



3rD-LIFE
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Trial Scenarios Definition

Deliverable D2.4

Work Package 2: End-User Input and Validation

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EXECUTIVE SUMMARY

Several trial scenarios definitions are presented below. The scenarios were developed by all partners in order to test 3rD-LIFE platform from results obtained in the user requirements phase.

The scenarios were designed with the aim to enhance the fit of the 3rD-LIFE platform to what users said in the interviews and focus groups as requirements of this platform to have for them to use it.

TABLE OF CONTENTS

DOCUMENT HISTORY	ERROR! MARCADOR NO DEFINIDO.
EXECUTIVE SUMMARY	ERROR! MARCADOR NO DEFINIDO.
TABLE OF CONTENTS	ERROR! MARCADOR NO DEFINIDO.
1. INTRODUCTION	1
2. BACKGROUND	2
3. SCOPE OF THIS DELIVERABLE	4
4. SCENARIOS – THE METHOD	5
5. SUMMARY OF REQUIREMENTS	6
6. THE 3rD LIFE SCENARIOS	8
6.1. Scenario 1	10
6.1.1. Part 1: My Room	10
6.1.2. Part 2: The Library	12
6.1.3. Part 3: At The Café	13
6.2. Scenario 2: Exhibition at the Café	13
6.3. Scenario 3: Language Course	14
7. CONCLUSION	16
8. NEXT STEPS	17
9. REFERENCES	18

1. INTRODUCTION

This document takes into account the results of the user requirements analysis that has been described in deliverable D2.3 and describes scenarios and essential use cases that are built on top of these requirements. As it was stated in the Document of Work, the aim of the 3rD LIFE project is to provide users with a virtual tool for interacting with other users and with other functionalities. With only a computer and an internet connection, users will be able to communicate with other users, make audio and video calls to real world terminals and have a more joyful and active life thanks to the e-learning tools, cognitive games and other applications that will be implemented.

The following section describes in detail the background for the development of scenarios and use cases as guidance for the technical development of the system. Afterwards, section 3 gathers the scope of this deliverable. Section 4 describes how a scenario is built, and section 5 provides a summary of requirements described in deliverable D2.3; finally the description of scenarios is presented in section 6.

2. BACKGROUND

The use of scenarios not only serves to aid technical development, they are also useful in the communication with potential end-users so as to come up with requirements for the tools and applications that are developed within the 3rD-LIFE project.

Scenarios provide an instantaneous vision of a specific setting and its context, thereby reducing the level of abstraction. This can be applied in communicating with users, but also for communication with other stakeholders or within the development team. Carroll [1] presents a classification scheme for scenarios and how they are used in the development process in eight different ways: (i) story development of current use practice for requirements analysis, (ii) a way to communicate between users and designers, (iii) provision of examples to motivate design rationale, (iv) how to help people outside the development team to envision the goals, (v) support for software design, (vi) implementation, (vii) easy training of users of the product, and (viii) provision of example-based documentation. In each of these settings, the scenarios provide the advantage that everyone involved has a better picture of how the tools can be used.

The scenarios force us to deal with details that might be overlooked when discussing abstract ideas and models, but they also have disadvantages because of their predefined paths through an application.

Different representations of scenarios can be used depending on the goals of the scenarios as described above. This representation can be understood as a continuum between very informal narratives to formal models that describe the scenario, with many steps in-between. The choice for a specific representation then depends on the role of the scenario and the phase that the development is in. The advantage here is that users can see how the interaction takes place in a detailed level including all the steps required.

Based on the scenarios, essential use cases are defined. Essential use cases give us the possibility to model interaction between a user and a system in a technology independent way. [2] The story-telling approach of the scenarios can be translated to a more structured visualization of the interaction between the user and the system.

3. SCOPE OF THIS DELIVERABLE

The requirements analysis described in D2.3 was the first step of the 3rD LIFE overall user-centered design procedure. It gave relevant information for all further project activities and deliverables by providing very early information and feedback from users about how their needs can be satisfied through the 3rD LIFE solution.

These requirements are translated into scenarios in this document. These scenarios structure the development efforts in all further work packages with respect to the technical development, comprising virtual design, application development and other technological issues.

4. SCENARIOS – THE METHOD

Scenarios offer a way to imagine design concepts in use [3]. They give us a way to describe an application and, more importantly, an interaction with an application in words. Because of this, they can be used to communicate and transform the findings from the requirements analysis into a prototype.

A scenario is some kind of a story. Scenarios contain and describe a setting, the agents or actors, their goals and purposes and the things they do [4]. A scenario can be described as a description of an individual user who is interacting with a specific set of computer facilities in order to achieve a specific outcome under specified circumstances and over a certain time interval.

Within all projects dealing with technology and end-users it is of high importance to be able to envision the interaction between the end-user and the system. Therefore it was settled on a scenario-driven approach to incorporate the findings from the requirements analysis into the development of the first prototype and to ease communication between the technical and the humane sides.

People in the scenario were modelled after the requirements analyses were done. This ensures a certain kind of empathic relationship with the 3rD LIFE user. Empathy between the designers of a product and the user is of great value when the user experience of the product is important.

5. SUMMARY OF REQUIREMENTS

A brief summary of the results of the requirements phase is presented below. A more extensive description of the outcomes can be found in the deliverable 2.3.

- Relationships and Communication

In Spain, the closest relationships for primary users were their friends followed by their children and siblings and for secondary users their parents. In Austria, primary users did not include grandchildren and secondary users their parents. In both countries users and their closest relatives live in different cities.

It is likely that primary users will be interested in using 3rD LIFE with their friends primarily and then with younger family members.

In Spain, primary users mostly use traditional ways for communicating such as landline telephone; however they also use to some extent channels like e-mail service. Secondary users use different ways depending on the person they want to communicate with. For their contacts older than 60 years, they use traditional ways and for younger contacts they use new devices and Internet services like social networks. Primary users use Internet mostly only for general purposes.

In Austria, both groups actively use the Internet in their daily life for gathering information, bureaucratic and financial activities, social networking, gaming and shopping. E-mail is the most commonly used communication channel by the primary users, whereas mobile phones are widely used for daily communication by both user groups. However, as in Spain, the communication between younger secondary user group members and the primary user group runs over traditional channels such as landline telephone and post (letters, cards).

- Attitude towards the Internet

In Spain, secondary users have a more positive attitude towards the Internet than primary users. Also, both groups are concerned about privacy and security aspect of sharing personal information on the Internet.

In Austria, both groups have a similar positive attitude towards Internet.

Therefore, the activities and communication in 3rD LIFE is likely to be initiated by both of the user groups in Austria, but in Spain more efforts may be required from the secondary user group.

- Activities

In both countries, primary users enjoy outdoor activities like walking or taking yoga or aerobic classes. Also, they like board games, bingo or cards games. Furthermore they are interested in reading books, taking courses and some other cultural activities like travelling, going to museums, conferences or concerts, handicrafts. Secondary users would like to play games, go to cultural events, have more contact with their relatives above 60 years and use more the new technologies with them.

The primary users perceive cultural, educational or entertainment activities as meaningful and attractive in 3rD-LIFE environment. Secondary users are more interested in making new friends, whereas primary users wish to keep contact over 3rD-LIFE with friends and family members who live far away.

- Security and Privacy

In both countries, users would like to set up the privacy level in order to share personal information with people of their choice. Also they would like to have a private place for sharing personal information and experiences, and public places for general activities.

- Appearance of the virtual space

The virtual space should be as realistic, simple and customizable as possible. Also, the spaces should meet some usability guidelines in order to guarantee the 3D world accessibility for all kind of people. Some recommendations were given in section 3.2.2 in the deliverable 2.3 of 3rD-LIFE.

- 3rD-LIFE applications and services

Users said that they would like to meet new people with similar hobbies and interests in 3rD-LIFE. Also they would like to have a place for sharing personal information and experiences.

Furthermore, they would like to have some educational and cultural applications like e-learning, concerts or lectures.

Finally they would like to have some serious games in 3rD-LIFE.

6. THE 3rD-LIFE SCENARIOS

Scenarios presented in this document are designed based on the user requirements collected in the previous tasks of WP2 and the decisions taken in WP3 about the 3D platform development.

Based on the results of the user requirement analysis presented in D2.3, the following scenarios portray the three main spaces for 3rD-LIFE as the basic spaces needed in the project. However, the spaces to be used are not limited to these.

My Room: This is the personal space of each user in 3rD-LIFE. It contains interactive-action areas, where the user can communicate, manage information and change personal settings:

- **Communication area** is the place where users can write/receive messages and information from their 3rD-LIFE contacts or 3rD-LIFE services, have private meetings and activities with their contacts (e.g. videoconference). The communication area has special components for different activities. For example, **Communication Wall** for videoconferences, **Inbox** for notifications. As this is a 3D Environment, interactions with the platform mostly run over interactive objects not over a 2D menu. For instance the Inbox contains interactive objects as notifications (e.g. a piece of paper, a box, etc.)
- **Desktop** is the place where the users will have their personal documents and objects (photos, music, e-books, games, etc.) The management of these will be possible on the Desktop.
- **Closet** is the place where the users can change their personal settings about the 3D environment and their avatars. The appearance of the avatar can be changed, for example, by applying alternative clothes and accessories.

The Café: This is a public space for interacting with other users through chat, text walls, voice conversations, etc. Social interactions will be the main focus of the Café including special areas for different activities:

- The **Corner of Games** will offer the opportunity to play multi-/single player games.

- The **Exhibition Area** is a place to organize exhibitions or to attend exhibitions organized by other users. There will be a pile of paper for the users to write comments of the exhibitions. Moreover, there will be a ranking of the most important exhibitors and most liked photographs month by month.
- **Hall** is a public space to get together. This place can be used as a meeting point for several events.
- **Café Wall:** here users can publish notes and announcements of some events that they want to organise in the virtual, and even in the real world.

The Library: This is the place for cultural events, education, digital information and entertainment sources (e.g. links to e-books, movies, courses, conferences, etc.). The focus of this place is also on informing users and providing them with information on various topics:

- **Notifications Board** lets users check upcoming events along with rooms in which these events will take place (i.e. auditorium, conferences/lectures room, gym, etc.).
- **Helpdesk** is the area where users can look for help on using 3rD-LIFE and various other topics such as computer usage, languages. However, except for the guided 3rD-LIFE tour, the content and the offer available are user generated. If needed/desired, this guide will be available everywhere and easy to find by the user at any moment in their navigation through the virtual space.

The following scenarios will be used in the user trials in T.2.7 End-user analysis and validation. There the users will be informed about 3rD-LIFE and an introduction about the basic features and functionalities will be given. A Guided Tour will be prepared, which will also be used at the Helpdesk later.

In this Guided Tour, the basic information for logging into 3rD-LIFE will be given and basic specifications of the avatar will be set up.

After that, the users will have a walk together with a virtual guide who will show them the new 3D environment, its buildings and what can be done at each special area. Also, some basic skills will be shown by the guide, such as how to move around and communicate in the 3D environment, how to upload information, etc.

6.1. SCENARIO 1

6.1.1. PART 1: MY ROOM

Laura, a 66 year old woman, receives an e-mail on her e-mail software (e.g. Outlook, Thunderbird, etc.) or webmail (e.g. Hotmail, Yahoo, etc.) from 3rD-LIFE telling her about an event happening today in the *3rD-LIFE Library*. The email contains the direct link to enter the 3rD-LIFE environment. Laura uses that link and logs in: her avatar appears in *My Room*.

First, Laura checks her *Inbox* and reads the details about the event in the *3rD-LIFE Library* that was mentioned in the email. Laura reads the schedule, the topic of the event (a concert) and confirms her attendance at the event, which will take place one hour later.

Laura lives in a small town and has many friends living in other cities. She has not logged into 3rD-LIFE for a while and wants to know if someone had visited her "*Room*" in the meantime. She also wants to have a look at the messages sent to her. Therefore, Laura goes to the *Communication Area* and sees some letters in her Inbox – messages left for her. She reads the message from Antonio, a 65 year old friend living in another city, who visited her 15 minutes ago and asked if she planned to attend the event at the *3rD-LIFE Library* today. Laura decides to communicate with Antonio over 3rD-LIFE. Laura will do it in one of the following ways. The final scenarios will be decided in the future, based on the development of the platform and on the decision of the consortium partners.

In the first way, Laura's avatar stands in front of her *Communication Wall* and writes on a sheet of paper to communicate with Antonio. Both of them want to attend the event at the *3rD-LIFE Library*, so they will meet there in an hour.

Then the avatar takes an envelope (next pile) and writes the name of the user. Then the paper is inserted in the envelope and thrown into a nearby mailbox. The message then automatically arrives to the Inbox in Antonio's room. In case Antonio's message settings include message delivery to his real-world e-mail and mobile phone (SMS), the message will also be sent there.

An alternative scenario for this aspect could be that Laura's avatar use a virtual telephone in her room, and call to Antonio in the 3rD-LIFE environment. Antonio's telephone rings in his

room. He picks up the phona and talks with Laura using their headsets/microphone and speakers with their own voice.

As Laura has already almost an hour before the event, she decides to play some cognitive games (Lumosity) by clicking the corresponding 3D object on her *Desktop*.

After playing for a while, Laura decides to change her appearance and looks for alternative clothes in the *Closet*. Once ready, she leaves *My Room* to go to the event at the 3rD-LIFE Library.

6.1.2. PART 2: THE LIBRARY

There are two ways so Laura can get into the 3rD-LIFE Library: either by teleporting or by walking. Today she wants to walk to the *Library*. During the walk, she meets other users and greets those she already knows.

Laura arrives at the *Library*, walks to the Notifications Board where she checks the details of the event she wants to attend (hour, location, type of event, people attending) and goes to the location where the event is going to take place. She can do this either by teleporting or just by walking. This time she chooses teleporting.

Once there, she sees that other users are also waiting to watch the event: this week it is a concert.

After talking with some other attendants for a few minutes, she meets her friend, Antonio, and they sit together and talk before the event starts.

As they have enjoyed the concert, they decide to go to the *Café* after the concert and see who else is there.

Before going to *The Café*, Laura notices that there is a German/Spanish course scheduled at the *Library*. She decides to attend the course; therefore she sends the date of start to her 3rD-LIFE calendar as a reminder. When she is back at her *Room*, she will have a look at the details about the language course.

6.1.3. PART 3: AT THE CAFÉ

Laura and Antonio arrive at *The Café*, where there are more friends that did not attend the concert.

They talk together for a while and they decide to go to the *Corner of Games* at *The Café* and play a game together. One of them decides to join a group that is watching a very challenging chess play taking place right now.

As the group of friends and Laura arrive at the Corner of Games, she remarks that an important chess competition begins soon. She wants to participate and follows the instructions given: "Put your name in the members list if you want to participate. You will find the list near the rest of activities in the Corner of Games".

6.2. SCENARIO 2: EXHIBITION AT THE CAFÉ

Laura sees that there's a photo exhibition at *The Café*, on the *Exhibition Walls*, put up by a 3rD-LIFE user, who wants to organize a trip to the mountains shown on the photos. This person is not a friend of Laura and is looking for people to go with her.

Laura attends the exhibition together with Antonio. They write comments for some of the photos by taking blank sheets of paper from the pile near the *Exhibition Wall* and putting them on the wall under respective pictures. Laura also wants to show her preference for a photo by rating it by clicking in the "I like it" or "Start" button. The owner of the photos receives a notification in his/her *Inbox* each time there's a new comment or a rating of one of the pictures.

There is also a list in the *Café Wall*, for the exhibition visitors who are interested in the trip to the mountains so that they can put their names there. Laura and Antonio put their names on the list.

After a couple of days, when the exhibition is over, the owner of the exhibition, Amanda, arranges a meeting at her room with the interested people to discuss the details of the trip.

Laura, Antonio and others who listed their names receive a notification with the details of the meeting in their *Inbox*.

6.3. SCENARIO 3: LANGUAGE COURSE

Laura checks her calendar in her *Room* at the *Communication Area* and sees the reminder for the German/Spanish language course, she was curious about. She reads the details about the course and has a look at the profile of the 3rD-LIFE user, Markus, who is organising it.

The class is divided into 2 parts:

- Usual class meeting regularly at the same place with a teacher.
- Mobile class visiting virtual spaces in 3rD-LIFE, where they can practice the language (i.e. a virtual greengrocer for practising fruits' names).

Laura decides first to attend the usual class for some basic information and then she wants to participate in the mobile class visiting virtual places to practice the language. She writes Markus a message over 3rD-LIFE mail that she will be attending the classes. Markus creates a language course group in his contact list and adds Laura to that group.

At the starting date, Laura and other interested 3rD-LIFE Users come to the Library. Markus is standing near the sign "Language Course today at 14 o'clock" and greets everybody, who had written him that they would be attending.

After 2 weeks of class meetings, they meet for a mobile class meeting and visit a grocery store together.

In the first part of the class, Laura learns some German or Spanish words about fruits, vegetables, as well as quantities and numbers. The words will appear written next to a real photograph of the product. In order to learn properly the pronunciation of the words, Laura clicks on the word and she listens in her headphones how to pronounce the word. Finally, Laura has to pronounce the word in front of a microphone and she will know if she is properly pronouncing the different words by a speech-recognition system or by sending the recording of her pronunciation task to another 3rD-LIFE user, Markus, who speak properly

the language she is learning. Markus will listen the recording and he will correct Laura pronunciation.

After learning the words, Laura receives a written shopping list with different products and quantities. Then she goes to the virtual grocery store. Once there, she sees virtual representations of several products, without the names written. Her task is to select the product in the requested amount according to the shopping list; or she might be also asked to read the shop list and if Laura properly pronounces the words she will successfully finish the task.

7. CONCLUSION

This document describes the scenarios that show the usage of 3rD-LIFE in a real-life setting. These scenarios were made with the aim of fulfilling the 3rD-LIFE objectives according to the obtained information in the requirements analysis.

Furthermore, the scenarios were carefully thought to assure a maximum of realism. People in the scenarios are similar to the user definition given in D2.1; and the activities that they have to perform are in an everyday context and the actions are also ordinary.

8. NEXT STEPS

The described scenarios will help us in the development of the final 3rD-LIFE solution. The next steps will mark the beginning of the technical development of the individual components of the system. Though, it is important not to forget that we are still in early stages of the project and that unforeseeable things might force us to make adjustments to the presented scenarios.

9. REFERENCES

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