in many deaths and complete lack of empathy towards you fellow crew members	
			A panel appears with the negative outcome of the simulation:	
			You and the crew died	Go to task 5

## 2.8. Scenario 5 - Communicating Effectively

Scene:		Task 5				
Lifeskills:		Commu	unicating Effectively			
Environment:		Main H	all (or aeroponic farm if this works better)			
Actors:		Juana,	Haru and Horace			
Description• Juana is responsible farm. She has found th area are not in good he • A dialogue where Juan music she plays different			a is responsible for the plants of the station a he has found that the plants existing in the r e not in good health and are in danger of wit logue where Juana explains to the trainee th she plays different plant has different reactio t they are exposed to they may grow or die.	nain hall/recreation hering (dying). hat depending on the		
step	speech	actor	description / speech	choice / condition		
			Theoretical Background Communicating Effectively			
	task5_juana_01	Juana	Hello trainee, welcome again to our station. I am the science officer of the station and I really hope you like plants!	Haru and Horace enter the room		
	task5_juana_02	Juana	First are you familiar with Lifeskills Theory and especially with Communicating Effectively?	i. Yes => Go to A4 ii. No => Go to A3		
A3	task5_juana_03	Juana	If you need refreshing first go to the training room and take the short course on Communicating Effectively	Go to Training Room - Communicating Effectively => Return to step A4		
A4	task5_juana_04	Juana	Plants are my responsibility and I love them almost as I love playing the piano. Do you play any kind of music?	Yes => A4.1 No => A6		
A4.1	task5_juana_05	Juana	I prefer classical music. What is your favorite music genre?			

			A choice panel opens i) Classical ii) Rock iii) Heavy metal iv) Jazz music v) Electronic music	In all cases continue to A6
A6	task5_haru_01	Haru	Did you know that plants also love music?	
A6.1	task5_juana_06	Juana	Do you need some help with this task?	(optional: if the user failed > 1 times ) Yes => (show the solution) Go to A10 No => continue
A7	task5_juana_07	Juana	I play for them all the time but not all respond the same to different music genres. Roses prefer classical music, while tomatoes need some beat (rock or electronic). Orange trees like Jazz, and basil is a friend of Chopin and classical music. The same applies to Sunflowers, who's second favorite is also heavy metal!	
	task5_horace_01	Horace	Can you help me put each plant next to the correct music so they can listen to music when Juana is away or cannot play the piano? I can never remember the correct music for each plant.	
			a matching panel opens, user needs to match music and plants (fuzzy match)	
			Roses => Classical Tomatoes => Electronic, Rock Orange tree => Jazz Basil => Classical Sunflowers => Classical or Heavy Metal	Match the music genres with plants Success => A7.1 Failure => A7.2
A7.1	task5_juana_08	Juana	Thank you choosing the best music for my plants! You are a great help!	go to A10
A7.2	task5_juana_09	Juana	I think you need to try again. Maybe you did not hear or understand me telling you what type of music each plant likes. Do you want to try again?	Yes => A6.1 No => A11
A10	task5_haru_02	Haru	Juana always tells me that plants are almost as complicated as people. Her biggest problem is that she is not here all the time to take care of them. And not only with music but with the light as well. They need specific minimum exposure to light in order to grow. Otherwise they may wither and die.	
A10.1	task5_juana_06	Juana	Do you need some help with this task?	(optional: if the user failed > 1 times ) Yes => (show the solution) Go to A19 No => continue
A11	task5_juana_11	Juana	Sunflowers loves the sun all day long. On the other hand basil cannot have direct sunlight. Even tomatoes need at least 8	

			hours of sun, while the orange tree needs at least 3, and the Roses at least 6 hours.	
	task5_haru_03	Haru	Please help me adjust the lights according to the preference of each plant so that they are happy and continue to grow.	
	task5_horace_02	Horace	I mix them up all the time, but I remember that tomatoes are not happy with just 3 hours of sun.	
A15	task5_haru_04	Haru	I don't know about tomatoes, but I remember that Roses need at least half a day's of sunlight!	
			Match the plants with the correct minimum light exposure. choices are: sun all day no direct sunlight >3 hours of sun >6 hours of sun >8 hours of sun Sunflowers => all day Basil => no direct sunlight Tomatoes => >8 hours of sun	
			Orange => >3 hours of sun, >6, >8 Roses => >6 hours of sun, >8	Success => A18 Failure => A15.1
A15.1	task5_juana_12	Juana	I think I told you that we do not have enough power and not all plants need the same amount of sun. Please pay more attention to my instructions and to the details I share. Do you want to try again?	Yes => 10.1 No => A19
A18	task5_juana_13	Juana	You are an active listener. It is very important that your attention was focused on my instructions. Our plants will be very happy! Congratulations. You completed all the Life Skills tasks.	End of the experience, show the outcome panel and after confirm go back to main menu
A19	task5_juana_14	Juana	I believe you have completed all your tasks. Congratulations!	End of the experience, show the outcome panel and after confirm go back to main menu

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The following shows a brief visual breakdown of the experience:













To view the run through experience, follow: <u>https://drive.google.com/file/d/1RVDYmRxCEQ6hdR\_KWWmVNOQis5PqC4bH/view?usp=drive\_link</u> The LifeSkillsVR App is available free to download on our website: <u>https://lifeskillsvr.com/</u>

### **Required Devices:**

- 1 Oculus quest 2
- 1 Android phone
- 1 Windows computer

#### **Oculus reset**

If you already have the Oculus quest linked to an existing account you MUST reset the head set

- 1. Turn off the Quest
- 2. Press and hold for 5/10 seconds, both the power button and the minus volume button
- 3. When appear the black screen with green text use the volume button to navigate to "factory reset"
- 4. Press the power button to confirm
- 5. Wait the end of data swipe and the reboot

#### **Computer steps**

- 6. Go to: https://developer.oculus.com/manage/organizations/create/
- 7. Register as new user
- 8. Create a new Organization
- 9. Add an "Organization Name"
- 10. Verify the account (may be necessary a mobile number)
- 11. Go to: https://developer.oculus.com/manage/verify/

#### Mobile (Android phone) steps

- 12. Download from google play the app "Meta Quest"
- 13. Activate the GPS and Bluetooth
- 14. Turn on the Oculus Quest
- 15. Start the app "Meta Quest"
- 16. Push the "Menu" button
- 17. Select "Devices"
- 18. Select the recognized Oculus Quest
- 19. Scroll the entries and tap "Developer Mode"
- 20. Tap on the toggle (is the only option)

### Computer steps (to upload apk into oculus device)

- 21. download the "quest build" folder, and uncompress it into a local folder
- 22. connect the oculus (turned on) with the computer, with the usb-c cable
- 23. allow (into oculus by popup interface) the computer to exchange files with
- 24. double click the install bat file into the uncompressed folder
- 25. allow the file to be launched (windows os popup)

### **Oculus steps (enable hand tracking)**

If you have some problem with the steps below, there are some video tutorial at the end

- 26. Select the clock in the tool bar
- 27. Click on setting
- 28. Select "hand tracking"
- 29. Click on "enable hand tracking"

30. Complete the tutorial (first time activating it)

### **Oculus steps (starting VR Application)**

If you have some problem with the steps below, there are some video tutorial at the end

- 31. Click on the tool bar button at the rightest position (a square made by 9 dots, 3 by 3)
- 32. In the top right drop down list select "unknown sources"
- 33. Click the "VR Life skill" app

### **External references**

- https://www.wikihow.com/Enable-Developer-Mode-Oculus-Quest-2
- <u>https://smartglasseshub.com/enable-developer-mode-on-quest/</u>
- https://aixr.org/insights/how-to-enable-developer-mode-on-oculus-quest-2/