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Project Acronym: i-locate

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D.7.3 Risk Log

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Dissemination Level		
P	Public	X
C	Confidential, only for members of the consortium and the Commission Services	

REVISION HISTORY AND STATEMENT OF ORIGINALITY

Revision History

Revision	Date	Author	Organisation	Description
V 01	26/11/2015	Irene Facchin	TRILOGIS	First version
V 02	27/12/2015	Giuseppe Conti	TRILOGIS	Update and final review

Statement of originality:

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

1. Table of Acroyms

Acronym	Description
A	Other
D	Risk related to the accessibility of data
I	Impact
M	Risk related to project management
N	Risk linked to norms or regulatory framework
O	Risk related to operating activities
P	Probability
T	Technological Risk

2. Executive Abstract

The risk plan in i-locate has been edited following the recommendations by the Project Management Institute (PMI) as detailed within the document Project Management Body of Knowledge (PMBOK®). The plan provides a "system" approach to the project risk management through a process that begins with the preparation of the risk plan, which defines the methodology for risk management, and it continues throughout the project lifecycle through constant monitoring, detection, evaluation (qualitative and quantitative) and documentation of risk factors, the identification of any mitigating action, and the subsequent monitoring of residual risks until their complete resolution is achieved or the project activities are concluded.

This document provides the results of the activity of continuous monitoring of the project activities. The report covers the second year of the project, from the 1st of January 2015 to the 31st of December 2015.

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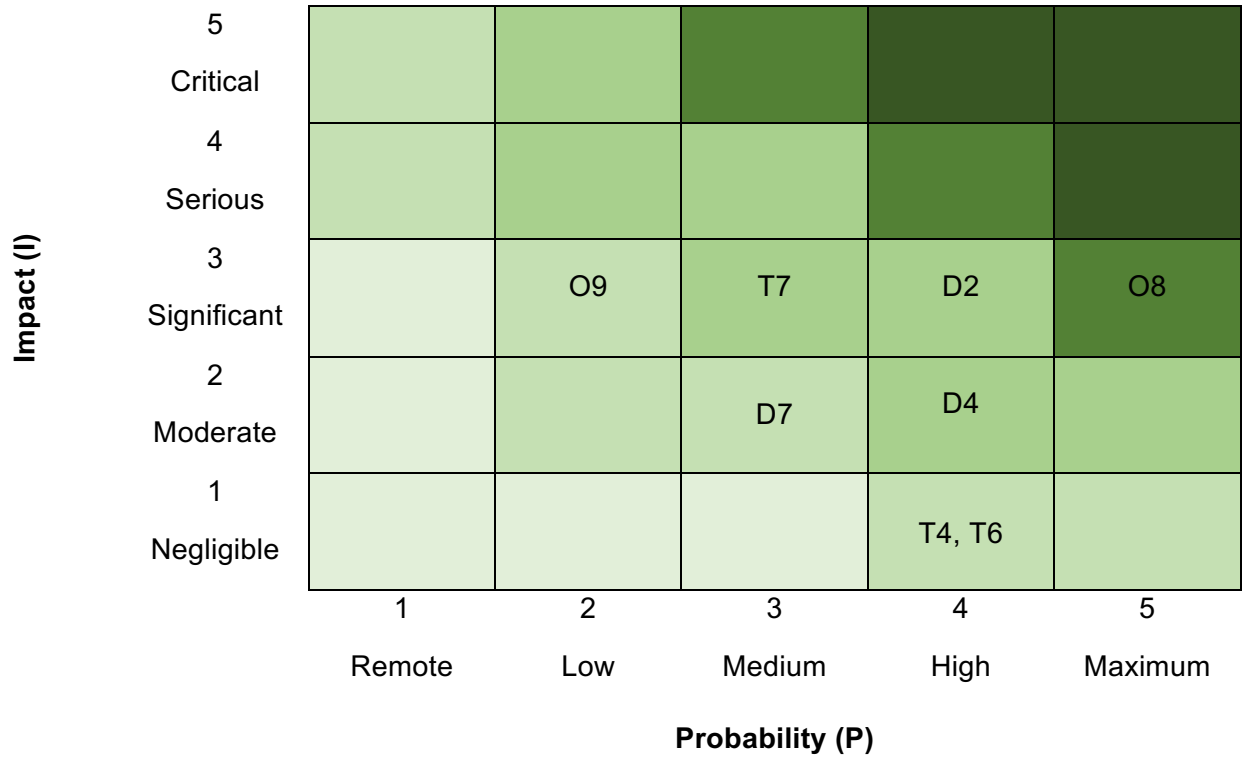
3. Risk Analysis methodology

This document provides the results of the activity of continuous monitoring of the project activities. It covers the period of the project activities from the 1st of January 2015 to the 31st of December 2015.

Risks in the i-locate project have been articulated into the following categories:

- T = Technological Risk.
- O = Risk related to operating activities.
- M = Risk related to project management.
- N = Risk linked to norms or regulatory framework.
- D = Risk related to the accessibility of data.
- A = Other.

The following rating has been used for project risks according to their severity and the probability of happening.



Probability	Description
5 = Maximum	Will surely happen: “1 on 1” chance

4 = High	May happen frequently, chances are between “1:1” and “1:10”
3 = Medium	May happen, chances between “1:10” and “1:100”
2 = Low	May happen rarely, chances between “1:100” and “1:1000”
1 = Remote	Very rare chance, less than “1:1000”

The classification in terms of probability (P) and impact (I) of risk factors, as per the graphic above, allows the definition of the Matrix Risk Index (RI), as presented within the following Table 1. The risks are herewith grouped according to a classification of the risk level.

Table 1. Matrix Risk Index Table

IR >= 20	Max	High risk of non-compliance of the project results, significant impact on the functionality provided by the system as well as on the timing and costs.
16 <= IR < 20	High	High risk of non-compliance of the project results, possible adoption of alternative technologies or methodologies with small variations on the final results but with a significant impact on costs and time.
6 <= IR < 16	Middle	Low risk of non-compliance of the project results, possible mitigation through adoption of alternative technical solutions with reduced consequences (time/costs).
4 <= IR < 6	Low	No risk of non-compliance of the expected results, minor changes compared to the nonfunctional requirements, marginally behind schedule (which can be absorbed in the course of further project activities) and costs.
IR < 4	Min	No risk of non-compliance, no change to functional characteristics, no impact on costs / time.

4. Risk Analysis

4.1. Technological Risks

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
T1	Risks inherent to the usage of open source tech., with poor commercial support.	3	2	No		
T2	Open source – possible sustainability issues generated from lack of interest to keep it updated.	2	2	No		
T3	Defined use-cases from the final users are not compatible with the technical requirements.	4	2	No		
T4	Some of the technology to be integrated are not mature enough and do not scale when deployed in the pilots.	4	1	Yes	No	As described in the deliverable 5.1., partner TU/e reported that there are still some additional features to be included in the i-Locate App in order to ensure full coverage of all the use cases, with particular regard to visualisation of features necessary for the navigation function. Currently, the team is working on these issues to solve all of them as soon as possible.
T5	The indoor localization technology chosen fail to provide the required accuracy.	3	2	No		The limitation brought by low localization accuracy achieved by Wi-Fi has been overcome by complementing Wi-Fi with use of QR codes located at

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
						strategic places throughout the building (currently in progress).
T6	Problems with integration of different technologies available to the project.	4	1	Yes	No	Due to limitation in the API available for GALILEO, it may not be entirely possible to develop the solution for iOS devices (instead the Android version is being developed with no specific issue), since this may require non-standard solution (i.e. jail-breaking of the smartphone). Solutions to this issue are being considered by the technical team. In case of a technical barrier full GALILEO support will be ensured for Android devices only. Moreover, the pilot in Athens arose some criticalities about the IndoorGML creation. All nodes and ways are displayed in the same manner, despite the fact that they have different information or that they do not have any at all. Thus, the graph creator cannot easily identify which ways and nodes include information and which do not, neither the existence of an error during the process. Additionally, during the IndoorGML creation, every available tool of the i-locate portal corresponds to a single task. For example, by clicking on the “Draw a

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
						point" icon you can draw only one node. In order to draw another point, one has to click on the icon again. This isn't convenient since there is the need for the creation of multiple nodes, ways, and attributes. Almost all of these criticalities have been addressed in a later phase on the portal; a new 'batch' procedure has been added for allowing easier creation of multiple items, and a plugin based on Open Street Maps software has been provided to see the whole graph in an easier way.
T7	Delayed delivery of results.	3	3	Yes	No	On 26/10/2015, partner Epsilon International informed the coordinator about their decision of withheld their participation and work in the project until the problem of the withheld payment on their regard would have been solved. The coordinator has immediately discussed with the TM and WP leader on how to minimise the impact for the project at the stage in which the consortium is releasing the final solution in two months. Trilogis and u-Hopper, as leader of the work package where development takes place, had take over ad interim (until necessary) the technical activities of Epsilon.

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
						Additional development, specifically related to the development of EGNOS/Galileo components, which is not critical to the project (in that its features are not required by the pilot activities), will be dealt with at later stage during the pilot phase. After discussion during fall 2015 have brought Epsilon International to reconsider their choice and resume activities. In fact this risk has been closed since Epsilon agreed on 11/11/2015 to proceed with the planned activities. All this situation has caused just a slight delay in the project. Moreover, issues had been raised on the development of the mobile application during 2015. Task 2.5.4 was reported on delay. The task should have started in February, and at the end of may partner ZIGPOS informed the Coordinator that they had still to start handling the task. The Coordinator urged partner ZIGPOS to give a very detail timeline of the

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
						various development stages i.e. dates with associated features. In the following months development caught up with support of other technical partners. The pilot in Rijeka experienced a problem when the customization of the application was needed to accomplish functioning and running of the scenarios. The issue was due to the fact that the pilot had initially no supporting partner (it had been initially supposed that the IT department would be adequately skill to carry on development by themselves). This issue was solved by transferring to another partner (UH) the effort necessary for their application customization. This change introduced some detail, however a new release of the app is now in the finalization stage and will be soon released. At the beginning of the installation planning there were some criticalities regarding the placement of the hardware within the pilot site in Dresden (partner ZIGPOS). The administration of the University of Applied Sciences was not aware that this setup would require fixed mains powered installation. After several negotiation rounds and some adjustments with the

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
						final placements, a solution has been found and the hardware installation started with a minimum delay.

4.2. Risks Related to Operating Activities

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
O1	Low involvement of the final users in the definition of Use-Cases	4	2	No		
O2	Low involvement of the final users in later activities of the project	3	2	No		
O3	Scarce participation by the stakeholders in validating the results from the pilots	5	3	No		
O4	Training material is not suitable for the purpose or not in the right format	4	3	No		
O5	Participation in the training actions by the targeted users is low	4	1	No		
O6	Breach of system security	4	2	No		
O7	Insufficient or incorrect maintenance	3	2	No		

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
08	Change to pilot areas	3	5	Yes	Yes	A change in the pilot site in Malta has occurred, from St James hospital to Mater Dei Hospital.
09	Delays in pilot activities	2	3	Yes	Yes	Early in 2015, partner GEOSYS reported that St James hospital pilot location was being being sold, so this blocked all the pilot activities. GEOSYS asked for a postponement of the obligations according the pre-defined timelines by 3 months. A new pilot at the Mater Dei hospital has been identified and a formal agreement with the management has been found. GEOSYS is now working hard to recover from the delay. Some criticalities occurred during the hardware acquisition phase for some of the pilot sites, because of the Italian and Romanian purchasing strict rules for public institutions. This happens for pilot sites in Italy (Rovereto, Tremosine) and Romania (Alba Iulia, Sibiu). This situation caused a delay in the preparation or installation of the hardware, without causing delay to the other pilot activities.

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
						A minor delay occurred for partner Municipality Of Genova, due to an internal reorganisation of the Municipality. This has brought some delays in the acquisition of the hardware and hence the whole pilot experienced a delay in the tasks. Now the tasks are going on and the team is working hard to recover the time lost. Moreover, some criticalities emerged for the Tremosine pilot. At first, the landslide moved the focus to that use case and required a rethink of the pilot site, which, afterwards, moved back the decision due to a very fast and accurate resolution of the issues

4.3. Risks Related to Project Management

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
M1	Original plan within the DoW not corresponding to actual project costs or efforts	4	1	No		
M2	Partner delivering poor or unsatisfactory results	4	1	No		
M3	Technical partner leaving the project	4	1	No		
M4	Supporting technical partner leaving the project	4	1	No		
M5	Pilot partner leaving the project	4	1	No		
M6	Marginalisation of partner	3	1	No		
M7	Limited involvement of members of the Advisory Board	2	1	No		

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
M8	Problems with liaising with international initiatives	2	1	No		

4.4. Risks Related to Norms or Regulatory Framework

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
N1	Regulatory elements that set constraints to the pilots' deployment and use of the ***i-locate*** toolkit.	5	3	No		
N2	Differences between legal framework may cause undue constraints.	3	1	No		
N3	Problem with privacy issues related to use of location based services with patients or differently abled citizens.	4	1	No		

4.5. Risk related to accessibility of data

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
D1	Data update, as changes in infrastructure may occur.	2	4	No		
D2	Limited data availability (data variance, change of specifications, data coverage).	4	3	Yes	Yes	Some of the partners did not have fully digital data. The remedial action envisaged is an appropriate process of data creation and collection, which is actually in progress. This risk has been completely mitigated.
D3	Limited accuracy and precision.	3	2	No		
D4	Limited or no access to indoor mapping data of old buildings.	4	2	Yes	Yes	Indoor maps have been created by taking into account this possibility.
D5	Inability to collect indoor data beyond the pilots involved.	1	2	No		

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
D6	Limited access to other data Sources.	3	2	No		
D7	Data format of the maps were not suitable	3	2	Yes	Yes	One of the issues that arose during the floor plans preparation and that lead to discussions between the pilot in Sibiu, the technical supporting partner, and the coordinator, was related to the data format of the outline (boundaries) of the maps. Due to the portal and data structure there could be only one outline for each pilot site, but the maps for the Brukenthal Palace building and the Tower from the History Museum (situated 100 m away down the street) were created separately and should have been merged together. After some discussions the solution came by merging the two data correctly leading to the actual visible result on the portal.

4.6. Other Risks

ID	Description of possible risks	I	P	Occurred?	Finished (if occurred)	Remedial actions
A1	Limited involvement of international community.	1	1			
A2	Unsatisfactory impact of standardisation activity.	1	2			