Part B: Description of scientific/technological objectives and *work-plan.*

Cultural Heritage And Sustainable Tourism: Analytical Tools For Managing Carrying Capacity

Acronym: CHAST

(**C**ultural **H**eritage **A**nd **S**ustainable **T**ourism)

A Proposal Submitted for the Environment, Energy, and Sustainable Development

City of Tomorrow and Cultural Heritage

October 2001

Proposal No.:

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B3 Objectives

The **project aims to identify and develop digital tools** embedded in a **GIS (model)** to enable decision makers to optimise the **sustainable exploitation** of their **cultural heritage** consistent with the **protection, conservation and maximisation** of **access** and **goals** of **urban development.** The project will model the **activity-based chain behaviour of tourist congestion** and **identify indicators** for the sustainable exploitation of cultural goods**.** Through **survey based techniques,** namely **Stated Preferences Analysis** and **Contingent Valuation Methods,** the development of proper **IT tools** and **models** will account for **people' preferences** in the management and use of cities of art. The project is based on the latest developments in **interactive choice experimentation** and in **modelling** both **pedestrian and non-pedestrian tourist flows**. These models will also tackle **security issues** related to the use and access of cultural attractions by **large crowds**. The common architecture of the developed **tools** and **methodologies** will then be transposed to **different European contexts,** with particular regard for those European cities, such as eastern European ones, where the **volume of tourism** has not achieved **unsustainable patterns** yet, but which are potentially at risk.

The problem

This project has found its origin in consultation with several European municipalities and decision makers. It addresses also some of the **more urgent research needs** of the European Union as expressed in a recent document[1] on the city and its cultural heritage. In the EU the **tourism industry is worth 60 billion EURO/year**, and it represents both a "threat and an asset for European Cities"(EU workshop report, 2001).

In general, we may argue that:

1. Most European **cities of art** are becoming **open-air museums**, where the quality of life for inhabitants is decreasing. Tourists, visitors and residents interfere with their respective behaviour. As a result, peoples' experience of visiting a city is often substantially diminished too.
2. **European Cultural heritage is a non-renewable, exhaustible resource**, which is at threat often due to unsustainable exploitation patterns that do not enhance the quality of people's experience. The exploitation level is linked to the urban context and its development. Cultural heritage is often owned by public organizations, such as municipalities, which have direct control over its management. However, management tools have not been developed in a consistent and satisfactory fashion.
3. **Tourism** in Europe is one of the most important industries, but some policies may cause distress to both residents and the cultural heritage itself. Many cities of art, to different extents and degrees, suffer because of **congestion** and the negative externalities caused by it. The identification of **indicators of congestion**, and **their sensitivity** is of paramount importance to analyse the **carrying capacity of cultural sites**. Therefore, it is important to develop new cultural heritage management tools that will account for urban changes and help decision makers to develop appropriate policies. **Sustainable tourism strategies** are then to be studied in a broad analytical context.

[1] European City Visions, Defining research needs, workshop report 8-9 February 2001, Brussels,

4. To define new **management models** and **digital tools**, that can be transferred to other European contexts, it is important to **understand peoples' preferences** for different **categories of cultural heritage goods** and their **use**.
5. It is important to study and propose **fiscal and economic measures** that may help managing cultural goods in a more sustainable way, reducing congestion and developing alternative tourist routes. To do so, it is important to study the **economic impacts** of current **conservation listing procedures and policy instruments**, tackling **new ways of handling** cultural goods and **assessing intervention options**.

Scientific objectives and approach

Achieving a **sustainable urban tourism** involves accounting for several different issues such as: a) **conservation** and maintenance of the physical heritage; b) **maximization of access** to different social groups; c) **balance** between the **conflicting interests** of residents and visitors; d) **minimization of negative externalities**, due to transportation or unsustainable exploitation patterns.

In the light of the above observations the **scientific objectives** of the project are:

1. Develop **analytical tools to model** chain behaviour of tourists and visitors to cities of art, which will also account for interference between tourists' and residents' behaviour.
2. **Identify indicators of congestion** in cities of art and historic centres, and study the sensitivity of **threshold values** defining the **carrying capacity** of historic sites.
3. Develop the **operational** framework for the analysis of congestion and sustainable exploitation of cultural heritage to be empirically tested in **three European cities of art.**
4. Analyse the **specific issues** and **challenges** the above cities of art **face**, in terms of conservation and tourism. By means of **SP surveys**, we will elicit public and other stakeholders' preferences for cultural attributes, current policy instruments and **alternative management models**.
5. Develop a **methodology** to compare results from the three cities of art, in terms of preferences, attitudes, and patterns of exploitation, impact on local economies, policy implementation and instruments.
6. Develop **IT tools**, embedded in a **Geographical Information System (GIS)**, which will contain a case-base of methodologies for managing Cultural Heritage. The tools will be able to retrieve and allow comparison of different approaches of management issues, such as **modelling and simulating** pedestrian and non-pedestrian **tourist flows** to control **congestion**.
7. Provide an adaptive framework for controlling **urban economic policies.** We will focus on lessons and **methodologies** that can be transferred to **other European contexts** where the volume of tourism has not achieved, as yet, unsustainable patterns. We will study the policy instruments to be used, such as **fiscal and economic incentives**, and **standards**.

B4 Contribution to Programme / Key Action Objectives

This application addresses the problems highlighted in EESDA **Key Action 4** "The City of Tomorrow and Cultural Heritage," **sub section 4.2.3 "Foster integration of cultural heritage in the urban setting"**.

The **primary goal** of the project is to develop a **GIS model** and a number of **digital tools.** These tools and models will be used within an operational framework and a **methodology** developed to identify indicators of congestion and the sensitivity of threshold values defining **carrying capacity** of historic sites. The goal of these tools is to **enable decision makers to manage their cultural heritage maximising its access while ensuring a sustainable use of heritage**

The active conservation of cultural heritage falls under the present Environmental Impact Assessment **(EIA)** directive and the Strategical Environmental Assessment **(SEA)** directive. The European Commission has encouraged, and in some cases required (for example in EC Directives 85/337/CEC and 97/11/EC) that environmental impact assessments be conducted for policies and projects, but has given little guidance in how those identified impacts should be used in decision making.

The **above policy instruments** will constitute a **reference framework** for our research. We aim to substantially contribute to the above directives, with particular reference to the **identification of sustainable patterns of exploitation of European cultural heritage** and the linked **fiscal and economic incentives**.

The European Commission acknowledges the role played by Cultural Heritage conservation for the sustainable development of cities. .Each European city is uniquely identified by its historic development manifested in its cultural heritage. Though architectural and historic features are different at national levels, the challenge that historic buildings and sites across Europe are facing is common. The role of conservation of historic building has been highlighted at international level since the Athens Charter, (1933), followed by a number of other international documents which have stressed both the economic value and the importance for the development of the city of entire cultural sites (Charter of Venice 1964, Granada Convention 1985); with particular respect to the integrated conservation of cultural heritage, both in terms of buildings and of sites (Declaration of Amsterdam 1975, Washington Charter, 1987).

The severe environmental hazards caused by poor air quality, traffic, **congestion, and over-exploitation** of heritage sites, represent a threat that each European country is currently experiencing to some degree. The damage on heritage may be irreversible, and may cause the destruction of a central part of social communities' cultural identities. Urban development that does not account for the necessity of appropriate management of cultural goods is not sustainable in economic, cultural or social terms. The assessment of management strategies for cultural goods conservation is therefore a matter of research and of enhancement of current methods and technologies. **The role played by information technologies is crucial** to the development of new approaches; and tools, which can adequately respond to the new necessities, urged by our global society. It is **also crucial to increase citizens' and stakeholders' participation in all decision making**, but particularly when conservation issues are present, as sometimes conservation may appear in conflict to the particular interests of specific sector of society. We can summarise our contribution to the key action objectives as follows:

1. We will provide **new digital tools**, embedded in a **GIS model**, which will help **modelling the chain behaviour of tourists and visitor flows.** The above tools will be able to simulate **alternative management options** and **assess their economic impacts.** This will account for the different local agendas, as well as features of each national heritage,

nonetheless aiming at establishing a common European approach to cultural heritage management (best practices). This addresses the type of deliverables required by the European Commission, (RTD 4.2) especially in terms of its utility at the institutional level.

2. The above tools will represent the end product of a theoretical approach, a **methodology** that will account for socio-economic issues as well as technological and cultural aspects. This approach is, therefore, in tune with the general objectives of the key action.
3. We will be comparing our proposed methodologies and tools to the existing alternatives, both at local and international level. We will assess the benefits at European level of the new proposed environmental impact assessment framework for the protection of cultural heritage, and how it responds to the norms highlighted by the International Charters. This responds to the requirement of RTD 4.2..
4. We will use an economic valuation technique, Stated Preferences Analysis, to elicit the economic values attached by the relevant population to alternative conservation management strategies, with particular reference to the congestion issues. This will provide us with an economic valuation of the specific cultural goods chosen in each country that *per se* accounts for citizens' and stakeholders' participation in developing best practices. This responds to the general objectives of the key action.
5. We will test our approach and the usefulness of the defined information prototype using case studies based in three **cities of art**. We will use Stated Preference Analysis to elicit economic values attached to alternative ways of **managing congestion**. We will then transfer both the methodologies and the operational framework to other European contest. This respond to the main objectives of both RTD 4.2 and **RTD 4.2.3.**

B5 Innovation

1. Sustainable urban tourism and carrying capacity of historic sites

Tourism is increasingly regarded as one of the development vehicles of a region. The idea of **sustainable tourism development** is now a popular concept and refers to allowing tourism growth while at the same time preventing degradation of the environment, as they may have important consequences for future quality of life. Sustainable tourism requires that the demand of increasing number of tourist is satisfied in a manner which continues to attract them whilst meeting the needs of the host population and improved **standards of living**, yet **safeguarding the destination environment and cultural heritage**.

Tourism is thus not only a rapidly rising economic activity, on all continents, in countries and regions, but is also increasingly recognised that this new growth sector has many adverse effects on environmental quality conditions. In the context of the worldwide debate on sustainable development, there is also an increasing need for a thorough reflection on sustainable tourism, where the socio-economic interests of the tourist sector are brought into harmony with environmental constraints. Tourism is intricately involved with environmental quality, as it affects directly the natural and human resources and at the same time is conditioned by the quality of the environment. Tourism may have positive economic impacts on the balance of payments, on employment, on gross income. Nevertheless, because of its complexity and connection with other economic activities, the direct impact of tourism development is difficult to assess.

In many cultural places, the tourist volume is still small, given the carrying capacity of the sites, often designed for large numbers. The **problem** arises when there are large numbers of tourists attracted by cultural heritage sites. This is the case of many world heritage cities, we could say of many European cities of art.

These cities are the trustees of cultural heritage and sustainable city life and hence the carriers of socio-cultural identity. This ambiguity is particularly present in the European setting. The issue of preserving cultural diversity and identity concerns not only European societies but also the rest of the world, as wider socio-economic forces influence styles and modes of living (see 1).[2].

In spite of the widely acknowledged value of conserving our built cultural heritage, relatively little effort has been invested in **developing appropriate analytical tools** for integrating conservation in to development planning. The **management of cultural heritage** has become especially important within the framework of urban planning (e.g., urban renewal, redevelopment, renovation, restructuring or urban areas). One of the major contribution and innovation of the project consists in the **tools,** embedded in a GIS model, **and methodologies** developed to tackle the issues of **carrying capacity of historic sites**, in the perspective of sustainable tourism.

The design of policies and plans, which involve heritage sites and cities, as well as more local measure of conservation, must involve measurement, analysis, and communication to designers and the wider public using new information and communication technologies (ICTs). In particular, decision support systems, which are frameworks for linking new IT tools together, are being developed in many areas of planning (see 2) At the heart of such systems lie geographic information systems (GIS), which provide the essential framework for

[2] To preserve anonymity all references quoted in this section appear in Part C.

data storage and analysis of urban and spatial data such as that involved in heritage problems. Combined with systems which make this data and related plans and policies available online, usually through world wide web environments, such decision support systems are rapidly becoming the main way of engaging those who are impacted new designs which seek to preserve and enhance existing urban environments (see 3).

The project proposed here analyses the **option demand for cultural goods**. It aims at enhancing the current knowledge on economic evaluation of the **impacts of conservation strategies** as well and giving a fundamental contribution to the **GIS state of the art** and the way it is currently used by decision makers. We believe that tourists have imperfect information about other substitute goods, and this contributes to the level of congestion for cities of art. Studying the option demand for similar cultural goods it is possible to define alternative routes for high volumes of tourists, who can be managed differently but still have a fulfilling experience of the city of art of destination.

This is why the project aims to identify and develop digital tools embedded in a GIS (model). They will be shaped in way enabling decision makers to optimise the sustainable exploitation of their cultural heritage consistent with the protection, conservation and maximisation of access and goals of urban development. In order to study possible alternative route for tourist volumes, the project will model the activity-based chain behaviour of tourist congestion and identify indicators for the sustainable exploitation of cultural goods, taking advantage of the more recent development of knowledge in this field. Through survey based techniques, namely Stated Preferences Analysis and Contingent Valuation Methods, the development of proper IT tools and models will account for people' preferences in the management and use of cities of art. The project is based on the latest developments in interactive choice experimentation and in modelling both pedestrian and non-pedestrian tourist flows.

2. The use of IT, GIS based tools and its potential

There have been many applications of GIS throughout Europe in the last decade, to land use and transport modelling, to spatial analysis of population growth and change as well as to various physical resources and natural environmental problems. A good review of the state of the art is contained in the handbook of GIS (see 4). Two particular issues which differ from those used in the development of mainstream GIS are relevant for building decision support tools for heritage problems. These involve

- The kinds of data which reflect such problems being a mix of media, numerical and qualitative as well as pictorial and visual
- The need to communicate such information to a wide array of users whose perceptual expertise is essential in evaluating quality in heritage issues

These two foci mean that the decision support system, which is, required needs multimedia as well as the ability to communicate such data to those affected. This means that Internet software is required such as Internet map servers – Internet GIS as well as various multimedia systems involving photographic realism, animation and such like digital presentation. Such systems are being developed, as Internet GIS becomes the main way of working with such methods. For example some research centre (see 4) are working with such systems to in their town centres working with the Department of Transport, Local Government and the regions while they have also worked with online environmental information systems (see 5). A good summary of the develop-meant of these techniques is given in the book by (2) referred to above.

There are also a number of GIS systems being used in heritage problems at present for example within International Heritage organizations and within various municipalities across Europe and the US. A **review of these is required** as there is no standard source of experience to date but in general, we consider that it is difficult to generalise their design at present in that various bits and pieces of ICT are assembled in their construction. The data problem has not been broached in such systems in any comprehensive way and **the project we propose here will standardise much of this experience** so that other municipalities and agencies across Europe (and the world) will be able to use our project as a model for their own applications.

B6 Project Work Plan

a) Introduction

Description of the work:

The proposed research project is very interdisciplinary in nature and driven by end-users' needs. The workload division is mirroring the expertises composing the consortium, purposely created in order to efficiently tackle the scientific objectives of the research. However, most of the work is intended as highly collaborative and each workpackage will see the interaction of different partners.

The work is divided among **three teams** with interlinked tasks: the **research** team, the **IT** modelling team, and the **advisory** team; the first two composed mostly by the academic partners, whilst the third one by the end-users. The research and related activities quality will be ensured at different stages by holding a number of Steering Committee meetings, involving **independent advisors**, both academics and end-users. The theoretical team will deal with the building of a theoretical and operational framework for modelling the chain behaviour of tourist flows. The team will gather information from theoretical review, data collection as well as brain storming sessions with the advisory team. The IT team will focus its efforts on developing spatial models and digital tools capable of simulating pedestrian and non pedestrian behaviour as well as alternative options to reduce congestion.

Milestones

1. **Identification of indicators of congestion** in cities of art and **threshold values** defining the **carrying capacity** of historic sites.
2. Development of the **operational** framework for the analysis of congestion and sustainable exploitation of cultural heritage to be empirically tested in **3 cities.**
3. **Stated Preferences surveys implementation** in the 3 different cities.
4. Development of a number of **IT tools**, embedded in a **GIS model**, which will contain a case-base of methodologies for managing Cultural Heritage.
5. Provision of a blueprint for urban economic policies, identifying **policy instruments**

Structure of the work plan and methodology

The project is divided into **9 workpackages.** Each workpackage will be led by a group leader who is responsible to manage and co-ordinate the work within that group. The group leader will plan and manage the work within the workpackage, ensure the deliverables are produced and delivered in accordance with the schedule. The project management is based on the delegation of decision with the following decision levels:

1) The co-ordinator will make the major decisions regarding significant changes to the project plan, resources allocation

2) The workpackage leaders are responsible for decisions relating to work within that workpackage.

3) Decisions relating to interactions between the work groups will be taken jointly between the interested parties. Such decisions will be taken during the intended national and European workshops as well as partners' meetings.

4) The steering committee, consists of representatives of all partners and two independent reviewers and a number of end-users, will meet six times during the 3 years project and

will ensure quality.

b) Project planning and time table

Manpower matrix: Workpackage/Partner

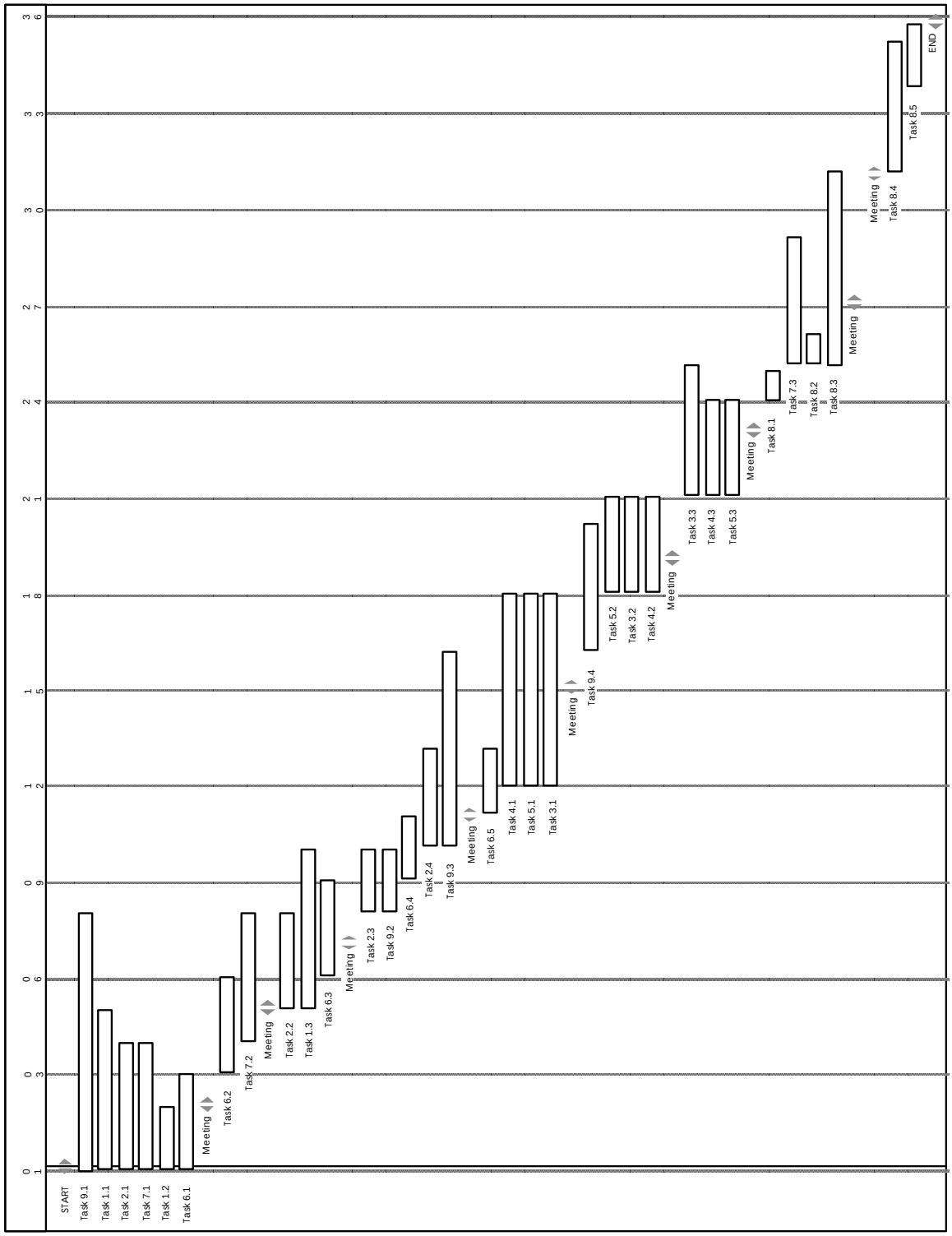
WPs	COOR	P1	P2	P3	P4	P5	P6	P7	P8
WP1		**12**	**4.5**	**2**	**4**	**2**	**2**	**2**	**2**
WP2		**4**		**2**		**12**			
WP3		**13**	**3**	**3**		**1**	**2**		
WP4		**5**	**1**	**3**	**1**	**12**	**2**		**0**
WP5		**5**		**12**	**3**		**2**		
WP6		**6**				**4**	**12**		**2**
WP7		**6**		**12**		**3**			
WP8		**11**	**2**	**11**	**1.5**	**5**	**7**	**1.5**	**3**
WP9	**9**	**10**	**0.5**	**1**	**0.5**	**1**	**1**	**0.5**	
Totals	**9**	**72**	**11**	**46**	**10**	**40**	**28**	**4**	**7**

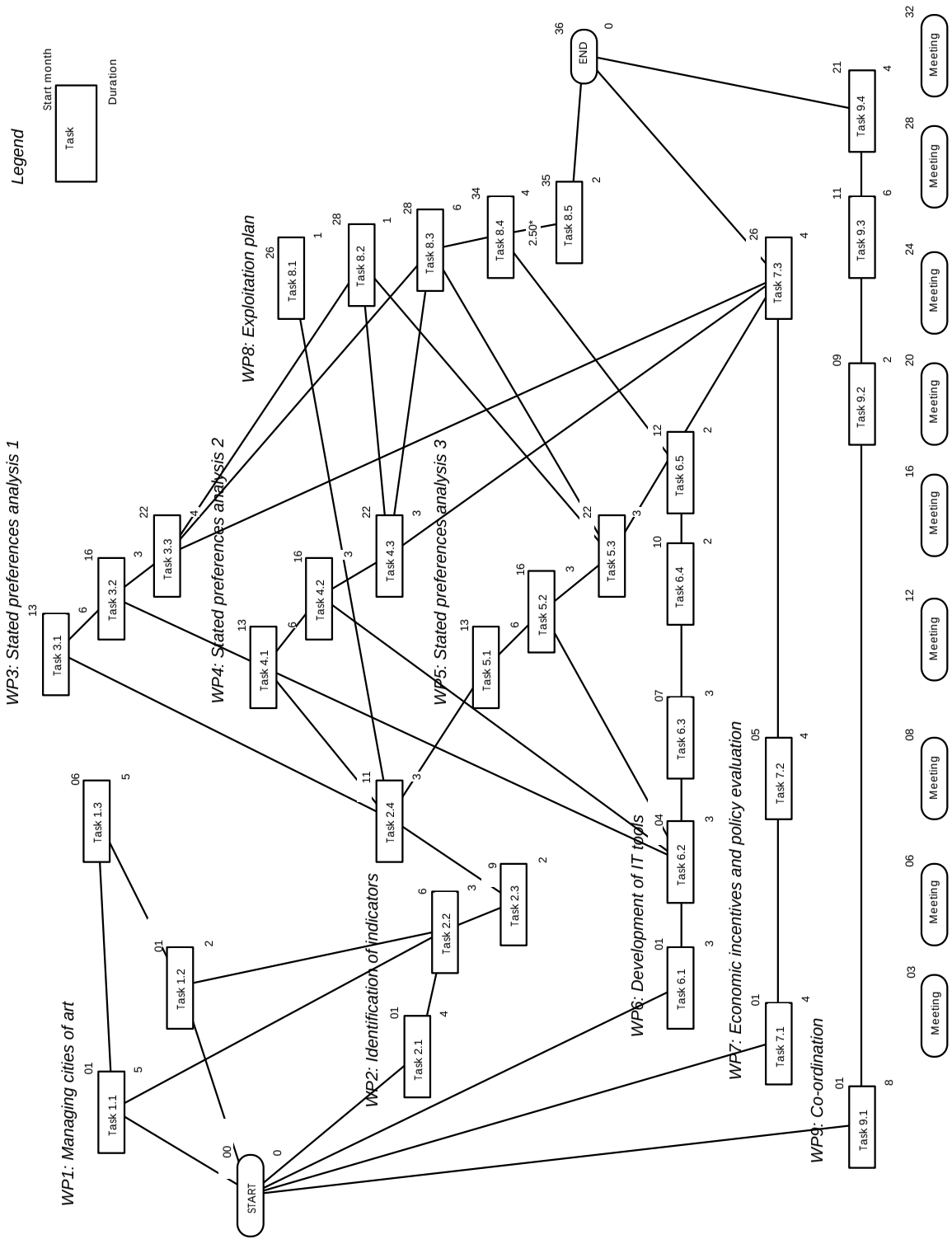
Manpower matrix: Workpackage -Tasks/Partner

Task	COORD	P1	P2	P3	P4	P5	P6	P7	P8	Totals
Task 1.1: Review of existing programmes		5	3.5		3	1	1	1	2	16.5
Task 1.2: Electronic forum		2	1		1		1	1		6
Task 1.3: Analysis of current strategies		5		2		1				8
WP1 total		12	4.5	2	4	2	2	2	2	30.5
Task 2.1: Analysis of indicators						4				4
Task 2.2: Defining carrying capacity		1		1		3				5
Task 2.3: Definition of congestion		1.5		1		2				4.5
Task 2.4: Develop comparative assessment		1.5				3				4.5
WP2 total		4		2		12				18
Task 3.1: Questionnaire design		6	1	1		1	2			11
Task 3.2: Survey implementation		3	1							4
Task 3.3: Data analysis		4	1	2						7
WP3 total		13	3	3		1	2			22
Task 4.1: Questionnaire design		2	1	1	1	6	2			13
Task 4.2: Survey implementation						3				3
Task 4.3: Data analysis		3		2		3				8
WP4 total		5	1	3	1	12	2		0	24
Task 5.1: Questionnaire design		2		6	1		2			11
Task 5.2: Survey implementation				3	1					4
Task 5.3: Data analysis		3		3	1					7
WP5 total		5		12	3		2			22
Task 6.1: Development of heritage GIS		1				2	3		1	7
Task 6.2: Development of Internet GIS		1				1	3		1	6
Task 6.3: Online tools for preference data		1				1				2
Task 6.2: Online tools for preference data							3			3
Task 6.4: Incorporate pedestrian flow data		1					2			3
Task 6.5: Roll-out IT framework		2					1			3
WP6 total		6				4	12		2	24
Task 7.1: Survey of economic incentives		2		4		1				7
Task 7.2: Analysis of impediments		2		4		1				7
Task 7.3: Blueprint for economic policies		2		4		1				7
WP7 total		6		12		3				21
Task 8.1: International workshop		1		2						3
Task 8.2: Paper dissemination		1	0.5	1	0.5	2	1	0.5		6.5
Task 8.3: Book editing		6	0.5	2	0.5	1	1	0.5		11.5
Task 8.4: IT prototype testing		2	0.5	1		1	4		3	11.5

Task 8.5: International conference		1	0.5	5	0.5	1	1	0.5		9.5
WP8 total		11	2	11	1.5	5	7	1.5	3	42
Task 9.1: General coordination	3	2	0.5	1	0.5	1	1	0.5		9.5
Task 9.2: Organisation of Advisory Board	2	1								3
Task 9.3: Reporting to EC	2	6								8
Task 9.4: Internet based coordination	2	1								3
WP9 total	9	10	0.5	1	0.5	1	1	0.5	0	23.5
Project totals	**9**	**72**	**11**	**46**	**10**	**40**	**28**	**4**	**7**	**227**

c) Graphical presentation of the project components




Legend
Start month
Task
Duration
WP1: Managing cities of art
WP2: Identification of indicators
WP3: Stated preferences analysis 1
WP4: Stated preferences analysis 2
WP5: Stated preferences analysis 3
WP6: Development of IT tools
WP7: Economic incentives and policy evaluation
WP8: Exploitation plan
WP9: Co-ordination
START
END
Task 1.1
Task 1.2
Task 1.3
Task 2.1
Task 2.2
Task 2.3
Task 2.4
Task 3.1
Task 3.2
Task 3.3
Task 4.1
Task 4.2
Task 4.3
Task 5.1
Task 5.2
Task 5.3
Task 6.1
Task 6.2
Task 6.3
Task 6.4
Task 6.5
Task 7.1
Task 7.2
Task 7.3
Task 8.1
Task 8.2
Task 8.3
Task 8.4
Task 8.5
Task 9.1
Task 9.2
Task 9.3
Task 9.4
Meeting
2.50*

d) Detailed project description broken down into workpackages:

d_1) Workpackage list

WPL Workpackage list

Work-package No	Workpackage title	Leader No	Person-months	Start month	End month	Delivrable No
WP1	Managing cities of art	**1**	**30.5**	**1**	**12**	**D1-D2**
WP2	Identification of indicators for the sustainable exploitation of cultural heritage	**5**	**18**	**1**	**12**	**D3-D4**
WP3	Eliciting public and stakeholders preferences for alternative management options for a northern European city of art	**1**	**22**	**12**	**24**	**D5-D6**
WP4	Eliciting public and stakeholders preferences for alternative management options for a centre European city of art	**5**	**24**	**12**	**24**	**D7-D8**
WP5	Eliciting public and stakeholders preferences for alternative management options for a southern European city of art	**3**	**22**	**12**	**24**	**D9-D10**
WP6	The development of digital tools and on purpose built software	**6**	**24**	**1**	**36**	**D11-D13**
WP7	Economic incentives and policy evaluation	**3**	**21**	**1**	**36**	**D14-D15**
WP8	Exploitation plan	**1**	**42**	**24**	**36**	**D16-D18**
WP9	Management, Coordination and reporting	**1**	**23.5**	**1**	**36**	**D20-D22**
TOT						

d_2) Deliverables list

Deliverable No	Deliverable title	Delivery date	Nature	Dissemination level
D1	Electronic forum of European cultural cities	Month 2	**DE**	**PU**
D2	Guidelines for the assessment of current management strategies	Month 12	**TH**	**RE**
D3	List of indicators for sustainable tourism and congestion in cultural cities	Month 13	**ME**	**RE**
D4	Operational framework for mapping the tourist state of cultural cities and its congestion	Month 15	**ME**	**RE**
D5	Two Data sets from a northern European city of art –case study 1	Month 21	**DA**	**RE**
D6	Data Analysis report for case study 1	Month 24	**RE**	**RE**
D7	Two Data sets from a centre European city of art –case study 2	Month 21	**DA**	**RE**
D8	Data Analysis report for case study 2	Month 24	**RE**	**RE**
D9	Two Data sets from a southern European city of art –case study 3	Month 21	**DA**	**RE**
D10	Data Analysis report for case study 3	Month 24	**RE**	**RE**
D11	Desktop and GIS software	Month 14	**PR**	**RE**
D12	Software Manual	Month 15	**DE**	**RE**
D13	Web based help systems	Month 15	**DE**	**RE**
D14	Review of economic instruments to control congestion in city of art	Month 4	**TH**	**RE**
D15	Report on social sustainability of the economic instruments	Month 8	**RE**	**RE**
D16	International workshop in cultural heritage optimal management strategies	Month 25	**DE**	**RE**
D17	Book on cultural heritage management	Month 32	**TH**	**PU**
D18	International conference on managing cities of art	Month 36	**DE**	**PU**
D19	A co-ordinator quartely progress reports to all partners	quartely	**RE**	**CO**
D20	A world wide web page	Month 30	**DE**	**RE**
D21	Co-ordinator final report.	Month 36	**RE**	**CO**

d_3) A short description of each workpackage

<table>
<tr><th colspan="5">CHAST Workpackage Description and Deliverables: WP1</th></tr>
<tr><td colspan="3">Workpackage title Managing Cities Of Art</td><td>Start: Month 1</td><td>Duration:</td></tr>
<tr><td colspan="3">Concise Description/ Contribution</td><td colspan="2">Participant code</td><td>Effort (MM)</td></tr>
<tr><td colspan="3" rowspan="4"></td><td>WP Coordinator</td><td>1</td><td>12</td></tr>
<tr><td>Task 1.1 Leader</td><td>1</td><td>5</td></tr>
<tr><td>Task 1.2 Leader</td><td>1</td><td>2</td></tr>
<tr><td>Task 1.3 Leader</td><td>1</td><td>5</td></tr>
<tr><td colspan="3">Person months for other participants 2 (4.5), 3(2), 4(4) 5(2), 6(2), 7(2), 8(2)</td><td colspan="2">Partial Total</td><td>18.5</td></tr>
<tr><td colspan="5">TOTAL PERSON MONTHS</td><td>30.5</td></tr>
<tr><td colspan="6">Objectives

Analyse the specific issues and challenges three outstanding cities of art face, in terms of conservation and tourism. Analyse the current policy instruments and alternative management models.

Develop a methodology to compare results from the 3 cities of art, in terms of preferences, attitudes, and patterns of exploitation, impact on local economies, policy implementation, and instruments.</td></tr>
<tr><td colspan="6">Description of the work/tasks

Task 1.1 Review of the existing conservation programmes and legislation for intervention in each of the countries where the case studies are being held. Mapping of the existing tourist support infrastructures, based on what is available at local level. This mapping will be used during the development of the IT tool in WP6. The work developed during this task will provide inputs to be used in WP2, WP3, WP4, and WP5.

Task 1.2 Electronic forum of end-users. Using existing networks of cities, we will developed a web based discussion theatre where municipalities and other stakeholders will discuss about the needs and plans to control congestion and to develop a sustainable approach to tourism. We will provoke discussion on issues related to exploitation of cultural heritage, with particular reference to measure currently available to insure safety and accessibility.

Task 1.3 Analysis of the economic impacts of current strategies. By means of regression analysis and hedonic approaches we will measure the impacts of current management policies on the relevant market segments.</td></tr>
<tr><td colspan="6">Deliverables

D1. Electronic forum of European cultural cities. Web based

D2. Guidelines for the assessment of current management strategies.</td></tr>
<tr><td colspan="6">Milestones and added value

Meetings among partners and other local agencies.</td></tr>
</table>

CHAST Workpackage Description and Deliverables: WP2			
Workpackage title **Identification of indicators for the sustainable exploitation of cultural heritage**	Start: Month 1		Duration:
Concise Description/ Contribution	**Participant code**		Effort (MM)
	WP Coordinator	**5**	**12**
	Task 2.1 Leader	1	4
	Task 2.2 Leader	1	3
	Task 2.3 Leader	1	3
	Task 2.4 Leader	1	3
Person months for other participants 1(4) 3(2)	**Partial Total**		**6**
	TOTAL PERSON MONTHS		**18**

Objectives

Develop **analytical tools to model** chain behaviour of tourists and visitors of cities of art. They will also account for interference between tourists and residents behaviour.

Identify indicators of congestion in cities of art and historic centres, and study the sensitivity of **threshold values** defining the **carrying capacity** of historic sites.

Develop the **operational** framework for the analysis of congestion and sustainable exploitation of cultural heritage to be empirically tested in **three cities of art.**

Design a comparative measurable framework through which findings and lessons from the 3 case cities can be transferred to other cases addressing tourist congestion.

Description of the work/tasks

Task 2.1 · Analysis of indicators for sustainable tourism based on extensive literature search among recent studies on cultural cities

Task 2.2 Examination of various ways to define and measure tourist carrying capacity in cites using principles from benchmark analysis and critical value analysis

Task 2.3 Definition of actual tourist congestion in relation to carrying capacity indicators, inter alia by deploying a multidimensional use indicator of cultural heritage.

Task 2.4 Development of a comparative assessment system that will allow to position individual case cities.

Deliverables

D3. A systematic list of indicators for sustainable tourism and congestion in cultural cities

D4. ·A comparative operational framework for mapping out the actual tourist state- and its congestion - of cultural cities

Milestones and added value

Expert meeting on indicators for sustainable tourism

Creation of forum of cultural cities involved with tourist congestion

CHAST Workpackage Description and Deliverables: WP3			
Workpackage title **Eliciting public and stakeholders preferences for alternative management options for a northern European city of art**	Start: Month 12		Duration:
Concise Description/ Contribution	**Participant code**		Effort (MM)
	WP Coordinator	**1**	**13**
	Task 3.1 Leader	1	6
	Task 3.2 Leader	1	3
	Task 3.3 Leader	1	4
Person months for other participants 2(3), 3(3) 5(1) 6(2)		**Partial Total**	**9**
		TOTAL PERSON MONTHS	**22**

Objectives;

1. To elicit public and other stakeholders' preferences for cultural attributes, current policy instruments, and **alternative management models**.
2. To develop a final **SP questionnaire format** capable of addressing alternative ways of tackling congestion in the city
3. To define the appropriate level of information and visualization for the alternative scenarios to be proposed to the public.

Description of the work/tasks

The workpackage leader will organise the implementation of the 2 case studies, in different sites of the cities where congestion, both at pedestrian and non pedestrian lever is at its highest. **The first survey** will elicit people's preferences for attributes of cultural heritage goods and ways of experience them, as well as try to measure the loss in utility due to the level of congestion experienced. This phase will have an impact on WP6 and the development of the visualization tool. **The second survey** will use the GIS model and digital tools developed in WP6 to assess people's preferences for alternative ways of managing congestion. We will simulate visually the alternatives, and attach economic values to the main attributes composing them.

The work per each survey is organised according to the following tasks:

Task 3.1 Questionnaire design: Focus groups and Pre-tests . Two focus groups per each survey will be held. The aim of this activity is to identify the perception of the relevant attributes describing congestion in cultural sites, with particular reference to the form of congestion experienced in the city of study. During this phase a selected number of representatives of local governmental agencies, stakeholders and public will take part into two different meetings focusing on the issues faced by the city. The outputs of workpackage No.1 and 2 will also inform this task. The identified indicators of congestion will then be used in the appropriate design of the questionnaire, using a Stated Preference approach, which will be adequately pre-tested against a sample of the relevant population, consisting of approximately 100 interviews per survey.

Task 3.2 Survey implementation and data input The final version of the questionnaire will be defined per each of the chosen sites. Then a specialised firm will implement the survey collecting per each survey a number of approximately 600 interviews, drawn from the relevant population of residents, tourist, and visitors.

Task 3.3 Data analysis The two data sets will be analysed from a statistical point of view, making best use of the information collected within the population sample. Then, a number of econometric tests as well as further statistical data analysis will be carried out to estimate the mean willingness to pay for the sample per each of the relevant attributes.

Deliverables

D5. Two different data sets

D6 Report on data collection and analysis.

Milestones and added value

1. Final Questionnaire
2. Data collection

CHAST Workpackage Description and Deliverables: WP4			
Workpackage title **Eliciting public and stakeholders preferences for alternative management options for a centre European city of art**	Start: Month 12		Duration:
Concise Description/ Contribution	**Participant code**		Effort (MM)
	WP Coordinator	**5**	**12**
	Task 4.1 Leader	1	2
	Task 4.2 Leader	5	3
	Task 4.3 Leader	5	2
Person months for other participants 1(3), 2(1), 3(3), 4(1), 6(2), 8(1)	**Partial Total**		12
	TOTAL PERSON MONTHS		**24**

Objectives;

To elicit public and other stakeholders' preferences for cultural attributes, current policy instruments, and **alternative management models**.

To develop a final **SP questionnaire format** capable of addressing alternative ways of tackling congestion in the city

To define the appropriate level of information and visualization for the alternative scenarios to be proposed to the public.

Description of the work/tasks

The workpackage leader will organise the implementation of the 2 case studies, in different sites of the cities where congestion, both at pedestrian and non pedestrian lever is at its highest. **The first survey** will elicit people's preferences for attributes of cultural heritage goods and ways of experience them, as well as try to measure the loss in utility due to the level of congestion experienced. This phase will have an impact on WP6 and the development of the visualization tool. **The second survey** will use the GIS model and digital tools developed in WP6 to assess people's preferences for alternative ways of managing congestion. We will simulate visually the alternatives, and attach economic values to the main attributes composing them.

The work per each survey is organised according to the following tasks:

Task 4.1 Questionnaire design: Focus groups and Pre-tests . Two focus groups per each survey will be held. The aim of this activity is to identify the perception of the relevant attributes describing congestion in cultural sites, with particular reference to the form of congestion experienced in the city of study. During this phase a selected number of representatives of local governmental agencies, stakeholders and public will take part into two different meetings focusing on the issues faced by the city. The outputs of workpackage No.1 and 2 will also inform this task. The identified indicators of congestion will then be used in the appropriate design of the questionnaire, using a Stated Preference approach, which will be adequately pre-tested against a sample of the relevant population, consisting of approximately 100 interviews per survey.

Task 4.2 Survey implementation and data input The final version of the questionnaire will be defined per each of the chosen sites. Then a specialised firm will implement the survey collecting per each survey a number of approximately 600 interviews, drawn from the relevant population of residents, tourist, and visitors.

Task 4.3 Data analysis The two data sets will be analysed from a statistical point of view, making best use of the information collected within the population sample. Then, a number of econometric tests as well as further statistical data analysis will be carried out to estimate the mean willingness to pay for the sample per each of the relevant attributes.

Deliverables

D7 Two different data sets

D8 Report on data collection and analysis.

Milestones and added value

1. Final Questionnaire
2. Data collection

CHAST Workpackage Description and Deliverables: WP5			
Workpackage title **Eliciting public and stakeholders preferences for alternative management options for a southern European city of art**	Start: Month 12		Duration:
Concise Description/ Contribution	**Participant code**		Effort (MM)
	WP Coordinator	**3**	**12**
	Task 5.1 Leader	1	2
	Task 5.2 Leader	3	3
	Task 5.3 Leader	3	3
Person months for other participants 1(3), 3(6) 4(3) 6(2)		**Partial Total**	**12**
		TOTAL PERSON MONTHS	**22**

Objectives;

1. To elicit public and other stakeholders' preferences for cultural attributes, current policy instruments, and **alternative management models**.
2. To develop a final **SP questionnaire format** capable of addressing alternative ways of tackling congestion in the city
3. To define the appropriate level of information and visualization for the alternative scenarios to be proposed to the public.

Description of the work/tasks

The workpackage leader will organise the implementation of the 2 case studies, in different sites of the cities where congestion, both at pedestrian and non pedestrian lever is at its highest. **The first survey** will elicit people's preferences for attributes of cultural heritage goods and ways of experience them, as well as try to measure the loss in utility due to the level of congestion experienced. This phase will have an impact on WP6 and the development of the visualization tool. **The second survey** will use the GIS model and digital tools developed in WP6 to assess people's preferences for alternative ways of managing congestion. We will simulate visually the alternatives, and attach economic values to the main attributes composing them.

The work per each survey is organised according to the following tasks:

Task 5.1 Questionnaire design: Focus groups and Pre-tests . Two focus groups per each survey will be held. The aim of this activity is to identify the perception of the relevant attributes describing congestion in cultural sites, with particular reference to the form of congestion experienced in the city of study. During this phase a selected number of representatives of local governmental agencies, stakeholders and public will take part into two different meetings focusing on the issues faced by the city. The outputs of workpackage No.1 and 2 will also inform this task. The identified indicators of congestion will then be used in the appropriate design of the questionnaire, using a Stated Preference approach, which will be adequately pre-tested against a sample of the relevant population, consisting of approximately 100 interviews per survey.

Task 5.2 Survey implementation and data input The final version of the questionnaire will be defined per each of the chosen sites. Then a specialised firm will implement the survey collecting per each survey a number of approximately 600 interviews, drawn from the relevant population of residents, tourist, and visitors.

Task 5.3 Data analysis The two data sets will be analysed from a statistical point of view, making best use of the information collected within the population sample. Then, a number of econometric tests as well as further statistical data analysis will be carried out to estimate the mean willingness to pay for the sample per each of the relevant attributes.

Deliverables

D9. Two different data sets

D10 Report on data collection and analysis.

Milestones and added value

1. Final Questionnaire
2. Data collection

CHAST Workpackage Description and Deliverables: WP6			
Workpackage title The development of digital tools and on purpose built software	Start: Month 1		Duration:
Concise Description/ Contribution	**Participant code**		Effort (MM)
	WP Coordinator	**6**	**12**
	Task 6.1 Leader	6	3
	Task 6.2 Leader	6	3
	Task 6.3 Leader	6	3
	Task 6.4 Leader	6	2
	Task 6.5 Leader	6	1
Person months for other participants 1(6), 5(4), 8(2)	**Partial Total**		**12**
	TOTAL PERSON MONTHS		**24**

Objectives

1. Develop a number of **IT tools** which will form the basis of a decision-support system for managing Cultural Heritage and for organising the eliciting public and stakeholders preferences

2. Develop GIS tools, specifically desktop and internet GIS which will allow users of the system access to preference data and to the development of policies and management plans

3. Relate the mapping and related tools to retrieve and allow comparison of different approaches of same management issues, such as **modelling and simulating** pedestrian and non-pedestrian **tourist flows** to control **congestion**

4. Develop the entire suite of tools in an online web-based context which allows access through the net and also the electronic theatre

Description of the work/tasks

The workpackage leader will organise the development of the suite of IT tools and develop these into a decision support framework which will support all other relevant work packages , especially workpackages 1 and 3-5. The tasks which will enable this to be done are as follows:

Task 6.1 The Development of Desktop GIS based on *ArcGIS***:** for mapping heritage problems: this will involve a coordination with all partners and will involve developing the relevant maps and other multimedia embedded into the GIS. This will extend to qualitative visual data such as photographs etc.

Task 6.2: The Development of Internet GIS based on *ArcIMS*: this will extend the software developed in Task 6.1 to the net and will involve simplifying the data so that external users can examine heritage problems. This internet GIS is embed within appropriate web browser technology.

Task 6.3: The Development of Related Online Tools for Soliciting and Managing Preference Data; these will be based on standard web browser technologies and will incorporate the state of the art analysis of preferences as developed in other workpackages

Task 6.4: The Incorporation of Pedestrian Flow Data: specifically tourist flows into the management system, and mapping and analysis of these data to provide indicators of congestion.

Task 6.5: The Roll-out of the IT Framework for each of the three European Cities as in Workpackages 3-5: This will involve piloting the software with participants and eliciting feedback, hence fine-tuning the designs, and seeking ways of developing best practice in the use of the systems.

Deliverables

D11. Desktop and GIS software adapted to the decision-support context implied in the various task above

D12. Manuals of how to use the systems with simple tutorials based on web-based applications

D13. Web-based help systems and a Programme web-page for all workpackages

Milestones and added value

The use of standard GIS software and standard web-based browsers adapted to managing the cultural heritage. This will add value to standard GIS software. The provision of new web-based software applications which a wide set of users in local authorities throughout Europe will be able to use.

CHAST Workpackage Description and Deliverables: WP7			
Workpackage title Economic incentives and policy evaluation	Start: Month 1		Duration:
Concise Description/ Contribution	**Participant code**		Effort (MM)
	WP Coordinator	**3**	**12**
	Task .1 Leader	3	4
	Task .1 Leader	3	4
	Task .1 Leader	3	4
Person months for other participants 1(6), 5(3)	**Partial Total**		**9**
	TOTAL PERSON MONTHS		**21**

Objectives

Provide a **blueprint** for **urban economic policies.** We will focus on lessons and **methodologies** that can be transferred to **other European contexts** where the volume of tourism has not achieved, as yet, unsustainable patters. We will study the policies handles to be used; such has **fiscal and economic incentives**, **standards** and other **instruments**

Description of the work/tasks

Finally, we will suggest a number of financial mechanisms at EU level, accounting for each national institutional framework.

Tasks

1. **Survey of** the economic incentives proposed in literature and of those been used at European level.
2. **Analysis of the institutional impediments**
3. **Blueprint for urban economic policies**

The work will focus on the analysis and development and adaptation of economic instruments for the reduction of congestion phenomena in art cities.

The analysis and proposals of economic instrument for reducing the environmental impact of economic activities has seen an huge diffusion in international literature in the last ten years but the problem of adaptation of the instruments for the reduction of congestion phenomena in art cities is still fairly unexplored, even though there are proposals, from this direction, on behalf of the administrators of the art cities. The task proposes to thoroughly examine the literature to the point of definition of the possible instruments with particular regards to the imposition of :

A survey will be obtained from the examination of the literature, providing possible proposals of “economic Interventions” for the reduction of the congestion phenomena.

Such proposals will be valued in the light of the specific characteristics of the study case to the point of:

The Evaluation will be carried out with the aid of a panel experts and with a board of decision makers directly involved in the eventual implementation.

The work package product will consist of :

A review of the current literature;

A proposal to utilise economic instruments in different case studies;

Evaluation of the efficiency and effectiveness and the equity of the different characteristics of the instruments in the case studies.

An evaluation of the feasibility

Deliverables

D14. A review of the possible economic instrument for reducing congestion in art cities

D15. An assessment of the “social sustainability” of the economic instrument

Milestones and added value

Experts meeting on the evaluation of economic instrument

CHAST Workpackage Description and Deliverables: WP8			
Workpackage title Exploitation plan	Start: Month 24		Duration:
Concise Description/ Contribution	**Participant code**		Effort (MM)
	WP Coordinator	**1**	**11**
	Task 8.1 Leader	3	3
	Task 8.2 Leader	5	3
	Task 8.3 Leader	1	6
	Task 8.4 Leader	6	6
	Task 8.5 Leader	3	6
Person months for other participants 2(2), 3(11), 4(1.5), 5(5), 6(7), 7(1.5), 8(3)	**Partial Total**		31
	TOTAL PERSON MONTHS		**42**

Objectives;

The nature of the research project itself requires an active dissemination of the results, especially towards the potential end-users, such as municipalities, governmental agencies, and cultural heritage protection bodies. However, another major aim of the exploitation of the results is to provoke comments and reflection within the wider academic community.

Methodology / work description;

In order to achieve the proposed objectives, the dissemination process will mainly take the following forms:

Task 8.1 International workshop. An international workshop will be organised on the theme of cultural heritage optimal management strategies. This will have at least a European, if not a worldwide dimension.

Task 8.2 Paper dissemination. During the research life cycle, the academic partners will be expected to present papers to the relevant academic forums. This activity's outputs will be also reported on the project web page.

Task 8.3 Book editing. The previous two tasks will represent the initial steps for the development of a book discussing the research issues. The book will include all the relevant outputs of the research and involve the participation of scholars who had not taken part to the project.

Task 8.4 IT Tools prototype testing.

Task 8.5 International conference on managing cities of art

Deliverables including cost of deliverable as percentage of total cost of the proposed project;

D16 International workshop on cultural heritage optimal management strategies

D17 Book on cultural heritage management and assessment for sustainable development of urban areas

D18 International conference on managing cities of art

Milestones including cost of the Milestone as percentage of total cost of the proposed project

Meetings of the Advisory Board

Prototype testing

CHAST Workpackage Description and Deliverables: WP9			
Workpackage title Management, Coordination and Reporting	Start: Month 1		Duration:
Concise Description/ Contribution	**Participant code**		Effort (MM)
	WP Coordinator	**1**	**19**
	Task 9.1 Leader	1	5
	Task 9.2 Leader	1	3
	Task 9.3 Leader	1	8
	Task 9.4 Leader	1	3
Person months for other participants 2(0.5), 3(1), 4(0.5), 5(1), 6(1), 7(0.5)	**Partial Total**		4.5
	TOTAL PERSON MONTHS		**23.5**

Objectives:

WP1 has a transversal dimension and will be active throughout the project life cycle. It is main aim is to guaranteed the coordination and management of all activities in order to best perform the research tasks. Main objectives are as follows:

1) To monitor the progress of the project, in collaboration with work packages leaders 2)To ensure the distribution of the resources supplied by the commission. 3) To initiate appropriate actions when and if problems arise in the project. 4) To make decisions on changes to the project plan. 5) To approve the annual audit report. 6) To approve the formal deliverables before they are submitted to the commission. 8) To complete and submit the periodical and final reports.

Methodology / work description;

Task 1.1 General coordination activities The implementation of this task will ensure the accomplishment of all the work involved in both administrative and scientific coordination.

Task 1.2 Organization and Management of Advisory Board Committee

Task 1.3 Reporting to the EU

Task 1.4 Internet based coordination of resources

The project management is based on the delegation of decisions with the following decision levels:

1) The co-ordinator will make the major decisions regarding significant changes to the project plan, resources allocation
2) A group leader who is responsible to manage and co-ordinate the work within that group will lead each workpackage. The group leader will plan and manage the work within the workpackage, ensure the deliverables are produced and delivered in accordance with the schedule. The work package leaders are responsible for decisions relating to work within that workpackage.
3) Decisions relating to interactions between the work groups will be taken jointly between the interested parties.

Deliverables including cost of deliverable as percentage of total cost of the proposed project;

D19 A quarterly progress reports to all partners.

D20 A World Wide Web page that contains general and specific information about each workpackages.

D21 Completion and submission of the periodical and final report

Milestones including cost of the Milestone as percentage of total cost of the proposed project

Initial management meeting of all partners.

Intermediate management meeting of all partners.

Final management meeting of all partners.

Development of World Wide Web page