

SOCIABLE DELIVERABLE D3.3

“Services Migration, Localization and Customization Specifications”



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Abstract

The present deliverable is devoted to three distinct aspects of the SOCIABLE services, namely localization (to five languages (Italian, Spanish, Greek, Norwegian and English)), customization (to different countries, users and user groups) and migration (from existing services). In terms of localization the deliverable presents the specifications of the SOCIABLE internationalization framework, which minimizes the effort required to localize the SOCIABLE ICT services in the target languages. In terms of customization, the deliverable specifies how SOCIABLE applications and sessions can be customized in order to meet the needs of different user groups participating in the SOCIABLE pilots. Finally, the deliverable explains that the selection of the Microsoft platform has obviated the need for migration requirements, since SOCIABLE does not entail the migration of any applications / services from the ElderGames project.

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Table of Contents

Revision History	2
Abstract.....	3
Table of Contents.....	4
List of Figures	4
List of Tables	4
Executive Summary.....	5
1. Introduction	7
2. Overview of the SOCIABLE Localization and Internationalization Process.....	9
2.1 The need for localization and internationalization.....	9
2.2 Overview of Localization Needs.....	9
3. Services Localization	11
3.1 Main Elements of SOCIABLE Localization Framework.....	11
3.2 Internationalization Capabilities of the SOCIABLE Technologies	11
3.3 The SOCIABLE Localization and Internationalization Framework	13
3.3.1 Provisions for Localization in the SOCIABLE Database	13
3.3.2 Provisions for Localization in the SOCIABLE applications packaging and deployment paradigm.....	14
3.3.3 Provisions for Localization in the SOCIABLE Surface Shell Applications	15
3.4 Localizing Cognitive Training Games.....	15
3.5 Localizing the Book-of-Life.....	16
3.6 Localizing the Back-office.....	17
4. Services Customization	19
4.1 Games Customization	19
4.2 Sessions Customization.....	19
5. Services Migration in SOCIABLE	21
5.1 Migration of Games	21
5.2 Migration of “Book-of-Life”	21
6. Conclusions	22
7. References	22

List of Figures

Figure 1: Part of the SOCIABLE database schema – The database tables include localization placeholders for all the target languages.....	13
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List of Tables

Table 1: XML Deployment Descriptors for the SOCIABLE applications making provisions for localization (the <GameInfo> section is given/presented as an example)	15
Table 2: Overview of the Localization Needs of the SOCIABLE Games	16

Executive Summary

SOCIABLE organizes pilot in four different countries, with the participation of native users in each one of the pilot sites. This multinational and multi-cultural character of the project asks for the localization of the SOCIABLE applications in four languages namely Italian, Greek, Spanish and Norwegian. Furthermore, all SOCIABLE applications must be available in English, which is used as an intermediate language, which is understandable to the whole SOCIABLE consortium. We also envisage that SOCIABLE might be localized in more languages in order to reach potential customers across the EU, as part of its exploitation strategy. For these reasons localization is an integral process of both the SOCIABLE workplan and later evolution. Hence, it is essential to perform the localization of the SOCIABLE services in a disciplined and organized way, and through minimal additional effort.

SOCIABLE has devised an internationalization framework, which can provide the means for structured and efficient localization of the SOCIABLE services. This deliverable is devoted to the specifications of the SOCIABLE internationalization framework, which relies on the internationalization capabilities of the underlying SOCIABLE technologies (notably the MS .NET framework). Based on these technologies the SOCIABLE framework is built upon three main pillars:

- Enhancements to the SOCIABLE database, which makes provision for storing and managing data associated with localized version of the text and media files that support the SOCIABLE services (such as the cognitive training games).
- Building of localization support within the SOCIABLE packaging and deployment paradigm, which makes provisions for deploying localized "bundles" of SOCIABLE services (such as games). The SOCIABLE packaging and deployment paradigm facilitates the population of the SOCIABLE database based on the locale of the "bundles".
- The implementation of localization capabilities within the SOCIABLE shell applications, which enable automatic detection of the end-user's locale and the subsequent localized execution of the respective services.

The deliverable elaborates on the mechanisms that support the internationalization framework. Moreover, it lists the localization requirements of the SOCIABLE applications and services (i.e. of the cognitive training games, the book-of-life and the back-office services). Note that the SOCIABLE services have varying localization requirements, ranging from simple localization of prompts and GUIs (graphical user interfaces) to localization of media files.

As its title indicates, the deliverable focuses also on the customization specifications of the SOCIABLE services. Customization refers to the adaptation of the SOCIABLE services to the needs/preferences of specific user groups (e.g., based on their culture or medical requirements). The deliverable lists the customization specification of the SOCIABLE services, along with SOCIABLE tools and techniques that support it.

SOCIABLE: Motivating platform for elderly networking, mental reinforcement and social interaction

WP3- Services Specification

Deliverable D3.3: "Services Migration, Localization
and Customization Specifications"

Finally, the deliverable explains that services migration requirements are no longer relevant to the SOCIABLE project. Indeed, following the selection of the Microsoft surface table as the main platform/device of the project, the project does not rely on the migration of applications/services from the ElderGames platform. Instead, all SOCIABLE services are exclusively developed/integrated for the needs of the project, based on controls and sample applications of the platform vendor (i.e. Microsoft).

1. Introduction

The main goal of the SOCIABLE project is to pilot and evaluate a novel ICT based approach for cognitive training and social activation, which is highly based on the merits of multi-touch surface computing paradigm. To this end, SOCIABLE organizes pilots at seven different pilot sites, which are dispersed across four different countries, namely Spain, Italy, Greece and Norway. The multi-national character of the SOCIABLE pilots imposes a need for delivering the services at multiple languages, which asks for a comprehensive localization process. At the same time, the SOCIABLE services will have a personalized nature, which will enable their customization to the needs of different target groups, pilot sites, as well as to individual elderly-needs. To this end, a customization process is also deemed necessary. Finally, to the extent that some services was to be migrated or reused from legacy services, a service migration process was also envisaged when the project was inspired. Migration referred to the possible reuse of the platform and/or games from the ElderGames project. Following the consortium's decision to adopt the Microsoft Surface platform, no Eldergames IPR is (re)used in the project, as also clearly stated in the latest Description of Work (DoW) document of the project.

The present deliverable focuses on specifications for the localization and customization processes within the SOCIABLE project. It was originally planned to include also the specification of migration process, based as already outlined given the current orientation of the project's developments these processes are no longer required. As a result, the deliverable is confined to the localization and customization aspects. In particular:

- The Services Localization aspect concerns the localization of the SOCIABLE platform and services to the languages of the various SOCIABLE sites, namely Italian, Greek, Norwegian and Spanish. For the localization task, SOCIABLE has devised and implemented a localization/internationalization framework, which is illustrated in the present deliverable.
- The Services Customization, which concerns the tailoring of the SOCIABLE services to the target user needs. The customization aims at serving the individual needs of the various pilot sites, the bundling of SOCIABLE services, as well as the customization of services to individual needs.

Prior to presenting the SOCIABLE localization framework, an overview of the SOCIABLE platform and services is provided. This overview aims at facilitating the reader to understand the scope of the present deliverable. Moreover, we present what can and should be localized in the scope of the SOCIABLE platform and services.

In terms of customization, we specify the mechanisms for customizing the SOCIABLE services to the users'/patients' needs. We also discuss customization needs that were elicited during the requirements engineering process of SOCIABLE (i.e. in the scope of WP1). In addition to presenting the customization specifications, we also address the service migration issues, through briefly discussing/presenting why the service migration activities are no longer required in this project.

SOCIABLE: Motivating platform for elderly networking, mental reinforcement and social interaction
WP3- Services Specification
Deliverable D3.3: “Services Migration, Localization
and Customization Specifications”

The deliverable is structured as follows: Section 2 following this introductory section provides an overview of the SOCIABLE platform and services, with emphasis on the components that will have to be localized. Section 3 presents the SOCIABLE localization technologies, framework and related technical specification. Section 4 is devoted to customization specifications, while section 5 discusses service migration issues. Finally, section 6 concludes the deliverable.

2. Overview of the SOCIABLE Localization and Internationalization Process

2.1 The need for localization and internationalization

SOCIABLE is piloting a new ICT based model for cognitive training and social activation of elderly suffering from mild forms of dementia and/or cognitive decline. The SOCIABLE model is based on pleasant gaming activities, which are executed over surface computing platforms (namely the Microsoft Surface Table and a Multi-touch Surface Laptop (Surface PC)). Hence, the SOCIABLE model is supported by a rich set of hardware, software and middleware components, which implement and integrate a number of play activities over the surface platforms. Since the SOCIABLE model will be piloted in four different countries (Italy, Greece, Norway, Spain) with native users'/patients' these components should support the localization of the services in the target (four) languages. Moreover, English should be also supported as a fifth language, which is the working languages within the consortium and hence the vehicle for reviewing the project's results.

In order to support these five languages the project has to implement a “localization” process and associated mechanism. In the context of the SOCIABLE project, we characterize as “localization” the process of adapting the text and applications comprising the SOCIABLE services, with a view to enabling the use of the SOCIABLE services in all pilot sites according to their cultural and linguistic needs. Hence, the localization process should enable the use of the SOCIABLE services by Greek, Italian, Norwegian and Spanish users in their native languages.

In order to efficiently manage the localization process, SOCIABLE is devising an “internationalization” approach. This approach hinges on planning and implementing the SOCIABLE services, so that they can easily be localized for the five target languages and cultures. Note that the objective of the internationalization process is to achieve the localization with minimal needs. Ideally, the deployment of the SOCIABLE services for multiple languages/sites must be performed without any additional development effort, but through the deployment of appropriate configuration files (i.e. files with the required linguistic resources). Furthermore, the switching between languages should be as automated as possible, while also being transparent to end-users.

2.2 Overview of Localization Needs

The SOCIABLE internationalization/localization process should strive to support all five languages in the delivery of the following services:

- The overall SOCIABLE environment, comprising the shells enabling users' login and navigation across the SOCIABLE services. Prompts, menus and other texts should be available in all target languages.

SOCIABLE: Motivating platform for elderly networking, mental reinforcement and social interaction

WP3- Services Specification

Deliverable D3.3: "Services Migration, Localization and Customization Specifications"

- The SOCIABLE cognitive training games, which are offered in the scope of the SOCIABLE session. Cognitive games tend to be ergonomic motivating multimodal and multimedia applications. Hence, their localization asks for:
 - Localizing the text of the games (such as prompts, controls and instructions).
 - Localizing the media files comprising the game, including audio, video and image files.
 - Localizing the semantics of worlds/texts, since for some cognitive games (e.g., word games) localization is not merely the translation of the texts.
 - Localizing the configuration files associated with the games, such as XML based deployment descriptors (e.g., resource descriptors according to the SOCIABLE packaging and deployment paradigm).
- The SOCIABLE Book-of-Life (BoL), another multimedia application used to boost the social activation of the users. Its localization entails similar elements/aspects to the localization of cognitive games (i.e. texts, media files, semantics, configuration files).
- The SOCIABLE back-office applications, which provide services to the health professionals. The back-office applications have to be localized in terms of their data and controls (such as text fields, selection lists, check-box choice, instructions and more).

3. Services Localization

3.1 Main Elements of SOCIABLE Localization Framework

The SOCIABLE localization framework is based on the following pillars:

- **The internationalization capabilities of the underlying technologies of the SOCIABLE services:** These technologies provide the means for building internationalized applications, which will be also exploited in the scope the SOCIABLE development and integration activities in WP4. They will be used to handle locales, different encoding and support for the characters of the various languages.
- **The surface shell applications specified in the scope of the SOCIABLE platform:** SOCIABLE will implement customized shell applications able to automatically detect the locale of the end-user, with a view to invoking/loading the appropriate linguistic resources.
- **The design of the SOCIABLE databases:** The SOCIABLE database will be specially designed in order to hold text and other resource in all target languages. Hence, the proper population and management of data in the target language can enable the internationalization of the SOCIABLE applications.

These pillars are in more detailed described in the sequel.

3.2 Internationalization Capabilities of the SOCIABLE Technologies

SOCIABLE is implemented based on state-of-the-art technologies, which provide support for internationalization. In particular, the main ICT components of the SOCIABLE platform and services (described in Deliverables D3.1 and D3.2) include:

- The Microsoft Surface Table hardware and associated Microsoft SDK software
- The Surface PC hardware.
- A number of cognitive training games, which are implemented as MS .NET applications over the surface platforms.
- The Book-of-Life application, which is also implemented as a .NET application.
- The SOCIABLE back-office application, which is another web based .NET application, which offers tools, functionalities and services to the medical professionals.

These technologies come with support for international applications (which is sometime denoted as i18n).

Localization in MS .NET

As already outlined due to the choice of Microsoft Technology, the MS.NET framework is the core implementation technology of these applications. Internationalization in MS. NET is a well known and widely supported process. In particular, resource files in .NET (e.g., Resx) support multiple localized versions of the resources, while at the same time providing the means (i.e. API) for automatically determining the correct resources that have to be loaded/used. As a typical example,

SOCIABLE: Motivating platform for elderly networking, mental reinforcement and social interaction

WP3- Services Specification

Deliverable D3.3: "Services Migration, Localization and Customization Specifications"

in order to create a localized application that exploits localized strings, one can create a resource file containing all the strings of the application (e.g., CognitiveGame1Strings.resx), and accordingly define multiple versions of the resource file for all the SOCIABLE target languages (e.g., CognitiveGame1Strings-EL.resx (for Greek), CognitiveGame1Strings-NO.resx (for Norwegian), CognitiveGame1Strings-IT.resx (for Italian), CognitiveGame1Strings-ES.resx (for Spanish). In this localization technique, the MS Visual Studio creates static classes (in the C# language), which enable retrieval of these strings.

.NET caters also for the localization of other components (such as Windows Form). Control and components are more easily customized through their property sheets. The process is as simple as switching the "Localizable" property of the controls to true. This switching/setting will enable the .NET framework to generate appropriate resource files and load text from there instead of embedding it inside the implementation code of the interface.

Windows Presentation Foundation (WPF) Localization

As explained in D3.1, SOCIABLE uses WPF as a presentation framework over the surface devices. Hence, techniques for localizing WPF applications come into foreground. WPF localization is slightly more challenging than .NET localization. In general WPF localization is also based on retrieving localized string from embedded resource files. Two techniques can be used:

- Localizing XAML (Extensible Application Markup Language) attributes
- Localizing the XAML source, which is handy whenever localization of bigger portions of the XAML code.

In both cases the localization of XAML based GUI code, can be performed through accessing resource files, or even a database containing the localized text.

ASP .NET Localization features

Given the web based nature of several SOCIABLE applications, the SOCIABLE localization framework will leverage the latest localization features supporting by ASP .NET, which include:

- The ability to automatically detect the browser language. In this way it is possible to adapt the web based application to the end-users' locale (assuming that the user's language coincides with the language of the requesting browser).
- The creation and management of declarative localization expression, which can obviate the needs for manually writing code in order to handle resources. The new expression syntax of ASP.NET 2.0, enables automated substitution of resources.
- The support of the standard resx file format in order to automatically retrieve resources at runtime. The process was briefly described in earlier paragraphs.
- Support of encodings beyond Unicode, which is very handy when dealing with browsers that do not support Unicode.

Overall the technologies supporting the SOCIABLE implementation provide the means for turning SOCIABLE applications to fully multilingual and personalized applications.

3.3 The SOCIABLE Localization and Internationalization Framework

The SOCIABLE localization/internationalization framework should leverage the above-mentioned capabilities of the SOCIABLE technologies in order provide a general mechanism for the internationalization of the SOCIABLE applications and services. This localization framework entails interventions in several elements of the SOCIABLE platform, such as the SOCIABLE database, the shell applications and the SOCIABLE packaging and deployment paradigm. These elements are described in Deliverable D3.2. Following paragraphs elaborate on the interventions to these elements towards implementing the SOCIABLE localization framework. Note that the localization framework constitutes an infrastructural element, and therefore can be naturally considered part of the SOCIABLE platform (according to the definitions given in D3.1 and D3.2).

3.3.1 Provisions for Localization in the SOCIABLE Database

As described in deliverable D3.2 and shown in Figure 1, (which is copied from D3.2), the SOCIABLE database holds and manages the data needed for managing SOCIABLE sessions and play cognitive games.

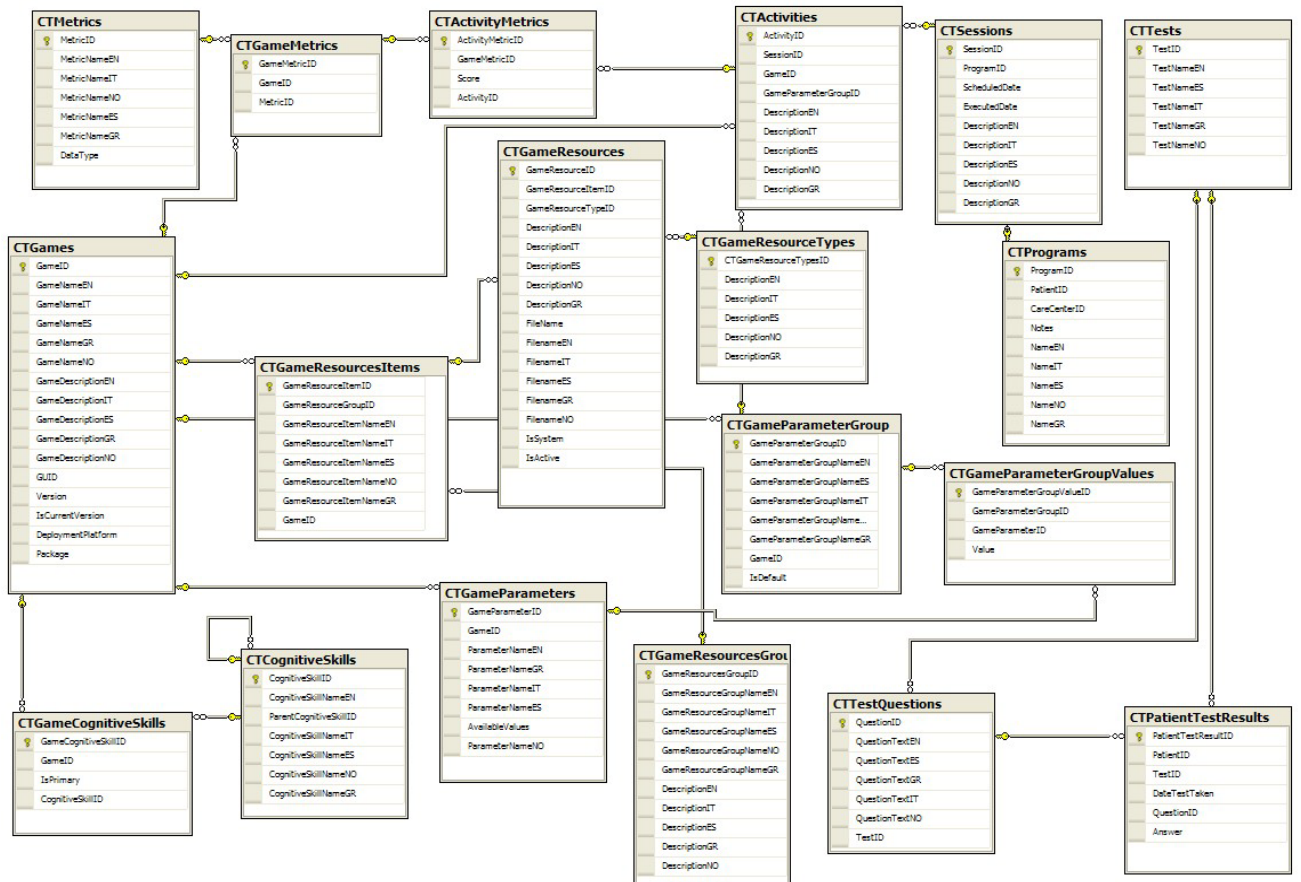


Figure 1: Part of the SOCIABLE database schema – The database tables include localization placeholders for all the target languages

SOCIABLE: Motivating platform for elderly networking, mental reinforcement and social interaction
WP3- Services Specification

Deliverable D3.3: "Services Migration, Localization
and Customization Specifications"

The SOCIABLE database design makes provision for the localization of the services in multiple languages. To this end, each table holding data associated with the overall SOCIABLE environment or individual games includes multiple attributes which correspond to all five target languages. In this way, surface applications (e.g., WPF based applications) can retrieve the appropriate resources according to the locale of the user. Some prominent examples follow:

- The **CTCognitiveSkills** table maintains attributes for describing the various skills at all five languages.
- The **CTGameResources** table maintains game resources and makes provision for holding localized versions in the target five languages.

Similar localization provisions are made in the design of the rest tables holding resources that have to be provided in multiple languages. Hence, SOCIABLE holds multilingual resources within its database. The later will have to be populated appropriately during the localization process in WP5.

Note that the above mentioned database design is reflected at both the local databases (hosted within the surface devices) and the central medical database of the care centre. The localized resources will be loaded from the local database of each user/device. The central database will provide updates to the localized information, whenever the local database is synchronized with the central one.

3.3.2 Provisions for Localization in the SOCIABLE applications packaging and deployment paradigm

In addition to taking localization provisions in the SOCIABLE database, there is also a need for populating the respective database entries. The mechanism for performing this hinges on parses the XML file containing game metadata (i.e. the deployment descriptor of the games) and accordingly to create all the required (for the given game) entries to the care centre database. As shown in Table 1 the XML descriptor includes information for localizing the game in multiple languages. The internal mechanism for parsing the file, extracts the parameters and populates the respective entries of the database tables.

```
<GameInfo>
  <GUID>6933B85B-C291-4645-8931-1350189011BJ</GUID>
  <Individual>True</Individual>
  <Package>puzzle.zip</Package>
  <GameNameEN>Puzzle</GameNameEN>
  <GameNameGR>Παζλ</GameNameGR>
  <GameNameIT></GameNameIT>
  <GameNameES></GameNameES>
  <GameNameNO></GameNameNO>

  <GameDescriptionEN></GameDescriptionEN>
  <GameDescriptionGR></GameDescriptionGR>
  <GameDescriptionIT></GameDescriptionIT>
  <GameDescriptionES></GameDescriptionES>
  <GameDescriptionNO></GameDescriptionNO>

  <Version>1.0</Version>
  [<EnforceCurrentVersion>True</EnforceCurrentVersion>]
```

```

    <DeploymentPlatform>TabletPC</DeploymentPlatform>

    </GameInfo>
    
```

Table 1: XML Deployment Descriptors for the SOCIABLE applications making provisions for localization (the <GameInfo> section is given/presented as an example)

3.3.3 Provisions for Localization in the SOCIABLE Surface Shell Applications

As outlined in D3.2, SOCIABLE is implementing specialized shell applications over the surface platforms of the project, with a view to personalizing the experience of accessing the SOCIABLE platform and services. Recall that the surface shell application makes for example provisions for automating the login process, while also synchronizing the end-user’s device/terminal with content and updates of the main (database) server of the care centre.

Language selection is another process that should be made as non-obtrusive to end-users as possible. To this end, the SOCIABLE shell applications have to incorporate mechanisms for automated detection of the locale of the requesting application (e.g., the end-user’s browser in the case of the back-office services and the services running on Surface PCs). Following the detection of the locale, the rest functionalities of the SOCIABLE localization framework will be activated in order to load/use the appropriate resource files and database entries.

Note that the locale could be set by each care centre, as part of the configuration work associated with the installation, deployment and use the SOCIABLE platform in the care centre. Despite the automated detection of the locale, the user’s should be provided with functionalities for changing the locale of the SOCIABLE services. Furthermore, login processes (e.g., using a SOCIABLE tag/card) could act as verification processes for the language selected/used. This means that as soon as a user specifies and uses a target language, the locale set in the care centre could be overridden, in order to better match the end-user’s preferences. This can be for example the case in care centers that host international or bi-lingual elderly.

3.4 Localizing Cognitive Training Games

The SOCIABLE localization framework outlined above will be used to localize the cognitive games of SOCIABLE. Despite the existence of a general localization framework, each individual game has its own localization needs. These needs are briefly presented in the following table (Table 2), which lists what has to be localized in each of the twenty-seven games that have been defined in Deliverable D2.2 of the project. Note that there are several games that do not require localization, in terms of their content. In all case however, instructions have to be available in all five languages.

Cognitive Game	Text	Images	Audio
Hide and seek	YES	YES	YES
Remember the story?	YES	YES	YES

SOCIABLE: Motivating platform for elderly networking, mental reinforcement and social interaction
 WP3- Services Specification
 Deliverable D3.3: “Services Migration, Localization
 and Customization Specifications”

Who belongs where?	NO	NO	NO
Remember the design	NO	NO	NO
Do you remember your order?	NO	NO	NO
Don't forget!	NO	NO	NO
What is in the scene?	NO	NO	NO
Par and Par	YES	YES	YES
Analogies	YES	YES	YES
7 Differences	NO	NO	NO
Take away menu	YES	YES	YES
Dilemmas	NO	NO	NO
Plan your day at...	NO	NO	NO
Guess who?	YES	YES	YES
Switching	NO	NO	NO
Lost in migration	YES	YES	YES
Scrambled words/sentences	YES	YES	YES
Incomplete grids	NO	NO	NO
Word /sentence completion	NO	NO	NO
Synonyms/Antonyms	YES	YES	YES
The intruder	NO	NO	NO
By the rules	NO	NO	NO
Word sort	YES	YES	YES
Domino	NO	NO	NO
Puzzle	YES	YES	YES
An American in Paris (modified)	NO	NO	NO
My home	YES	YES	YES

Table 2: Overview of the Localization Needs of the SOCIABLE Games

3.5 Localizing the Book-of-Life

The Book of life is considered as other cognitive game in development and localization aspects. For this reason it is developed using the same technologies involved in the games development (MS.NET, WPF, and Microsoft Surface SDK).

As previously mentioned in this document MS.NET supports localization by using the resources files (.resx). In order to localize the Book-of-Life application a resource file containing all the strings of the application (BookofLife.resx) has been created. This file has been translated to multiple versions for all the SOCIABLE target languages (e.g., BookofLife EL.resx (for Greek), BookofLife -NO.resx (for Norwegian), BookofLife -IT.resx (for Italian), BookofLife -ES.resx (for Spanish).

Apart from the texts of the application the Book of Life also contains media files (photos and audios). The photos do not need localization because they do not contain any text. The audio files are songs that remind the elderly different stages of his life. The application will contain songs in different languages but they are not going to be translated.

3.6 Localizing the Back-office

The back office consists of two main parts:

- the web application for the system administration;
- the shared services offered through the web-service.

During the installation, the application the system administrator must define the language of the deployment site; then, when the user logs in, the application determines if the user's language corresponds to that of the installation; if so, it is proposed to the user the configured language, otherwise English will be the adopted language.

This operational mode is required because all the operations performed on elements of the deployment site shall be submitted in a language understandable to all users of the site.

A prerequisite to the user of the back-office is to speak English and, of course, the local language.

Shared services are instead called by the applications (administrative console, games and Book of Life) by indicating as a parameter the language to be used for the reply messages and the possible error messages; this allows to all caller applications to propose to the user the preferred language, without interfering with other applications.

In the sequel we describe the mechanisms used for localization.

For the administration application, .Net web application, the localization involves the use of mechanisms of the .Net framework (illustrated in paragraph 3.2) and some other mechanisms implemented "ad hoc".

In particular, the application makes use of the following elements of the .Net framework:

- The tools to determine the language selected by the user or the default language set in the browser, if you have not selected any specific language.
- The resource files with the extension .resx, that will constitute the set of labels displayed to the user.
- Extensions created "ad hoc" of the asp.net control to show from time to time the database elements corresponding to the selected language (for example to show the user menus, the lists of properties such as marital status, etc.).

The services offered as a web service in turn provide:

- The determination of the user's language, passed as a parameter of the call.
- The use of the appropriate field in the database, according to the selected language.
- The use of the resource files with extension .resx as for the web-application.

For the localization of the application it is necessary to define the following elements that will be used automatically by the system:

SOCIABLE: Motivating platform for elderly networking, mental reinforcement and social interaction

WP3- Services Specification

Deliverable D3.3: "Services Migration, Localization
and Customization Specifications"

- Resource files with extension .resx, all contained in one project in order to facilitate the translation.
- Localization of the interface elements contained in the database (menu elements, registers of cities, regions and nations).

4. Services Customization

SOCIABLE is organizing its pilots based on a common consistent methodology and an associated set of technological developments. Hence, the project strives to minimize deviations from the common methodology, which leads to only minimal customization of the SOCIABLE services (except for localization). However, the project will provide tools and techniques for personalizing elderly sessions. Furthermore, some customizations in the SOCIABLE platform will be realized in response to requirements stemming from the SOCIABLE surveys in WP1.

4.1 Games Customization

Some customizations of the platform in terms of the delivered games will be based on results derived from the SOCIABLE user requirements process. In particular, there were requirements about different balance of the number and type of games demanded in the various countries as follows:

- **Per-country preferences for word and picture games:** According to the SOCIABLE surveys, Spanish user showed a tendency towards word games, while the rest two countries (Italy and Greece) exhibited a balanced preference. As a result the SOCIABLE platform should deliver more word games in Spain, while maintaining a balanced mix in the other two countries.
- **Greater Effort to address Social Isolation risks in Italy:** SOCIABLE surveys confirm literature results about isolation risks, since the analysis of quantitative data showed correlation between cognitive impairment – measured with MMSE – and isolation). This phenomenon appears intensified among the Italian users, which asks for the delivery of more games during the use of the platform in Italy.

In addition to country-based localization, the cognitive games will be customized for the various users and user group. In particular, each game includes different difficulty levels matching the needs of different elderly groups.

4.2 Sessions Customization

The SOCIABLE pilot model will enable the customization of the elderly session by the medical expert. Such as customization functionality will be provided through the back-office services of the project (which have been specified as part of D3.1). In short the medical expert will be able to design individualized programme and sessions through controlling:

SOCIABLE: Motivating platform for elderly networking, mental reinforcement and social interaction

WP3- Services Specification

Deliverable D3.3: "Services Migration, Localization
and Customization Specifications"

- The number of sessions comprising a SOCIABLE programme.
- The number of games that can be played (by the elderly) within a SOCIABLE session.
- The specific games that comprise a SOCIABLE session.
- The difficulty level of the games (taking also into account the profile and medical record of the elderly).

5. Services Migration in SOCIABLE

During the early inception of the SOCIABLE pilot project, it was envisaged that SOCIABLE will reuse and adapt the ElderGames platform, as well as games that have been implemented in the ElderGames project. During the course of the project, the consortium has decided to use the commercial MS Surface platform for reasons that have been explained in depth in the scope of Deliverable D9.3 of the project. Following this decision the project is integrating and implementing cognitive games from scratch, without any reliance on or reuse of ElderGames IPR. This is explained further in the following paragraphs.

5.1 Migration of Games

Since Microsoft Surface was established as the platform for the SOCIABLE project, all games designed for the project are totally different from those integrated in the ElderGames Project.

The contents of the proposals for each of the established games have been defined by medical experts participating in the project and are based on activities that they use with their patients, on a daily basis. AIJU has carried out all the game designs for this project by relying on information provided by the medical experts. We have worked together with them to create new proposals that will ensure a design that adapts to the needs of the users, thus guaranteeing the therapeutic benefits we are aiming to achieve.

If the games that are included in ElderGames are compared with the ones being developed for the SOCIABLE project, it can be clearly demonstrated that there is no similarity between them and they are completely different.

5.2 Migration of “Book-of-Life”

The Book of life is a new application designed and developed exclusively for the SOCIABLE project in order to promote the social activation among the elderly users. It has no relation with the Eldergames project.

6. Conclusions

SOCIABLE organizes pilots in four different countries, which implies a need for localizing its ICT services. Acknowledging this need, the consortium has devised an internationalization framework, which eases the task of delivering services in multiple languages and locales. On the one hand this internationalization framework relies on the internationalization capabilities of the .NET framework and related technologies used in SOCIABLE. Indeed, .NET includes versatile mechanisms for localization, which make use of resource files in a way that obviates the need for any additional implementation effort in the scope of the localization process. On the other hand, internationalization in SOCIABLE is also based on the proper design of the SOCIABLE database and packaging/deployment paradigm. In the scope of the deliverable, we have presented the specifications associated with both the database and the SOCIABLE packaging/deployment paradigm.

Based on the SOCIABLE internationalization framework, the SOCIABLE technical team will proceed with the localization of cognitive games, the book-of-life and the back-office applications. Relevant requirements and specifications have been described in the scope of the document. Note that the localization process may involve multiple media, including text, video and audio.

In addition to localization, SOCIABLE will also customized its application to the needs of specific users and/or user groups. Such customization requirements stem from the SOCIABLE user requirements process, as well as to the need for personalizing the SOCIABLE sessions.

This deliverable was originally meant to cover a dimension/aspect of the SOCIABLE services, namely the migration of legacy services (from ElderGames) in order to server the needs of SOCIABLE. Since the project's decision to opt for the commercial Microsoft Surface platform, migration requirements (from ElderGames) are no longer valid. In the scope of the deliverable, we have explained that all SOCIABLE applications are developed/integrated in the scope of the project, rather than migrated from other background projects.

7. References

Guy-Smith Ferrier, ".NET Internationalization", Addison Wesley, ISBN 0321341384, June 2006.