Ten Projects
Horizon 2020 for Cultural Heritage
Pre-Kick Off Meeting

BUTLER JEROME
Project

Second draft, March, 2015

A.I.C. – Associazione Investire in Cultura

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B - TECHNICAL ANNEX

COVER PAGE

Title of Proposal: Mobile robot for aged persons

Acronym: Butler Jerome

List of Participants:

Participant No *	Participant organisation name	Country
1	X	X
2	Y	Y
3	Z	Z
4	W	W
5	K	K
6	K	K
7	K	K
8	K	K
9	K	K
10	S	S
11	L	L
12	A	A
13	O	O.

Table of Contents

Butler Jerome

"Mobile robot for aged persons"

1 – Excellence

1.1 – Objectives

For aged as well as disabled persons the visit of a museum like the Louvre, the British Museum or the Uffizi is quite a difficult and tiring task. Nevertheless tourism statistics show that there is a continuous increase all over Europe of aged persons visiting museums.
Difficulties to move inside huge galleries, to understand directional internal signs, to find essential services like restrooms, cafeterias, etc, may deprive an aged person of the pleasure of the visit.
The use of wheel chairs for disabled persons, either hand or motor driven, is always possible but they represent a rather rude and sometimes offensive solution for many visitors who will refuse to use these facilities.
Objective of this proposal is to create a an independent wheeled robot prototype called "Butler Jerome" which has to be specific for a single museum. Its main feature is its perfect knowledge of the spaces and services of that museum, both single objects like paintings and sculptures but also the position of services like caffetterias, restrooms, shopping areas. It has to be able to move inside the museum interacting with an aged person sitting on it with natural language so that the visitor may ask questions relative to single objects and services inside that specific museum.
The project has to be divided into the following steps:
1 – Construction of a wheeled robot so that the person may sit comfortably. It must have a very different design from actual motor driven wheeled chairs for disabled persons.
2 – The wheeled robot must be able to move avoiding obstacles through perfectly known spaces of a specific museum. The software needed for such a task, as well as the mechanical solutions represent a significant challenge.
3 – The wheeled robot must accept questions of the visitor referring to activities and services which are specific of a single museum by using natural language.
The development of a prototype useful for a specific museum may be reprogrammed for other specific museums once the areas, services and objects of the museum are known.

1.1 Relation to the work programme

The work programme topic to which Butler Jerome relates is Robotics ICT24 because the proposal fulfils the Call requirements, ie.:

a) Call Specific Challenge:

b) Call Scope:

c) Call Expected impact:

d) Call Types of action:

Research and innovation actions.

Code 2 (to be written once all Work packages are ready)

1.2 – Relation to the Work programme

Code 1 (to be written once all Work packages are ready)

1.3 – Concept and approach

Code 2 (to be written once all Work packages are ready)

(Describe the overall project starting from the activities of WP2, WP3, and WP4: their approach, methodology, etc. and any national or international research linked to this project).

1.4 Ambition

Code 3 (to be written once all Work packages are ready)

(Describe for the overall Project, i.e. for the activities reported in WP2, WP3, and WP4:

1 - the state-of-the-art

2 – the progress beyond the state-of-the-art

3 – the literature concerning the previous points)

2 – Impact

2.1 –Expected impacts

Code 4 (to be written once all Work packages are ready)

(Describe how a lasting impact of the Project will be ensured by the following strategic Project choices):

……..

(In particular, describe the following Project outcomes that will become available in a practical use):

……..

2.2 –Measures to maximize impact

Code 5 (to be written once all Work packages are ready)

a) Dissemination and exploitation of results

Preparation of a draft plan for dissemination of project results
All Partners will prepare items for publication (scientific papers, conference abstracts, website updates, etc.). Full details about how to publish Project results are outlined into the Consortium agreement.

b) Communication activities

All partners will describe, according to their opinion:
- Market impacts of the project
- Market size and potential
- Steps towards commercialization
- Necessity of a European approach

3 – IMPLEMENTATION

3.1 Work plan - work packages, deliverables and milestones

Code 6 (to be written once all Work packages are ready)

(Describe the overall Work Plan based on the activities of the five Work packages.)
Timing of the Work plan (Gantt chart)
Inter-relation of the components (Pert chart)

The following five Work Packages: WP1, WP2, WP3, WP4 and WP5 represent the structure of this Work plan

Table 3.1a: Work package WP1 description

Work package number 1			**Start Date or Starting Event**				
Work package title	**Coordination**						
Participant number	X	Y	Z	W			
Short name of participant	X	Y	Z	W			
Person/months per participant:	X	Y	Z	W			

Objectives

This WP guarantees that:

- an effective coordinating structure is created
- the research project is carried out according to the time schedule and budget established,
- meetings are organized to enable collaboration and management of consortium partners,
- the project progress of the WPs is managed and monitored against contractual deliverables,
- the WPs objectives are achieved efficiently,
- a system is created to provide a continuous evaluation feedback and a constant project monitoring.
- the project is managed according to the contract between the BUTLER JEROME consortium partners and the EC, maintaining a continuous link with the EC, and the overall legal, contractual, ethical, financial and administrative management activities are performed ensuring accurate and timely distribution of funds, reporting on activities, etc.).

Description of work

WP 1 is the Coordination Work Package, which will last for the whole duration of the project.

1 - Coordinator

The responsibility of the project coordination will be taken by …… who will supply the Project Coordinator. The project coordinator is responsible for all deliverables.

The coordinator's main activities concern the monitoring and management of the agreed deliverables and milestones in the contract between the consortium and the EC, and the smooth running of the project as a whole. The coordinator will maintain continuous relationships with the General Assembly including the Work Package leaders and will report to the EU. For the day-to-day project management, the Project Officer (PO) supports the coordinator. She/he will focus on the daily management, coordination and administrative and financial aspects of the project.

Coordinator activities:

a) Kick Off meeting.

Upon signature of the contract with the European Commission, the project coordinator will organize an initial kick-off meeting for all personnel involved in the project. This kick-off meeting will enable the participants to obtain a better perspective of their role in the BUTLER JEROME project. Prior to concluding the contract with the EC, a Consortium Agreement will be signed between the project partners

b) Process Management tasks.

The Project Coordinator will conduct the overall project management, as specified in the contract between the consortium and the EC, i.e.:

- Organize the project meetings, workshops, and receive reports;
- Oversee the drawing up and timely signing of the Consortium Agreement;
- Ensure that all parties will sign the contract with the EC on time;
- Initiate, prepare and preside over regular project progress meetings and the dissemination of information to all partners pertaining to these meetings;
- Act as liaison to the European Commission on behalf of the group in all verbal and written communication;
- Inform the Commission properly about the situation and progress of the work;
- Inform the Commission in advance of the date and subject of the meetings;
- Coordinate the overall financial, administrative and contractual activities of the project, including monitoring and maintaining the overall adherence to the financial budgets;
- Report the overall budgetary situation of the project to the EC, based on the cost declarations from the individual partners;
- Coordinate the dissemination of knowledge and deliverables.

3 - Operational project management

The consortium agreement and contract conditions with the EC will be monitored by the General Assembly to ensure compliance by all participating parties.

For each work package, a WP leader has been appointed to take primary technical control of and responsibility for the proper management and execution of the tasks related to the particular WP. He/she establishes (in co- ordination with the Project Coordinator) the detailed schedule of his/her WP. He/she is also responsible for the quality of, and the correct and timely submission of deliverables relating to his/her WP. Each WP leader is also appointed to chair the meetings among the partners participating to his/her WP and will communicate frequently both formally and informally with the workers in the WP.

4- Monitoring:

a) Internal reporting

In order to monitor and guide the consortium, each individual partner will regularly (after the first four months and thereafter at four-monthly intervals) submit a progress report to the respective Work Package leaders. On the basis of these reports, the WP leaders will monitor progress and take any necessary action to ensure the work package remains on schedule.

Each WP leader is required to provide the PC regularly (after four months and thereafter at four monthly intervals) with a progress report concerning his/her WP and containing sufficient technical information to enable the PC to be assured that work is progressing according to plan.

The status of the project will be updated by the PC in a Project Dashboard that will highlight all key progress indicators of the project and areas at risk.

b) External reporting

The combined WP reports (task of the PC) will be discussed and evaluated during meetings of the General Assembly and will constitute the interim reports and form the basis for the annual and final reports that will be submitted to the European Commission by the PC.

Based on the EU model format the coordinator will ensure that all partners provide a consistent flow of information containing key points on the financial progress in the form of a financial report and associated financial plan, as well as an activity report and updated implementation plan.

c**) Internal communication**

A communication plan will be agreed upon by the General Assembly at the kick-off meeting and will define means and methodology of communication among the project partners.

5- Financial / administrative management

The Project Officer of …… will ensure that all budgetary actions are performed according to the rules and regulations of the EC and the consortium agreement. This includes amongst others establishing a good operating practice for financial management adapted to the financial system of each participating party, to ensure that the received funds are correctly distributed, accounted for, cost statements are received.

Deliverables

– ***Consortium Agreement.*** A Consortium Agreement will be concluded among the project partners.
– ***Kick-Off meeting minutes.***
– ***Meeting/workshop minutes.***
– ***General Assembly meeting minutes.***
– ***Internal website with public areas for communication and data sharing***
– ***Partners progress report.*** Each individual partner will regularly submit a progress report to the respective Work Package leaders in order to monitor progress and to ensure the work package remains on schedule.
– ***Work Package progress report.*** Each WP leader is required to provide the PC regularly with a WP progress report concerning his/her WP to enable the PC to be assured that work is progressing according to plan.
– ***Interim reports.*** The PC will combine the WP progress reports and will constitute the interim reports.
– ***Progress reports to the EC.*** Annually the PC will submit progress reports to the EC.
– ***Final report (technical, financial, deliverables).*** The PC will submit the final report to EC.

Table 3.1a: Work package WP2 description

Work package number 2		Start Date or Starting Event					
Work package title	Wheeled robot						
Participant number	X	Y	Z	W			
Short name of participant	X	Y	Z	W			
Person/months per participant:	X	Y	Z	W			

Objectives

Construction of a wheeled robot so that the person may sit comfortably. It must have a very differen design from actual motor driven wheeled chairs for disabled persons.

(Marco Leo - CNR-INO Possible Contributions)
Definition of wireless protocols (e.g. Bluetooth Low Energy, Wi-Fi,) and network configuration enabling the communication between the robot and the environment enabling robot localization (to be used in WP3, task 1), navigation (to be used in WP3, task 2) and interaction with passengers (to be used in WP4) .
Definition of the on board (laser, cameras, odometers, radio frequency tags, etc.) and environmental (cameras, radio frequency readers,…) sensorial devices for safe and comfortable navigation purposes (to be used in WP3, task 2)
Definition of the on board sensorial devices (cameras, microphones, depth sensors,…) enabling the monitoring of the aged person for affective computing (to be used in WP3, task 3)
(Marco Leo - CNR-INO Possible Contributions)

Description of work

Deliverables

Table 3.1a: Work package WP3 description

Work package number 3		Start Date or Starting Event					
Work package title	Software of the wheeled robot						
Participant number	X	Y	Z	W			
Short name of participant	X	Y	Z	W			
Person/months per participant:	X	Y	Z	W			

Objectives

The wheeled robot must be able to move avoiding obstacles through perfectly known spaces of a specific museum. The software needed for such a task, as well as the mechanical solutions represent a significant challenge.

(Marco Leo - CNR-INO Possible Contributions).

TASK1: Indoor Target Localization in Wireless Sensor Networks.

RSS (Received Signal Strength) techniques will be defined and implemented accurately localize the robot in the environment.

TASK2: Object Detection and Obstacle Avoidance

The algorithmic modules that enable the roboticsystem to:

-to recognize some specific objects in the scene (e.g. persons, doors, chairs, service signboards, and so on). This allows the underlying SLAM task can be updated and then to perform a more robust and reliable navigation of the robot.

-to avoid obstacles during the navigation task. This will be achieved by combining different sensorial inputs and gathering quantitative measures of the spaces around the robot in order to make easier, for the navigation task, the planning of the best path to the target.

TASK3: Affective Computing

The algorithmic modules that interpret the emotional state of humans and adapt behaviour to them will be designed and implemented. Facial emotion/expression recognition, gaze analysis, subjective scene saliency, gesture recognition (eventually combined with the analysis of the audio), gender/age/sex recognition are some of the possible strategies that will be involved in order to understand the feeling of the person interacting with the robot. Depending on the processing outcomes different behaviours can be implemented in order to respond to the human requirements (e.g. the robot could detect from available cues when the user was having difficulty and offer expanded explanations or additional information)

(Marco Leo - CNR-INO Possible Contributions)

Description of work

Deliverables

Table 3.1a: Work package WP4 description

Work package number 4		**Start Date or Starting Event**					
Work package title	**Museum visit**						
Participant number	X	Y	Z	W			
Short name of participant	X	Y	Z	W			
Person/months per participant:	X	Y	Z	W			

Objectives

The wheeled robot must accept questions of the visitor referring to activities and services which are specific of a single museum by using natural language.

Description of work

Deliverables

Code 7 (All Partners received empty templates for Work packages WP2, WP3, and WP4; please, any Partner should return these templates to each2014@gmail.com compiled as a first draft).

Table 3.1a: Work package WP5 description

Work package number five		**Start Date**					
Work package title	**Project results diffusion**						
Participants number							
Short name							
Pearson/months per Participant:							

Objectives

Objectives if this Work package are

1 - Dissemination and exploitation of results

Definition of a work plan for dissemination and exploitation of the project results; implementation of a social platform

2- Communication activities

Organization of events concerning the partners of the Consortium; preparation of a website; organization of mid term workshops and final conference open to EU Commission experts

Description of work

This Work package aim is to improve the dissemination of information about the project results and deliverables: it is a core measure of the project's success. According to this preliminary consideration, different promotion and dissemination actions are foreseen and addressed to both experts in the field and any other Stakeholders.

1 - Dissemination of project results through scientific journals and through participation in Congresses, conferences and workshops

All project results will be shared and disseminated among the project Partners. In order to ensure high visibility of the project within the scientific community, publication in high impact factor scientific journals will be encouraged, as will be presentation at relevant workshops and conferences. Each research institution in this proposal will contribute to this dissemination as participants in WP 5.

2 - Organization of a workshop and a conference

In particular, within six months from the starting of the project a workshop will be held open to specific stakeholders.

3 - Demonstration event. In close collaboration with the WP2, WP3 and WP4 teams a demonstration event will be arranged in order to show how the newly developed techniques work.

This will exhibit the validity and usefulness of the new tools to a competent audience, able to comment and discuss the results obtained.

4 – BUTLER JEROME Website. Promotion of the demonstration event will be made through this website.

Other activities:

1 – Organization of the partners consortium meeting before and throughout the project activity according to the Coordinator suggestions (for 24 months); application of tools and methodologies of risk management to the governance of single parts of the project according to the suggestions of the project coordinator.

2 - Dissemination and exploitation of results deliverables, elaboration of a website concerning the activities of the project; maintenance and adjournments of the website during and after the project preparation; organization of events.

3– Project internal communication of documents and deliverables among the project partners

Deliverables

- *Workshop and conference in and related information & dissemination material*
- *Papers in scientific journals*
- *Launch of fully functional Knowledge Base*
- *Demonstration even*

- Commercial service development

-Business Plan for exploitation of products and services

Next Table 31b shows the list of work packages:

Code 8 (to be written once Work packages are ready)

TABLE 3.1b – List of Work packages

Work Package No	Work Package Title	Lead Participant No	Lead Participant Short Name	Person-Months	Start Month	End Month
One						
Two						
Three						
Four						
Five						
				Total months		

Next Table 3.1c shows the list of Deliverables for each Work package:

Code 9 (to be written once Work packages are ready)

TABLE 3.1c – List of Deliverables

Deliverable (number)	Deliverable name	Work package number	Short name of lead participant	Type	Dissemination level	Delivery date
		One				
		Two				
		Three				
		Four				
		Five				

3.2–Management structure and procedures

In order to efficiently manage the project, a specific WP dedicated to coordination and management has been foreseen in the project work plan, to ensure that suitable priority and attention will be given to project management. Within this WP 1 all the aspects related to administrative and quality management of the project will be included. The responsibility of the project coordination will be taken by XXX that will supply the Project Coordinator (PC) and a Project Officer (PO).

The project partners are fully committed and agree to work together with the utmost cooperation for the timely fulfilment of their responsibilities. Previous experiences and participations in European framework programs have led to the decision to keep this management structure as simple as possible. The **overall organizational structure** proposed for the BUTLER JEROME project is presented in Figure 1. It is aimed at ensuring the fulfilment of the project objectives, by allowing clear and continuous communication among the project partners.

a) Project Coordinator

The overall management of the project will be the responsibility of XXX as coordinating partner. Key to this is the role of the Project Coordinator, which will be carried out by …….

The **Project Coordinator** (PC) will be responsible for the **overall coordination** of the **technical and scientific activities, and all other aspects of the project** including **management of potential conflicts** and compromise negotiation in the unlikely event of conflict and will also be the primary contact person for the European Commission. Hence he/she will be responsible for all communication with - and reporting to - the EC.

The **Project Officer** (PO) will be responsible for day-to-day **legal and contractual management** of the project and **administrative and financial activities.** The PO will report to the PC.

In particular, according to the Consortium Agreement, the Coordinator shall be responsible for:

- Monitoring compliance by the Parties with their obligations
- Keeping the address list of Members and other contact persons updated and available
- Collecting, reviewing and submitting information on the progress of the project and reports and other deliverables (including financial statements and related certification) to the Funding Authority
- Preparing the meetings, proposing decisions and preparing the agenda of General Assembly meetings, chairing the meetings, preparing the minutes of the meetings and monitoring the implementation of decisions taken at meetings
- Transmitting promptly documents and information connected with the project
- Administering the financial contribution of the Funding Authority and fulfilling the financial tasks
- Providing, upon request, the Parties with official copies or originals of documents which are in the sole possession of the Coordinator when such copies or originals are necessary for the Parties to present claims.

The following Table 3.2a gives a list of milestones.

Code 10 (to be written once Work packages are ready)

TABLE 3.2a – List of milestones

Milestone number	Milestone name	Related work package(s)	Estimated date	Mean of verification

The following Table 3.2b gives the critical risks identified and the possible mitigating actions.

Code 11 (to be written once Work packages are ready)

TABLE 3.2b – Critical risks for implementation

Description of risk	Work package(s) involved	Proposed risk-mitigation measures

b) The General Assembly

The General Assembly is the decision making body of the Consortium.
The General Assembly shall consist of one representative of each Party (hereinafter referred to as "Member").
Each Member shall be duly authorised to deliberate, negotiate and decide on all matters listed in the Consortium Agreement.
The Coordinator shall chair all meetings of the General Assembly, unless decided otherwise by the General Assembly.
The Parties agree to abide by all decisions of the General Assembly.
This does not prevent the Parties from submitting a dispute for resolution in accordance with the provisions of settlement of disputes.
Operational procedures for the General Assembly representation in meetings
Any Member:

- should be present or represented at any meeting;
- may appoint a substitute or a proxy to attend and vote at any meeting;
- shall participate in a cooperative manner in the meetings.

c) The Work Package leaders

All technical and scientific issues of the project, in particular relating to the interdependence between and coherence of the different WPs - will be managed and consolidated by **the Work Package leaders** who

will **report to the PC directly**. To achieve the R&D objectives of the project, the experimental, scientific and technical work has been organized into 3 R&D WPs (WP2,WP3, and WP4).
For each of them, a WP leader will be appointed to take primary technical control of and responsibility for the proper management and execution of the tasks related to the particular WP. In particular, he/she establishes (in coordination with the PC) the detailed schedule of his/her WP and the work in progress. Each WP leader is also responsible for identification of risks and for proposing solutions to the PC in respect of his/her WP. Taking into account that any of these R&D WPs will be the responsibility of three/four partners, WP leaders will be rotated among partners any four months.
Each WP leader is required to provide the PC at four monthly intervals with a progress report concerning his/her WP and containing sufficient technical information to enable the PC to be assured that work is progressing according to plan.

d) Means for governance and control

The means for governance and control (quality assurance, consortium agreement and communication plan) will be tailored to the scale of the BUTLER JEROME project. A correctly empowered governance and control for the overall project management will be guaranteed by following means:
The Consortium Agreement: All the BUTLER JEROME rules will be included and described in detail in the **Consortium Agreement**.
This document will define:

- the responsibilities, mutual obligations and roles of the partners;
- the division of the budget;
- the strategy for the exploitation of results;
- the rules for the settlement of disputes

The Consortium Agreement will be signed within the first month of the project and will define in a very clear and detailed way: roles of each partner, formal rules of participation, voting mechanisms, criteria for evaluation of activities realized by each partner, rules for budget re-allocation, etc.
The Quality Plan: A **quality plan** will be agreed by the General Assembly at the Kick-off meeting, and will ensure that appropriate quality assurance is undertaken. It will include:

- persons responsible for quality assurance, quality standards, methodologies and procedures;
- procedures for identification, distribution, collection, filing, maintenance and disposal of quality records resources, schedule and responsibilities for conducting the quality assurance activities

Quality control will represent a key issue in the overall management of the project, since it plays a critical role in keeping the action aligned towards its final objectives.

d) Project Meetings

An initial „launch/kick-off" meeting will be organized at the start of the BUTLER JEROME project for all the personnel involved in the project. The purpose of the kick-off meeting is to:

- Present to all involved an overview of the project;
- Enable each participant to obtain a better perspective of his/her role in the BUTLER JEROME project and set this in context with the roles and skills of other project members;
- Define the main outline of the Consortium Agreement;
- Establish procedures for Quality Assurance and formalize policies for publication, intellectual property rights and any arbitration procedures.

3.3 –Consortium as a whole

Partners of the Consortium will be all the partners working on the five Work packages. Each partner will designate a member to participate to the meetings of the Consortium.
All the rules reported in the EU suggested Consortium Agreement must be followed.
The Consortium partners belong to very different scientific disciplines, from IT engineers to archaeologists, from robotics and mechanical experts and they have to complement one another in order to create a Robotic System suitable for this project.

Analogously, the presence inside the Consortium of Enterprises is fundamental for building and experimenting the products of project.
The BUTLER JEROME project is proposed by a consortium of xx **partners** from **X EU Member States** and comprises all the appropriate key players to ensure the availability of resources, capacities, technologies, capabilities, technical and operational knowledge required for the timely achievement of the goal of the project.
The consortium will bring together European efforts and methodological/technological developments and has therefore a high potential for developing and validation of innovative non-destructive diagnosis techniques to assess and monitor the state of preservation of the European heritage.
The partners to the BUTLER JEROME project have the following areas of interest and activity, Table 3.3.

Code 12 Any Partner should send these data by mail to each2014@gmail.com; please only one sentence!)

Table 3.3 Areas of interest/activity for BUTLER JEROME project partners

P	Area of interest / activity

3.4 – Resources to be committed

Code 13 (Section 3.4 to be written only after all other points and sections are ready)

According to costs as stated in the budget table in Part A of the Proposal, the following Table 3.4.1 shows the costs distribution.

Table 3.4.1 Total Costs

	WP 1	WP 2	WP 3	WP 4	WP 5	Total
Personnel costs						
Other costs						
Total direct costs						
Indirect costs						
Subcontracting						
Total costs						
Requested subsidy	2					

In order to achieve the objectives of BUTLER JEROME, duration of 24 months has been foreseen for the project. The overall project cost is € xxx.xxxx and **the overall EU contribution requested is € xxxx.xxx**, both reasonable and necessary considering the number of partners, the ambitious objectives and the duration of the project.
In the following, more details are provided about the costs in the main cost categories of the project.

3.4.1 - Personnel Costs

Personnel costs represent a significant part of the project budget, in total **€ xxxx.xxx**. For each work package, the personnel costs have been calculated considering the appropriate man-power (see Table 3.4 a – Summary of staff effort) needed to complete the proposed activities.

TABLE 3.4a – Summary of staff effort

	WP n	WPn +1	WPn+2	Total Pearson/ Months per Participant
Participant Number/Short Name				
Participant Number/Short Name				
Participant Number/Short Name				
Total Person/Months				

The weighted average monthly rate costs of the personnel that will be working in the work package are provided in Table 3.4.2

Table 3.4.2 – Weighted average monthly personnel costs in € per partner and work package

Partner	W	W	W	W	W

Next Table 3.4b shows "other direct costs" for participants where those costs exceed 15% of the personnel costs.

TABLE 3.4b – "Other direct cost" items

Participant Number/Short Name	Cost (€)	Justification
Travel		
Equipment		
Other goods and services		
Total		

3.4.2 - Travel costs (other direct costs)

The total travel costs are **€ xxxx** and refer to meeting, working session and other issues related to the coordination of participants' contributions, as well as to the attendance of conferences and events for dissemination purposes. In more detail, the following travels have been foreseen, so far, for calculating the travel costs:

Project meetings: technical and management meetings where all participants will be present, and where technical issues as well as management issues will be discussed. 6 project meetings are foreseen for the project duration (one meeting each 6 months of project).

Technical meetings: meetings needed among two or more partners collaborating on the same tasks. The twice yearly Project meetings will form a significant venue for inter WP discussions, and will make provision for specific subsets of WP managers to meet outside the main workshop on request, e.g. for inter- and intra-WP decision-making purposes.

Dissemination meetings**:** participation to international conferences/workshops to present the BUTLER JEROME results, and for attendance to the BUTLER JEROME workshop. Each participant involved in WP5, will receive travel costs.

3.4.3 - Consumables (other direct costs)

The total costs for consumables amount to **€ xxxxx**.

The consumables with BUTLER JEROME are mostly related to preparation, analysis, characterisation, validation, process optimisation, pre-prototype development and tests and are summarized in table 3.4.3

Table 3.4.3.a – Consumables per work package

	Consumables description

A total of **€ xxx** has been included for the purchase of durable equipment by the project partners. The equipment costs were calculated on depreciation basis, considering the duration of usage of the equipment within the project. The table 3.4.3.b provides an overview of the planned equipment purchases

Table 3.4.3.b – Equipment purchase per participant

rtner short na me	V a l u	E l i g	Description	W P

3.4.4 - Other costs (other direct costs)

The other remaining costs amount to **€ xxxx**. These are listed in Table 3.4.4

Table 3.4.4 – Other direct costs per Work package

	Other costs

4 – Members of the Consortium

Code 14 (All Partners, starting from now, should write at least about three pages plus the relevant publications lists, concerning both the Organizations they belong to and the persons who will carry out the proposed activities)

4.1 – Participants

- A description of the legal entity and its main tasks, with an explanation of how its profile matches the tasks in the proposal;

(Marco Leo - CNR-INO Possible Contributions)

Description of legal entity

The National Research Council (CNR) is a public organization; its duty is to carry out, promote, spread, transfer and improve research activities in the main sectors of knowledge growth and of its applications for the scientific, technological, economic and social development of the Country.

To this end, the activities of the organization are divided into macro areas of interdisciplinary scientific and technological research, concerning several sectors: biotechnology, medicine, materials, environment and land, information and communications, advanced systems of production, judicial and socio-economic sciences, classical studies and arts.

CNR is distributed all over Italy through a network of institutes aiming at promoting a wide diffusion of its competences throughout the national territory and at facilitating contacts and cooperation with local firms and organizations.

The Institute for Optics (INO), established in 1927, is partner of the present proposal.

In particular, the research will be carried out in the INO unit in Lecce. The involved researchers have a strong expertise computer vision and pattern recognition with applications in the fields of video-surveillance, assistive technologies, autonomous vehicles, affective computing, chemical sensor analysis, non-invasive diagnostics, video analytics for audience measurements and sports events, medical imaging, security and manufacturing.

In particular, concerning the tasks in the current proposal, the researcher at INO in Lecce have expertise in object detection and localization (from visual and non-visual sensors), autonomous navigation of vehicle in indoor environments, human attention monitoring, gaze estimation, facial expression recognition, soft-biometrics, action/gesture recognition.

(Marco Leo - CNR-INO Possible Contributions)

- a curriculum vitae or description of the profile of the persons, including their gender, who will be primarily responsible for carrying out the proposed research and/or innovation activities;

(Marco Leo - CNR-INO Possible Contributions)

Marco Leo received an Honours Degree in Computer Science Engineering from the University of Lecce in 2001. Since then he is a Researcher at the National Research Council of Italy. His main research interests are in the fields of image and signal processing, computer vision, pattern recognition, neural networks, graphical models, linear and non-linear transformation (Fourier, Wavelet, ICA, kernels functions). He participated in a number of national and international research projects dealing with automatic video surveillance of indoor and outdoor environments, technologies to assist persons with neurocognitive deficits, human attention monitoring, real-time event detection in sport contexts, non-destructive inspection of aircraft components, affective computing and alternative human/machine interactions. He is author of more than 100 papers in national and international journals, and conference proceedings. He is also a co-author of three international patents on visual systems for event detection in sport contexts.

Since 2013, he organized the international annual workshop on Assistive Computer Vision and Robotics (ACVR) and he is also guest editor for the Special Issue on Assistive Computer Vision and Robotics oof the n Elsevier Journal of Computer Vision and Image Understanding Journal.

Cosimo Distante received the degree in Computer Science in 1997 at the University of Bari. He received the PhD in Materials Engineering in 2001 by working in the field of development and application of new techniques and algorithms for computer vision and Pattern Recognition in robotics. In 1998 he has been visiting researcher at the Computer Science Department of the University of Massachusetts at Amherst MA (USA) where has worked in the context of Perceptual Robotics and Artificial Neural Networks systems. He also served as a teaching Assistant of the Artificial Intelligence Class of the University of Massachusetts. In 2001 he joined the Italian National Research Council where has been the head of the signal and image processing laboratory where has been a scientific leader of several EU funded projects and member of the coordination Netcarity FP6 AAL funded Integrated project. Since 2009 he is researcher of the National Institute for Optics. Since 2003 Dr. Distante is contract professor on “Image Processing” and “Pattern Recognition” in computer engineering at the University of Salento Italy. In 2011, Dr. Distante has been awarded with the national innovation Prize working capital PNI-Cube with the project Taggalo. He is CTO and founder of the CNR's spin-off Taggalo s.r.l. Since 2011 he is member of the NATO SET-ET075 working group on “Coordinated Distributed Mobile Sensors”.

(Marco Leo - CNR-INO Possible Contributions)

- a list of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements relevant to the call content;

(Marco Leo - CNR-INO Possible Contributions)

[1] Leo M, De Marco T, Cazzato D, Distante C. Unsupervised Eye Pupil Localization through Differential Geometry and Local Self-Similarity Matching, PLoS ONE 9(8): e102829. doi:10.1371/journal.pone.0102829

[2] Cazzato D, Leo M, Distante C. An investigation on the feasibility of Uncalibrated and Unconstrained Gaze Tracking for Human Assistive Applications by Using Head Pose Estimation, MDPI Sensors, Special Issue "Ambient Assisted Living (AAL) Sensors, Architectures and Applications", Sensors 2014, 14, 8363-8379; ISSN 1424-8220 doi:10.3390/s140508363

[3] Leo M, Spagnolo P , Mazzeo P L, Nitti M. Accurate Ball Detection in Soccer Images using probabilistic Analysis of Salient Regions. Machine Vision and Applications, November 2013, Volume 24, Issue 8, pp 1561-1574 ISSN 0932-8092, DOI 10.1007/s00138-013-0518-9 (BibTeX)

[4] Carcagnì P, Cazzato D, Del Coco M, Leo M, Pioggia G, Distante C. Real-time gender based behaviour system for human-robot interaction. Fifth International Conference on Social Robotics 27th to 29th October 2014, Sydney, AU, Springer Lecture Notes in Computer Science volume 8755

[5] Adamo F, Cazzato D, Distante C, Leo M, Palestra G C, Pioggia G. A Study for Evaluating Visual Exploration in ASD Children. International IEEE/EPSRC Workshop on Autonomous Cognitive Robotics University of Stirling, Stirling, Scotland, UK, 27-28 March 2014

(Marco Leo - CNR-INO Possible Contributions)

- a list of up to 5 relevant previous projects or activities, connected to the subject of this proposal;

(Marco Leo - CNR-INO Possible Contributions)

1) National Operative Program PON-01_00980 **BAITAH** - Methodology and Instruments of Building Automation and Information Technology for pervasive models of treatment and Aids for domestic Healthcare (project funded by the Italian Ministry of Education, University and Research PON R&C 2007-2013)
2) National Operative Program PON04a3_00201 **SARACEN** - Socially Assistive Robots Autistic Children EducatioN(project funded by the Italian Ministry of Education, University and Research PON R&C 2007-2013)
3) National Operative Program PON01_00536**CAR_SLIDE** - A system for monitoring and mapping of landslides (project funded by the Italian Ministry of Education, University and Research PON R&C 2007-2013)
4) private funding sources - **Method and System for the detection and the classification of events during motion actions**(project funded by Italian Football federation)
5) private funding sources - **Method and System for the Automatic Detection of Events in Sport Fields** (project funded by Udinese Calcio SPA)

(Marco Leo - CNR-INO Possible Contributions)

- a description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work;
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(Marco Leo - CNR-INO Possible Contributions)

The computer vision lab at INO is provided of all the technical equipment needed to carry out the research activity. The available instrumentation consists, among other, of cameras, depth sensors, optical devices, wireless sensors and processing units (standard and miniaturized). However, considering the rapid obsolescence of technology, in the initial phase of the project the possibility to technologically upgrade the instrumentation has to be taken into consideration.

(Marco Leo - CNR-INO Possible Contributions)

- any other supporting documents specified in the work programme for this call.

4.2 – Third parties involved in the Project

No third parties involved in this project

5 – Ethics and Security

5.1 – Ethics

There is no ethics issue in the ethical issue table in the Administrative Proposal Form of BUTLER JEROME, Part A.

5.2 – Security

The activities or results of this project do not raise security issues.