# GamiFIN Conference 2017

Proceedings of

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Edited by

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# GamiFIN 2017

# Proceedings

This volume of CEUR-WS Proceedings contains 20 papers presented at the 1st International GamiFIN Conference (GamiFIN 2017). The conference was held in Pori, Finland, May 9-10, 2017.

# Preface

GamiFIN Conference is a meeting place where researchers, industry and experts present results from their latest work regarding gamification, technology, media and digital culture for the future society.

The first GamiFIN Conference took place on 9th to 10th of May 2017 and was organised by the University Consortium of Pori. University Consortium of Pori is a centre of 2 500 students, 170 experts and four universities operating networked in a multi-science environment. UCPori carries out research and education in art, economics, culture, industrial management, technology, and social sciences, and provides a unique multidisciplinary environment for the research.

GamiFIN brings together people not only from different fields of academia but also from different sectors such as companies and other institutions. GamiFIN is a great opportunity to present your novel and ground-breaking research results, benefit from the interaction with industry and practitioners and to get new ideas how to utilize gamificational approaches in research as well as in industrial level.

GamiFIN 2017 was proud and delighted to have such a great combination of excellence around gamification in terms of our confirmed keynote speakers: **Dr. Sylvester Arnab**, Reader in Game Science, Coventry University (UK), **Dr. Sebastian Deterding**, a senior research fellow at the Digital Creativity Labs, University of York (UK) and **Dr. Juho Hamari**, a Professor of Gamification at UCPori and a leading researcher at the Game Research Lab University of Tampere. The exciting lectures concentrated on e.g. the current state of the art in the field of academic research on gamification, why gamification needs theory and how to transform ordinary tasks into extraordinary experiences. GamiFIN 2017 was sponsored by GameLayer & Cloudriven.

There were six academic paper sessions and one business & industry session held in the conference. The sessions based on the selected themes of the papers and were the following: Contemporary Research on Gamification, Gamification of Education, Cultural Approach on Gamification, Gamification & Design, Motivational & Behavioral Factors of Gamification and Health & Gamification. The academic papers were gathered based on the call for papers launched on autumn 2016. The submission system used was EasyChair, which also handled the double blind review process. We had a wide range of expertise around gamification in our program committee, which will be presented with the organizational committee later on.

Overall, the GamiFIN 2017 was a huge success. We had around 50 participants and they were from nine different countries (Finland, China, Jordania, Netherlands, Italy, Russia, Ireland, Greece, UK). The feedback we received was great and for that reason, we are happy to announce that GamiFIN 2018 will take place next year as well!


June 2017

Pauliina Tuomi
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# The Gamification of Heritage
# in the Unesco listed Medieval Town of Rhodes

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**Abstract:** "*Grand Master Challenge*" is a heritage game developed under the umbrella of DIVERTIMENTO, an ongoing Project within the COSME PROGRAMME 2014-2020. The Game aims to effectively facilitate tourism consumption choices and stimulate a new heritage mobility model in Unesco enlisted Medieval City of Rhodes by communicating heritage values to non-captives audiences in an entertaining and participatory way. It is supported by an iBook for iOS/Android operating systems specifically designed to serve as an information hub for the Game plot, narratives and clues and facilitate spatial navigation through the embedded Google Map. Structure and contents are aligned with human cognitive architecture to facilitate cognitive processing of information with tourism value. The Game enables an unlimited number of users to retrieve key media information and customize it according to their personal preferences and points of enthusiasm, transforming their personal experiences into a ludic marketing tool.

**Keywords**: Cultural Heritage (CH), Human Cognitive Architecture (HCA), Gamification

## 1. Introduction

In their seminal paper "Why do people play games? A meta-analysis" (Hamari and Keronen, 2017) define Games and multi-purpose information systems, with hedonistic and utilitarian dimensions, where players are pursuing "instrumental outcomes". We defend that this could be a definition for tourism, should one replace "game" with "destination": tourists select destinations from different reasons and perspectives: because they attach meanings to certain attractions; because they may be attracted by the beauty of nature or by a range of diverse activities or because they pursuit quality of services. At the same time major economic and technological shifts impact both the profile and the decisions of tourist: tapping the power of distributed networks they share ideas and expertise quickly and effectively, create and share information and knowledge with richer patterns of participation and engagement through Social Media and wired communities. Given the competitiveness of the tourism industry, destinations are a game to be won, should they meet "user expectations". This paper presents the design and delivery of a heritage game in the Unesco enlisted Medieval City of Rhodes, Greece as a first attempt to create a new heritage mobility model and thus offer visitors quality experiences and better informed choices in the Medieval City.

## 2. Research Objectives

Two objectives are set:  a) to develop a new heritage mobility model in the Medieval City to enhance the navigation and visitation pattern and thus facilitate consumer choices; b) to enhance the perception of the Unesco enlisted Medieval Complex by reducing the extraneous cognitive loads and exploit universal concepts to redirect attention, as familiarity allows the human brain to expend less effort to concentrate on personal and meaningful content. Prior and expert knowledge about the Medieval City are set to zero for both objectives.

## 2.1 Accessible Heritage

In order to make heritage accessible is required a heritage management tool that identifies and produces significant visitor experiences.  The development of a Game at a Unesco designated site, is a collaborative process that involves 3Level government actors, cultural operators, local communities, private owners and businesses, volunteers, research, academic and training institutions and domain specific experts. It incorporates a set of procedures and mechanisms that strive to connect onsite experiences with significant phenomena and events considering at the same time economic benefits for local businesses, sustainable uses of heritage assets and local resources and quality visitor services. In this vein the Game considers the objectives of cultural operators and heritage managers; the target publics, the significance of the designated monuments and the visitor experience diversity.

Non-captive audiences at heritage places are multinational, multicultural, and multigenerational groups, exploring novel information potentially connected with their own pre-understandings and prior knowledge. The main difference between learners in formal settings and non-captive audiences is the possibility to rehearse material. As human working is limited in capacity with respect to the number of elements it can handle simultaneously, rehearsal is necessary to prevent information loss. This condition cannot be met with time-scarce non-captive audiences at heritage places. In order to create a mental bridge to selected phenomena, and make the novel seem familiar by relating it to prior knowledge and/or universal concepts in a much shorter time period and more entertaining way, the Game presupposes a limited working capacity to deal with visual, auditory and verbal material and an almost unlimited long-term memory, able to retain schemas i.e., mental representations that vary in their degree of automation (Waxman, 1996:281, Oberauer et. al., 2003:167-193).

Experiences are created through memorable occasions and/or interactions that engage people in a personal way and connect them with a place. The Game offers non-captive audiences opportunities to derive from their play meanings and values, gain knowledge, modify attitude and behaviour. It is designed to create emotional impact and fosters multisensory experiences, enjoyment and relaxation.  Individual dispositions may dictate various needs to experience seekers: the need for social contacts at cultural heritage settings or/and learning experiences; the need for restorative environments or experiences which create a sense of peace and calm; the need or desire to escape from a mundane and alienating environment, or to alleviate boredom; a search for novelty or change, for new sources of stimulation and adventure, or the need to explore the unknown; the  need for learning or cognitive engagement;  finally leisure as an opportunity for self-fulfilment, self-development or a source of meaning in life. Given the aforementioned considerations 32 monuments were selected in the Medieval City of Rhodes, which, structured in 10 play units in an integrative audiovisual narrative, ensure mastery, autonomy and satisfaction across the 10 geolocations in the Medieval City, the Moat and the Perimetric Wall (fortification).

Research results demonstrate that information, which requires recipients to engage in complex reasoning and involve combinations of unfamiliar elements, is rejected. The Game Prototype has been presented to a sample of 53 individuals (supply and demand) utilizing mobile devices. The testing of the Prototype through an performance in the Medieval City, mise en scène by Aldo Di Russo, with adolescent volunteers, who played the roles of different actors and avatars, in the in 2014 has revealed that users are prone to co-creating meaningful heritage contexts, and that consumer time is shifting across interpreted monuments, but also across app and device categories and operating systems. More specifically results from the onsite research has demonstrated that the intrinsic motivated sample (78%) has freely  selected to attend or ignore communication content, whilst the minor part of the sample (22%) has stated explicitly that learning outcomes are paramount to recreational objectives. To serve the demands of audience, who prefers educational interactive entertainment to passive observation, a remedial evaluation in 2015 was undertaken to reorganize contents and enhance the experience via the deployment of an iOS primarily and an Android operating systems secondarily.

The Game aims to capture the essence of 32 heritage assets, organized in and effectively communicate their significance in a cognitive-emotional way to non-captive audiences in real time following a new heritage mobility model in the Medieval City. Prime goal of the Game is to facilitate information processed in each heritage narrative considering the working memory limitations and the scarce time budget of the audience, but not at the expense of understanding. Therefore the constraints inherent in the working memory are the determinants for the design of heritage narratives.

## 2.2 A New Heritage Mobility Model

The field research revealed that the new race of connected consumers, independently of age, is looking for *authentic experiences* at heritage places, exploiting all possibilities for the co-creation of context. While most cultural and tourism-oriented services include exceptional scenic or heritage assets to attract consumer flows, the Game generates customized experiences and points of enthusiasm, broadened and deepened by the stories and their interpretation. By highlighting cultural experiences in the Medieval Town, win-win scenarios for the host community and its visitors are offered via a new heritage mobility model in the Medieval City that terminates the vicious circle, where only three monuments are solely visually consumed: Street of the Knights, Great Hospital, Grand Masters' Palace. A series of outcomes describe the desired impacts of the Game, i.e., what the audience (53 test persons) does, think, or feels about the new heritage narrative and the game play:

*Cognitive-Emotional Impact:* Visitors deployed the Game prototype onsite allocating an approximate 20-50 seconds for each exhibit, 1-3 minutes for an interpretive, such as the Great Hospital of the Knights,- which serves as Archaeological Museum since 1912 shadow and sitting opportunities prolonged the reading time substantially. The Game wins a very specific significance onsite: the heritage narratives were gladly rehearsed by the audience more than 2 times in average. Each monument is embedded in a longer narrative, and is connected to the related monument(s) all across the Medieval City. Narratives have been re-visited, contextual information is assessed among groups, comparisons are drawn in the proximity of authentic assets, geolocations and new meanings are created and shared via the through apps and Social Media Tools. Different types of built heritage in the Medieval City have been compared (Classic, Gothic, and Ottoman era). Similarities and differences in the hospital care of today and in the Middle Ages in Rhodes and Europe have been discussed. Income differences of skilled workers today and in the Middle Ages i.e., doctors, engineers, but also carpenters, sailors, artisans, construction workers and farmers provoked curiosity and further discussion.

*Socialization:* unlike in the classic tourism consumption model (organized visit) the test persons have engaged with each other and have interact onsite with other visitors, to whom they have shown the Prototype. Test persons and visitors have discussed how the experienced heritage assets relate to their own lives, most notably the Great Hospital of the Knights, the Grand Master's Palace, St. Catherine's Hospice and the Moat. 26 visitors have called others in their group over to try the suggested activity offered by the Game and have followed the test persons on the game play.

*Place Attachment:* Test persons have explained how they have acquired *expertise* about the Medieval City, which led to excitement and inspiration, but also to accessibility and security in moving around the Medieval City, the Moat and the Perimetric Wall. This "freedom" has enabled more and better informed consumption choices. Familiarity and dexterity in moving around is a result of prior knowledge (previous onsite-virtual experiences, experiences of others, by means of visual, verbal and sensory stimuli) and acquisition of information with tourism value. If the quest *"how can I find the GM Palace"* cannot be met, then tourism revenue is lost. Landscape familiarity has impacted length of stay within the Medieval Town for different consumption purposes. Reported behavior of the test persons has proved to be congruent with the risk-reduction strategy theory formulated by scholars (Ankomah et al., 1996, Gursoy and McCleary, 2004, Kerstetter and Cho, 2004, Ryan, 2000, Walmsley and Jenkins, 1994, Yovcheva et al. 2013), however as mobile technologies impact the knowledge pattern, further inquiries are needed to shed more light into the correlation heritage knowledge – tourism consumption. Through the Game the onsite audience is offered a significance chance to create their personal place-bonding at a time. Thus a new cultural heritage mobility model is born.

## 3. Methodology

### 3.1 The Planning Concept

The Game is supported by a cohesive heritage narrative "THE UNITED STATES OF EUROPE: DRESS REHEARSAL, RHODES, 1306-1522" developed according to the values of the Council of Europe and it is embedded in the iBook. It involves 32 monuments connects 20 geolocations, in the Unesco enlisted Medieval City of Rhodes, structured in 10 trail stations. Given the multiethnic character of the Knights Hospitallers and the visibility of monuments in the landscape, 5 interpretive spheres are introduced to inspire the comparison of the sovereignty of Rhodes (1306-1522) with European Union values "united in diversity". Following recent scholarly research that challenging games help the learning process (Hamari et al., 2016), the Game is designed

to facilitate visitors familiarize with known schemes from their everyday life such as: (multi-ethnic) governance, citizen services (administration, health, defense, etc.), economy and commerce, faith, social life and arts, private life, so as to enable quick understanding and foster participatory cultural consumption. The cultural route developed entails 10 play units that include 20 geolocations. Each play unit is embedded in the EUROTHENTICA eBook.

## 3.2 Heritage Assessment

The National Heritage Register declares 281 assets within the wall of the Medieval Town of Rhodes (1948). 32 assets have been selected, following the Significance Assessment methodology adopted by DIVERTIMENTO, documenting exactly why assets are significant using a multivariate analysis. A Statement of Significance produced for each asset on the basis of the historic-archaeological information, intrinsic qualities, inherent values, visibility in the landscape, spatial importance, social recognition, physical accessibility and interpretive potential, build the asset values, the meanings that shall be conveyed to the audience. Meanings are contextual in nature, including a linguistic, spatial and a social context. To access any meaning is to comprehend it within a given context. The significant context of meanings in tourism is a spatial one, the sense of place. Meanings extracted from a visit to place, heritage or natural site, collection etc., constitute the high added value experience a visitor takes away in memory. In this vein, the visitor experience is the meaning as a result of cognitive processing.

## 3.3 Audience and Stakeholders

The audience at heritage attractions, heritage places and sites, whether it is called, visitor, tourist, or cultural consumer, a gourmet seeking customer, or a curious soul, it belongs to the very heterogeneous groups, often comprised of multi-generational and multicultural identities. Capturing and keeping their attention high up during the Game, it means to create bridges between the inherent values of the heritage assets selected for presentation and the Game players. Far beyond the dissemination of factual information, an interpretation process creates meanings, so that the Game Players can put a place into personal perspective and identify with it in more profound and enduring way.

The Game refers to the inherently interesting and valuable tales that most heritage assets can narrate about the history, culture and environment of the surrounding landscape and communities. Telling the story is a creative process that includes many types of synergies within the Local Stakeholder Map. Through the story, citizens can express what is unusual and special about their communities. The Game is the intentional, coordinated message conveyed to the audience about the heritage assets and their qualities. The additional emphasis of quality and continuity of the visitor's experience distinguishes the Game from other tourism products and management issues like landscape protection or land management efforts. The development of the game encourages the Local stakeholders to seek out, document and communicate all of the special qualities of a place: archaeological, natural, cultural, historic, recreational and scenic. This makes the onsite experience an integrative experience: visual, educational, physical and emotional. The Game aims at increasing cultural and tourism consumption: while most culture and tourism-oriented services include exceptional scenic or recreational heritage assets to attract consumer flows, the Game will draw experiences, broadened and deepened by the story and its interpretation.

Public, private and third sector local actors and project stakeholders form the supply side. However the Local Stakeholder Map is fragmented because: a) different institutional/legal structures and frameworks/capacities with overlapping state-regional-local government responsibilities perpetuate tensions in the policy context; b) different perceptions of culture by different actors at different levels give rise to competition between the public-private sector actors. The perception of the Game as a novelty in the heritage landscape has been embraced more by the audience and the businesses than the public sector and the local authorities.

# 4. The Game Design

The Game is addressing multinational, multigenerational non captive audiences, with sufficient knowledge of English as a foreign language. Embedded in EUROTHENTICA, an  the eBook Collection for iOS/Android/Windows iBook available at the Appstore and Google Play, the Game is exploiting storytelling to create a new cultural heritage experience in situ. Storytelling, old as prehistoric times, is still a powerful tool for

conveying and sharing ideas, beliefs, values and traditions exactly because stories are so effective at explaining the meaning of things. The Game refers to the inherently interesting and valuable tales that most heritage assets can narrate about the history, culture and environment of the surrounding landscape and communities. The story is an aspect that people often find highly interesting, fun and compelling, and this encourages participation.

As the Medieval Town is a Unesco enlisted monument, signposting is prohibited. At major entry gates i.e. moat, gates exists directional signage, while labels onsite offer information strongly coded in expert language. A narrative structure around each monument has been developed with a reading duration of 60 secs for each story, that is embedded in the iOS/Android iBook. The game play developed in in the Medieval Town and the Moat has duration of 180 minutes.

Modern neuroscience is yielding insights which can give valuable tools for the design and delivery of quality visitor experience. Brain literacy can help accurately identify aesthetic reactions to the visual environment and catalogue the features which sustain or detract from important aesthetic experiences (Papathanasiou-Zuhrt & Di Russo, 2015). Aligned with the principles of human cognitive architecture, information units in the iOS/Windows/Android environment are chunked with max. 3 novel concepts per unit, below the limit proposed by Miller (1956), Baddeley and Hitch (1981) and Baddeley (2003 and 2012). Graphic design is aligned with the eye-scan-path movement, information layering follows international standards for the interpretation of heritage (Papathanasiou-Zuhrt &Weiss-Ibanez, 2014). In order to decongest working memory, redirect attention and allow visitors to connect with prior knowledge from the everyday life, metaphors and associations have been extensively utilized. Meanings communicated through the use of associations and metaphors are based on universal concepts, and differ substantially from transmitting formal knowledge. Main goal is to inspire visitors co-create content; experience heritage in a playful way without alienating the socio-historical context; have fun and realize the benefits.

The Game tells a story at each play unit. Depth and complexity depend directly on the location-task correlation, which affects the time required to play at each location, perform the tasks, the ease of accessing and processing information. The Game is linked to Social Media Channels and the Google Map through the iBook. Winners, who have mastered all tasks, are awarded the title of the Grand Master. To promote the Game's ludic character, winners receive the Game diploma and a free meal/drink and their photograph is uploaded in the Grand Master's Gallery, Generation II.

The Game design considers also site facilities and orientation, tourism related services such as transport and accessibility issues, catering, shopping and accommodation information, distance and time on tracks, important features identified on an orientation map, seasonal problems such as high/low temperatures etc. With an ability to objectively identify the essential elements of indoor and outdoor heritage spaces, strategies and plans which better safeguard valuable assets can be crafted. Environmental protection and scenic preservation has become an increasingly important part of open space planning as the public desire for such amenities grows and the prospect of losing natural and scenic resources increases in response to growth pressures. The emphasis on quality of the visitor experience distinguishes the Game from other tourism products. While most culture and tourism-oriented services include exceptional scenic or recreational heritage assets to attract consumer flows, the Game will draw experiences, broadened and deepened by the story and its interpretation.

Experience seekers crave for authentic experiences at heritage places (Bulancea &Egger, 2015). Highlighting cultural experiences along the Game Area a win-win scenario for the host community and its guests emerges as stories provide a mechanism for encouraging the audience to lengthen stay, an economic impact felt throughout the Project Area.

## 4.1 The Game Area

The eBook narratives reinforce the association chain enabling new cognitive content to relate to prior knowledge.The narrative is the part of the story told to the player, either by the stakeholder member, either by dislocated information and further clues, either by evident information in a digital device The narrative is the non-interactive part of the story, but nevertheless is may motivate or discourage the player to carry on. As game playing is an interactive process, the narrative may be also used to provide for relaxation and further encouragement, provided is well planned and written. Writing in an entertaining, short, precise and interpretive way is a task that shall involve high expertise in the domain. The narrative shall embed the clues and the story

flow, but not as an account of facts in a scientific language. Here will be defined the actual progress of the Game Plot. As you do so, think about ways that the player can take an active role in helping the avatar to make it through the story: overcoming obstacles, meeting challenges, solving problems, and so on.

**Table 1.** The Game Area.

| N | MONUMENT NAME NAME | GAME NARRATIVE | LATITUDE | LONGITUDE |
|---|---|---|---|---|
| 1 | MOAT | DIGGING THE MINES, Moat 1522 | 36,446796 | 28,222924 |
| 2 | GATE D'AMBOISE | THE SWORD OF KING LOUIS, Rhodes, Gate Amboise, 1512 | 36,446002 | 28,222785 |
| 3 | GRAND MASTER PALACE | BEST SELLER BOOK, Grand Master Palace, 1481 | 36,445775 | 28,224113 |
| 4 | CHURCH OF ANNUNCIATION | EXPLOSION, St. John of the Hospital, 1310 | 36,444714 | 28,223973 |
| 5 | KNIGHT STREET | TRIUMPH, Street of the Knights , 1306 | 36,44505 | 28,224595 |
| 6 | HOUSE OF PRINCE CEM | EXPENSIVE CAPTIVE, House of Prince Cem, 1481 | 36,445307 | 28,226127 |
| 7 | GREAT HOSPITAL OF THE KNIGHTS IN RHODES | EYE WITNESS , The Great Hospital of the Knights, 1437 | 36,444796 | 28,227176 |
| 8 | LADY OF THE CASTLE | THE FLOCK, Our Lady of the Castle, 1309 | 36,445057 | 28,227546 |
| 9 | OLD HOSPITAL OF THE KNIGHTS IN RHODES / GUNPOWDER MAGAZINE | MEDECIN SANS FRONTIERES, 1356 | 36,445478 | 28,226803 |
| 10 | ARMORY DE MILLY | THE DRAGON SLAYER, Armory of the Knights, 1420 | 36,446272 | 28,227865 |
| 11 | CASTELLANIA | JUSTICE, Castellania, 1507 | 36,443523 | 28,228678 |
| 12 | ADMIRALTY | ADMIRAL IN LOVE, Admiralty 1451 | 36,442938 | 28,229885 |
| 13 | KAHAL SHALOM SYNAGOGUE | RACHEL GRANADA, Square of the Jewish Martyrs, 1426 | 36,442204 | 28,230416 |
| 14 | OUR LADY OF THE BURGO | THE TREASURE OF THE VIRGIN, Our Lady of the Burgho, 1522 | 36,442893 | 28,230802 |
| 15 | ST. CATHERINE'S HOSPICE | ROOM WITH A VIEW Hospice St. Catherine, 1467 | 36,443167 | 28,231266 |
| 16 | COMMERCIAL PORT /SEA GATE | SAILOR OF FORTUNE, Porta Marina, 1401 | 36,444023 | 28,22827 |
| 17 | ST GEORGE BASTION | HIGH TREASON, Bastion of Auvergne, 1522 | 36,443967 | 28,221945 |
| 18 | TOWER OF ITALY (BASTION DEL CARETTO) | DISAPPEARENCE, Tower of Italy, 1516 | 36,441151 | 28,231942 |
| 19 | TOWER OF SPAIN | ANASTASIA , Tower of Spain, 1522 | 36,441956 | 28,222416 |
| 20 | MANDRAKI MILITARY HARBOUR (WINDMILLS, FORT ST. NICHOLAS, CHURCH OF ANNUNCIATION) | SAILOR JERVIS, Fort St. Nicholas, 1480 | 36,451243 | 28,228017 |

## 4.2 The Game: Mission, Narrative, Plot and Rules

The objective of GRAND MASTER'S CHALLENGE is to offer an entertaining experience in the Unesco enlisted Medieval City of Rhodes. Therefore the Plot is defined by the socio-historical contents of the period of the Knights Hospitallers in Rhodes, Greece: 1306-1522.As the defined landscape is set around 1500, for reasons

of a clear visibility of the selected monuments in the landscape, the plot is associated with stories, events and technology standards of this particular type: dresses, weapons, titles, societal stratigram, roles, socio-historical background and connections to Europe are set in the time period 1306-1522. The plot is simple and includes the discovery of a theft, which is crucial for the defense. 4.000 golden ducats which are destined for the acquisition of a new chain for the Military Harbour vanish mysteriously from the Inn of Spain and this fact is associated with the sudden death of Grand Master Fra Guy de Rochefoucault. The Vice Chancellor of the Knights in Rhodes Fra Giovanni-Battista delle Scalle invites Knights from all European priories to come to Rhodes and contribute to the revealing of the culpable. The knight who solves the mystery becomes the next Grand Master.

Players are assisted by an avatar that helps overcome the obstacles and giving the hints for the clues that are embedded in the eBook Narrative. The introductory text sounds: *I am Professor Hans von Puppet, archaeologist. I have spent my life without any sensational discoveries and I was thinking to retire. But suddenly, a clue from the Hidden Book of Knights in Rhodes, lost for 500 years, changed my life. And this clue will change your life too. Play the game in the CITY OF THE KNIGHTS in Rhodes and I will share with you the secrets of the Knights Hospitallers. I will reveal the Game rules. The invisible hand will help you. You will win the Game and become the next Grand Master of Rhodes.*

*And remember: "The Mediterranean is the key to three Continents".*



**Figure 1.** The Avatar.

## 5. Conclusions

The instability in the wider area of eastern Mediterranean and the refugee crisis has led to a sharp decline in both visitor numbers and average spending in the Aegean islands. The challenge is for Rhodes is to create both an alternative visitation motive and quality experiences in the Medieval City, which received in the last three years an average of 2,5 million, but only a 3% have visited the major attractions in the Medieval City. The Game implementation shall ensure that cultural heritage assets and services selected by cultural consumers and heritage tourists in the Project Area become fully accessible across computers or mobile phones, with the streetscape playing protagonist roles in the experience framework. The Game is transforming factual information about selected geo-locations into fully comprehensible digital artworks, that complement cultural consumption and independent travel practices. Thus visitors will be enabled to customize their experiences and seek attractive services and applications, hence, fostering consumer demand. The innovation of the Game lies in that *a-* instead of attracting CH consumers by merely exposing asset visibility, it links the tangible object with its intangible dimension, the hidden meanings and the stories in a cognitive-emotional way; and *b-* is projecting every-day-life basic knowledge into the remote past utilizing heritage assets onsite and an ICT-intense experience environment. Still tested as a prototype, the Game is designed to offer a participatory CH service with cognitive-emotional affinity, through a process of negotiation with creative crowds and prosumers, where validated expert knowledge matches the creative skills of experience seekers and cultural consumers.

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**Annex**
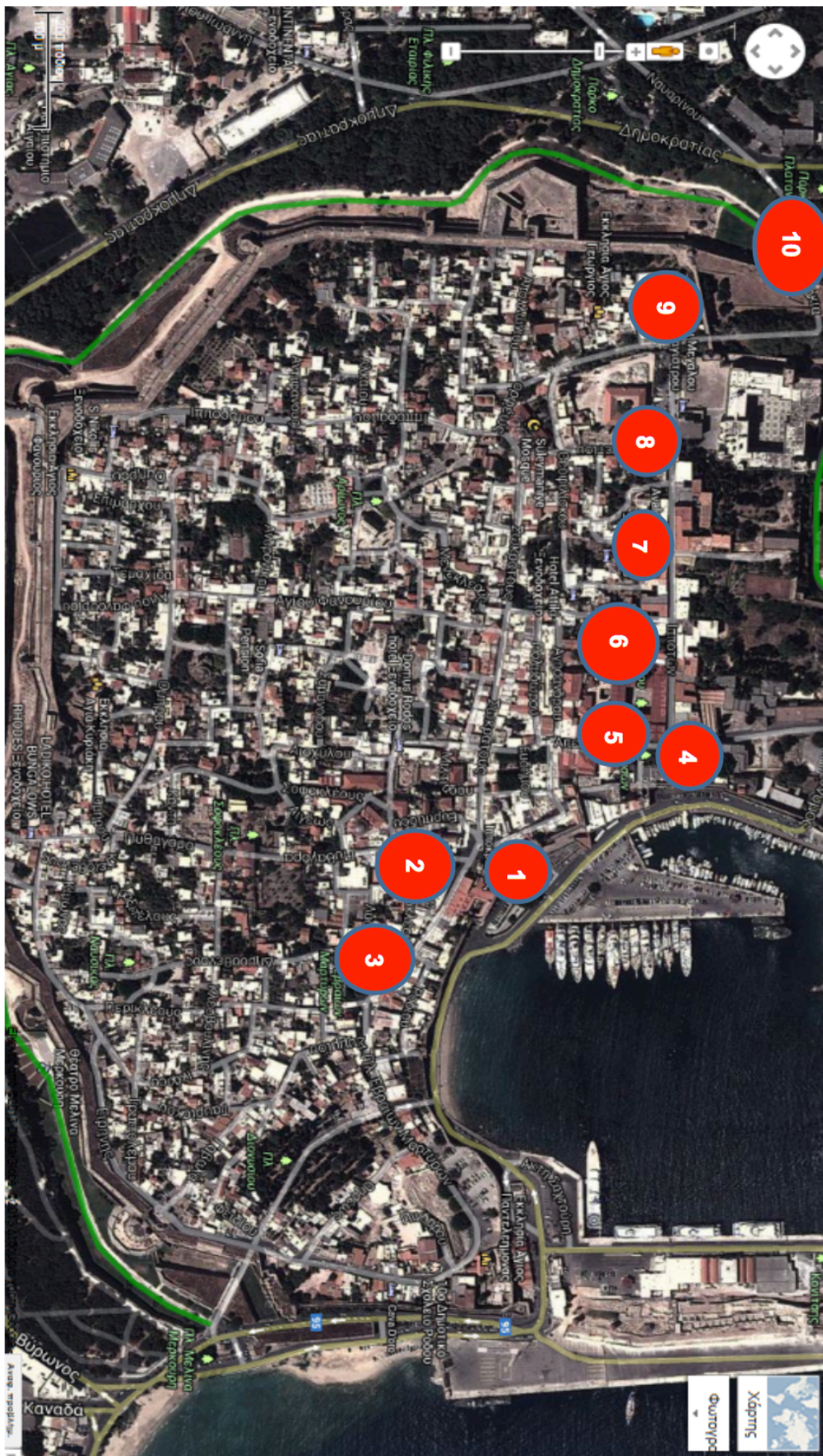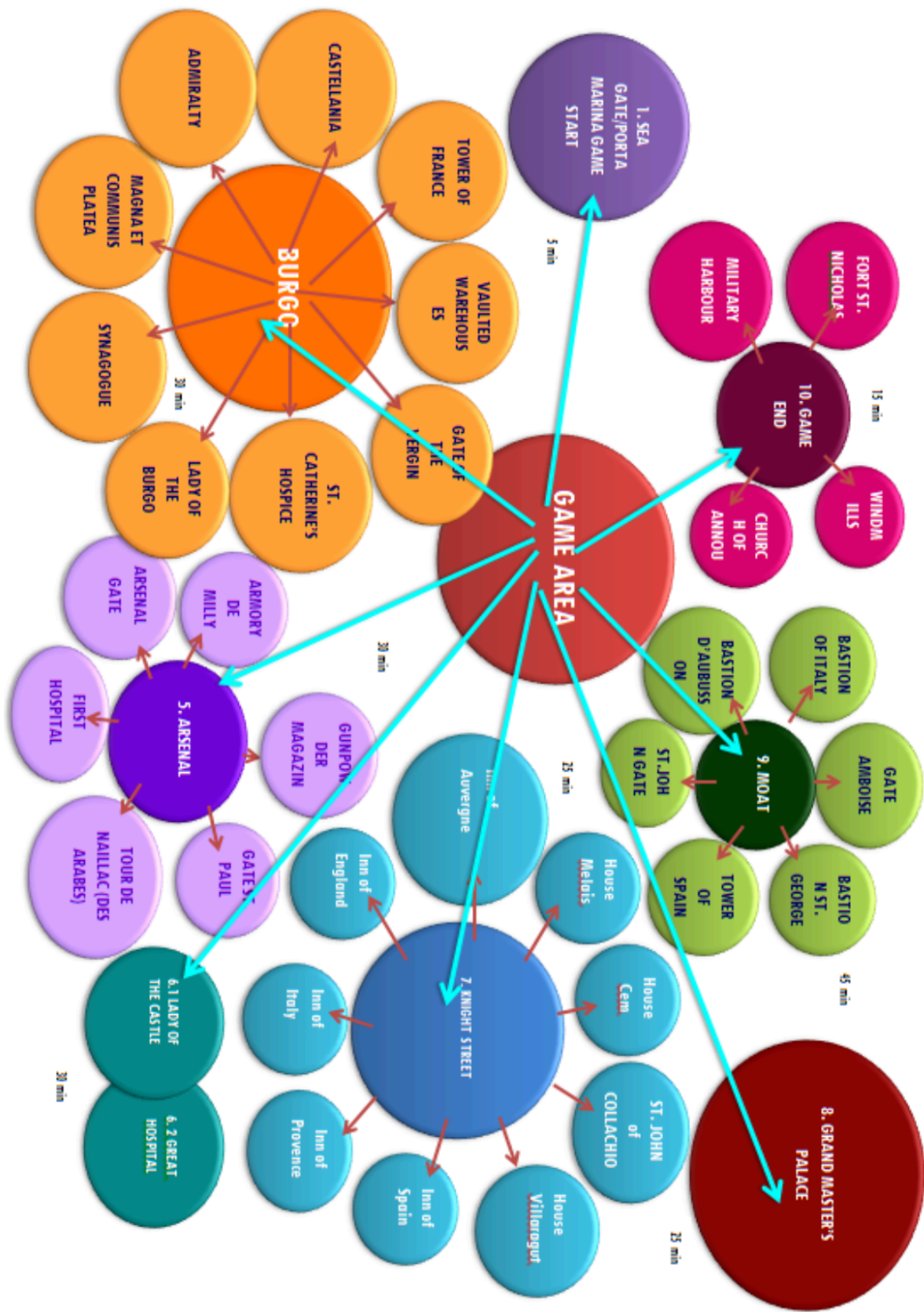


**Figure 2.** The Medieval Town of Rhodes.

**Figure 3.** The Game Area.

**Figure 4.** Game Play Locations.