P.A.T.C.H. - Prevention Analysis and Tools for Cultural Heritage

FINAL TECHNICAL IMPLEMENTATION REPORT

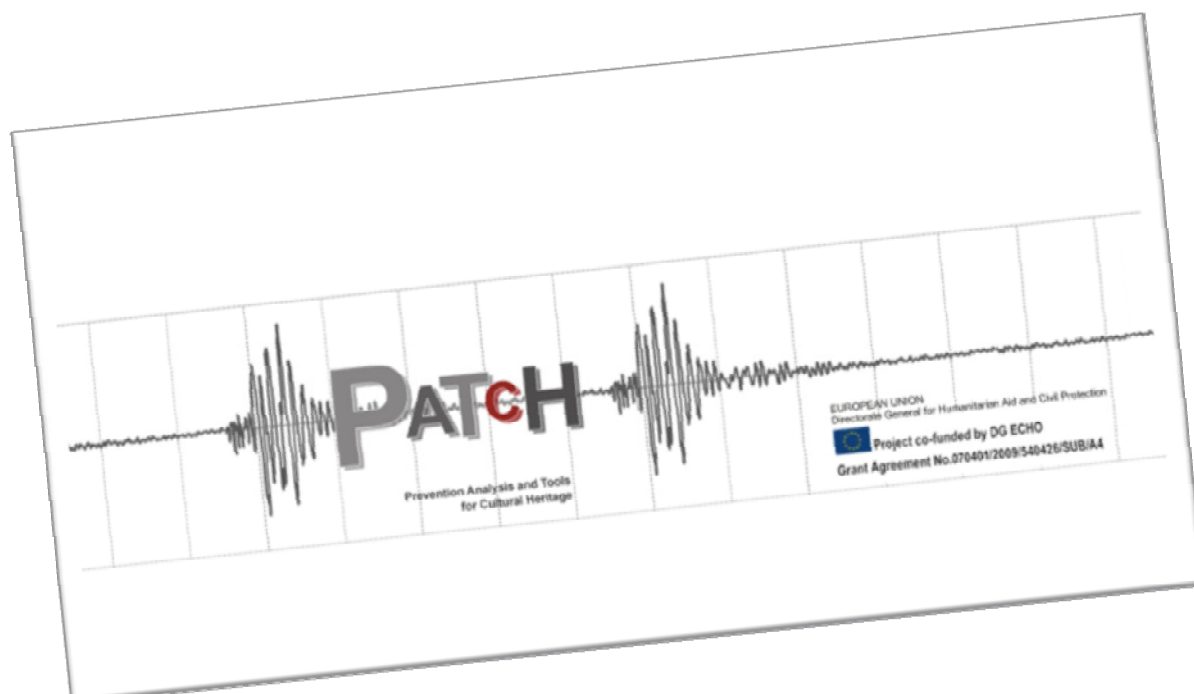**Beneficiary: Centro Studi e Formazione Villa Montesca**
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1. General reminder of project objectives, partnership and expected deliverables

1.1 Project Objectives

The P.A.T.C.H project main purpose is to create and implement instruments, based on training, education and research, useful for building a culture of prevention and preparedness in view of disaster events on Cultural Heritage. The impact of earthquake disasters on cultural heritage is usually severe and immediate and the consequences are often irreparable; the main scope of the project is then to minimize CH damage and avoid or mitigate the worst consequences of earthquake disasters, and so to apply the civil protection principles, follow the guidelines and understand and overcome the existing barriers for disaster prevention and planning in cultural heritage.

The PATCH objectives are:

- realizing a survey, in each partner country, for creating a detailed scenario of the earthquakes impact on Cultural Heritage in Pilot areas and analysing the existing CH emergency management and prevention measures.
- realizing an international best practice analysis and a market search concerning innovative tools and procedures to use them in order to improve the CH rescue interventions.
- elaborating innovative intervention practices (Guidelines on earthquake risk management in the CH sector) with a special focus on correct human behaviours, containing minimal procedures, applicable in different contexts, in order to make operators with different specialized competences and skills able to handle the situation and to cooperate within a team.
- developing and testing training methods for a correct implementation of the guidelines which will provide staff members involved the skills required for an effective quick intervention.

The PATCH project aims also to create a multilateral approach and an integrated system (networking) of civil and cultural heritage protection, especially minor CH resources, making all the operators aware of procedures. It wants to develop wide educational and technical information through Newsletters, Journals, web site, arranging and promote lectures, workshops, and other appropriate activities related to the cultural heritage disaster prevention at European level.

1.2 Partnership

A European network of Partners has been created in order to cooperate and to improve knowledge about the main project topics and guarantee quality and effectiveness of deliverables and achieved results. Each partner contributed, with its own country experience, to the best carrying out of the activities and the actions implementation. The partnership includes the coordinating beneficiary: Centro Studi e Formazione Villa Montesca (Italy) and the following associated beneficiaries: Custodia generale del Sacro Convento della Basilica Papale di San Francesco in Assisi (Italy); University of Crete – Natural History Museum of Crete (Greece); Policia Local de Valencia (Spain); Consorci de la Ribera (Spain); Municipality of Agios Athanasios (Cyprus); Province of Perugia (Italy); Municipality of Heraklion (Greece)

1.3 Expected Deliverables

The main expected deliverables, according to the core tasks, are the following :
- Research publication: Historical report on earthquake CH damages occurred in the partner countries
- Analysis of the CH safeguard systems and procedures in the partner countries
- Guidelines on Earthquake risk management in the cultural heritage sector - Best practices analysis

- Innovative tools and technologies survey
- Protocol and procedures for emergency teams on CH in earthquake events

These guidelines are addressed to define the skills required in the intervention teams and the procedure to develop to assure a safe action in the disaster theatre. The Guidelines contain:

- Training Manual (instructions for Guidelines use, containing specific training paths for different operators involved)

Second-life resources for training activities

-Training courses in presence
- Theoretical part
- Practical part (drills in situ)

- Identification of the testing sites (museums, libraries, churches and other CH sites) to experiment protocol and procedures identified in the guidelines
- Dissemination activities: dissemination plan, web site, Project Brochures, Publications in specialized journals and newspapers, PATCH Newsletter (5 issues), Final Conference in L'Aquila
- Project Video Dossier

2. General summary of the project implementation process

2.1 General overview of the process

The project comprised the following phases (Task ID):

TASK ID A Management & Reporting to EC

This was a transversal phase for the planning, monitoring and control all the project tasks and the motivation of all those involved in it in order to achieve the project's objectives on time and at the specified cost, quality and performance.
In order to manage the project as a coherent programme on improvement the main activities done were been:

Shared Protocol among the partners for the Project Management; Kick-off meeting in Italy – Assisi on March 4th and 5th 2010 (The first meeting was planned in Spain but, jointly with the partners, it was decided that the project would gain a higher added value by being presented and opened to the public by the technical staff of the partner "Basilica Papale" with their know-how and experience developed since the 1997 earthquake); Spreadsheet formats for the Financial Analysis and Cost Management; PATCH Gantt chart and Work Breakdown Structure; Responsibility Allocation Matrix; Spreadsheet formats for documenting the projected activities in relation with costs; Templates and Checklists for scheduling and monitoring the partners tasks; Quality evaluation plan; Quality indicators; Meeting in Cyprus (26th and 27th October 2010); Meeting in Spain (4th and 5th of May 2011); First Progress Report (on Task B activities); Second Progress Report (on Task C and D activities); Mission of Italian experts, Lorca (Spain), 26/29 May 2011; Patch Exercise, Assisi (Italy), 24 June 2011; Patch Exercise, Valencia (Spain), 27 July 2011, Fourth Meeting, Heraklion, 5-6-7 October 2011.

The 14th December 2011 has been held the Final Conference in L'Aquila.
L'Aquila, is a town with a strong symbolic meaning, and drawing a great attention of the media for being so famous as in the past few years it was hit by a strong heart quake.
The Public Authorities of Perugia and L'Aquila, active in the sectors of culture, civil protection and community policies intervene during the conference and all the project partners have the opportunity to disseminate to the wide public their experience in applying protocols and procedures created within the PATCH project, to prevent damages on Cultural Heritages during seismic events in their countries. According to the project the final conference was due in Bruxelles. The commission has been informed about amendment.

TASK ID B Research on CH protection systems and procedures adopted in the partner countries

A survey was carried out in the countries involved in the project in order to analyze a detailed scenario of the earthquakes impact on CH in Pilot areas and analysing the existing CH emergency management and prevention measures (with a special focus on people risk incurred and on man-made CH damages due to lack of skills of operators involved in intervention procedures). The research is based on the current and geographical data collected on CH, earthquakes, prevention and safeguard procedures. All partners and actors have been actively involved. The research cards are put into the PATCH GeoMap that is available from the project website.

TASK ID C Earthquake risk management in the cultural heritage sector

The main activities realized were been:

- International best practice analysis and a market search concerning innovative tools and procedures (materials, individuation and location technologies and techniques, packaging, removal and storage procedures..) to use in order to improve the CH rescue interventions

- Innovative intervention practices (Guidelines on earthquake risk management in the CH sector) with a special focus on correct human behaviours, containing minimal procedures (a sort of CH First Aid treatment measures), applicable in different contexts, in order to make operators with different specialized competences and skills able to handle the situation and to cooperate within a team

TASK ID D Protocol and procedures: Testing and Implementing

Main activities:

- realization of a Training Manual (instructions for Guidelines use, containing specific training paths for different operators involved)

- realization of Second-life resources for training activities.

The training activities in presence (Theoretical and Practical part), scheduled in the project proposal form May 2011 on, have started in the different countries after the meeting in Spain (held 4th and 5th of May 2011)

TASK ID E Exploitation

The on-line courses (addressed to emergency team operators and CH operators) have been *realized and tested.* All the partners have prepared the national On-line Communities and have organized their National workshops.

TASK ID F Dissemination

Main activities:

Dissemination Plan; Project Web-site realization and continuous updating; Brochures in English, in Italian, in Spanish and in Greek; Publications in specialized journals and newspapers; PATCH Newsletters, press realises and press conferences.

2.2 Comparative analysis of initial and actual time schedules, planned and used resources, expected and actual results

The actual time schedule for all the phases of the project activities followed closely the initial time schedule. Indeed all activities and products of the PATCH project have been carried out and implemented according to scheduled programme, thus guaranteeing the correct and rational use of all resources - material, human and economic, set by the project work group.

The planned and used resources are described in the F forms and comprise costs for personnel, travel and subsistence, sub-contracting and other direct costs. Full details of expenditure are detailed in the financial statement and excel workbook, however only marginal variations can be noted. In particular it must be underlined that the main difference comes from the fact that some activities, originally foreseen in the sub-contracting heading, have been realized by the consortium staff. Anyway the total variation between the two headings not exceeds the 10%, as stated in the Common Provisions.

Each of the key expected results were achieved. In the section 5 "Presentation of the technical results and deliverables" all the outcomes and results are clearly described.
Anyway it must be underlined that the partnership decided to realize a product not planned in the application: the PATCH game on line. Even if it was an hard and time/resource consuming work this on line interactive game for PC was really useful because it's addressed to people less expert but anyway interested in this important issue. In the game is possible to realize a simulation of interventions on earthquakes: the users are engaged in emergency situations in the same way as a player in an adventure game. This way the player must perform a series of correct operations in order to continue and keep going on, otherwise he/she will have to repeat them and correct his/her actions, so indirectly learning the correct sequence of actions.
The user faces different levels of play, which are progressively more difficult. The difficulty of the game is based on the number of operations required and the speed with which these actions must be performed.
This game is interesting also for the project exploitation.

3. Evaluation of project management/implementation process

General framework

An effective Project Management provided an integrated framework for project organization, planning and control which was designed to:
- ensure the timely and cost-effective production of all the end-products
- maintain acceptable standards of quality,
- clearly and explicitly agree the objectives and scope of the project among the partners organizations,
- develop an overall schedule of activities and resources (project plan) required to carry out the whole project,
- develop a detailed schedule of activities and resources (stage plan) required to carry out the stages (TASK ID) of the project,
- define a project organization structure which was used to effectively manage and carry out the necessary work

so that
- since the beginning the project was set up in order to reach its project goals
- the probability of producing high quality outcomes on budget and on schedule was maximized.

To reach these objectives and to guarantee that all the proper planned activities could be put into action, a set of management tools were implemented and continuously updated during the project lifetime: the PATCH Organization Chart, the Gantt Chart and the Work Breakdown Structure of the project, Products Report, Project Costs Report.

It must be also underlined that the evaluation of the project management foresaw some processes:

- Project monitoring focused on activities and outputs and on their contribution to outcomes. Monitoring has been a continuous observation of a project's progress by systematically gathering key performance data for regular analysis

- Project reviews focused on outputs and outcomes. It was organized through different forms of evaluations during which the different co-beneficiaries, coordinated by the applicant, reflected upon the project progression towards achieving its objectives, taking into account available monitoring and evaluation data.

- Two interim and a final evaluations (in relation with the project reports to the DG ECHO) focused on the outcomes of the project and the likelihood that they will achieve the expected impact. Evaluations provided an opportunity for in-depth reflection on the strategy and assumptions guiding the project. They assessed the progress made towards the achievement of a project's objectives.

- Impact assessments (still on going even if the project eligibility is over) in order to determine how and in which way the project interventions can contribute to longer-term impact. The impact assessment is made in the different countries involved in the project with a strict linkage with their national cultural heritage and civil protection systems. This sort of evaluation also considers the linkages between the different projects outcomes and the national interventions and strategies on the protection of CH in case of seismic events.

3.1 Positive aspects / opportunities

a) The project started on the right foot with a proper initiation because goals and expectation were shared among all the organizations participating in the project. Since the beginning all partners actively participated to the planning and accomplishment and the organization modalities of the partnership were defined by all the partners (the kick off project meeting in Assisi was very important form this point of view)

b) in PATCH the transnational cooperation has been importantly a learning experience: valuable expertises were been well integrated into the project, tanking into account that the best teamwork results from the diversity of the individuals and roles.

c) the linkage that the applicant and the co-beneficiaries organizations have had with the relevant stakeholders in the field of civil protection and cultural heritage (relevant representatives in their own countries and in other EU countries) gave to the project an important national and trans-national impact. The dissemination and exploitation of the project results (please see the press area www.montesca.it/patch/pressarea.asp) and the amount of articles, press releases, events about the project are a direct evidence of the project effective impact. This enabled the project to ensure that messages were relevant across countries and organisations.

d) the importance paid to creating a pleasant atmosphere during events delivered by the project helped to harness people's interest and involvement, enhancing contributions from the Project Team, core group and the wider network.

e) by setting up a robust and separate financial and administrative system for the project and using the forms and excel wordbook provided by EC, the Project Team has been able to monitor and gradually evaluate the project activities and expenditure.

f) The mission to Murcia Y Lorca
Near the town of Lorca, an earthquake occurred at on 11 May 2011, during the project activities development, causing panic among locals and displacing many from their homes. The quake was preceded by a magnitude 4..4 , that inflicted substantial damage to many older structures in the area, including the historical Espolón Tower of Lorca Castle.
The Consorci de la Ribeira, project partner was contacted by the local Civil protection Organization requiring an intervention related to the protection of the CH based on the experimenting guidelines. The project Coordinator and the Spanish and Italian partners organized a mission to Lorca and Murcia, giving suggestions to the local authorities and having the opportunity to verify "on the real field" the applicability of the instructions contained in the PATCH guidelines. After having had meetings with the local authorities and experts, the project representatives concluded that the indications contained in the guidelines were useful for organizing the emergency and post-emergency actions. Most of the "golden rules" to be applied during the "peace time", had not been observed: the application of the guidelines in prevention phase ought to have made possible to react quickly, having immediately information at disposal of the rescuers.

g) all the products have been supported by structured guidelines in order to make them usable by a large public of interested stakeholders: the training manual contains instructions for the use and specific training paths for the different operators involved (emergency team operators or CH operators), the Second-life resources for training activities and virtual experiences of rescue operations are anticipated by structured Guidelines; the on line interactive game for PC for people less expert foresees a user guide; the use of the on-line courses addressed to all professionals, staff and volunteers concerned by PATCH issues, are explained in a guide as well.

h) the sequence of the stages and steps of the project reflected the intrinsic and architectural dependencies inherent in the project. In any stage, an output of one step has been the input to another.

i) the representativeness of the national steering committees that ensured that the best expertise at national level to fulfill roles and responsibilities were selected and all major interest groups (operating in civil protection and in the protection and management of Cultural Heritage) were appropriately represented. So, other then the project partners, the project benefits from having a group of experienced people who operated in an integrated fashion and who understood exactly the roles they had to play in contributing to the success of the project. This also ensured that the main interests being served by the project were properly represented also at the working level.

j) the combination between an external, independent evaluation and an internal one that stated that the project can be accountable for a follow-up, having assessed the positive results of the following main evaluation criteria

Evaluation criteria	Description
Relevance and strategic fit of the project	The extent to which the objectives of a development intervention are consistent with beneficiary requirements, country needs, global priorities and partner and stakeholders needs and policies.
	The extent to which the approach adopted by the project is strategic and can have a comparative advantage.
Validity of project results in relation with the civil protection policies	The extent to which the project is logical and coherent with the civil protection national and European policies.
Project progress and effectiveness	The extent to which the project's immediate objectives are achieved, taking into account their relative importance.
Efficiency of resource use	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted into results.
Effectiveness of management arrangements	The extent to which management capacities and arrangements put in place supports for the achievement of the PATCH project results
Impact orientation and sustainability of the project	The strategic orientation of the project towards making a significant contribution to broader, long-term, sustainable development changes.
	The likelihood that the results of the project are durable and can be maintained or even scaled up and replicated by project partners after the project formal end.

k) the activities and deliverables realized are fully consistent with the project main aim, building a culture of prevention and preparedness in view of disaster events on CH.

l) final meeting in L'Aquila
The vice-Mayor of Aquila municipality, Mrs Pezzopane, contacted the Province of Perugia, vice-President for the Civil Protection Mr Bertini, asking about the opportunity to organize the final conference in L'Aquila. The request came because the symbolic role of the Town, being stroke by an earthquake in 2009. The final conference was held in the city centre, near the so called Red Zone where, because of the seismic event, it is still no possible to reintroduce inhabitants and economic activities.

m) it's already defined by the members of the PATCH consortium a follow-up of the project and it's also started an outcomes maintenance process. This is a formal defined process that involves technical staff in the identification and carrying out the work to be done in order to maintain the web site and all the project outcomes that are in.

3.2. Internal and external difficulties encountered

There weren't significant internal or external difficulties during the project implementation.

Two elements are worth of mention:

- The differences in the level of intervention related to the Culture Heritage, and specifically the existing differences related to the competences distributed among the local and the central institutional levels have represented a criticality in the Guide-lines making process. The Guidelines have been addressed to give indications about how to organize the pre-emergency phase, the emergency and the post-emergency situations. According to some aspects, it has not been possible to introduce all the organizational aspects related to the emergency actions, but it has been necessary to leave the definition of the approach to the interpretation of the readers, adapting the issues to the local contexts and regulations.

- The different cultures and approaches towards the restoration. The guidelines are not related to the restoration interventions, however what it is considered to be relevant and a positive praxis in system of protection of the CH with a reconstruction approach, it is considered as a negative example of post-emergency interventions. These differences of approach have sometimes represented a criticality in the way the actions to be held in order to protect the CH have been pointed out and defined.

3.3. Core group co-operation

 - The Core Group Members were carefully selected to include representatives from the partners organizations and from a range of other organisations active in the field of Civil Protection and in the CH management at national and European level.

Most of the members had either led or participated in EC-funded projects.

- The Core Group had a key role in guiding the project and in monitoring its progress.

The members of the Core Group have been included in the decision process. This was a strategy to ensure that valuable expertises were well integrated into the project. The arrangements for decision-making of the Group were inspired by the principle of transparency. This strategic alliance reflected the partnership's specific objectives and work programme. Indeed in the project, although every partner was leader of specific actions (the ones more related to the specific experience and competence of each organization), all the partners actively participated to the planning and carrying out of the project.

- The Core Group was also the coordinating organization of the project internal evaluation, therefore it checked and monitored the activities implementation and the respect of the foreseen timetable. In this way the proposal in itself worked as 'control tracklist' with an interesting self-evident monitoring structure.

- The Group also supported the PATCH dissemination

- It was up to the Core Group Members to determine a group of representative stakeholders at national and European level (policy makers, civil protection organizations, experts in cultural heritage, national and EU Institutions, public administrators, operator of CH, scientific experts and non-associated persons that are not organized and usually considered the silent majority - e.g. neighbouring people-) with whom the vision and expectations about the project were been confronted during the project lifetime.

- The Core Group provided tremendous support and guidance to the Project Team throughout the project, with exceptional contribution of advice, sharing knowledge, experience and contacts.

- Five Core Group meetings (hosted in the different countries involved in the PATCH project) and several video conferences and skype conferences were done in these two years project.

3.4. Co-operation with the EC

The coordinating beneficiary of the PATCH project has been in close cooperation with the European Commission that greatly eased the strategic phases of the project. Ms Ioanna SGOURDOPOULOU-KARRA has been very collaborative and careful.

The EC was informed of and invited to project meetings and events and received the main project outcomes and two interim reports.

The two interim reports, including a summary of the project expenditures were submitted in August 2010 and in April 2011

At appropriate times, the Project Leader sought financial and technical advice and kept the EC up to date with the project activities and approaches and where any changes were considered.

3.5. Comments on the European value added

The project activities and results had an additional European value that would have not resulted from a project funded at regional and national levels.

The project is indeed able to feed into European debates and looks beyond its confines to find a broader European relevance of the issues, the actions and the outputs: so the European Added Value (EAV) has been maximised by the main activities that are strategic at European level.

For this reason the project has several added values that can be summarized as following:

European Political added value

The project addressed problems that have an European dimension.

Cultural Heritage (CH) is part of our social environment and it is linked to our European identity. While preservation of life and property will always be the priority in any disaster situation, other 'assets', such as the preservation of cultural heritage has also become significant components in disaster management.

The impact of earthquake disasters on cultural heritage is usually severe and immediate and often irreparable because cultural heritage sites and items are particularly vulnerable to the effects of the disasters as they are finite, rare, valuable and non-renewable (therefore, the cost of losing them at local, national and European level is really high).

The political added value of the project must be seen also in relation with the findings of the Civil Protection Financial Instruments that states that training, education and research, including on relevant traditional knowledge preservation, are effective ways of developing a culture of preparedness and prevention.

European Operational added value that entails:

- cross-border cooperation among EU organizations with a vertically and horizontally functioning partnership, despite the different structures and areas of responsibility

- the researches and experimentations of the PATCH products on large-scale that have necessitated of an international collaboration: the project benefited from a wider pool of ideas from which to open the doors to increase possibilities for the building of a culture of prevention

- the establishment of a critical mass in human and technical terms and the combination of complementary expertises and resources available Europe-wide in the different partners organisations

- the development of a circle of committed experts (multipliers): carrying out the work at European level was been greater than the sum of the impacts of national projects because they joined research and innovation, realized cross-border networking, exchanged best practices and know-how.

The outcomes of the project have potential net benefits which are at trans-national level, giving a contribution for innovative preventive and intervention practices on CH in case of seismic events, applicable in different contexts, in order to make CH and Civil Protection able to handle the situation and to cooperate within a team. For these reasons most of the PATCH outputs can be used or can be adapted for use in all the Member States. In particular the Patch Geo-Map, The PATCH guidelines, the Second Life environment, the PATCH game, that are a consulting, implementing and integrating interactive multimedia tools accessible from the website, can be continuously updated (also after the project end), keeping both the beneficiaries and the wider public continuously updated.

Finally it can be underlined that the PATCH project gave important results from a multidimensional perspective: *local* because it had an effective impact during the experimentation at local level, *national* because it was connected to the national Civil protection policies and regulations; *European* because it can give a contribution to the implementation of strategies to develop a culture of prevention for the CH safeguard and to put a disposal a set of tools, protocol and procedures for better CH interventions in an earthquake emergency.

3.6. Lessons learnt and possible improvements

The project was extremely successful, however there are some aspects (*possible improvements*) which could have enabled the project to be even more effective.

In particular

- ❖ considering translation needs in other languages of the ones of the partners countries and English
- ❖ using since the very beginning of the project the on line communication system, in particular the thematic forum automatically connected to e-mailing. In this way, in the second phase of the project, it has been possible to organize a storage of documents (without, for example, weighing down mail boxes allowing a quick and easy finding of deliverables and materials). The fourm could be used also for the preparatory reading, notes, draft presentations sharing

Concerning the *lesson learnt* the following aspect are worth of mention:

- The valorisation activity is a key factor of the project. In PATCH project the partners showed to have actively engaged in a continuous dissemination effort using different media and tools. An important evidence of this effort is the press review showing a good rate of dissemination also in specialised magazines. In this case, the projects activities and its results can produce a prolonged effect with more possibility to become a 'structural value' of the scientific content in the specific field

- the importance and value of a well structured project proposal which can be used as a continued source of reference and to facilitate the early identification of likely variations in activities or budget which can be brought to the attention of the EC

- the importance of a well structured connection among objectives, activities, deliverables, outputs and results and partners engagements. In this way the proposal in itself worked as 'control tracklist' with an interesting self-evident monitoring structure.

- the usefulness of completing the various monitoring forms in helping the Project Team to progressively evaluate the technical results and deliverables

- applying good team management for each of the teams involved (Project Team, Core Group, experts....) led to the following: team-building, early and effective planning, sharing of results, listening to different ideas, continuous attention to harnessing, enthusiasm and interest

- the importance of a precise and detailed timetable that makes possible to analyze the progress of different project phases and tasks

- the effectiveness of a clear identification of different categories of project users: target groups, end-users, beneficiaries and stakeholders. This was important because each product has different parameters of effectiveness, different target groups a different way to impact during the project or after its formal conclusion

- the added value that had an additional product, the PATCH Game (not planned in the application) in particularly connected to the implementation of a 'playful approach' to the subject matter considering the need to raise awareness and the possibility to disseminate the culture of prevention in CH in case of seismic event to a wide range of 'digitalised' people.

4. Activities

4.1 Comparison between initial planned and actual implemented activities, including monitoring, evaluation and dissemination

The actual implemented activities for all the phases of the project followed closely the initial planned ones. Indeed all activities and products of the PATCH project have been carried out and implemented according to scheduled programme, thus guaranteeing the correct and rational use of all resources - material, human and economic, set by the project application form.

Some variation were linked to the change of some meetings locations.
The first project meeting was held in Assisi on March 4th and 5th 2010, even if it was planned in Spain. Jointly with the partners and after having informed the EC, it was decided that the project would gain a higher added value by being presented and opened to the public by the technical staff of the partner "Basilica Papale" with their know-how and experience developed since the 1997 earthquake.

The second meeting was held in Cyprus instead of Greece.

Concerning the final conference, it was planned to be realized in Bruxelles, but it has been held in L'Aquila.
L'Aquila, is a town with a strong symbolic meaning, and drawing a great attention of the media for being so famous as in the past few years it was hit by a strong earthquake.
The Public Authorities of Perugia and L'Aquila, active in the sectors of culture, civil protection and community policies, intervened during the conference and all the project partners have the opportunity to disseminate to the wide public their experience in applying protocols and procedures created within the PATCH project, to prevent damages on Cultural Heritages during seismic events in their countries. The EC has been informed about the change and invited in L'Aquila Conference.

All the activities related to monitoring, dissemination and evaluation are fully realized. In particular, the monitoring and evaluation of the Project were carried out in the framework of the accredited certification ISO 9001:2008 of Centro Studi e Formazione Villa Montesca.

The coordinating organization of the project has developed the latest version of the world's most widely used standard for quality management systems (QMS).

This means that the Patch project was monitored and evaluated with a systematic approach to project quality management, ensuring that the needs were clearly understood, agreed and fulfilled.

An external evaluator has been subcontracted in order to give to the project an independent assessment related to:

i) the step by step progress of the initiatives and actions as a contracted project

ii) the actual outcomes as they are likely to benefit the end-users and the target groups

The external evaluation has been a process of collecting, recording and organizing information about project results, including short-term outputs (immediate results of activities, or project

deliverables), and immediate and longer-term project outcomes (Geo-Map, Guidelines and Procedures, Second Life, On-line courses, Patch Game)

Common rationales for conducting the external evaluation were been:

- recognition of on-going activities and progress made;
- identification of success factors, need for improvement or where expected outcomes were reached or not;
- control and validation of the results reached in every TASK;
- demonstration of effective, efficient and equitable use of financial and other resources;
- check that the aims, tasks, duties and responsibilities are clearly understood, agreed and fulfilled by all the organizations of the consortium.

4.2 Qualitative evaluation of activities

All the activities planned according to the PATCH project have been realized and also some more deliverables have been produced and added to the ones initially scheduled.
To achieve this result all the Partners have shared common perspectives and responsibilities, respecting their tasks and the deadlines.
Within each Task ID specific actions have been developed. All the activities are herein detailed on the base of all the Task ID actions.

TASK ID A – 'Management & Reporting to EC'

During the whole project lifetime Coordinator and Partners have shared a common plan of management for a correct, effective development of the activities. It helped to reach on time all the expected objectives with a stress on the good quality of the results and the valuable impact they had on the beneficiaries and the wide public.

Project meetings
The Partners have met on a commonly established schedule to allow a constant exchange of experiences and share objectives and tasks for the following phases.

The meetings among the partners have been the following:

- The **kick-off meeting** has been held in Assisi, Italy, on 4th and 5th March 2010, organized by Centro Studi e Formazione Villa Montesca and the Custodia Papale del Sacro Convento di San Francesco.
This meeting had the purpose to make the Partners know each other, to present the PATCH project, its aims and activities, to describe the work methodology, to explain the guidelines for the research phase, to present the administrative and organizational issues, and also those related to the dissemination of project activities and results as well as to the quality assurance. The meeting was an important occasion for allowing a face-to-face contact among the Partners and for allocating responsibilities for the first period of the project and also for transferring a whole overview of the entire PATCH project.

- The **second meeting** has been held in Limassol, Cyprus, on 26 and 27 October 2010, organized by the Municipality of Agios Athanasios.
During this meeting the partners discussed about the work methodology and a common framework to adopt for realizing the Protocols and Procedures. They also shared the guidelines for the finalization of the Market search. The main tools for the theoretical and practical training to be developed in each participating country have been defined. The work plan for the second period of the project was defined and responsibilites allocated.

- The **third meeting** has been held in Valencia, Spain, on 4 and 5 May 2011, organized by Consorci de la Ribera.

The Coordinator and Partners could analyse the current situation of the project activities, define the work plan and the next steps to be done. During this meeting the final draft of the Protocols and Procedures was defined and the Partners were introduced to the Survival kit and the training pack. The last part of the meeting focused on the training path to be developed in each partner country, divided between training activities in presence and online.

- The **fourth meeting** has been held in Heraklion, Crete, on 5 October 2011, organized by the Natural History Museum of Crete and the Municipality of Heraklion.

The Partners talk about the indications provided by the Coordinator for the Final Report (Activity and Financial parts), about the publication of the Guidelines, they present the dissemination activities developed in each partner country so far, and the strategy and modalities of diffusion in each partner country for the Learning Game, the E-learning platform and the Online Community.

Partners discuss about the proposal that the Province of Perugia received by the Province of L'Aquila to organize the European final Conference in L'Aquila. Partners decide that this could be a relevant occasion to have the final project meeting in a symbolic town as l'Aquila, so sadly famous for facts related to the earthquake here occurred in 2009.

The proposal to change the final conference location from Brussels to L'Aquila is shared among the partnership. The Coordinator informs the DG ECHO about this proposal and asks for confirmation to be allowed to change the final conference location from Brussels to l'Aquila.

The Partners meeting was followed by the European Conference 'Protecting Cultural Heritage' held on 6 October (described in details in the next chapter 'technical results and deliverables' – National Workshops). On 7 October the Crete Partners have planned the Practical Workshop, living this way the occasion also to the other Partners to attend it and see in person the Crete exercise.

- The **fifth meeting** has been held in L'Aquila (Abruzzo), Italy, on 13th December 2011, organized by Centro Studi e Formazione Villa Montesca in collaboration with Provincia di Perugia.

During this last meeting the Partners discussed about the last steps to proceed within the project to accomplish all the tasks and about the follow up.

Each partner presented the dissemination activities developed in their countries for diffusing the online training courses realized. They could talk about the last issues regarding the publication of the Guidelines in their national languages and also analyse what requested by the EC for the final financial and activity reports in order to collaborate and jointly produce a complete reporting of all that has been done during the two years of the project with the contribution of all the consortium members.

TASK ID B – 'Research on CH protection systems and procedures adopted in the partner countries'

Historical and bibliographical research. Technical and risks analysis
During the first phase of the project, a research was carried out in the involved countries to realize a detailed scenario of the earthquakes impact on Cultural Heritages in interested areas and an analysis of the existing CH emergency management and prevention measures (with a special focus on people risk incurred and on man-made CH damages due to lack of skills of operators involved in intervention procedures). The study covered a long period of historical data, as well as all categories of Cultural Heritage elements offering a long list of examples and data.

The research is based on the geographical data collected on CH, earthquakes, prevention and safeguard procedures. The result of this research phase has been a detailed list of card reports describing earthquake episodes occurred in exact areas and their impact on specific cultural heritages taken into consideration. The reports contain historical data and technical

evaluations, analysis of existing protection emergency procedures and prevention measure in partner countries.

It is a methodological analysis of the critical levels of current protection and prevention procedures and of the elements influencing the procedures for prevention and safeguard of Cultural heritage in emergency conditions.

This analysis has been a preliminary step for setting up a following damage prevention and protection guidelines for avoiding or minimising losses, and was so fundamental in setting up the planning of emergency procedures, focus of the next phase.

These have been gathered and published in the PATCH GeoMap (described in the next chapter 'Technical Results and deliverables') that gathers also important and useful data about potentially seismic areas, helping to raise awareness in people working with CH in these areas, and also giving fundamental information for future location of buildings, museums and buildings of artistic interest.

The earthquake events result of the research, in each partner country, have been:

ITALY:

	Region	Date of the Event
1	Sicily	1693-01-11 - 01:30 pm
2	Aquilano	1703-02-02 - 11:05 am
3	Calabria	1783-02-05 - 12:00 am
4	Valtiberina Umbria –Toscana	1789-09-30 - 10:15 am
5	Molise	1805-07-26 - 09:00 pm
6	Basilicata	1857-12-16 - 09:15 pm
7	Calabria	1908-12-28 - 5:21 am - 04:21 am
8	Friuli	1976-05-06 - 9:06 pm - 08.06 pm
9	Appennino Umbro-Marchigiano	1997-09-26 - 11:40 am
10	Aquilano_Abruzzo	2009-04-06 - 03:32 pm

GREECE:

	Region	Date of the Event
1	South-western Crete, Greece	365, July 21
2	Crete island, Greece	1780, October
3	Crete island, Greece	1810, February 16, 22:15
4	Crete island, Greece	1856, October12, 02:45
5	Rhodes island, Greece	1926, June 26 19:46:34
6	Milos island, Greece	1930, February 14, 18:38
7	Cretan sea, Greece	1935, February 25, 02:51
8	Amorgos island, Greece	1956, July 9, 03:11
9	Crete island, Greece	1959, May 14, 06:36
10	Thessaloniki and Chalkidiki prefectures, Northern	1978, June 20 20:03:21

	Greece	
11	Grevena and Kozani prefectures, Northern Greece	1995, May 13, 08:47:17
12	Kythira island, Greece	2006, January 8, 11:34
13	Athens	1999, 7th September, 14:56:50

CYPRUS:

	Region	Date of the Event
1	Nicosia	10/12/1718
2	Famagusta	12/1735
3	Limassol	29/6/1896
4	Famagusta	18/2/1924
5	Paphos	10/9/1953
6	Paphos	9/10/1996

SPAIN:

	Region	Date of the Event
1	Màlaga, Andalucia	1680-10-09
2	Estubeny, la Costera, Comunitat Valenciana	1748-03-23 06:15
3	Torrevieja, Comunitat Valenciana	1829-03-21 18:03 (approx.)
4	Carlet, Ribera de Xúquer, Comunitat Valenciana	1872-05-19 17:30
5	Chiva, Comunitat Valenciana	1890-02-02
6	Almería, Andalucía	1804-08-25 – 08:25h
7	Granada, Andalucía	1884-12-25
8	Murcia	1911-04-03
9	Muro d´Alcoi, Comunitat Valenciana	1644-06-19
10	Ontinyent, Comunitat Valenciana	1945-07-01
11	Murcia	11 May 2011

TASK ID C – 'Earthquake risk management in the cultural heritage sector'

International Best practices Analysis

All the Partners have analysed the cases of best, bad and innovative practices concerning measures and procedures taken in earthquake events in their countries to prevent damages to the Cultural Heritage and protect them.

The analysis gave an overview of the existing approaches considering cultural heritage in all aspects of disaster management planning, including preparedness and recovery with a special focus on human factor.

The cases taken into consideration by the PATCH consortium are detailed in the next chapter 'technical results and deliverables'.

Market search on existing tools and systems

All the Partners have collaborated to the realization of the final market search with contribution to specific parts of the document as agreed according to the allocation of tasks to each consortium member (as detailed in the following chapter at 'MARKET SEARCH

'Innovative tools and technologies to use in peacetime and in emergency in order to increase the effectiveness of CH rescue operations'.

They have analyzed the materials, technologies for first intervention on CH affected by earthquakes, innovative techniques for packaging, transport and storage, equipment for personal protection. So a final study has been produced aiming at verifying the resources to be employed in emergency situations and the innovative instruments that could enable more effective intervention operations and improve CH rescue interventions.

It is considered as a useful tool for civil protection operators and it became apparent during the training phases where many questions rose up concerning necessary materials and processes that were finally covered by the research.

Protocol and Procedures for cultural heritage and people protection in earthquakes events

All the members of the PATCH consortium have jointly worked out the English version of the draft and following versions of the Protocols and Procedures. They contributed in offering information and data at specific topics and translated in their language the final version of the publication. Each Partner has given contribution to the document by providing contents about the application of the procedures on some specific kinds of works of art. The document in fact contains minimal procedures applicable in various contexts to make operators with different specialized competences and skills able to act in emergency and post emergency situations as well as in the prevention phases. All of this by acting in cooperation within a team.

The Partners have in first instance commonly defined the works of art and Cultural Heritages on which to focus their attention. The division of tasks and parts of content among all the Partners is detailed in the next chapter.

The deliverable was organised in a proper and scientific way engaging all necessary staff and experts to offer the up to date information and data. The final document encompasses all modern techniques and processes as well as good practices on the topic. Furthermore, the Guidelines were the base for the development of the training activities.

Elaboration of a Training Manual addressed to emergency team operators and CH operators

The Coordinator has designed and produced a Manual structured as a guide for people working in CH rescue operations. In first instance it has been addressed to the partner organizations for providing them with instructions on how to use the materials contained in the PATCH training pack during their practical exercise on testing sites. On the base of this manual all the Partners could learn more about all the equipment and tools necessary to implement an intervention on the field. They could also arrange in a correct and effective way the materials not included in the box and so provide the equipment and instruments not included.

The manual gave all the technical indications that Partners then used for training the persons involved in the practical exercises about the exact phases and steps to accomplish for a correct implementation of the workshop. To see how the manual is structured please go to the next chapter on 'technical results and deliverables').

Further to the persons directly involved in the PATCH practical exercises, the manual represents also a valuable support for different professional profiles involved in emergency interventions and rescue operations involving CHs for helping them in the planning of activities and in the correct application of right technical instruments and equipment.

TASKID D - PROTOCOL AND PROCEDURES: TESTING AND IMPLEMENTING

Identification of the testing sites
Before starting the training activities the Partners have identified in advance the locations, sites where to apply the procedures of protection and prevention learned during the theoretical phase with all the trainees involved.
The testing sites identified were:
Italy → Assisi, Basilica di San Francesco – Chiostro dei Morti
Spain → Alzira, Municipal Museum MUMA
Crete → Natural History Museum of Crete
Cyprus → Agios Athanasios, Church of Agios Minas

Second life Training activities
On 15 June 2011 the Coordinator and Partners have participated in a common session in Second Life aimed at training the persons that, for each member organisation, have been tutors of the E-professional training in his/her country. This innovative tool trained the Partners to know the methodology of the practical part of the e-professional training. The tutors have followed instructions of the Coordinator, who preliminarily had arranged the entire virtual environment dedicated to the simulation activities, and could actively take part in a practical session to learn the actions to undertake in a possible rescue scenario.
The activities implement on Second Life are part of the E-professional training, representing the practical moment and have been useful to supply brief and practical information on how to plan action and intervene in post-earthquake activities affecting the Cultural Heritage.

THE PATCH GAME:
Centro Studi Villa Montesca, together with all the partners, decided to realize an additional product, that was not scheduled in the application: the PATCH GAME.
It is an interactive game where it is possible to realize a simulation of interventions in which users are engaged in emergency situations in the same way as a player in an adventure game. One of the strength point of the game is the fact that each simulation performed could be registered so to give the opportunity to the players to see it from different points of view, to analyze the actions made and correct some mistakes. It's also possible to use the tutorial for the basic training of the operators so to convey as much knowledge as possible thanks to this new educational tool.

Training activities in presence (theoretical and practical part)
In each partner country a theoretical workshop has been organized, followed by a practical one to have a direct on-field experimentation of the technical skills required to enact the 'Protocols and Procedures for the Protection of Cultural Heritage works of art' with the purpose of training the emergency team operators intervening in case of earthquakes.
During the theoretical part the trainees have been introduced to the Manual of procedures (its area of application and general summary, actions of recovery and safeguard for the cultural heritage, general elements for the safety in interventions, the Chain of Control - identification, tasks and competitions of the equipment of emergency and equipment, tools and technologies for the personal protection) and to the Manual of the Training Pack.
In fact, for implementing their practical workshops the Partners have received in their testing site the PATCH Training Pack (described in next chapter) acting as a support for enacting all the actions characteristic of a situation of intervention in emergency.
For allowing the Partners to realize their workshop with the support of the items contained in the pack, an exact schedule, commonly shared and agreed by all the members of the consortium, has been planned for the shipment of the box on time to each testing site. During the workshops the situation occurring in an area struck by an earthquake and affecting a number of valuable works of art has been simulated: the intervention team met for an initial briefing studying also the maps containing useful information about the area, then intervened in the area following the technical instructions contained in the Protocols and Procedures.

The training pack was considered to serve training activities in all partners' areas as a mobile pack containing models, tools and materials to practically implement actions for protection, safeguarding and rescue cultural heritage after a serious seismic hazard.

The final product provided by the Coordinator was of high quality both in respect to the models and material included as well as all accompanying material for its implementation (ie. Instructions, presentations). The pack has travelled to all partners' area and helped for the successful implementation of training activities.

Worth of mention is the fact that NHMC (Crete) has reproduced the pack but with a lower cost and lower quality in order to repeat the training activities in the future. Already this took place once and is also scheduled for April 2012 with the Hellenic Volunteers Rescue team. From this experience it became apparent that it would be better if each partner had the ability to reproduce the pack at the same standards with the original, for it's own needs.

As the evaluation of training activities and great willing to participate have proved the Training Packs has already fulfilled its purpose and serves as a fantastic interactive tool that can be used as a model for similar activities.

All the Partners have handed out to the attendants of the training activities in presence a detailed questionnaire for gathering their evaluations, impressions about the theoretical and practical workshops in order to allow all experts involved in the project to assess the quality of the workshop. The purpose of the questionnaire was to analyse the clearness, usefulness and effectiveness of the explanation provided concerning the Protocols and procedures for the safeguard of CH items in the case of a seismic event. Also the efficacy of the didactics (trainers having or not a deep technical knowledge and excellent preparation in the field) and of the workshop (adequately supplied operational competences) have been analysed.

TASK ID E - EXPLOITATION

Online courses (addressed to emergency team operators and CH operators)
The Coordinator has structured the IT environment for the online courses. Coordinator and Partners have agreed on how to organize the learning units on the base of shared guidelines, keeping into consideration easy use of the courses, versatile structure and useful and applicable contents. The purpose of the online courses is to let interested subjects to know the actions to be carried out in order to protect cultural heritage in case of earthquakes.

The courses are available in English and then have been translated in all the partners' languages. These have been disseminated in each partner country to stakeholders (i.e. in Spain to Civil protection, fireman, local police, restorers, museum managers and responsible by the use of press releases, mails, through partners' websites and presentation in the different local and National meetings. They have also disseminated the course and invited to join it to the Lorca heritage responsible).

Members of fire-fighters, of LPV and those belonging to the Valencia City Council Department of cultural heritage have been interested in the execution of this course. Afterwards the passwords have been provided to trainers to have access to the course. They have been given basic training about earthquakes and about how to protect the cultural heritage in these events. Then, they have been invited to join the on-line community, in order to express their suggestions, experiences, questions and doubts in this regard.

As highlighted by Crete partners, the online activities developed by the Coordinator, with support of all the partners, appeared to be strong tools for dissemination of Protocol and Procedures and training were considered to serve the various online activities of the project in order to cover not only the project's target groups (i.e civil protection operators, rescue teams, technicians etc.) but also broader people like young people.

The applications were tested by all participants and were improved at the level that was necessary. Comments collected indicated the variety of the products, the restriction for some target groups and especially those that are not familiar with modern technologies and internet applications, but it revealed what exactly was the intention of the particular products to approach the younger ages. These deliverables will definitely contribute to a long lasting dissemination of project main deliverables to as much broader as possible target group.

Online Community

Centro Studi e Formazione Villa Montesca opened a web blog (Patch Community) to create a virtual community gathering members from all the partner countries. This kind of 'web community' proved to have a great potential of diffusion to the wide public, all the interested persons directly or indirectly operating in the CH protection sector. They can exchange knowledge and experiences on earthquake rescue, or information related to cultural heritage in terms of handling, storage, etc. and it allows to take advantage of these synergies for future earthquakes.

This instrument also gives to the PATCH project an important potential of dissemination among experts, stakeholders, public and private authorities not only in the partner countries but all over Europe.

As reported by the Partners, the online community served as a communication tool for the different parties concerned with combating the earthquake damage to cultural heritage in the event of a disaster. It gave the possibility to share a place where to put in common all the knowledge, techniques and experiences, in order to provide a better protection of the cultural heritage for disaster response.

Four National Workshops

Each partner has organized a workshop in his/her country with the aim of letting the wide public know about the results achieved within the PATCH project. Stakeholders, operators of the sector and also beneficiaries involved or anyway interested in the project topic had the opportunity to become aware about the prevention and intervention procedures elaborated and implemented within the project. The workshops were also an important moment of exploitation of the project's outcomes and objectives and for assuring their further development in the future.

TASK ID F - DISSEMINATION

Dissemination Plan realization

The Coordinator has proposed all the project Partners, in the preliminary phase of the project, a Management Protocol containing the Dissemination plan of the PATCH project. The main purpose of the plan was to give the Partners useful indications about how to promote at all levels the project, the activities and products realized in its framework. According to the dissemination plan, all the Partners use during the project a form for recording the main relevant data about each dissemination event realized.

Project web-site realization

A very modern and informative web site for project dissemination was scheduled initially to host all product information and deliverables. Project website hosted progressively all project news, activities and deliverables and attracted the interest of many people and operators of the sector of interest of PATCH. All deliverables were easily recognised, translated in all partners' languages and downloadable. It presented activities and news concerning Civil Protection in Europe in general helping to share information to all site visitors.

The website was disseminated during all the project activities in all the partner countries.

Simultaneously, a project forum area was also developed in order to share information and data among partners, to support group discussions and improve project implementation. The project forum operated successfully helping sharing information, data and discussions concerning project implementation. It contributed in a very positive way in activities' organisation and implementation, collecting and sharing information and disseminating partners' activities.

Project brochures definition and printing

The Spanish partner Consorci de la Ribera has designed the layout of the PATCH brochure involving also all the other partners in providing photos interesting for being added to the brochure. They also collaborated with the coordinator to define the last version of the texts to be included in the final version of the brochure. Each partner translated it in the national language and printed it for assuring a wide diffusion in all the national territory. Its purpose was to let the wide public know about the project contents, its objectives and expected results.

Project Video-Dossier realization

At the end of the project a video dossier has been realized to assure a continuous diffusion of the project also in the future. It contains information about the activities realized within PATCH and resumes its main contents. It is developed in a friendly way to allow a diffusion to a wide audience and different kinds of stakeholders. It has been conceived as the best tool to publish the project's results and actions.

Publications in specialized journals and newspapers

During the whole project all the Partners have diffused the PATCH project, its achievements and the activities realized in its framework through articles published on paper and web journals. The articles have been published on national specialized newspapers and journals, at national and local level, in all the involved countries. They allowed the dissemination of the project to a wide audience. In particular, specialized journals guaranteed the diffusion of the project's activities among the specific project stakeholders.

Publications of news concerning events realized and results achieved within the PATCH project are made also after the project end.

PATCH newsletters

The Coordinator, in collaboration with all the Partners, elaborated the contents of the newsletters. They have diffused them during the dissemination events organized in their countries and to their mailing lists so assuring a wide diffusion of information about the project's activities, outputs, underlining the necessity of intervention strategies based on the effective cooperation among different professional profiles within the team.

Thanks to the newsletter, that will remain available also after the project end on the PATCH website (together with more and more PATCH outputs) it will be possible to continue the promotion of the dialogue among the risk management actors and CH actors at local and national level, emphasizing that those involved in civil protection and in CH management and safety should be given the opportunity of pooling their experience within a European perspective.

Realization of the Project Final Conference in L'Aquila

The Final Conference was planned the day after the partners last meeting. It was organized by Centro Studi e Formazione Villa Montesca in collaboration with the Province of Perugia.

It has been held on 14th December 2011 in L'Aquila, Italy, as it represents a significant place for the sector of action of the PATCH project, due to its strong symbolic meaning. The Public Authorities of Perugia and L'Aquila, active in the sectors of culture, civil protection and community policies intervene during the conference and all the project partners have the opportunity to diffuse to the wide public their experience in applying protocols and procedures created within the PATCH project, to prevent damages on Cultural Heritages during seismic events in their countries.

5. Presentation of the technical results and deliverables

GEOMAP

The results produced by each partner during the research phase have been gathered in the PATCH GEOMAP, that is a map of past earthquakes occurred in specific areas, specifying their technical characteristics.

It is a web interactive tool that can be consulted by each interested person on the PATCH website. Experts, stakeholders and operators of the sector have the possibility to implement the map and integrate it with further data on occurred earthquakes as it can be continuously updated, also after the end of the project, this allowing to keep beneficiaries and the wider public updated with the most important seismic events that have had a significant impact on European cultural heritage from the first data available to today.

An interactive browsing of the map of Europe allows to find the locations of earthquakes that took place in the past and to explore the geophysical data in descriptive cards and bibliographic links.

LINK TO THE GEOMAP
http://www.montesca.it/patch/intermapDB.asp

How does the Geomap work:

Browsing on the map with the mouse, the Countries with available data on hearthquakes highlight. For example, in the PATCH project the interested countries are Italy, Spain, Greece, Crete and Cyprus.

By clicking on a country, the image is enlarged and technical data about the specific location and earthquake occurred are displayed on the right
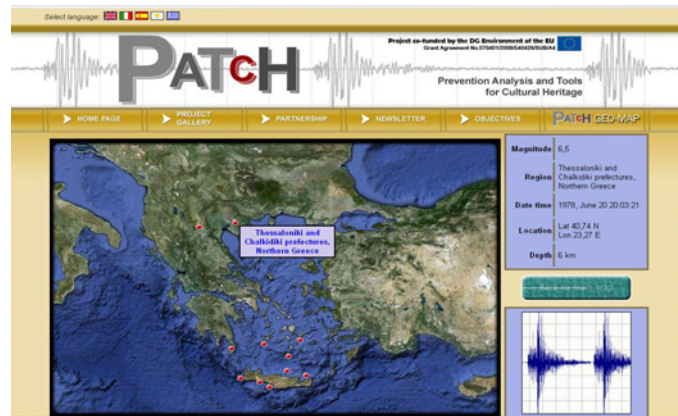
By clicking on one of the place highlighted with a red point, a detailed report on each earthquake is displayed with data and also images about:
Magnitude, Region, Date, Location, Description, Relevant damage to the Cultural and Historical Heritage, Source, Earthquake Location on Google Map and/or Google earth.

As explained, it is possible to continuously update the Geomap database.
New data can be inserted by clicking on the button 'Click here to insert a new Report Card'
available on the Patch Geomap page (at http://www.montesca.it/patch/intermapDB.asp) and by
filling in the empty form.
All new data are verified and checked by the administrator before the final publication on the
Geomap.

THE PATCH
SURVIVAL KIT

BEST PRACTICES ANALYSIS

All the Partners have analyzed bad and best practices describing some main issues: characteristics of the earthquake occurred, description of the moveable works of art, description of the damage, description of the protection procedures after the earthquake, evaluation on the protection procedures (insufficient, sufficient, good, very good), description of the current state (damages, return to original location etc.).
This constitutes the second part of the research, focused on the Practice of intervention in emergency situations related to an Earthquake phenomenon which had interested part of the CH.
Partners have analyzed the most relevant effects caused by the earthquake on the CH and the practices of intervention realized during the period of emergency.
In particular, the research focused on the actions realized to rescue the CH in order to put in evidence:
- Best Practices
- Bad Practices: Situation in which the method adopted represented a risk itself for the safeguard of the CH
- Innovation in the sector.

The best practises analyzed are:
Greece
- Restoration of damaged Monuments in Greece: experiences after the Heraklion Thessaloniki and Grevena Earthquakes
- Protection of Heraklion's Archaeological Museum exhibits
- Bad and Good practices for the protection of cultural heritage (urban tissue and significant buildings) in the neighbourhood of Ag. Triadha of the Municipality of Heraklion
Italy
- Bad Practice about earthquake that caused the collapse of Duomo of Venzone.
- Bad Practice about protection of movable work of art – altar piece of Raffaello Sanzio, Cappella Baronici, Chiesa di Sant'Agostino, Città di Castello, PG - Valtiberina Umbria – Toscana 1789-09-30.
- Good Practice about intervention practices on archives, library of Nocera Umbra, Appennino Umbro-Marchigiano 1997-09-26.
- Best Practice: 1997 – Sellano Umbria-Marches Apennines
Cyprus
- Innovative Practices: Introduction of automated fire fighting systems; Installation of fireproof and waterproof cases around items of interest; Introduction of more advanced training courses for existing personnel; Creation of a crisis response center, responsible for coordinating response teams.
- Bad Practices: Often demonstration of late response in cases of emergency such as fires and earthquakes, Lack of proper training of the response teams, Lack of adequate human resources in response teams, Lack of proper coordination between people and teams
- Best Practices: 10 Byzantine churches that are under UNESCO, the Archaeological site of Choirokitia, the Tombs of the Kings and the Archaeological Museum of Nicosia as well as several other monuments and places of cultural interest have been equipped in their totality with highly sensitive and technologically advanced fire detection, new electrical equipments, external fire protection and theft systems. Six of them (Panayia tou Arakos, Lagoudhera, Panayia, Moutoullas, Archangelos Michael, Pedhoulas, Timios Stavros Ayiasmati, Platanistasa, Panayia Podhithou, Galata, Ayia Sotira, Palaichori) have been equipped with an internal fire extinguishing system
Spain
Research, demonstrations and simulations on the collateral effects of earthquakes (for example fire in historical archives or museums, flooding, etc) due to short circuits or broken pipes. Complete research made by the fire department about how to reduce damage in historical archives fires. For Spain are also inserted information about the practices regarding:
- Archaeological Crypt of St. Vicent Martir's prison

- Municipal Histórical Museum of Valencia
- Cervelló Palace, Valencia
- City Museum of Valencia
- Casa-Museo Benlliure, Valencia
- Archaeological Museum L'Almoina, Valencia
- Museum-House Blasco Ibáñez, Valencia

The third part of the research is represented by interviews to experts in the field of CH providing a compendium of video experiences. The interviews are herein listed:

Spain:
Content f the interview: 'Cultural heritage in Valencia and measures regarding its protection and rescue'.
Interviewees:
Eduardo Loma – Ossorio
Valencia Municipality Fire Department Sergeant

Cyprus:
Content f the interview: 'Legislation for protection of monuments and cultural heritage in Cyprus'
Interviewees:
Giorgos Fiotheou
Archaeologist, Department of Antiquities
Dr. Sophocles Sophocleous
Associate Prof. of History of Art and Archaeology. Director of the Centre of Cultural Heritage, University of Nicosia
Director of the Centre of Cultural Heritage, University of Nicosia
Michalis Rouvas
Assistant Civil Defence Officer

Crete:
Content of the interview: methodology followed by the archaeological museum, techniques and best practices to protect the invaluable contents. Historical recursion on the most important earthquakes and on the relevant damages to the cultural heritage of Heraklion.
Interviewees:
Mrs Liana Starida
Archaeologist
Manager of the archaeological department of the Byzantine Antiquities Authority
Alexandra Karetsou
Doctor, archaeologist
Former Director of the Archaeological Authority of Crete

Italy:
Content of the interview: Good practices concerning the organization of the Civil Protection intervention on CHs in case of seismic events and impact on local communities.
Interviewees:
Paolo Virilli, Restorer
Maurizio Fattorini, Fire Brigade
Father Luigi Marioli, Director of the Assisi Basilica
E. Consuelo Caputo, Restorer and Architect

Link to the best practices and video interviews of the Experts

http://www.montesca.it/patch/bestpractices.asp

MARKET SEARCH
'Innovative tools and technologies to use in peacetime and in emergency in order to increase the effectiveness of CH rescue operations'

A document has been realized gathering contributions from all the Partners, entitled "Market search – tools and technologies to increase the efficacy of cultural heritage rescue operations". The publication became part of the 'Montesca Papers' collection.

It is an on the field survey of tools and materials for self-protection, for protection of CH during first removal and an analysis of innovative techniques of packaging, transport and storage and it aims at
- verifying the market and singling out which resources could be used in an emergency situation
- discerning innovations that could be useful and necessary in enabling first intervention operations and their feasibility

The publication is divided into three sections:
- analysis and brief description of the Personal Protection Equipment
- analysis of tools and materials used during first on site intervention
- analysis of CH handling, innovative tools and techniques.

And is organized into the following chapters:

1. Introduction
describes the main topic of the study, use of personal protection equipment, analysis of the tools used in emergency for the rescue of Cultural Heritage in case of a seismic event, analysis of support tools also for damage assessment.
2. Framework
The framework includes rules and regulations on National Trust safety and protection procedures, a brief description of the firms that produce, distribute and sell tools, materials and techniques for interventions on works of art after a seismic event.
3. PPE - Personal protection equipment
Analysis of the types of equipment, techniques and tools for direct and indirect protection in case of a seismic event. It includes a list of the best products on the market, problems, innovations and feasibility.
These products are divided into the following categories:
- Personal protection
- Audio and video communication systems
- Protection of the works of art
4. Tools and materials for the first interventions on site
Analysis of the types of equipment, techniques and tools for the first intervention (for direct and indirect protection) of the CH in the case of a seismic event, analyzing also the techniques and tools for the diagnostic intervention. It includes ICT tools, robotic tools, digital cameras and first intervention equipment.
5. Handling and removal
Analysis of the techniques for removal and first movement of works of art and equipment for removal according to the typology of the items and of the damages occurred. This section also gives some indications about packaging, transport and storage techniques of CH in the case of a seismic event.
6. Conclusion
Survey results, critical evaluation and conclusions

It is a study about the tools used in emergencies for the rescue of CH in the case of a seismic event. Its aim is to make operators aware of the exiting technology and equipment, also because of the continuous innovations in this field. Information contained in this research supply the basis both as regards the techniques and the equipment to be used not to incur in any further risk. It is a survey of equipment and tools to be used in case of earthquakes (general information, technical

characteristics)

The study is addressed in particular to restorers, museum staff and art experts who join the rescue teams although lacking awareness in terms of safety. It could be a useful instrument for persons not familiar with safety operations.

All the Partners contributed to the contents of the market search according to the following division of tasks:

Chapter	Editor
1. Introduction	IT: CSVM + Basilica Assisi + Provincia Perugia
2. Framework	IT: CSVM + Basilica Assisi + Provincia Perugia
3. Protection materials and tools: the market, problems and innovation	GR: Municipality of Heraklion + Natural History Museum, University of Crete
4. Tools and materials for the CH protection during the first intervention *on site*	ES: Valencia Local Police Department + Consorci de la Ribera + Municipality of Agios Athanasios
5. Removal and first movement: the market, problems and innovation	IT: CSVM + Basilica Assisi + Provincia Perugia
6. Packaging, transport and storage: the market, problems and innovation	IT: CSVM + Basilica Assisi + Provincia Perugia
7. Conclusions	IT: CSVM + Basilica Assisi + Provincia Perugia

LINK TO THE MARKET SEARCH
http://www.montesca.it/patch/Doc/Marketsearch.pdf

**PROTOCOLS AND PROCEDURES FOR THE RESCUE
OF CULTURAL HERITAGE ITEMS DURING SEISMIC EVENTS**

It is a manual of Protocol and Procedures to make operators able to handle the situation and to cooperate within a team, for the protection of Cultural Heritages and people. It develops procedures addressed to operators involved both in the prevention and in the intervention phase in the CH field.

It explains how to be prepared and how to intervene in an earthquake emergency in the Cultural Heritage sector, defining an effective and clear allocation of tasks, and intervention rules. It in fact contains preventive measures and measure to take in emergency situations, with a special stress mark on human factor, as intervention team composition and organization, behavioural rules, tasks allocation, training paths for different professional profiles involved in earthquake risk management in CH sites, cooperation and communication within the intervention team in order to avoid man-made errors provoking serious damages to people and CH items in the disaster scene.

It contributes to increasing the awareness and knowledge on tools and behaviours useful to operate efficiently in this kind of situation for saving, first of all, human lives and for preserving the Cultural Heritage.

These rules and procedures aim to obtain effective results, on the assumption that wrong and inappropriate actions and behaviours could compromise the intervention effectiveness, causing also serious damages (CH, human losses).

This manual is organized according to the following index:

Foreword
1. Introduction
2. Area of applicability
2.1 Classification of Cultural Heritage items
2.2 CH items and earthquakes: possible scenarios
2.3 The chain of command
3. Safety measures: procedures, equipment, tools and technologies
4. The Emergency Team
5. Container and contents vulnerability: prevention criteria and base devices
5.1 Introduction
5.2 Details of knowledge for the containers/buildings
5.3 Isolated or in aggregate buildings
5.4 Churches vulnerability
5.5 Museum property vulnerability estimation and simplified interventions to reduce vulnerability
5.6 Intervention strategies to reduce museum objects and their support own vulnerability
6. Protocols and procedures for the safeguard of CH items in the case of a seismic event: general outlines
6.1 Frescoes and wall paintings
6.2 Paintings on canvas
6.3 Icons
6.4 Natural History collections and exhibits
6.5 Libraries
6.6 Archival items
7. Cultural Heritage Structures and Urban Fabric
8. Appendices

All the Partners have worked out contents for the manual focusing the attention on specific kinds of works of art and defining for each of them activities (that are common to all scenarios and categories) and making up the three different phases of intervention:

PHASE 1: Prevention
Includes operations to be analytically assessed as regards works of art and locations and should be preparatory and functional to the subsequent actions. These actions should be finalised to the planning of targeted interventions in foreseeable scenarios.
They foresee the following main aspects:
- Mapping, cataloguing and documentation of CH items
- Routine maintenance
- Protection measures
- Setting up and updating emergency plans
- Organising and training intervention teams

PHASE 2: Emergency
This phase foresees the operations to be carried out during the occurring calamity by singling out, improving and accomplishing adequate systems of intervention on the CHs, among the ones planned during the 'phase 1', by involving the specifically trained professionals.
Five basic macro activities to be considered during a seismic emergency are:
- Alarm and briefing
- Site safety measures
- Direct assessment of the conditions of CH items and planning of necessary interventions
- Safety operations
- Photo and video documentation and logs

PHASE 3: Post-emergency
The phase foresees the operations to be carried out soon after the earthquake, at the end of the emergency phase, by singling out and accomplishing 'emergency interventions' with conservative character, aimed at stopping the deterioration and avoiding an increase of the damage, in order to allow and establish a correct storage of the CHs in view of future interventions.
Division of tasks among the Partners:

Centro Sudi e Formazione Villa Montesca	Chapter 2, 2.3, 3, 4, 6, 6.6
Basilica Assisi	Chapter 2.1, 2.2, 6, 6.1, 6.2
Provincia di Perugia	Chapter 5
Municipality of Agios Athanasios	Chapter 6.3
Natural History Museum of Crete	Chapter 6.4
Policia Local de Valencia	Chapter 6.5
Municipality of Heraklion	Chapter 7

LINK TO THE PROTOCOL AND PROCEDURES
VERSIONS: ENGLISH, ITALIAN, SPANISH, GREEK
http://www.montesca.it/patch/Doc/Protocol&Procedures.pdf
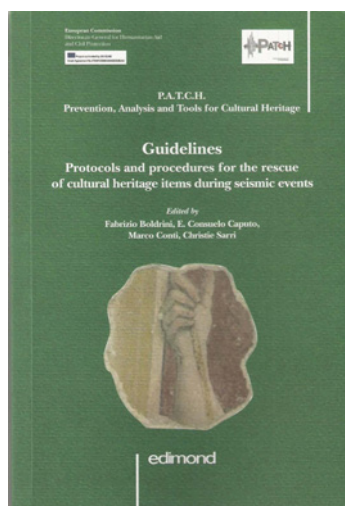
PATCH TRAINING MANUAL

Short guide, structured with contents addressed to emergency teams and operators involved in Cultural Heritage rescue operations, containing practical instructions for the use of the Patch training pack.
It is organized into the following sections:
- PATCH project
  (description of the main objectives and actions of the PATCH project)
- PATCH Training Pack
  (description of the purposes of the pack and of the use of materials included, description of the materials and tools to be used during the experimentation (of the ones included in the pack and of the not included instruments to be provided by the partner for a correct experimentation)
- PRACTICAL WORKSHOP
  (technical indications on how to set up the testing site and all the steps of the workshop with pictures on the actions to undertake by the operators and on practical interventions already implemented, useful as examples)
- APPENDIX
  (containing maps, architectural plans, technical and historical report, photographs)

LINK TO DOWNLOAD THE MANUAL
http://www.era-edu.com/formazione/temp/PATCHTRAININGPACKhandbook.pdf
or from the PATCH website at
http://www.montesca.it/patch/Doc/PATCHTRAININGPACKhandbook.pdf

PATCH TRAINING PACK

Support materials for the practical workshops carried out in each partner Country. It contains all the tools to develop the exercise. It includes reproductions of works of art and a set of materials necessary for the operators in case they need to rescue works of art in an intervention scenario. In the pack there are the items of the simulation and all the basics for a practical workshop experimenting the skills on the field. It is a set of basic equipment that can be increased according to the area where the experiment is carried out. It represents a valuable asset in starting up a practical exercise.

Some technical characteristics:
It is a 'box' containing materials and instructions for the partners to help them carry out their practical workshop of handling and protection of movable works of art in case of seismic events. It is a wooden box, size (1,35x1,55x1,07 metres) and contains materials divided into levels.

SECOND LIFE ENVIRONMENT

A dedicated virtual environment has been developed to recreate a real scenario in 3D where operators as fire-fighters, emergency operators, restorers, actors working in the CH protection and in intervention and emergency situations have the opportunity to be trained through virtual simulation linked to particular situations and different settings, to learn from experts that guide them during the simulations and to test their own competences.
The virtual environment chosen for developing the simulation is Second Life, a system accessible all over the world and with a number of members constantly increasing over the years.
Users of the PATCH simulation become actors of a series of action inside the virtual environment, acting together in a common space at the same time from different locations all over the world.
Steps of the PATCH Simulation:

→ CREATION OF ACCOUNT AND AVATAR:
each user creates an account, an avatar, an animated character that represents the user within the system (it is also possible to attach a detailed description of one's own profile for promotional and job purposes).

→ DEFINING THE PATCH DIRECTOR:
- an "Administrator of the simulation" (a so defined 'PATCH-Director') has the role of director of the events.
- The PATCH-Director is able to repeat, cancel or restore the series of events, on the basis of the sequence of operations performed.

During the simulation the users make a series of actions: cordon off a place; insert codes to catalogue the damaged works of arts, collect debris of a painting in special containers, catalogue some works of arts.
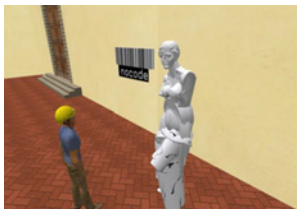
→ CHOOSE OF THE ROLE
- The user chooses a role within the simulation: fire-fighter, volunteer or restorer
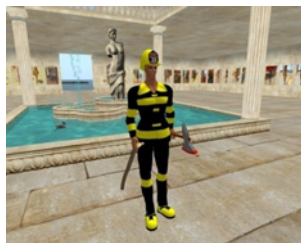
→ PICK UP THE INVENTORY
The user takes the material necessary for the simulation, keeping into consideration the role chosen.

→ INTRODUCTION TO THE SCENARIO
→ EARTHQUAKE SIMULATION
the user assists to the earthquake
→ ACTION
the user make all the actions learned for the recovery of the works of art that are in the emergency scenario and for their removal and storage outside the risk area.
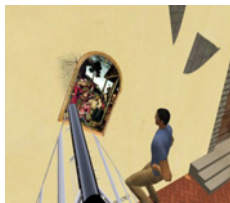
After the simulation the users are evaluated on the basis of their actions. Any eventual error is described and alternative strategies for a proper execution of the operations are presented. The whole simulation will be registered, thus giving the opportunity to be reviewed and commented.

LINK to SECOND LIFE and the simulations realized
Video of the training for trainers realized with the PATCH Partners
http://www.montesca.it/patch/secondlife.asp

Photos of simulation made during the Cretan National Workshop and training activity that took place on 6th October 2011. Cretan Partners, together with the Coordinator, made an online connection with second life and performed several actions for the attendants of the workshop (were about 40 in total).

During the second training workshop the Cretan Partners had in presence on 28 of December they made again an appointment with the Coordinator to present some issues of Second life.

PATCH GAME

It is an on line interactive game for PC for people interested in the main topic of PATCH. Thanks to this game it is possible to realize a simulation of interventions on earthquakes.

As Second Life was thought as addressed to experts, this on line interactive game for PC is addressed to less expert people. In the game the users are engaged in emergency situations. The player must perform a series of correct operations in order to continue and keep going on, otherwise he/she will have to repeat them and correct his/her actions, so indirectly learning the correct sequence of actions.

The user faces different levels of play, which are progressively more difficult. The difficulty of the game is based on the number of operations required and the speed with which these actions must be performed.

Each simulation performed can be registered so to give the opportunity to the players to see it from different points of view, to analyze the actions made and correct some mistakes. It's also possible to use the tutorial for the basic training of the operators so as to convey as much knowledge as possible thanks to this new educational tool.

LINK TO THE PATCH GAME

http://www.montesca.it/patch/patchgame.asp

TRAINING COURSES IN PRESENCE

All the Partners have organized and developed in their country in presence training courses, composed of two parts: a theoretical one and a practical one.
These training activities aimed to test and experiment the Protocols and Procedures realized, introducing them to the trainees (Civil Protection operators, CH operators as museum guides, CH curators, restorers, art historians, etc…and volunteers) and experimenting them directly on the field.
The training courses have been divided into a first workshop to explain the Manual of the Protocol and Procedures, and a second workshop carried out in the testing site of each partner country and based on the use of materials put at the trainees disposal in the Training Pack (copies of paintings, sculptures, manual, equipment for CH removal or preservation and for people protection and safety) to make the simulation realistic and effective.

The courses realized in the Partner Countries:

Course in Italy:
Theoretical part – 17 June 2011 (Assisi)
Theoretical and Practical part - 24 June 2011 (Assisi)
(minutes, images and video of the course are available at
http://www.montesca.it/patch/photogallery.asp)

Course in Spain:
Valencia 27 July 2011
(video, images, minutes available at http://www.montesca.it/patch/photogallery.asp note: after an introduction, the video of the theoretical and practical exercise starts FROM MINUTE 4:00)

Course in Crete:
Theoretical part – 3 October 2011 (Heraklion)
Practical part – 7 October 2011 (Heraklion)

NOTE → Worth of mention the fact that the Partners of Crete organized and implemented a second Workshop on 28th December 2011. A group of 40 volunteers of the Civil Protection Volunteers of Heraklion participated in a 4 hours training seminar. The seminar presented the PATCH products, the Protocol and Procedures as well as the Training scenario. Afterwards the trainees attended the program at the seismic simulator of the Natural History Museum of Crete and then 15 of them participated in the in situ drill of the exercise following the decided scenario, removing museum items after a seismic hazard.
The museum reproduced parts of the training pack in order to implement the training activity in future.

(minute, images available at http://www.montesca.it/patch/photogallery.asp)

Course in Cyprus:
Agios Athanasios 29 November 2011
(minute, images available at http://www.montesca.it/patch/photogallery.asp)

ON-LINE TRAINING COURSE

It represents the theoretical E-professional training, while Second Life is the practical moment. The online training course is available in all the partners' languages to assure a correct diffusion and implementation with learners in each involved country.
It provides on-line training about protection of cultural heritage in case of earthquakes. It intends to provide practical information on planning an action and intervening in post-earthquake situations that have affected Cultural Heritage.
The course:
- supplies practical information on how to plan action and intervene in post-earthquake activities affecting the Cultural Heritage.
- explains the "Golden Rules".
- allows compatibility between profession and training.
It has been developed thinking to address all the potential clients (even if not directly involved in the Project), it has been designed as extra training material for those who are involved in professional activities and do not have enough time to update their skills.

Structure of the course:

A) Learning Object: introducing the topic
Teaching units
- Foreword
- What is Cultural Heritage
- What happens to CH in the case of a seismic event
- Interventions
- The 10 golden rules
- The intervention team

B) Situation tests linked to the following aspects:
What I have to Know
What I have to Plan
How I have to Act

Through a simple mechanism based on a "Drag and Drop" system, the learners can choose between correct and not correct actions for each one of the three aspects.
At the end the system gives answers about "What's wrong and What's correct" giving an effective explanation, so providing the learner with useful data and indications to know more about the actions undertaken, eventual mistakes and correct actions to develop in the future.

LINK TO THE ON-LINE TRAINING COURSE

http://www.era-edu.com/formazione/login/patchindex.php

The course is also available directly from the PATCH homepage by clicking on the "training material" button. There you will find the general data to access.

Data to access:

Username: patchuser
Password: password

The course, is organized in 3 steps as follows:

Step 1: COURSEWARE: Introducing the topic
Step 2: Situation test
Step 3: Drag & Drop

Step 1: COURSEWARE - Introducing the topic
The courseware introduces the main points of the procedures to be implemented for the protection of Cultural Heritage damaged or at risk of damage during or after an earthquake.

Step 2: Situation test

It is an E-tool that presents a specific risk scenario: what could happen in the case of an earthquake

Step 3: Drag & Drop

It is an E-tool for testing skills and competences about PATCH Training Activities. Starting from a list of actions, users have to select right options about 3 tasks.

If the user does not make a correct choice, it is displayed as follows:
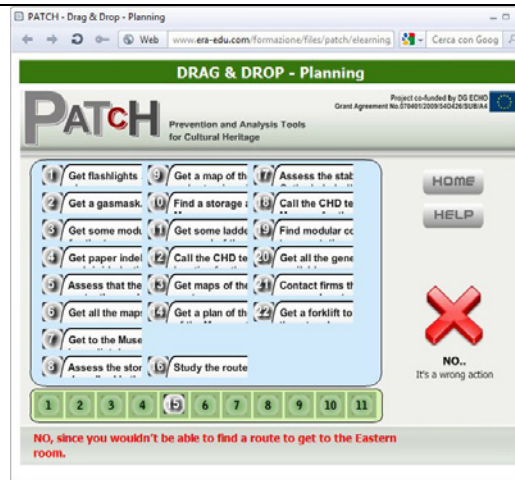
If the user makes a right choice about the action to undertake:
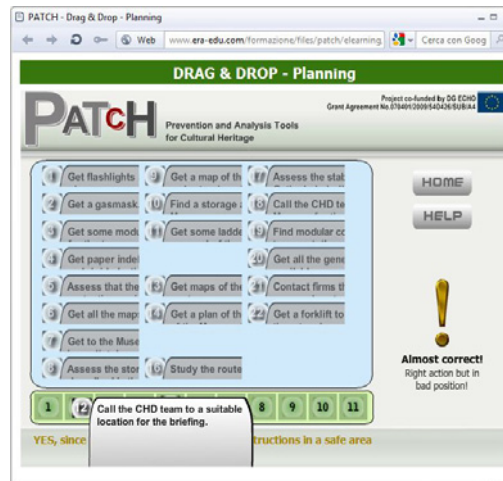
E N D   O F   S U R V I V A L   K I T

THE PATCH COMMUNITY

It is a thematic blog, created in WordPress, where all the participants can post messages and contents.

The Patch Community is a virtual space, accessible from the PATCH website, where operators in the field of CH, stakeholders, Civil protection intervention teams from different countries etc. can share their experience and exchange useful information, materials and data. Here it is possible for risk management operators and CH operators to communicate and improve their skills, strategies and tools for reducing damages occurring to CH in earthquake emergencies and improve the quality of the intervention strategies.

It is a useful tool for promoting new cooperative relations in the risk management and the Cultural Heritage sector.

The Partners have received their passwords from the administrator of the Community and have been given rights to add new participants to join the community from all the involved countries.

LINK TO THE PATCH COMMUNITY
Accessible from the PATCH homepage or directly on the following link: http://www.era-edu.com/csfvm/PATCHCommunity/

NATIONAL WORKSHOPS

A national workshop for exploitation purposes in each partner country has been organized. In details here follows more information about the four national workshops held:

SPAIN

National Workshop in Valencia: 12 December 2011

It took place in the headquarters of the Consorci de la Ribera and was addressed to technical personnel of restoration of museums and to emergency bodies: Firemen, police and members of civil protection. The event began with a brief presentation of the main goals of the project, its partners and its main outputs. A great diffusion of the on-line course was done during the workshop due to the fact that TV and press where present.

Secondly a presentation of the Protocols an Procedure guidelines was done by the project coordinator Fabrizio Boldrini and an expert in restoration of the Assisi Basilica, Paolo Virilli. Through a recorded interview they explained the different sections of the manual and detailed the most important aspects to bear in mind. The expert on rescue and in emergencies Moises Belloch developed the technical measures of action in an emergency situation.

The attendants to the workshop congratulated this initiative and confirmed the lack of any guidelines so complete as the ones developed within PATCH. Also a suggestion of a regional network of stakeholders was launched and attendants were interested on that.

CRETE

National Workshop in Heraklion: 6 October 2011

National conference: "Protecting Cultural Heritage"

The National Workshop took place in the Exhibition of NHMC and was organized in collaboration with the Municipality of Heraklion. The Workshop followed the third project meeting and gave the opportunity to project partners to present their activities under PATCH in broad audience constituted by engineers, archaeologists, conservators, technicians, museum staff and volunteers. More than 50 people attended the workshop, among them an officer of Civil Protection department of EC, while broad publicity was given in local and regional media.

During the workshop the main deliverables of PATCH, like the Historical Data list, the Guidelines and Procedures and the Second life platform were presented. More specific, in collaboration with the technical staff of Villa Montesca a real time demonstration of Second life platform was performed to the participants and instructions were given for its further use.

ITALY

Conference on identity and protection of the contemporary artistic heritage. Title of the conference 'CROLLO-028'. It was held in Città di Castello, Museo Burri.

The conference had the characteristics of a theatre representation, it was conceived in collaboration with the Burri Foundation and promoted by the Città di Castello Municipality. The main topic of the representation was the relation between cultural identity and contemporary that if it is lost because of a natural disaster, this risks to affect the identity of a whole community of people. Took part in the initiative also Bruno Corà (historian and art critic) and Francesco Scoppola (regional director of CHs of Umbria).

DISSEMINATION PLAN

The Management Protocol realized at the beginning of the project, shared and agreed with all the Partners, embedded also the Dissemination plan of the PATCH project.

It contains the main indications that Partners have followed during the development of the project activities focusing the attention on their valorisation at micro level (promotion, experimentation and relationships with the disseminated levels of CH governance) and at macro level (that is at the level of the European Civil Protection policy). The dissemination plan includes the reference to the main dissemination instruments realized during the PATCH project: Web-site and newsletter, National meetings and conferences, News releases and press conferences, publication of the project results in specialized and non-specialized local and foreign journals, Video dossier). According to the dissemination plan a simple tool has been defined (Description of the Dissemination Activities - DDA) to allow the coordinator to collect results about the dissemination events organized in each partner country.

Date		Location		Partner/s involved	
Title of the event					
Description of the Dissemination activities:					
Other organizations involved					
Documentation attached (evidences of the dissemination)					

WEBSITE

The website has been designed to favour a wide audience to get all the relevant information about the project objectives, products, results, as well as the activities developed during the project life. It keeps both the beneficiaries and the wider public updated with the project's activities, and the most important seismic events that have had a significant impact on European cultural heritage from the first data available to today.

According to the characteristics of some of the products included, the website assumes a really interesting interactive features allowing the user to become active subject. The website was disseminated during all project activities in all the partner countries.

LINK TO THE PROJECT WEBSITE
http://www.montesca.it/patch/index.asp

BROCHURE

The PATCH brochure is a paper based product used during the project activities to diffuse its content, objectives and expected results. It has been created in English and then all the Partners have translated the contents in their language to assure a wide diffusion at national level. These will be useful tools to be applied also for a continuous future dissemination of the project.

Link for downloading the brochure in EN, IT, GR, ES

http://www.montesca.it/patch/doc/PATCH_Brouchure.pdf

English version

Italian version

Greek version

Spanish version

VIDEO DOSSIER

The video dossier contains all the video contributions realized during the whole project. It is a narration of the activities realized within PATCH and resumes its main contents. It is developed in a friendly way to allow a diffusion to a wide audience and different kinds of stakeholders. It has been conceived as the best tool to publish the project's results and actions.

LINK TO THE VIDEO DOSSIER
from the homepage of the PATCH website

www.montesca.it/patch/videodossier/index.html

PUBLICATIONS IN JOURNALS

All the Partners have prepared contents for articles and published them on paper and web journals. These articles were about the initiatives, events realized within the PATCH project, the activities of training and the results achieved. The purpose was to let the specialized and also the wide public know about the PATCH aims, its achievements and potentialities for future applications of the results and products realized within the project.
Publication of news concerning events realized and results achieved within the PATCH project are made also after the project end.
Information about the articles published are available in the PATCH website, in the dedicated section 'Press Area'.

LINK TO THE 'PRESS AREA' of the PATCH website

www.montesca.it/patch/pressarea.asp

NEWSLETTER

Five numbers of the newsletter have been realized, diffused to the partners and published on the PATCH website, available for providing information relevant on the project content, and its results to the wide public, CH staff and professionals, civil protection operators, risk management operators, politicians, decision makers, stakeholders…
The newsletter section will remain active also after the project end to guarantee all the interested persons to have the information they need about the project and so the widest possible dissemination.

LINK FOR DOWNLOADING THE NEWSLETTERS

http://www.montesca.it/patch/newsletter.asp

FINAL CONFERENCE IN L'AQUILA

The Final Conference of PATCH has been held in L'Aquila on 14th December 2011, and was organized by Centro Studi e Formazione Villa Montesca in cooperation with Provincia di Perugia. The decision to change the place of the Final Conference, taken jointly with all the project partners and with the preliminary approval by the DG ECHO, and to organize it in L'Aquila followed the consideration of this city as an example of place where disasters have been caused by a strong earthquake as the one that occurred here in 2009. Due to its symbolic meaning, the event was considered to have the potential to gather attention from a wide audience, general public, stakeholders, operators of the sector and public authorities. During the Conference (see programme below) interventions from the public authorities of Province of Perugia and L'Aquila Municipality, acting in the Culture, Civil Protection and Community Policies, made the institutional welcome. Then representatives of each partner organisation made a speech reporting their experience of application of the protocols and procedures on specific kinds of works of art. After the conference institutional and partners' representatives participated in a guided visit to the 'red zone' of the centre of L'Aquila so having the occasion to see in person the damages caused by the earthquake and the current situation.

Programme downloadable from the news of the event
On the PATCH homepage http://www.montesca.it/patch/index.asp
Or directly from http://www.montesca.it/patch/Doc/PATCH_14Dec2011_EN.jpg (English version)
http://www.montesca.it/patch/Doc/PATCH_14Dec2011_IT.jpg (Italian version)

MISSION TO LORCA, MURCIA (SPAIN)
26-29 May 2011

On May 11, 2011 an earthquake of magnitude 5 in Ritcher's scale took place in Lorca, region of Murcia. Lorca is a village with a huge cultural heritage. This incident caused multiple damages to the cultural heritage of the city and has been the biggest one occurred in Spain in years.

The Spanish partner Consorci de la Ribera considered pertinent to establish collaboration with the affected area with the aim to realize a fruitful exchange of experiences and to diffuse the PATCH project and the Protocol and Procedures. Consorti de la Ribera proposed this collaboration to the PATCH Coordinator that accepted to participate and offer the service of several Italian experts specialized in restoration and emergency situations. They have visited and evaluated the area with the President, Juan Ignacio Barrachina and the manager of the Consorci. The organization of a workshop in Murcia facilitated a great exchange of experiences and several advices and procedures of action in situations of risk.

In addition the PATCH project was presented and the most important steps of the project were explained. The Consorci de la Ribera kept in contact with Lorca and Murcia experts through regular sending of information, through the following actions:
- Invitation to take part in the On-line PATCH Community
- Information about the Training Course
- Invitation and information about the National Workshop
- Sending of the Protocol and Procedures guidelines

6. Evaluation of the technical results and deliverables

6.1. General lessons learnt, Strengths, Possible challenges and/or improvements to be tackled through further action, Recommendations to stakeholders, partners, authorities in charge, National and EU institutions

The general lesson learnt is that the overall results reached concern the increased awareness about the involvement of the Cultural heritage defense in the local and national civil protection policies.

The lack of specific procedures of intervention is witnessed by the difficulty to find information about the practices related to the preservation of monuments and artistic crafts conserved in museums or in open private and public areas.

The effort made in the PATCH project in order to compare the different procedures of intervention in case of an earthquake interesting an area with presence of Cultural heritage is an important step towards an European historical overview of the effects provoked by the earthquake on the cultural patrimony.

Concerning the evaluation of the technical results and deliverables, the following table shows comments about possible challenges and/or improvements to be tackled through further action, recommendations to stakeholders, partners, authorities in charge, National and EU institutions

Main Results and Deliverables	Evaluation (strengths; possible challenge and/or improvements; recommendations)
Research on CH protection systems and procedures and interactive Geo-Map	The research addressed to have a first map of the effects on the Cultural heritage can demonstrate how difficult is to make the cultural operator be aware of their role of civil protection operator. The interactive geo-map allows any expert to introduce new information about the historic effects and it is made to be update continuously even after the administrative end of the Patch project. Many experts of archeology and history of art found quite unexpected to consider the study of the negative effect on the single item part of the cultural heritage stirred up by an earthquake as a result of a wrong activity of preservation. They are not used to take into account the prevention organization as a specific factor of success or failure in case of a natural event. The earthquakes are used to be considered correctly unpredictable events. But, as the first project results show quite clearly, being in seismic areas can entail the probability of this event.
International Best Practices Analysis	The basic lack of information does not involve merely the historical earthquake but it is not very simple also to have specific information about the practices adopted during the interventions related to the more recent events. The cards containing the International Best practices can be a valid help in order to make the professional aware of some interesting results already realized. Furthermore it must be underlined that the cards and the analysis can be continuously updated (also after the project end), keeping both the beneficiaries and the wider public updated with the most important seismic events that have had a significant impact on European cultural heritage. They can be put inside the GeoMap
Market search: Innovative tools and technologies to use in peacetime and in emergency in order to increase the effectiveness of CH rescue operations	Extent and adequateness of the information of the Market search about tools and materials used for self-protection, for protecting CH during first removal, for analysing innovative techniques of packaging/transport/storage, are high satisfactorily. Careful collective management has been a strong point to ensure that the analysis achieved its goals and on-time. The basic recommendations addressed to the authority in charge of the protection of the cultural heritage is to have all the information available and to formalize and let be available any defined procedure in order to have always supporting documents for the further modifications needed in case of new technological development or new knowledge.

Protocol and Procedures to manage earthquake emergency in the Cultural Heritage sector	The guidelines contain different measures planned (preventive measures and measure to take in emergency situations) with a special stress mark on human factor. Extent and adequateness of the information are high satisfactorily: the Guidelines develop procedures addressed to operators involved both in the prevention and CH emergency intervention phases. These rules and procedures refer to standard right behaviours in order to obtain effective results, on the assumption that wrong and inappropriate actions and behaviours could compromise the intervention effectiveness, causing also serious damages (CH, human losses). An effort from all the project partners in order to guarantee a wide dissemination of the procedures is suggested.
Training Manual addressed to different operators involved in CH rescue operations	The Training Manual is a short guide containing practical instructions for Guidelines use. It's structured with specific training contents addressed to different operators involved in CH rescue operations. It's a short but effective Manual that also helps to use the other training tools. It must be mentioned also the Patch Training Pack that contains all the needed materials for the training exercises and for the simulation of an intervention in the field addressed to safeguard the CH after an earthquake.

Second-life resources for training activities	Second-life resources for training activities can be seen as a multiplication of the training activities, giving to the CH and Civil Protection staff and professionals the chance to have virtual experiences of rescue operations adopting the behavioural and operative procedures explained in the PATCH guidelines.
	The simulation, by using computer technologies, allows to recreate a real scenarios in 3D, in a Virtual Reality (Second Life). So fire-fighters, emergency operators and restorers have the opportunity to:
	    – Assist to the most particular situations in different settings
	    – Learn from Experts that guide them during the simulations
	    – Test one's competences after having studied the basics
	One of the strong point is the fact that, at the end of the simulation, each operator can be evaluated on the basis of his/her actions:
	    • Any error is described and alternative strategies for a proper execution of the operations are presented.
	    • The whole simulation is registered, thus giving the opportunity to be reviewed and commented
	Very innovative tool, very effective with the opportunity to be used by a wide public (multiplicative effect)

On line interactive game for PC	It must be underlined that the interactive game wasn't scheduled in the application. It's one more product that the Centro Studi Villa Montesca, together with the other project partners, decided to realize in order to provide an easy instrument for people less expert but anyway interested in this important issue. In the interactive game is possible to realize a simulation of interventions in which the users are engaged in emergency situations in the same way as a player in an adventure game This way the player must perform a series of correct operations in order to continue and keep going on, otherwise he/she will have to repeat them and correct his/her actions, so indirectly learning the correct sequence of actions. One of the strength point of the game is the fact that each simulation performed could be registered so to give the opportunity to the players to see it from different points of view, to analyze the actions made and correct some mistakes. It's also be possible to use the tutorial for the basic training of the operators so as to convey as much knowledge as possible thanks to this new educational tool. An effort from all the project partners in order to guarantee a wide dissemination of this product is suggested.
On-line training courses addressed to the risk management and CH teams and operators	The E-learning training course provides a structured interaction between theory and practice, between know how and new knowledge concerning the preventive measures for cultural heritage. Particularly interesting is the analysis of some Situation tests related to the Protection procedures (During and After). Through a simple mechanism based on "Drag and Drop" the learners can choose between correct and un-correct actions for each one of the three aspects. At the end the system gives answers about "What's wrong and What's correct" giving an effective explanation. So the course is very simple, effective and can be used as a valid training instruments both from volunteers, Fire brigades, CH professionals and operators, Civil Protection experts and operators, in order to make them more aware of the needs and of the obstacles they could have to face in a CH rescue intervention. An effort from all the project partners in order to guarantee a wide dissemination of this product is suggested.

7. Follow up

7.1 Comparison between initial and current follow up

The initial follow up was substantially related to the possibility to extend the Guidelines to other European countries not involved in the Patch partnership.
The Consortium was held in order to involved the Countries geographically more involved in the seismic areas. But the relationship between the Cultural Heritage and the damages provoked by earthquakes are quite common in the Old Continent.
The second issue was more related to the extension of the training, addressed in the project basically to categories of rescuers normally not involved in the Civil Protection training activities. The follow up was based on the opportunity to involve not just experts but volunteers and restorers in the training activities. These issues still are very actual, even if during the project cycle, many activities encountered the appreciation of different categories of experts. The on-line training activities proved to be very attractive even for a public of not experts.

7.2 Additional follow up approaches

The Patch GeoMap, that is a consulting, implementing and integrating interactive multimedia tool accessible from the website, can be continuously updated (also after the project end), keeping both the beneficiaries and the wider public updated with the most important seismic events that have had a significant impact on European cultural heritage from the first data available to today. Interactive browsing of the map of Europe will allow the project sustainability allowing to find where a specific natural disaster took place and exploring its geophysical data in descriptive cards and bibliographic links

The Protocol and Procedures, the Second life environment and the on-line training can have a wide diffusion all around Europe so they can be seen as tools and instruments addressed to the relevant professionals and operators in order to have all the information needed to prevent the natural effect on cultural and historical items and a set of *k-factor* in the containment of the dramatic damages.

The PATCH PC and on-line game, not included originally, in the project proposal has proved to be very useful in order to disseminate a "culture of the protection" of the Cultural Heritage.
The possible follow up is represented by the further dissemination of the game, being possible to addressed the game to university students in arts, cultural heritage management of cultural institutions etc…

Another relevant impact of the opportunity to extend the project issue is represented by the possibility to cover other sectors of the Cultural Heritage. The Guidelines have been addressed to some sectors singled out as the most significant of the general aspects involved.
However the community of experts participating to the elaboration of the documents presented the exigency to cover other aspects, proposing the solution to not published the Guidelines in paper version, creating instead an on-line community of experts, developing and extending the existing one.
In this perspective, various aspects of the Culture Heritage could be covered by independent groups of experts.

The final idea is related to the Patch Box. The box has been a solution to have a put-on-place system quickly available to be used in the exercises. It is possible to think to a short version of the box, at disposal of even little organisations of volunteers.