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Abstract	This deliverable presents the demonstration plan and highlights the particular aspects of the i-Treasures platform that will be demonstrated at each sub-use case. The demonstration plan covers the period between the month 37 and month 45.
Keywords	i-Treasures project sub-use cases, Demonstration, Evaluation, Demonstration Plan, Demonstration Schedule

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List of Abbrevations

2D	Two Dimensional
3D	Three Dimensional
3DVMSL	Three Dimensional Visualization Module for Sensorimotor Learning
EEG	Electroencephalography
HBB	Human Beatbox
ICH	Intangible Cultural Heritage
LMS	Learning Management System
LPP	Laboratoire de Phonologie et de Phonétique

1. Executive Summary

This deliverable presents the initial demonstration plan of the ten sub-use cases of i-Treasures project. The major aim is to get in touch with the domain experts and potential communities in order to plan demonstrations of the major outputs of the project. Demonstrations are planned to begin in month 37, in the third year of the project after the end of the development phase, and will last until the end of month 45. In this initial plan, responsible partners have defined most of the details, however some details, such as exact dates and logistics are considered as future work, since it is quite hard to finalize those issues at the moment. It is planned to sort out such specific details as soon as possible as the required tools such as games, sensors get more fully developed.

2. Introduction

This deliverable presents the initial demonstration plan of the ten sub-use cases of i-Treasures project. The demonstration of i-Treasures project will start after month 37 and end in month 45. The aim of these demonstrations is to present and demonstrate usability of the main project outputs to the relevant communities and possibly get feedback from them. Therefore it should be noted that, demonstrations are not part of the exploitation plan and dissemination activities. So, demonstrations can be considered as the completion of technical work rather than exploitation.

Demonstration plan is strongly related with deliverable D5.1 "Report on Analysis of Educational Scenarios" where an effort was already done to define possible demonstration and learning contexts, as well as target populations. As it will be illustrated in the following, some of the planned demonstration activities target local communities; others are more general and target larger communities and general public.

The demonstration activities run under WP6 are expected to demonstrate the usability of the i-Treasures platform and its various functionalities in different contexts and to validate them, so to provide, together with WP7 (which is more specifically oriented to evaluation), further inputs to WP2.

2.1   Background of Work Package 6

WP6 aims to demonstrate the integrated system developed in WP5. Therefore the outcome of WP6 is expected to provide feedback to WP2 (Requirements and Specifications Identification) and WP7 (Technical Assessment and Evaluation). In WP2 system requirements and specifications are defined and tuned. So, it can be said that WP6 covers the demonstration process for the established system parts. In order to achieve this goal, an initial demonstration plan is prepared in this deliverable in order to define the demonstration objectives in each use/sub-use case. During the actual demonstrations it is planned to demonstrate the usability of the platform and its main components to the various users who will play a significant role through their active participation either as experts or learners.

Türk Telekom leads this work package with the help of the whole consortium. Figure 1 shows the general overview of this WP. As the figure shows, WP6 also provides input to WP7 (Technical Assessment and Evaluation). WP7 is responsible of general evaluation of the developed system, especially in terms of technical performance,

user acceptance and cost-effectiveness as well as assessment of the integrated platform developed within WP5. In this aspect, the demonstrations will produce additional input regarding user acceptance and usability. This issue is further discussed in section 3.5 "Evaluation Methodology". Another strong interaction is with deliverable D5.1, which defined a set of possible learning scenarios. All the contextual constraints as well as the pedagogical aspects defined in D5.1 are taken into consideration in the present deliverable, while defining the scope, demonstration scenarios and venues.

WP6 is comprises of four sub-tasks namely; a) Task 6.1 Demonstrator Planning, b) Task 6.2 System Demonstration for use case "Rare traditional songs", c) Task 6.3 System Demonstration for use case "Rare dance interactions", d) Task 6.4 System Demonstration for use case "Traditional craftsmanship", and e) Task 6.5 System Demonstration for use case "Contemporary music composition".
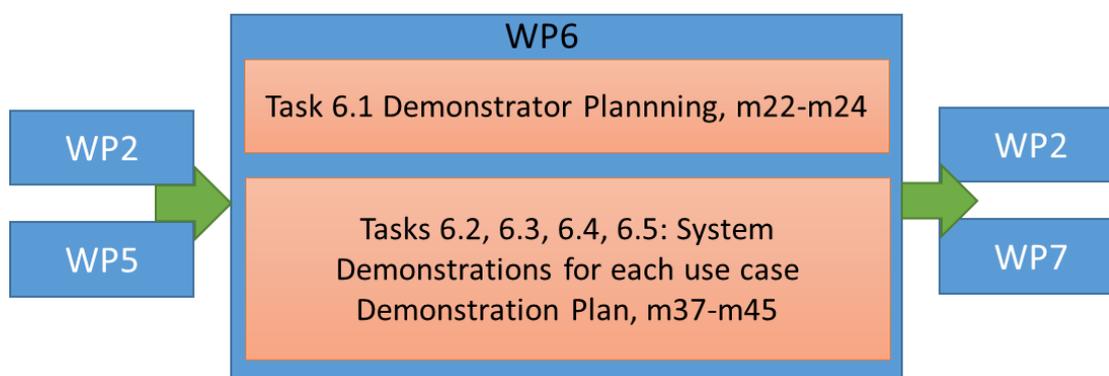
Figure 1 Overview of WP6: schedule, task plan, responsible partners and interaction with the other WPs.

2.2   Demonstration Constraints

Demonstration is aimed to prove the developed usability of the system with as many people as possible. However there are various constraints to be taken into consideration. First off all, we should pay attention to reach the correct audience in order to perform better demonstration and validation (please note that dissemination and exploitation are carried out under WP8).

Considering this fact, some sub-cases target very specific audience, such as secondary-school students, while others target the general public.

Another aspect is the identification of appropriate demonstration venue/s. In many plans we propose to use schools or museums as the main demonstration sites. However specific relevant events are also considered as an opportunity and some

demonstrations are planned to coincide with those events. Public places, like music clubs, are also used since they host the targeted audience. Besides, some partners have also planned specific demonstrations at their premises. It is also planned to visit community places and perform limited scale demonstrations.

2.3   Report Structure

The structure of this document is the following:

- Section 1 is the executive summary.
- Section 2 is this introduction.
- Section 3 presents in detail the demonstration plans of the ten sub-use cases. It also provides information regarding the evaluation methodology.
- Section 4 summarizes the conclusive remarks.

3. Demonstration Plan

There are ten sub-use cases under four use-case categories in i-Treasures project. This deliverable defines a specific demonstration plan for each sub use-case including the scope, scenario, participants and schedule of each plan.

3.1 System Demonstration Plan for Use Case "Rare Traditional Songs"

CNRS is the responsible partner for this use case as well as the Human Beat Box and Cantu in Paghjella sub use-cases. CNR is responsible for Canto a Tenore sub-use case and UOM is responsible for Byzantine Music sub-use case.

3.1.1 System Demonstration Plan for Sub-use Case "HBB"

Human Beatbox (HBB) is an artistic form of human sound production in which the vocal organs are used not only to imitate percussion instruments, but also wind and string instruments. In contemporary western popular music, human beat-boxing is an element of hip-hop culture, performed either as its own form of artistic expression, or as an accompaniment to rapping or singing.

This technique originated in the hip-hop movement in the United States in the 1980s. The Human beatbox was originally used to replace expensive electronic machines, then it has grown to become a genuine art form of its own. Today beatboxers meet in "battles" and a strong community develops online (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis")..

3.1.1.1 Scope

The goal of this use case demonstration is to demonstrate the usability of the i-Treasures platform for the boost of HBB singing technique. The Human beatbox can be considered as part of our still growing cultural heritage, but it remains on the margins. It is not recognized yet because it is still quite inaccessible, since there are no schools of Human beatbox yet. The knowledge transmission is oral and can be done either online or by introductory workshops. Sensitization or initiations in museums or classes of schools would make this art accessible to the general public. (see D2.1 – "First Report on User Requirements Identification and Analysis") Based on these observations, the scenario which has been chosen consists in an activity which could be displayed in museums / exhibitions / singing festivals / youth centres,

in order to give a brief introduction to these techniques by learning few basic sound productions, representative of the HBB. This tool is seen as a way to inform people about the existence of this culture, and encourage them to learn about Human beat-box by getting in touch with singing clubs for instance, after their experience with the proposed demonstration tool. The purpose of the use-case demonstration is thus to prove and validate the usability of this basic learning scenario for augmenting the awareness of the general public towards the existence of the HBB singing technique. To do so, a learning scenario including some specific functionalities of the platform has been created in the integrated Learning Management System (LMS) see D5.1 – "Report on analysis of educational scenarios"). The implementation of this learning scenario will be the basis of the planned demonstration.

3.1.1.2   Demonstration Scenario

The learning scenario created in the LMS aims to give a brief introduction to the Human beat-box singing technique to by-passers of any age coming to an exhibition/museum/music club, by learning a few basic sound productions, representative of this singing technique. Given the exhibition setup chosen for this scenario, the interaction with the system is designed to be very short. Discovering HBB can be in the form of an interactive show. The audience will be invited to take part in a story and to intervene in it's unfolding. By working their imagination, repeating and imitating the narrator, they will learn three Basic Human beatbox sounds (kick, snare, hi-hat), and master some combinations.

A playful approach will allow children to explore their articulatory possibilities. This will open them to the hip-hop culture and other traditional singing techniques that inspire Human beatbox.

The flow of activities reflects these objectives, but all the activities are optional, since visitors can come at any time and join one activity while having skipped all the others. One introductory activity on a singing performance (carried out using an informative video made available by the LMS), ideally precedes the practicing activities.

3.1.1.3   Demonstration Participants

The demonstration will take place in Paris either in a youth and cultural centre or in the context of a music club. The specific location will have to be determined once the first versions of the tool corresponding to the described scenario is presented to the

potential partners. The demonstration might occur in two steps, with the same scenario repeated at two different occasions.

The participants will hence be the general public coming to the museum/exhibition/music club. In addition to these general public with no knowledge about HBB singing techniques, experts and apprentices in HBB will be invited to the exhibition, so that the installation is tested both by general public and by HBB amateur singers ranging from novice to experts. CNRS will install the setup and supervise the demonstration.

3.1.1.4   Demonstration Schedule

Table 1 Demonstration plan of Human Beat Box sub-use case

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
In a youth club, cultural centre or music club venue to be decided, in Paris	To be decided according to the organisation selected for the demonstration.	CNRS	• People coming to see the exhibition or the music club (general public + HBB singing amateurs) • CNRS and UPMC project members	• computer • screen • Hyper-Helmet • Ultrasound sensor • Microphone • Nasal-accelerometer • EEG sensors • Lips motion camera • Acquisition tools

3.1.2 System Demonstration Plan for Sub-use Case "Cantu in Paghjella"

The Corsican Cantu in Paghjella is often described as one of the most ancient indigenous polyphonies of the Mare Nostrum islands. The Cantu in Paghjella, based

on oral transmission, has been accompanying generations of peasants in their everyday life in Corsica.

During the 20th century, the Cantu in Paghjella practice tended to decline. However in the 70s, the Riacquistu movement, which asserted the Corsicans' island-specific linguistic and cultural claims, gave a new take-off to the traditional polyphonic singing.

The Cantu in Paghjella is a tradition and an oral expression, a social practice, a ritual and festive event. The term Cantu in Paghjella is approximately translated into French by traditional Corsican polyphony. It designates a polyphonic male chant interpreted a capella by three voices (a seconda, u bassu and a terza) in both secular and liturgical types. If there are more singers, the bassu voice may be sung by more than one singer. According to the repertoire, diverse languages such as Corsican, Crusca Lingua (Toscan Corsican), Sardinian, Latin and Greek are used. The Cantu in Paghjella can be characterized by its technique, its context of execution and its mode of oral transmission. The Cantu in Paghjella technique is characterized by;

- Staggered entries of three voices: They generally enter in the same order: a seconda (main voice) begins, followed by u bassu (bass register) and finally a terza (tenor range). The very first sound, always launched by the seconda voice, must be perfectly tuned because it determines the pitch ranges of the other two voices.
- Overlap arrangements: These correspond to irregular shifts in the voices producing conjunct and counter movements from one scale to another with respect to the principal melodic line (held by the seconda main voice), thus resulting in echoes instead of converging in unison.
- Use of ornamentations: The vocal ornamentations called a ricuccata, consist in melodious inflexions around some notes called de passage that enable the other voices to enter.

The Cantu in Paghjella text structure corresponds to a stanza comprising six lines (a sixain) of eight syllables organized in 3 couplets. A couplet of 2 lines corresponds to the musical sentence (melostrophe or versu), which is thus repeated three times during the execution of a stanza (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis").

3.1.2.1   Scope

The goal of this use case demonstration is to demonstrate the usability of the i-

Treasures platform for the preservation of Corsican Cantu in Paghjella polyphonic singing. We suggest an application which could be displayed in museums/exhibitions/music festivals/singing schools/any other space, in order to give a brief introduction to Paghjella by learning some basic singing technique elements and a short melody/text (versu), representative of this singing style. This tool will contribute to introduce and disseminate the knowledge of this rare human treasure, to raise people's interest and curiosity and to encourage them to learn and practice. To this aim, a learning scenario, including some specific functionalities of the platform (e.g. visualisation of tongue movement) has been created in the LMS integrated in the platform (see D5.1 – "Report on analysis of educational scenarios"). The implementation of this learning scenario will be the basis of the planned demonstration.

3.1.2.2 Demonstration Scenario

The learning scenario created on the LMS aims to give a brief introduction to the Cantu in Paghjella. The demonstration plan includes various steps, from historical information about Corsican polyphonic singing to the execution of a versu or just a few syllables of a versu (2 octosyllabic lines). A video can present traditional singers interpreting a simple but representative piece of their repertoire. This piece will be considered the reference. Next the corresponding text (in one of the Paghjella languages - preferably Corsican) can be presented visually and read aloud to the listeners with the correct Corsican diction. The learners could then repeat parts of the text, all together.

Next, learners can listen to an audio-visual document including only part of the sung versu: they can start together with and accompany the singer(s) in the video, like in a karaoke, and at some point the video turns mute (or weak sound) and learners should continue alone. Emphasis will be put on each voice's (secunda, bassu, terza) entry. To study polyphonic voice entries, the audio sound of the entering voice in the audio-visual document can be amplified and the other voices can be tuned down.

Some breathing exercises may also be proposed using the platform, in particular by listening to different rhythms of inhalation/exhalation, followed by voice production exercises of growing duration using a fixed stable vowel and a stable voice quality (no vibrato).

3.1.2.3   Demonstration Participants

The demonstration will take place in Paris or in Corsica either in a Corsican cultural centre, a museum or in the context of a music club.

The participants will preferably be Corsican-speaking persons, or speakers of languages already sang as Paghjella (Latin, etc…). Groups of three (or multiple of three) singers should be organised. For a group of three singers, one should have a deep voice, two should have shrill voices. In addition, experts and apprentices in Cantu in Paghjella will be invited so that the installation shall be tested by singers of different levels ranging from novice to experts. CNRS will be the responsible i-Treasures partner and will install the setup as well as supervise the demonstration.

3.1.2.4   Demonstration Schedule

Table 2 Demonstration Plan of Cantu in Paghjella

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
In a singing school, a cultural centre, a museum or in a music club to be decided in Paris or Corsica	To be decided according to the partner selected for the demonstration.	CNRS	• Corsican-speakers (or speakers of any language in Paghjella repertoire) • Cantu in Paghjella experts • CNRS and UPMC project members	Multiple of two or three (upon availability) • computers • screens • Hyper-Helmets • Ultrasound sensors • Microphones • Nasal-accelerometers • EEG sensors • Lips motion cameras • Acquisition tools

3.1.3 System Demonstration Plan for Sub-use Case "Canto a Tenore"

Canto a Tenore represents a form of polyphonic singing performed by a group of four men who perform separate and specialized parts. Generally speaking, the tenor singing can be described as a solo singing accompanied with chords ("corfos") by a three-part vocal chord ("su tenore"). The soloist, called "sa boghe", sings a Sardinian

language poem (logudorese), while the other three cantors (su bassu, sa contra, sa mesu boghe) accompany the chant with nonsense syllables (either one or two) consisting of guttural sounds characterized by a peculiar vocal tone. Since it has been developed in the oral tradition, it doesn't rely on rigid schemes, written scores or preset melodies. Several styles exist according to the village in which the singing is performed, that are slightly different one to the other (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis").

3.1.3.1   Scope

The scope of this sub-use case demonstration is to demonstrate the usability of the i-Treasures platform in Canto a Tenore education. In particular, since like many other cultural expressions, it is usually taught and learnt in informal contexts by oral tradition and imitation, the demonstration aims to explore the potential of the platform functionalities in supporting a formal educational path which includes distant and face to face activities.

To do this, a learning scenario, including some specific functionalities of the platform (e.g. the Text to song module) has been created on the Learning Management System (LMS) integrated in the platform (see D5.1 – "Report on analysis of educational scenarios"). In this way it will be possible to evaluate whether the platform will be able to support experts providing a structured educational path, based on made-on-purpose materials (stored in the LMS and in the platform repository) and specific functionalities.

3.1.3.2   Demonstration Scenario

The conceived scenario (see D5.1 – "Report on analysis of educational scenarios") aims to demonstrate the use of the platform with a population of students in general education (in particular, upper secondary school students), who are not novices in Cantu a Tenore, but did not follow structured educational paths before. This learner's profile is quite common in Sardinian villages; as a matter of fact, kids have the opportunity to listen to Tenore singers during social events and to learn something in informal context, so that they already have a knowledge in the field which is, however, not organized and incomplete. The scenario aims to provide them a structured path, starting with a theoretical module which gives the opportunity to systematize and consolidate their theoretical knowledge about Canto a Tenore

through material already available on the platform or inquire-based activities. Moreover the plan is conceived for increasing their listening and, whether it's possible, singing competences.

Listening competences will be fostered by means of made-on-purpose audio video resources stored in the LMS and the innovative Text to song module. At this stage, singing competences are expected to be fostered in face to face sections, but in the future the game application will be able to perform this function.

The scenario is conceived to be followed in groups under the guide of an expert but students involved will follow the path according to their level of competences (some activities are optional for students who already have the specific competence, e.g. students who already sing are, of course, able to sing one of the four voices).

3.1.3.3   Demonstration Participants

The demonstration will be held at the upper secondary school "A. Volta" in Nuoro, Sardinia (Italy). The demonstration will take place as an extra-curricular activity involving several actors:

- Students (age 14-19): around 20 students with different levels of competences.
    - Some are apprentices in their villages, namely, those learned to sing a Tenore through oral tradition in their own villages. These students usually have medium-high listening competences also of other villages singing styles.
    - Others have never sung, but they have listened the a Tenore song in a number of occasions and situations
- A couple of experts, which held the course.
- i-Treasures partners: the sub-use case leader (CNR) will be present the first day of the course/demonstration, in order to introduce the platform to experts and users. Partners responsible for vocal tract data capturing (CNRS/UPMC) will be present when the game application will be demonstrated, in order to supervise the use of the technology adopted (hyper-helmet).

3.1.3.4   Demonstration Schedule

Table 3 Demonstration Plan of Cantu a Tenore

Demonstration	Demonstration	Responsible	Participants	Equipment

Venue	Dates	Partner		
Secondary school "A Volta", Sardinia, Italy	To be decided	CNR	• Students • Experts • CNR Team (coordination) • CNRS/UPMC (technical coordination)	• PCs • Microphones • Hyper-helmet

3.1.4 System Demonstration Plan for Use Case "Byzantine Music"

Byzantine music is the music of the Byzantine Empire composed to Greek texts as ceremonial, festival, or church music. Research done in this field has proved that Byzantine music has its root in ancient Greek music and although it has not been listed by UNESCO as an endangered ICH, there is a risk that certain interpretation styles of Byzantine Hymns could die out if no action is taken. Even if Byzantine music has its own annotation system, the singing know-how is transmitted orally through everyday practice, where the apprentice learns close to the expert (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis"). The goal of this case study is to apply the methodology for rare singing knowledge preservation and transmission developed in i-treasures.

3.1.4.1   Scope

The scope of this use case demonstration is to demonstrate the usability of the i-Treasures platform in Byzantine Music education. Like many other traditional cultural expressions, it is usually taught and learnt in informal contexts by oral transmission and imitation, so the demonstration aims to explore the potential of the platform functionalities in supporting an educational path with different learning activities.

Thus, the demonstration covers the theoretical part that has been implemented into courses available through the platform. Different types of documents, presentations, multimedia contents and exercises to validate the pedagogical goals have been created. Specific functionalities (Text to Song) will also be added in the LMS for this use case (see D5.1 – "Report on analysis of educational scenarios"). However demonstration of Text to song is dependent to the approval of experts. If they think that the implementation is useful for any of the rare singing sub-use-cases, this feature is planned to be demonstrated as well.

3.1.4.2 Demonstration Scenario

To demonstrate the different elements of the Byzantine Music sub-use case study, we propose different demonstration scenarios depending on user profiles. More precisely we can distinguish two different demonstration orientations.

The first demonstration scenario aims more at presenting learning and transmission aspects by emphasizing on theoretical aspects. The pedagogical material available through the platform covering theoretical aspects (historical aspects, annotation system, rhythm and duration etc.) will be demonstrated. In addition to this, listening exercises, quizzes, tests and other activities developed according to the pedagogical plan will be proposed to the learner.

The second part of demonstration concerns more practical aspects, such as singing with the use of hyper helmet. After the learner gets familiarized with the web platform and its content, he/she is invited through the learning path to use helmet and the sensorimotor feedback to improve its singing techniques.

3.1.4.3 Demonstration Participants

The demonstrations will take place mainly in Thessaloniki and the broad region of northern Greece and in Paris, in France since these are the locations where the 2 partners mostly involved to this sub-use case study (University of Macedonia – Multimedia Technologies and Computer Graphics Laboratory and Sorbonne Nouvelle, Phonology and Phonetics Laboratory) are based. A demonstration in Athens can be also planned since a large number of national events dedicated to creative technologies are organized in the capital city of Greece.

Different communities can be identified as potential users of the i-treasures Platform in Byzantine Music sub-use case study.

To start by the large public, we plan to participate at large national or regional events open to public such as "Researcher's night" in Greece, or to demonstrate our technology into museums.

To reach actors in general education field we plan to demonstrate the results of this use case to secondary education establishments such as Kalamari School in Thessaloniki, but also to schools that have supported us and manifested their interest since the beginning of i-treasures, like the Music School of Giannitsa or Katerini, in Macedonia Region. Their students represent the youngest potential users of i-treasures (between 12-18 years old).

Demonstrations are also planned at more specialized institutions for Byzantine music learning, where we can involve more advanced students and professional musicians.

Finally we consider that it is also important to demonstrate the use case to the research community through special demonstration sessions organized in Paris at LPP (Laboratoire de Phonologie et de Phonétique).

3.1.4.4   Demonstration Schedule

Table 4 Demonstration Plan of Byzantine Music

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
Demo at the Museum of Byzantine Culture, Thessaloniki	To be decided	UOM	Visitors of the museum, general public	• Computer • Hyper-helmet
Demo at the Museum of Ancient, Byzantine and Post-Byzantine Musical Instruments, Thessaloniki	To be decided	UOM	Visitors of the museum, general public	
Demo at the Science Center and Technology Museum, Thessaloniki	To be decided	UOM in collaboration with CERTH	Visitors of the museum, general public, researchers	
Demo at Secondary education institutions (General and Music Schools)	To be decided	UOM	Teachers and young students	

Giannitsa, Katerini, Thessaloniki				
Demo at the National Conservatory of Thessaloniki	To be decided	UOM	Professional Musicians and Advanced students	
Demo to the members of the quier "Filathonitai", Thessaloniki		UOM	Professional byzantine singers	
Demo at the Festival of Science and Innovation, Athens		UOM	Large public and festival participants	
Demo to the students of the Byzantine Singing School « Παναγία Λαοδηγήτρια», Thessaloniki		UOM	Advanced students	

3.2   System Demonstration Plan for Use Case "Rare Dance Interactions"

UMONS is responsible partner for this use case as well as Walloon Dance and Contemporary Dance sub use-cases. CERTH is responsible for Tsamiko and Calus sub use-cases.

3.2.1 System Demonstration Plan for Sub-use Case "Tsamiko dancing"

The Tsamiko (Greek: Τσάμικος, Tsamikos) is a popular traditional folk dance of Greece. This dance is probably named from the Tsames in Northern Epirus, but

according to other sources it is named from the clothes of the 'klephtes', the mountain fighters in the Greek war of independence. The name of the dance comes from the name used to describe the outfits they wore, which were called "tsamika". Today, it is enjoyed throughout Greece by both men and women. It is danced in a semi-circle, with the leader performing variations while the others follow the basic steps.

Tsamiko is danced to a 3/4 rhythm. The dance follows a strict and slow tempo with emphasis on the "attitude, style and grace" of the dancer. The steps are relatively easy but have to be precise and strictly on beat. Its variations consist of both smooth and leaping steps.

Over time the dance has taken on many variations. Although an eight measure (sixteen steps) dance has been taught at schools and a five measure (ten steps) dance is common in northern Greece, the six measure (twelve steps) dance is by far the most widely danced in Greece and elsewhere (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis").

3.2.1.1 Scope

The scope of this use case demonstration is to demonstrate the usability of the i-Treasures platform in teaching Tsamiko to students of a dance school. In particular, since Tsamiko, like many other cultural expressions, is usually taught and learnt in formal or informal contexts by imitation, the demonstration aims to explore the potential of the platform functionalities in supporting an educational path which includes distant and face to face activities.

To do this, a learning scenario, including some specific functionalities of the platform has been created ιn the LMS integrated in the platform (see D5.1 – "Report on analysis of educational scenarios"). In this way, it will be possible to evaluate whether the platform is able to support experts providing a structured educational path, based on made-on-purpose materials (stored in the LMS and in the platform repository) and specific functionalities.

3.2.1.2 Demonstration Scenario

The main conceived activity aims to demonstrate the use of the platform for learning Tsamiko using a complete course. The learners will be University students attending the classes for the lesson "DIDACTICS OF GREEK TRADITIONAL DANCES" of Prof. Douka in the Department of Physical Education and Sports Science of the

Aristotle University of Thessaloniki. The leaners' profile are close to the one assumed by the pedagogical scenario, i.e. any individual wanting to learn Tsamiko, with or without knowledge of other traditional dances.

The scenario aims to provide to the learners a structured path, starting with a theoretical module which gives the opportunity to systematize and consolidate their theoretical knowledge about Tsamiko through material already available on the platform or inquiry-based activities and assignments. Moreover, dancing competences will be fostered by means of made-on-purpose video resources stored in the LMS about the phases of Tsamiko dance as well as for variations of the dance (e.g. the double step). Furthermore, dancing competences are currently expected to be fostered in face to face sections with the dance teacher and experts, but also by using the available game application which will be installed by CERTH in the dance room (already used for experts' and learners' motion capture within i-Treasures) and will be accessible to all students participating in the demo course for three-four consecutive dancing lessons (dates will be decided according to the learning path). Some of the students may also be able to run the game application at home, as the only hardware required is a PC equipped with a Kinect sensor.

The scenario is conceived to be followed in parallel with the traditional dance class under the guidance of Prof. Douka for 2-3 weeks. Students involved will follow the path according to their level of competences. At the end of the demonstration, the learning experience will be evaluated by user questionnaires, as well as from quantitative data collected from the game-like application.

Beyond this main demonstration activity, two additional demonstration events for the general public are envisaged for this sub-use case:

1. The first will be co-organized in one of the many traditional dancing exhibition events organized by Lyceum of Greek Women.
2. A second one be co-organized within an outreach event organized by CERTH, such as the Researcher's night (or similar event), which is co-organized every year by CERTH.

In both events, a brief introduction to i-Treasures platform and tools will be made and the game-like application and the learning platform will be demonstrated.

Lyceum Club of Greek Women

The Lyceum Club of Greek Women (www.lykeionellinidon.gr/lyceumportal/en/) was founded in Athens by Callirhoe Parren in 1911. Consisting of almost 16.000

members from Greece and abroad, the Lyceum Club of Greek Women has always been characterized by a spirit of volunteering and selflessness. The Lyceum Club of Greek Women through its dynamic role is making efforts towards the preservation of the Greek folk culture and tradition. The Lyceum Club is a non-profit organization, based on voluntary work. It is considered as a core of culture, where scientific knowledge meets passion. Its main difference from other folklore clubs lies in the fact that the collected material is not only destined for use at museums and studying, but it takes flesh and bones during the shows of the Club's dance group.

The history of Lyceum Club of Greek Women of Thessaloniki (LCGW, http://www.likhelthes.gr), begins in 1939 when a group of remarkable women decide to start a women's club in order to preserve our heritage and the preservation and dissemination of customs and traditions.

From its establishment, LCGW works in cataloguing, teaching and presentation of Greek traditional dances. Greek traditional dance lessons for different groups (children, adolescent, adults and senior people) are regularly organized by LCGW in different parts of the Thessaloniki. The teachers are graduates of the Department of Physical Education and Sport Science.

3.2.1.3   Demonstration Participants

The main demonstration activity will be held at the classes for the lessons "DIDACTICS OF GREEK TRADITIONAL DANCES" of Prof. Douka in the Department of Physical Education and Sports Science of the Aristotle University of Thessaloniki. The leaners' profile partially fits the one assumed by the pedagogical plan, i.e. any individual wanting to learn Tsamiko, with or without knowledge of other traditional dances. The main demonstration activity involves several actors:

- Students (age 18-23): around 10-30 University students attending the class of Prof. Douka and having different levels of competences will be involved.
- Prof Douka and some experienced Tsamiko dance teachers/experts are currently cooperating with Prof. Douka and will be used as experts, as and if needed (e.g. for helping student in the teaching of Tsamiko using the i-Treasures system and/or for monitoring their performance). These dance teachers (e.g. Mr. Christos Katsafylloudis) have significant expertise, as most of them also teach traditional dances in courses organized by the Lyceum of Greek Women.

- i-Treasures partners: the sub-use case leader (CERTH) will be present the first day of the course/demonstration, in order to introduce the platform to experts and users.

3.2.1.4   Demonstration Schedule

Table 5 Demonstration Plan of Tsamiko

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
Department of Physical Education and Sports Science (AUTH)	Complete Tsamiko learning course, 2 months	CERTH	- Students - Experts	- PCs - Kinect sensor(s)
Lyceum of Greek Women event	Single day event, to be decided	CERTH	General public	- PCs - Kinect sensor(s)
CERTH event	Single day event, to be decided	CERTH	General public	- PCs - Kinect sensor(s)

3.2.2 System Demonstration Plan for Sub-use Case "Calus dancing"

Romanian Căluş originated as a healing and fertility ritual performed by groups of an odd number of men, bound together by an oath. By the beginning of the 20th century its ritual form survived mainly in southern Romania and among Romanian minorities in northern Bulgaria (Mellish, 2006), although remnants of this custom could be found in much of the rest of Romania, and throughout the Balkans.

The musical measure is 2/4 and the rhythm is binary and binary syncopated. The Rhythmic cells are: Dipiric, Anapest, Dactil, Spondeu, Amfibrah, while Rhythmic motifs are formed by combining two or more rhythmic binary cells. The superposition between the dance and musical phrases, in archaic form, is in most cases unmatched. The rhythm of the dance superposes and completes the rhythm of the song, creating a polyrhythmic effect.

The Calusari are disposed as single units in a circle. The Căluş is composed only of men of different ages, excluding children, who are not accepted under a certain age

and social status. The Calusari are freely placed in space, the specific posture for the Căluş is leaning on the stick, with the right hand a rule, or with both hands (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis").

3.2.2.1   Scope

The scope of this use case demonstration is to demonstrate the usability of the i-Treasures platform in teaching Calus to individuals without any prior knowledge in traditional dancing. Calus, like many other cultural expressions, is usually taught and learnt in formal or informal contexts by imitation, so the demonstration aims to explore the potential of the platform functionalities in supporting an educational path which includes distant and face to face activities.

To do this, a learning scenario, including some specific functionalities of the platform has been created on the LMS integrated in the platform (see D5.1 – "Report on analysis of educational scenarios"). In this way, it will be possible to evaluate whether the platform is able to support Calus teachers or experts providing a structured educational path, based on made-on-purpose materials (stored in the LMS and in the platform repository) and specific functionalities.

3.2.2.2   Demonstration Scenario

The main activity aims to demonstrate the use of i-Treasures platform with a number of individuals, with different level of experience in dancing, with the collaboration of our Calus expert and teacher, Prof. Florian Teodorescu.

Although the details of the demonstration activities need to be further discussed with Prof. Teodorescu, three types of demonstration scenarios are envisaged:

The first scenario aims to provide to learners a structured path, starting with a theoretical module which gives the opportunity to systematize and consolidate their theoretical knowledge about Calus dance through material that will be uploaded on the platform or inquiry-based activities and assignments. Moreover, dancing competences will be fostered by means of made-on-purpose video resources stored in the LMS about the phases of Calus dance as well as for its variations. Furthermore, dancing competences are expected to be fostered in face to face sections with Prof. Teodorescu, but also by using the available game application which will be installed in a place accessible by the learners. Similar to the Tsamiko case, it will also be possible to run the game application at home, as the only hardware required is PC equipped with a Kinect sensor. The learners involved will

follow the path according to their level of competences. At the end of the demonstration, the learning experience will be evaluated by user questionnaires, as well as from quantitative data collected from the game-like application.

A second demonstration scenario for the general public in Romania is envisaged in the International Folk Festival "Căluşul Românesc" that is held in the Municipal Cultural Center of Caracal, Romania, at summer every year. The Festival is committed to encouraging the promotion of folk dance heritage value UNESCO, music, song, culture, stimulating international cultural exchange and establishing a viable forum for promising folk artists to demonstrate their talent. During the Festival there is a scientific symposium with the theme "Intangible heritage values, and to safeguard them!". The Festival typically includes the most representative bands of Caluş from the country, folk ensembles in the country and abroad, thus it will be a great opportunity of demonstrating the game application and the i-Treasures platform for research and education.

A third demonstration scenario aims to make the Calus dance known in another country, e.g. Greece. This aim will be achieved by organizing a special event within a international traditional dancing festival or similar event in Greece or in another country with an i-Treasures partner, with the cooperation of the local partner (e.g. CERTH), Prof. Teodorescu (either in person or remotely via tele-conference) and (optionally) local associations (e.g. the Lyceum of Greek Women). During this event, the i-Treasures partner will present the i-Treasures platform for research and education and demonstrate the game application for Calus dance. Traditional dancers and even the general public will have the chance of getting acquainted with the dance by observing and practicing its dance steps.

3.2.2.3   Demonstration Participants

The main demonstration activity will be held at one of the classes of Prof. Teodorescu in Caracal, Romania. The leaners' profile partially fits the one assumed by the pedagogical scenario, i.e. any individual wanting to learn Calus, with or without knowledge of other traditional dances. The main demonstration activity will involve several actors:

- Students (age 7-40): around 5-15 dancers attending the class of Prof. Teodorescu and having different levels of competences will be involved.

- i-Treasures partners: the sub-use case leader (CERTH) will be present the first day of the course and demonstration event, in order to introduce the platform to experts and users.

3.2.2.4   Demonstration Schedule

Table 6 Demonstration Plan of Calus

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
Dance school in Caracal, Romania	To be decided	CERTH	• Students • Calus expert	• PCs • Kinect sensor(s)
"Căluşul Românesc", Municipal Cultural Center of Caracal, Romania	To be decided	CERTH	General public	• PCs • Kinect sensor(s)
International Traditional dance event	To be decided	CERTH (or local i-Treasures partner)	• General public • Calus expert	• PCs • Kinect sensor(s)

3.2.3 System Demonstration Plan for Sub-use Case "Walloon"

Walloon traditional dances are a cultural heritage of the Walloon region which has been forgotten by most people, even in the Walloon Region itself. Walloon traditional dances are essentially peasant dances originated from the 18th, 19th and early 20th centuries. They were originally mostly danced in popular balls in the villages but almost disappeared at the end of the 19th century and beginning of 20th century. More general information about the Walloon traditional dances can be found in deliverable D2.1 "First Report on User Requirements Identification and Analysis".

3.2.3.1   Scope

The goal of this use case demonstration is to demonstrate the usability of the i-

Treasures platform for the preservation of Walloon traditional dances. Our initial finding is that this cultural heritage has been completely forgotten by most people, even in the Walloon region. Based on this initial finding, the scenario which has been chosen for such a preservation is to design an application which could be displayed in museums/exhibitions/dance festivals/any other space, in order to give a brief introduction to these dances by learning one or a few basic steps, representative of these dances. This tool is seen as a way to inform people about the existence of this patrimony, and encourage them to learn about Walloon traditional dances by getting in touch with dance clubs for instance, after their experience with the proposed demonstration tool. The purpose of the use-case demonstration is thus to demonstrate the usability of this basic learning scenario for augmenting the awareness of the general public towards the existence of the Walloon dance cultural heritage.

To do this, a learning scenario, including some specific functionalities of the platform (e.g. the Motion comparison module) has been created on the LMS integrated in the platform (see D5.1 – "Report on analysis of educational scenarios"). The implementation of this learning scenario will be the basis of the planned demonstration.

3.2.3.2   Demonstration Scenario

The learning scenario created on the LMS aims to give a brief introduction to the Walloon traditional dances to by-passers of any age coming to an exhibition/museum, by learning one or a few basic steps, representative of these dances. Given the exhibition setup chosen for this scenario, the interaction with the system is designed to be very short. The targeted audience consists thus of novices in Walloon traditional dances, which might even never have heard about the existence of such dances. The educational scenario for Walloon dance in non-formal contexts for beginners has been presented in D5.1, report on analysis of educational scenarios, under Section 5.2.2. The summary of this educational scenario is presented hereunder.

The content domain covers different aspects of the dance from the historical information to the execution of some steps and figures. The goal is to give visitors the opportunity of a first approach to Walloon dance and at the same time to raise their interest towards the dance itself and local initiatives (e.g. dance clubs). Thus the path

needs to be entertaining, in order to engage even people without a specific interest.

At the end of the experience the visitor should have acquired some basic information about the Walloon dance (the history, the different styles, etc.) and should have learned three Walloon traditional dance steps (pass pied, matlotte and maclotte).

The flow of activities reflects these objectives, but all the activities are optional, since visitors can come at any time and join one activity while having skipped all the others. One introductory activity on the dance (carried out using an informative video made available by the LMS), ideally precedes the practicing activities related to the three steps. These three more practical activities are both based on the use of the 3D platform for sensorimotor learning: at the beginning the steps are presented and practiced without music, then, when the visitor masters the step at a certain level, the music is added with an incremental speed, until the real speed is reached.

3.2.3.3   Demonstration Participants

The demonstration will take place in Mons either in a museum or in the context of a temporary exhibition. In the framework of Mons2015 (Mons 2015 European Capital of Culture) several opportunities will be available thanks to UMONS contacts with partners involved in museums and artistic installations. The specific location will have to be determined once the first versions of the tool corresponding to the described scenario can be presented to the potential partners in order to choose the most appropriate location and settings for the demonstration to take place. The demonstration might occur in two steps, with the same scenario repeated at two different occasions.

The participants will hence be the general public coming to the museum/exhibition. In addition to these general public with no knowledge about Walloon traditional dances, experts and apprentices from Walloon dance group will be invited to the exhibition, so that the installation shall be tested both by an audience completely novice to Walloon traditional dances and by Walloon amateur dancers ranging from novice to experts. UMONS will be the responsible i-Treasures partner and will install the setup as well as supervise the demonstration.

3.2.3.4   Demonstration Schedule

Table 7 Demonstration Plan of Walloon Dance

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
In a museum venue to be decided, in Mons	To be decided according to the museum partner selected for the demonstration.	UMONS	• People coming to see the exhibition (general public + Walloon dance amateurs) • UMONS project partners	• KinectV2 • computer • screen

3.2.4 System Demonstration Plan for Sub-use Case "Contemporary dance"

Contemporary dance is a very special use case and it has been agreed by the i-Treasure partners to consider it as such. The focus of the research in this use case will be to discover hidden higher level features in contemporary dance thanks to very precise motion capture data recordings (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis")..

3.2.4.1   Scope

The goal of this use case demonstration is to demonstrate the i-Treasures platform and more specifically to test if the higher level features discovered through automatic analysis and machine learning in the contemporary dance recordings are useful for the contemporary dance experts.

3.2.4.2   Demonstration Scenario

Hence, the demonstration will consist of presenting the automatic analysis results to the experts and letting them explore the recorded motion capture files based on the extracted features. Browsing and querying the motion capture database based on these features will enable the experts to receive some feedback about the relevance

of these features. We propose to present the results as a sheet or webpage with graphs and figures giving a profile of each dancer based on the higher level features selected.

3.2.4.3   Demonstration Participants

The demonstration will take place in Belgium and involve contemporary dance experts (dancers and choreographers). For this very exploratory demonstration scenario, at least five experts should be approached.

3.2.4.4   Demonstration Schedule

Table 8 Demonstration Plan of Contemporary Dance

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
Anywhere where a meeting with the experts can be planned. The demonstration will take place for one expert at a time, and the location can be different for each expert.	To be decided according to the availability of the experts.	UMONS	• Experts in contemporary dance (dancers and choreographers) • UMONS project partners	• Computer

3.3 System Demonstration Plan for Use Case "Traditional Craftsmanship"

Pottery[1] is the ceramic material which makes up pottery wares, of which major types include earthenware, stoneware and porcelain. The place where such wares are made is also called a pottery. Pottery also refers to the art or craft of the potter or the

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[1] http://en.wikipedia.org/wiki/Pottery

manufacture of pottery. Pottery is made by forming a clay body into objects of a required shape (most commonly vessels) and heating them to high temperatures in a kiln (high temperature chamber), which removes all the water from the clay and induces reactions that lead to permanent changes including increasing their strength and hardening and setting their shape.

In i-Treasures, we focus on wheel-throwing pottery, where a ball of clay is placed in the centre of a turntable, called the wheel-head, which the potter rotates with a stick, with foot power or with a variable-speed electric motor (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis").

3.3.1 Scope

The scope of this use case demonstration is to demonstrate the usability of the i-Treasures platform in teaching wheel throwing pottery to beginners. Pottery, like many other cultural expressions, is usually taught and learnt by imitation, so the demonstration aims to explore the potential of the platform functionalities in supporting an educational path which includes distant and face to face activities.

To do this, a learning scenario, including some specific functionalities of the platform has been created on the LMS integrated in the platform (see D5.1 – "Report on analysis of educational scenarios"). In this way, it will be possible to evaluate whether the platform is able to support pottery experts by providing a structured educational path, based on made-on-purpose materials (stored in the LMS and in the platform repository) and specific functionalities.

3.3.2 Demonstration Scenarios

The main activity aims to demonstrate the use of i-Treasures platform to learn wheel-throwing pottery, with the collaboration of the Greek pottery expert, Mr. Theodore Galigalidis. Specifically, the main demonstration scenario aims to provide to learners a structured path, starting with a theoretical module which gives the opportunity to systematize and consolidate their theoretical knowledge about wheel-throwing pottery through material that has been uploaded on the platform, quiz tests, inquiry-based activities and assignments. Pottery-making competences will be fostered by means of made-on-purpose video resources stored in the LMS about the different phases of wheel-throwing pottery as well as presentation of the construction of different objects (bowl, plate, sphere, cylinder and more complex objects). Furthermore, pottery-making competences are expected to be fostered in face to face sections with Mr. Galigalidis, but also by using the available game application

which will be installed in a place accessible by the learners. The users may also have the opportunity to run the virtual pottery game application at home, as only inexpensive hardware is required (PC with Leap Motion and Kinect sensors). The learners involved will follow the path according to their level of competences. At the end of the demonstration, the learning experience will be evaluated by user questionnaires, as well as from quantitative data collected from the game-like application.

Beyond this main demonstration activity, two additional demonstration events for the general public are envisaged for this sub-use case:

1. A special event for pottery (e.g. an exhibition or workshop co-organized by the pottery association).
2. An event be co-organized within an outreach event organized by CERTH, such as the Researcher's night (or similar event), which is co-organized every year in Thessaloniki by CERTH.

In both events, a brief introduction to i-Treasures platform and tools will be made and the game-like application and the learning platform will be demonstrated.

3.3.3 Demonstration Participants

The main demonstration activity will be held at a workshop of Mr. Galigalidis and will involve pottery students (beginners) with ages 10-40 and different level of competences. i-Treasures partners, including the sub-use case leader (CERTH), will be regularly present during the course (and the special demonstration events) in order to introduce the platform to experts and users.

3.3.4 Demonstration Schedule

Table 9 Demonstration Plan of Traditional Craftsmanship

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
Pottery workshop	To be decided	CERTH	Students Pottery expert	PCs Leap Motion Kinect sensor(s)
Pottery association	To be decided	CERTH	General	PCs

event			public	Leap Motion Kinect sensor(s)
CERTH event	To be decided	CERTH	General public Pottery expert	PCs Leap Motion Kinect sensor(s)

3.4.   System Demonstration Plan for Use Case "Contemporary Music Composition"

The main objective of this use case is to develop a novel intangible musical instrument, i.e., a novel Multimodal Human-Machine Interface for music composition, in which natural gestures performed in a real-world environment are mapped to sound segments, taking into account the emotional status of the performer. A hybrid approach is used for gesture data acquisition and analysis based on 2D/3D and embedded sensors, while the emotional status of the performer is analysed via EEGs All these gestures, expressions, emotions and sounds are integrated into the Intangible Musical Instrument (IMI), enabling users with different profiles (composers, performers, non-musicians etc) to explore more sophisticated body/music interactions (for more details, see D2.1 – "First Report on User Requirements Identification and Analysis").

3.4.1. Scope

The scope of this use case demonstration is to justify the usability of the i-Treasures platform in music education and composition. The demonstration includes thus two parts. The first concerns the platform and its functionalities, such as supporting an educational path, providing SCORM courses and Learning Management System (LMS) functions. Before starting to experiment with the Intangible Musical Instrument (IMI) it is necessary to introduce some basic notions of theory of music. For this, we plan to demonstrate a learning scenario, including multimedia content that has been created on the LMS integrated in the platform (see D5.1 – "Report on analysis of educational scenarios"). In this way, it will be possible to evaluate whether the platform will be able to support experts, providing a structured educational path, based on made-on-purpose materials (stored in the LMS and in the platform repository) and specific functionalities.

Since theory can explain how a piece of music works but not how the composer or the performer actually functions, there is also a second part of the demonstration planned that concerns the IMI. As described in deliverable D4.2 "First Version of Mapping Sound to Gestures and Emotions", this IMI supports, as a unified user experience, both the learning of expert musical gestures (Transmission) as well as performing and composing with gestures (Preservation and Renewal).

3.4.2. Demonstration Scenario

To demonstrate the different elements of the Contemporary Music Composition Use Case we propose different demonstration scenarios depending on user profiles (e.g., schools, events, museums, conferences, carnivals etc.). More precisely, we can distinguish two different demonstration orientations.

The first demonstration scenario aims more at presenting learning and transmission aspects by emphasizing on pedagogical aspects. The pedagogical material available through the platform, covering theoretical aspects (historical aspects, and concepts, such as harmony chords, intervals, metric values, etc. related to works by Gubaidulina, Xenakis, Bethoveen etc.), will be demonstrated. In addition to this, listening exercises, quizzes, tests and other activities developed according to the pedagogical plan, will be proposed to the learner.

The second part of demonstration concerns more practical aspects, such as performing and composing in real-time with simple gestures inspired from gestures of professional musicians. After the learner got familiarized with the web platform and its content s/he is invited through the learning path to use the IMI. The learner puts on the sensors and makes practice with the suggested gestures, in such a way that the sensorimotor learning system gives feedback about the accuracy of the performance. The following activity is similar, but this time the proposed sound and gestures have to do with the pianistic schools, so that the learner learns how to perform/imitate specific gestures on a piano keyboard according to the different pianistic schools. After this, the student is asked to imitate more complex musical pieces and s/he makes practice. In the last activity, s/he is asked to try to compose contemporary music, using hand and body gestures and possibly facial expressions and emotions evoking imaginative mapping of gestures to sounds.

As mentioned before, the orientation of the scenarios will be adapted depending on the user profiles, on the events and the places where Contemporary Music Composition Use Case will be demonstrated. Teachers and parents are probably

more interested in pedagogical aspects of this use case since the IMI gives to children the possibility to have a first music composition experience while performing gestures. They can thus explore basic pillars of musical education such as pieces of classical composers and different sound parameters by doing gestures. While performing a simple musical gesture, the IMI matches it to sound inspired from classical music. This process has a strong educational character and can be used in pedagogical purposes. At the same time amateur musicians or professional artists can be more interested in the creative aspects of IMI and the new perspectives that it offers to musical expression. In the final version of the IMI composers and performers will have the possibility to enrich the sound library with the sound they would like to use for their new piece and propose their own gestures for the real time sound synthesis.

3.4.3. Demonstration Participants

The demonstrations will take place mainly in Thessaloniki and the broadest region of northern Greece and in Paris in France, since there are located the two Partners mostly involved in this use case. A demonstration in Athens can be also planned, since a large number of national events dedicated to creative technologies are organized in the capital.

Different communities can be identified as potential users of the i-treasures Platform and the IMI.

To start by the general public, we plan to participate at large national or regional events open to public such as "Researcher's night" in Greece, or "Futur en Seine" festival in Paris.

To reach actors in general education field we plan to demonstrate the results of this use case to secondary education establishments such as Kalamari School in Thessaloniki, but also to schools that have supported us and manifested their interest since the beginning of i-treasures, like the Music School of Giannitsa or Katerini, in Macedonia Region. Their students represent the youngest potential users of i-treasures (between 12-18 years old).

Demonstrations are also planned at more specialized institutions like conservatories (e.g., State Conservatory (SC) located in Thessaloniki), where we can involve more advanced students and professional musicians.

Finally, we consider that it is also important to demonstrate the use case to research community through special demonstration sessions organized in Paris at IRCAM

(Institut de Recherche en Coordination Acoustique/Musique), or at Aristotle University of Thessaloniki at the Department of Music Studies where we could invite the members of the «Greek Composers' Union (GCU)». Moreover, a concert (or series of concerts), involving works with IMI will be pursued, in close collaboration with the GCU, SC and Athens/Thessaloniki Megaron.

3.4.4. Demonstration Schedule

Table 10 Demonstration Plan of Contemporary Music Composition

Demonstration Venue	Demonstration Dates	Responsible Partner	Participants	Equipment
Science Center and Technology Museum, Thessaloniki	To be decided	UOM in collaboration with CERTH	Visitors of the Museum (large public)	Computers, IMI including Kinect, Leap Motion, Animazoo, eMotiv for EEG
Museum of Contemporary Art, Thessaloniki	To be decided	UOM	Visitors of the Museum (large public)	
Demo at the Festival of Science and Innovation, Athens	To be decided	AUTH in Collaboration with UOM	Visitors and participants of the festival	
Futur en Seine Festival, paris		ARMINES	Visitors and participants of the festival	
Demo at Secondary education institutions (General and Music Schools) Giannitsa, Katerini,	To be decided	UOM	Teachers and young students	

Thessaloniki			
Demo at the National Conservatory of Thessaloniki	To be decided	AUTH in collaboration with UOM	Professional Musicians and Advanced students
Demo session at the University of Aristotle, Dep. Of Music Studies	To be decided	AUTH in collaboration with UOM	Professional Musicians , performers, composers, advanced students, researchers
Demo at the Conservatory of Kalamaria	To be decided	UOM in collaboration with AUTH	Teachers and young students
Demo at the Vocational training Center (IEK), Thessaloniki		UOM in Collaboration with AUTH	assistants nurses in the subject of music-therapy
Demo session at IRCAM, Paris		Armines in Collaboration with UOM	Researchers of Sound and Music interaction field
Demo at the Festival of Science and Innovation, Athens		AUTH in Collaboration with UOM	

3.5 Evaluation Methodology

One of the aims of demonstration activities is to collect data and derive relevant information as users experience the main project outputs in order to demonstrate and validate the usability of the developed systems. This task is challenging since there

are ten sub-use cases having distinct aspects. It has been already discussed that those sub-use cases address either local or global ICH, use different set-ups/sensors and target various user groups. The demonstration and validation methodology for each sub-use case may require additional work and approach since common aspects are limited.

At this phase of the project we are planning to use two approaches to validate the demonstrations. First approach is to hand out questionnaires to participants involved in the demonstration activities. It is quite important to design very effective questionnaire for each sub-use case since it is not easy to gather the relevant communities often. Due to this fact, it is planned to prepare a template questionnaire which will be elaborated by discussions. TT will prepare this draft which will contain clear open-ended and close-ended questions specifically designed to extract measurable information as much as possible. CNR who has deep knowledge in designing questionnaires considering educational aspects will help TT.

The questionnaires in this WP will be aligned with the questionnaires that were used or that will be used in WP7. However, it should be noted that the event itself is a demonstration and mostly the people of similar interest will attend. So it can be considered that the demonstration environment will be different from the isolated environment in the WP7 evaluations. Besides the participants will have a chance to observe their peers while testing the usability of the sub use case systems. In such a demonstration the learners may provide more general feedback since their observation will reflect a wider perspective. Feedback about the usability of the system might be more realistic due to rich experience during the demonstration.

TT will use the outputs of D7.1 "Assessment plan" while preparing the template. D7.1 defined detailed assessment criteria and measurement approach to evaluate the i-Treasures platform. This early work has established the basis of evaluation methodology that takes the user requirements as a starting point. Besides it formulated the indicators for the assessment ranging from purely technical criteria to user acceptance criteria such as usability, privacy, ethical etc. in a set of questionnaires. More recently, additional questionnaires were developed for the needs of the use case evaluation (Task 7.3: Use Cases Evaluation). The latter concern only for the HBB, Tsamiko, pottery and contemporary music composition cases, but can easily be generalized for the remaining 6 sub-use cases.

A draft questionnaire template will be circulated at month 32. Each sub-use case leader will adapt this template to prepare the questionnaires handed out at the demonstrations. Sub-use case leaders are also responsible of translating those questionnaires to the language/s spoken at the demonstration venues. The

questionnaires will also be aligned with the work performed on WP7 which is "technical assessment and evaluation". It should be noted that this work will provide input to WP7 and specifically to the technical evaluation of demonstrations.

The second approach is to use game analytics which will provide objective data gathered while the attendees play the games. Player's logging history is beneficial for building detailed user models, analysing the process of learning or tracing bottlenecks in game play. For preserving the efficiency of learning it is highly relevant to gain insights in the activities and behaviours needed for the player to reach performance milestones. It should be noted that while game play tends to focus on performance, which is linked with an attitude of achieving milestones and score, learning requires opportunities for reflection, repetition, self-evaluation, pauses, and even the preparedness to make mistakes. Having completed a serious game successfully does not necessarily imply successful leaning. Nevertheless, game logging data are a treasury of information, which could be exploited for distilling more details about the players' learning achievements based on their wanderings and trajectories through the network of game state nodes, revealing meaningful patterns, variables and relationships. Via the game analytics information about learners' activities and interests for improving learning outcomes could be acquired, towards the development and application of predictive models in instructional design. The dynamic character of game data loggings provides the opportunity, via game analytics, to reveal learners' behavioural pattern changes across time; the latter could further be justified by the corresponding questionnaires. The combined information acquired during the demonstration activities could facilitate the justification of the efficiency of the i-Treasures sensorimotor learning approach. Those analytics cover details such as;

- the score of the player,
- how much time spent on observation phase
- how much time spent on practice phase
- success/failure rates etc…

Similar to the above discussed issue about the questionnaires, the spirit of the demonstration environment may also contribute a difference to game analytics in a positive way. As the learner has a chance to observe the other people he/she may avoid typical challenges in the games. Thus they can come up with different strategies since they learn by observing the real case.

Currently we implemented the base functionality into the developed games. However, it is planned to improve and finalize the detailed analytics to gather all of the required data by the end of month 35, before the start of demonstrations.

4. Conclusions

This deliverable presents the demonstration plan of the ten sub-use cases of i-Treasures project which will take place between month 37 and month 45. The demonstrations are planned in a way to present the technical outputs of the project to the relevant communities and get feedback from them. At this phase of the project, sub-use case leaders have planned the scope, scenario, demonstration venue, participants and equipment, however these details can be updated depending on the future improvements in the project.

It should be noted that all of the sub-use cases target different audiences, address distinct scenarios and use different set-ups. Besides, some sub-use cases represent local ICH, while other are global. Therefore it is not easy to aggregate or merge sub-use case demonstrations. Considering this variety, it can be concluded that covering all of these ICH issues and presenting them to the relevant communities requires additional work and each sub-use case should be demonstrated by separate demonstration/s.

This issue introduces additional challenge especially in the cases that we have to use specific hardware such as hyper-helmet. Considering the facts that; this setup requires technical expertise and there are limited number of sets available, all of the rare-singing sub-use cases must be demonstrated sequentially, i.e. in different time periods. It is also necessary that the technical team is present and a backup setup should exist, since in case of malfunction it is not possible to rearrange another demonstration. This approach is also valid for all of the sub-use cases no matter what type of sensors/set-ups are used. Besides, some of the partners such as CERTH, UMONS are responsible of different sub-use cases. Since they must also participate in demonstrations, this issue also prevents us to organize parallel demonstrations. The last issue for demonstration planning is that some use-cases such as contemporary music composition will be demonstrated at different venues by responsible partners. Thus, many of the demonstrations must be organized sequentially between month 37 and month 45. Considering these issues, the exact dates and logistics of the demonstrations will be determined later following the completion of the system components toward the end of third year of the project (month 36).

It is also very important for sub-use case leaders who are also the leader of demonstrations, to practice the scenarios at least two months before the actual

demonstrations, if possible with the participation of few representatives of the target audience. This approach is quite important in order to discover technical challenges and to prevent future failures during the demonstrations. The time buffer of two months are required to fix/amend technical problems.

The last challenge is about the evaluation methodology. One of the outcomes of demonstration plan is to provide feedback to WP2 and WP7. Therefore it is important to derive information by gathering data while the experts and learners use the games. Besides, the questionnaires and game analytics data in raw format also provides a useful input to Task 7.3 "Use Cases Evaluation" and Task 7.4 "Technical Assessment of the System". Even though the different aspects of sub-use cases introduce variety, we plan to use game analytics which are supposed to provide common objective metrics as well as the questionnaires. In order to overcome this challenge it is planned to enhance the content of the game analytics as much as possible before the demonstrations start.