



Risk Terminology  
**Fire Research Series 3/2008**





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International Fire Consultants Ltd

May 2008  
Department for Communities and Local Government

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# Executive Summary

This review has confirmed the appropriateness of the underpinning legislation and guidance contained within the Civil Contingencies Act 2004 (CCA) together with the guidance documents 'Emergency Preparedness' and 'Emergency Response and Recovery'; against which responding bodies and other supporting agencies have developed strategies to successfully meet their legal and moral obligations.

However, there are areas of potential conflict in relation to the use of risk terminology associated with the Category 1 & 2 stakeholders<sup>1</sup> which have been found to be variable across the spectrum of planning and response to emergencies.

Given the large number of Category 1 & 2 organisations, services and agencies within the United Kingdom, together with International implications, as expected there arises a plethora of associated and potentially differing/conflicting risk terminology, procedures and signals that could have an adverse impact on efficiency and effectiveness in managing some aspects of emergency incidents. It is clear that an appreciation of the different terminology and operating procedures of the likely co-responders to emergency incidents would improve interoperability, co-operation and ensure that the risk to society – in terms of life, business and infrastructure, as well as the risk to the co-responders – was minimized.

However, there are a number of opportunities that have been identified from the work undertaken by this research project, in respect of:

- a) Partnership working between Communities and Local Government and the Cabinet Office in the development of a national Lexicon and the integrated risk management planning process.
- b) The utilisation of the Risk Dictionary Model for multi-agency terminology analysis in line with the Risk Dictionary document Methodology & Software User Guidance NO L06160.
- c) Consideration should be given to linking and building on existing infrastructure to provide optimum ongoing data management facilities and services for the multi-agency terminology. Such as:
  - Integrated Public Service Vocabulary (IPSV)
  - MoD Central Data Management Authority – Data Definition Repository (DDR)
  - NHS Data Dictionary.
- d) Development of the awareness of Fire and Rescue Service national projects of the CCA requirements and objectives. In addition, sharing of learning outcomes with the FRS and HMFSI in Scotland.

<sup>1</sup> Civil Contingencies Act 2004

- e) Consideration to given to participation within a number of European funded projects with similar objectives to the Risk Terminology Project.
- f) Learning from existing projects and developments to prevent 're-inventing the wheel'.
- g) Consideration as to the inclusion of organisations such as the Mines Rescue Service Ltd and Highways Agency (currently not included within the Category 1 and 2 responders) within the ongoing development of the multi-agency terminology.
- h) There is a clear requirement for a lead body to co-ordinate the introduction of a national Model for multi-agency terminology, building upon the guidance contained within the CCA and supporting documentation. This would see the standardisation where practicable, of risk terminology, signals and procedures, or, as a minimum, the raised awareness of the potential problems. This work would require strong political support due to the wide range of organisations that form Category 1 & 2 emergency responders.

It is considered that the research project findings contained within the twenty seven recommendations of this report, if adopted, will assist in the harmonisation of terminology and associated areas of interest across multi-agency organisations. This will offer potential to improve interoperability across the range of emergencies identified in the CCA as well as smaller scale incidents which also involve inter-agency operations. The introduction of a lead body for the co-ordination of this task, together with appropriate levels of political and financial support, will ensure not only the successful introduction of the Risk Dictionary, but will also support the delivery and maintenance of the nation lexicon.

# Chapter 1

## Statement of Requirement

### 1.1 The Requirement

The Civil Contingencies Act (CCA) requires that risks to society are assessed and, where necessary, contingency arrangements put in place. The CCA requires that responders undertake risk assessments and maintain them in a Community Risk Register which should outline the risks and prevention measures taken to minimise that risk. The Category 1 responders to an emergency incident include the Fire and Rescue Service, the Police and Ambulance Services, and other bodies such as the Health Authority and Environment Agency.

In planning for their responses it has been recognised that each of the Category 1 responders have a 'language' of their own, and that this is reflected in the numerous terms and associated definitions used by them in preparing and responding to emergency incidents. Whilst a number of these terms will be common to each of the responders, some of these apparently 'common' terms will have different definitions and much of the 'language' will be specific to the responders concerned. The potential misunderstanding of the use and context of this terminology may, in some cases, present a risk to both responders and the public.

Therefore an appreciation of the different terminology and operating procedures of the likely co-responders to an incident would improve co-operation, and ensure that the risk to society – in terms of life, business and infrastructure, as well as the risk to the co-responders – was minimized. It is in this context that the Fire Statistics and Research Division of Communities and Local Government in partnership with the Cabinet Office have identified the need to undertake research to identify the risk related language and definitions used by Category 1 responders and other agencies, in order to prepare a dictionary of risk terminology.

The key Requirements:

1. Contact relevant Category 1 responder organisations to establish:
  - a. Their risk terminology.
  - b. Specific terms used during response to major incidents.
  - c. Signals for standard operation practice.

2. Create a Risk Dictionary, to allow the capture and demonstration of the various issues from comparing multiple data sets including:
  - a) Data designations or Phrases (Simple or Complex terms with two or more roots)
  - b) Data definitions
  - c) Organisation
  - d) Signals by the responding agencies
  - e) Context – Scenario
3. The Risk Dictionary should be easily searchable electronically and as paper copies
4. Advise on instances where the benefits to common terminology would be beneficial and reasonably practical to introduce.
5. Advise where issues could arise from very different descriptions applying to similar circumstances.
6. This report will include reference to:
  - Size of the problem
    - Agencies and organizations involved using risk terminology
    - Identification of good practice
    - The development of Risk Dictionary toolkit and associated guidance for its use.

# Chapter 2

## Introduction

### 2.1 Background

The Civil Contingencies Act was introduced by Parliament in January 2004 following close consultation with Key stakeholders. The Act and accompanying regulations have delivered a single framework for civil protection in the United Kingdom capable of meeting the many challenges of the twenty-first century.

The Act is separated into two parts:

- Part 1: local arrangements for civil protection, establishing a statutory framework of roles and responsibilities for local responders
- Part 2: emergency powers, establishing a Modern framework for the use of special legislative measures that might be necessary to deal with the effects of the most serious emergencies.

Part 1 of the Act establishes a new statutory framework building on existing arrangements by:

- Establishing a clear set of roles and responsibilities for local responders
- Giving greater structure and consistency to local civil protection activity
- Establishing a sound basis for performance management at a local level.

The Act divides local responders into two categories depending upon the extent of their involvement in civil protection work.

Category 1 responders are those organisations at the core of emergency response (e.g. emergency services, local authorities, etc). They are required to:

- Assess the risk of emergencies occurring and use this to inform contingency planning
- Put in place emergency plans
- Put in place Business Continuity Management arrangements
- Put in place arrangements to make information available to the public about civil protection matters and maintain arrangements to warn, inform and advise the public in the event of an emergency

- Share information with other local responders to enhance co-ordination
- Co-operate with other local responders to enhance co-ordination and efficiency
- Provide advice and assistance to businesses and voluntary organisations about business continuity management.

## 2.2 Civil Contingencies Local Resilience Forum

The make up of the Local Resilience Forum is shown in Appendix A.

## 2.3 Statutory requirements

The Civil Contingencies Act requires responsible agencies to work together to ensure that risks to society are assessed and that detailed Community Risk Plans are produced; these plans are made available to the public. Every Local Authority has a statutory responsibility to publish a 'Risk' register outlining the risks and prevention measures taken to minimise the risks. The reports must include input from all bodies likely to respond to such emergencies, (Category 1 responders). The principal mechanism for multi-agency co-operation under the Act is the Local Resilience Forum which is based upon each local Police area.

Local Resilience Forums should deliver:

- Compilation of agreed risk profiles through the Community Risk Register
- Systematic, planned co-ordinated approach for Category 1 responders in relation to:
  - Risk, planning for emergencies
  - Planning for business continuity management
  - Publishing information about risk assessments
  - Plans and arrangements to warn and inform the public
  - Other aspects of civil protection.

Category 1 responders are required to produce Integrated Emergency Management (IEM) plans comprising of six related activities; Anticipation, Assessment, Prevention, Preparation, Response and Recovery.

The IEM plans will be reviewed on a regular basis and information will be made available to the public within the published Community Risk Register. The register outlines potential hazards including severity, probability, risk rating and appropriate control measures in place.

Terminology and vocabulary employed by Category 1 responding agencies vary widely when defining risk and operating procedures. The appreciation of the different terminology and operating procedures of the likely co-responders to emergency incidents would improve co-operation and ensure that the risk to society – in terms of life, business and infrastructure, as well as the risk to the co-responders – was minimized.

The risk assessment process introduced under the Civil Contingencies Act has already started to promote common terminology. However, due to the well established specific/ specialist language that understandably already exist across the various responders the risk terminology varies between organisations.

There is therefore a requirement to bring together risk terminology from all sectors who are concerned with risk and may provide a response to any emergency. The aim must be to develop, as far as practically possible, common terminology or at least an understanding of the variances.

Organisations will only become aware of potential, unplanned, areas of conflict/danger either during realistic training or actual emergencies. If left un-checked there exists the potential for loss of life or serious injury for both emergency responders and members of the community.

# Chapter 3

## IFC Project Methodology & Approach

### 3.1 Scale of the project

Due to the numbers of Category 1 & 2 organisations involved in Civil Contingency Planning, IFC proposed within their tender response to restrict their review to National and Regional contacts within 'key' organisations. This decision offered a realistic and manageable work stream that ultimately provided a clear understanding of the problems associated with risk terminology, procedures and signals, incorporated within Integrated Emergency Management (IEM) and Integrated Risk Management Planning (IRMP) within the Fire and Rescue Service (FRS).

### 3.2 Interviews with Stakeholders and Organisations

The numbers of potential stakeholders that will participate within the Local Resilience Forums across the country are indicated below in table 3.1. This indicates the potential size and complexity of data sharing issues that will be faced between key responders.

<b>Table 3.1 Potential Stakeholder Groups</b>	
<b>STAKEHOLDER GROUPS*</b>	
<b>ORGANISATION(S)</b>	<b>No</b>
Police	44
Fire Authorities	47
Strategic Health Authorities	28
Ambulance Services	32
Maritime & Coastguard Agency – 30 separate locations	30
Environment Agencies	8
Borough Councils	29
City Councils	14
Councils	4
County Borough Councils	1
County Councils	36
District Councils	12

<b>Table 3.1 Potential Stakeholder Groups (continued)</b>	
<b>STAKEHOLDER GROUPS*</b>	
<b>ORGANISATION(S)</b>	<b>No</b>
London Boroughs	29
Metropolitan	3
Metropolitan District Councils	5
Metropolitan Borough Councils	17
Passenger Transport Authority	1
Royal Boroughs	2
Unitary Authorities	30
Unitary Wales	14
Regional Assemblies	10
Voluntary Organisations registered with the National Council for Voluntary Organisation	4,554
General Charities	169,249

*\*This list is by no means extensive and should be seen as a general indicator.*

As can be seen within Table 3.1 above it would not be possible to review all stakeholder groups within the project timeframes. It was therefore agreed with the Communities and Local Government Contract Manager that the focus for stakeholder interviews should be based where possible on a single Local Resilience Forum (LRF), and a number of other relevant 'key stakeholders'.

The Northwest LRF was used to represent an average sized and well established forum, providing a good balance of organisations, services and agencies working together on Integrated Emergency Management. Where it was not possible to obtain the necessary early access to interview the specific individuals within Northwest organisations, an equivalent organisation within another LRF was sought to ensure a robust project outcome.

A number of relevant contacts within 'key' organisations were identified across the various agencies and national projects. As the project developed and various topics of interest became apparent, additional interviews were arranged to explore these areas as fully as possible within the project timeframe. This provided a wide breadth of interviews ranging from LRF members, national bodies and project groups along with other outside organisations relevant to the project e.g. Mines Rescue.

To ensure uniformity of approach an interview questionnaire was produced. This provided a formalised framework for the semi-structured interviews (See Appendix B). This provided interviewers with a standardised approach; providing reliable results that can be cross referenced. The questionnaire was seen as the minimum requirement within the interview process and interviewers actively encouraged wider feedback to ensure that vital evidence was not missed, thereby maximising the results obtained from the framework provided by the questionnaire. The interviews were undertaken 'face to face' or by telephone.

### 3.3 Literature Review

There is a large amount of information relating to the use and management of terminology. In many cases this is a small element of a broader based project or scope of work. This information is available at international, national, regional, and local levels. With this in mind the project team established agreed parameters for the literature review with the Communities and Local Government Contract Manager. This action enabled a realistic, focused and manageable review.

The aim of the literature review was to form an essential element in determining the extent of potential problems and area of conflict associated with risk terminology, procedures and signals employed when organisations, services and agencies undertake the six key elements of Integrated Emergency Management namely; Anticipation, Assessment, Prevention, Preparation, Response and Recovery.

This project did not attempt to analyse the associated issues of sharing information from a practical or technical perspective.

### 3.4 Risk Dictionary Software Development

Within Stage One of the contract the project team produced a conceptual schematic Model outlining the structure and functionality of the proposed Risk Dictionary software. This schematic Model reflected the:

- Communities and Local Government initial Statement of Requirement
- Aspects of the literature review, and
- Comments from Stakeholder interviews
- Relevant ISO Standards for Terminology.

These factors and the capture of numerous data sources from various organisations allowed the project team to focus on the design, build and loading of the Risk Dictionary within Stage Two of the project.

The main focus for the development of the Risk Dictionary software was during Stage Two of the project. This is outlined in Chapter 5 of this document and is detailed in Risk Dictionary document Methodology & Software User Guidance NO L06160. The capture of a number of glossaries and data sets (See Appendix C) from various stakeholders has been undertaken. To date, thirteen organisations have contributed towards the Risk Dictionary from paper or electronic records. This will demonstrate how:

- The various issues and problems associated with data terminology could be examined and analysed
- How the prioritisation of risk terminology outcomes could be presented to ensure appropriate response and treatment of any identified risk
- How the use of the Risk Dictionary could support 'user workshops' to engage with Category 1 & 2 stakeholders (and others) to analyse the impact of the problems of inconsistent terminology within a given context/scenario
- Any lessons learnt from potential use of the Risk Dictionary could be passed to the National Lexicon Project.

The Risk Dictionary will require the appointment of a System Administrator to provide ongoing maintenance and support to ensure that the data terms are accurate and reflect a current up to date view of any changes or amendments.

### 3.5 Analysis of evidence

The project team have been responsible for analysing the information and data collected within the literature review, web research and interview processes. This final report now summarises the evidence collected and draws conclusions and recommendations for future work in this area of research. This report should be read in conjunction with Risk Dictionary document Methodology & Software User Guidance NO L06160.

### 3.6 Production of the final report

This final report has been prepared for the Department for Communities and Local Government as specified within the terms of the contract and builds directly upon the Risk Terminology Scoping Study report dated the 31 March 2006.

# Chapter 4

## Research

### 4.1 Background

This research has highlighted a number of areas of related activities, particularly within the Fire & Rescue Service, relating to the Risk Terminology work undertaken by the Fire & Risk Management Division of International Fire Consultants Ltd on behalf of Communities and Local Government.

An ongoing dialogue has been maintained with the Communities and Local Government Contract Manager to ensure that any significant findings were made immediately available. This has allowed the instigation of any necessary actions from Communities and Local Government since the commencement of the project.

It will come as no surprise that the issue of terminology can be specific to a particular organisation or even department within an organisation. This problem is compounded when geographical boundaries are also considered. This creates silos of knowledge and, unfortunately, the constant re-invention of the wheel in an attempt to provide a solution. Therefore, when attempting to examine this issue, which must ultimately be considered alongside the associated organisational process, procedures, technical, cultural, etc across numerous organisations, over regional, national or international boundaries the difficulties can appear to be insurmountable.

It is considered that the analysis and determination of the 'common terms' should be at the start of any process to enable multi-agencies to share information efficiently and effectively.

This project has identified relationships with a large number of other projects and similar areas of research. The key issue on which to focus is one of interoperability between Category 1 and 2 responders and the ability to have a common dialogue that can be understood without the creation of risk to other responders or members of the public. It should be noted that whilst the issue of interoperability can also include the technical communication provisions across the emergency services this issue is not covered specifically within this project.

It is considered that the ultimate aim of sharing information efficiently and effectively across multiple organisations in a secure environment can only be achieved by decisive political and professional leadership from the highest level.

It was noted that, whilst a significant number of projects had a referenced information and data within their scope, it was only as a single element of a much larger project. Many projects have focused on the technical means to deliver, analyse or display the information, only to find that there is a lack of information to utilise effectively within the various solutions. Where possible this report attempts to describe those areas of projects and activities that are closely related to the objectives of the Risk Terminology Project.

## 4.2 General – Risk Terminology Findings

There are issues even within the same organisation, arising from differing departments' interpretations of risk terminology and associated meaning. This arises out of differing perspectives on what risk means to each department; and the interpretation of the term in relation to their function or area of authority. This was highlighted during a local authority interview and demonstrates that the issues relating to risk terminology can impact not only on inter-agency working but within individual departments within organisations.

The extent of the potential problems caused by the differences in the use of terminology is wide ranging, covering all aspects and interpretations of risk; from Category 1 emergency responders through to financial institutions, business continuity and the voluntary sector. An example of this was highlighted during an interview with the Health Protection Agency as part of the Local Resilience Forum (LRF). The Emergency Planning Officer stated that there are wide variations in terminology used for command centres, giving an example of twenty seven different names used for such a centre. Whilst this problem was recognised across the LRF as an issue, agreement on the use of standard terminology was still proving to be very difficult.

Where common terms & meanings have been established this is most often based directly on the terminology used within CCA and associated guidance, although it may be referenced through a Strategic level body for that organisation.

An example of this was highlighted within Tyne & Wear Major Incident Co-ordination Procedures:

*“In order to allow the adoption of common procedures and prevent confusion, it is important that both terminology and documentation is standardised. The terms used in this plan follow the recommendations of the Association of Chief Police Officers (ACPO) who have issued a glossary of terms for use in major disaster planning. These are used by the emergency services in the Northumbria Region”. This document also has a list of definitions and a glossary of terms to support its use.*

In other cases the use of 'an agreed terminology' has been found, where for example, a number of organisations have agreed to 'accept terminology', perhaps based on one organisation who may take a lead role. This may often be industry specific and not

necessarily aligned with the CCA. There is also an area of operational risk within each organisation that does not fall within CCA and this again can have its own associated terminology and signals.

A further scenario is where a single organisation has its own specific vocabulary for risk related matters and operates in relative isolation alongside others without significant common terminology understandings in either direction. This became evident during conversations with The Mines Rescue Service who, although not Category 1 or 2 responder, are a very skilled and specialised rescue service, who use a lot of mining terminology and only have a limited understanding of other services' terms and signals.

A final example exists where there is a complex mix of the above; where an organisation in the main adopts CCA risk terminology yet, due to its nature of operations, there are elements of risk terminology that are sector specific and although known widely and often internationally within the sector, are largely unrecognised by other responders.

A good example of this was discovered during an interview with the local HM Coastguard Service (MCA). Although they use CCA terminology within their emergency planning and joint response work, there are terms and signals such as "PAN PAN". Although this is recognised throughout the maritime world as an urgent distress signal it may not be understood by other responding Category 1 & 2 bodies on a local or regional basis.

Similarly the meaning of a word, signal or phrase within one organisation or context may have little or no commonality with the meaning associated with the same word, signal or phrase within other organisations.

With terminology there are several clear issues:

- a) The possibility that the same word, signal or phrase exists and has a different meaning within another organisation or context. (Its meaning is misunderstood)
- b) The possibility that the word, signal or phrase has no meaning within other organisations or context and also has no equivalent. (It is not understood)
- c) The possibility that the word, signal or phrase has no meaning within other organisations or context, yet a different word, signal or phrase is used to convey the same meaning within that organisation/context. (It is not understood)
- d) The possibility that the word, signal or phrase is recognised but conveys a completely different meaning. (resulting in an inappropriate and potentially dangerous action)

### 4.3 Risk Assessment Methodology

As the literature review and interviews progressed it became apparent that organisational perception of risk; and indeed the identification and classification of what constitutes risk varies considerably, depending on perspective and priorities. Within this there are yet further varying levels of risk perception based on individual interpretations of the attributes of any given risk, which will be subjectively judged against the experiences and intrinsic values of the individual.

A standardised risk assessment methodology ensures that a pattern of approach is followed consistently. However, due to other factors, any assessment of risk can, and will be viewed differently and different outcomes arrived at based on context. Therefore it is possible that a score of “Medium” within one context could have little commonality in practical terms, with the same rating in a totally different area of risk.

Therefore, it is essential to have a robust and carefully constructed guidance and support mechanism to ensure that a similar approach to risk is undertaken and applied across different organisations when working in a multi-agency environment. The guidance contained within the Emergency Preparedness document should provide that support to responders.

Whilst it may be difficult to control the methodology outlined in the Emergency Preparedness, documents should be mirrored in any supporting separate risk assessments that a stakeholder organisation might undertake. It is, therefore, recommended that any process such as the Integrated Risk Management Process (IRMP) undertaken by the FRS should be aligned with the Integrated Emergency Management plan to provide a consistent outcome.

### 4.4 The Victoria Climbié Public Inquiry

The following Metropolitan Police submissions are in reply to five seminar topics provided by Lord Laming and the Inquiry. They represented the views of the service as the way forward in multi-agency Child Protection cases both pan-London and Nationally. This is available at:

[www.nationalarchives.gov.uk/ERORecords/VC/1/1/Evidence/p2subs/pdfs/sem5/public/Sandra%20Forsyth%20-%20Metropolitan%20Police%20Services.PDF](http://www.nationalarchives.gov.uk/ERORecords/VC/1/1/Evidence/p2subs/pdfs/sem5/public/Sandra%20Forsyth%20-%20Metropolitan%20Police%20Services.PDF)

The second seminar *A Common Purpose, A Common Language* raised a number of questions, one of which was “How it could be ensured that every child potentially in need is identified at a very early stage and is brought within the system of assessment, care planning and if necessary, formal protection?” It was recognised that no one agency is wholly responsible for ‘discovery’, the identification of ‘need’ will require the combined resources and expertise of a variety of agencies. In considering this question it raised two specific areas of interest to this study.

i) Common Terminology & Definitions

It was indicated that partner agencies need to have a common understanding and definition of what constitutes needs and thresholds. The partner agencies all probably feel that they know and understand what a child in ‘need’ is. However, it appears that each agency has its own slightly different definition.

There are, at present, many publications that explain in detail what each definition means. In order to have a consistent understanding of the terminology some work needs to be undertaken to provide one list of explanations and definitions to which every agency will sign up to.

However, it is recognised that this may be a difficult task initially, as at present each partner agency has its own ‘policies and procedures’ manuals. Some, as in the case of Social Services, vary from Borough to Borough.

The priority would appear to establish and agree the ‘Common Language’ with the partner agencies. Then partner agencies can move onto the actual procedures involved when a child or children come to notice of one or other of the agencies.

**Recommendation 1:** Consideration should be given the development of a common terminology and procedures for Category 1 and 2 responders in a similar manner to the approach suggested within the inquiry which builds on the existing advice and guidance supporting the CCA.

ii) Risk Assessment and Management

At the time of writing their report the Social Services had their ‘Assessment Framework Document’. This document allowed the capture of details (child, family and actions taken) in a standardised format. It was apparent that within the document there was no set format for ‘Risk Assessment and Risk Management’.

In interviews with various agencies throughout this study there has been a mixed response to the undertaking of risk assessments, see comments in 4.3.

## 4.5 Department for Education and Skills – Multi-Agency Glossary

The Department for Education and Skills (DfES) recognised that the lack of a common language is one of the key barriers to working effectively. They have established a web-based multi-agency glossary: *Every Child Matters – Change for Children*. This can be found at:

[www.everychildmatters.gov.uk/deliveringservices/multiagencyworking/glossary/](http://www.everychildmatters.gov.uk/deliveringservices/multiagencyworking/glossary/)

The glossary has been produced for managers and practitioners from different backgrounds working in multi-agency settings to promote and facilitate communication and understanding. Whilst this area is outside of Civil Contingencies, it has established procedures and protocols to deliver a common understanding of terminology to the partnering organisations.

The DfES has published a document *Making it Happen* to support the development of more effective front-line integrated working practices across the children's workforce. This provides advice on Coordinating Delivery, Data Gathering and Data Sharing.

[www.everychildmatters.gov.uk/\\_files/59881E141B8023DD062CB83E190F5AF5.pdf](http://www.everychildmatters.gov.uk/_files/59881E141B8023DD062CB83E190F5AF5.pdf)

The aim of the document is to raise awareness of the tools and guidance available and show how the separate initiatives work together to support effective practice for everyone who works with children and young people.

**Recommendation 2:** Consideration should be given to further examination of the Department for Education and Skills multi-agency glossary. This should be undertaken as the Risk Terminology Project progresses.

## 4.6 Scottish Executive Publications

Her Majesty's Inspector of Fire & Rescue Services for Scotland has issued a report *Simultaneous Terrorist Attacks*. This report examines the level of preparedness in the event of simultaneous terrorist attacks (of a similar nature to those that occurred in London on 7 July 2005) of the Fire and Rescue Services in Scotland. This can be found at:

[www.scotland.gov.uk/Resource/Doc/118866/0029176.pdf](http://www.scotland.gov.uk/Resource/Doc/118866/0029176.pdf)

It is indicated within the report that, whilst Scotland should be mindful of the necessity to remain interoperable and integrated with the remainder of the UK, Scotland deserves a greater degree of resilience within its own borders. This aim is in harmony with both the First Ministers vision for Scotland and the Permanent Secretary's "Characteristics for Scottish Society" which includes, "We stand, as far as possible, on our own feet".

The report outlines the relevant issues for the Scottish Fire & Rescue Service and recommends a way forward to improve their level of preparedness. It focuses on the critical areas surrounding support services and infrastructure. The report conclusions which have a relationship to aims of this project are:

- There is a need to urgently address the issues surrounding radio communications, particularly the need to secure interoperability at the appropriate level across the emergency services.
- Control Rooms must be integrated and provide adequate capacity and resilience for Scotland. The option of three Fire Control Rooms would meet these vital requirements.
- Organisational and Geographical Boundaries – A reduction in the number of organisational and geographical boundaries currently in place would shorten communication lines and reduce the tiers of decision making across those boundaries. Whilst the entire Fire and Rescue Services attempt to work to a common aim, i.e. dealing with emergencies, disasters and civil contingencies, it is not always easy or effective when working with eight different organisations and a plethora of other agencies.
- A single Fire and Rescue Service for Scotland, which would still allow for local accountability and identity, operating at a strategic level, where incident command and service support and infrastructure could be set to a single standard rather than have to cross protocols and procedures of differing boundaries, would achieve these aims. Service boundaries mean different equipment and appliances within those boundaries. A single Fire and Rescue Service would result in the standardising of both equipment and procedures.

**Recommendation 3:** Consideration should be given to sharing the outcomes of this report with FRS & HMFSI colleagues in Scotland to ensure that learning outcomes from all projects are shared – Risk Terminology, FiReControl, e-Fire, etc to ensure interoperability goals are achieved.

## 4.7 Lothian and Borders 'Alert'

This work was identified from the Emergency Planning Steering Committee Annual Report 2004/05. This can be found at:

[http://download.edinburgh.gov.uk/emergency\\_report\\_final.pdf](http://download.edinburgh.gov.uk/emergency_report_final.pdf)

The Steering Committee instigated work to examine the requirements of the Civil Contingencies Act and present proposals for adjustments in the emergency planning arrangements in the Lothian and Borders area. In Scotland the classification of Category 1 and Category 2 organisations is determined by Scottish Ministers.

The Steering Group recognised that communication is a key element in the management of any emergency and have taken steps to develop a technical solution (Electronic Emergency Management System) to enhance their capabilities to deliver their emergency planning facilities, resources and improve the management of multi-agency incidents.

This electronic system 'Lothian and Borders Alert' was completed in May 2005 and is currently being rolled out. The system has two main components:

- A secure site which allows partner agencies to share incident related information and task each other in relation to any on-going incident. This is supplementary to the command and control systems currently used by the emergency services and facilitates a dynamic flow of information across all the partner agencies.
- A public site which ensures that incident related information is made available to the public either through direct access to the site or through the media.

It was indicated that the technical elements of the system are 'in place' and the project team is progressing training and other business change issues with a view to the system becoming operational.

**Recommendation 4:** Consideration should be given to examining the Lothian & Borders 'Alert' system. Whilst not having a specific focus on terminology it should be evaluated to assist in the future development of the Risk Terminology Project.

## 4.8 The Social Care Data Standards – Scottish Executive Publications

The Social Care Data Standards Project was set up by the Scottish Executive, the Association of Directors of Social Work (ADSW), the Convention of Scottish Local Authorities (COSLA), and Audit Scotland. This can be found at:

[www.scotland.gov.uk/Publications/2003/11/18451/28527](http://www.scotland.gov.uk/Publications/2003/11/18451/28527)

Its purpose was to produce data definitions and standards for use by Local Authorities and voluntary and private social care providers in Scotland to improve the quality, consistency and comparability of social care information, both locally and nationally. It comprised a team of information specialists drawn mostly from Scottish local authorities and the NHS in Scotland.

The project carried out a programme of data standards development for information about people in Scotland who have social care needs, their social situation, the assessments they undergo, what the needs are and the services they receive. Particular emphasis was laid on producing data standards which are in line with those used in Health, Education and Housing to enable information sharing between partner care agencies to support joint working.

By creating standard definitions the project also aimed to promote a 'common language' between care service professionals across different public service providers. For example, when a social worker in Glasgow talks about a problem drug user, a child protection referral, an addiction assessment, a criminal justice statutory order, etc. other social workers and other relevant professionals across Scotland understand exactly what is meant by that term. Furthermore, when such items are counted, the only way that the numbers can be meaningfully compared across agencies and authorities is by using a standard definition – for example, the number of community care assessments per head of population.

The project has produced definitions and data standards for a range of care and subject areas, plus other discussion, guidance and evaluation papers and information notes. These are available at:

[www.scotland.gov.uk/Topics/Government/DataStandardsAndeCare](http://www.scotland.gov.uk/Topics/Government/DataStandardsAndeCare)

The data sharing standards manual is available at:

[www.scotland.gov.uk/Topics/Government/DataStandardsAndeCare/Manual](http://www.scotland.gov.uk/Topics/Government/DataStandardsAndeCare/Manual)

It is considered that organisations involved in social care appear to be far ahead of others in terms of data sharing and understanding the need for a common language and terminology.

**Recommendation 5:** Consideration should be given to further analysis of the work undertaken by social service agencies which may benefit the development of common terminology and data sharing for CCA purposes by assisting in a speedier implementation.

## 4.9 Local Authority GIS Planner

An interview with Local Authority Geographical Information System (GIS) planners indicated their concern at the current level of ability to share information across geographical boundaries. It was even indicated that there is currently a lack of internal communication between GIS planners, and with personnel within the Local Authority Civil Contingencies Planning section. Whilst it was recognised that a small number of Local Authorities may have put in place systems to move this issue forward, it was felt that these were far ahead of the majority of Local Authorities. A number of key issues raised were:

- Information – the need to provide relevant, appropriate, accurate and timely information in a form that is applicable. To establish an understanding of what is known and what needs to be discovered.
- Data Sharing – the need to establish a unique identifier using National Land and Property Gazetteer (NLPG) in conjunction with Ordnance Survey products.
- Data Management – the need to manage data sets from disparate sources. Ability to manage across administrative boundaries allowing rapid effective and efficient data movement.
- Interdependencies – Mapping the interdependencies of information knowledge at emergencies.
- Interoperability – must be handled as a multi-agency endeavor, communication is key to get the right information to the right person on time.
- Message Flow – Commercial companies are developing their perception of the top ten messages (in XML) that would be used at an emergency. This was possibly in isolation from the emergency services.
- Problems:
  - No true information exchange.
  - Not speaking the same language.
  - Hiding behind data protection.
  - Interoperability – currently word of mouth and telephone.
  - It meets our needs – others?

There was a currently lack of direction and leadership which would be essential to provide the impetus to take this work forward.

Whilst this highlighted a direct link to the Risk Terminology Project, in that there was recognition that there was limited common language currently defined between the Category 1 and 2 responders. It also raised a number of issues that will need to be considered as this project progresses.

**Recommendation 6:** There is a need to provide strong leadership and political support to provide the infrastructure for interoperability and data sharing.

## 4.10 The Police National CBRN Centre – Winterbourne Gunner

An interview was held at Winterbourne Gunner with personnel from the Fire and Rescue Service, Police and Ambulance.

The Police National CBRN Centre (PN-CBRN-C) was established in October 2001 on the MoD's Winterbourne Gunner site. The Centre provides a Centre of Excellence for the police response to CBRN incidents by providing high quality training and support. Whilst the centre is focused on the training of police officers the facility provides training across the emergency services.

The purpose of the Centre is to ensure officers have the necessary skills and equipment to respond effectively to CBRN incidents and to provide:

- strategy and training service (developing the personal skills, abilities and qualities of both its staff and students)
- research and development advice, including best practice and procedures in relation to operational issues (developing doctrine, protocols and procedures relative to the police operational response to a CBRN incident. identifying, collating and disseminating information and best practice)
- equipment procurement process.

In addition, the Tactician's Forum was established to enable first responders to discuss and develop planning and response solutions and where appropriate to act as a bridge between policy and operational approaches. It does not create policy or set out the CBRN Strategy itself.

The Tacticians' Forum was established in 2004 as a nationally recognised multi-agency group, with representatives from the emergency services and other tactical-level practitioners as well as central government departments and agencies to consider and resolve immediate response issues affecting the services dealing with CBRN incidents. The group has produced a number of documents including defining multi-agency doctrine outlined in its multi-agency Concepts of Operations (MANConOps) for Chemical, Biological, Radiological or Nuclear (CBRN) Terrorism.

A key aim of the forum is to develop as much clarity as possible between the three emergency services on joint objectives, terminology and training.

During the interview a clear understanding on differing organisational roles and interaction was demonstrated and it was suggested that in order to take this work forward it perhaps should be focused within a specific context i.e. 'Gold Command'.

**Recommendation 7:** Consideration should be given to develop a focused 'context sensitive' approach. Also, it would be advisable that the development of the multi-agency terminology should involve the key stakeholders with extensive practical experience in the area of multi-agency working, such as the Tacticians' Forum.

## 4.11 SITPRO Simplifying International Trade

An interview was undertaken with personnel from SITPRO an organisation aimed at simplifying international trade. Key issues in the development and use of common data standards, data structure and data harmonisation were discussed. SITPRO is an executive Non-Departmental Public Body (NDPB) and receives most of its funding from the Department of Trade and Industry (DTI). Their focus is to simplify international trade via the provision of a single window which will enable the submission of data once to fulfil all import, export and transit related regulatory requirements. It was stated that the requirement to re-key information is costing UK business a great deal of money together with the associated problems of data entry error when information is re-keyed. The use of naming and design rules for Electronic Data Interchange (EDI) were suggested as areas that should be examined for the development of data sharing initiatives between Category 1 and 2 responders. Further information can be found at:

[www.sitpro.org.uk/policy/index.html](http://www.sitpro.org.uk/policy/index.html)

An example of national good practice can be seen within the Australian governments' ([www.customs.gov.au/site/page.cfm?u=5443](http://www.customs.gov.au/site/page.cfm?u=5443)) approach to creating a Standard Data Set (SDS) benchmarked against the World Customs Organisation (WCO) Data Model:

### **The Standardised Data Set Project**

[www.unece.org/trade/workshop/lyon\\_sep05/Australia.ppt](http://www.unece.org/trade/workshop/lyon_sep05/Australia.ppt)

Julie Olarenshaw

Director SDS Project

Australian Customs Service

This stated that "At present there is no 'whole of government' approach to the collection of international trade data in Australia. There are many benefits in establishing an Australian Standard Data Set (SDS) as it will":

- Carry the same meaning across all participating agencies
- Increase the confidence security agencies can have in the identification of risk
- Open the way for a Single Window for industry to deal on line with government.

The project was developed in conjunction with 41 relevant Government Agencies.

In total, 7,649 data elements were collected. With the elimination of "same as" elements within agencies, the number of data elements was reduced to 3,993. Prior to agency review, the data elements were harmonised to less than 1,000. The elimination of "same as" elements proved to be of substantial financial benefit for the project.

The Australian Customs Service, with the help of a number of relevant agencies at the Federal, state and territory level, is developing a Standardised Data Set (SDS) to apply across the whole of government to regulate import, export and transit movements of cargo, conveyances and crew. This will allow data from one agency to be used by another.

Fifty-seven agencies at the Federal, state and territory level share an interest in international trade information, with 41 of these agencies requesting data directly from the trading community. Drawing the bulk of these interests together using a common standard and set of definitions for data, and a system where information submitted once is used many times, has significant potential benefits for the trading community and for governments.

The adoption of a standard data set opens the possibility of developing a single entry point for the trade and transport industry to deal online with government. This would allow relevant parties to lodge standardized information and documents at a single entry point to fulfill all import, export and transit-related regulatory requirements.

There are a number of obvious links between the above case study and the current terminology work being progressed by Communities and Local Government and Cabinet Office and potential benefits that may be ultimately achieved.

**Recommendation 8:** Consideration should be given to further investigation of the use of data naming and design rules as used by DTI for Electronic Data Interchange (EDI) should be explored for any potential synergy and benefit to support the future electronic data sharing between Category 1 and 2 responders.

## 4.12 US Department of Homeland Security

The US department for Homeland Security announced approval of the National Incident Management System in March 2004. This can be found at:

[www.nimsonline.com/](http://www.nimsonline.com/)

The project clearly recognises the issues with regard to multi-agency working and potential problems with lack of common terminology. It is considered that the proposal will provide a solution to the issues of multi-agencies working together to manage major incidents.

Key elements and features of NIMS include:

- **Incident Command System (ICS).** NIMS outlines a standard incident management organisation called ICS that establishes five functional areas of command, operations, planning, logistics, and finance/administration, for management of all major incidents. To ensure further coordination and during incidents involving multiple jurisdictions or agencies, the principle of unified command has been universally incorporated into NIMS. This unified command not only coordinates the efforts of many jurisdictions, but provides for and assures joint decisions on objectives, strategies, plans, priorities, and public communications.
- **Preparedness.** Responder readiness to manage and conduct incident actions is significantly enhanced if professionals have worked together before an incident. NIMS recognises this and defines advance preparedness measures such as planning, training exercises, qualification and certification, equipment acquisition and certification, and publication management. Preparedness also incorporates mitigation activities such as public education, enforcement of building standards and codes, and preventive measures to deter or lessen the loss of life or property.
- **Communications and Information Management.** Standardised communications during an incident are essential and NIMS prescribes interoperable communications systems for both incident and information management. Responders and managers across all agencies and jurisdictions must have a common operating picture for a more efficient and effective incident response.

- **Joint Information System (JIS).** NIMS organisational measures further enhance the public communication effort. The Joint Information System provides the public with timely and accurate incident information and unified public messages. This system employs Joint Information Centers and brings incident communicators together during an incident to develop, coordinate, and deliver a unified message. This will ensure that Federal, state, tribal, and local levels of government are releasing the same information during an incident.
- **NIMS Integration Centre (NIC).** To ensure that NIMS remains an accurate and effective management tool, the NIMS NIC will be established by the Secretary of Homeland Security to assess proposed changes to NIMS, capture and evaluate lessons learned, and employ best practices. The NIC will provide strategic direction and oversight of the NIMS, supporting both routine maintenance and continuous refinement of the system and its components over the long term. The NIC will develop and facilitate national standards for NIMS education and training, first responder communications and equipment, typing of resources, qualification and credentialing of incident management and responder personnel, and standardization of equipment maintenance and resources. The NIC will continue to use the collaborative process of Federal, state, tribal, local, multi-discipline and private authorities to assess prospective changes and assure continuity and accuracy.

**Recommendation 9:** Consideration should be given to further investigation of the progress of the National Incident Management System and any relevant associated findings.

## 4.13 Fire and Rescue Service

### Integrated Risk Management Planning

Integrated Risk Management Planning (IRMP) concerns risk management planning to improve public safety, reduce the number of fire incidents and save lives. The IRMP process is central to the risk planning process of each FRS. These plans are set out locally in each FRS and determine preventative strategies and emergency response standards based on the authority's assessment of risk to their community.

Integrated risk management has shifted the focus in planning to put people first, looking at the risks arising from all fires and other emergency incidents, and at the options for reducing and managing them.

It is recognised that significant development has been undertaken with regard to the IRMP process to identify the relevant data sources that need to be considered throughout the risk

management process. It will ultimately be dependant on the ability to capture information from multiple data sets from disparate sources to provide an effective and efficient planning tool.

**Recommendation 10:** Consideration should be given to developing the synergies between the IRMP process and the CCA Integrated Risk Management process in order to achieve a seamless process for the management of risk from the smallest incident to a larger scale emergency situation.

### FiReControl

The research project has shown that, although significant areas of work on the subject of risk terminology are ongoing, there has not been, to any great extent, a co-ordinated alignment of this work under one common thread. However, recent high level events, in part arising out of the actions of the initial scoping study, give reason to believe that this amalgamation and co-ordinated direction of effort and ideas is now a very real possibility.

A good example of this is the FiReControl Project. An interview was undertaken with members of the FiReControl Data Convergence Project Team.

The FiReControl project is planning to deliver a national system of nine interconnected regional control centres. The regional control centres will form part of the Critical National Infrastructure, and will have to meet stringent security and resilience requirements.

The FiReControl project will deliver a modern, highly functional and high quality system providing full mobilising, resource status and location information.

The approach will provide a local, regional and national response capability that will be better aligned to the demands of a changing operational environment. Staff in the new control rooms will be trained to national standards in nationally agreed roles.

FiReControl has three main elements: people, technology and accommodation. The technology stream includes the key issues related to data convergence and migration, which will ultimately provide a single 'common' view of risk information across the FRS within the UK.

**Recommendation 11:** Consideration should be given to the inclusion of personnel from the FiReControl Project within the ongoing development of the common terminology across multiple stakeholders and to share the terminology findings with the FRS in Scotland.

### **Managed Learning Environment (MLE) or e-Learning Project**

The Project Manager responsible for the MLE based at the Fire Service College ([www.fireservicecollege.ac.uk/elearning\\_home.htm](http://www.fireservicecollege.ac.uk/elearning_home.htm)) was interviewed to discuss the potential areas of synergy between the Risk Terminology Project and the work being carried out with the MLE Project. It was identified that the MLE will support all aspects of the learning process including administration and management functions and provide access to knowledge, advice and guidance, research and development. The implementation of the MLE is to be phased, providing for:

- All FRS personnel (i.e. uniformed, non-uniformed, non-operational and control staff)
- Different work/shift patterns (i.e. whole time, retained, job share, home working etc)
- Access from different geographical locations (including the workplace and home).

It is considered that the MLE will:

- Provide an environment where blended learning (i.e. a mixture of traditional classroom based activities and on-line based courses) can be supported
- Deliver a programme of e-learning courses and e-reference content
- Enable collaborative learning, irrespective of geographical location or work patterns
- Provide learning opportunities in support of the IPDS framework
- Improve the consistency of learning materials and information
- Support the delivery of current, accurate, and reliable knowledge, information and learning
- Disseminate critical information to a large user-base (e.g. changes in regulations, and procedures that need to be disseminated to the fire community)
- Reduce cost by removing duplicate or overlapping training delivery or by replacing conventional delivery with on-line learning.

During the discussions it was stated that this project will not be developing new terminology and will be utilising and building on the work already undertaken by FiReControl and e-fire. It should be noted that there will be potential significant benefits from the use of the MLE in developing common terminology across the FRS and to provide interactive facilities to learn from exercises debriefs.

This has also been evidenced in the extensive work undertaken by the FiReControl data convergence team, in their ongoing work to align the data terms, and develop a common understanding across the UK FRS (As previously described).

## E-Fire Project

Team members from the 'e-fire' Project were interviewed to ascertain any potential areas of synergy with the Risk Terminology Project. E-fire is a national project, funded by Communities and Local Government under the Local Government modernisation Programme. The e-fire project will produce a range of internet-based facilities designed to assist the FRS in its delivery of electronic services and contribute towards improving safety.

The initial emphasis will be to focus on the delivery of benefits for wide sections of the community, providing:

- Advice and information about home fire safety
- Guidance and advice for Care professionals
- Assistance to operators of commercial and public premises to comply with their legal obligations to provide a safe place of work.
- Information and on-line self-assessment questionnaire for firefighter applicants.

The e-fire project will establish a robust ICT infrastructure platform. In the longer term, it is envisaged that this will enable the sharing of information in a secure environment and assist in the development of more effective working relationships between individual fire and rescue services, and between FRSs and their partners, such as those working with disadvantaged groups at high risk from fire, and also with 1st and 2nd tier responders under the Civil Contingencies Act.

A significant investment by e-fire has been made in the development of FRS data taxonomies, metadata, etc. This work has required the use of taxonomy experts who provided specific advice to the e-fire project team in this area.

The relationship with the wider e-community has been developed with the Integrated Public Services Vocabulary (IPSV). This may also provide opportunities for the development of a common language between Category 1 & 2 responders and it is considered that engagement with the IPSV Editorial Panel should be considered at the earliest opportunity.

**Recommendation 12:** Consideration should be given to examining the taxonomy created by e-fire and undertaking discussions with IPSV as part of an assessment for future involvement in the Risk Terminology Project and the utilisation of the e-fire ICT infrastructure for data sharing with external organisations.

## Remote Intelligent Management Support and Training (RIMSAT)

RIMSAT (Remote Intelligent Management Support and Training) was a European funded project with UK London Fire Brigade and West Midlands Fire and Rescue Service as UK partners.

RIMSAT was developed in the recognition that knowledge management is a firm's most valuable asset. The RIMSAT project aimed to use the acquired knowledge effectively in order to develop new and existing skills. Benefits of such a system were numerous, including inter alia, advancements in safety, an increase in cost-effectiveness and reduction in avoidable expenditure.

The RIMSAT project was to provide a facility to learn from 'critical incidents' to assist decision makers by improving incident knowledge. RIMSAT used the Data Dictionary produced by the National Mobile Data Project (see below).

**Recommendation 13:** Consideration should be given to the potential development in the RIMSAT tools which may be extremely beneficial in the development of any system support software for Category 1 and 2 responders as the project progresses.

### **Advanced Multi-Modal Intelligence for Remote Assistance (AMIRA)**

AMIRA (Advanced Multi-Modal Intelligence for Remote Assistance), often acknowledged as a "son-of-RIMSAT" project, benefits from the participation of the Fire Service in its aim to improve the accessibility of relevant information for mobile workers by the development of components using speech dialogue technology and collaborative working techniques.

It was recognised that situations may occur in which a mobile worker had difficulties in obtaining information needed in order to solve a problem at hand. The criticality of the situation may range from simply one of time to a life-threatening emergency to a major incident. In order to identify and resolve the problem encountered, such an operative needs access to multiple sources of information, provided in a meaningful way via a mobile processing and communications device with at least speech input and possibly a hands-free kit to connect to an interactive system. AMIRA's goal is to design an intelligent information access system through which relevant, reliable time-critical information can be shared via interactive communications devices such as laptops, mobile phones or PDAs.

In order to provide powerful assistance for decision-making, different types of knowledge sources must be accessible. These types include experience-based knowledge that documents solutions to specific problems, as well as more general descriptive or training documentation to support decision-making and implementation. From this perspective, AMIRA represents a seamless combination of structural CBR (CaseBased Reasoning) and full-text search.

**Recommendation 14:** Consideration should be given to monitoring the progress of the AMIRA Project which may offer suitable solutions to deliver information to Category 1 and 2 responders.

## The Data Management Tool Kit

The Data Management Tool Kit was developed by the Chief Fire Officers' Association (CFOA) – National Mobile Data Project, with the aim to remove the potential for information overload by defining role-based data requirements 'accurate, relevant and timely' (ART) information. This initially required the capture and development of a single generic FRS data dictionary comprising the various risk terms and definitions that may be required across multiple roles and various incident scenarios. The toolkit allowed the team to analyse various role-based information requirements within different operational scenarios. The team examined the data requirements for thirty one individual roles over an incident timeline, comprising:

- Mobilisation
- En-Route
- Arrival
- First 30 minutes
- Thirty minutes to Two hours
- Two hours to Close.

This analytical process allowed the development of role-based information needs to support incident ground operations. This might vary between a small to major incident where various emergency services and agencies would interact and multiple FRS 'roles' would need access to different quantities of information.

It was noted that there are a number of synergies with the above project concepts and the development of the Communities and Local Government Risk Dictionary. The potential for collaboration across the two areas of analysis methodology and software development should be explored with CFOA.

**Recommendation 15:** Consideration should be given to exploring the potential for collaboration between Communities and Local Government and CFOA on Risk Terminology and Data Management Tool Kit methodologies and software.

## The Knowledge Management Project

The Knowledge Management Project was a concept that flowed from the work of the National Mobile Data Project in the capture and provision of critical risk data for personnel on or off the incident ground. This work started as a workstream of the e-fire project but, due to re-scoping, the workstream was slipped from the initial deliverables in 2004.

The knowledge management work continued into 2005 with a number of specific workstreams analysing information requirements for:

- Building Disaster Assessment Group – specialist team of FRS personnel who had participated in physiological trials at the Fire Service College and had an awareness of potential critical information affecting operational incidents
- New Dimension – specialist personnel with knowledge and understanding of potential CBRN activities
- FiReControl – identifying key data requirements that influence decision making within a control room environment.

In addition, work was undertaken to develop an outline business case for the implementation of a knowledge management strategy to support the delivery of critical risk data for the FRS. This included six areas of work:

1. **Data Analysis** – *Existing 31 Role-based data requirements assessed. Data Analysis Requirements; Pre-Incident Requirements key to New Dimension; First 10 minutes from arrival – Fire development; FiReControl Convergence Issues Data Standards & Protocols Incident Process Maps – Decision Making; Data Presentation, Format, etc.*
2. **Data Exchange** – *Data Exchange – throughout organisational cycle, Prioritised Partnerships; Learning from others such as e-government Framework for Multi-Agency Environments (FAME), National eGovernment Project for Mobile Working (NOMAD), KM Project, etc; Prioritised data sharing to meet KM Key Drivers: Civil Resilience, Risk Management and Business Requirements.*
3. **Incident Command** – *Information ‘On and Off’ the Incident Ground. Pro-Active information delivery to improve and support decision making; Access to ‘ART’ data – real time throughout incident duration; Improvement of H& S on Incident Ground; Tools to support Silver & Gold command & control; Interoperability standards & protocols; Development and support of Multi-Agency working; Learning from others – RIMSAT, AMIRA, etc.*
4. **Expert Advice** – *Provided on the Incident Ground or at Remote locations – Silver or Gold. Partnership working; Prioritised Partnerships; Learning from others – RIMSAT, AMIRA; e-government FAME; Prioritised to meet KM Key Drivers – Category 1 & 2 Partners.*
5. **Organisational Learning** – *Capture of Intelligence ‘on and off’ the incident Ground; Hot Debrief; Fire Investigation; Unusual Incident development – Sandwich Panels, etc; Incident Health & Safety Investigation; Incident Report Form (FDR) Information; Strategic Issues*

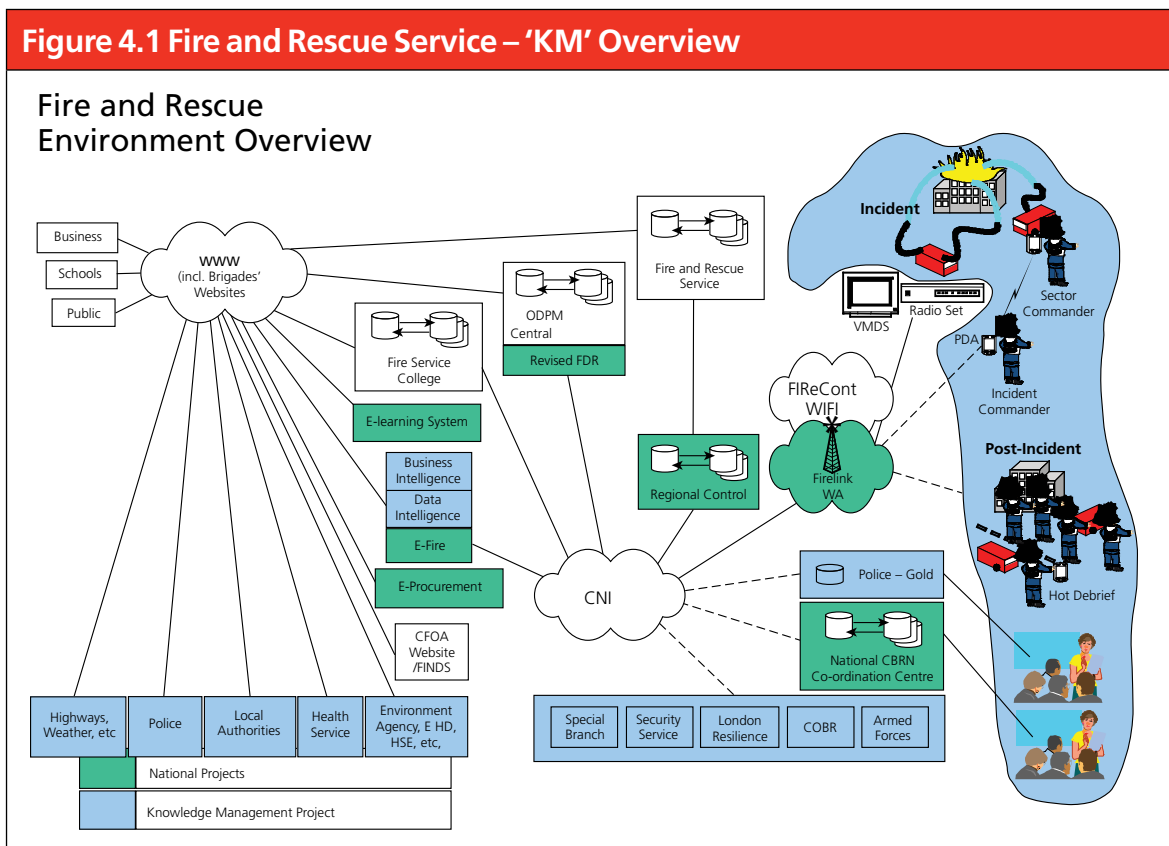
- 6. **Business Intelligence** – Providing Improvements in the: IRMP process; IEM process; Pro-active Risk Response; Training Provision; IPDS – Development of role based competencies; FDR – Data Mining Trend Analysis; Fire Investigation; Trend & Multi-agency response; Fire Safety – Enforcement & CFS

An overview diagram is provided below in Figure 4.1.

The work continued until August 2005 when it finished the re-scoping as outlined above. The status of a national FRS knowledge management is unclear and perhaps confused at this time. The project is referenced in current Communities and Local Government e-transformation documentation and included in FRS ICT Roadmap strategy for commencement in April 2007. However, following discussion with Communities and Local Government personnel there is no commitment of any necessary funding, personnel, etc to allow this work to proceed.

As the knowledge management project would clearly support a number of the other national projects and the Civil Contingencies objectives of multi-agency working, etc. It is recommended that further investigation as to the ability to secure political and financial support to take this work forward.

**Figure 4.1 Fire and Rescue Service – ‘KM’ Overview**



## 4.14 ACPO Road Policing ITS Working Group

ACPO are undertaking a number of projects that aim to improve emergency service operations with the use of technology. A number of external projects currently being carried out by Association of Chief Police Officers (ACPO) ITS Working Group were identified and considered relevant to the Risk Terminology Project.

An ACPO ITS project of particular relevance is the Petra.Net co-ordination project. The Petra.Net project aims to bridge the knowledge gap between the security research community, the emergency service and public authority community. A secure web-based network will be a tool for disseminating the European Commission's security research programme's findings, to support emergency services across Europe.

The information available on the Petra Network will be tailored for specific emergency service operator's needs. Petra also acts as a sharing platform for best practices; operational problems; good ideas; and information between emergency services, research teams, and academics across the EU.

The key points of the Petra.Net project are similar to those of the Risk Terminology Project. Petra.Net integrates knowledge across different public services, whereas the Risk Terminology Project deals with the difficulty of differing terminology when sharing information across services. Although the projects are at different stages, they inter-link on an information management level. Therefore, consideration should be given to developing links between the Petra.Net project and Risk Terminology Project.

Project React is another project that involves sharing information across the emergency services. The purpose of the project was to research options to provide assistance to emergency service control rooms. When a member of the public reports an incident to the emergency services control room, the relevant emergency services or public bodies are informed. The information is spread across a number of databases especially if the incident reported is close to a County or Country border.

There is a serious accessibility problem with dispersed information, especially considering the nature of incident response resource planning. Project React aims to develop software that will allow emergency services to identify common incidents quickly, therefore allowing a more coordinated and efficient response. The project will facilitate the sharing of data and integration across the emergency services.

The React project should not be overlooked when researching the background for the Risk Terminology Project. Project React deals with the relevant distribution and sharing of information at the time the incident is reported, whereas the Risk Terminology Project ensures the information being shared between the different bodies is understood and relevant.

**Recommendation 17:** Communities and Local Government and CFA partnership with ACPO ITS should be monitored and maintained to provide ‘active engagement’ in order to take full advantage of the current and future European ‘emergency service’ project opportunities.

## 4.15 Framework for Multi-Agency Environments (FAME) – E-Government

Framework for Multi-Agency Environments (FAME) is one of the 22 National Projects supported by the Communities and Local Government to support its local e-government strategy, the FAME National Project was set up to create a framework for multi-agency environments. What this has meant in practice is coming up with a way for local authorities and their partner agencies to share information at the local, sub-regional and regional level, while retaining control of it. The FAME website can be found at:

[www.fame-uk.org/](http://www.fame-uk.org/)

The framework that FAME has developed looks at nine areas that are key to successfully creating a multi-agency environment where information can be effectively shared. These nine areas are:

- Scoping and Business Case
- Legal Powers and Responsibilities
- Governance
- Information Sharing
- Identity Management
- Infrastructure
- Messaging Events and Transactions
- Sustainability and Federation.

Each of these is a vital component in getting information sharing to work; it is not simply a case of working out what technology is required, or even agreeing what data you want to share. One important use of terminology needs to be dealt with up front. The phrase “information sharing” implies that different agencies will be actually exchanging elements of the data they hold in order to populate their own databases.

The FAME framework has a different perspective. Within the framework, agencies are agreeing what data they are willing to allow to be seen and in what circumstances. They retain control of their data, deciding what information they need to tell others about (‘push

data'), what data they will allow others to know about if they ask ('pull data'), and what events they will tell other agencies about ('alerts'). In this way of working, any data that is displayed to a practitioner is always up to date, as it is obtained from the original source, not something that has been copied somewhere else.

The FAME project recognised that there are a number of questions that must be thought through by agencies considering if they are going to start sharing information with other agencies. These are:

- Who is going to decide what can be shared?
- Who is going to manage the systems that are used to share it?
- How will you pay for the maintenance of the systems, and the staff who are needed to manage them?

**Recommendation 18:** Consideration should be given to further examination of the FAME project for future data sharing across Category 1 and 2 Responders as the Risk Terminology Project progresses.

## 4.16 Ministry of Defence – Central Data Management Authority (CDMA)

An interview with the Ministry of Central Defence Data Management Authority highlighted a number of areas of synergy with the Risk Terminology Project.

The Central Data Management Authority exists to enable interoperability of MoD information systems, dealing with data management. Data Management within the MoD is concerned with identifying and maintaining metadata (data about data), not the specific data held in data fields.

The MoD CDMA has a staff of 12 personnel and is responsible for the management of the data across the whole of the MoD. The CDMA is organized into a cell structure to provide overlap for the various Defence Sectors, Functional Areas and Agencies.

- COMMAND CELL (1 x SO1 and 2 x SO2) Responsible for:  
*Command Function, RN Sector, Army Sector, Intelligence and NATO.*
- LOGISTICS CELL (2 x C2) Responsible for:  
*DLO, DPA, Geographic, Defence Estates and e-Gov.*
- PERSONNEL CELL (2 x C2) Responsible for:  
*Personnel Function, RAF Sector, Finance, Medical and Training.*

- TECHNICAL SUPPORT CELL (1 x C1 and 2 x C2) Responsible for:  
*Website Maintenance, DDR Administration and Technology Refresh.*
- HELP DESK and ADMIN CELL (1 x D and 1 x E)

In order to provide effective data management a system of governance structure for the management of data has been established. Data Management within MoD is guided by the Information Environment Regulatory Executive Group. The IE REG membership is drawn from all areas of the MoD and reports to the Defence Information Reference Group Executive. The Data Management Groups are the main conduit into the business areas. They:

- Undertake much of the work with ourselves at CDMA
- Ensure the products are acceptable to business areas and staff candidate data definitions from projects
- Some are technical based, some business based.

The Defence Information Strategy has a basic assumption that all Defence information should be sharable, in order to “be more joined up – internally and externally”. However, a number of building blocks are required in order that this might be achieved:

- Data Definitions
- Data Management
- Information Management.

The key to their work is the Defence Data Repository (DDR).<sup>2</sup> See Appendix E. This is a type of data dictionary, but also includes terms, information objects and encyclopaedic data. It exists to hold the MoD’s corporate metadata.

The MoD are interested in the metadata for information being passed between systems across functional areas and any global interfaces between function areas and going outside MoD. Also they are particularly interested in any new systems metadata.

The NATO definition of interoperability (taken from both the Allied Administration Publication 31) which is a generic description of interoperability for information systems, is defined as:

*“The ability of systems, units or forces to provide services to and accept services from other systems units or forces combined with the ability to use the services so exchanged to enable them to operate effectively together” (NATO – AAP-31)*

<sup>2</sup> [www.def.army.mod.uk/www.cdma.mod.uk/rohome.asp](http://www.def.army.mod.uk/www.cdma.mod.uk/rohome.asp)

CDMA defines interoperability by replacing the 'service' with 'information'. This then becomes "The ability to share information combined with the ability to use (understand) the information so shared".

In terms of supporting information interoperability, Information Management is about the sharing of information. (IM may do other things – it is only described here in the context of supporting information interoperability) and Data Management is about making that information usable and understandable, by "making information make sense".

CDMA principles of Data Management:

- **Data** should, where possible, be captured once and once only. This reduces the possibility of contention. This is for both the metadata and occurrence data.
- **Where** data is exchanged between information systems, its definition must be explicitly agreed by the owners of those systems. This stops the possibility of ambiguity. Definition here includes the textual description, the format and the structure of the data.
- **Data** which is exchanged between Information Systems must have an identified 'Owner' – someone who, alone, is authorized to amend the metadata. This will prevent two variants of the same data being present at the same time. It is important to note here that the Owner of the data is different from the Owner of the Information System.
- **Data** which is unchanging in nature must not be the subject of routine exchange between information systems. This prevents communications becoming 'clogged' up with data traffic which is not of time-related value, and which will delay (or even stop) the passage of data that is time related in value.

The metadata definitions are agreed across the whole of MoD and held in the Defence Data Repository (DDR). They are taken from agreed standards (in the order of ISO, British Standard, DefStan or MoD) where possible. The Defence Data Repository will contain a set of agreed interface standards. These are data Models containing agreed MoD data definitions in a structure. Encyclopedic Data needs to be controlled and not duplicated within the MoD.

The international aspects of Data Management require the CDMA to manage the MoD's differences to external data standards. This includes work between national government agencies and departments. A comprehensive set of Data Management Policies exist.

The principles employed in the DDR are as follows:

- A data item will be defined in the DDR in isolation from any Model.

- Data definitions will be acceptable to the whole of the MoD and will be fit for purpose rather than perfect.
- Rather than create another definition when a satisfactory one exists elsewhere, extant international and other standard definitions, where those are acceptable to the MoD business, will be used.
- Where those international definitions are not satisfactory, these will be held as synonyms or partial synonyms to aid the mapping of agreed MoD definitions to those standards.
- As part of the process of agreeing a MoD data definition, the owner of that definition will be identified (as required by JSP 329 DM9) to ensure that the definition meets the MoD's requirements and to control any changes to that definition.

The DDR holds the following information for each data definition:

- An unambiguous label used to identify the data item.
- A full, clear textual description defining the label.
- The format that the data item uses.
- The business owner of the data definition. e.g. DLO
- The DMG that originated the data definition.
- The way in which the data item is used.
- The system (or systems) where the data item is used.
- A pointer to where any encyclopedic data sources may be located.
- In addition, the DDR will hold pointers to diagrams and other supporting documentation of any data interface Models.

It was indicated during discussions that the DDR could be made available to Communities and Local Government for their use. It is considered that this may be an extremely useful tool and build on partnership working between Communities and Local Government, MoD and Cabinet Office.

A second interview with personnel from the MoD CDMA took place to discuss the work that had been undertaken to create the UK Defence Taxonomy.

The MoD has over 500 major information systems and due to their role is interested in every subject. The MoD definitions can vary from those in outside organisations – Theatre – in the hospital, performing for the troops, operational theatre environment. Theatre of operations: A geographical area defined by the military strategic authority which includes and surrounds the area delegated to the operational commander within which he will conduct operations – known as the joint operations area.

It was recognised that MoD needed to adapt to deliver 'better use' of information. This involved cultural change – internally driven and external forces – portals, electronic ways of working.

It was recognised that legacy material can not be manually tagged and the only alternative is auto-categorisation. However, these tools need a rule base which can come from the taxonomy, allowing ambiguous terms are made clear with use of scope notes.

A number of initiatives to improve the exploitation of information by the formation of cross subject working groups and teams. The aim was to achieve a common use and understanding of skills terminology. It was found that acronyms and abbreviations are pervasive throughout the public sector and that they impact on use of auto-categorisation tools e.g. LAW – local area workgroup – may categorise under legal subject (computer wrongly interpret). Therefore, the MoD recognised the need to adapt to change and make its own change to deliver better use of information.

A number of important UK Defence taxonomy principals were established:

- Subject based not organisation based as the MoD changes so often it would not make sense
- Improving Information Management – One label instead of many to support consistent indexing and retrieval
- Remove ambiguity and duplication of terms
- If it doesn't meet the business requirements it will soon lose its credibility.

The UK Defence Taxonomy is the source of the values for the subject category, and the UK Defence Thesaurus will be the source for the subject keywords. This work has been cross referenced with the Integrated Public Sector Vocabulary (IPSV) categorisation.

This work to the development of the UK Defence Taxonomy was achieved within a three month timescale, excluding the planning stage. An extremely ambitious project which has assisted in the ability in the goal of interoperability. It is considered that further dialogue between MoD, Communities and Local Government and Cabinet Office personnel would be strongly advisable.

**Recommendation 19:** Consideration should be given to development of the partnership working between Communities and Local Government, MoD and Cabinet Office – considering potential use of the DDR and taxonomy expertise.

## 4.17 The National Health Service – Single Assessment Process

The Single Assessment Process (SAP) aims to provide a coordinated way for NHS and social care agencies to assess the health and social care needs of older people and their carers, and to plan and deliver their care. The SAP tool will assist the capture and sharing of 'care assessment, planning and delivery' information more effectively. Further information can be found at:

[www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4009402](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4009402)

Individuals and carers needing health and social care support might have five or six different assessments, which could see them answering the same questions time and again. Subsequent care plans are also often uncoordinated.

To meet these aims, the new system will enable the many professionals involved in delivering care to record the key information they need in an up-to-date single record and share it. The system will be made available to both health and social services in all of London's local care communities, allowing the electronic sharing of information across organisational and geographic boundaries; this is particularly important in London where care can be delivered by many different agencies.

Department of Health required agencies implementing the Single Assessment Process to 'review the terminology in local use to describe assessment and other care processes, and agree a common language'. This can be found at:

[www.cpa.org.uk/sap/glossary/glossary.html](http://www.cpa.org.uk/sap/glossary/glossary.html)

This glossary has been developed to explain some of the terms used by health and social care agencies when working with adults. Its aim is to assist multi-agency training and help communication between staff from a variety of agencies.

The glossary may also be useful to explain concepts and processes to the individuals and carers we work with, so supporting them in decision making and self management.

## 4.18 NHS Data Dictionaries

Another good example of risk terminology standards is provided with the NHS Data Dictionary. This can be found at:

[www.connectingforhealth.nhs.uk/systemsandservices/data/datamodeldictionary/datamodeldictionary/content](http://www.connectingforhealth.nhs.uk/systemsandservices/data/datamodeldictionary/datamodeldictionary/content)

The dictionary was established in 1985 and provides a robust system for managing data supporting policy and procedures within the NHS. The scale of this operation is impressive, with an estimated one thousand people from various locations potentially contributing to its development and ongoing support.

There has been significant investment in the system over the years to achieve the current functionality. A team of seven business analysts /data Modellers currently manage the data dictionary function of this system alone. It is a multi faceted system providing access for medical professionals to standardised terminology and procedures which have been approved through a national level vetting process.

This process ensures that, regardless of location or position within the NHS; common terms, meanings and policies are adopted. Similarly data is collected in a standardised manner from all areas of the NHS.

This information is shared, within certain legal constraints, with other related services, e.g. Social Services and Elderly People Services. Doctors within the Ministry of Defence (MoD) and The Prison Service also have access to this system and contribute appropriate data.

From an operational perspective one function/element of the NHS system named SNOMED offers great support to ambulance crews and other medical professionals attending emergency incidents. This system, which is password protected, provides access to terminology, diagnosis and procedures in respect of illness and injury.

During the interviews it became clear that, although the NHS Data Dictionary; risk data terminology and procedures within the system had been through a rigorous national medical approval system, there was no intentional design currently to embrace other organisations' risk terminology outside of the medical world and any commonality with other agencies vocabulary. It was, however, identified that any development which would allow interaction of other services terminology would be a significant improvement to the existing system and one which would be considered favourably.

It was found that NHS Data Dictionary was not aligned or linked with The Integrated Public Sector Vocabulary system (IPSV) and that there was little current awareness of this work.

It was also found that, although the NHS Dictionary supports doctors within MoD, there was no linkage to any terminology work ongoing within the MoD.

In summary, this Data Dictionary is an excellent example of the type of development that it is possible to achieve through one organisation. If a coordinated approach was to be established pan service, much could be gained from a closer inspection of this endeavour and therefore it presents itself as an interesting case study.

**Recommendation 20:** Consideration should be given to development of the partnership working between Communities and Local Government and NHS – considering their experience and expertise in use and development of the Data Dictionary and links to operational support systems.

## 4.19 Integrated Public Sector Vocabulary (IPSV)

An interview with a member of the Integrated Public Sector Vocabulary (IPSV) editorial panel was undertaken. The IPSV is part of the Cabinet Office e-Government Unit (eGU). IPSV is an 'encoding scheme' for populating the e-GMS Subject element of metadata. It is fully compliant with ISO 2788 and BS 8723, the International and British Standards for monolingual thesauri. The vocabulary was developed with the backing of Communities and Local Government and the eGU and is constantly being reviewed and updated. This can be found at:

[www.esd.org.uk/standards/ipsv/](http://www.esd.org.uk/standards/ipsv/)

Version 1 was developed by merging three earlier lists: the GCL (Government Category List), LGCL (Local Government Category List) and seamlessUK taxonomy. It had 2,732 preferred terms and 4,230 non-preferred. Version 2 is much bigger, with 3,080 preferred terms and 4,843 non-preferred. As a result, IPSV now covers internal-facing as well as public-oriented topics.

In addition, two subsets of IPSV are now available:

- The Internal Vocabulary covers only the 'internal-facing' topics. It has 756 preferred terms and 1,334 non-preferred
- The Abridged version covers the whole scope of IPSV but is limited to the upper levels. It has 549 preferred terms and 1,473 non-preferred.

IPSV provides and maintains the list of services accepted as the standard for defining local authority outputs and measuring electronic service delivery. These lists provide different ways of grouping services. The family of lists helps local authorities share resources with one another and with external bodies. So work carried out by one authority, or centrally, can be more readily accessed by other authorities. The lists are:

- Local Government Service List (aka The PID List) Local authority service
  - Local Government Audience List – The types of people at whom local government resources are aimed
  - Local Government Classification Scheme – Used to construct a file plan for records management

- Local Government Interaction List – Interaction types
- Local Government Business Category List – Business sectors relevant to local government
- Local Government Directory List – The directory structure of a typical council
- Local Government Category List – Terms describing local government resources and a Web site navigation
  - Government Category List – Terms describing all government resources

The lists provide a method of cross referencing by a consistent indexing standard. This will allow different local authorities to share information more easily with one another and with external bodies if they use the same terminology to index things. These are described in detail at the following link:

[www.esd.org.uk/forums/download.php?id=445](http://www.esd.org.uk/forums/download.php?id=445)

The online display shows IPSV as a hierarchical tree structure, which can be searched interactively. It uses the same conventions as in the esd-toolkit display of the LGCL, except that no distinction is made between “categories” and “keywords”.

IPSV can be downloaded in a variety of formats as listed below. You can also download mappings from LGCL and LGSL terms. For tips on how to use IPSV, and explanations of all the resources, see the guidance notes lower down.

The esd-toolkit is a hosted, secure, online resource that enables all local authorities to record their public facing services against a comprehensive list of services, processes and interactions. Using the esd-toolkit local authorities can monitor, manage and report on their progress towards implementing electronic government and modernisation targets – making a real difference – improving services for the citizen. The esd-tool kit may provide alternative methods for analysing and managing risk terminology and should be explored before implementation. Further detailed information can be found at:

[www.esd.org.uk/esdtoolkit/](http://www.esd.org.uk/esdtoolkit/)

The governance structure for the esd-toolkit indicates a partnership working theme within the framework including:

- Attributes and Metadata
- Interoperability & Standards
- Multi-agency working

As the esd-toolkit has the involvement of numerous Local Authorities it should be considered in the future developments of the Risk Terminology Project.

**Recommendation 21:** Consideration should be given to the further investigation of IPSV for the analysis and/or management tool for the Risk Terminology Project.

## 4.20 Infrastructure for Spatial Information in Europe (INSPIRE)

Infrastructure for Spatial Information in Europe (INSPIRE) is a European project which aims at making available relevant, harmonised and quality geographic information for the purpose of formulation, implementation, monitoring and evaluation of Community policy-making. Information on this project can be found at:

[www.ec-gis.org/inspire/](http://www.ec-gis.org/inspire/)

Currently the general situation on spatial information in Europe is one of fragmentation of datasets and sources, gaps in availability, lack of harmonisation between datasets at different geographical scales and duplication of information collection. These problems make it difficult to identify; access and use the data that is available.

Fortunately, awareness is growing at national and at EU level about the need for quality geo-referenced information to support understanding of the complexity and interactions between human activities and environmental pressures and impacts. The INSPIRE initiative is therefore timely and relevant but also a major challenge given the general situation outlined above and the many stakeholder interests to be addressed.

It is indicated that spatial information can provide a key role and opportunity as it allows data to be integrated from a variety of disciplines for a variety of uses. It is believed that a widely accessible spatial description of the community territory would deliver the requisite framework for coordinating information delivery and monitoring across the community. This objective could be a key factor to achieving interoperability and supporting the sharing of information between organisations.

The INSPIRE principles are that:

- Data should be collected once and maintained at the level where this can be done most effectively
- It should be possible to combine seamlessly spatial data from different sources and share it between many users and applications
- Spatial data should be collected at one level of government and shared between all levels
- Spatial data needed for good governance should be available on conditions that are not restricting its extensive use

- It should be easy to discover which spatial data is available, to evaluate its fitness for purpose and to know which conditions apply for its use

It is suggested that the target users of INSPIRE include policy-makers, planners and managers at European, national and local level and the citizens and their organisations. Possible services are the visualisation of information layers, overlay of information from different sources, spatial and temporal analysis, etc.

This project may be very influential in the development and use of Geographical Information systems with particular emphasis on those that support the risk management process within the FRS such as the Fire Service Emergency Cover (FSEC) and FiReControl project.

**Recommendation 22:** Consideration should be given to the development of awareness across Communities and Local Government of the INSPIRE project and the potential specific links to FSEC and FiReControl project.

## 4.21 Project Orchestra

An interview was undertaken with Ordnance Survey personnel who are one of the partnering agencies within the Project Orchestra consortium. Orchestra is a European funded project which commenced in September 2004 for a three-year duration.

This project is concerned with Risk Management activities and the associated complexities by virtue of the range of organisations and various administrative levels, each with their own systems and services that would be involved. This fragmentation makes it difficult for agencies to share relevant information so as to handle the problem efficiently. It was indicated that, even when data is exchanged, the formats and systems used are so different that it hampers proper data analysis and resource management – all critical elements of risk management. Further information can be found at:

[www.eu-orchestra.org/](http://www.eu-orchestra.org/)

The project has identified the need to be able to consolidate information from disparate systems to support citizen protection and security, disaster management, criminal justice, and other missions. Also, administrations need to be able to work together across organisational boundaries whether they are at European, national, regional or local levels. The aim of ORCHESTRA is to improve the technical interoperability between actors in the risk management chain so that they are able to share information more effectively.

More specific goals of ORCHESTRA are:

- To design an open service-oriented architecture for risk management
- To develop the software infrastructure for enabling risk management services
- To deliver an infrastructure integrating spatial and non-spatial services for risk management
- To validate the ORCHESTRA results in a multi-risk scenario
- To provide software standards for risk management applications

The project has set out to develop a service-oriented architecture for risk management based on open standards, together with a software infrastructure for enabling risk management services. Services applicable to specific risk management applications, for instance forest fires or floods, man-made risks, are also being developed.

In addition, emerging specifications out of the INSPIRE and GMES initiatives will be incorporated into Project Orchestra. Software adhering to the ORCHESTRA architecture will be able to interoperate, to a certain extent even at a semantic level, and organisations will be able to cooperate much more efficiently than it is currently possible.

It is recommended that contact is actively pursued with Project Orchestra due to their links with other associated European projects and the level of synergy with the Risk Terminology Project objectives of – terminology, interoperability and risk management.

**Recommendation 23:** Consideration should be given to development of the links with Project Orchestra due to the links with other EU Projects GMES and INSPIRE and specifically – issues of terminology, interoperability and risk management.

## 4.22 Global Monitoring for Environment and Security (GMES)

The Global Monitoring for Environment and Security (GMES) concept was initiated in 1998 and is a joint initiative of the EU and European Space Agency (ESA) Councils. The project called for “...establishing by 2008 a European capacity for Global Monitoring of Environment and Security” to gather, interpret and use data and information in support of sustainable development policies. It represents a concerted attempt to bring environmental and security data and information providers together with users, to better understand each other and to agree on how to make such information available to the people who need it. Information on this project can be found at:

[http://europa.eu.int/comm/space/gmes/index\\_en.htm](http://europa.eu.int/comm/space/gmes/index_en.htm)

GMES is highlighted within Project Orchestra, a Disaster and Risk Management project which indicates that account should be taken of both INSPIRE and GMES initiatives.

The plan outlines steps towards the establishment of a system that will harness, coordinate and enhance existing Earth observation and monitoring information from satellites and Earth-based sensors, in order to support better decision-making for the environment and security. The initiative aims at providing independent, cost-effective, and user-friendly services that can help to anticipate or address crises such as forest fires or floods, and lead to better management of issues ranging from the protection of the environment to combating illegal immigration.

It is recognised that, currently, a lot of data on these matters is available from many different sources, but, for technical reasons or due to a lack of co-operation, they are often inconsistent or not fully integrated.

“The greater the accuracy and timeliness of the information available, the greater the ability for decision-makers to act effectively,” Accurate decision-making for the environment and security is complex. In the past, substantial investment has been made to gather and treat information that can better support environmental and security policies. But raw information, including data from diverse and often unrelated sources, has to be processed frequently, often within demanding time constraints. The end result is that the information, in its current form, is not useful to those who need it. The GMES initiative aims to bring together and make the most of existing data collected from Earth-based *in-situ* monitoring capacities, as well as airborne and space-based Earth observation tools.

It will also provide a strategic tool to support a wide range of European policies including agriculture, transport, regional development, fisheries and external relations. GMES has also a great potential to stimulate economic growth by fostering the creation of new innovative services so much so that it has been selected as one of the “Quick Start” projects in the Commission’s Initiative for Growth. Specifically, the Action Plan outlines tasks required to accomplish this in the next four years, including:

- Developing the right tools (space and in-situ components) that can collect the required information
- Designing the appropriate data integration and information management infrastructure that will allow users to easily access and share the information
- Providing regular and reliable services that are tailored to the specific needs of users
- Establishing a structure for effectively funding and managing the new GMES capacity

## 4.23 Project OASIS

The OASIS Project addresses the Strategic objective, “Improving Risk Management”. This is a European funded project which commenced in September 2004 and will be completed by September 2008.

It is proposed that civil protection organisations had not benefited as much as other professionals from the new information technologies:

- The situation is now evolving but this evolution is conducted at national level and in a great number of cases at regional level
- Some organisations are equipped with latest technologies, while others only have previous generation systems
- Problems of compatibility and interoperability are increasing

It is stated that the project aims to:

- Support the response operations from local emergencies, to those on a large scale and to any kind of disaster
- To develop a Disaster and Emergency Management system which can be used at the different levels of the civil protection organisations, European, national, regional or local and facilitate the cooperation between the information systems used by the civil protection organisations

OASIS is to define and develop an Information Technology framework based on an open and flexible architecture and using standards, existing or proposed by OASIS, that will be the basis of a European Disaster and Emergency Management system.

OASIS will provide within this framework an initial set of applications which will cover the main needs that are identified by the end-users. The first version in September 2006 in the context of exercises in the area of the partners premises, the second version at the beginning of 2008 in the frame of ‘in the field’ exercises.

This highlights another European project with similar scope and objectives to other EU projects mentioned in this report. Although no specific reference of links to INSPIRE or GMES were noted, which for the nature of the project deliverables would be highly advantageous. However, the scope for OASIS is specifically related to the Civil Contingencies arena, with issues of terminology and interoperability specified. It is therefore recommended that further investigation be made with the project at the earliest opportunity.

**Recommendation 24:** Consideration should be given to development of links with Project OASIS as this project is specifically linked to the Civil Contingencies arena with issues of terminology and interoperability.

## 4.24 Leeds University Location Sensitive Information Project

The Leeds University Business School (LUBs) have formed a consortium of Government Departments, Agencies and other bodies that are interested on the use of geographically-coded data within a Location Sensitive Information System (LoSIS). This project aims to explore the specific information requirements of individuals in the context of their location and of his/her current activities.

This will be focused on Category 1 responders, whose organisations at the core of the response to most emergencies (e.g. emergency services, local authorities, NHS bodies). Category 1 responders are subject to the full set of civil protection duties. They are amongst other matters required to:

- Assess the risk of emergencies occurring and use this to inform contingency planning
- Share information with other local responders to enhance co-ordination.

It was indicated that the work would initially take the form of a gap analysis attempting to quantify the range of issues and the work that has been undertaken to date. This will take approximately 12 months to complete. Any areas identified where further research is necessary would then be subject to European bids for funding.

It is considered that this work would be complimentary to the data analysis workshops recommended within this report and may provide a ready made group to form editorial panel workshops (See L06160 Risk Dictionary and User Guidance No 106160 – Section 2 and Appendix D).

**Recommendation 25:** As the Leeds University – Location Sensitive Information Project research is focused on Civil Contingencies the involvement and support of Communities and Local Government and Cabinet Office will benefit all parties, particularly during the initial gap analysis – identifying cross-cutting issues.

## 4.25 Mines Rescue Service Ltd

An interview was undertaken with personnel from the Mines Rescue Service Ltd. It became apparent that the Mines Rescue Service Ltd had significant, knowledge, skills, understanding and specialist equipment that could contribute to a large scale multi – agency incident. This was recognised from their involvement in rescue operations at the Stockline Plastic Factory explosion which occurred on the 11 May 2004 in Glasgow, in which 9 people died and 40 were injured.

Senior managers from the Mines Rescue Service Ltd expressed the view that their potential contribution as a responder to emergencies does not appear to have been fully embraced within CCA. It was indicated that this has created a feeling of isolation due to lack of inclusion within the mainstream emergency preparedness planning process.

It is considered that the inclusion of the Mines Rescue Service Ltd would make sense in the move towards a common risk terminology and methodology.

**Recommendation 26:** Consideration should be given to the inclusion of the Mines Rescue Service Ltd in the development of a common terminology and also their contribution as a responder to emergencies.

## 4.26 The Highways Agency

An interview with personnel from the Highways Agency was undertaken to ascertain their current position with respect to the development of a common terminology, etc. Whilst it is recognised that they are currently not identified as either a Category 1 or Category 2 responder, they may be one of the responders attending an emergency possibly the first to arrive through their traffic safety officers and the operation of regional traffic control centres.

The Highways agency act as the operator of Motorways and All-Purpose Trunk Roads in England. They have mobile personnel who manage traffic and attempt to reduce delays on the major road network systems. The Highways Agency are currently examining their knowledge management strategy with a key aim to provide accurate, relevant timely information to their personnel.

It is clear from examining training documentation from Multi-Agency Training Exercise 'Advance' that the issue of a common terminology is key, particularly when:

- There is early identification of chemicals (Hazmat Kit)
- Early multi-agency coordination for Silver/Gold
- Early removal of stranded traffic
- Exercises and training at a local level
- All agencies working to consistent national standards

**Recommendation 27:** Consideration should be given to the inclusion of the Highways Agency in the development of a common terminology and also their contribution as a responder to emergencies.

## 4.27 The Dublin Core Metadata Initiative (DCMI)

The Dublin Core Metadata Initiative (DCMI) is an open forum engaged in the development of interoperable online metadata standards that support a broad range of purposes and business models. This can be found at:

<http://dublincore.org/>

DCMI's activities include consensus-driven working groups, global conferences and workshops, standards liaison, and educational efforts to promote widespread adoption of interoperable metadata standards and developing specialized metadata vocabularies for describing resources that enable more intelligent information discovery systems.

The Dublin Core Metadata Initiative provides simple standards to facilitate the finding, sharing and management of information. DCMI does this by:

- Developing and maintaining international standards for describing resources
- Supporting a worldwide community of users and developers
- Promoting widespread use of Dublin Core solutions.

The major characteristics of DCMI as an organization are (the three 'I's):

- Independent: DCMI is not controlled by specific commercial or other interests and is not biased towards specific domains nor does it mandate specific technical solutions
- International: DCMI encourages participation from organizations anywhere in the world, respecting linguistic and cultural differences
- Influenceable: DCMI is an open organization aiming at building consensus among the participating organizations; there are no prerequisites for participation.

The development of Metadata for the risk terminology work will be necessary and therefore the DCMI is brought to the attention of Communities and Local Government. It should be noted that Dublin Core Metadata Initiative is referenced within IPSV.

Any system supporting emergency preparedness should be robust and secure at all times in order to fulfil its function effectively. In developing homeland security the American Government have produced a white paper addressing these issues.

## 4.28 Other examples include of good practice

### **Railway Lexicon**

[www.railway-technical.com/lex15.shtml](http://www.railway-technical.com/lex15.shtml)

This is a web based technical dictionary giving railway terminology and descriptions as used by Network Rail (formerly Railtrack); the system also provides links to other technical railway data sites including a site dealing specifically with abbreviations and another with English versus American terminology.

## Acronym Finder

[www.acronymfinder.com/](http://www.acronymfinder.com/)

This is a Web based resource as described below.

Figure 4.2 Acronym Finder	
<p>With more than 475,000 human-edited entries, Acronym Finder is the world’s largest and most comprehensive database of acronyms, abbreviations, and initialisms. Combined with the Acronym Attic, Acronym Finder contains more than 3 million acronyms and abbreviations. Search or filter for terms is possible from the following categories:</p>	
<p><b>Information Technology (IT)</b>                      Information technology, Internet/Web, Telecommunications, computing &amp; computer science, hardware, software, etc.                      Examples: AJAX , CMM, DHCP, FTP, HTTP, PDA, RSS, SDK, TCP, WWW</p>	<p><b>Science &amp; Medicine</b>                      Popular science, hard science, medicine, nature, engineering, physics, space, astronomy, geology, chemistry, etc.                      Examples: ACL, DNA, HEPA, LASER, MRI, PTFE, SSRI, TIA, TENS, VOC</p>
<p><b>Military &amp; Government</b>                      Local, national and international governments, military, defence, defence industry, weapons systems, etc.                      Examples: DoD, ICBM, ICE, NHS, MoD, NOAA, NSA, OSHA, NZQA</p>	<p><b>Organisations &amp; Schools</b>                      Local, national, and international organisations, schools, colleges, universities, education, non-profits, NGOs, etc.                      Examples: ALA, ANWB, BBB, IEEE, MoMA, NEA, UCLA, UN, WTO</p>
<p><b>Business &amp; Finance</b>                      Business, finance, accounting, marketing, real estate, shipping, companies, stock markets, products, etc.                      Examples: BOE, CEO, EBIDTA, FOB, GAAP, IKEA, IPO, MLS, P&amp;L, TVM</p>	<p><b>Slang &amp; Pop Culture</b>                      Slang, chat, instant messaging, newsgroups, sports, people, pop culture, etc.                      Examples: AFAIK, BRB, IIRC, IMHO, JFK, LOL</p>

## Business Continuity

The issues relating to risk terminology extend well beyond responding agencies and into other areas impacting on civil resilience. Examples include business continuity support services, infrastructure and financial impacts. One such example is the Disaster Advice Glossary which is a commercial site giving definition for common disaster related terminology, with references to source of definition in some cases. This can be found at:

[www.disasteradvice.co.uk/glossary\\_y.html](http://www.disasteradvice.co.uk/glossary_y.html)

# Chapter 5

## Risk Dictionary Software

### 5.1 The Risk Dictionary Software

This element of the report:

- Builds on the Section 5 of the Risk Terminology Report V1.2 dated the 30 March 2006, which outlined the issues and proposed structure for the Risk Dictionary
- Is taken from the Risk Dictionary Methodology and User Guidance Document Report No L06160.

in order to provide an overview of the functionality contained within the Risk Dictionary software.

### 5.2 Risk Dictionary Model

In the development of this Risk Dictionary Model a number of:

- Glossaries have been sourced from documents, internet, etc (See Appendix E). Many of the glossaries include a mixture of designations, abbreviations, acronyms and their descriptions. In some cases it would appear that they had not followed any formal guidance in their creation (ISO 740). The glossaries comprised of two structured levels designation (L2) and description (L2\_d)
- Datasets have been obtained from electronic support systems which have an existing data structure to match the Risk Dictionary Model (L0 to L2\_d).

ISO 704: 2000 Terminology work – Principles and methods. This document standardises the essential elements for undertaking quality work in terminology, providing a common framework for organisations or individuals to manage implementation. It is also intended to provide assistance to those in terminology management and manipulation, including the planning and decision making involved in managing a stock of terminology. The main activities include:

- Identifying concepts and concept relationships
- Analysing and Modelling concept systems on the basis of identified concepts and concept relations

- Establishing representations of concept systems through concept diagrams
- Defining concepts
- Attributing designations (predominantly terms) to each concept in one or more languages
- Recording and presenting terminological data, principally in print and electronic media (terminography).

In addition, the following ISO standards are referenced in this document:

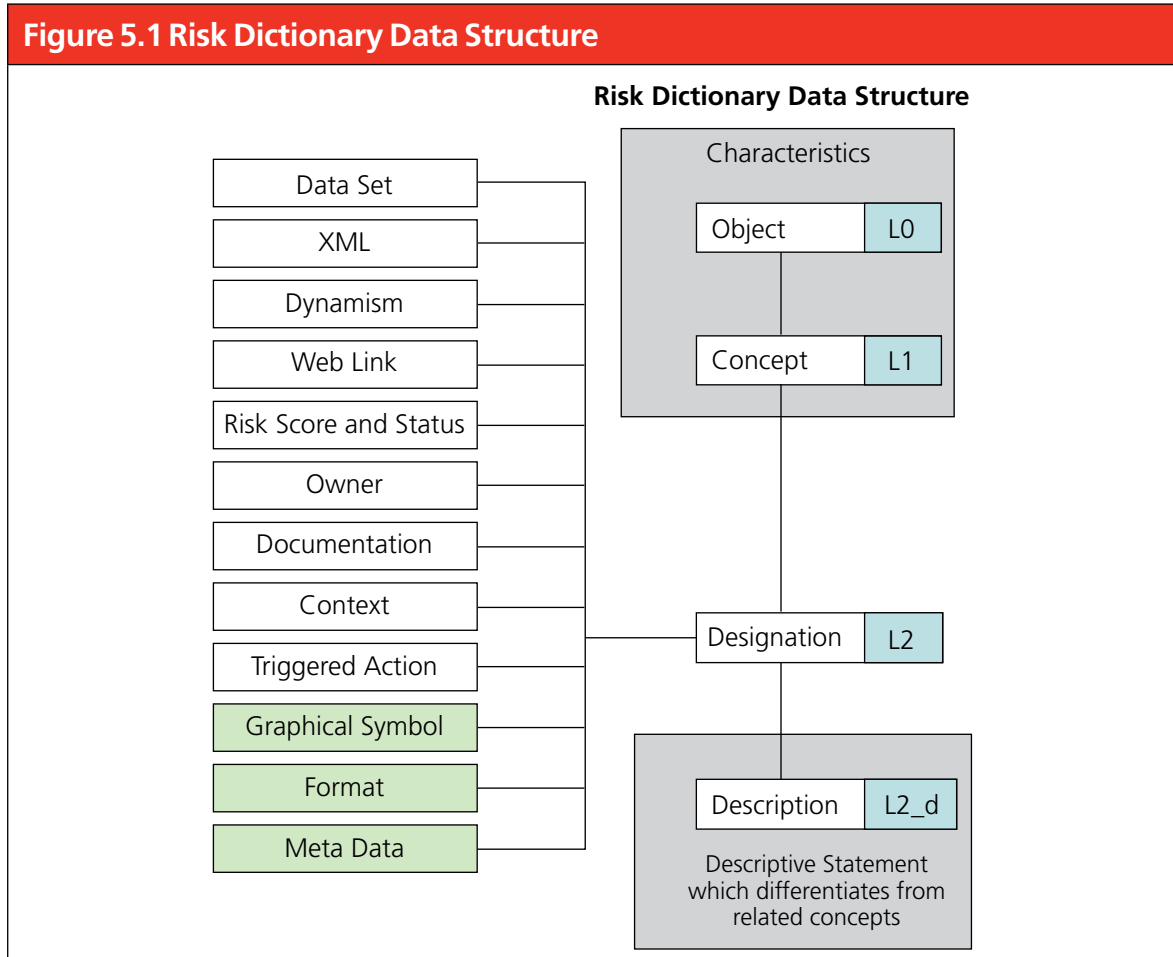
ISO 860:1996 Terminology work Harmonization of concepts and terms

ISO 15188: 2001 Project Management guidelines for terminology standardisation

ISO 1087-1: 2000 Terminology work Vocabulary Part 1: Theory and application

ISO 1087-1: 2000 Terminology work Vocabulary Part 1: Computer Applications

Where possible due regard to the above documents has been made in respect of the development of the Risk Dictionary; in addition to the specific needs identified in the Statement of Requirements. Therefore, the issues surrounding the use and analysis of multi-agency terminology are complex and are shown in Figures 5.1 and 5.2 below:



Levels L0 & L1 are generally not included within glossaries. These are the concept or object which the designation is attempting to label and the description (L2\_d) is attempting to describe by way of the characteristics, shape, usage, composition, etc. Therefore, for the purposes of the Risk Dictionary these levels (L0 & L1) will need to be defined in broad terms to outline the concept in which the designations and descriptions have been developed.

This will allow future amendment/MoDification of concept level (L0 & L1) when attempting to analyse and harmonise the terminology.

### 5.3 Risk Dictionary Elements

In addition, the following factors need to be considered with each designation. Those indicated with \* are considered to be key areas of interest to this study:

**Data Set** – The name of the dataset that the designation belongs to, if appropriate.

**XML** – The extendable mark-up language tag used to identify the designation.

**Dynamism** – the potential for the object to change, and the rate of change, such as the weather which would be very dynamic and a spatial reference which would never change.

**Web Link** – the reference from which the designation was sourced or associated.

**Risk Score & Status** – The ability to assess the risk of the individual designation from both its impact and potential likelihood of occurrence. To provide a methodology and software tool to assist the development of a structured prioritised approach to the Management of Risk Terminology.

**Owner** – The owner of the terminology and its management and continued use.

**Documentation\*** – The reference from which the designation was sourced.

**Context\*** – The context or scenario in which the designation would be used

**Triggered Action\*** – The actions that may be initiated with the use of the designation within the context of the response.

**Graphic Symbol** – The use of a graphic symbol to substitute or support the designation. (Not included in this version of software)

**Format** – The format in which the current designation is held. (Not included in this version of software)

**Meta Data** – Meta data is data that expresses the context or relativity of data. Examples of meta data include data element descriptions, data type descriptions, attribute/property descriptions, range/domain descriptions and process/method descriptions. Meta data includes name, length, valid values and description of a data element. Ref: [www.dmreview.com/resources/glossary.cfm](http://www.dmreview.com/resources/glossary.cfm) (Not all elements are included in this version of software)

Also, there are potential issues in respect of numerous variations in terminology across multiple stakeholders, in respect of the designation and description.

## 5.4 Abbreviation and Acronyms

In the case of designations they may include the use of abbreviation and acronyms. Many stakeholders only appear to publish lists of abbreviations and acronyms.

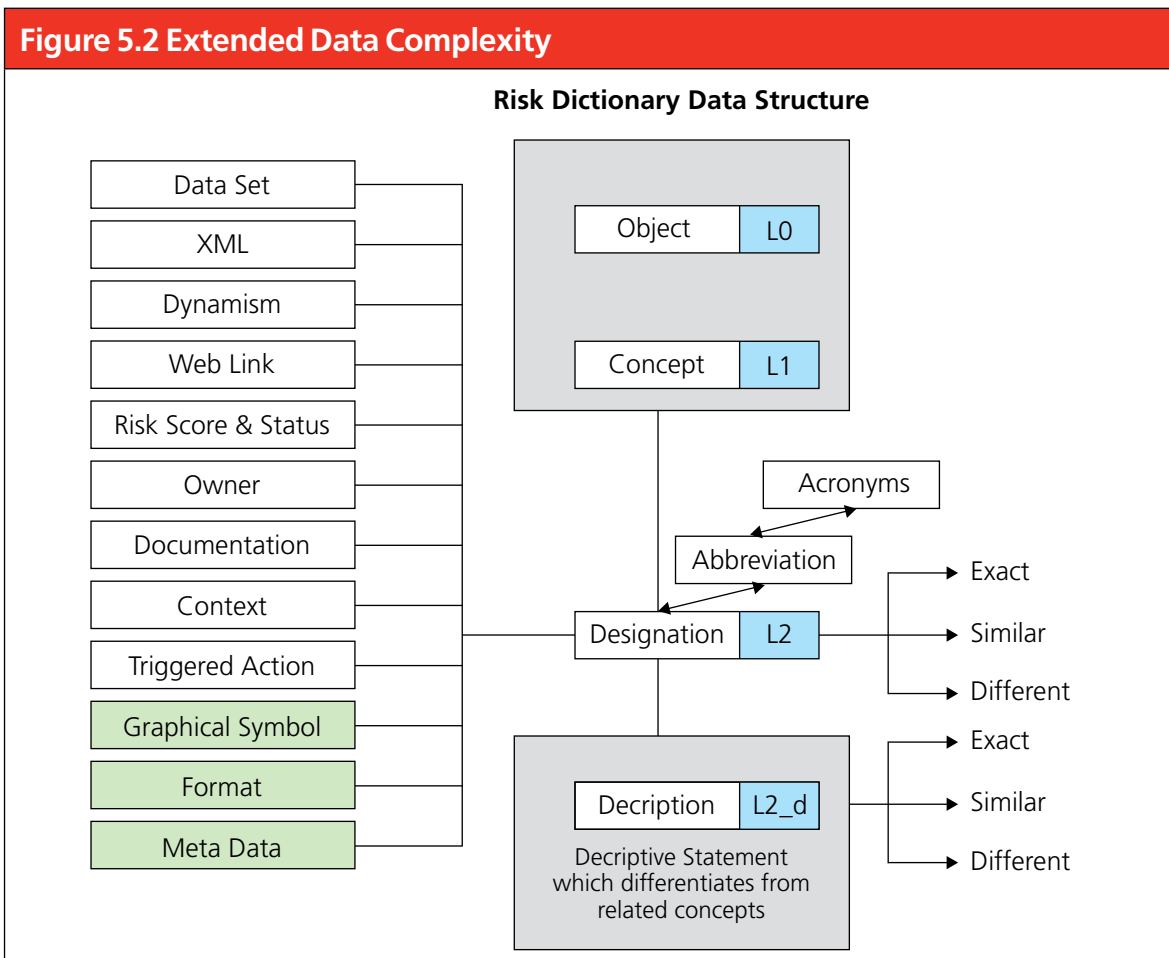
In addition, where there is:

- a) an 'exact' match in designation between two different stakeholders and the descriptions are totally different. For example, the designation 'Fire' can be used by many different organisations some of whom may have completely different meanings for the word. The Fire and Rescue Service (FRS) would use it to mean a material is being burnt whilst the Army would shoot a gun, a pottery would put a clay pot in a kiln and an employer may sack an employee.  
or
- b) where the designations and descriptions are not an exact match – only similar  
or
- c) where the designations are different and the descriptions are describing the same concept or object. For example Gold Control, Emergency Co-Ordination Centre, Strategic Control, Major Incident Control Room, etc. In this example it is recognised that there is a need to associate different designations with the same description and to link them together for the purposes of further analysis and evaluation.  
or
- d) Variations and mixtures of the three options in 'a to c' above.

## 5.5 Risk Dictionary Structure

The structure to the Risk Dictionary software is described in Figures 5.1 and 5.2.

Therefore, in the light of the requirements and issues identified during the research period the methodology and user guidance for the Risk Dictionary software support tool (See Methodology & Software User Guidance No L06160) has been developed to support the aims and objectives of Communities and Local Government and the Cabinet Office.



## 5.6 Risk Dictionary Output

The risk dictionary output is based on the glossaries and data sets referred to in Appendix C. To date, thirteen organisations have contributed towards the Risk Dictionary from twenty four different documents or electronic records. This has provided a total of 4,065 terms of which 1,948 are Designations and 2,654 are Acronyms/Abbreviations.

The Risk Dictionary can produce a list of common terms (Designations and Acronyms/Abbreviations). From the sample available a total of 223 Designations are duplicated and 555 Acronyms/Abbreviations and are duplicated.

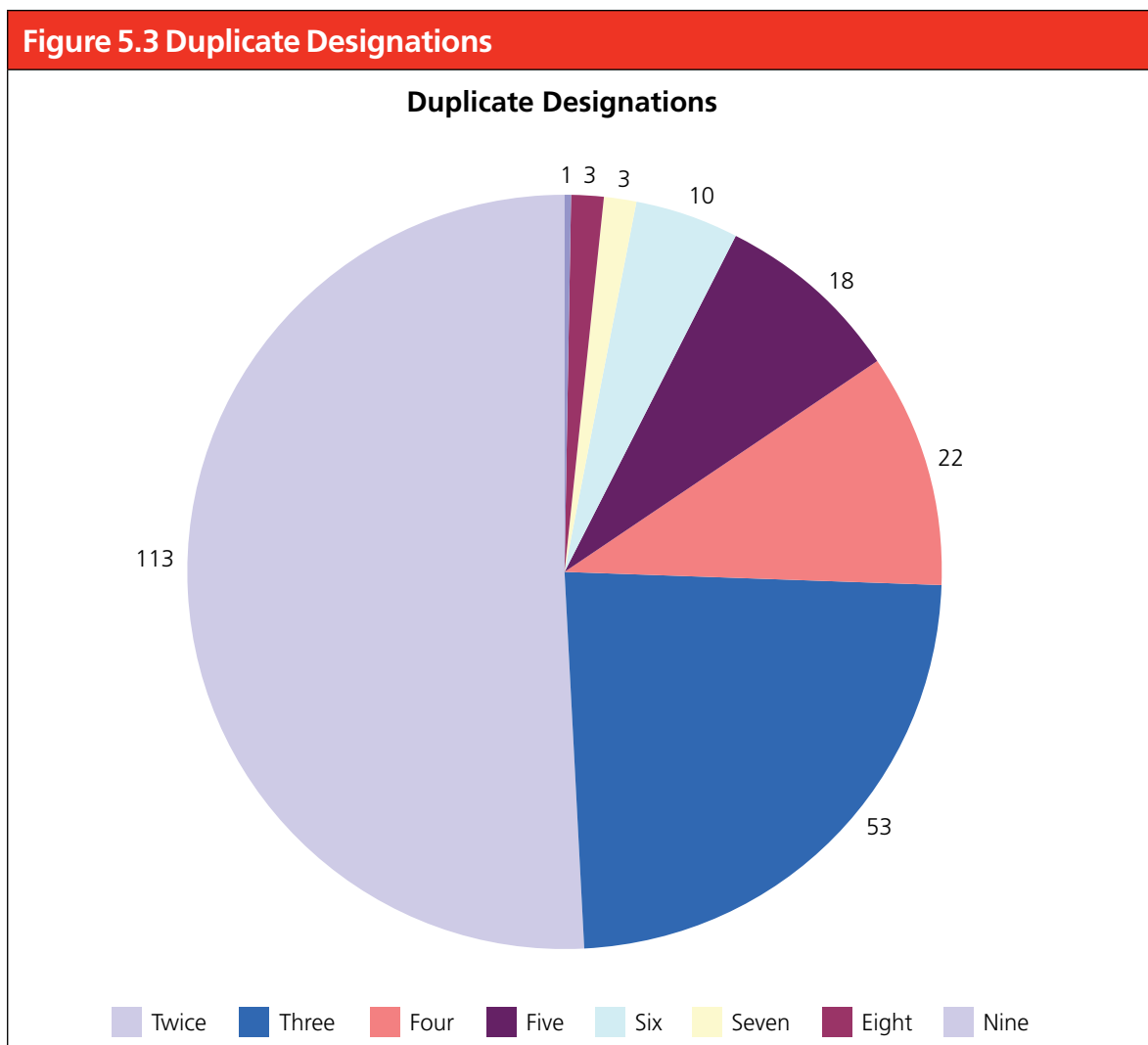
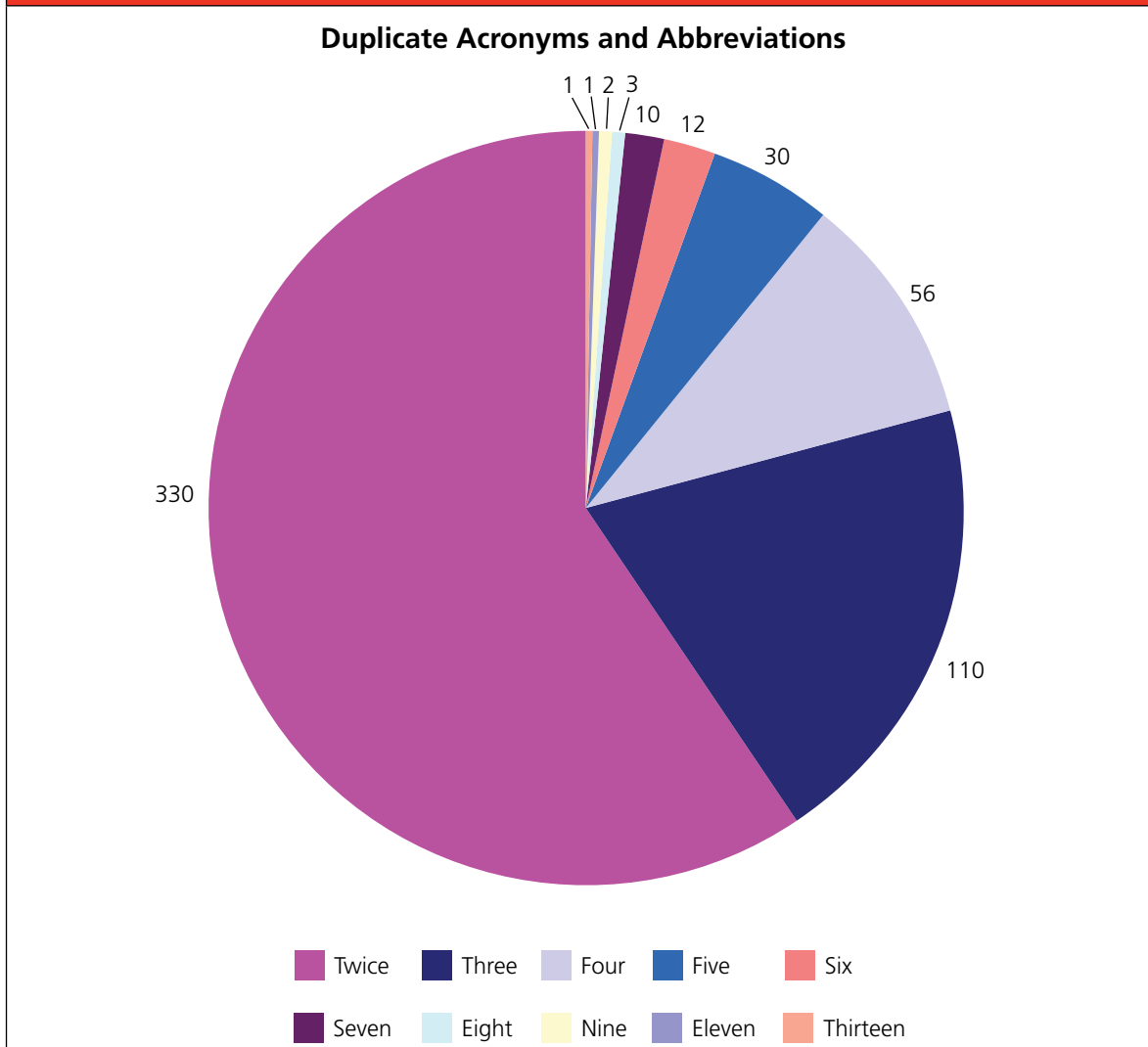


Figure 5.4 Duplicate Acronyms/Abbreviations



It should be noted that the list of duplicate terms will ultimately be reduced by linking different designations that attempt to describe the same object. This process is achieved by use of the association functionality within the Risk Dictionary software, searching for common key characteristics that exist within the descriptions.

By examining each of the descriptions the key characteristics can be ascertained – *Building designated, Premises, temporary accommodation, evacuees, overnight facilities, displaced persons*. This will allow the appropriate designations to be linked together.

# Chapter 6

## Conclusions and Recommendations

### 6.1 General

The review confirmed the appropriateness of the underpinning legislation and guidance contained within the Civil Contingencies Act 2004, together with the guidance documents 'Emergency Preparedness' and 'Emergency Response and Recovery', against which responding bodies and others supporting agencies have developed strategies to successfully meet their moral and legal obligations.

Individual Category 1 & 2 responders have a responsibility to produce their own risk assessment plans, and elements of these feed into the work of the local Resilience Forums. At this level within the normal planning environment potential areas of conflict, (where recognised), in terminology, procedures and signals can be recorded and managed accordingly. However it was evident that responders may well be unaware of areas of potential conflict in risk terminology. These potential areas of conflict would only come to light either through realistic training exercises or actually dealing with an emergency. Organisations not fully involved in this type of activity would only realise the problems as and when they occur in real time.

The research opened a 'Pandora's Box' in terms of scale of relevant projects, documentation and related web links that were relevant to the Risk Terminology Project. It should be recognised that these 'areas of research' will require ongoing additional investigation throughout the duration of the Risk Terminology Project to maintain currency with their development.

### 6.2 National Lexicon

The interim report highlighted the need and opportunity for partnership with the Cabinet Office for the development of a national Lexicon. It is considered that the evidence in this report has confirmed the need for a lexicon and therefore cognisance of the relevant 'areas of research' should be made.

## 6.3 Common Terminology

Where agencies and organisations have been identified as achieving a common terminology (NHS, MoD, Social Services) across multiple stakeholders, it is recommended that their good practice is explored in more detail before beginning new work.

## 6.4 Risk Dictionary

The Risk Dictionary Model offered within this report provides solutions for the analysis of data; allowing the development of common terminology, signals and procedures. It will also provide the ability to capture the context in which terms are used and potential actions that may result. This will enable identification and prioritisation of the harmonisation of the multi-agency terminology. However, it may be more prudent to utilise other options identified within this report.

## 6.5 Risk Dictionary Management

The management of the Risk Dictionary, when implemented, will be an ongoing process and links to other data management data base systems, highlighted within Chapters 4 & 5, would be extremely beneficial to the data management associated with all aspects of Civil Contingencies planning.

## 6.6 National & Regional Workshop

Both the interviews and literature reviews have confirmed some areas of conflict with regard to terminology, procedures and signals. Additional research in the form of regional/national workshops should be implemented to inform Category 1 responders of the project outcomes, thereby leading to a fuller understanding of these areas and appropriate solutions to mitigate conflict.

## 6.7 National Lead Body for co-ordination of Risk Terminology

As identified in the recommendations, there is a clear requirement to undertake this work and therefore to provide strong political leadership and adequate funding to take this project forward. In order to achieve this objective a national lead body should co-ordinate the introduction of a national model, building upon the guidance contained within the CCA and supporting documentation. This would see the standardisation of Risk terminology, signals and procedures.

Consideration of the future ownership, funding and support requirements will be required.

## 6.8 Reviewing emergencies & multi-agency exercise

It would be extremely beneficial to extend the learning outcomes of multi-agency exercises to include problems in relation to risk terminology, signals and procedures. This data should be reviewed at a national level and should be considered for inclusion within national and regional workshops.

## 6.9 UK Projects

The project team has identified a number of projects both existing and in the planning stages that would directly benefit from giving consideration to cross cutting issues such as common risk terminology, signals and procedures. This should be acknowledged nationally and facilitated by the e-government agenda.

## 6.10 Fire & Rescue Service

Opportunities will exist with regard to cross cutting terminology procedure from the FRS national projects which may be co-ordinated via the e-transformation group.

## 6.11 Consultant Support

It may be beneficial to give consideration to employing the services of a consultant specialising in data taxonomy, as this has prove useful to other projects highlighted within this research project.

## 6.12 Agencies and Organisations outside CCA

The project highlighted that the Mines Rescue Service Ltd and Highways Agency currently sit outside the scope of the CCA. Due to their specialised skills and practical involvement in emergencies, it is considered that they should be included within the ongoing dialogue associated with risk terminology, signals and procedures.

## 6.13 European Projects

Opportunities exist to establish links with multiple European projects dealing with terminology used within a multi-agency environment.

## 6.14 Potential Collaboration

Potential collaboration with the CFOA exists in the development of a combined 'tool kit' merging the Risk Dictionary functionality with their data management 'tool kit'. Also CFOA may be the appropriate route to maintain an information flow with Scotland on risk terminology related issues.

## 6.15 Electronic Data Interchange – Standards

It is recommended that further investigation of the use of data naming and design rules used by DEFRA for Electronic Data Interchange (EDI) should be explored for any potential synergy and benefit to support the future electronic data sharing between Category 1 and 2 responders.

## 6.16 Recommendations

The following are the recommendations of the Fire and Risk Management Division of International Fire Consultants Ltd. These are based on the research detailed within the report.

**Recommendation 1:** Consideration should be given the development of a common terminology and procedures for Category 1 and 2 responders in a similar manner to the approach suggested within the inquiry which builds on the existing advice and guidance supporting the CCA.

**Recommendation 2:** Consideration should be given to further examination of the Department for Education and Skills multi-agency glossary. This should be undertaken as the Risk Terminology Project progresses.

**Recommendation 3:** Consideration should be given to sharing the outcomes of this report with FRS & HMFSI colleagues in Scotland to ensure that learning outcomes from all projects are shared – Risk Terminology, FiReControl, e-Fire, etc to ensure interoperability goals are achieved.

**Recommendation 4:** Consideration should be given to examining the Lothian & Borders 'Alert' system. Whilst not having a specific focus on terminology it should be evaluated to assist in the future development of the Risk Terminology Project.

**Recommendation 5:** Consideration should be given to further analysis of the work undertaken by social service agencies which may benefit the development of common terminology and data sharing for CCA purposes by assisting in a speedier implementation.

**Recommendation 6:** There is a need to provide strong leadership and political support to provide the infrastructure for interoperability and data sharing.

**Recommendation 7:** Consideration should be given to develop a focused 'context sensitive' approach. Also, it would be advisable that the development of the multi-agency terminology should involve the key stakeholders with extensive practical experience in the area of multi-agency working, such as the Tacticians' Forum.

**Recommendation 8:** Consideration should be given to further investigation of the use of data naming and design rules as used by DTI for Electronic Data Interchange (EDI) should be explored for any potential synergy and benefit to support the future electronic data sharing between Category 1 and 2 responders.

**Recommendation 9:** Consideration should be given to further investigation of the progress of the National Incident Management System and any relevant associated findings.

**Recommendation 10:** Consideration should be given to developing the synergies between the IRMP process and the CCA Integrated Risk Management process in order to achieve a seamless process for the management of risk from the smallest incident to a larger scale emergency situation.

**Recommendation 11:** Consideration should be given to the inclusion of personnel from the FiReControl within the ongoing development of the common terminology across multiple stakeholders and to share the terminology findings with the FRS in Scotland.

**Recommendation 12:** Consideration should be given to examining the taxonomy created by e-fire and undertaking discussions with IPSV as part of an assessment for future involvement in the Risk Terminology Project and the utilisation of the e-fire ICT infrastructure for data sharing with external organisations.

**Recommendation 13:** Consideration should be given to the potential development in the RIMSAT tools which may be extremely beneficial in the development of any system support software for Category 1 and 2 responders as the project progresses.

**Recommendation 14:** Consideration should be given to monitoring the progress of the AMIRA Project which may offer suitable solutions to deliver information to Category 1 and 2 responders.

**Recommendation 15:** Consideration should be given to exploring the potential for collaboration between Communities and Local Government and CFA on Risk Terminology and Data Management Tool Kit methodologies and software.

**Recommendation 16:** Consideration should be given to development of a feasibility study to take forward the Knowledge Management Project work aligned with the CCA.

**Recommendation 17:** Communities and Local Government and CFOA partnership with ACPO ITS should be monitored and maintained to provide 'active engagement' in order to take full advantage of the current and future European 'emergency service' project opportunities.

**Recommendation 18:** Consideration should be given to further examination of the FAME project for future data sharing across Category 1 and 2 Responders as the Risk Terminology Project progresses.

**Recommendation 19:** Consideration should be given to development of the partnership working between Communities and Local Government, MoD and Cabinet Office – considering potential use of the DDR and taxonomy expertise.

**Recommendation 20:** Consideration should be given to development of the partnership working between Communities and Local Government and NHS – considering their experience and expertise in use and development of the Data Dictionary and links to operational support systems.

**Recommendation 21:** Consideration should be given to the further investigation of IPSV for the analysis and/or management tool for the Risk Terminology Project.

**Recommendation 22:** Consideration should be given to the development of awareness across Communities and Local Government of the INSPIRE project and the potential specific links to FSEC and FiReControl project.

**Recommendation 23:** Consideration should be given to development of the links with Project Orchestra due to the links with other EU Projects GMES and INSPIRE and specifically – issues of terminology, interoperability and risk management.

**Recommendation 24:** Consideration should be given to development of links with Project OASIS as this project is specifically linked to the Civil Contingencies arena with issues of terminology and interoperability.

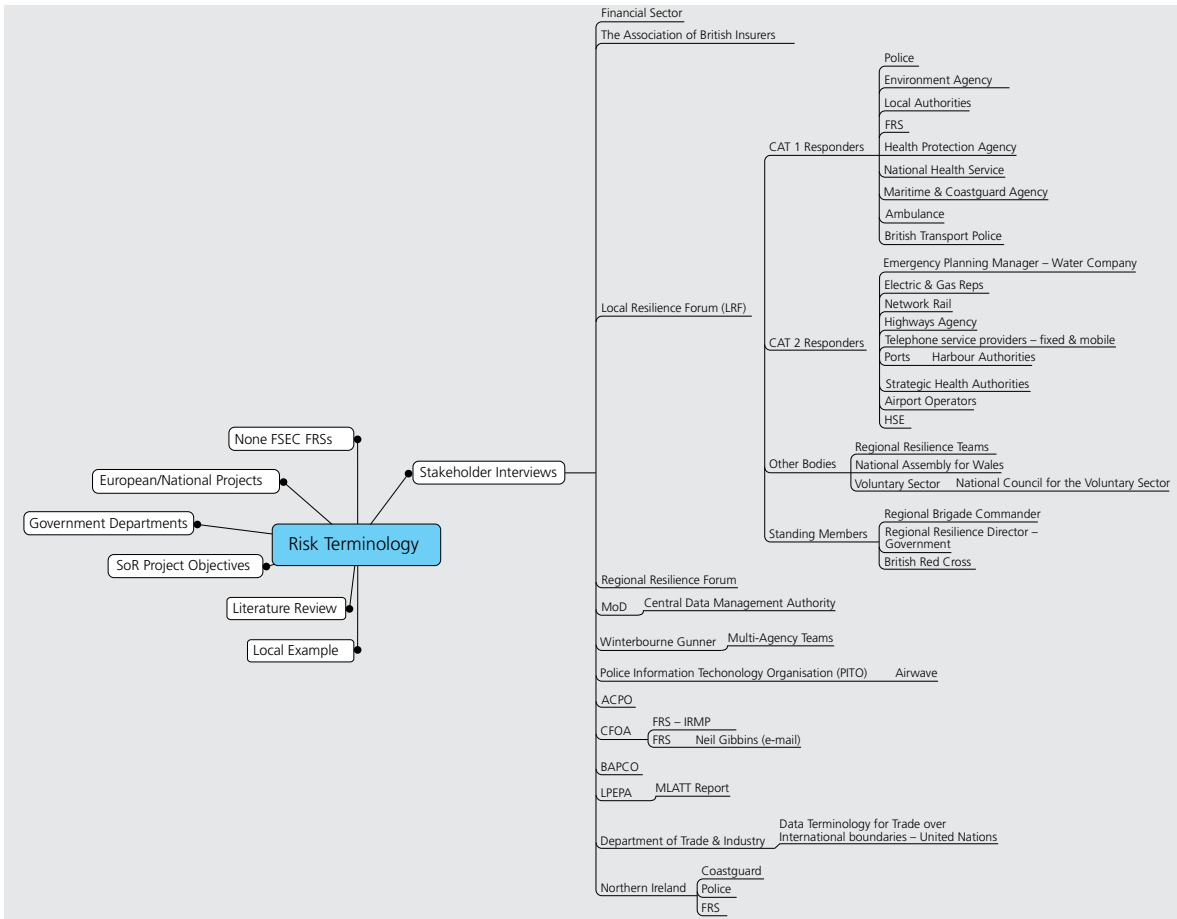
**Recommendation 25:** As the Leeds University – Location Sensitive Information Project research is focused on Civil Contingencies the involvement and support of Communities and Local Government and Cabinet Office will benefit all parties, particularly during the initial gap analysis – identifying cross-cutting issues.

**Recommendation 26:** Consideration should be given to the inclusion of the Mines Rescue Service Ltd in the development of a common terminology and also their contribution as a responder to emergencies.

**Recommendation 27:** Consideration should be given to the inclusion of the Highways Agency in the development of a common terminology and also their contribution as a responder to emergencies.

# Appendix A

## Local Resilience Forum Stakeholder Map



# Appendix B

## Questionnaire Template

Date:

<b>Organisation &amp; Category:</b>							
<b>Contact Details:</b>							
Name:							
Position:							
Contact Tel No:							
Email Address:							
<b>Type of Interview:</b>							
Telephone		Interview Q&A		Presentation		Observation	
Other		Follow up Required		Additional Information:			

1. Do you have any existing data dictionary on specific risk terminology used in within the organisation/industry to capture risk information?

If yes what format is it in? Copy obtained Y/N

2. What type of risk methodology do you use to identify and quantify risks?

What format is it in? Copy obtained Y/N

3. Are you currently aware of a risk critical conflicts in risk terminology/methodology between organisations

4. Any work being undertaken on risk terminology/methodology

a) In own organisation?

b) Aware of in other organisation?

c) National initiatives

5. Can you provide:

A copy of your organisational risk register

A copy of the community risk register (where appropriate)

6. If risk terminology data is available within your organisation

a) Does the term or signal include details of how it is relevant to the organisation Y/N and whenever appropriate, does it explain any expected actions resulting from using it? Y/N

b) Identify any areas of common use with other organisations or possible conflicts? Y/N

What other information (if any) is recorded for the risk terminology?

7. Does your organization share risk terminology information with others? Y/N

If so with who?

And in what context?

- a) Pre planning
- b) Incident (Dynamic)
- c) Post Incident (Learning/Debrief)

8. Does your organization have Data Dictionary Schema?

Copy obtained Y/N

9. Do you have a list of scenario types used for risk planning within the organization?

Copy obtained Y/N

Other Notes/contact details

# Appendix C

## Internet and Literature Review Sources

The literature reviews included a wide range of documents and reports including inter-alia;

### **Literature Review Sample of documentation**

Civil Contingencies Act 2004

Emergency Preparedness

Emergency Response and Recovery

### **Community risk registers**

Northampton

Cambridge & Peterborough

Gwent

Lancashire

Merseyside

Sussex

Greater Manchester

Cheshire

West Midlands

CPA final report Leicestershire

Hertfordshire

Nottinghamshire

Lancashire LRF LANMIC Joint Approach

### **Risk Communication**

LFEPa Heritage Consultations with Mayor

Orchestra Risk Management

HSE R2P2 – Reducing Risk, Protecting People

e-Fire & associated documents

ISPV Integrated Public Sector Vocabulary

Seamless Taxonomies

### **Plus Web links**

Quitline Minimum Data Set Data Dictionary

[www.naquitline.org/pdfs/mds\\_datadictionary.pdf](http://www.naquitline.org/pdfs/mds_datadictionary.pdf)

PREMIS Data Dictionary

[www.oclc.org/research/projects/pmwg/premis-final.pdf](http://www.oclc.org/research/projects/pmwg/premis-final.pdf)

NHS Data Dictionary

[www.connectingforhealth.nhs.uk/datastandards/datadictionary](http://www.connectingforhealth.nhs.uk/datastandards/datadictionary)

Bowker Data Dictionary

[www.bowker.co.uk/datasub/DataDictionary.pdf](http://www.bowker.co.uk/datasub/DataDictionary.pdf)

NHS Service Level Agreement – Data and Information Standards

[www.connectingforhealth.nhs.uk/datastandards/](http://www.connectingforhealth.nhs.uk/datastandards/)

Committee for Regulating Information Requirements

[www.connectingforhealth.nhs.uk/dscn/dscn9998/0898p08.pdf](http://www.connectingforhealth.nhs.uk/dscn/dscn9998/0898p08.pdf)

DEFRA – Understanding Risk in Everyday Policy Making

[www.defra.gov.uk/environment/risk/policymaking0509.pdf](http://www.defra.gov.uk/environment/risk/policymaking0509.pdf)

DEFRA – Flood and Reservoir Safety Integration

[www.defra.gov.uk/environment/water/rs/pdf/defra\\_rs\\_flood-etc-12.pdf](http://www.defra.gov.uk/environment/water/rs/pdf/defra_rs_flood-etc-12.pdf)

DEFRA – Guidelines for Environmental Risk Assessment and Management

[www.defra.gov.uk/environment/risk/eramguide/index.htm](http://www.defra.gov.uk/environment/risk/eramguide/index.htm)

Business Continuity Management Guide Information

[www.thebci.org/BCMGuideInformation.pdf](http://www.thebci.org/BCMGuideInformation.pdf)

Financial Services Authority – The Firm Risk Assessment Framework

[www.fsa.gov.uk/pubs/policy/bnr\\_firm-framework.pdf](http://www.fsa.gov.uk/pubs/policy/bnr_firm-framework.pdf)

A Risk Management Standard – AIRMIC/IRM/ALARM

[www.theirm.org/publications/documents/Risk\\_Management\\_Standard\\_030820.pdf](http://www.theirm.org/publications/documents/Risk_Management_Standard_030820.pdf)

Abstract Risk Terminology – a Platform for Common Understanding and Better Communication

[www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=14573339&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=14573339&dopt=Abstract)

NHS Data Standards

[www.nhsia.nhs.uk/datastandards/pages/dd/index.asp](http://www.nhsia.nhs.uk/datastandards/pages/dd/index.asp)

SNOMED Clinical Terms

[www.connectingforhealth.nhs.uk/technical/standards/snomed](http://www.connectingforhealth.nhs.uk/technical/standards/snomed)

SNOMED CT browser

[www.connectingforhealth.nhs.uk/technical/standards/snomed/browser/](http://www.connectingforhealth.nhs.uk/technical/standards/snomed/browser/)

# Appendix D

## Data Sources

Data Source	Risk Dictionary	Format
FSEC	Held in Abeyance	Electronic
FiReControl	Entered	Electronic
CFOA National Mobile Data Dictionary	Held in Abeyance	Electronic
Glossary of Terms – Emergency Preparedness	Entered	Electronic & Paper
Glossary of Terms – Emergency Response and Recovery	Entered	Electronic & Paper
Lothian & Borders Police Standard Terminology	Entered	Electronic & Paper
Greater Manchester FRS Standard Abbreviations	Entered	Electronic & Paper
Dealing with Disaster 3rd Edition	Entered	Electronic & Paper
The decontamination of people exposed to Chemical, Biological, Radiological or Nuclear (CBRN) substances or Materials. Strategic National Guidance	Entered	Electronic & Paper
London Emergency Services Liaison Panel Major Incident Procedures Manual	Entered	Electronic & Paper
Media Emergency Forum Joint Glossary of Official & Media Terms & Acronyms	Entered	Electronic & Paper
HMIC Inspection Methodologies – General Terminology	Entered	Electronic & Paper
A Glossary of the terms associated with the Fire Service Emergency Planning Process	Entered	Electronic & Paper
ACPO National Intelligence MoDel	Entered	Electronic & Paper
The NHS Emergency Planning Guidance 2005	Entered	Electronic & Paper
Resilience Capabilities Framework Glossary – RESTRICTED	Entered	Paper
North Yorkshire Police – Terminology	Entered	Electronic

<b>Data Source</b>	<b>Risk Dictionary</b>	<b>Format</b>
Multi-Agency National Concept of Operations Tactical Principles of Inner Cordon Management – Restricted – Policy (Draft v1)	Entered	Electronic & Paper
Approved Document B	Entered	Paper
North Yorkshire Police – Terminology	Entered	Electronic
MI5 The Security Service – Glossary	Entered	Electronic
British Transport Police – Abbreviations	Entered	Electronic
Police Information Technology Organisation – Glossary	Entered	Electronic
Highways Agency – Glossary (Draft Version)	Entered	Electronic & Paper
Guidance on Policing Motorways 2006 – Highways Agency Glossary	Entered	Electronic & Paper
Highways Agency National Crisis Management Plan Glossary of Abbreviations	Entered	Electronic & Paper

# Appendix E

## MoD Data Definition Repository

The screenshot displays the MoD Data Definition Repository (DDR) interface. At the top left is the Royal Coat of Arms and the text 'EXIT'. The main header is 'DDR Read Only Version Defence Data Repository' with the slogan 'better defence through better use of information' and a 'Print' icon. A left sidebar contains 'Search' (Quick Search, Advanced Search) and 'Navigation' (Back). The main content area shows details for a 'DATA DEFINITION' with ID 3587. It is 'Approved' and has a label 'DATA DEFINITION'. The XML Name is 'DataDefinition' and the Description is 'A DESCRIPTION which determines the rules to which one or more collections of data instances must conform.'. It is owned by the Information Coherence Authority for Defence. The Reference Source is 'Director General Information - Business POC: ICAD7 -'. Existence and Definition Protective Markings are 'Unclassified'. The Originators Comment states it has already been approved as an OBJECT. Encyclopaedic POC, URL, and Synonym are all 'None'. Under 'USAGE(s)', there are two entries: 'Approved' with Usage Type 'Entity' and 'Working' with Usage Type 'XML Element (Complex Type)'. Both are owned by the Information Coherence Authority for Defence. An 'Additional Constraint' comment notes system usage as 'DATA\_DEFINITION' within the 'Defence Data Repository Application'.

**DATA DEFINITION**  
Approved  
ID: 3587  
Label: **DATA DEFINITION**  
XML Name: DataDefinition  
Description: A DESCRIPTION which determines the rules to which one or more collections of data instances must conform.  
Owning DMG: Information Coherence Authority for Defence  
Reference Source:  
Business Owner: Director General Information -  
Business POC: ICAD7 -  
Existence Protective Marking: Unclassified  
Definition Protective Marking: Unclassified  
Originators Comment: This definition has already been approved as an OBJECT.  
Encyclopaedic POC: -  
Encyclopaedic URL: None  
Synonym: None

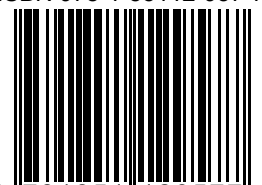
**USAGE(s)**  
Approved  
Usage Type: **Entity**  
DMG: Information Coherence Authority for Defence  
Additional Constraint:  
Comment:  
System Usage: used as DATA\_DEFINITION within [Defence Data Repository Application](#)  
Usage Link: None

Working  
Usage Type: **XML Element (Complex Type)**  
DMG: Information Coherence Authority for Defence

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