European Exchange of Best Practice in Arson Prevention and Investigation (E-API)

Final Project Report

28th February 2009

Report by Northumberland Fire and Rescue Service in partnership with Northumbria Police and Laboratoire Central de la Préfecture de Police

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Foreword

We are pleased and proud that Northumberland Fire and Rescue Service has been the lead partner on this innovative project. Over the course of the last two years, our officers have worked in close partnership with Northumbria Police (UK), Laboratoire Central de la Préfecture de Police (FR) and a number of other organisations in Europe in order to reduce the number and severity of fire crime incidents in Europe. The project has brought together a huge amount of expertise from all four corners of the continent and has successfully facilitated a greater level of information sharing across national borders. As a direct result of the project activities, fire crime professionals are now more aware of the excellent prevention and investigative practices that are currently being developed and implemented within Europe.

In Northumberland we are committed to exploring different methods of preventing and investigating arson. Arson is a crime that can often be destructive and devastating to the communities within which it occurs. This devastation can be both physical and psychological. Through hard work and dedication, we have helped to achieve significant reductions in recorded arson fires in Northumberland in the last few years. This has been achievable as a direct result of our close working partnership with Northumbria Police, the local authorities and other stakeholder organisations. However, despite our successes, we are determined to continue to improve our work in this area and we believe that this project has been vital in working towards this objective. The project deliverables outlined in this report will not only help us to improve the safety of residents living in Northumberland but will also assist colleagues in Europe to make their communities safer places to live and work.

We hope that this report will encourage practitioners in all European countries to share their knowledge, experience and expertise with others working to prevent and reduce arson. By working in partnership and exchanging information with colleagues at the local, national and international level we can all achieve further reductions in fire crime and reduce its devastating impacts on life, property and the environment.

Northumberland, February 2008

Brian Hesler QFSM MSc MA BA MIFireE
Chief Fire Officer and Director of Community Safety
Northumberland Fire and Rescue Service

Executive Summary

This is the final report of an innovative two-year project that was delivered by Northumberland Fire and Rescue Service (UK) in partnership with Northumbria Police (UK) and Laboratoire Central de la Préfecture de Police (Paris, France). The project was delivered between January 2007 and December 2008 and was titled: "European Exchange of Best Practice in Arson Prevention and Investigation"[1]. The project activities were co-funded by the European Commission Directorate-General for Environment under the 2006 Call for Proposals in Civil Protection.

The overarching premise of the project was that by sharing best practice in arson prevention and investigation, arson practitioners across Europe could be better equipped to prevent and investigate fire crime within their communities. In order to stimulate and facilitate greater levels of cross-border communication, the project involved the delivery of a number of key activities, including the:
- creation of a European network of contacts;
- creation and development of a European Register of Experts/Specialists;
- creation and development of a European Database of Best Practice;
- design, development and pilot of basic-level training modules for fire investigation (suitable for delivery in all European countries);
- delivery of the first "Fire Crime in Europe Conference".

The partners conclude that the project was extremely successful because it exceeded the scope of the initial plans. The project successfully created a European Network of Arson Practitioners and facilitated a significant level of cross-border communication and information exchange. This level of cross-border communication was unprecedented among arson practitioners prior to the project. The project was also deemed to be successful because it delivered all seven of its key objectives, which subsequently contributed towards the successful completion of all project aims. In addition, the project delivered all of its expected outputs, as well as an additional four outputs. Importantly, the project delivered significant European added-value through the dissemination of activities and outputs to a wide European audience. This level of dissemination was made possible by a comprehensive communication strategy which included the publication of journal/magazine articles across Europe, the placement of advertisements on websites and the circulation of emails via the project distribution list.

It is the opinion of the project team that greater levels of European cross-border communication, cooperation and interaction are still required within the fields of arson prevention and investigation. This report makes a number of specific recommendations which will help to achieve this objective. The project team envisage, as they have done since the project outset, that the outputs described in this report represent a foundation rather than a conclusion. The implementation of the recommendations presented within this report will provide foundations upon which to achieve future success. Northumberland Fire and Rescue Service, Northumbria Police and Laboratoire Central remain committed to supporting the newly formed European Network of Arson Practitioners; however, they now require assistance and collaboration from other organisations and individuals in order to guarantee its success and longevity.

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[1] If you would like further information about any aspect of the project, and/or any part of this report, please feel free to contact the author, Rob Stacey (contact details on p2).

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1. Introduction

This is the final report of an innovative two-year project that was delivered by Northumberland Fire and Rescue Service (UK) in partnership with Northumbria Police (UK) and Laboratoire Central de la Préfecture de Police (Paris, France). The project was delivered between January 2007 and December 2008 and was titled: "European Exchange of Best Practice in Arson Prevention and Investigation"[2]. The project was co-funded and supported by the European Commission Directorate-General (EC D-G) for Environment, under the 2006 Call for Proposals in Civil Protection. The key focus of the project was to implement activities that would stimulate and facilitate greater levels of cross-border communication between professionals working to prevent and investigate arson in Europe.

In addition to satisfying the terms and conditions of the grant provided by the EC D-G for Environment, this report has been written in order to provide a thorough and detailed record of the project activities and findings. The project partners hope that the findings of this report will be of interest to all organisations across Europe, and indeed those further afield, who work to prevent and investigate fire crime. It is also hoped that the experiences of the project team discussed throughout this report will provide a useful frame of reference for other organisations in Europe who are embarking upon large projects within related fields.

Although the project partners were all highly skilled in the design, delivery and management of large projects prior to beginning this work, the design and delivery of this project was very much viewed as a learning exercise, primarily because of the cross-border interaction and partnership working required. Northumberland Fire and Rescue Service and Northumbria Police work in partnership on a daily basis through the Northumberland ATF. LCPP also work in close partnership with the Sapeurs Pompiers (French Fire Service) and other police and public organisations in France. However, none of the project partners currently works on a daily basis with partners working in other countries. This project represented a new challenge and opportunity for all of the organisations and personnel involved. All of the project partners, and indeed a number of other contributors, have noted that during the project they learned a significant amount about the activities of other organisations investigating and preventing arson across Europe. This knowledge has already been used to positively influence the design of new projects and the design and implementation of new arson prevention and investigation initiatives and procedures.

Although the project was extremely successful in achieving its key focus, aims and objectives, it is the opinion of the project team, an opinion which is expressed at several points throughout this report, that greater levels of European cross-border communication, cooperation and interaction are still required within the fields of arson prevention and investigation. By sharing more information and knowledge across national borders, arson practitioners can learn a great deal from initiatives that have been successful in various locations across the continent. It is also of extreme importance that practitioners learn about initiatives that have been unsuccessful and the reasons for their failures. Not only will this reduce duplication and help ensure greater efficiency, it will also stimulate the exchange of ideas and opinions among professionals. This project has acted to stimulate greater cross-border communication and it is hoped that the work begun here can be developed further

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[2] If you would like further information about any aspect of the "European Exchange of Best Practice in Arson Prevention and Investigation Project" and/or any part of this report, please feel free to contact any of the key project personnel (contact details on page 12).

so that a permanent European arson forum can be established to facilitate ongoing exchanges, interaction, cooperation and collaboration.

Terminology used within the report

Before continuing with the main sections of this report it is important to clarify terminology that will be used throughout. Firstly, a list of abbreviations used throughout the report can be found in Appendix 1. Secondly, the terms "arson" and "fire crime" will be used interchangeably throughout this report. Both terms are used to refer to the same basic act: *"any criminal act where fire is used to damage life, property and/or the environment"*. The decision to use both of these terms was made because the term "arson", which was used throughout the project design process, is widely used throughout the UK but it is not easily recognisable to professionals working in all European countries. The project team realised this was the case when distributing the questionnaire surveys. The design, distribution and analysis of the questionnaire surveys is outlined in more detail in Section 4 of this report[3]. It was concluded that the term "fire crime" is perhaps more universally identifiable across the continent. As the project plans and proposals were all written from a UK perspective, the term "arson" is retained and used in combination with the term "fire crime".

Structure of the report

This report is divided into 11 key sections, each of which describes a key activity completed during the project. The next section of this report will provide a general overview of the project partners, aims, outputs and activities. Section three then discusses the first key activity of the project: the creation and development of a European network of contacts involved in the professional fields of arson prevention and arson investigation. Section four describes the process and subsequent recommendations of a scoping study of arson prevention and investigation practices adopted throughout Europe. The following sections describe the development and maintenance of two key resources: a European database of best practice and a European register of experts, respectively. Section seven outlines the development of basic level fire investigation training modules, suitable for implementation in all European countries. Section eight is then dedicated to describing the design, delivery and evaluation of the first ever Fire Crime in Europe Conference which was hosted by Northumberland Fire and Rescue Service on 15th and 16th September 2008. The proceeding section provides details about exchange visits conducted throughout the project and the exchange of activity reports between participating organisations. The penultimate section then outlines recommendations that have been devised by the project team for the creation of a secure web-based platform. The creation of this system will ensure that arson practitioners across Europe have the ability to continue to exchange information and experience. The report then culminates with the key conclusions and recommendations of the project. This final chapter pays particular attention to work that should be completed in the near future in order to sustain the momentum developed during this project.

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[3] A separate supplementary report concerning the questionnaire survey analysis is also available upon request from the report author. Further details are included within Section 4 of this report.

2. Project Overview

The three official partners on this project were Northumberland Fire and Rescue Service, Northumbria Police and Laboratoire Central de la Préfecture de Police. The composition of the project team ensured that the three key professional fields of arson investigation, arson prevention and arson forensics were well represented within the project design, management and delivery. The subsequent sub-section now briefly introduces the individual partners, while subsequent sub-sections outline the individual personnel working on the project and the project aims, objectives and outputs.

Project partners

Northumberland Fire and Rescue Service (NFRS) was the coordinating partner on this project. NFRS is part of Northumberland County Council and provides fire and rescue cover to the County of Northumberland in northern England. The County covers an area of almost 2,000 square miles (approximately 500,000 hectares) and is home to approximately 310,000 residents. The Service provides cover through 4 wholetime, 2 day staffed and 12 retained fire stations and employs 205 whole-time firefighters and officers, 155 retained firefighters, 18 fire control staff and 50 civilian support staff. NFRS has a long term strategic aim of improving the social, economic and environmental well being of all residents within Northumberland. Central to this is "preventing fires and other emergencies happening" and in doing so "reducing death, injury and damage to property". One of NFRS's key targets is to reduce the number and impact of deliberate fires set within Northumberland. National government targets set at the start of the new millennium stipulated that all Fire and Rescue Services in England should achieve at least a 10% reduction in deliberate fires[4] set within their areas between 2001/2002 and 2010. NFRS has already surpassed this target by achieving a 38% reduction in deliberate fires between 2002/2003 and 2007[5]. NFRS now aims to continue to improve upon this success and is exploring the possibilities of incorporating the elements of initiatives and strategies successfully implemented by other organisations working to prevent and investigate arson in the UK, Europe and further afield.

NFRS works with partners to investigate and prevent deliberate fires in Northumberland

Northumbria Police is responsible for policing a diverse region of 2,150 square miles, including large rural areas and smaller - but heavily populated - areas and thriving inner cities. The force is split into six geographical area commands, supported by ten specialist departments. With a resident population of 1.4 million, Northumbria Police is one of the largest forces in England and Wales. The Northumberland Area Command almost mirror-

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[4] The term "deliberate fires" is used by the Fire and Rescue Services in the UK and is not the same as the term "arson" which is used by the Police. The term "deliberate fire" refers to fires where the cause of the fire is merely suspected to be deliberate. The term "arson", however, directly implies blame and guilt. Blame and guilt can only be assigned by the Criminal Justice System. The Fire Service may assist the Police in their investigations by providing their expertise and experience; however, the Police maintain sole responsibility for conducting criminal investigations in the UK.

[5] Current statistics for the fiscal year 2008-2009 indicate that NFRS will have helped to achieve an even greater reduction in deliberate fires by the end of the fiscal year.

images the geographic area covered by Northumberland Fire and Rescue Service. As of February 2008, Northumbria Police employs 4,004 police officers and 2,376 members of police support staff, including 259 Community Support Officers and 127 Special Constables. Northumbria Police has a long term 2020 Vision to build trust and confidence in the community and to reduce crime and disorder. Dealing with anti-social behaviour, criminal damage (including arson) and reducing the harm caused by drugs and alcohol are all reflected in the Service's objectives for 2008-2011.

Prior to the project, NFRS and Northumbria Police had worked in close partnership for many years to prevent and investigate arson and to improve community safety for the residents and visitors of the County of Northumberland. Both organisations have committed resources and personnel to the set-up and maintenance of a multi-agency Arson Task Force (ATF). The Northumberland ATF is responsible for investigating, preventing and reducing fire crime through effective partnership working with multiple public and private organisations and stakeholders. In addition to the routine duties mentioned here and those detailed in Appendix 2, the Northumberland ATF was responsible for the overall coordination and management of this special project.

The Northumberland ATF supports Northumbria Police in the detection of arson

While Northumberland Fire and Rescue Service and Northumbria Police have a well-established partnership, the inclusion of Laboratoire Central in the project team provided the opportunity for the creation of new partnerships. LCPP was created in 1878 as the major technical and scientific body of the Préfecture de Police in the greater Paris area. LCPP has expertise and competency in the prevention of technological and domestic risk, assistance to the safety of people and property, and the evaluation of the impact of human and industrial activity on the environment. The daily work of 216 LCPP personnel includes: onsite investigations of scenes of fires, explosions and spillages of dangerous or toxic compounds; investigations of suspected improvised explosive devices (IEDs); post-blast identification of the components of IEDs; post-fire identification of flammable compound traces; identification of unknown chemical compounds; attending radiological, chemical and nuclear incidents; environmental disasters (especially concerning air or water); and fire safety engineering (influencing legislative changes to improve public safety). What is noticeable in LCPP's role is that they are involved in initial scene investigations through to laboratory analysis of samples that have been taken at the scene. LCPP is very involved in a number of working networks with European and international entities (universities, other laboratories, government laboratories in order to prevent terrorism and arson). In France, LCPP is a major partner involved in the Projet National Ingénierie de la sécurité Incendie (PN ISI) and leads on many studies related to fire modelisation.

Experimental fires at LCPP

Project personnel

The key personnel involved in the design and delivery of this project were:

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If you would like any further information about the project or about any aspect of this report, then please feel free to contact any of the individuals listed above.

Project aims and objectives

The key aim of the project was to reduce the number and severity of arson fires set annually within European communities. The countries included within the scope of the project were all 27 of the European Union Member States, all 3 European Candidate Countries, and Iceland, Norway and Switzerland (see Figure 1 overleaf).

In order to achieve the central project aim, the project was designed to identify, collate and disseminate best practice in arson prevention and investigation throughout Europe. The underlying premise of the project was that by sharing best practice in arson prevention and investigation, arson practitioners across Europe can be better equipped to prevent and investigate fire crime within their communities.

Three further project aims were formulated during the project design process. These were to:
1. Raise awareness of best practice across EU Member States and the Candidate Countries of effective methods in implementing arson prevention and fire safety measures
2. Provide an awareness of the reductions that can be made through prevention strategies and how this can be achieved through effective partnership working and a co-ordinated investigation process
3. Identify the value of establishing a web-based information and coordination network which can provide a formal platform for the exchange of tactical and operational information across the EU in fighting and preventing arson and fire crime.

Figure 1 – Countries included within the scope of the project
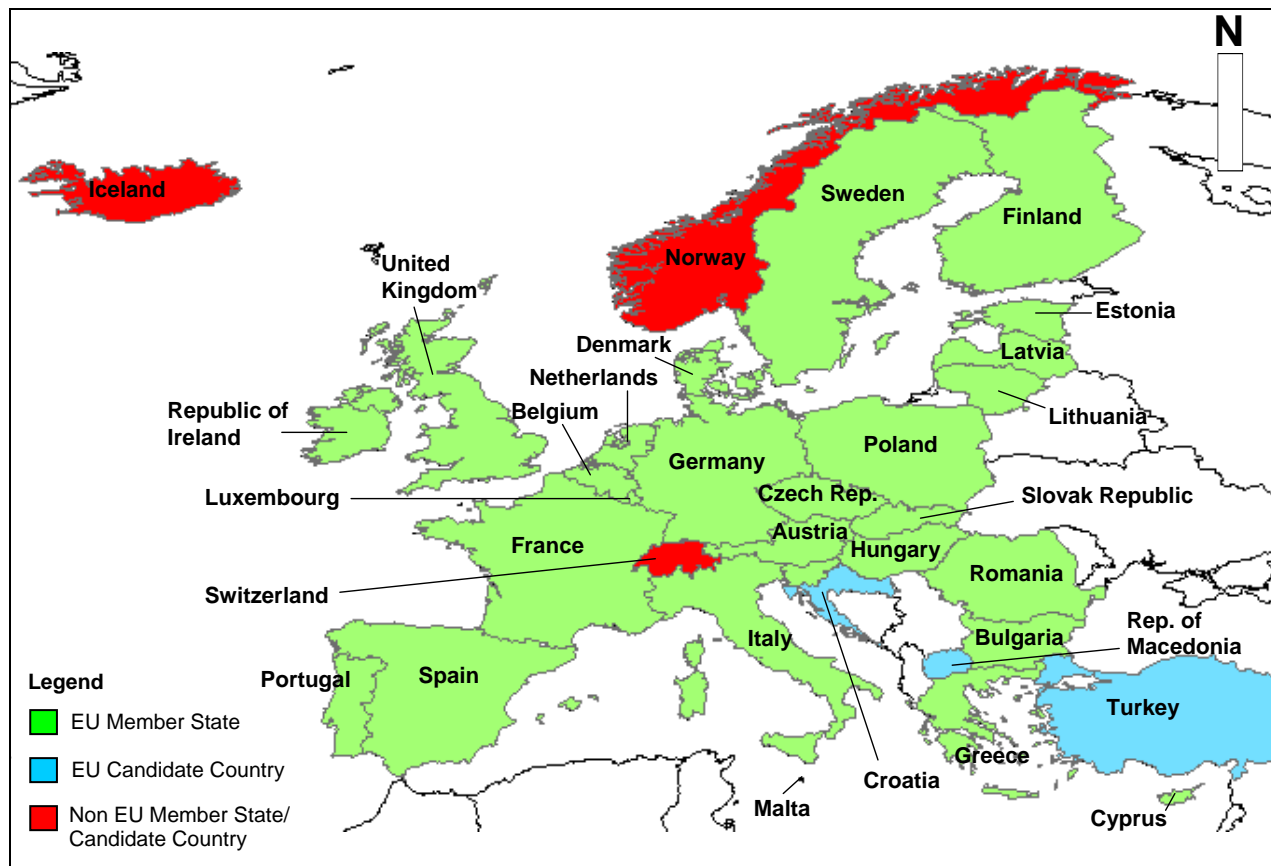
Legend
- EU Member State
- EU Candidate Country
- Non EU Member State/ Candidate Country

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In order to provide structure to the project activities, 7 specific objectives were also formulated. These objectives were to:

1. Stimulate the exchange of information and best practice through effective networking in prevention and the investigation of arson
2. Promote cross-border cooperation and sharing of best practice through innovation in responding to new challenges.
3. Build inventories of best practice and experience.
4. Elaborate lessons learned in the fields of arson prevention and investigation.
5. Develop guidelines and recommendations for the practical implementation of arson prevention initiatives.
6. Elaborate training modules for fire investigation at different levels.
7. Produce a formal network between specialists and bodies involved in relevant fields.

Project outputs

The project partners decided that it was of vital importance that the project activities produce some key outputs that would be of benefit to others and which would ensure that

the work of the project remain useful and usable beyond the project completion. It was decided at the outset that the project would produce 8 key outputs:

1. A European network of contacts working to prevent and investigate arson.[6]
2. A European Register of Experts in Arson Prevention and Investigation.
3. A European Database of Best Practice in Arson Prevention and Investigation.
4. Fire Investigation Training Modules capable of being delivered in all European countries.
5. The inaugural Fire Crime in Europe Conference to bring together practitioners in arson prevention and investigation from across Europe.
6. Sharing of activity reports and case studies through visits and exchanges between organisations.
7. Guidelines and recommendations for the practical implementation of arson prevention initiatives
8. Recommendations for the creation of a secure web-based system to connect the European Network of Arson Practitioners

The project was so successful that four additional substantial outputs were also produced:

9. A substantial scoping study report identifying features and practices of fire crime prevention and investigation within European countries.
10. An evaluation report of a full pilot of the fire investigation training modules developed during the project.
11. A detailed post-event evaluation report for "The Fire Crime in Europe Conference 2008" – a report which provides recommendations and an excellent model for the design and delivery of future European fire crime conferences.
12. A prototype web-based platform that will be used to temporarily connect the European Network of Arson Practitioners

The remainder of this report will now discuss the project outputs in more detail. The report then culminates with some recommendations and conclusions that were generated as a result of the project activities.

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[6] This contact network is currently being used to circulate information updates and requests to practitioners across Europe. The project team are receiving requests from practitioners in Europe and are circulating them to all individuals currently enlisted on the network. This process has yielded some great successes in terms of the identification and sharing of information and advice which is available, but often not easily identifiable, across Europe.

3. European Network of Contacts

A key element of the project was to identify and make contact with practitioners working to prevent and investigate fire crime within the European countries included within the scope of the project. During the two-year project, the project team have compiled a list of individuals and organisations interested in the work of the project. All of the individuals included within the distribution list were willing to receive regular progress updates about the project and other relevant information concerning fire crime (for instance, information concerning seminars and events held within European countries). As of 31st December 2008 (the completion date for the project) the network of contacts had grown to include 534 individuals, representing approximately 340 organisations.

The project team used a comprehensive methodology for identifying individuals and organisations responsible for arson prevention and investigation in Europe. The various techniques employed included: emails and letters distributed to government departments responsible for fire and rescue services and police services; distribution of questionnaire surveys (further information later in this report); internet searches; advertisements uploaded onto the notice boards of a number of fire-related websites within several European countries[7]; and distribution of information to individuals within other existing European networks (including the EU Fire Safety Network and the European Network of Forensic Science Institutions (ENFSI) Fire and Explosions Working Group[8]. In addition, 18 informative articles concerning the project were published in 10 EU languages in fire and policing-related magazines and journals in 11 European countries[9]. These publications raised the profile of the project activities and attracted a number of additional project contacts. Some of the magazines will also be publishing articles which will disseminate the findings of the project in early- to mid-2009.

The distribution list currently contains professional contacts working within all 33 European countries included within the scope of this project. No fewer than two individuals from each country are included within the distribution list, with most countries represented by considerably more individuals[10] (see Figure 2 overleaf). The UK was represented by the greatest number of individuals on the distribution list (194 contacts), primarily because the project team had access to national databases containing contact details of all Fire and Rescue and Police Services within the country. The UK has also been particularly active with regards to the fields of arson prevention and investigation during the last decade, which has led to the creation of a substantial infrastructure. Importantly, the identification of a number of contacts within each country has ensured a reasonable level of resilience: there has always been at least one individual within each country receiving information about the project even if other contacts have moved job or have been absent for extended periods of time.

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[7] A list of all of the website advertisements can be found in Appendix 3.
[8] The project partners would like to thank members of both the EU Fire Safety Network and the ENFSI Fire and Explosions Working Group for their advice, support and enthusiasm during the two year project.
[9] A list of all of the articles published can be found in Appendix 3. Some of the journals/magazines are actually distributed to multiple European countries and not just the country where the publisher is based.
[10] The greatest number of individuals included within the distribution list from any single country was for the United Kingdom (194 project contacts). The accumulation of this extremely large number of contacts was achievable because the project team were able to access two existing databases containing contact details of all Fire and Police Services in the UK. The project team were unable to gain access to similar national databases maintained by the other European countries included within the project.

Figure 2 - Project Contacts in Europe[11]

	BE	BG	CZ	DK	DE	EE	IE	IS	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MK	MT	NL	NO	AT	PL	PT	RO	SI	SK	FI	SE	CH	TR
Series1	15	11	10	16	31	10	8	2	7	8	26	6	11	4	4	6	4	6	6	8	30	8	5	9	5	4	6	4	22	24	13	3
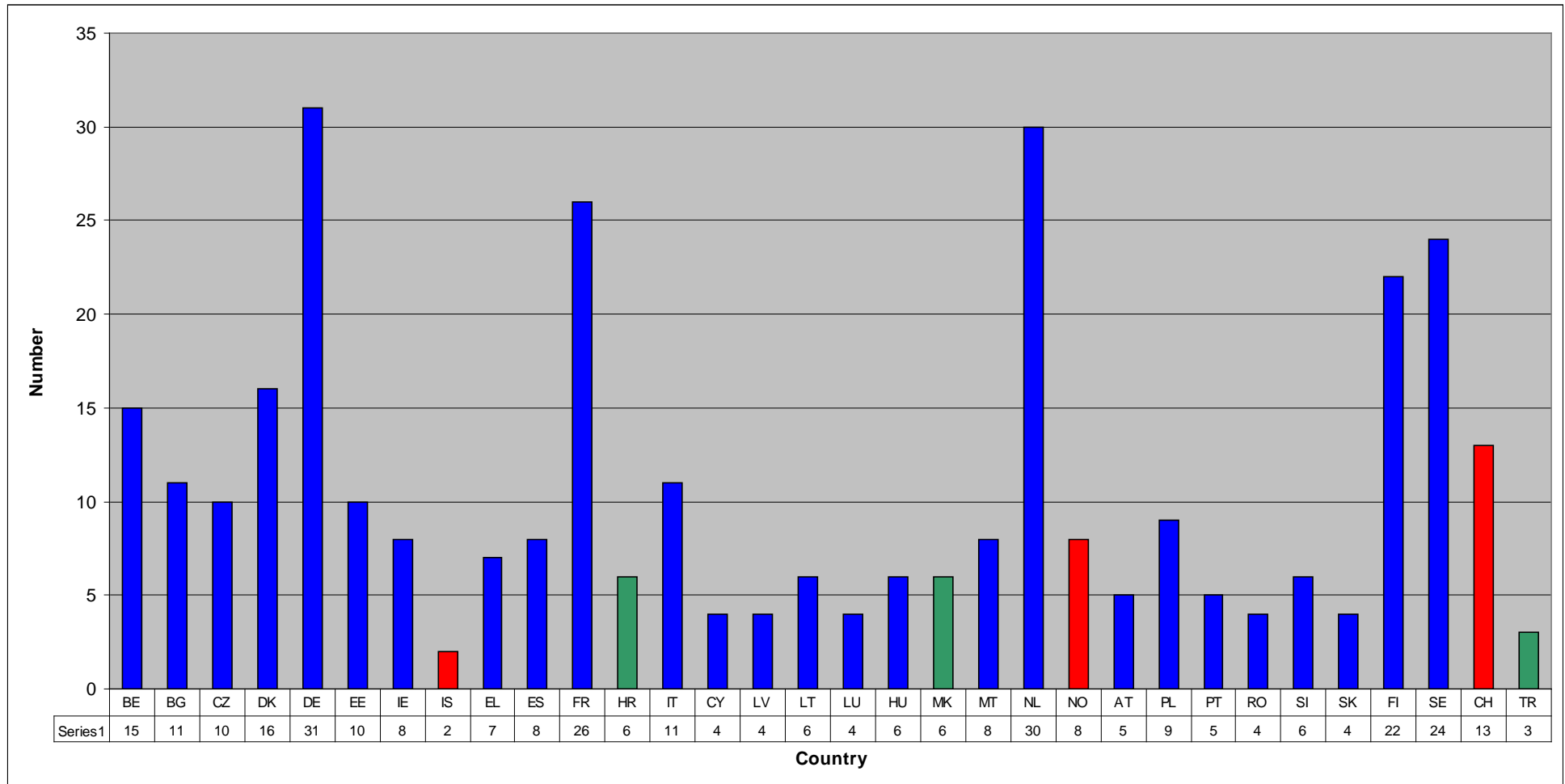
Country

LEGEND: ■ European Union Member State   ■ European Union Candidate Country   ■ Non-EU Member State/Candidate Country

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[11] This graph excludes 195 project contacts from the UK, 5 contacts from countries outside Europe (Chile, New Zealand and the United States of America), and 3 contacts within the European Commission. A key to country abbreviations used within this graph can be found in Appendix 1.

As has been highlighted, individuals within the distribution list received regular project progress reports concerning the project activities. These progress reports were compiled and distributed in November 2007, February 2008, May 2008 and October 2008. The number of individuals receiving copies of the progress reports obviously increased as the project progressed. The project team have concluded that the regular circulation of progress reports to all contacts in Europe was an extremely successful technique for developing a substantial distribution list for three key reasons:

- Firstly, the distribution of progress reports ensured that stakeholders and interested parties were kept informed of the progress of the project activities.
- Secondly, progress reports enabled the project team to maintain interest in the project throughout its duration.
- And, thirdly, the progress reports were often passed onto other third parties, many of whom then contacted the project team directly to request their inclusion within the distribution list. This therefore enabled the collection of additional contacts.

While the project team have compiled a substantial distribution list, the number of individuals receiving progress reports may have been even greater if progress reports had been compiled and circulated earlier in 2007. The project team have concluded that management of future European projects within this or other fields focused upon a large number of countries should consider the creation and distribution of progress reports to interested parties from the project outset. This approach maximises the potential for dissemination of project findings.

The future of the European network of contacts
The network of contacts that has been developed during the course of the project is an extremely useful resource for the continual development of European cross-border information sharing within the fields of arson prevention and investigation. The project team are now quickly and efficiently able to find specialists in particular fields working within up to 33 European countries. Prior to the project, this capability did not exist because no resources had been dedicated to identifying potential contacts throughout Europe. During the course of the project, the project partners have used the distribution list to circulate information about the project and also to distribute requests and information on behalf of other organisations working to prevent and investigate arson in Europe. This function has been extremely valuable as no other systems are currently in place in order to connect arson practitioners across Europe. More specifics about some of the requests from third parties that have been met will be discussed later in this report; however, in summary, these requests have resulted in the distribution of conference flyers, the distribution of requests for individuals with expertise within highly specific fields, and requests for best practice regarding specific problems related to arson prevention and/or investigation.

There are still ways that the network can be further improved. In particular, the project team have pledged to continue to increase the number of individuals included on the distribution list, particularly to increase the number of contacts within the lesser-represented countries. This maintenance will also include the provision of a service to other organisations in Europe with regards to circulating information about events, projects and other issues of relevance to the wider European Arson Practitioner community. These ongoing activities by the project partners will ensure that the distribution list continues to

be a useful resource for not only the project team but also the wider network. In order to acknowledge the ongoing nature of the network, the network of contacts developed during the project is referred to as the "European Network of Arson Practitioners" (ENAP) throughout the remainder of this report.[12]

There are, however, some changes that are required in order to make the network a more sustainable and living entity. Primarily, future action is required in order to achieve a greater level of connectivity between network contacts. Figure 3 (overleaf) illustrates how the project has enhanced levels of connectivity and interaction between arson practitioners working within European countries. Prior to the project, there was some communication between some individuals working in some countries (network diagram 1.). This communication and interaction was often between individuals working in very specialised fields within the broader professions of arson prevention and investigation (such as forensic analysis fields). This interaction was far from inclusive and some countries and professions were simply not involved, despite the fact that arson prevention and investigation is within the remit and professional interest of multiple types of organisations (for instance, fire and rescue services, police services, forensic services, forestry services etc.). During the project, the project team successfully established themselves as a central point of contact, acting as a facilitator and coordinator for information exchange between practitioners working in the 33 European countries (network diagram 2.). Information was passed to the project team and then disseminated to those on the distribution list. Sometimes this information was disseminated to the whole distribution list and, at other times, filters were used to identify the most appropriate sources for the information.

Figure 3 - The development of a European Network of Arson Practitioners

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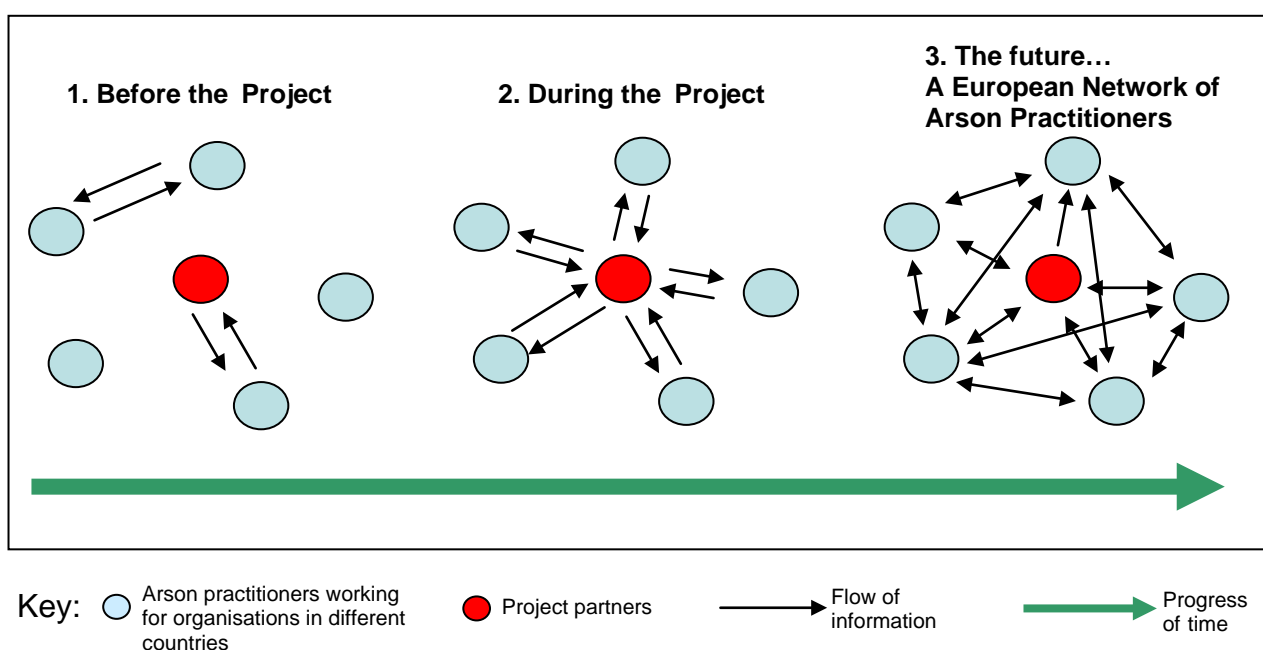
[12] The name "European Network of Arson Practitioners" and acronym "ENAP" will be used until a permanent name and acronym are collectively decided by a working group of organisations. See overleaf for more information pertaining to the working group. It should be noted that, at present, ENAP has no legal status in any European countries. The name is merely used for convenience to describe a network that will hopefully be formalised and established in the near future.

Figure 4 – The project team acting as a facilitator and coordinator for cross-border information exchange during the project
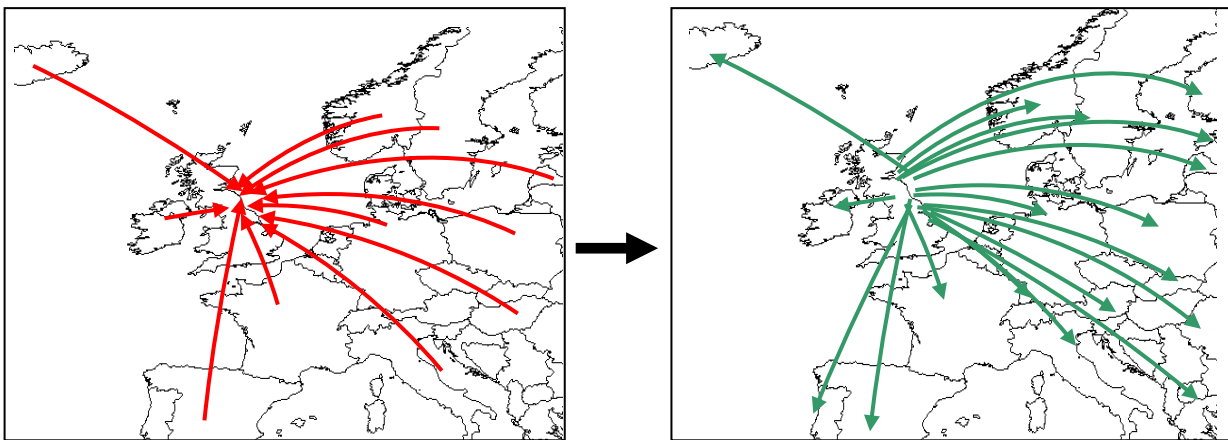
Project team gathering and receiving information

Project team distributing information to all contacts or selected contacts

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Now that the project has culminated, the project team pledge to continue to provide a linkage between, and support to, individuals and organisations in Europe. However, this is not a sustainable structure for a continental network. Rather, the ideal situation is presented in the third network diagram presented within Figure 3: this shows how a European Network of Arson Practitioners should be structured. Rather than one central point of contact, the network requires greater connectivity and interaction. The network no doubt requires a central committee or board that can steer it and oversee the implementation and maintenance of key activities (finances, maintenance of central resources etc.); however, individuals within the network need to be able to communicate and exchange information more directly with other members. The suggestion that will be made later in this report is that a secure web-based system is one function that is required in order to foster enhanced and sustainable connectivity. Other options will be explored by a working group of organisations that will be formed in 2009.[13]

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[13] The project team intend to form a working group in 2009 that will consist of representatives from the project partners and a number of new partner organisations. This working group will meet to discuss the way forward for the network, formulate external funding applications, and complete other activities that are required in order to establish the network. It is the intention of the project team that support for this working group, both financially and politically, will be sought from external bodies, including the European Commission, ENFSI and other national and transnational organisations involved in arson prevention and investigation. At present there are a number of organisations in a number of countries (including, but not limited to, the project partners) who are supporting the working group and who have pledged the time and services of their employees.

4. Scoping Study Using Questionnaire Surveys

The project team decided that questionnaire surveys would be an appropriate and effective method for collecting information of importance for the project. It was also decided that there would be three specific aims to the questionnaire surveys:

1. To collect information on arson prevention and investigation practices in European countries.
2. To identify potential best practice for inclusion within a European database.
3. To identify individuals and organisations with a professional interest in the prevention and investigation of fire crime.

Two different questionnaires were designed, distributed and analysed. The first was distributed to fire, police and other government organisations involved in arson prevention and/or investigation. The second was specifically designed and distributed to forensic institutions that investigate fire scenes and/or analyse fire scene debris within laboratories. Both of the questionnaire surveys were translated into three languages: English, French and German. Prior to circulating the questionnaires to potential respondents, the project partners decided that a suitable response rate target would be at least one completed questionnaire from each of the 33 European countries included within the project.

Distribution of the questionnaire surveys

Between June and December 2007, 279 questionnaire surveys were distributed to arson practitioners working across Europe. Several techniques were adopted in order to identify organisations and individuals to send copies of the questionnaire surveys, including:

- Using the knowledge and contacts of the project partners;
- Contacting individuals who appear on the contact lists of previous European scale projects/networks – particularly individuals within the EU Fire Safety Network and the European Network of Forensic Science Institutions (ENFSI);
- Internet searches;
- Contacting European and national Civil Protection, Policing and Forensic organisations (including government ministries with responsibility for fire, police and forensic work);
- Contacting British Embassies within European countries[14];
- Snowballing technique for identifying other interested parties.

By combining the aforementioned techniques, the project team were able to identify a significant number of organisations with a vested interest in arson prevention and/or arson investigation. The final questionnaire distribution statistics were:

- 242 questionnaires distributed to Fire, Police, and other Government organisations in Europe.
- 48 questionnaires distributed to Forensic organisations in Europe.

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[14] This approach was adopted because the project officer was able to converse more fluently in English compared to any other language and because British Embassies across the world often have established links with national fire and rescue and police personnel.

Questionnaire responses

156 individuals working for police, fire and government organisations, and 38 individuals working for forensic organisations, completed and returned copies of the questionnaires. This equates to exceptionally high return rates of 65% from fire, police, and government organisations and 89% from forensic organisations, respectively. The translation of the questionnaires into three European languages[15] was no doubt one important factor that contributed to this high response rate.

Figure 5 (overleaf) plots the locations from which all of the questionnaires were returned. Red dots on the map refer to questionnaires returned by Fire and Rescue Services and government departments with responsibilities for fire and civil protection issues; blue dots indicate questionnaires from Police Services and Police-related organisations; and green dots indicate responses from Forensic Institutions[16]. As can be inferred from the map, questionnaires returned by Fire and Police organisations vary in terms of their location type. Some were returned by organisations based within capital cities, large cities and from smaller settlements within more rural areas. By contrast, the majority of the questionnaires returned by forensic institutions were from organisations based within capital or large cities, with a small proportion being returned by regional forensic centres. The skills, expertise and investment required for complex forensic analysis of fire debris means that most countries can only afford to have a small number of specialists working from one central laboratory. The comparative centralisation of arson forensic specialists within many European countries contrasts significantly to the comparatively more decentralised nature of the work of the Fire and Police Services.

Conclusions of the questionnaire analysis

A more detailed report[17] outlining the results of the questionnaire survey analysis is available upon request from the project officers. In summary, the report presented 7 key conclusions. These were:

1. Approaches to fire crime prevention, investigation and recording vary both between and within European countries.

2. The value of different organisations completing fire investigations in partnership together should still be promoted to a European audience. While many countries and organisations have already acknowledged the benefits of partnership working during fire investigations, there are still some countries where scene investigations are completed by organisations working in isolation. More needs to be done in some areas of Europe in order to promote the positive benefits of this type of partnership working.

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[15] In addition, project contacts in Turkey and the Republic of Macedonia very kindly translated the questionnaire into Turkish and Macedonian so that their colleagues working within the fields of arson prevention and/or investigation could respond. The project partners are very grateful for this assistance.
[16] Please note that forensic institutions are often a sub-section or department within a police organisation. For the purpose of this map, all forensic institutions, including both independent organisations and departments within police organisations, are included within the forensic institution category.
[17] The title of this report is: "Fire Crime Prevention and Investigation in Europe: A scoping study using questionnaire surveys".

Figure 5 – Questionnaire response distribution

Legend
- 🔴 Fire and Rescue
- 🔵 Police
- 🟢 Forensic Institution

Oslo
Riga
Vilnius
Paris
Sofia
Rome
Lisbon

NORTHUMBERLAND
COUNTY COUNCIL
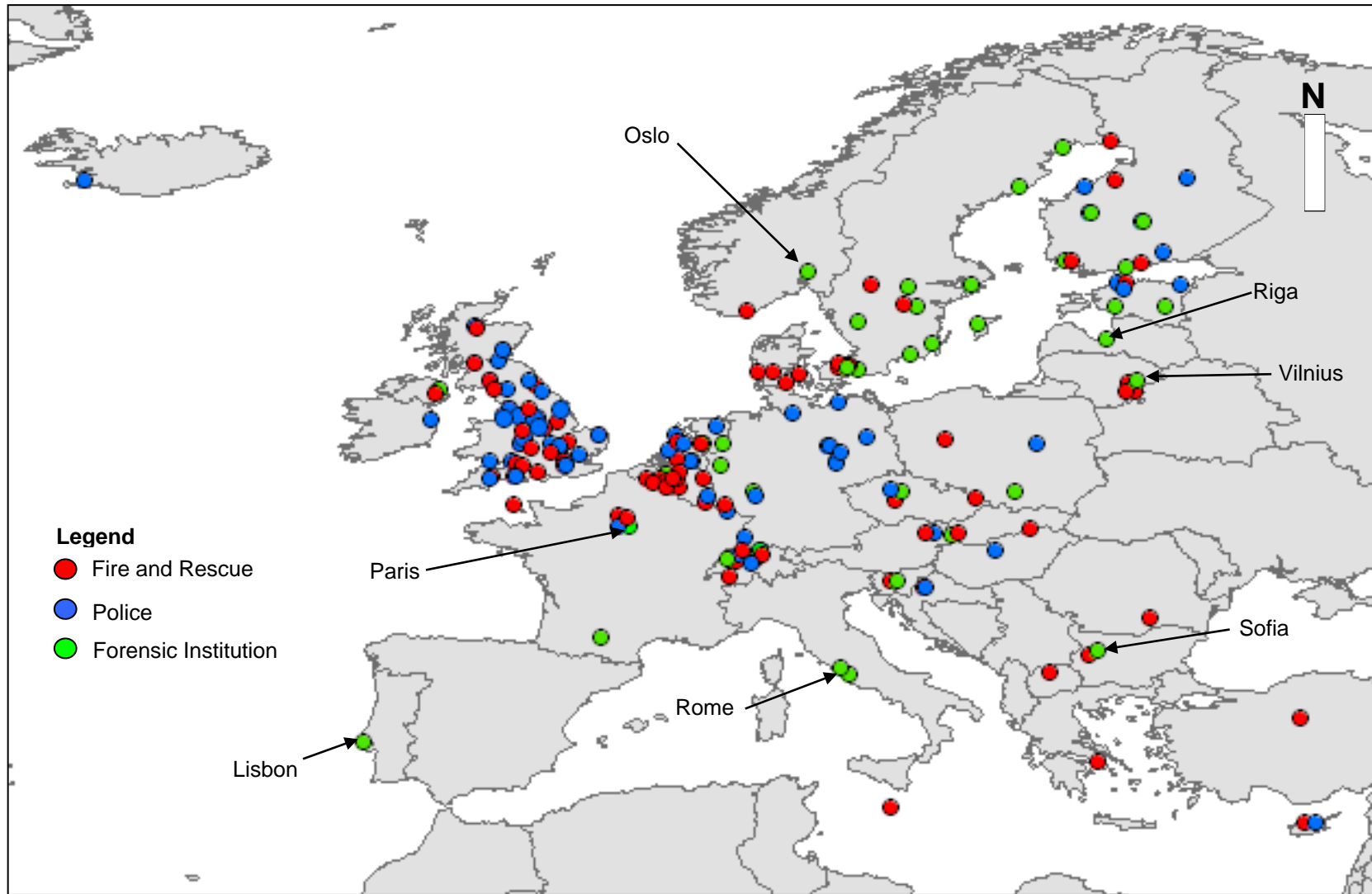
3. The benefits of close partnership working between multiple fire crime prevention organisations should be promoted to a greater degree across Europe. While a number of countries seem to have established systems where multiple agencies work in partnership during fire scene investigations, it was clear from the questionnaires that there is comparatively less partnership working among prevention organisations in many European countries. A number of different types of organisations have a vested interest in preventing fire crime, including, but not limited to, fire, police, local authority/government, health authorities, insurance, and forestry organisations and private landowners and businesses. It stands to reason that preventative measures may be most effective and more comprehensive if multiple organisations work together. Current preventative work is most likely to be completed in relative isolation by an individual organisation which means that there is the potential for duplication. Greater partnership working in the field of fire crime prevention is consequently required in many European countries.

4. A more coordinated arson prevention-investigation approach in some European countries/communities might ensure better value for money in terms of reductions in the numbers and severity of fire crimes. This suggestion was made in the light of the fact that a number of respondents seemed to view fire crime prevention and investigation as two distinct and unconnected professional fields. This is clearly not the case. The completion of quality fire investigations can ensure that arsonists/fire setters are brought to justice. Fire setters quite often set multiple fires and many serial arsonists will not cease their fire setting behaviour until they are caught by the authorities. Bringing fire setters to justice removes these individuals from society, and allows the relevant authorities to administer appropriate treatment. From the point of view of prevention, investigations can provide information on the methods and motivations of fire-setters which can be used to inform preventative strategies. The publicity of prosecutions for fire setting can also aid prevention by deterring other would-be fire setters. Consequently, investigation should be a key element of any coordinated prevention strategy. The most effective and comprehensive prevention strategies adopted in Europe tend to strike a good balance between four key elements: enforcement (through good quality investigations), deterrence, education and removal of opportunities for fire setting.

5. The process of gathering data through the questionnaire surveys has enabled the project partners to form a number of new working relationships with numerous organisations in Europe involved in arson prevention and investigation. The majority of these relationships would not have been formed were it not for the distribution of the questionnaire surveys. Questionnaire surveys are consequently an effective method for gathering data and establishing lines of communications with professionals working in other European countries.

6. There is a need to create a formal European Network of Arson Practitioners which can facilitate more permanent and long-lasting cross-border exchange of information, advice, and expertise in arson prevention and investigation. There is currently no mechanism or organisation that currently facilitates these activities.

7. Finally, the creation of a European Database of Best Practice in Arson Prevention and Investigation is a viable and useful exercise. A total of 82 potential examples of best practice were identified via the questionnaire surveys. It was concluded that this would provide an excellent foundation for the creation of a European database.

5. European Database of Best Practice

There are a number of databases that exist which contain best practice information related to a number of professional fields. While planning and designing this project, the project team identified an excellent example of an online database containing best practice in crime prevention. This website had been created by the European Crime Prevention Network (EUCPN) and is continually modified and updated[18]. The project team identified that this database was extremely useful in terms of presenting best practice from across Europe, however, they also identified that the database did not include information relating to good practice in fire crime prevention[19]. Fire Crime is a specific and complex crime requiring complex preventative and investigative measures. Consequently, the project team decided it was necessary to create a specialist database dedicated to presenting best practice in fire crime prevention and investigation. The overall design and format of the database, along with the criteria used to select appropriate best practice, was informed by the exemplary database created and maintained by the EUCPN.

Criteria for information included within the database

The project team collectively devised a set of criteria for selecting appropriate examples of best practice for inclusion within the database. The criteria were developed after researching criteria for best practice used by other organisations for other databases. According to the criteria that have been developed, each best practice entry should:

- have obvious links to the field of arson prevention and/or the field of arson investigation and/or the field of arson forensics;
- be appropriately formulated[20];
- be/have been implemented in a European country included within the scope of the project;
- be replicable[21];
- be successful and there is evidence available to support such success[22].

All individuals/organisations wishing to submit an example of best practice to the database are required to complete and submit a standard application form providing their contact details and details about their best practice initiative/scheme/policy. The project team have, on occasions contacted those submitting information to the database to request further information about their initiative for inclusion within the database.

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[18] The EUCPN good practice database can be accessed at: http://www.eucpn.org/index.asp

[19] In addition, the database did not include good practice information relating to fire investigation as this was outside of its designated remit.

[20] It should be evident from the information submitted that the best practice example has been appropriately formulated – for example, that the initiative/scheme/policy was designed and delivered through the following logical process: problem identification, development of aims of an appropriate response to the problem, design of an appropriate response, implementation of an appropriate response and evaluation of the response to ensure success and continual improvement.

[21] The best/good practice must be theoretically replicable, at least in part, in another country. As a general guidance, the best/good practice scheme/initiative/policy should not rely upon highly specific legal mechanisms or other similar specific factors.

[22] Evidence of success could include, for instance, supporting statistical data.

Topics currently represented within the database

At the conclusion of the project, the European database contained 33 examples of best practice. These best practice summary documents have been submitted by practitioners working in 10 European countries. A list of the best practice topics currently represented within the database can be found in Appendix 3.[23] It is the intention of the project team that this list needs to be expanded as new best practice is identified and developed. The project team also believe that practitioners working in countries that have not submitted best practice information for inclusion within the database should be encouraged to do so.

The project team have already responded to 8 specific requests for best practice contained within the database. These requests have been processed through manual searches of the current database stored on a stand-alone system in Northumberland. The project team have established a target of responding to all requests for best practice within two weeks of being received. Currently, all requests for best practice have been processed within two weeks.

All of the recommendations of this project will be discussed in more detail within the final section of the report; however, it is important to highlight one of the recommendations here: the project team recommend that the database of best practice needs to be made securely accessible online via a web-based database system. The project team also recommend that organisations who take over coordination of the formal European Network of Arson Practitioners would be best placed to take over the maintenance and control of the database in the near future. A web-based system will allow professionals across Europe to interrogate and submit information for consideration for entry in the database from their own computer terminals. This kind of system will ensure even more rapid transfer of information and a greater level of interaction. It will also provide future sustainability for the database. By its very nature, the database needs to be flexible to incorporate best practice as it is developed. The project team believe a web-based system will be the most effective method for achieving this objective.

Future development and reviews of the database

The Best Practice Database can be further developed in two key ways. Firstly, the project team suggest that new initiatives/schemes/policies are continually uploaded onto the database. Although the project has successfully identified, collated and stored 33 examples of best practice, the database will be even more useful if best practice is continually collected. New initiatives, schemes, policies etc. are constantly being implemented and will be of interest to other practitioners across Europe. It is a significant achievement to have collected so many examples of good practice so far, but to stand the test of time and to maintain its usefulness and applicability, the database must be expanded and maintained.

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[23] The following disclaimer is attached to any data contained within the best practice database: "The database/guidance has been published in good faith by Northumberland Fire and Rescue, Northumbria Police and Laboratoire Central de la Prefecture de Police who shall not incur any liability for any action or omission arising out of any reliance being placed on this database/guidance by any other organisation or other person. Any organisation or other person in receipt of this database/guidance should seek their own professional advice prior to any reliance on anything contained therein. Finally, the European Commission is not responsible for any information contained within the database, or for any use made of the information contained therein".

Secondly, although a considerable amount of information about best practice is currently contained within the register, there are a number of topics and issues not represented. A small number of requests for information from the database could not be fulfilled in full because best practice information is currently unavailable. In order to address these omissions, a list of required best practice has been developed, including:

- Techniques for investigating vegetation fires (for instance, investigation of forest, heathland, moorland, grassland fires)
- Research into the cause of fire
- Techniques for fire investigation
- Fire investigations completed by Fire Officers
- Forensic analysis of ignitable liquids (including GC and GC/MS data of ignitable liquids)
- Preventing criminal fires in/near to industrial plant facilities
- Secondment of fire fighters into schools
- Fire fighters engaging with children and young people within local communities

The collection of best practice related to the issues on this list will be an immediate priority for the project team who will, as long as time and resources allow, maintain the database into the near future. A specific request for topics currently omitted from the database was circulated by the project team to the network of contacts during January 2009. The team are awaiting responses and will distribute any information that is submitted to them accordingly. With additional time and resources, the project team believe that it would be possible to collect appropriate best practice related to most if not all of the topics listed above.

All individuals who have already submitted best practice to the database have been informed that they are responsible for ensuring that their contact details are accurate. They have also been informed that they should provide updates regarding their best practice initiatives if there are any substantial changes and/or if new evidence emerges to support or contradict the success of the initiative/policy/scheme. The project partners will periodically review all database entries and any individuals who cannot be contacted during these review periods will have their best practice submissions removed. The purpose of these reviews will be to ensure that information contained within the database is timely and up-to-date and that anybody accessing this information will be able to contact the author(s) of each best practice submission for further information.

6. European Register of Experts

During the project planning stages, the project team identified that there was no existing European register of experts in arson prevention and investigation, despite the fact that these general professions contain a significant number of highly specialised fields. A number of high profile fires have occurred in the UK and Europe within the last few years and a number of them have required highly specialised and trained investigators to conduct scene examinations. It was for this reason that the project team decided that a register containing the contact details of European experts in arson prevention and investigation was much-needed because it could facilitate and streamline cross-border communication between professionals and relevant authorities.

Criteria for experts selected for the register

The project team collectively devised a set of criteria for selecting appropriate experts to be included within the register. According to the criteria, Individuals included within the register must:

- be currently employed in a European Union Country, a European Union Candidate Country, Iceland, Norway or Switzerland[24];
- be currently employed in a profession directly related to arson prevention and/or arson investigation;
- be willing to participate in exchanges/placements with individuals from other European countries;
- have appropriate experience and/or professional qualifications in fields directly related to arson prevention and/or arson investigation.

In addition, it is stated within the criteria that it is desirable that enrolled experts/specialists are active members of regional, national and/or multinational bodies and/or advisory committees in fields related to arson prevention and/or arson investigation. All applicants are required to complete and submit a standard application form providing their contact details, a list of their expertise and justification for being included within the register (see Appendix 3 for a copy of the form).

After formulating the criteria, the project team liaised with individuals in a number of European countries to request feedback. One concern was expressed by a number of individuals: how will the integrity and the credibility of the register be maintained? The project team responded by amending the criteria to include two additional clauses:

- All individuals applying to be included within the register must also submit a copy of their curriculum vitae outlining their education, qualifications (academic and/or professional) and experience.
- The project partners reserve the right to request a formal reference from an applicant's Chief Officer/Director.

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[24] The facility will exist to expand the number of countries that can supply experts to appear on the register. Additions will be made after any changes to European Union membership and/or at the discretion of the database coordinator. The primary goal will be, however, to ensure that this register remains a European resource.

These measures have been designed to ensure that those applying to be included within the register can be verified, vetted and approved as experts/specialists. This will subsequently ensure that the integrity and credibility of the register is maintained[25].

Experts and expertise currently represented within the register

There are currently 52 individuals from 18 countries enrolled on the register. These individuals are experts/specialists in a number of different fields related to arson prevention and arson investigation (see Appendix 4).

The project team have responded to a number of requests for advice/information from experts within specific fields. These requests have been processed through manual searches of the current database stored on a stand-alone system in Northumberland. The recommendations of this project will be discussed in more detail within the final section of the report; however it is important to outline one of the recommendations here: the project team recommend that the register must be made securely accessible online via a web-based database system. This will allow professionals across Europe to access the register from their own computer terminals, search the register for fields of expertise they require advice about, and submit electronic applications for consideration. This type of system will ensure more rapid transfer of information and advice and a greater level of European interaction. It will also provide future greater sustainability for the register.

In order to promote further expert exchanges, the project team have sign-posted members of the network to existing funding streams that might potentially fund exchanges/placements. In particular, the European Exchange of Experts in Civil Protection instrument (http://www.exchangeofexperts.eu/) has been suggested as one potential source of funding for exchanges/placements.

Future development and reviews of the register

All experts included within the register have been informed that they are responsible for providing accurate contact details. The project partners will annually review all experts' contact details and any experts who cannot be contacted during these review periods will be removed from the register. The register can be further developed in two key ways. Firstly, although the project has successfully enrolled experts from 17 countries, which is a significant achievement, the register will be even more useful if experts from the remaining 16 countries included within the project can be enrolled in the near future. Secondly, although a considerable amount of expertise is represented within the register, there are a number of specialist fields not yet represented. Consequently, the register should be developed to enrol experts and expertise that are not yet included.

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[25] The following disclaimer has also been included within the document outlining the criteria for selecting experts for the register: "The register/guidance have been published in good faith by Northumberland Fire and Rescue, Northumbria Police and Laboratoire Central who shall not incur any liability for any action or omission arising out of any reliance being placed on this register/guidance by any other organisation or other person. Any organisation or other person in receipt of this register/guidance should seek their own professional advice prior to any reliance on anything contained therein. The European Commission is also not responsible for any information contained within the register or for any use made of the information contained therein".

7. Fire Investigation Training Modules

Fire investigation training is currently offered by a number of commercial and academic institutions within Europe. There are also a number of national and international societies that offer varying levels of fire investigation training. However, prior to the delivery of the project, the project partners identified that there were no fire investigation training courses available to those who were not members of the national and international fire investigation societies and/or for those who could not attend courses delivered by commercial and academic institutions. Telephone conversations with arson investigation and prevention practitioners in other countries revealed that some of the organisations in Europe employing fire investigators could not afford to send any or all of their investigators on the training courses currently provided. The project team subsequently identified the need for the development of fire investigation training modules that could be used and adapted to train fire investigators in all European countries.

Design and development of fire investigation training modules

Over the course of the project, the project team have developed a number of fire investigation training modules to address the training needs of a variety of practitioners involved in fire investigations. These modules are in the form of presentation slides and accompanying resources, such as case study photographs of real fire scenes and photographs of common fire scene patterns and phenomena. Full lesson plans have been developed which outline the aims, objectives, learning outcomes and suggested structure for each module (see Appendix 5 for exemplary pages from a lesson plan). The development of learning outcomes ensures that each module is student-focused. In addition, the learning outcomes provide a useful point of reference for organisations interested in delivering the modules in the future or for potential future students.

A key premise of the training module design has been that investigators must put theory into practice in order to develop their fire scene investigation skills and techniques. Consequently, the modules include theoretical and practical training elements. The specific modules that have been developed include:

- Forensic Awareness and Scene Preservation
- Management of the Partnership at the Fire Scene
- The Chemistry of Fire and Fire Behaviour
- Collection and Continuity of Fire Scene Evidence
- Interpretation of Visual Indicators at Fire Scenes[26]
- Electricity as a Cause of Fire
- Myths and Misconceptions in Fire Investigation
- The Scientific Method of Fire Investigation
- Witness and Report Writing
- Investigation of Fires in Vehicles
- Compartment Fire Investigations

The modules have been developed to address training requirements at varying levels. For instance, the Forensic Awareness and Scene Preservation module could be delivered as

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[26] Including, training in the interpretation of burn patterns and glass patterns.

basic level training course for all first responders[27] to fire scenes. The issues covered within this module include basic forensic awareness at fires scenes and the principles and practicalities of scene and evidence preservation. Individual's receiving training through this and other modules in the list would subsequently receive a moderate level of training. The modules in their current format do not provide the highest level of fire investigation that is currently available within the European Union. Fire investigators wanting to develop their skills to the highest level would need to subsequently attend one of a number of specialist courses provided by commercial or academic institutions in Europe. However, the current selection of modules provides a useful basis for introductory and intermediate training in fire scene investigation. Every fire scene is unique and can potentially yield situations and patterns that have not been witnessed by even the most experienced investigators. All fire investigators should therefore be aware of the need for regular training and exposure to fire scenes. Consequently, these modules should be viewed as a good foundation for fire investigation training, particularly for new investigators or for existing investigators wanting to receive refresher training in one or more of the modules.

The modules that have been developed focus on the general scientific methods required for conducting high quality fire investigations and upon the partnership approach to fire investigation which has been successfully employed for a number of years in the UK and Scandinavian countries. Each of the modules can be tailor-made to suit particular local circumstances. For instance, the general principles presented within each module can be amended or used as a foundation from which to build upon with country-specific rules, laws and regulations. This design ensures that the modules have significant value at a European level.

Pilot of the training modules in Poznań, Poland

The project partners went beyond the scope of the initial project by piloting the modules to a group of investigators in Poland. By piloting the modules, the project officers were able to assess the suitability and adaptability of the modules prior to their distribution to and use by other organisations. The pilot was held on 3rd - 7th September 2007 in Poznań, Poland. All of the aforementioned modules were combined[28] to form a five-day multi-agency training course that was delivered to 22 fire, police and insurance investigators. This intensive course provided students with 51 contact hours with the organisers and was hosted by the Fire Service College in Poznań. Officers from Northumberland Fire and Rescue Service and Northumbria Police assisted the Fire Service College in Poznań, the Poznań Police and PZU Insurance Wielkopolska Branch to collectively organise and deliver the course[29].

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[27] First responders are the first emergency service officers (fire, police ambulance etc.) that attend the scene of a fire or other type of emergency.

[28] Additional country-specific modules were also created and delivered during the course by the Fire Service College in Poznań and the Poznań Police.

[29] Officers from Northumberland Fire and Rescue Service and Northumbria Police delivered lectures and presentations in English. The presentations were subsequently translated into Polish by a translator specialising in fire investigation training. While this increased the length of the presentations, it ensured that specialists who had written the training modules were able to answer queries from the students at any time during the course.

The course comprised of four key teaching elements, including:

- theoretical sessions within a classroom;
- practical exercises within the classroom (including exercises using fire scene photographs);
- private study time, with the organisers providing assistance and advice where required;
- practical sessions spent investigating real fires on the training ground.

One of the storage containers used for the compartment fires at the training ground in Luboń near Poznań, Poland

Consequently, the pilot course involved theoretical modules towards the beginning of the week and practical sessions on the Fire Service College training ground towards the end of the week. The practical sessions involved small groups of participants working together to complete a full investigation of a real vehicle fire and a full investigation of a real compartment fire. These fires were staged to simulate different causes, ignition sources and scenarios. Scrap vehicles were acquired through local sources, while the compartments were constructed using large storage containers that had been converted into realistic, fully furnished rooms. Students of the Fire Service College were tasked with responding to the staged scenes and extinguishing the fires. This ensured that participants were provided with fire scenes that had experienced a level of damage (from fire and extinguishing efforts) that could be reasonably expected in the real world. All of the vehicle and room fire scenarios that were investigated by the students are outlined on the subsequent two pages of this report. The before and after pictures of the room fires have been included to provide an indication of the level of damage caused by the fires.

The course organizers and successful students who attended the Fire Investigation Workshop held in Poznań, Poland 3rd – 7th September 2007

The course concluded with a short observational and written assessment which judged the knowledge and competency of those who attended. The results of the assessment were excellent, with all of the attendees achieving the pass mark. There is evidence that the training has now had positive effects concerning the way that routine fire investigations are completed in the region. There is evidence to suggest that there is a greater level of partnership working between different organisations attending scenes of fire. Investigations are now more frequently completed by fire, police and insurance investigators working jointly together. This is a significant improvement on the previous situation where investigators from different organisations would attend the scene on their own and sometimes destroy evidence for investigators arriving later from other agencies. There is now a much more coordinated approach. There is, however, a real need for the provision of similar fire investigation training courses for other fire investigators in the Wielkopolska region and in the other 15 provinces in Poland.

The pilot of the training modules was also a success from another perspective: multiple organisations from multiple countries united to successfully deliver and receive training in fire investigation. It is a huge achievement that the training modules devised by the project team could be utilised so effectively. The successful delivery of the training modules in one country has led the project team to conclude that it is highly likely that the modules can be adapted and amended for successful delivery in other European countries.

Future reviews and development of the training modules

A full evaluation of the pilot course revealed that the training modules could be fine-tuned to improve their adaptability for future use by other organisations in Europe. The evaluation also revealed some important considerations for the organisation and delivery of fire investigation training, and made a number of specific recommendations for improving future courses. The modules have all been adapted accordingly and are now in a format that can be used for the delivery of courses in any European country.[30] The project partners will make these modules available to any professional organisations that require them and, where possible, will provide advice and guidance in relation to the actual delivery of any training based upon the modules. The project team will make a copy of the evaluation report available to any organisations in Europe who would like to deliver fire investigation training. Organisations will consequently be able to benefit from the experiences of the pilot course.

As the project has developed, the partners have also identified a small number of additional modules that could be created in order to provide a more comprehensive selection of training. The project partners suggest that future modules could be developed on the following topics:

- Photography of fire scenes
- Investigative techniques for explosions
- Analysis of domestic/commercial appliance faults
- Awareness of laboratory analysis methods

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[30] It should be noted that, at present, the training modules are all written in English and Polish. Translation is therefore required so that the modules can be used in other countries.

The partners intend to develop these additional modules in the near future. However, other organisations may be better placed to create these modules and the partners would like to present an open invitation to any individuals or organisations that might be willing to contribute to the design and compilation of these or additional modules. Any future modules developed will of course adopt the same structure and design as the existing modules to ensure continuity is maintained.

The professional field of fire investigation is dynamic, like most scientific fields. New techniques and procedures are continually being pioneered and implemented and new products and equipment are regularly released by various commercial organisations. It is therefore of paramount importance that the training modules are continually revised and updated. Consequently, the project partners will endeavour to review the current training modules on a frequent basis to ensure that they are up-to-date and appropriate[31]. Amendments to the training modules will be made as and when appropriate and the creation of further additional modules will be considered on individual merit.

Room Fire Investigations for the Pilot Training Course in Poznań, Poland
3rd – 7th September 2008

Room 1 (Kitchen) – Accidental fire caused by a cigarette carelessly discarded by the occupant.

Room 2 (Office) – Deliberate fire set by a rival group/pressure group petrol bombing the office. The petrol bomb was thrown through the window which was broken prior to burning.

Room 3 (Living room) – Fire set by a young child playing with matches and candles.

Room 4 (Workshop/office) - Accidental fire caused by element of electrical heater left touching cardboard boxes filled with plastics.

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[31] Last updated March 2009.

Vehicle Fire Investigations for the Pilot Training Course in Poznań, Poland
3rd – 7th September 2008

- Car 1 – Deliberate fire caused by the owner setting fire to rags in the engine compartment. The fire was set as an insurance fraud.

- Car 2 – Deliberate fire set by criminals. The car was stolen and used in other crimes. The criminals set alight to petrol that they poured onto the passenger seat. Several pieces of evidence, potentially containing DNA, fingerprints and other evidence that could be used to identify the criminals, were placed within the car.

- Car 3 – An accidental fire caused by the engine being switched on prior to repair work being completed. Sparks from the detached H-T lead ignited fuel in the engine compartment causing the fire.

- Car 4 – This scenario was originally set up as an accidental fire where cords wrapped around the car battery would heat up, burn through the insulation and eventually ignite. However, very soon after ignition the fire self-extinguished itself causing only superficial damage in the engine compartment. The organisers changed the scenario and lit a second fire by igniting petrol poured in the passenger compartment. The scenario now involved an owner trying to fix his car and then, after realising the expense of the damage, setting another fire in order to submit a fraudulent claim to his insurers.

8. The Fire Crime in Europe Conference 2008

A key element of the project was the organisation and delivery of The Fire Crime in Europe Conference 2008. This event was hosted by the Northumberland Fire and Rescue Service and was delivered with the assistance of Laboratoire Central and Northumbria Police. The event was held on 15th and 16th September 2008 at the Gosforth Park Marriott Hotel, near Newcastle upon Tyne in northern England. Practitioners from 21 European countries working at both senior and grassroots levels attended the event which was the first of its kind to be held in Europe.

Aims of the conference

The central aim of the event was: *"To promote a greater level of cross-border communication between those working to prevent and investigate arson in European Union, European Union Candidate and European Economic Area countries."* In order to achieve this, the project team formulated four specific aims for the delivery of the conference. All of the aims were formulated in order to contribute towards the successful completion of the project aims previously outlined on pages 12 and 13. The four aims of the conference were to:

- Raise awareness of best practice in effective methods in preventing and investigating arson;
- Provide a forum for the elaboration of lessons learned by professionals working in the fields of arson prevention and arson investigation.
- Provide the opportunity for networking between arson practitioners from across Europe;
- Gauge support for the creation of a formal European Network of Arson Practitioners[32].

In order to successfully achieve the conference aims, the project partners selected external suppliers to provide specialist assistance, services and equipment in event management, audio-visual equipment and support, and simultaneous translation. These were all services beyond the capabilities and capacities of the partner organisations. In accordance with purchasing guidelines, tenders were put out for the services required and at least 3 quotes were obtained. The organisations providing the best value for money in their quotation were contracted for the event.

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[32] This is a provisional title that has been used by the project partners during the course of the project. The network has not yet been formally created, although the project partners recommend within this report that this network should be created in the near future.

Conference communication strategy

All members of the European Network of Arson practitioners were invited to attend the conference via informative emails that were circulated prior to the event. In addition to contacting existing members of the network, four techniques were deployed to identify and contact additional potential delegates:

- An advertisement was placed on the NFRS/Northumberland County Council (NCC) website.
- Advertisements were placed on the websites of third party organisations (see Appendix 5 for full list)
- Conference advertisements were purchased and placed in 6 fire- and police-related publications circulated throughout the UK and Europe.
- Informative articles were published in a number of fire-related publications in Europe (again, see Appendix 5 for full list). Some of these were published in English and others were published in other European languages.

The advertisement placed in fire-related magazines was designed by a graphic designer and formed the basis for the branding of the whole event. This strategy ensured that the event had a consistent and easily recognisable identity. The communication strategy that was implemented was very successful in raising the profile of the conference and the project and also helped to attract a number of delegates who, prior to viewing the advertisements, were unaware of the conference.

Copy of the conference advertisement placed in 6 fire- and police-related magazines
distributed to practitioners in the UK and Europe

Presentation sessions

The opening addresses at the conference were delivered by the Chief Officers of the three partner organisations: Brian Hesler, Chief Fire Officer and Director of Community Safety of Northumberland Fire and Rescue Service; Mike Craik, Chief Constable of Northumbria Police; and Bruno Fargette, Directeur of Laboratoire Central de la Préfecture de Police. The event was expertly chaired by Max Hood (pictured below right), then Assistant Commissioner of London Fire Brigade and now County Fire Officer for West Sussex Fire and Rescue Service and Chair of the Arson Control Forum in the UK.

Photographs taken inside the main conference suite

In addition to the opening speeches, the project team decided that speakers from across Europe should be invited to deliver presentations on their examples of best practice in arson prevention and arson investigation. In order to identify and select speakers, the project team circulated an email call for expressions of interest to deliver a presentation at the conference. Emails were sent out on 5th March 2008 to the 351 individuals that were included on the project distribution list at that time. Those who were interested in delivering a presentation were requested to respond to the email and provide a short (200 word) summary of their proposed presentation. The submitted summaries were used as one method for selecting appropriate presentations. In addition, the conference organisers also devised a selection methodology based around several other key criteria. It was deemed critical that all presentations delivered at the conference:

- present information about an example of best practice in arson prevention or arson investigation;
- present an example of best practice that could be adopted by arson practitioners working within other European countries (i.e. the best practice presented must be transferable to other countries and not rely upon specific legal mechanisms or other limiting factors);

In addition, the conference organisers also deemed it necessary:

- to select speakers from a variety of different countries in order to ensure a truly inclusive European conference. 33 European Countries are included within the "European Exchange of Best Practice in Arson Prevention and Investigation Project" and it was deemed important to have as many of these countries as possible represented in the plenary sessions;
- to select presentations representing a variety of different topics related to arson prevention and investigation;

- to select an approximately equal number of presentations addressing issues related to arson prevention and arson investigation.

Once the deadline for expressions of interest had passed, the project team reviewed and discussed the content of the summaries. The interest to present was far greater than the number of presentation sessions that could be integrated into the conference schedule so, using the criteria developed, 16 speakers/presentations were selected from a total of 29 expressions of interest. The selected speakers represented 9 European countries, with two additional speakers representing transnational organisations/networks. Those who had been short-listed to present were contacted by the organisers and were requested to confirm their attendance (see Table 1 below for full list of presentations selected). Those who were not selected to present were informed that they had been unsuccessful but were placed on a reserve list of speakers in case any of the selected speakers were unable to attend.

Table 1 – Presentations delivered at "The Fire Crime in Europe Conference 2008"

Organisation	Country	Presentation Title
Northumberland Fire and Rescue Service	England	"European Exchange of Best Practice in Arson Prevention and Investigation: A European Commission funded project to tackle fire crime in Europe"
Merseyside Fire and Rescue Service	England	"Knowledge Management to Support and Connect a European Arson Network"
Merseyside Fire and Rescue Service	England	"Firework Misuse and the Investigation of Pyrotechnic-Based Explosions"
Yvelines Fire Department	France	First collaboration between the Fire Department and the Police
Berlin Police	Germany	"Cooperation During Fire Investigations Between Police and Insurance Investigators in Berlin"
FM Global	International	"FM Global Fire Prevention Grant"
National Criminal Investigation Service	Norway	"Establishing a Quality System for Scene of Crime Fire Investigation in Norway"
Karlstad Kommun	Sweden	"Combating Arson in Schools – Arson Prevention by Reducing Risk of Violations in the School Environment"
ENFSI	Europe	"ENFSI Fire and Explosions Working Group and The First Responder Guide"
Corpo Nazionale dei Vigili del Fuoco - NIA	Italy	"On the Fire Scene: Sampling Materials where Accelerants are Supposed to be Found"
West Midlands Arson Task Force	England	"Code Red – Evidence from Car Fires"
Apeldoorn Fire Brigade	Netherlands	"Fire Investigation Creates a Learning Investigation"
The Puppet Broadcasting Company	England	"The Five Minutes Initiative: Engaging Youth, Tackling Arson and Hoax Calls – A Partnership Project."
Instituto Superior de Polícia Judiciária e Ciências Criminais	Portugal	"Typologies of Portuguese Rural Arsonists and their Implications for Investigation and Prevention Strategies"
Forestry Commission Wales	Wales	"Preventing Forest Fires in South Wales"
Corpo Forestale dello Stato	Italy	"Investigative Methods for Forest Fires in Italy"

Workshop sessions

While presentations are an excellent method of conveying information about an initiative, process or procedure, the organisers wanted to include sessions within the schedule that promoted a greater level of interaction among the delegates. It was decided that three workshop sessions would be delivered, each of which would encourage small group discussions. The 3 workshops would be simultaneously delivered during two sessions: one session of workshops would be delivered on day 1 and the other on day 2. Delegates attending the conference therefore had the opportunity to attend 2 of the 3 workshop sessions.

The method used to select workshop leaders and topics was similar to that used to identify plenary presentations for the event. On 5th March 2008, the conference organisers circulated an email call for expressions of interest to lead a workshop at the conference. Emails were sent to the 351 individuals that were included on the project distribution list at that time. The email requested that those who were interested in leading a workshop should submit a basic plan of their proposed workshop. These plans were to be submitted on a standard form that was designed by the conference organisers.

Prior to receiving expressions of interest from organisations willing to lead a workshop, the conference organisers developed a set of criteria for selecting appropriate workshop ideas. The two key criteria were that:

- the three workshops would be led by three organisations representing three European countries;
- the three workshops would each cover one of the three general topic areas of: arson prevention, arson investigation and arson forensics.

In addition, the conference organisers decided that the selection of workshops would be decided upon in coordination with the selection of presentation sessions. This approach was adopted to ensure that as many European countries as possible would be represented in the delivery of the workshop and presentation sessions.

The conference organisers received 3 expressions of interest from 3 organisations working in 3 countries to prevent and/or investigate fire crime. All 3 expressions of interest submitted were accepted as they fulfilled the criteria developed by the organisers.[33]The workshop sessions and leaders selected for the event are listed in Table 2 (overleaf). The workshop leaders were all given specific guidelines on designing and delivering their workshop. Importantly, these guidelines highlighted the specific aims that the conference organizers had devised for the workshops, based upon the general aims for the conference and the project as a whole. It was stressed to each workshop leader that their workshop should contribute towards the successful completion of all of the following aims:

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[33] It would have been possible to distribute another call and the organisers believe that other organisations would have been interested in designing and delivering a workshop. However, as the first expressions of interest all fulfilled the established criteria, it was deemed suitable to select the organisations/topics from those received by the initial deadline. It should also be noted that designing and delivering a 90 minute workshop session requires a greater time commitment than designing and delivering a 20 minute presentation. Hence it is therefore not surprising that a greater number of expressions of interest were received for delivering presentations compared to delivering workshops.

- provide a forum for communication and discussion between individuals working in different organisations and different European countries.
- provide a forum for the elaboration of lessons learned by professionals working in the fields of arson prevention and arson investigation.
- provide awareness of the potential reductions in deliberate fire setting that can be achieved through the implementation of appropriate prevention strategies.
- provide foundations for the establishment of a formal European network of arson prevention and arson investigation specialists.

Table 2 - Workshops delivered at "The Fire Crime in Europe Conference 2008"

No.	Organisation	Country	Topic	Title
1	Northumberland Fire and Rescue Service	England	Arson Prevention	"An Holistic Approach to Arson Prevention"
2	Fire Service College & Provincial Fire Service Headquarters in Poznań	Poland	Arson Investigation	"Fire Investigation: In Search of Pan-European Best Practice"
3	Laboratoire Central de la Préfecture de Police	France	Arson Forensics	"Computer Modelling of Fires"

The guidelines distributed to the workshop leaders also highlighted that a workshop observer would be assigned to each workshop. The role of the workshop observers was to collect and collate information about the workshops. They were tasked with observing the same workshop delivered on both days of the conference. Having made observations and notes during both workshops, they were asked to concisely summarise the information and findings discussed within the workshops they observed and present these to the whole delegation during the closing plenary session. This feedback mechanism was essential as it ensured that delegates were informed of the findings of all the workshops, including the one workshop that they could not attend.

Delegates participating in the conference workshops

The three individuals selected to fulfil the roles of workshop observers were all members of Northumberland Fire and Rescue Service and all had prior experience of this type of activity. In addition to fulfilling their key role, the three observers also assisted the workshop leaders by aiding them in the distribution of materials to delegates and by assigning tables to delegates as they entered the workshop room. Consequently, the three observers made a significant contribution towards the successful delivery of the workshops.

It is important to now summarise the specific findings of each of the workshop sessions, as presented by the workshop observers during the closing session of the conference:

1. *"An Holistic Approach to Arson Prevention"* - The observer of Northumberland Fire and Rescue Service's workshop reported some lively debates within the workshop with many different prevention initiatives and perspectives being discussed. In summary, it was concluded that arson is often a multifaceted problem with multiple causes and contributing factors. Consequently, effective prevention strategies will not include just one initiative; arson prevention must incorporate multiple initiatives and schemes that tackle different aspects of the problem. The workshop observer closed his speech by reinforcing the fact that prevention of fire crime, along with accidental fires, is crucial. He urged that all stakeholder organisations in all European countries must do more to work together and continue to develop and improve their prevention strategies: new and innovative initiatives must be incorporated into their "prevention mix". No country has achieved an acceptable level of fire crime control, because just one incident can cause mass devastation to life, property and the environment. While statistics show reductions in fire crime in some countries and some localities, practitioners cannot afford to become complacent.

2. *"Fire Investigation: In Search of Pan-European Best Practice"* - The observer of the workshop led by the partnership of Polish Fire organisations noted that the key conclusion of the workshop was that none of the represented countries had a perfect fire investigation system and that the development of pan-European best practice should be considered as a medium- to long-term goal. The workshop went someway towards discussing the development of pan-European best practice in fire investigation and provided food for thought for the delegates as they returned to their normal places of work. The workshop leaders challenged the delegates to question and evaluate their current fire investigation procedures and to continue to find out about the methods and techniques used by investigators working in other European countries. By sharing best practice and experience, investigators may be able to develop a pan-European best practice model in the near future.

3. *"Computer Modelling of Fires"* - The observer of the LCPP workshop found that the key conclusion to be derived from the workshop was that fire modelling is a new and important tool for fire investigation and fire safety engineering; however, its current limitations need to be fully understood and appreciated. Consequently, fire modelling should be viewed as one of a range of tools available for organisations involved in fire investigation and prevention. Fire modelling technology is in its infancy and still requires high quality human input, assessment, development and research. LCPP are one of the organisations at the forefront of developing this technology and, through

large scale tests held within a derelict apartment building in Paris on 16th – 19th February 2009, will continue to provide important contributions to this research field.

Conference evening meal

All delegates attending the conference were invited to attend the Conference Evening Meal at 7:15pm on Monday 15th September 2008. The evening meal was hosted by Northumberland Fire and Rescue Service within the banqueting suite at the conference hotel. Delegates were treated to a Northumbrian themed menu with Northumbrian entertainment provided by David Bailey, Northumbrian Piper to the Chief Constable of Northumbria Police and the Lord Mayor of Newcastle upon Tyne. The aim of the meal was to allow delegates the opportunity to converse and network with colleagues from across Europe within a comfortable setting and atmosphere. While the open-plan seating arrangement that was adopted allowed flexibility for the delegates, the organisers did decide that future events should consider devising a table plan to ensure that delegates from multiple countries are sat at all of the dining tables. This strategy would have further enhanced cross-border communication and discussion. The conference meal, however, was very well received by the delegates and there was an excellent atmosphere.

Evaluation of the conference

The thorough post-event evaluation process[34] completed by the project partners concluded that "The Fire Crime in Europe Conference 2008" was an extremely successful event. The full post event evaluation report concluded that the structure and strategies deployed during the design and delivery of the conference provide an excellent model for the design and delivery of future international fire crime conferences and/or other similar events. All elements of the conference design and delivery were positively received by the majority of delegates who completed the feedback forms. Most importantly, the conference met, and in a number of cases exceeded, the expectations of those who attended.

Of those who completed the feedback questionnaires, 93% stated that the venue was suitable and 96% stated that their expectations had been met. In addition, 98% of respondents replied that the event had been useful/informative. This alone is excellent basic feedback concerning the delivery of the event. The feedback questionnaires also requested that delegates rate other specific elements of the conference using an attitudinal scale (see Figure 6, overleaf). Delegates who completed the feedback questionnaires were very positive about the selection of presentations[35], the pre-event organisation, the onsite organisation, the conference meal and the general event catering. 93% of respondents rated the selection of presentations as "excellent" or "good" while,

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[34] The post-event evaluation process consisted of three key elements: analysis of feedback questionnaires completed and returned by delegates attending the event; a debrief meeting attended by key individuals and organisations involved in the design and delivery of the event; and post-event correspondence between the project officers and some of the delegates who attended.
[35] The delegate feedback questionnaires also collected feedback concerning each individual presentation/ speaker. This feedback was forwarded to each individual speaker in order to provide them with constructive comments to aid their own personal professional development. All of the speakers were grateful of the feedback they received. The organizers decided it was not appropriate to make this personalised feedback publicly available.

99%, 99%, 89%, and 95% of respondents respectively rated the pre-event organisation, onsite organisation, conference meal and general catering to be either "excellent" or "good". This feedback allowed the conference organizers to conclude that there was a very high level of satisfaction among the delegates who attended.

Delegates were given separate feedback forms during the workshops in order to collect feedback specific to each of the three sessions. The feedback collected via these forms was again exceptionally positive; all of the workshops received high satisfaction indexes for all of their key components (see Figure 7, overleaf). Some delegates provided some constructive comments and these were conveyed to the workshop leaders in order to assist their professional development and to provide points of reference for fine-tuning the design and delivery of future workshops. All of the workshop leaders were grateful for receiving delegates' feedback concerning their workshop.

Figure 6 – Feedback from delegates regarding "The Fire Crime in Europe Conference 2008"
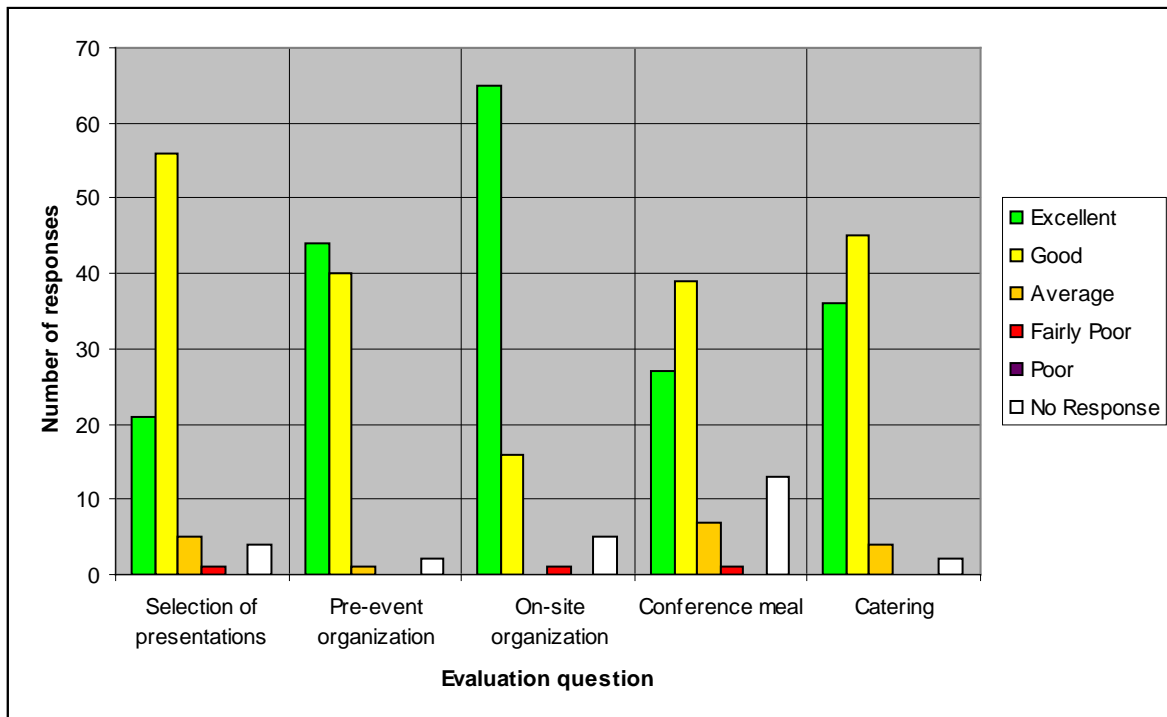
In order to fulfil the final key aim of the conference, which was "to gauge support for the creation of a formal European Network of Arson Practitioners", specific questions were included within the delegate feedback questionnaires. Firstly, delegates were asked if they thought a European Network of Arson Practitioners would be useful in the fight against fire crime. Figure 8 (overleaf) indicates that responses were fairly unanimous, with 91% of those who responded stating that a European Network would be useful. The feedback from delegates regarding the creation of a formal European Network supported the opinions and visions of the project partners: a European Network of Arson Practitioners is required to facilitate long-term cross-border communication and information exchange throughout Europe. While small networks exist to connect some specialists, there is no comprehensive and all encompassing network that links and connects arson practitioners from multiple professional fields. Research completed during the project[36] has found that multiple organisations have a vested interest in arson prevention and investigation, and that close partnership working between different agencies has yielded some extremely successful results. A formal European Network like that proposed by the project team could extend partnership working, cooperation and collaboration at the European scale. The Network that has been created is already achieving a greater level of connectivity and, if this Network were to be formalised, it could achieve even greater levels of cross-border interaction among arson practitioners.

Figure 7 – Feedback from delegates regarding workshop sessions delivered at "The Fire Crime in Europe Conference 2008"

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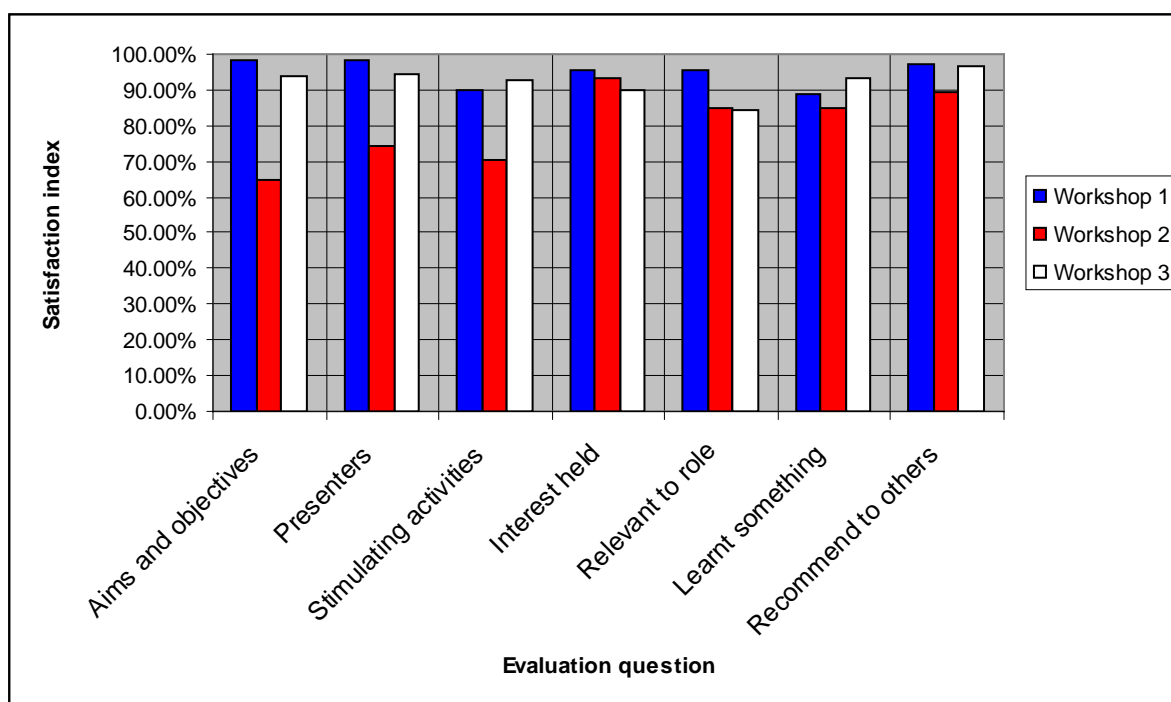
[36] See section 4 of this report which discusses the questionnaire survey data.

Figure 8 – Support for the formal creation of a European Network of Arson Practitioners amongst delegates attending "The Fire Crime in Europe Conference 2008"
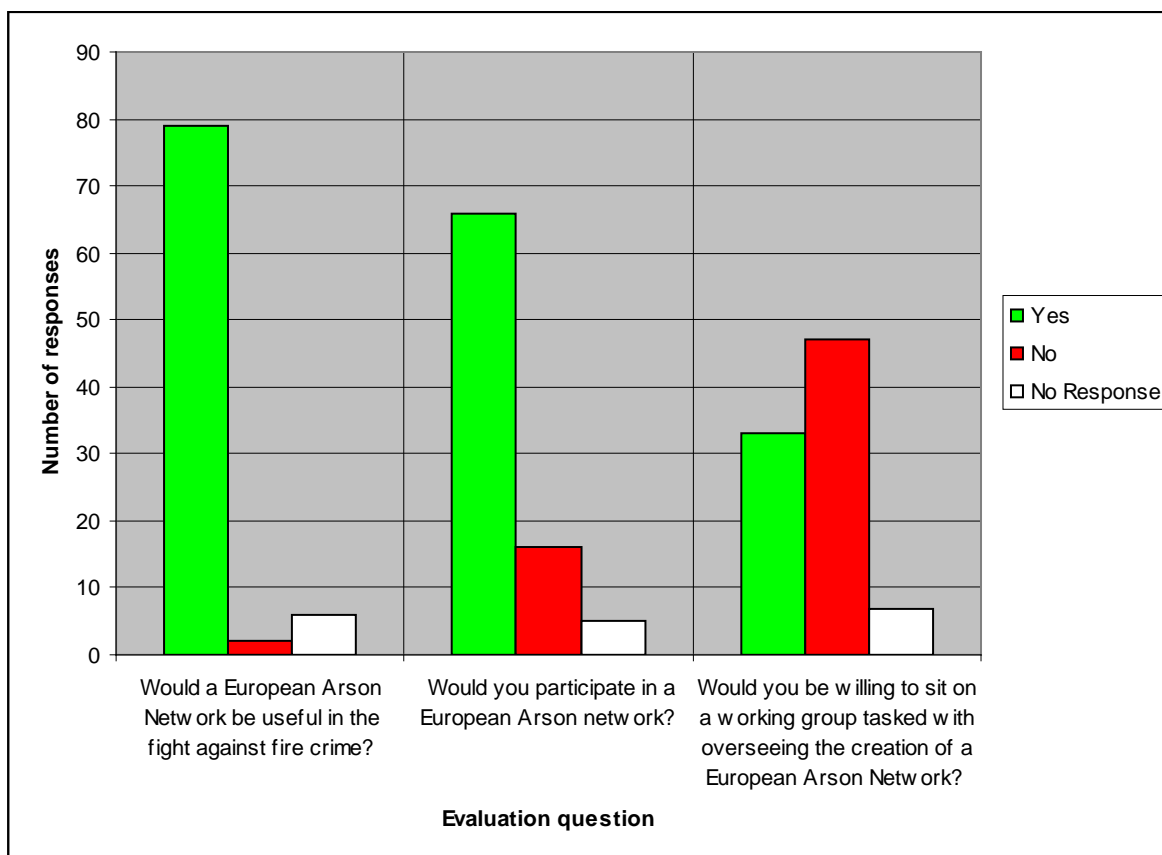
Conclusions of the conference and recommendations for future events

The organisers determined during the evaluation process that all five key aims of the event had been successfully achieved. Firstly, all of the presentations and workshop sessions delivered at the event were successful in raising awareness of best practice in effective methods in preventing and investigating arson. Secondly, the event successfully provided a forum for the elaboration of lessons learned and, thirdly, provided the opportunity for networking between European arson practitioners. Finally, the conference successfully gauged support for and promoted the proposed creation of a web-based system and formal European Network of Arson Practitioners.

In summary, it was concluded that three key factors contributed to the overall success of the event. It is recommended that these three key factors are acknowledged in the design and delivery of future European fire crime conferences.

1. The first key factor was the team of external contractors commissioned to provide facilities, equipment and services for the event. All of the external contractors were extremely professional and made significant contributions towards the smooth delivery of the event.

2. The second key factor was the team of speakers, workshop leaders and the chair who provided the main content of the event. All of these individuals were extremely knowledgeable in their subject area and completed a significant amount of work to design and deliver their presentations and/or workshops.

3. The final key factor was the number of individuals and organisations from across Europe that wanted to attend and contribute to the event. Demand for places far exceeded supply. The fact that 21 countries were represented is an excellent achievement and an indication that fire, police, forensic, forestry, insurance and other government agencies across Europe view fire crime as a significant problem that requires innovative prevention and investigation solutions.

The post-event evaluation process generated two additional key recommendations[37]. The first key recommendation was that future European fire crime conferences are both needed and viable. There was a significant level of support for future events from those who attended the conference and there were 13 speakers/presentations that could not be included within the conference schedule but which could be included within future conferences. In addition, there has also been a significant level of support for future events of this nature from the members of the European Network of Arson Practitioners, many of whom had wanted to attend the 2008 event. It is the opinion of the project partners that future Fire Crime in Europe Conferences could be hosted on a biannual basis. The conference organizers also believe that the location and responsibility for the design and delivery of future events should migrate around Europe. This will ensure that a variety of approaches are presented and that individuals working in countries not represented in the 2008 delegation might perhaps have a better opportunity of attending future events[38]. The organizers of "The Fire Crime in Europe Conference 2008" now have the experience of delivering a successful European conference on fire crime and would like to welcome other organisations to take responsibility for future events. The project partners are more than willing to provide guidance, assistance and support to any future hosts.

The second key recommendation is that future European fire crime events should attempt to increase European cooperation and participation as far as possible. The event would have been even more successful if delegates had been enlisted from all 33 European countries included within the wider project. Despite this slight shortcoming, the conference was still incredibly successful to have enlisted delegates from 21 countries as this level of inclusiveness is extremely difficult to achieve, particularly when it is considered that the project team began in 2007 with contacts in only a small number of countries. The achievement of the first Fire Crime in Europe Conference should be built upon with the organisers of future conferences considering ways of increasing the participation of countries not represented in the 2008 delegation.

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[37] The full "Post-Event Evaluation Report" also presented 11 very specific recommendations for fine-tuning the design and delivery of the event.
[38] Some of the individuals who were interested in attending the event could not attend due to the distance/relatively high cost of travel between their country and the UK.

9. Sharing activity reports through exchanges

The central focus of the project was to stimulate cross-border exchange of information, best practice and experiences among arson practitioners in Europe. The project activities and outputs described during the earlier sections of this report focused upon gathering and disseminating information via telephone, email and postal communication. However, the project team also deemed it necessary to complete a number of face-to-face meetings with practitioners throughout Europe. A number of these meetings were arranged during the project and it was during these meetings that activity reports were exchanged by the partners and other European organisations. Some of the activity reports collected have been included within the European Database of Best Practice in Arson Prevention and Investigation for the wider European arson practitioner community to access. Some of these reports were highly specific to particular practices or initiatives, while other activity reports related to the more general activities of the organisations involved. The exchange visits that were completed during the project will now be discussed in more detail during the following sub-sections.

Exchange visits completed during the project

Four formal exchange visits were completed during the project. These included:

- 3rd - 10th September 2007, exchange visit (as part of the Fire Investigation Training Workshop) hosted by The Fire Service College in Poznań (Poland). Meetings were attended by officers from Northumberland Fire and Rescue Service (NFRS), Northumbria Police, the Poznań Police, P.Z.U. Insurance Wielkopolska Branch, Regional Headquarters of the State Fire Service in Poland, and The Fire Service College in Poznań.
- 25th October 2007, exchange visit hosted by Laboratoire Central de la Préfecture de Police (LCPP) at LCPP headquarters in Paris (France). Meetings were attended by officers from NFRS and LCPP.
- 5th June 2008, exchange visit hosted by NFRS at NFRS Headquarters in Morpeth, Northumberland (UK). Meetings were attended by officers from Northumbria Police, LCPP and NFRS.
- 20th November 2008, exchange visit hosted by LCPP at LCPP headquarters in Paris, France. Meetings were attended by officers from NFRS, Northumbria Police and LCPP.

Meetings and conferences attended by the project team

In addition to the aforementioned exchange visits completed by the project team, the project officer also met with practitioners working in various locations around the UK during conferences and specifically scheduled meetings. The following meetings were deemed especially important for the successful completion of the project as they involved members of the project team meeting with representatives of national and regional bodies responsible for fire investigation and arson prevention:

- Meeting in London (UK) on 14th April 2007 between members of NFRS and the Communities and Local Government Department[39] (A department of UK Central Government). The meeting was attended by officers from NFRS, CLG and BRE (Building Research Establishment Ltd).
- Meeting in London (UK) on 22nd February 2008 with the Chairman for the South East England Wildfire Group (SEEWG) working for the Forestry Commission in the South of England. This meeting involved discussions concerning the project, including possible contributions from the Forestry Commission, and discussions concerning the development of a wildfire statistics document for the UK.[40]

In addition to the two aforementioned meetings, the project team attended a number of other events that were not forecast within the initial project budget. Travel, accommodation and subsistence costs for attending the events listed below were paid by Northumberland Fire and Rescue Service[41] and/or the conference organisers. NFRS decided that it was important for project personnel to attend these events in order to develop broader skills, knowledge and contacts within this field and to disseminate the findings of the project to a European audience:

- "*Arson Conference 2007: Best Practice - Where are we now?*", held on 15th May 2007 and hosted by the Performance Improvement Family Group 4 at the Tall Trees Hotel, Yarm, Cleveland (UK).
- "*Arson – New Initiatives Conference*", held on 2nd October 2007 and hosted by West Midlands Arson Task Force at West Midland Police's Tally Ho Police Training Centre, Birmingham (UK).
- Meeting at Merseyside Fire and Rescue Service Headquarters (Bootle, Liverpool, UK) on 21st February 2008 with the Director of Knowledge and Information Management and Special Projects Officer.
- "*Arson Seminar*", held on 15th and 16th July 2008 at Nottinghamshire Fire and Rescue Headquarters. The event was organised by the Performance Improvement Network.
- "*Annual General Meeting and Annual Training Seminar*", held on 28th January 2008 and hosted by the Fire Investigators Association of Ireland at the Dublin Fire Brigade Training Centre, Dublin, Republic of Ireland[42].
- "*Conference on the Investigation of the Origin and Causes of Fires*", to be held on 20th and 21st February 2009 and hosted by Asociación Nacional de Investigadores de Incendios de España (ANINCE) in Seville, Spain.
- North East England Fire Investigation Practitioners Forum to be held in March 2009.

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[39] Specifically, this included members of the Fire and Resilience Directorate who have overall responsibility for the work of the Fire and Rescue Services in the UK.

[40] Specifically to discuss "arson" or "deliberate" wildfires and the key issues associated with recording these types of wildfires. Information collected during this project was directly fed into the development of the wildfire statistics document.

[41] In the case of the *"Arson – New Initiative Conference"* in Birmingham (UK), and the *"Conference on the Investigation of the Origin and Causes of Fires"* in Seville, accommodation and subsistence were paid for by the conference organisers because project personnel attended the events as invited speakers.

[42] Although the conferences in Dublin and Seville, and the meeting in the North East of England, were outside the duration of the project, project personnel were invited by the conference/meeting organisers to attend and present the findings of the project. Attendance at these events forms an important element of the project dissemination strategy.

Benefits to the project of the exchange visits, meetings and conferences

The benefits that were gained by the project team's involvement in exchange visits, conferences and meetings were numerous and included:

- Excellent opportunities to network with arson prevention and investigation practitioners from the UK;
- To identify other potential project contacts throughout Europe via UK practitioners with pre-established cross-border communication channels;
- Promotion and dissemination of the project objectives and outputs to a UK audience;
- Promotion and dissemination of the project activities and outputs to individuals from other European countries;
- Informing the UK Government (through CLG) about the project work and progress and discussions of how the project work will be used to inform future national policies and practices;
- Identification of common objectives and linkages between the project and other projects/activities being completed in the UK and in other European countries;
- The development of new partnerships between the project partners and other organisations involved in arson prevention and investigation.

In addition to exchange visits and attendance at conferences and meetings, the project team met with more than 100 individuals involved in arson prevention and investigation during the Fire Crime in Europe Conference 2008 (more detailed discussion about this event can be found later in this report). This event provided a good opportunity for many organisations in Europe to exchange activity reports concerning fire crime.

Conclusions and recommendations concerning exchanges visits and sharing of activity reports

The partners had envisaged that the project would involve a greater number of exchange visits; however, fewer visits were completed than were initially predicted and budgeted. While the exchanges that were completed were extremely fruitful for all involved in terms of the exchanges of information and experiences that occurred, the project team were extremely successful in creating and maintaining excellent communication links with a significant number of practitioners within European countries, as is evidenced within the results presented in other sections of this report. During the project design, the project team had assumed that such effective links could not be developed without face-to-face meetings and exchanges. Fire investigation and arson prevention are necessarily very sensitive and confidential professions, and it was believed that "cold-calling[43]" on practitioners would not yield very effective results in terms of identifying best practice and exchanging information and experiences. The experience of this project, however, suggests that this was perhaps an incorrect assumption. While the face-to-face meetings/exchanges did provide an excellent opportunity for discussion and debate and were successful in cementing strong cross-border partnership bonds between participating

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[43] A basic translation of cold calling is "the sending of correspondence to an individual who is unaware that they will receive this correspondence". The sender and recipient often have no prior history of communication with one another, as is the case with most "cold calling".

organisations[44], many professionals across Europe were more than willing to communicate and exchange information via email and telephone correspondence[45]. For the purpose of this project, a mixture of face-to-face meetings (including the delivery of The Fire Crime in Europe Conference 2008) and communication via email and telephone ensured an extremely successful process of information exchange.

By scheduling fewer exchange visits, the project partners were also able to fund a greater number of speakers to attend The Fire Crime in Europe Conference 2008. The original budget only allocated funds for travel, accommodation and subsistence for 10 speakers to attend the conference. However, the project team were inundated with information about excellent initiatives, policies and procedures that would be of significant interest to the European audience that would attend the conference. Some of the funding not used for exchange visits by the partners was used to cover the costs of travel, accommodation and subsistence of additional speakers that were added to the conference schedule. The benefits of bringing more speakers to the conference extended far beyond the scope of the project partners to all individuals and organisations represented at the conference. The project team believe that this amendment to the budget was of significant importance for promoting greater cross-border communication, and for contributing to the success of the conference and the wider project.

The level of information exchange and the number of activity reports and documents that were shared between organisations during this project was only sustainable and viable because an officer was employed to work full-time on the project. This form of cross-border interaction and coordination cannot therefore continue beyond the life of the project. The project team recommend that a permanent solution is developed and initiated in order to maintain cross-border communication concerning arson prevention and investigation. Without a permanent communication channel, practitioners cannot easily share activity reports, experiences and best practice examples with professionals working beyond their own localities, regions and countries. The recommendation of this report is ultimately that a web-based solution must be created and maintained. More specific recommendations regarding the design and functions of this web-based solution will be discussed within the next section of this report.

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[44] Organisations participating in the exchange visits have declared that partnerships will continue through ongoing collaboration and information exchange.
[45] For some individuals, communication via these means was preferable to face-to-face meetings because of the time and resources required to arrange and host meetings with colleagues from other countries.

10. Guidelines and recommendations for the practical implementation of arson prevention initiatives

The project team decided during planning meetings that it would be useful to develop guidelines and recommendations for the practical implementation of arson prevention initiatives. These guidelines were to be designed to be universally relevant to practitioners working to prevent fire crime in all European countries. The team were aware of guidance documents and training courses regarding the practical implementation of arson prevention strategies in some European countries, but believed that a reference document applicable to all European countries would be a valuable resource. The key benefits of producing this document are that it could be used as a valuable training resource for those newly employed in the profession of arson prevention and as a useful reference resource for experienced practitioners.

Design of the guidance document

While the project team had planned to develop a very comprehensive document, it was deemed necessary to change the initial project plan. There were two key reasons for this modified approach:

1. The project team identified, through the collection of data via the questionnaire surveys, that a significant amount of material would need to be collected, analysed and evaluated from across Europe in order to develop a comprehensive document.
2. The production of a more concise document would be more accessible to practitioners in all European countries, particularly for those with considerable workloads[46]. A more concise document could be read and more easily digested by a greater number of practitioners.

The past experience of NFRS and Northumbria Police has shown that identification, analysis and evaluation of arson patterns and potential arson risks, coupled with a constant reappraisal and, where required modification, of existing prevention strategies is of key importance to fire crime prevention. If you do not know if there is a problem (i.e. a hotspot of arson fires), what the problem is (what types of arson fires these are), how serious the problem is, or how effective your prevention strategies actually are, then you do not have the information required to develop effective approaches to preventing and reducing the problem. Using this experience and knowledge, the project team decided that the most appropriate design for the document would be to present and briefly explain some of the key theories and models that have been developed and successfully applied to crime prevention and problem solving, with specific reference to their relevance to fire crime prevention. Compilation of the document therefore necessitated a literature search using the Internet and via information collected from project contacts over the course of the project.

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[46] A number of practitioners liaised with during the project commented that they were responsible for both arson investigation and arson prevention. While it is necessary for arson prevention and arson investigation practices to be interlinked and coordinated, individuals with responsibility for both of these two key areas are sometimes extremely busy and cannot dedicate as much time to prevention strategies as an individual employed full-time to prevent fire crime. Obviously, it should not be overlooked that workloads and responsibilities can be determined by a number of factors not mentioned here.

Rather than providing answers concerning the specific design of arson prevention strategies, the material contained within the guidance document is intended to provide a useful framework or process through which arson prevention practitioners can develop successful and innovative prevention strategies. Armed with a basic framework, practitioners can apply the recommendations and models to any scenario and any type of arson fire, irrespective of location or jurisdiction. By compiling a number of models and theories into one easily digestible document, this output significantly reduces the amount of time and effort that practitioners would need to invest to select and read a collection of material relevant to this subject.

Summary of the material contained within the guidance document

The key constituent parts of the guidance document include sections dedicated to the following topics:

- **Introduction –** This is a very brief section which outlines the structure of the document and those practitioners that might be interested in reading its content.

- **Common motivations for arson –** This section takes the form of a concise reference table that lists and describes the common motivations for deliberate fire-setting. Although many practitioners are no doubt aware of the different motivations for arson, it is always useful to survey a summary table of this information to ensure that particular motivations are not overlooked when designing and implementing prevention initiatives. This section also emphasises that there may be multiple, rather than singular, motivations for an arsonist's behaviour, but the identification of individual primary motivations is important for the development of appropriate prevention strategies.[47]

- **Collection, analysis and interpretation of data on fire crime** – This section emphasises the importance of collecting and analysing good quality data on fire crime and the importance of data sharing between different stakeholder organisations.

- **Problem solving theories and models to support fire crime prevention -** This is the key section of the document which provides a brief overview of a number of diagrams, tables and models related to problem solving approaches and relevant crime prevention theories that should be incorporated into fire crime prevention strategies. The information presented in this section is derived from a wide literature base. One of the models, the SARA Model, was originally developed in the USA and is now used by crime prevention practitioners around the world.

- **Monitoring and evaluating fire crime prevention initiatives –** This section provides some general guidance related to monitoring and evaluating fire crime prevention initiatives. Specific reference is given to setting realistic and achievable targets for arson prevention initiatives.

- **Basic theories of criminality and crime prevention to inform crime prevention initiatives** – This section outlines some of the basic theories of criminality, including the theories underpinning the academic fields of environmental criminology and situational crime prevention. Specific reference is made to "Routine Activity Theory", which was proposed by Cohen and Felson (1979)[48], the problem

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[47] As argued by Canter and Almond (2002:18) in: Canter, D. and Almond, L. (2002) *The Burning Issue: Research and Strategies for Reducing Arson (*Office of the Deputy Prime Minister: London).

[48] Cohen, L. and Felson, M. (1979) 'Social change and crime rate trends: A routine activity approach', *American Sociological Review*, 44, 588-608.

analysis triangle and Ekblom's (2001)[49] "conjunction of criminal opportunity". Specific reference is also made to the four themes of crime opportunity reduction presented by Townsley and Pease (2001)[50].

- **Fire investigation: a key part of effective arson prevention strategies** – This section outlines why fire investigation is an important part of overarching arson prevention strategies. A list of some of the key benefits of good quality fire investigations is included.
- **Useful References –** this section lists useful references, identified over the course of the project, which may provide further useful information for the implementation of fire crime prevention initiatives.

Dissemination of the guidance document

The guidance document has been developed over the entire course of the project. It has taken this length of time to identify useful and appropriate resources, documents, tools and models. The project team have also constantly edited and modified the content of the document in order to ensure the document remains concise and highly relevant. Now that the document is complete, the document will be disseminated along with several other completed outputs (including the Fire Investigation Training Modules) to all members of the European Network of Arson Practitioners. In addition, the project team will disseminate this resource through advertisements on the project partners' websites and the websites of supportive external organisations. Finally, all of the resources produced during the project will be promoted and disseminated through follow-up magazine articles that are scheduled for compilation and publication.

Future development of the guidance document

There is scope for future review and improvement of the guidance document. The document currently includes a good selection of material primarily because researchers in the UK and USA have been particularly active within this research field over the last three decades and, as a result, much of the research produced has been produced and published in English. Consequently, the document currently only contains information in English. Nevertheless, the guidance document may be further strengthened by the inclusion of material produced in other European languages.

In order to maintain the reliability and appropriateness of the document, Northumberland Fire and Rescue Service will conduct an annual review. Where and when appropriate, the document will be modified to incorporate new material. This is sustainable in the medium-to long-term because NFRS must complete this work for its own arson prevention strategy. NFRS is now well placed to identify and collect new and relevant information from various sources in Europe. The document and its development could eventually become the responsibility of the working group created to oversee the creation and development of the formal European Network of Arson Practitioners, although this is not a necessity.

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[49] Ekblom, P. (2001) *The conjunction of criminal opportunity: a framework for crime reduction toolkits* (London: Home Office)

[50] Townsley, M. and Pease, K. (2001) *What makes a good SARA?* (unpublished document accessible at: http://www.crimereduction.homeoffice.gov.uk/saramersey.pdf)

11. Recommendations for a secure web-based platform for a European Network of Arson Practitioners

The project team have developed recommendations for a secure web-based platform. These recommendations have been formulated through a process of gap analysis involving the evaluation of a number of existing website systems. The recommendations have also been developed after discussion of ideas with various skilled professionals involved in the two professional fields of knowledge management and fire crime prevention/investigation. The actual output that has been produced is a separate document in the form of a project tender/business case. This document was written over the entire course of the project, incorporating information, opinions and ideas expressed by various parties while the project developed[51].

Evaluation of existing websites

The six websites that were evaluated as part of the gap analysis are listed below. Most of these websites had been created for previous European Commission-funded projects within fire or emergency service related fields. Further details concerning the evaluation of the specific websites is contained within the full document of recommendations produced by the project team.

> **AMIRA Project (Advanced Multi-Modal Intelligence for Remote Assistance)**
> http://www.amira.no/index.php
>
> **EU Exchange of Experts in Civil Protection and Marine Pollution**
> http://www.exchangeofexperts.eu/
>
> **European Virtual Academy (EVA)**
> http://www.evanetwork.net/
>
> **National Fire Fighter Near Miss Reporting System (USA)**
> http://www.firefighternearmiss.com/home.do
>
> **European Crime Prevention Network (EUCPN) Website**
> http://www.eucpn.org/
>
> **Microsoft SharePoint Website hosted by Merseyside Fire and Rescue Service[52]** Access is not available to the general public

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[52] This particular site was different to the other five evaluated. Firstly, it did not have any publicly accessible areas, unlike all of the other sites. And, secondly, the site had been earmarked for use by another project but was no longer required. The system was kindly made available to the project team for use as a temporary prototype system. This site was the last to be evaluated and so the majority of the recommendations had been formulated. After evaluating the site, it was determined that the site fulfilled the majority of the recommendations and also delivered some additional functions and capabilities not offered by any of the other systems (outlined later in this section of the report). Further details are included later in this report.

The need for a web platform and summary of recommendations

At present, there is no web system or site that connects arson practitioners working across Europe yet the general feeling expressed by delegates attending "The Fire Crime in Europe Conference 2008" was that such a system would be extremely useful and important. The key recommendation of the project team is therefore that a secure web platform should be created in order to provide a permanent forum for the cross-border exchange of best practice information related to arson prevention and investigation. Such a web platform would provide instantaneous access to information and rapid exchange of information, experiences and ideas. This project has successfully stimulated a significant degree of cross-border communication during the short term; however, the creation of a suitable web platform will ensure that this can be sustained during the medium- to long-term.

The project team have devised a list of specific criteria for the proposed web platform to connect European Arson Practitioners. These state that the platform should:

1. *Be securely accessible to only verifiable professional persons working in Europe* – The site must include password protection through a secure username and password system. This will ensure potentially sensitive information regarding preventative and investigative techniques is not shared with potential fire setters.
2. *Be easy to navigate* – ideally everything the user may require should be accessible from the home page of the website. Basic computer training and experience should be sufficient to allow users to navigate and use the site effectively.
3. *Use consistent fonts and colours* - so that information is clearly visible and is appropriate to the website subject matter. The site should be branded to make it easily identifiable so that users accessing multiple windows can quickly identify the site.
4. *Include a number of key functions* – The site must have the following functions: a calendar of events; discussion forums; separate workspaces for any separate sub-groups of the network that are formed;
5. *Include a detailed site map* – this should outline all of the sections, sub-sections and different pages included within the site;
6. I*nclude an interactive map where information specific to an individual country can be accessed by clicking on respective countries* – this would allow users to access country specific data quickly and efficiently. This could include, for instance, best practice developed within specific countries, contact details of individuals involved in the network from specific countries etc. by clicking on respective countries.
7. *Include a page with contact details of personnel involved in the administration and organisation of the European Network -* This could include web links which, when clicked, will bring up a blank email addressed to the project contact so that users can directly email their requests to relevant individuals.
8. *Have the ability for forms to be submitted in electronic and paper format* – Including, but not limited to, electronic forms to contain information for inclusion in the European Database of Best Practice and Register of Experts.
9. *Have the ability for multiple document types to be uploaded onto the site* – The site must be able to include uploaded documents and files in all of the following formats: Microsoft Office (Word, Excel, PowerPoint, Publisher, Access); Adobe Acrobat; photographs; videos. It may also be desirable for the system to be able to support other document types.

10. *Include links to related external websites and organisations* – This could include links to other national professional organisations involved in arson prevention and investigation, EU and other transnational institutions, etc.
11. *Include information that outlines the purpose and mission of the site* – this should either be on the home page of the site or on another page that is easily identifiable and accessible from the home page.
12. *Be centred on the page* - This will ensure that users can view most of the information on the page without using the scroll bars.
13. *Include a search facility* - So that users can locate information required using a minimum number of mouse clicks.
14. *Have a thorough indexing system to facilitate a good search facility.*

In addition to this list of requirements, the project team have also identified a number of "desirable" attributes for the web system:

- *Ability for key users (such as administrators) to "push" and "pull" information to and from other users* - Essentially this is a system that allows key users to create alerts and generate automatic email messages. Some systems can generate these alerts/emails when new documents are uploaded to the system. The subsequent email informs users about the general details of the document that has been uploaded and can include a direct link to the document. This type of system is an excellent method for maintaining interest in the site.
- *Ability to be able to create and archive periodic case studies* – This is connected to the previous suggestion concerning maintenance of interest in the site. It would be useful for a site to be able to incorporate case studies of initiatives produced on a regular basis. These case studies should be visible on the home page and previous case studies (i.e. from previous months and years) could be accessible in an archive.
- *Ability to be able to see when other users are using the site at any one time* – Microsoft SharePoint sites and others utilising similar technology, use a similar system to that used by instant messaging services. This allows users to be able to quickly identify other users who are using the site at any point in time. If a contact of interest is using the site, a user can choose to send them an instant message.
- *Ability to create photograph and/or video libraries of past investigation cases and prevention initiatives.*
- *Ability to incorporate RSS feeds from other websites of interest* – For instance, European Commission and European Union websites and the websites of other national organisations related to fire crime. Sites incorporating RSS feeds are more likely to be designated by users as "home" or "favourite" pages. The reason for this is that information from other websites of interest is automatically fed into these websites and made visible to the user. Instead of viewing multiple sites, the user can read information from multiple sites on a single page.

The project team are currently awaiting the results of follow-on activities prior to presenting these recommendations to any external organisations. These follow-on activities were not included within the project plan and were only developed once significant support for the web platform had been identified. The circulation of a short questionnaire survey to project contacts, which is one of the key follow-on activities, is discussed in the next sub-section.

Future creation and development of a secure web-based platform

The project team believe that the work begun during this project to design and recommend a potential web-based system needs to be continued. In order to lend further support to the recommendations that have been developed during the project, and to ensure the timeliness of the recommendations, the project team are currently continuing to develop the recommendations for the web platform at their own time and expense. NFRS have devised a short electronic questionnaire to circulate to practitioners in order to gather information pertaining to needs and requirements for a secure web-based system. The questionnaire is currently being piloted to a small number of individuals from the network[53]. Once the pilot is complete, feedback will be gathered and analysed and any necessary changes will be made. The questionnaire is scheduled for circulation to all current members of the European Network on 20th March 2009. The comments and findings collected via the questionnaire process will be incorporated into the recommendations that the project team have developed. The recommendations are extremely useful in their current format; however, the project team believe that this additional work will lend further support and justification to the proposals.

Prior to the establishment of a permanent web solution, the information collected via the questionnaires will also be used to influence the design of a temporary prototype web system[54] that has been set up by the project team in partnership with Merseyside Fire and Rescue Service (MFRS) in the UK. MFRS have very kindly contributed staff time, resources and network space to the prototype system at no cost to the project team or the European Commission. The actual creation of a permanent system may take some time as financial backing and support must be sought from a number of stakeholders. The initiation of a temporary solution will ensure cross-border communication and interaction does not disappear before a permanent system can be created. The prototype is already under construction and has been designed using the recommendations developed during this project. The project team have begun to upload project documents and have edited the basic framework. The incorporation of findings from the electronic questionnaires will further ensure that the prototype system is closely tailored to the needs and requirements of the target audience: i.e. fire crime practitioners working in Europe.

The prototype system currently uses Microsoft Office SharePoint technology which facilitates greater levels of user interaction, manipulation and contribution than normal websites. Approved users of the prototype site[55] will be able to upload their own documents for others to see, create event notices within a calendar, contribute to discussion forums etc.[56], instead of relying upon a central administrator to monitor and maintain the site. This type of technology is more self-sustaining than traditional websites. Users will literally dictate what appears on the site, although administrators will also be able to "push" information to all users in order to stimulate interest and/or to request specific information.[57] Initial use of the prototype system will be monitored and any important findings will be added to the document of recommendations.

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[53] The pilot questionnaires have been sent to 30 individuals from 30 countries.

[54] At present the Microsoft SharePoint site does not have the capability to integrate an interactive map. The project team will continue to look for alternatives and/or solutions.

[55] All current and future members of the European Network of Arson Practitioners will be automatically sent a computer generated username and password to allow them to access the site.

[56] Subject to approval by the site administrator who will monitor document uploads.

[57] Web platforms need to be dynamic in order to maintain the interest of their users. If sites are not updated with new material, and/or new material is not "pushed" to users, then users may discontinue using a site.

12. Conclusions of the Project

The central aim of the project was *"to reduce the number and severity of arson fires set annually within European communities".* In order to achieve this, the project design was oriented towards identifying, collating and disseminating best practice in arson prevention and investigation throughout Europe. The underlying premise was that by sharing best practice in arson prevention and investigation, arson practitioners across Europe can be better equipped to prevent and investigate fire crime within their communities which would have a knock-on effect of reducing the number and severity of criminal fires set within Europe. Common sense logic suggests that there is adequate evidence that the project has successfully stimulated and coordinated greater cross-border communication and information exchange regarding successful prevention and investigation practices. The level of cross-border communication and interaction that has been achieved during the project is unprecedented within the professional fields of fire crime prevention and investigation. The new network that has been created is already working to make a difference, as exemplified by the following statement made by a fire investigator from the Netherlands:

> *"This is one of the benefits of the European Network!!!! An accident in Portugal with a Dutch product. If the network wasn't there, I wouldn't have a clue."* – Crime Scene and Fire Investigator in the Netherlands

This statement was made in response to an email circulated about a product produced in the Netherlands which had caused an explosion within a vehicle in Portugal. One individual was seriously hurt in the incident and the vehicle was significantly damaged. Without a link at the European level, information concerning this incident and the potential risks associated with the product, would never have reached arson practitioners and investigators[58] in the Netherlands. Prior to this project, there was no link and no forum through which this type of information could be exchanged between practitioners. Had the network not existed, investigators and other fire professionals in the Netherlands would have been unaware that a product produced in their country had caused such a serious incident in Portugal. This alone provides evidence of the significant value of the project work.

If the information and expertise that has been collected, developed and circulated during the project is incorporated and acted upon (obviously, where appropriate), then it is inevitable that the work undertaken during this project will help to achieve the central project aim: to reduce and prevent arson in Europe. The real benefit of this project is that positive results will be achieved as a result of relatively limited capital investment. Criminal fires are extremely costly to the economies of all European countries. In the UK, for instance, the total cost to the economy of reported arson in 2004 was estimated by the former Office of the Deputy Prime Minister to be £2,400,000,000[59]. When this figure is broken down even further, the total capital investment of this project was considerably less than the estimated average total cost of a fire in the UK involving a fatality, which was

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[58] Arson investigators require a deep knowledge of the possible causes of accidental and arson/deliberate fires so that they can accurately determine fire cause. Consequently, the European Network of Arson Practitioners has circulated important information related to the investigation of both accidental fires and arson fires, and will continue to do so.

[59] Office of the Deputy Prime Minister (2006) ''The Economic Cost of Fire: Estimates for 2004" (Office of the Deputy Prime Minister: London).

estimated to be £1,375,000[60]. Considering these high estimated costs, which are no doubt similar to the costs experienced in other European countries, and the comparatively low level of capital investment, even if the project only manages to help prevent a relatively small number of criminal fires in Europe, it will still deliver excellent value for money and excellent European added value. Fire crime is extremely damaging and reductions, however large or small, will bring significant benefits for European communities and for the environment. The wider implementation of successful arson prevention initiatives identified in this project will help protect people, property and the environment, thus promoting safer, healthier, happier and more attractive European communities.

Quantifying the success of the project by evaluating the project activities and outputs

The overall success of the project can be measured more precisely by looking in detail at the degree to which the specific project aims, objectives and outputs were all delivered. Evidence has been provided to suggest that the general aim of the project has been successfully achieved, however, it is important to also evaluate the more specific aims and objectives of the project in order to more comprehensively quantify the success of the project. At the project outset, three aims were identified. These were to:

1. Raise awareness of best practice across EU Member States and the Candidate Countries of effective methods in implementing arson prevention and fire safety measures
2. Provide an awareness of the reductions that can be made through prevention strategies and how this can be achieved through effective partnership working and a co-ordinated investigation process
3. Identify the value of establishing a web-based information and coordination network which can provide a formal platform for the exchange of tactical and operational information across the EU in fighting and preventing arson and fire crime.

The successful completion of the project aims rested on the successful completion of seven specific objectives contained within the project plan. To refresh, the seven specific objectives were:

1. Stimulate the exchange of information and best practice through effective networking in prevention and the investigation of arson
2. Promote cross-border cooperation and sharing of best practice through innovation in responding to new challenges.
3. Build inventories of best practice and experience.
4. Elaborate lessons learned in the fields of arson prevention and investigation.
5. Develop guidelines and recommendations for the practical implementation of arson prevention initiatives.
6. Elaborate training modules for fire investigation at different levels.

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[60] The 2004 report estimates the average economic cost of serious injuries as a result of fire to be £155,000 and minor injuries as a result of fire to be £12,000 (p15). It should be noted that these figures are set to rise in a new revised document which will incorporate the economic cost of fire estimates for 2006. It must also be noted that, while it is useful to quantify the economic costs of fires, the emotional and psychological costs to victims and communities are immeasurable and should not be underestimated. Indeed, the emotional and psychological costs of fires, particularly criminal fires, may be even more damaging than the costs to the economy.

7. Produce a formal network between specialists and bodies involved in relevant fields.

Evaluation of the project activities indicates that the majority of these objectives were achieved, and the achievement of some even surpassed expectations. The delivery of each objective will now be discussed in turn.

Firstly, the project has managed to stimulate the exchange of information and best practice through effective networking. This has been achieved both through the delivery of The Fire Crime in Europe Conference 2008 and with the project team acting as facilitators and mediators for the request and exchange of information between practitioners. Prior to the project there was only disparate cross-border communication between a small number of isolated practitioners. There is now a central communication point through which information or requests for information and/or advice can be circulated, albeit manually at present. Consequently, European arson practitioners are now much better connected than they were two years ago. It has been mentioned in earlier sections of this report and will be discussed later in this section, however, that there is still scope to further enhance the connectivity and interaction of this network.

Secondly, the project team have successfully promoted cross-border cooperation and sharing of best practice through innovation. The Fire Crime in Europe Conference 2008 brought together 174 delegates from 21 countries. Those who attended observed and discussed a number of innovative approaches to arson prevention and investigation that were presented by speakers and workshop leaders. The conference meal provided further excellent opportunities for practitioners to discuss best practice. Copies of the presentations delivered during the conference have also been distributed to a further 21 individuals who could not attend the conference but who were interested in the material presented.

Thirdly, the project team have built a database of best practice which can be maintained and built upon. The project team have also built a separate database, the European Register of Experts in Arson Prevention and Investigation, containing the contact details, qualifications and special skills of a number of experts in arson prevention and investigation from across Europe. Both of these systems are currently stored on the NCC computer system, with copies of original documents kept on file in case they are required for manual or electronic upload onto other systems. Both systems are flexible and can be amended and built upon in the future.

Fourthly, during the exchange visits and various correspondences via email and telephone conversations, the project team have elaborated lessons their organisations have learned in the fields of arson prevention and investigation. The project team have also begun elaborating the lessons learned by others.

Fifthly, the project team produced a set of guidelines and recommendations for the practical implementation of arson prevention schemes. The project plan had envisaged that a more comprehensive manual would be produced, however, after collecting information for the scoping study of practices adopted in Europe, the project team uncovered a significant level of variety and diversity in the arson prevention approaches adopted by practitioners working in European countries. Considering the quantity of information that would need to be collected, analysed and evaluated in order to adequately complete this task, the project team decided that it was not realistic to attempt to produce

a comprehensive and lengthy manual of recommendations within the project time frame. The project team re-evaluated the project plan and decided to place a higher priority on delivering key elements. Instead of producing a comprehensive manual, the project team decided to produce a more concise guidance document based on the experiences of the project partners and a small number of third parties. Indeed, the development of a more concise set of guidelines may actually be to the benefit of the wider community as this document may be used by a greater number of practitioners as a quick yet effective reference guide. The development of a comprehensive manual of recommendations may still be a useful exercise and could form the basis of a future project. It was only possible to identify that the initial plans for this objective were unachievable after collecting a significant amount of information via the questionnaire surveys. The project team therefore conclude that it was important on this occasion to adopt a flexible approach to the project plan, incorporating feedback and information collected during the project and using this to adjust priorities accordingly.

Sixthly, the project team have begun to "elaborate training modules in fire investigation at different levels". The modules have been elaborated in Poland in their entirety through the Poznań pilot and have been described and promoted in a number of magazine/journal articles published across Europe. The completion of the full pilot went beyond the scope of the initial project plan and the evaluation yielded very important findings that were used to further improve the modules for future delivery. The delivery of the pilot in Poland also contributed to the successful completion of previously discussed fourth objective as valuable lessons learned by the project team in Northumberland regarding good practice for managing multi-agency partnerships during fire scene investigations were elaborated to trainee Polish investigators. All investigators, irrespective of which country they work in, must have a sound knowledge of the scientific principles of fire investigation and the project team believe that they should also be aware of the benefits of close multi-agency partnership working. The strength of the training modules that have been developed is that there are no limitations as to where these modules can be delivered: they can be delivered in any country in Europe. There has already been interest from officials in Italy, Spain and Turkey who would like to consider using the training modules in the near future. The project team will continue to promote the training modules to a European audience during 2009 and 2010 and believe that other organisations will use them as a basis for delivering training to their employees. It takes considerable time to develop good quality teaching modules such as these and the provision of this resource to other organisations will save considerable time, money and effort. Organisations receiving the modules simply need to organize facilities for the training (for instance, lecture, training ground and catering facilities) and make small additions concerning country-specific information regarding national laws and protocols and report writing requirements.

Finally, the project has been very successful in producing a European network of specialists and bodies involved in arson prevention and investigation. A European Network of Arson Practitioners has been created, although it still needs to be formally and legally established. The network that has been created is considerably larger than the project team had originally anticipated and continues to grow beyond the completion date of the project. In addition, within this large network, a smaller group of experts is now accessible and contactable via the European Register of Experts in Arson Prevention and Investigation.

In addition to successfully achieving all of the seven specific project objectives, it can also be stated that the project has been extremely successful in terms of the outputs that were

produced. The initial project plan identified that 8 key outputs would be produced by the end date of the project. These included:

- To create a substantial European network of contacts working to prevent and investigate arson.[61]
- To create of a European Register of Experts in Arson Prevention and Investigation.
- To create a European Database of Best Practice in Arson Prevention and Investigation.
- To develop Fire Investigation Training Modules capable of being delivered in all European countries.
- To share activity reports and case studies through visits and exchanges between organisations.
- To produce recommendations for the creation of a secure web-based system to connect the European Network of Arson Practitioners.
- To develop guidelines and recommendations for the practical implementation of arson prevention schemes.
- To deliver "The Fire Crime in Europe Conference 2008".

All eight outputs were delivered during the project and many of these outputs were delivered to a more comprehensive standard than had been anticipated during the project plan. For instance, the project team began the project by setting an initial target of enlisting at least one contact from each country included within the scope of the project for the European network. At the conclusion of the project, considerably more individuals were enlisted in the network from most countries. As another example, the project team had aimed to enlist 33 individuals on the European Register of Experts; however, by the project completion date this target had been easily surpassed with 52 experts enlisted. In addition, there are other examples where the outputs actually delivered surpassed initial targets and expectations.

In addition to producing all eight pre-planned outputs, four additional outputs of significant value were delivered:

- A detailed evaluation of the pilot of the fire investigation training modules
- A detailed evaluation of the design, organisation and delivery of The Fire Crime in Europe Conference 2008
- A detailed scoping study of arson prevention and investigation practices adopted across Europe
- A prototype web-based platform that will be used to temporarily connect the European Network of Arson Practitioners

The fact that four additional outputs were produced provides further indication of the overall success of the project. By going beyond the scope of the initial project plan, the project team have achieved some remarkable results within a limited time frame and within the initial budget.

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[61] This contact network is currently being used to circulate information updates and requests to practitioners across Europe. The project team are receiving requests from practitioners in Europe and are circulating them to all individuals currently enlisted on the network. This process is yielded some great successes in terms of the identification and sharing of information and advice which is available, but often not easily identifiable, across Europe.

The keys factors contributing to the success of the project

There were a number of factors that contributed to the success of the project. The project partners believe that it is important to highlight some of these within this section of the report in order to provide the benefit of their experience to other organisations embarking, or planning to embark, upon similar international projects. Primarily, part of the success of the project can be attributed to the willingness of many other organisations to contribute to the activities that were delivered. There was a real desire among practitioners across Europe for the project to be successful and, in particular, for a European network of arson practitioners to be created. Without this willingness and enthusiasm, the network would not have been so large and the database of best practice and register of experts would have contained fewer entries. In addition to the general support that has been voiced regarding the formal creation of a European network, seven individuals/organisations from seven countries[62] have already pledged firm practical support for the network by nominating themselves to be part of the working group that will be formed in 2009. It is of significant importance that the project team have received this kind of commitment from a number of organisations. Importantly, the project team have generated a level of support which has helped to lay strong foundations for future work and the ongoing stimulation and maintenance of European cross-border communication and interaction among arson practitioners. The network will have a wide base of members and a central core of organisations that, with support from other external agencies such as the European Commission, can steer, guide and manage its daily, medium- and long-term functions. In conclusion, international projects of this nature must be designed so that they aim to deliver activities and outputs that the target audience in all participating nations actually want and need. The key strength of this project was that it produced outputs and aimed to achieve goals that practitioners across Europe supported.

Another key factor contributing to the success of the project was the significant level of European added value of the project outputs. By the project completion date, the European Database of Best Practice in Arson Prevention and Investigation contained 33 entries from 10 European countries, while the European Register of Experts in Arson Prevention and Investigation contained 51 experts from 17 countries. The Fire Crime in Europe Conference 2008 was also exceptionally successful in terms of European-added value, with delegates attending from 21 European countries and 30 speakers and workshop leaders from 9 countries who were involved in the delivery of various sessions. Indeed, the delivery of the conference alone was a significant achievement and, when coupled with the European databases and the fact that 534 individuals from 33 European countries have been enrolled in the European Network of Arson Practitioners, there is evidence of substantial value at the European level.

The project team have concluded that perhaps the key factor contributing to the success of the project was the comprehensive communication strategy that was devised and implemented. This strategy has been discussed elsewhere within this report, but, in summary, it involved a number of activities aimed at informing and disseminating information about the project. By informing both grass-roots level practitioners and senior decision-makers, the team were able to generate support for the project and achieve a

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[62] Working group nominees work in the UK, France, the Netherlands, Republic of Ireland, Spain and Sweden. The project team are also hopeful to obtain a nomination from an individual/organisation working in Eastern Europe in the near future. Representatives from several different regions of Europe within the working group will maximise the European added value of the future work of the working group.

high level of European added value. Informative magazine/journal articles and website bulletins published in a number of languages in a number of countries were a key first step towards promoting the work of the project, attracting interest and identifying possible sources of best practice information. Once interest had been generated in the project, however, it was of key importance that this interest was maintained. The informative articles were not enough on their own as there was a limit to how many could be produced. In order to maintain interest, the project team compiled and circulated quarterly progress reports and other regular informative emails. This follow-up strategy was extremely successful in maintaining interest among contacts and for establishing a level of trust in the project team and the project. It was also an easily sustainable technique as the project team needed to constantly evaluate the progress of the project to ensure effective project management. Regular progress reports highlighted to all project contacts that project work was being completed, that progress was continually being made, and that the project was producing real outputs of real significance for arson practitioners in Europe. It is suggested here that the communication strategy adopted for this project would be extremely useful and beneficial for future projects with similar aims of creating and maintaining European networks in any professional field.

In order to continue the process of mutual support and collaboration established between the project team and other contributing organisations, copies of all of the supplementary project reports will be distributed to all members of the network. In addition, copies of this final report will be circulated to the government ministries responsible for arson prevention and investigation within each country included within the project.[63] The project findings, recommendations and deliverables will therefore be circulated to practitioners via both a top-down and bottom-up approach. In addition, this final report will be uploaded onto the EC DG Environment website and to the websites of the project partners. A number of other organisations across Europe who are involved in arson prevention and investigation have also agreed to upload this report to their websites. This dissemination strategy continues the strategy that was successfully employed throughout the project. Individuals and organisations that did and did not contribute to the project can all learn about the outputs and recommendations that have been developed and can learn from the valuable experiences of the project team.

The project team will continue to disseminate the project findings and outputs to other interested parties beyond the life of the project. The partners have also pledged to continue to push the agenda and recommendations outlined in this report. This reflects the continued commitment of the project partners to achieving a more connected European network of professionals working to prevent and investigate fire crime. The work completed so far provides an excellent foundation from which to build upon with further improvements in cross-border connectivity, interaction and cooperation. This work may also provide a model and impetus for developments among arson practitioners working in other continents of the world. Interest in the project activities and outputs has already been expressed by practitioners working in North and South America, Australia and New Zealand, which suggests that the project may become an example and pathfinder for similar projects designed and delivered in other continents.

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[63] On average this amounts approximately 2 ministries within each of the 33 European countries included within the scope of the project.

The future – an ongoing mission to reduce and prevent fire crime through cross-border cooperation

While reductions in fire crime have been achieved in a number of European regions and countries over the last decade, fire crime still occurs and continues to pose a significant threat to life and property in all European countries. Even though some organisations have shared information regarding best practice, and those in receipt have used this information to positively inform their strategies for arson prevention and investigation, one incident of fire crime can have devastating consequences for life, society and the environment. One deliberate wildfire can destroy hundreds of thousands of hectares of vegetation and infrastructure, as has been seen in the wildfires in Australia in February 2009. One incident of wheelie bin arson can lead to flames spreading from the bin to an adjacent building and subsequently to any connecting buildings[64]. It should also be realised that the initial intent of a fire-setter may not always correspond to the actual outcome of their behaviour[65] (Brett, 2004[66]). Put simply, small fires which are not adequately controlled can soon turn into large and extremely destructive fires. Even if statistics of fire crime indicate that some organisations are successfully reducing and preventing arson, practitioners cannot become complacent. Innovative practices and initiatives are still required for fire crime prevention and investigation work in Europe to achieve its maximum potential. There are still missed opportunities and imperfect systems within most countries that, if developed using information from other European countries, could further reduce and prevent the devastating impacts of fire crime.

The project team envisage, as they have done since the outset of the project, that the outputs described in this report represent a foundation rather than a conclusion. More work is needed to continue to build upon the successes of this project. It is now the responsibility of practitioners across Europe to continue the work that has been started. Northumberland Fire and Rescue Service, Northumbria Police and LCPP remain committed to the central aim and agenda outlined in this report. However, they require assistance and collaboration from other organisations and individuals in order to ensure the success and longevity of the European Network of Arson Practitioners. The project team believe and hope that the European Network of Arson Practitioners will have a very exciting and productive future. While the success of this project has been incredibly important, the subsequent work that will be completed with regards to implementing a permanent network with permanent resources for European arson practitioners is as important, if not more so.

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[64] Some incidents of wheelie bin arson in the UK have resulted in injuries and fatalities due to the spread of fire and smoke to adjacent residential properties.

[65] For instance, a property fire lit by an individual intending to file a fraudulent insurance claim may burn out of control and threaten other neighbouring properties and human lives. On many occasions where this occurs, fire-setters have only intended to damage their own property; however, the consequences of their actions can sometimes be far graver than they had originally anticipated.

[66] Brett, A. (2004) ''Kindling theory' in arson: how dangerous are firesetters?' in *Australian and New Zealand Journal of Psychiatry*, 38, 419-425.

13. Project Recommendations

The work begun during this project needs to continue in order to achieve long-lasting cross-border interaction and cooperation. The project team have met and discussed their views, and the views of others, on the follow-up work that needs to be completed now that the project has concluded. A number of recommendations have been identified throughout various subsections of this report. While all of the recommendations made within this report are important, this final section of the report will identify and discuss the seven key recommendations of the project. In summary, the recommendations are:

1. Completion of additional future research into arson prevention and investigation practices adopted throughout Europe is recommended.
2. Compilation and regular analysis of National and European statistics on fire crime incidents is recommended.
3. Development of a more interactive and self-sustaining European Network of Arson Practitioners is recommended.
4. The formation of a working group to oversee the formal establishment of the European Network of Arson Practitioners is recommended.
5. Maintenance and development of new and existing resources for the European Network of Arson Practitioners is recommended.
6. Delivery of future European fire crime conferences is recommended.
7. Delivery and development of the fire investigation training modules developed during this project is recommended.

The project team and the individuals/organisations that will form the working group can work together to progress some of the recommendations outlined below, however, they cannot achieve everything that has been recommended without support from other organisations working at national and European levels. In particular, the project team hope that the European Commission, EUROJUST and Europol will all take note of the project recommendations and pledge support for future actions and activities. The project team highly recommend that all of the seven key project recommendations are completed in order to assist European arson practitioners in the mission to protect communities from the devastating effects of fire crime.

Recommendation 1 – completion of further research into arson prevention and investigation practices adopted throughout Europe

The project team recommend that more research into arson prevention and investigation practices adopted across Europe is required. The project questionnaire surveys, and the resultant scoping study that was produced, identified some of the similarities, contrasts and complexities with regards to prevention practices adopted in European countries; however, there was not time nor resources to complete a comprehensive study. The project team recommend in particular that the collection of further information into preventative and investigative practices adopted across Europe should be used to inform the development of a comprehensive manual of guidance and good practice for arson prevention schemes/initiatives. The project team were able to successfully create a summary guidelines document outlining some of the basic elements of good practice that were gathered from a small number of countries; however, the collection of further information could allow the development of a more detailed set of framework guidelines

which will be beneficial to all European countries, irrespective of whether they have a relatively high or low level of experience in developing and delivering arson prevention initiatives.

Recommendation 2 – to develop national and European statistics on all fire crime incidents

The scoping study completed during this project identified the complete absence of comparative statistics on arson/fire crime within and between European countries. At present there is no comprehensive attempt to quantify the amount of fire crime that occurs in Europe each year. It is apparent that fire crime is a problem in all countries, but statistics are not currently available to allow comparison between all European nations. There is no doubt that the lack of comparative statistics is possibly due to the fact that different countries use different definitions for fire crime and the fact that some countries do not seem to record and analyse statistics on fire crime incidents at all. However, this does not mean that it is not possible and meaningful to attempt to collect, collate, analyse and disseminate fire crime statistics for all European nations. There are three organisations that have collected fire statistics in Europe. The European Fire Academy has compiled statistics[67] on annual fatalities in fires in EU and non-EU countries in Europe but has not presented statistics on arson. A website called Nordstat.net[68] presents fire statistics from all Nordic countries[69], but again there is no compilation of arson statistics[70]. The CTIF Center of Fire Statistics already collects fire statistics for a number of European Countries and the questionnaires it circulates include a section recording arson fires. However, the most recent arson statistics it has presented are from the 1990s[71]: no fire crime statistics from 2000 onwards have been presented in its recent reports. It is also important to note that the data on arson statistics that was presented for the 1990s only consisted of total numbers of incidents. The data did not include any details about the individual incidents, for instance, the type of arson fire (vehicle, dwelling etc.), the location of the fire (residential area, rural area, road, field etc.) or the level of damage/injury caused. In order to compare and contrast fire crime occurring throughout Europe, more detailed statistics need to be compiled and analysed. The project team believe it would be a worthwhile and justifiable exercise to produce a regular European fire crime statistics document, although support for this exercise would be required at both the European and national level. If fire crime statistical data can be collected from all European countries then fire crime patterns, hotspots and problems can be identified, and perhaps also prevented, at the continental, regional, national and local scale.

The aforementioned work regarding the compilation of fire crime statistics is greatly needed so that nationally and internationally the extent of fire crime can be measured and monitored over time. If we cannot quantify fire crime then we do not know exactly how destructive and devastating it really is: all we know is that fire crime is a problem in all European countries and that it is extremely damaging to our communities. In addition, if we cannot quantify fire crime we are also unable to quantify the successes and/or failures of

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[67] http://www.europeanfireacademy.com/cms/show/id=675053
[68] http://www.nordstat.net/index.aspx
[69] Denmark, Finland, Iceland, Norway and Sweden.
[70] Arson statistics for some of the Nordic countries are included in additional reports uploaded onto the Nordstat website (http://www.nordstat.net/index.aspx): however, there is no easy way to compare arson statistics from all five countries.
[71] http://www.ctif.org/IMG/pdf/CTIF_report10_world_fire_statistics_2005.pdf

strategies and initiatives devised to prevent fire crime. This recommendation mirrors a recommendation made as part of another previous European Commission funded project which argued for the need for more high quality statistics on fire incidents in order to gain a better understanding of trends, problems and costs:

> *"Statistics and facts around fires are essential for all nations… Statistics need to be of high quality and well defined. In many cases there is good knowledge about response actions but less on causes, problems and losses in deaths and economy terms. More can be done in most nations to find effects, to identify and declare trends. There is also a need to better understand the differences when benchmarking is performed within and between countries." (Albinson, 2004: p5)*[72]

While the above quote mentions the need for more fire statistics, which would presumably be collected by Fire and Rescue Services, this project recommends more specifically that statistics regarding fire crime should be compiled, collated and analysed by multiple organisations, including Fire and Rescue Services and Police Services. The reason for this is that Fire and Rescue Services and Police Services are both responsible for the investigation and/or prevention of arson, at least in a number of European countries. In the UK, for instance, the Fire and Rescue Service and Police Service may not both always attend and record every deliberate fire that occurs. Consequently, if the Fire and Rescue and Police incident statistics are not compared and integrated then the true extent of fire crime is not accurately measured.

In connection with the recommendation that comparative fire crime statistics should be compiled, analysed and monitored, the project team recommend that those European countries that do not currently compile fire crime statistics must be encouraged to do so. The recording of incidents will help these countries identify problems and risks and formulate appropriate responses. The collection of detailed statistical data in the UK during the last decade has meant that the problem of arson has been quantified, appropriate targets have been set to reduce the number of incidents occurring each year, and authorities are now able to evaluate whether and to what degree their arson prevention initiatives have been successful. Without this good statistical base, the excellent preventative work that is currently being delivered across the country would not have been possible. Perhaps the best way to urge all countries to record fire crime incidents, and to improve the recording practices of all of those that already do so, is for a project to be initiated to formulate general guidance, applicable to all European countries. This piece of research would ideally look at the good practices already adopted by some countries and incorporate these practices and principles into an overarching framework of best practice. The research could also present findings from several countries that have successfully reduced fire crime in recent years, making particular reference to the number of lives saved and the level of damage (both environmental and economic) that has been prevented.

The final recommendation to make with regards to the recording of fire crime statistics is that any work undertaken to establish comparative European fire crime statistics will also need to incorporate thorough analysis of the varying definitions of fire crime that currently

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[72] Albinson, B. (2004) *"Prevention of Fires and Other Incidents: Report and Recommendations"* (Swedish Rescue Services Agency). The report formed part of a project devised and delivered by the Swedish Rescue Services Agency which was funded by the European Commission Civil Protection Unit (2000-2004).

exist across Europe. Without appreciating the different legal definitions and common understandings across Europe, any comparative data that is collected and analysed will be meaningless. Arson statistics will only be meaningful if they are framed within an appropriate context.

Recommendation 3 – to develop a more interactive and self-sustaining European Network of Arson Practitioners

The project team believe that the membership of the European Network of Arson Practitioners needs to be increased so as to include a greater number, and a more representative sample, of practitioners working in most European countries. The project team also recommend that the network needs to be made more interactive and self-sustaining. As has been illustrated by Figures 3 and 4 on pages 18 and 19, the project team have acted as a central point of contact during the project. The project team have successfully facilitated and stimulated communication between individuals and organisations, often relaying information from one individual/organisation to another. Indeed, the project team will continue to do this as far as is reasonably possible. However, mechanisms are now required to facilitate an even greater level of interaction and connectivity between European Arson practitioners. Rather than relying upon one centrally located organisation as a facilitator, a good European network needs to be more interconnected so that individuals and organisations can contact other individuals and organisations directly. In order to achieve a greater level of connectivity, structures and technologies must be created and implemented. As has been mentioned at various points throughout this report, the network requires a web-based platform. A permanent web platform would connect arson practitioners in such a way that they can communicate and share information from their own computer terminals. The prototype system is an excellent temporary solution; however, the lack of permanency means that future development of the system may be curtailed or restricted by third parties. A permanent solution will ensure the longevity of the system and resources and will allow the working group members to develop and modify the system as new requests and requirements are communicated by practitioners. Section 10 of this report highlights more specific recommendations regarding the content and functionality of a suitable permanent web platform, however, it is important to note here that a permanent system must be adaptable and modifiable so that it can take into account new trends, opinions, ideas and functions. A system that is suitable for practitioners today may not fulfil the requirements of the practitioners of tomorrow. The European Network of Arson Practitioners will need to be dynamic, and so too must its web platform.

Recommendation 4 – to form a working group to oversee the formal establishment of the European Network of Arson Practitioners

While the project team will continue to work towards the goal of achieving a formal European Network of Arson Practitioners, it is vitally important that other organisations are also actively involved in this process. The project team represent three types of organisations working within two European countries; however, the network developed during the project includes members in 33 European countries representing many more types of organisation. The formal network that is created must be truly European and those tasked with overseeing its creation and maintenance over the coming years must represent practitioners across the continent. It is therefore recommended that a working

group of organisations/individuals representing different types of organisations and multiple countries should be established. The project team have already gathered firm commitments from a number of organisations who are willing to allow their employees to become members of the working group and to complete some of the tasks necessary for creating and running the network. These volunteers represent organisations working to prevent and/or investigate fire crime in the UK, France, the Netherlands, Poland, Spain and Sweden. The project team now recommend that this group meets face-to-face and formulates a plan of action for the work to be completed during the coming year. The meeting should also involve collective decision-making regarding the allocation, monitoring and completion of key tasks.

The goodwill of the working group volunteers is extremely important for the future success of the network. However, the project team recommends that this goodwill must also be supplemented by political and financial support from other organisations, including the European Commission. While the ultimate goal is to create a self-sustaining and highly connected network, some form of financial contribution is required in order to achieve this state. Funding is required to cover network start-up costs which will include, but may not be limited to, the cost of meetings attended by the working group, the development of a web platform (discussed previously in Recommendation 3), the development of a mission statement, goals and objectives for the network, the development of an identity for the network, and the implementation of an effective communication strategy for the network. It is recommended that one of the primary tasks of the working group is to explore and request funding to cover network start-up costs. The working group must also work to devise a sustainability strategy to ensure that the network can function in the future with little or no financial contributions from external funding sources.

Recommendation 5 – *to maintain and develop new and existing resources for the European Network of Arson Practitioners*

The project team have created a number of extremely useful resources over the course of the project. These resources include: the substantial distribution list for the European Network of Contacts; the European Database of Best Practice in Arson prevention and Investigation; the European Register of Experts in Arson Prevention and Investigation; and eleven Fire Investigation Training Modules. The project team will offer these resources, and any other outputs delivered as part of the project, to the European Network of Arson Practitioners and recommend that the network continues to develop, maintain and disseminate these resources. In addition, the project team recommend that the network should consider developing new resources to cater for the needs and requirements of European arson practitioners both now and in the future. Resources developed during this project, and those developed during continuation activities following the completion of the project, should, as far as possible, be made available on the suggested web platform. This will improve access to the resources among members of the network. At present, members can access the resources by submitting a request to NFRS, however, by including the resources on a web platform this convoluted process can be significantly streamlined. It must be reiterated that the potentially sensitive nature of some of the resources requires that there should be an adequate level of security on the web platform to protect them against unauthorised access.

Recommendation 6 – to deliver future European fire crime conferences

Future European Fire Crime Conferences are needed to ensure that those working to prevent and investigate fire crime are informed of good practice approaches being developed and implemented across the continent. Without this link, there is no formal mechanism through which European colleagues can come together in one location to discuss innovative methods, approaches and experiences. The success of The Fire Crime in Europe Conference 2008 has proven that European conferences can be an excellent method for facilitating much-needed cross-border interaction within this professional field. The project team recommend that future Fire Crime in Europe Conferences should migrate around Europe with a different host organisation/country each time. This will ensure that different organisations have an opportunity of designing the events and including their own ideas and priorities. It also ensures that practitioners across Europe have a better opportunity of attending some of the events because events held closer to their country may reduce the burden of travel and subsistence costs for attending staff. This may be particularly important for practitioners working for organisations that have relatively small budgets for conferences/seminars.

Three organisations/countries have voiced their interest in hosting future Fire Crime in Europe Conferences and the project team will, where required, gladly support all of them by providing advice and practical assistance. Any organisations interested in hosting future European Fire Crime Conferences will be provided with a full copy of "The Fire Crime in Europe Conference 2008 Post Event Evaluation Report" produced during this project. The project team recommend that future conferences need to be financially supported by an organisation(s), either at the national or European level. The financial commitment of delivering such a conference is too great for many individual organisations to bear, especially considering the fact that host organisations are likely to need to commit funding prior to receiving any registration fees from delegates who will attend. The ideal situation is that future Fire Crime in Europe Conferences will be funded by an organisation, or by multiple organisations, so that delegate registration fees will not be required. This situation creates a highly inclusive event whereby delegates only need to pay costs of their own travel and accommodation. Funding for future events could be sought from public and/or private organisations (for instance, insurance agencies).

Recommendation 7 – delivery and development of the fire investigation training modules

The project team recommend that the training modules developed during this project should be delivered (in part or in their entirety) to all first responders in Europe who have not received relevant training. These modules provide a basic knowledge and understanding of forensic awareness and preservation at fire scenes which is of key importance for ensuring that high quality fire investigations are completed.

By completing high quality fire investigations, authorities in Europe have a better chance of identifying the exact cause of fires and, where fire crime has been committed, a better chance of identifying the perpetrator and bringing them to justice. The knock-on effect of this is that higher conviction rates for arsonists can also act as a greater deterrent to would-be fire starters, as well as removing perpetrators from society. In the case of fires started accidentally, high quality fire investigations will ensure that accidental causes are

accurately identified and that appropriate measures can be put in place to prevent and/or reduce future fires of the same nature. As Commissioner Hilko Kruise aptly stated in his presentation at "The Fire Crime in Europe Conference 2008", "fire investigation creates a learning organisation". Fire investigations can yield significant amounts of useful information. Investigators can learn how fires started (origin of the fire and the cause), how they developed, what affects any fire fighting activity had on the fire and the scene etc. All of this information can and should be used to positively inform improvements to organisations' policies and procedures. To provide one example of many, if a fire has been particularly destructive within a particular type of building, a fire investigation may identify faults in the building design and/or structural materials and this information may be used to improve the designs of existing and future buildings, thus reducing the likelihood of the same level of damage occurring elsewhere. For incidents of fire crime and accidental fires, thorough fire scene investigations completed by multiple agencies working in partnership together should be a key element of prevention strategies in all European countries. The completion of high quality fire investigations will lead to more convictions and act as a deterrent to other would-be fire-setters.

The project team also recommend that additional fire investigation modules should be developed to supplement and complement the existing eleven modules. In particular, the modules on the following topics should be developed by appropriate specialists: photography of fire scenes; investigative techniques for explosions; analysis of domestic/commercial appliance faults; awareness of laboratory analysis methods. These suggested modules should be developed in the same format as the existing modules as evidence collected from the Poznań pilot suggests that this format was very effective. It is also recommended that, in the near future, other training modules should be considered in the light of new emergent trends and/or priorities.

Appendix 1

Key to Abbreviations and Acronyms

AMIRA – Advanced Multi-Modal Intelligence for Remote Assistance
ANINCE - Asociación Nacional de Investigadores de Incendios de España
ATF – Arson Task Force
AVAIL – Abandoned Vehicle Action Information and Liaison Scheme
BRE – Buildings Research Establishment Ltd.
CLG – Communities and Local Government
CSA – Community Safety Academy
CTIF – International Association of Fire and Rescue Services
EC D-G – European Commission Directorate-General
ENFSI – European Network of Forensic Science Institutions
ENAP – European Network of Arson Practitioners
EU – European Union
EUCPN – European Crime Prevention Network
EUROJUST – European Union's Judicial Cooperation Unit
EUROPOL – European Law Enforcement Organisation
EVA – European Virtual Academy
IEDs – Improvised Explosive Devices
LCPP – Laboratoire Central de la Préfecture de Police
MFRS – Merseyside Fire and Rescue Service
NCC – Northumberland County Council
NFRS – Northumberland Fire and Rescue Service
PN ISI - Projet National Ingénierie de la Sécurité Incendie
RSS – Really Simple Syndication
SEEWG - South East England Wildfire Group
USA – United States of America

Key to Country Abbreviations

BE – Belgium
BG – Bulgaria
CZ – Czech Republic
DK – Denmark
DE – Germany
EE – Estonia
IE – Ireland
IS - Iceland
EL – Greece
ES – Spain
FR – France
HR – Croatia
IT – Italy
CY Cyprus
LV – Latvia
LT – Lithuania
LU – Luxembourg

HU – Hungary
MK – Republic of Macedonia
MT – Malta
NL – Netherlands
NO - Norway
AT - Austria
PL - Poland
PT - Portugal
RO - Romania
SI - Slovenia
SK – Slovak Republic
FI - Finland
SE - Sweden
CH - Switzerland
TR - Turkey
UK – United Kingdom

Appendix 2

The Northumberland Arson Task Force – A Best Practice Approach to Preventing and Investigating Arson

The Northumberland Arson Task Force (ATF) is a multi-agency task force that currently consists of 12 personnel from Northumberland Fire and Rescue Service (NFRS) and 1 police officer from Northumbria Police. Personnel within the ATF employed by NFRS include the ATF Manager, ATF Researcher, ATF Project Officer, a Community Warden Manager and 8 Community Wardens. The Northumberland ATF has been identified by the UK government[73] as an example of best practice in effective arson prevention and investigation. The department is dynamic in its response to changes and problems as they occur, and proactive through its anticipation of potential future problems.

The Northumberland ATF aims to reduce and detect arson through a two-pronged strategy of:
      1. Arson Prevention
      2. Arson Investigation

1. Arson Prevention
Using a problem solving approach the ATF works closely with partner agencies to develop and implement arson reduction and prevention initiatives. The ATF's prevention strategy involves three key mutually supportive and interdependent strands (listed in order of preference and priority):

      a. Education
      b. Removal of Opportunity
      c. Deterrence

a. Education
The ATF sits within a larger department within Northumberland Fire and Rescue Service called the Community Safety Academy (CSA). The principle objective of the Community Safety Academy is to improve safety in the community and reduce risks to life through effective partnerships with other agencies. The structure of the CSA has been developed to create three distinct, but mutually supportive teams: the Programme Delivery Team; the Programme Development Team; and the Arson Task Force. Members of the ATF assist in the delivery of Fire and Security Awareness training courses given to school caretakers, Police Neighbourhood Beat Managers, Police Community Support Officers, Police Crime Prevention Officers and other Police Officers. These courses aim to educate and raise awareness among school caretakers of potential targets for arson attacks and how they can reduce opportunities for arson by implementing simple preventative measures. In addition to this form of education, the CSA designs and delivers the Schools Education Programme to all schools within Northumberland. This programme is a long-term initiative that educates young people in community safety issues (including fire safety and the dangers of deliberately setting fires). The programme has been designed to mutually support the National Curriculum and is structured to deliver appropriate and relevant messages to children and young people throughout their school lives.

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[73] By the former Office of the Deputy Prime Minister (ODPM).

b. Removal of opportunity

A significant proportion of the work completed by the Northumberland ATF involves the identification and removal of potential arson risks. This involves continual analysis of the Fire Service Incident Database and the Police Crime and Incident Databases by the Arson Task Force Researcher and Police Officer. The ATF also relies upon information about potential risks being conveyed by the team's 8 Community Wardens, police officers, partner agencies (for instance, the local authority), fire crews attending incidents or completing other duties, and observations made by the team while on duties throughout the county. The ATF also rely upon intelligence provided by members of the public. Where arson risks are identified, the ATF does everything in its power to ensure that the risks are removed as soon as possible. A common arson risk within the county is the existence of fully-laden skips that are not promptly collected. When the ATF identifies a fully-laden skip it notifies the company that owns the skip and requests that they remove it as soon as possible. This proactive approach towards risk removal has contributed to a significant reduction in the number of rubbish fires set within the county.

Another specific initiative aimed at removing opportunities for arson which has been set up with the assistance of the Northumberland ATF has been the AVAIL Scheme – Abandoned Vehicle Action Information and Liaison. This initiative involves the rapid removal of abandoned vehicles from the streets of Northumberland. Any abandoned vehicle reported through the central hotline telephone number is removed and impounded within 24 hours. This has helped to significantly reduce the number of criminal fires within vehicles across the county.

c. Deterrence

The deterrent aspect of the ATF's preventative work takes two forms. Firstly, by completing high quality multi-agency fire scene investigations, the ATF deters would-be fire-setters by improving conviction rates and bringing more arsonists to justice. Secondly, the ATF engages in publicity campaigns. This work takes the form of focused publicity campaigns that warn against the dangers and potential ramifications of fire-setting (particularly during the Bonfire Period around November 5th each year), as well as periodic "letter drops" to homes and businesses within recorded arson hotspots around the county. The letters request that residents pass any information they may have about incidents of fire-setting to the ATF via a confidential telephone number. Any information received is passed directly to Northumbria Police. While these letter drops often yield important information that the Police can act upon, there is also an important deterrent element – individuals who are setting fires are notified that the Fire Service and Police are working together to stop fire setting behaviour in the area.

2. Arson Investigation

No strategy can prevent all criminal fires from occurring. Consequently, when criminal fires do occur, the ATF's strategy involves the completion of thorough fire scene investigations in order to yield information about the origin and cause of the fire, as well as potential evidence that can be used to identify criminal fire setters. By conducting thorough investigations in partnership with other organisations, the ATF is working to increase the detection rate for arson and prevent and reduce future arson fires. By thoroughly investigating fire scenes and bringing more fire-setters to justice through the courts, the ATF has helped increase the number of successful prosecutions for criminal fire setting. The ATF is also helping to deter some would-be fire setters by making examples of those who have been caught and punished through the use of targeted publicity campaigns.

Appendix 3

Topics Represented within the European Database of Best Practice in Arson Prevention and Investigation

- Arson awareness poster initiatives
- Fire prevention campaigns aimed at children, young people and the elderly
- Computer modelling of fire
- Forensic analysis of fire scene debris
- Recording and interpretation of evidence gathered from fire scenes
- Community Wardens working as part of an Arson Reduction Team
- Collection of information prior to the completion of fire scene investigations.
- Fire/arson investigation training
- Investigation of vehicle arson
- Prevention of vehicle arson
- Prevention of heath and grass fires
- Preventing arson by young people through court room drama
- Preventing arson by children and young people through education
- Preventing arson by young offenders through intervention schemes and courses.
- Preventing arson by gathering and responding to community intelligence.
- Preventing arson through arson audits
- Preventing arson and anti-social behaviour by developing and nurturing relations between the Fire Service and young people.
- Partnership and cooperation between Fire and Police organisations investigating fires
- Partnership and cooperation between Police and insurance organisations.
- Preventing and reducing anti-social behaviour and hoax calls to the Fire Service
- Preventing arson near businesses through quick strikes.
- Qualifications for fire investigators.
- Restorative Justice approaches to arson prevention and anti-social behaviour
- Use of fire investigation dogs
- Typologies of rural arsonists and their implications for investigation and prevention strategies.

Appendix 4

Expertise Represented within the European Register of Experts in Arson Prevention and Investigation

- Computer modelling of fire
- Conducting fire simulations
- Cooperation between fire investigators from different organisations
- Crime scene management and preservation
- Gathering internet intelligence on arson/explosions
- Fire dynamics
- Fire prevention campaigns aimed at children, young people and the elderly
- Fire safety through building design
- Fire scene investigation
- Forensic analysis of fire scene debris
- Forensic analysis of accelerants within fire scene debris
- Forensic awareness at fire scenes
- Forensic chemistry
- Fund raising for arson reduction/prevention
- Initiatives and techniques for preventing fire crime
- Improvised explosive/incendiary devices
- Investigation of explosions
- Investigation of fires caused by electricity
- Investigation of fires/explosions within explosive stores
- Investigation of vehicle fires
- Preventing misuse of fireworks
- Prevention/reduction of commercial/industrial fires
- Prevention/reduction of dwelling fires
- Prevention/reduction of school fires
- Prevention/reduction of vehicle fires
- Reaction of materials to fire
- Recording of evidence gathered from fire scenes
- Research into the causes of fire
- Storage of evidence/exhibits gathered from fire scenes
- Training courses for fire investigators
- Use of fire investigation/detector dogs
- Vehicle fire reduction/prevention

Appendix 5

List of website advertisements about the project

- *Northumberland County Council website* (UK) – August 2007 onwards.
- *Firebrake Wales website* (Wales, UK) – June 2008 onwards.
- *Chief Fire Officers Association (CFOA) website* (UK) – June 2008 onwards.
- *Federation Nationale des Sapeurs-Pompiers de France* (France) *website* – June 2008 onwards.
- Asociación Nacional de Investigadores de Incendios de España *(ANINCE) website* (Spain) – June 2008 onwards.
- *British Association of Public Safety Communications Officers* (BAPCO) website (UK) – June 2008 onwards.
- *Norwegian Association of Fire Officers website* (Norway) – June 2008 onwards.
- *European Police College website* (European) – July 2008 onwards.

List of magazine/journal articles published on the project

Arson Intelligence Newsletter (published by the Arson Prevention Bureau, UK), United Kingdom, March 2008, Issue 103, p1-3.

International Association of Arson Investigators (IAAI) UK-Chapter Newsletter, Spring 2008, p6.

Fire Risk Management (UK), September 2008, p9.

Asociación Nacional de Investigadores de Incendios de España (ANINCE) Revista (Spain): Issue 2, June 2008, pp40-49; and Issue 3, October 2008, pp8-13; and Issue 4, February 2009, pp13-41

Fire Review (Greece), 2008, Issue 129, p33.

Pelastustieto (Finland), 2008, Issue 6, p89.

Przegląd Pożarniczy (Poland), 2008, Issue 8, p34.

Sirenen (Sweden), August 2008, p23

International Association of Arson Investigators (IAAI) UK-Chapter Newsletter, Autumn 2008, p8

Fire Forum (Belgium), October 2008, pp29-32

Przegląd Pożarniczy (Poland), 2008, Issue 11, pp36-37.

Pompierii Români (Romania), February 2009, Issue 2, pp14-17.

Brandvaesen (Denmark), 2009, forthcoming.
Sapeurs Pompiers (France), 2009, forthcoming.
Fire Magazine (UK), 2009, forthcoming.
Emergency Services Ireland (Republic of Ireland), 2009, forthcoming.

(Please note: black text denotes articles written by the project team; red text indicates articles written by third parties i.e. not by the project team).

Appendix 6

Copy of the Expert Registration Form

European Exchange of Best Practice in Arson Investigation and Arson Prevention

Notification of Willingness to Participate in Exchanges of Experts and Advice across Europe

Please complete this form if you would like to be included on a register of experts willing to complete arson investigation and/or arson prevention exchanges and placements in Europe. Each individual must complete and submit their details on an individual copy of this form and must complete Appendix 1 to provide consent for their contact details to be made available to others.

At the bottom of the form we would be grateful if you could write a brief sentence or two which provides support for the fact that you are an expert in your field. This could include reference to relevant qualifications, experience and/or official membership of professional and advisory groups.

Please submit completed forms to Rob Stacey. If you have any queries about this form then please contact Rob Stacey at: Northumberland Fire and Rescue Service Headquarters, Loansdean, Morpeth, Northumberland, NE61 2ED, United Kingdom, Tel: +44 (0)1670 534794, Email: rstacey@northumberland.gov.uk

Name	
Organisation	
Address	
Country	
Telephone number	
Email address	
Are you an expert in arson investigation and/or arson prevention?	
Areas of expertise (please identify up to 6 topic areas in which you can provide expert advice)	1. 2. 3. 4. 5. 6.
Languages spoken	
Why do you consider yourself an expert?	

Appendix 7

Two exemplary pages from a Fire Investigation Training Module Lesson Plan

Module Summary and Learning Objectives

Topic	**Fire Investigation Course – Forensic Awareness**
Students	Firefighters, Police Officers, Scene of Crime Officers in groups of up to 20
Time Available	1 hour 10 mins
Venue	Lecture Room
Expected Entry Behaviour	Students will have limited experience and understanding of the role of the fire investigator and application of Fire Investigation procedures. Students may have an awareness of the behaviour of fire, the relevant Legal system, processes and procedures applicable to the country in which they operate.
General Aim	To provide the students with an understanding of, and the necessity for, good forensic practice
Specific Objectives	At the end of the module students will • Demonstrate understanding of the need for effective scene preservation • Understand the concept of the transfer of trace evidence • Demonstrate understanding of the need for good forensic practice • Demonstrate understanding of how to deal with a fatal fire • Have an awareness of evidence that can be recovered from a fire scene

Detailed List of Module Content (page 1 of 4)

Content/Time	Teacher Activity	Student Activity	Assessment	Resources
Introduction (5mins)	Instructors to briefly introduce themselves by their name and role and explain what the session involves including the aim and objectives of the session	Listening	Q & A written assessment of this module completion of the course	Slide 1 Flip chart paper Pens
Icebreaker (5mins)	Instructor to ask the students to introduce themselves and discuss any experience good or bad that they have encountered regarding forensic evidence	Listening/note taking		Blank name labels Pens
Forensic preservation (10mins)	Explain the importance of forensic evidence in the context of fire investigation and explain the fragility of this evidence using examples from previous fire investigations also discuss the impact of both scene disturbance and preservation. Use the two photographs in slide numbers 3 & 4 to explain the importance of the part the firefighters can play in preserving the scene.	Listening/note taking		Slides 2 - 5
Locard's Law (10 mins)	Explain Locard's Law, and emphasise how trace evidence can be either added to a scene or taken away from the scene. Describe the various types of trace evidence that can be used by the Police to connect a person to the scene or the scene to a person.	Listening/note taking. Examining examples of trace evidence		Slide 6 Glass to demonstrate Finger, ear and lip prints

Appendix 8

**Structure and design of the three workshop sessions at
"The Fire Crime in Europe Conference 2008"**

**Workshop 1 - An Holistic Approach to Arson Prevention
Led by Northumberland Fire and Rescue Service, Community Safety Academy**

Introduction: A short presentation introducing the workshop leaders, Community Safety Academy and the aims of the workshop

Task 1: Ice-breaker activity based upon piecing together information to recreate a story. This activity promoted discussion and debate among the small groups.

Task 2: Activity requiring the delegates to make judgements using limited information provided to them. This activity stressed the importance of trying to reduce the influence of prejudice in our decision-making processes regarding arson prevention.

Task 3: Case study activity. Groups were provided with information about a number of individuals who had set fires. They were then tasked with selecting which intervention techniques adopted by Northumberland Fire and Rescue Service would be suitable for trying to change the individual's fire-setting behaviour.

Conclusion: Some general summary comments and thoughts to take away from the workshop.

**Workshop 2 - "Fire Investigation: In Search of Pan-European Best Practice"
Led by The Fire Service College & Provincial Fire Service Headquarters in Poznań**

Introduction: A short presentation introducing the workshop leaders, the Fire Service College & Provincial Fire Service Headquarters in Poznań and the aims of the workshop

Task 1: Ice-breaker activity. This involved the participants completing an activity which identified each individuals' possible investigator profile.

Task 2: Piecing together a fire scene from photographs. Participants were given a series of photographs from a real fire scene and were tasked with coming to a group decision about the cause and seat of the fire.

Task 3: Discussion of fire investigation techniques and procedures adopted within different European countries. Participants were then posed the question: Is there scope for the development of Pan-European best practice and procedures?

Conclusion: Some general summary comments and thoughts to take away from the workshop.

Workshop 3 – Computer Modelling of Fires
Led by Laboratoire Central de la Préfecture de Police

Introduction: A short presentation introducing the workshop leaders and the aims of the workshop.

Task 1: Ice-breaker activity. Participants were asked to complete a short questionnaire looking at the use of computers within their professions.

Task 2: Piecing together a fire scene from photographs. Participants were given a series of photographs from a real fire scene and were tasked with coming to a group decision about the cause and seat of the fire.

Task 3: Piecing together a fire scene using data from computer models. Participants were given some information about different computer models concerning the same fire scene looked at in Task 2. The groups were tasked with identifying the cause and seat of the fire from this data and with selecting the model they thought most accurately represented the scene during the ignition and development of the fire.

Conclusion: Some general summary comments about the positives and drawbacks of computer modelling of fires and thoughts to take away from the workshop.

Northumberland Fire and Rescue Service (NFRS) provides fire and rescue cover to the County of Northumberland in northern England. The County covers an area of almost 2,000 square miles (approximately 500,000 hectares) and is home to approximately 310,000 residents. NFRS has a long term strategic aim of improving the social, economic and environmental well being of the residents of the county it serves. Central to this is "preventing fires and other emergencies happening" and in doing so "reducing death, injury and damage to property". It is our aim to share our knowledge and expertise, and to learn from the successful practices and initiatives implemented by other organisations, in order to improve the safety of residents living and working in Northumberland and in other regions and countries.