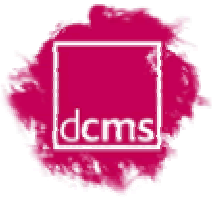


Stage 2 Report on the Development and Operation of a National Database of Stolen and Illegally Removed Cultural Artefacts

Issue 1.0

© 2004 VEGA Group PLC

Customer	:	Acquisitive Crime Team, Crime Reduction and Community Safety Group of the Home Office.	**Document Ref**	: **135.276.REP.001**
			Issue Date	: **21 May 2005**
			Issue	: **1.0**
Contract No	:	**135/276**		
WP No	:	**01**		

Title : **Development and Operation of a National Cultural Database – Stage 2 Report**

Abstract : This report provides advice and recommendations on the development and operation of a national cultural database. It compares an MPS based solution with a PPP Option and concludes that a combination of both represents the best solution.

Author : Steve Hartley

Approval : Richard Albery

Accepted : Steve Wilkes

Distribution :

Steve Wilkes
Acquisitive Crime Team
1st Floor Allington Towers
19 Alington Street
London
SW1E 5EB

Owain Lloyd-James
Museum & Libraries Sponsorship Unit
2-4 Cockspur Street
London
SW1Y 5DH

Hard Copy File:
Filename: 135.276.rep.001_1.0.doc

Copyright © 2004 VEGA Group PLC
All rights reserved.
No part of this work may be disclosed to any third party translated reproduced copied or disseminated in any form or by any means except as defined in the contract or with the written permission of VEGA Group PLC.

VEGA Group PLC
Delme Place, Cams Hall Estate, Fareham, Hampshire PO16 8UX, United Kingdom
Tel: +44 (0)1329 223838 Fax: +44 (0)1329 238319
www.vega.co.uk

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 7

2. INTRODUCTION 8
2.1 Purpose and Scope 8
2.2 Structure of the Document 8
2.3 References 9

3. BACKGROUND 10
3.1 Methodology 10
3.2 Requirements Capture 10
3.3 Comparison of Options 11
3.4 Assumptions and Constraints 11
3.4.1 Terms of Reference 11
3.4.1.1 Database 11
3.4.1.2 Stolen 11
3.4.1.3 Illegally Removed 12
3.4.1.4 Cultural Object 12

4. UNDERSTANDING THE ISSUES 13
4.1 Terminology 13
4.1.1 Data on Stolen Cultural Artefacts 13
4.1.2 Data on Illegally Removed Cultural Artefacts 13
4.2 Purpose of a National Database 14
4.3 Value 14
4.4 Diversity of Requirement 15
4.4.1 Law Enforcement Agencies 15
4.4.1.1 Police Forces 15
4.4.1.2 HM Customs and Excise (HMCE) 16
4.4.2 Public Organisations 16
4.4.3 Commercial Dealers 17
4.4.3.1 Auction Houses 18
4.4.3.2 Dealers 19
4.4.3.3 Insurance Companies 19
4.4.3.4 Private Collectors 20
4.4.4 Government Departments 20
4.4.4.1 Home Office 21
4.4.4.2 Department for Culture, Media and Sport 21
4.4.4.3 International Dimension 21
4.5 Management 22
4.6 Liability 22
4.7 Follow up Matches 22
4.8 Impact on Crime 23
4.8.1 Crime Reduction 23
4.8.2 Organised Crime 24

5. OPTIONS ANALYSIS 25
5.1 Addressing the Issues 25
5.1.1 Issues of General Agreement 25
5.1.2 Contents of the Database 25
5.1.2.1 Object Record Qualification 26
5.1.2.2 Value 27
5.1.2.3 Police Provided Information 27
5.1.2.4 Data Standards 28
5.1.2.5 Data Ownership 28
5.1.2.6 Security 28

© 2004 VEGA Group PLC

5.1.3 Providing Information to the Database....29
5.1.4 Providing a Service....29
5.1.5 Fees....30
5.1.5.1 Recovery Fees....30
5.1.5.2 Access Fees....31
5.1.6 Management....31
5.1.7 System Requirements Issues....31
5.2 Financial Analysis....32
5.2.1 Introduction....32
5.2.2 Main Issues....33
5.2.3 Variations of the Financial Summary....34
5.2.4 Step 1: Expansion of the Metropolitan Police System to all other Forces....34
5.2.5 Making the Expanded Police Database available over the Internet....35
5.2.6 Step 3: Pulbic-Private Partnership....36
5.2.7 Revenues: Core Services & Extended Services....36
5.2.8 Sponsorship....37
5.2.9 Early Implementation....37
5.2.10 Financial Analysis Summary....37

6. CONCLUSIONS....39

7. RECOMMENDATIONS....40

APPENDIX A GLOSSARY....A-1

APPENDIX B *TERMS OF REFERENCE FOR THE STUDY*....B-1

APPENDIX C *AIDE MEMOIRE*....C-1

APPENDIX D *CONSULTATIONS AND STAKEHOLDERS*....D-1
D.1 Consultations Undertaken....1
D.2 Stakeholder Map....3

APPENDIX E *REQUIREMENTS ANALYSIS*....E-1
E.1 Approach....1
E.2 User Requirements....1
E.2.1 Access Mediums....1
E.2.2 Ergonomics....2
E.2.3 Image Support....2
E.2.4 Language Support....2
E.2.5 Interface Format....2
E.2.6 Help and Support....2
E.2.7 Standards....3
E.2.8 User Requirement Issues....3
E.3 System Requirements....3
E.3.1 Systems Integration....3
E.3.2 Metrics and Performance....4
E.3.3 System Requirements Issues....5
E.3.4 Supporting Functions....5
E.3.5 Service Requirement Issues....5
E.4 Data Handling....6
E.4.1 Data Definitions....6
E.4.1.1 At Risk....6
E.4.1.2 Cultural....6
E.4.1.3 Stolen....6
E.4.1.4 Illegally Removed....7
E.4.2 Data Definition Standards....7
E.4.3 Data Quality Assurance....8

© 2004 VEGA Group PLC

E.4.4 Data Ownership....8
E.4.5 Data Handling Issues....8
E.5 Access Issues....9
E.6 Economics....9

APPENDIX F *REQUIREMENTS ANALYSIS SUMMARY*.... F-1
F.1 Access Paths....1
A.2 Data Definitions....2
A.3 Data Exchange....4
A.4 Data Quality....5
A.5 Data Type & Scope....6
A.6 Economics....7
A.7 Ergonomics....8
A.8 Implementation....9
A.9 Metrics and Performance....10
A.10 Outcomes....11
A.11 Security....12
A.12 Support and Management....13
A.13 Systems Integration....14

APPENDIX G *PROCESS MODELS*....G-1
G.1 Data Entity List....1
G.2 Input Object Data....2
G.3 Input Sensitive Object Data From Remote Trusted System....3
G.4 Input User Data....4
A.5 Query Object From Customs & Excise....5
A.6 Query Object From Remote Trusted System....6
A.7 Query Object....7

APPENDIX H *KEY USER REQUIREMENTS*....H-1
H.1 Mandatory User Requirements....1
H.2 Desirable User Requirements....2

APPENDIX I *ASSESSMENT OF MPS ART AND ANTIQUES UNIT SOFTWARE*.... I-1
I.1 Cardbox Specifications....1
I.2 Cardbox client/server concept....1

APPENDIX J *DETAILED FINANCIAL BREAKDOWN*....J-1
J.1 Summary....1
J.2 Step 1 - Expansion to Cover 43 Forces....2
J.3 Step 2 - Making Police Database Available over the Internet....3
J.4 Step 3 - Organisation to Manage the Service....4
J.5 PPP Costs....5

© 2004 VEGA Group PLC

AMENDMENT POLICY

This document shall be amended by releasing a new edition of the document in its entirety. The Amendment Record Sheet below records the history and issue status of this document.

AMENDMENT RECORD SHEET

ISSUE	DATE	DCI No	REASON
A	22/03/04	N/A	Draft A - For document review
B	22/03/04	N/A	Draft B -For early release to Home Office and DCMS for discussion
C	25/03/04	N/A	Draft C - Released in abridged form for comment Home Office and DCMS. Full copy for document and technical review
1	21/05/05		Issue for Release

© 2004 VEGA Group PLC

1. EXECUTIVE SUMMARY

In December 2003 the Dealing in Cultural Objects (Offences) Act became Law in the United Kingdom. It introduced the concept of a 'tainted object', which is defined as a cultural object that has been illegally excavated or removed from a building or monument of historical, architectural or archaeological interest. It is now a criminal offence for a person to acquire or dispose of a cultural object knowing or believing it to be tainted.

Following recommendations of the Culture, Media and Sport Select Committee (2000) this report takes forward the issues and financial considerations that need to be addressed in establishing a national database of stolen or illegally removed cultural artefacts.

The first stage of the project was to capture the requirements from a wide range of stakeholders who would potentially have an interest in interacting with a national database. An aide memoir was developed to provide a basis of discussion on the user requirements and a database constructed to store the returning information. Consultations covered the range of organisations that would have an interest in the operation of a national database. In addition, contact was made with other database operators and independent arts and antiques consultants. The Home Office and Department for Culture Media and Sport (**DCMS**) also provided information and support.

The analysis concluded that the full establishment of a service supported by a national database of stolen or illegally removed cultural artefacts requires the combination of public sector data and private sector expertise. The database requires the authoritative information on stolen articles, from the Police, to provide credibility if it is to be a Government sponsored national database. The private sector is best placed to exploit this information and provide a wider and more comprehensive service, which would require a considerable time to build up within the public sector. All options considered have a cost to the public purse with the biggest influence on the level of public funding required dependent on the scale of recovery fees that a PPP would be allowed to charge. The proposed approach is a combination of the MPS and PPP options.

It further concluded that with regards to items being placed on the national database the definition of a cultural object should remain at the discretion of a management board, but initially may be confined to Annexes of Council Regulation (EEC) No 3911/1992 and Council Directive 1993/7/EEC.

To achieve an early indication of intent, The MPS Art and Antiques Unit database should be made available to a wider audience. (subject to a more detailed technical evaluation and checking of existing data). Prior to the establishment of any national database clear data standards, data definitions and a security policy will need to be established.

© 2004 VEGA Group PLC

2. INTRODUCTION

2.1 Purpose and Scope

The purpose of this report is to present our findings from an investigation into the development and operation of a national database of stolen or illegally removed cultural objects.

It covers tasks 1-7 in the Terms of Reference (**TOR**) for the study, which can be found at APPENDIX A. In brief, this required us to:

1. Acquire an understanding of the work undertaken to date.
2. Consult with a wide range of stakeholders.
3. Identify areas of issue and conflict.
4. Provide a functional specification.
5. Provide advice on technical issues.
6. Assess the options of a public private partnership and / or extending the Metropolitan Police Service, Arts and Antiques Unit database.
7. Provide a recommendation as to the way forward.

The focus of the investigation was on the technical and financial issues that had to be addressed to meet the requirement for a national database to hold data on stolen and illegally removed cultural artefacts. At subsequent meetings we were also asked to look more widely at the effectiveness / cots effectiveness in reducing crime (section 4.8)

2.2 Structure of the Document

After this introduction, the document is divided into a number of major sections that are briefly described below. Each Section is supported by a series of Appendices where necessary.

Section	Content
0	This section contains an executive summary of the findings.
2	This section contains an Introduction to the Project.
3	This section contains the background to the project and makes reference to the considerable amount of information already in the pubic domain. It covers the methodology adopted and the consultations undertaken.
4	This section highlights the main issues that have arisen during our discussion with the various stakeholders.
5	The aim of this section is to provide an option's analysis of the two candidate solutions, MPS and PPP from both the financial perspective and their respective abilities to address the issues.
6	This section states the conclusions we have drawn from our analysis.
7	This section provides the recommendations.

© 2004 VEGA Group PLC

2.3 References

Throughout the text references or sources of information are referenced by footnote.

© 2004 VEGA Group PLC

3. BACKGROUND

In December 2003 the Dealing in Cultural Objects (Offences) Act became Law in the United Kingdom. It introduced the concept of a 'tainted object', which is defined as a cultural object that has been illegally excavated or removed from a building or monument of historical, architectural or archaeological interest. It is now a criminal offence for a person to acquire or dispose of a cultural object knowing or believing it to be tainted[1].

Also in December 2003, the UK Parliamentary Select Committee on Culture, Media and Sport published the report of its second enquiry into the illicit trade and restitution of cultural property[2]. This was held to review progress upon recommendations made in the Committee's 2000 report[3] and also by the Governments Illicit Trade Advisory Panel (**ITAP**)[4]. The ITAP report also proposed the establishment of a database of unlawfully removed cultural objects and made reference to a database of stolen cultural artefacts.

3.1 Methodology

3.2 Requirements Capture

The first stage of the project was to capture the requirements from a wide range of stakeholders who would potentially have an interest in interacting with a national database. An aide memoir was developed to provide a basis of discussion on the user requirements. A copy of the aide memoir can be found at 0.

A list of those consulted is at APPENDIX A

Consultations covered the full range of organisations that would have an interest in the operation of a national database. In addition, contact was made with other database operators and independent arts and antiques consultants. The Home Office and Department for Culture Media and Sport (**DCMS**) also provided information and support.

This aide memoir was distributed to a wide audience and followed up by a series of interviews (see section 4.4). In all cases information extracted at interview was returned to stakeholders for verification. Responses were received or obtained from the majority of recipients.

The information gathered was placed into a database from which user requirements were extracted. These user requirements were the subject of a workshop of a representative selection of stakeholders. The workshop aimed to form a consensus and to allow stakeholders to question each other in an open forum.

Further research was conducted from document searches, reference sources and Web sites.

---

[1] *Culture without Context issue 13, Autumn 2003*

[2] *Cultural Objects: Developments Since 2000, (ISBN 0215014391)*

http://www.publications.parliament.uk/pa/cm/cmcumeds.htm#reports.

[3] *Cultural Property: Return and Illicit Trade (2000),*

http://www.publications.parliament.uk/pa/cm199900/cmselect/cmcumeds/cmcumeds.htm

[4] *Ministerial Advisory Panel on Illicit Trade (2000),*

http://www.culture.gov.uk/global/publications/archive_2000/Report_Illicit_Trade.htm

© 2004 VEGA Group PLC

The results of the requirements capture is covered in APPENDIX A

3.3 Comparison of Options

In comparing the two options under consideration three models were used to show the effect on moving from a wholly government run solution to a Public Private Partnership (PPP). These models were populated with cost and resource information in an interactive spreadsheet that was, and can be, used to compare changing parameters. The pros and cons of each model were highlighting.

The comparison of options is covered in Section 5

In addressing the issues involved in the development and operation a national database, due consideration was taken of how each option, MPS or PPP, would address the issues raised.

3.4 Assumptions and Constraints

Our analysis of the requirements has been constrained by various criteria primarily in order to meet the timescales and requirements of the Client. A contingency was built into the project plan but was not required. Where an assumption has been made this will be clearly marked in the text. All starting point assumptions and constraints are described in the following sections.

We have assumed that the case for a database has been established.

3.4.1 Terms of Reference

Analysis of the requirements has been limited to the consideration for a database of stolen or illegally removed cultural objects. Before such a constraint can be placed on our analysis an understanding of the terms used in the TOR has to be presented in order to determine our start point.

3.4.1.1 Database

The term 'Database' we have assumed refers to a computer hosted storage facility where the information is stored in electronic form and is structured. We have not assumed a form of database such as Relational or Object Orientated since this is an implementation issue for the service developers.

The scope of the database contents must be those associated with the following Terms of Reference criteria.

3.4.1.2 Stolen

We have assumed that the term 'Stolen' refers to the possession of an item which breaches the legal rights of the owner to determine the disposal and location of the said item.

The relevant legislation (taken from Theft Act 1968) gives the basic definition of theft as:

> A person is guilty of theft if he dishonestly appropriates property belonging to another with the intention of permanently depriving the other of it; and "thief" and "steal" shall be construed accordingly.

© 2004 VEGA Group PLC

3.4.1.3 Illegally Removed

We have taken the definition of illegally removed or 'tainted' is taken from the Dealing in Cultural Objects (Offences) Act 2003, which states:

A cultural object is tainted if, after the commencement of this Act:

> (a) A person removes the object in a case falling within subsection (4) or he excavates the object, and
>
> (b) The removal of excavation constitutes an offence.

It is immaterial whether:

> (a) The removal or excavation was done in the United Kingdom or elsewhere,
>
> (b) The offence is committed under the law of part of the United Kingdom or under the law of any other country or territory.

An object is removed in a case falling within this subsection if:

> (a) It is removed from a building or structure of historical, architectural or archaeological interest where the object has at any time formed part of the building structure, or
>
> (b) It is removed from a monument of such interest.

Theft centres on depriving another of an object, where as in the case of illegally removed, there may not be a defined 'owner' of the object. Whether an offence has been committed in the latter case will depend upon the circumstances in which the object was removed.

3.4.1.4 Cultural Object

At the start of our analysis we found the term 'Cultural' to have many different meanings or interpretations and that one of the undeclared aims of our analysis is to recommend the qualification criteria for an item to be described as 'Cultural'. As a starting point we have assumed that the term 'Cultural' has some special significance which requires an object to be managed under a unique set of restrictive criteria so that it can be classified within a database.

© 2004 VEGA Group PLC

4. UNDERSTANDING THE ISSUES

This section highlights the main issues that have arisen during our discussion with the various stakeholders. The information is set out by user community basis. How the issues contained in this section should be collectively addressed is contained in Section 5.

4.1 Terminology

An understanding of the issues requires an understanding of the terminology.

During this stage of the project the requirement is to provide advice and recommendations on the development of a national cultural database to hold data on stolen and illegally removed cultural artefacts. This can be broken out into:

- Data on stolen cultural artefacts.
- Data on illegally removed cultural artefacts.

4.1.1 Data on Stolen Cultural Artefacts

Any artefact that is reported as stolen *should* have been reported to the Police. The Police would allocate a Crime Reference Number, investigate the claim and, should it be confirmed that the artefact is stolen, take appropriate action within existing priorities and resources. This takes time. The Police do not interpret whether an artefact is of cultural value - it is either stolen or it is not. The Metropolitan Police Service (**MPS**), Art and Antiques Unit already have a database of stolen artefacts. They use a broad definition of antiquities[5], antiques[6] and art[7].

The data provided to the police is provided on the understanding that it is for the use of the police in pursuant of their duties. Commercial database providers obtain information on stolen articles from various sources including direct from the Police, as in the case of Norfolk Police Force, from insurance companies or private individuals. The only authoritative source for stolen Artefacts, however, is the Police.

The issues are:
What is the impact on the time delay between an object being stolen and its appearance on the database, and can this be alleviated?
Under what circumstances would the police release data to a PPP?

4.1.2 Data on Illegally Removed Cultural Artefacts

Collecting and storing data on 'illegally removed cultural artefacts' requires an understanding of the terms 'illegally removed' (or tainted) and 'cultural'. Though we have stated our definition of the terms there is not a common understanding of the meaning of these terms. In addition, there is also common use of a variety of terms that are similar

[5] *Man made objects created prior to the collapse of the Roman Empire.*

[6] *Objects over 100 years old.*

[7] *Anything judged to be 'art'.*

eg. Illegally excavated, illegally exported. As yet there has been no case law to establish how illegally removed would be interpreted.

As far as we are aware there is no single point of reference for illegally removed cultural artefacts, though the Portable Antiquities Scheme (**PAS**) does record archaeological finds. A database of illegally removed archaeological material would need to record descriptions of categories, including those thought to have been illegally excavated. In short, it should supply descriptions and images of types of object, which are known to be under threat of illegal excavation[8], or have been in the recent past, and are thought to be circulating in the market.[9]

In order to be effective the database would need to store information from countries throughout the world and identify items that are known to have been removed or are 'at risk' of being removed. Identifying items 'at risk', as opposed to stolen, and placing them on the database has a potential to restrict legitimate dealers[10] who would prefer only stolen articles to be on the national database

The issues are:
What would be the impact on use of the database if it included 'at risk' items?
Who determines which illegally excavated items should appear on the database?

4.2 Purpose of a National Database

The original recommendation in July 2000, by the Culture, Media and Sport Select Committee recommended establishing a "national database of *stolen* cultural property and cultural property exported against the laws of countries concerned under national police control."

In creating any database it is necessary to establish a clear and agreed objective or desired end state - what purpose does the database serve? It is recommended that this could be[11]:

> "The objective is to bring about a change in practice so that the trade in stolen or illegally removed cultural artefacts is minimised or ideally halted and that the maximum support is given to police investigations."

4.3 Value

The value of a cultural object can be largely intrinsic. In addition the vast majority of the members of the International Association of Dealers in Ancient Art deal in objects that are worth between £1 and £500. A typical commercial search fee of £30 does not make it cost effective for dealers to interrogate a database for items of low value. The International Association of Dealers in Ancient Art, within its code of ethics and practice,

---

[8] *From our definition in para 3.4.1.3 illegally excavated comes under the definition of illegally removed.*

[9] *Source - The newsletter of the Illicit Antiquities Research Centre Issue 13, Autumn 2003.*

[10] *From meeting with BAMF - Stolen Art Database.msg*

[11] *Original Source - National Database 04_ALR.doc*

only requires its members to undertake to check objects with a purchase value of £10,000 or over[12].

In general the lower the value, the less distinctive the item and so the more difficult it is to match, and unless an item is unique it may not be sensible to log it. From a practical point of view and to make it administratively workable, unless descriptions are extremely detailed, in general Auction Houses would not be looking at objects below £1000[13].

The issue is:
Should there be a lower limit on the value of articles placed on the national database?

4.4 Diversity of Requirement

A large community of stakeholders has a potential interest in a national database. A stakeholder map is at Appendix D.2. Four of these stakeholder groups are discussed below. The fifth group of stakeholders is the trade of professional bodies that represent the organisations for the other four.

4.4.1 Law Enforcement Agencies

4.4.1.1 Police Forces[14]

The MPS have the only dedicated unit specialising in Art and Antiques crime. The majority of Police Forces have a Due-Diligence Officer who may undertake the role as a secondary, rather than primary, duty depending on the volume of crime and his/her own Forces priorities.

The Art and Antiques Unit deals with stolen and looted articles from any country and makes use of internationally available warnings of items at risk. The 'value' of an item is not important, it is the fact that it is 'stolen' that alerts the police. The Art and Antiques Unit does not, however, consider illegally excavated items.

The Art and Antiques Unit is linked to other police forces and some of the information they hold can be accessed via the MPS website. (The information currently available on this website is from the old Article Classification Intelligence System (**ACIS**)).

The Police provide a core service for the public to deter and prevent crime and assist in bringing perpetrators to justice. They require holding information, not only of the stolen article, but also crime reference numbers and associated intelligence. Not all of their information will be made public for operational reasons, should they partake in a National Database.

The Art and Antiques Unit has no objection, in principle, to their database being operated by someone else subject to any necessary safeguards. Their current database is not directly available outside the Art and Antiques Unit.

They would not want to store pre-registered items on their system.

---

[12] *http://www.iadaa.org/iadaa_frameset_1/iadaa_frameset_1.htm*

[13] *Response from Bonhams - 040315 Bonhams.doc*

[14] *Response from MPS Arts and Antiques Unit - 135.276.met.001.doc*

The Police are the authoritative source of data on stolen items. It was quoted that of 26 notifications from a commercial database supplier only 2 turned out to be stolen, which clearly has implications for police resources and raises questions over integrity of data. There are issues surrounding the speed, with which information comes to the Police database, which commercial providers have ways of addressing.

The issues are:
What information would the police make available to a publicly accessible database?
To what extent would they want to control the use of the data?

4.4.1.2 HM Customs and Excise (HMCE) [15]

Interest by HMCE in a national database is as a law enforcement department. HMCE is the lead enforcement agency for exports and imports of cultural objects. Their aim is to prevent illegal exports from, and imports to, the UK. The database would be used as a tool for frontline staff to identify cultural objects that have been intercepted by HMCE to help determine whether they were unlawfully removed or are in breach of export controls.

HMCE would want the following classes of articles to be available on the database:

- Council Regulation (EEC) No. 3911/92. This lists objects and values that require an EU Export Licence and therefore fall under export controls for HMCE.
- The dealing in Cultural Objects (Offences) Act 2003. This details how cultural objects become tainted.
- The Export Control Order 1992. This lists objects and values that require an UK Export Licence and therefore fall under export controls for HMCE.

The issue is:
Whether the database should contain access to classes and categorisation of items?

4.4.2 Public Organisations

Within our stakeholder map, public organisations principally refer to museums. In general museums require a single port of call to establish the provenance of an article and to carry out due-diligence. Their requirement is less 'immediate' than dealers, and their definition of a cultural object can be much wider than most. Many losses from museums involve staff or contractors working within the museum, and the loss is often only discovered years after the theft or conversion. Museums often hesitate to report such losses because of the difficulty of proof, the effect on public confidence, particularly from benefactors, and effect on staff morale.

They also tend to categorise articles through the use of Thesauri, of which there are several in operation.

[15] *Response from HMCE - 040309 Customs and Excise.doc*

4.4.3 Commercial Dealers

All art and antiques traders require access to information in order to carry out due diligence checks. The British Art Market Federation (**BAMF**)[16] is an umbrella organisation whose members include individual companies, trade associations and professional bodies that represent a wide diversity of art market businesses throughout the UK. They have a "principles of conduct" and BAMF members have agreed to take appropriate steps if they know, suspect or have reason to believe that they are in possession of stolen property. Such steps may include conducting further inquiries by checking with a registry of stolen art, or reporting the concern to appropriate legal advisers or law enforcement authorities.

It is estimated that there are of the order of 10,000 arts and antiques traders in the UK of which approximately 20% are members of trade or professional organisations. Some of the larger traders are currently well served by commercial organisations, but the majority of traders do not use commercial suppliers principally on the basis of cost, insufficient access and turn round time for enquires.

The BAMF[17] put forward the suggestion of a government run database of stolen art in their submission to the House of Commons Culture Select Committee inquiry. They did this on the grounds that the Committee was responding to a general concern about the illicit market in stolen and looted art and they considered that a database would be a powerful practical step in countering the problem. **As far as due diligence is concerned, the legitimate art market already has a number of avenues to pursue, (with which they are content) including the existing databases.** This is an important point, as they are not asking the government to do something that they are not already capable of doing themselves. The database should, in their view, be considered as a measure to prevent art theft and associated crimes.

As a body the BAMF[18] hold a common view that the core of a national database should focus on stolen items, from a Government law enforcement source. They are not in favour of pre-registration of items on the stolen art registry (but do not oppose a pre-registration database separately from the stolen art database) nor did they see any advantage in displaying the value of an item to the general public. They support the need for both expert input and expert search to be available as well as the need for a clear audit trail of enquiries. The BAMF views on recovery fees are that they may generate a conflict of interest.

In order to look at the differing requirements of a system and the different issues to be addressed we will look at the requirement of Auction Houses and Art and Antique Traders. Clearly there will be a range of requirements between these two.

The issue is:
To what extent should the database contain items other than those reported stolen?

[16] The following are members of BAMF: Antiquarian Booksellers' Association, the Antiquities Dealers' Association, Bonhams, the British Antique Dealers' Association, Christie's, The Fine Art Trade Guild, LAPADA, The Association of Art and Antique Dealers, The Royal Institution of Chartered Surveyors, the Society of Fine Art Auctioneers, The Society of London Art Dealers and Sotheby's.

[17] Source: BAMF response - Stolen Art Database.msg

[18] Meeting with BAMF - Stolen Art Database.msg

© 2004 VEGA Group PLC

4.4.3.1 Auction Houses[19] [20]

Auction Houses have every interest (commercial, public relations and legal) to ensure that items offered for sale have not been stolen and that they are legally on the market. The proposed database would act as a deterrent to thieves offering items for sale through legitimate traders. Whilst it is not in their economic interest, the credibility of their business and the whole UK art market is dependent on an effective database of stolen art, as long as access is reasonably priced. For commercial considerations, no authoritative figure has been obtainable, but it is believed the *major* auction houses collectively pay in the order of £150K per annum. We have no figures for the smaller auction houses.

The integrity or quality of data is important to all those who sell artefacts. A mis-match can stop a sale with the potential for subsequent legal action if the supposed match to a stolen item is found not to be correct. Items can enter a sale after a catalogue is published resulting in the need for quick result (in the same manner that individual dealers require.

Whilst auction houses are interested that all stolen items are included, from a practical point of view (and to make it administratively workable for them) unless descriptions are extremely detailed and photographs available, it would be difficult in large part to match the average item estimated at below £1000. This is because it is highly likely that lower value items will not be sufficiently uniquely identifiable. In addition, the smaller auction houses will offer for sale a greater number of items that are considerable less than £1000. As an example, a recent Bonhams County Sale[21] had 342 items in its auction catalogue. The majority of these items were on offer for under £200, only 1 was on offer in excess of £500.

Auction Houses require bulk searching. It is estimated that between 3-4 Million[22] individual items (the number of lots will be smaller) will require checking per annum. A typical file size for searching would be 300 to 400KB of which there would be of the order of 2000 such files submitted per year. In addition, the timescale between drawing up a catalogue and the sale is relatively short (2-3 weeks) and it would be advantageous if the system could operate such that information was checked prior to inclusion in a catalogue. An ideal turn round time would be of the order of 5 working days. As bulk users they may wish to influence the way in which data is categorised within a national database in order to improve the efficiency of matching and searching.

The issues are:
Integrity of the database.
Its ability to conduct bulk searching within a reasonable timescale.
The cost for the service provided.
Accessibility and speed of response for smaller auction houses.

[19] *Response from Bonhams - 040315 Bonhams.doc*

[20] *Further information supplied by BAMF - BAMF UK database.doc*

[21] *Bonhams County Sale, Honiton, Fri 27 Feb 04 at 11.00am*

[22] *The original scale of checking was required but was confirmed as being indicative of the scale at the meeting with the BAMF*

4.4.3.2 Dealers

Small dealers can represent the other end of the spectrum. As individuals presented with an opportunity to buy an artefact they will need a response within minutes if the national database is to be effective for them. Their level of searching will be considerably less and financially the cost of current commercial providers is out of their reach. A registration fee (of the order of £25 per annum was suggested)[23] was preferable to an individual search fee. There is no clear indication as to the level of take up that would be effected should a national database be established.

Dealers purchasing items at a fair would need a mechanism for remote access or through the national database providing a service at such events. In general, dealers will not be happy with undertaking a search after they have committed funds for payment, since at the lower end, they may not be able to recover their outlay.

The issues are:
Accessibility and cost.
The ability to provide remote access.
Whether they would make use of the national database.

4.4.3.3 Insurance Companies[24]

The insurance industry will be a user of the national database since once the claim is paid, title to potential recoveries passes to insurers. For commercial database providers insurance companies are a major source of funding through subscriptions and recovery fees. Insurance companies are also in a position to influence the operations of the art trade, most of whom they insure, for at least on of the following:

- Defective title (loss of purchase price if an item turns out to be stolen).
- Professional liability (if they are sued because an item turns out to be stolen).
- All risks for the theft of fine art in the care, custody, or control of the art trade.

The insurance industry is also an important source of funds to the police for informers, which is dependent on recovery success.

The insurance industry's essential interest is in recoveries. It is easy for them to evaluate the benefits of the system in strict financial terms. With the exception of one or two insurers who give the original victim/policy holder the right to purchase back the items at the original claim value, the great majority of insurers benefit from recoveries and any inflation in the value of the item since the date of the claim.

Insurers would be interested in the long-term deterrent effect of the database and would be very interested in the art trade increasing its searching activity, both to increase the recovery rate and to reduce any claims that they may suffer on errors and emissions or defective title policies.

The insurance industry may use the database direct or through insurance brokers, loss adjusters, or other claims handlers.

---

[23] *BAMF Ref*

[24] *Information supplied by ALR - National Database 04_ALR.doc*

Many insurers would wish to check a national database before they underwrite a schedule of property to check that the items are not stolen. They may also wish to check whether items have been repaired, claimed for a total loss, or if there is a high chance of fakes.

The issue is:
Will the insurance companies contribute to a national database?
Will recovery fees be a source of income for the database provider?

4.4.3.4 Private Collectors[25]

Private collectors may wish to register losses, particularly if they are not insured. It is worth noting that probably the majority of losses come from individuals who would not consider themselves private collectors, who did not purchase the items themselves, but inherited them, and thus the descriptions, photographs, etc., may be lacking.

Some individuals wish to see a major effort to recover their items beyond the normal police resources, particularly if they are not insured. They may be prepared to pay for such research and investigation efforts, often favouring a system whereby they only pay in the event of a successful recovery.

Private collectors may also wish to search the database before they purchase, unless they require the dealer or auction house to do so and provide them with the necessary evidence.

The issues is:
What part will recovery fees play in the financial model?

4.4.4 Government Departments

The main Government Departments with an interest in a national database are the Home Office and DCMS. Other Government Departments, eg. Department of Trade and Industry (**DTI**)[26] would have an interest when dealing with particular items.

The issues are:
For all Departments, the effectiveness and the cost of a national database.
Which Government department will fund the national database?
Financially, their prime concern is that the database must become self-financing.

[25] *Information provided by ALR - National Database 04_ALR.doc (Private collectors have not been interviewed).*

[26] *The DTI have an interest where firearms are to be exported.*

4.4.4.1 Home Office

The Home Office interest in a national database is allied to that of the Police. Their interest is in the reduction of crime through the provision of an effective deterrence, through prevention and by detection.

An element the Home Office required addressing be whether the establishment of a national database will contribute to a reduction in crime. In addition they are concerned that data provided to the police for investigative purposes will be used to assist in enabling a private provider to ascertain recovery fees.

The issues are:
Will the establishment of a national database reduce crime?
The use of recovery fees to support a self-financing solution.

4.4.4.2 Department for Culture, Media and Sport[27]

DCMS's aim is to counter the illicit trade in cultural objects, which tend in the main to be antiquities ie. the trade in objects unlawfully removed from their place of origin. They also aim to remove any perception of the UK art market being as one that trade in illicitly obtained goods.

DCMS would like the database to be able to be searched by as many people as possible, therefore allowing it to work as a due diligence tool. Consequently, it has not only to be available, but in such a format that it is easy and affordable for all stakeholders to use. They would want law enforcement agencies to be able to use it to secure convictions against those who do trade illegally in such material and would also like the existence of the database to serve as a deterrent to those mentioned above. As a user DCMS would want to carry out spot checks when issuing export licenses.

The issue is:
How illegally removed objects are identified and under what criteria will they be added to the national database?

4.4.4.3 International Dimension

The trade in cultural property is international[28] and the UK National Database is conceived eventually as part of and linked to an international one. If it included all losses, (whether from the UK or overseas) it would be to the advantage of the UK in terms of promoting a leading role in protecting cultural heritage.

In order to operate internationally, relationships will need to be established with the insurance industry, art trade, police forces, private collectors, media, and many other parties in many different countries. These include the other major art dealing nations,

---

[27] Source: DCMS in e-mail FW: CULTURAL OBJECTS DATABASE.msg dated 22/02/04

[28] 40% of all the ALR matches are made in a country different to that where the item was stolen - Source: National Database 04_ALR.doc

such as the USA and Northwest Europe, as well as the nations from whom thefts or looting are particularly common, e.g., the Middle East, South East Asia, South America.

If the UK database is limited to UK thefts a very significant opportunity may be lost. As previously mentioned, integrity of data is a key requirement to minimise the risk of liability. Information coming from overseas will need to be subject to the same data standards as information gathered nationally. It could be assumed that items reported as stolen would be passed from an overseas law enforcement body to the UK law enforcement bodies. The Schengen agreement and the establishment of SIS2 will help with the transfer of information.

The international dimension is outside the scope of this report but is mentioned for completeness and has be taken into account, where appropriate, in any recommendations.

4.5 Management

In respect of running the national database an agreement needs to be reached on how it is managed. There are two extremes - open or fully managed.

An open database is characterised by no payment, no audit trail proof, and no follow up of matches, combined with unlimited access for browsing. A fully managed database is characterised by limited access, fully auditable and active support for those searching by qualified staff.

The issue is:
What level of management is required to produce an effective national database?

4.6 Liability

With any database that is used to support activities such as due diligence checks there is the potential for error. This could include:

- Failure to match stolen items leading to a loss for the victim of a missed recovery.
- Giving clearance for a dealer to purchase an item that subsequently turns out to be stolen (and was registered as stolen with the police but has not appeared on the database).
- Notification that an item is stolen which spoils its market when subsequent information proves this to be wrong.

Whilst these risks can be limited by contract they cannot be eliminated. The national database may require errors and omissions insurance as well as the other statutory insurance requirements such as public liability. One of the main aims of any government-sponsored database must be to ensure data integrity to help minimise this risk.

4.7 Follow up Matches

A database service provider may wish to offer a service for follow up matches. There is a potential that if items are not pursued, dissatisfaction will result from items left in storage, which cannot be repatriated or sold. For items recorded as stolen this activity will need to be undertaken in conjunction with the appropriate law enforcement agency.

© 2004 VEGA Group PLC

It has been suggested[29] that the credibility of the database will depend on its efficient matching and follow up without which at best it will become a fictitious umbrella of good faith.

The issue is:
What follow up service will be provided?

4.8 Impact on Crime

4.8.1 Crime Reduction

Providing a database that is searchable is no guarantee that it will be used or have an effect in reducing crime. There are a large number of avenues through which an item can be sold. A proactive approach by the database owner can act as a deterrent for example, where items are offered for sale through the Internet. Ultimately, there is no evidence that the existence of a cultural database will reduce crime[30].

There are some potential benefits to be gained, whilst subjective[31], that are generally agreed. A Constabulary would gain by being in a position to offer an improved service to the public ensuring the widest possible circulation of stolen and, if possible, recovered items. There would be improvement in public relations by being able to demonstrate that serious efforts are being made to recover property. There would also be the potential to detect more offences by bringing offenders to justice as well as the potential to deter offending by publication of successes arising from the use of the system.

There is general agreement from the Police Officers we contacted that the effectiveness of a cultural database cannot be fully assessed until it is in established. In order to achieve this it will be necessary at some point to quantify the number of thefts of Arts and Antiques from all Police Forces in the country, so that a national picture can be established. At present only 'thefts' are recorded.

NCIS[32] also offered a further perspective. The establishment of a National database would indicate to other countries that we were taking the problem seriously. They also believed that it would further assist the UK standing once the database contained information on objects illegally removed from other nations. Clearly there are some practical considerations, for example it has to be known that the object has been removed from its country of origin and the time taken to get this information onto the database, but the principle remains. The issue of liability with respect to overseas stolen items has been raised previously.

The issues are:
Notification of removals from other countries.
The speed at which information can be brought to the database.

[29] *Source - Submission by ALR - National Database 04_ALR.doc*

[30] *Comment by Art and Antiques Unit in telecon 15 Mar 04*

[31] *Telecon Hartley/Watts(Sussex) 24 Mar 04; Telecon Hartley/Robinson(Avon) 25 Mar 04; Norfolk Response.doc*

[32] *Telecon Hartley/Williamson 24 Mar 04*

4.8.2 Organised Crime

References to the relationship between the theft of cultural property and organised crime is documented in both Hansard[33] and in the United Kingdom Threat Assessment of Serious and Organised Crime 2003[34]

In the Second Reading of the Dealing in Cultural Objects (Offences) Bill, Richard Allan MP quoted from the National Criminal Intelligence Service's threat assessment of 2001. This identified art and antiques crime as a level 2 threat to national security, because of the link between theft and transport of such items and organised crime. It went on to say that terrorists do whatever organised crime does, and the lines between who carries out such theft are therefore blurred. However, it is clear from NCIS, Special Branch and FBI information that there is a link between the removal and transport of cultural objects and the funding of terrorism. The following is an example of such links.

In September 2001, the art and antiquities unit intercepted and seized £3 million of Bactrian art. The pieces were 3,000 years old and had been looted by members of the Northern Alliance and sold via Pakistan to fund the war effort against the Taliban regime. They were held by New Scotland Yard, to await restoration when the Kabul museum has been rebuilt.

Similar connections between organised and serious crime were raised in the 2003 threat assessment, from which the following is extracted.

The Council for Prevention for Art and Antiques Theft estimates that scale of arts and antiques theft in the UK is £300 million to £500 million annually. It is likely that low level criminals are responsible for most incidents of cultural property theft in the UK. However, serious and organised criminals will be attracted by the size of the global cultural property market, the involvement of private dealers and the ease with which stolen items can be moved nationally and internationally with a low risk of detection. The theft of art and antiques enables organised criminals to raise funds to support other crimes.

Serious and organised criminals make use of couriers to transport cash out of the UK for a variety of reasons; However, additional provisions aimed at tackling the flow were introduced in the Proceeds of Crime Act 2002. By May 2003, approximately £21 million cash had been seized, some 80 percent of which could be attributed to the new PoCA provisions. High value goods such as gems, and antiques are often used in lieu of cash, especially where they are small enough to conceal on a person, and it is possible that these may be used more extensively if law enforcement is increasingly successful in targeting cash. Serious and organised criminals also purchase luxury goods, such as jewellery, artwork and antiques, as a way of laundering money.

---

[33] *http://www.parliament.the-stationery-office.co.uk/pa/cm200203/cmhansrd/vo030404/debtext/30404-15.htm*

[34] *http://www.ncis.co.uk/ukta/2003/ukta2003.pdf*

© 2004 VEGA Group PLC

5. OPTIONS ANALYSIS

The aim of this section is to provide an options analysis of the two candidate solutions, MPS and PPP, from both the financial perspective and their respective abilities to address the issues and provide an effective national cultural database.

5.1 Addressing the Issues

5.1.1 Issues of General Agreement

There are a number of requirements that are generally agreed and require no further discussion.

It is agreed that the database should contain data on stolen articles and that the only information that should be publicly available is object data. It is not agreed what further information the database should hold.

Most users require a one-stop-shop for those carrying out due-diligence checks. However, the database will be one of several due-diligence checks that a ligitimate buyer or seller should undertake.

It is agreed that the database should provide an audit trail of those who access the system and of the searches they undertake.

It is agreed that a set of data standards is required for the data on the database. Data definitions are not agreed.

It is agreed that the database should support the storage and viewing of high quality images.

It is generally accepted that web access will be an important feature of the national database.

The issues raised in Section 4 come under 7 general headings, each of which is discussed below.

5.1.2 Contents of the Database

The core of the database should be stolen artefacts. The authoritative source for such data are the Police. There is opposition to the inclusion of 'at risk' items, or items not clearly identified as stolen, which stems from the perception that it will restrict trade. However, from a technical perspective, there is no reason why articles contained, for example, in the ICOM Red List, could not be included within the database architecture with each area managed separately.

An indicative structure for the database, to include all necessary items, would be structured as in the diagram below, with stolen items being separate from 'at risk' etc.

© 2004 VEGA Group PLC

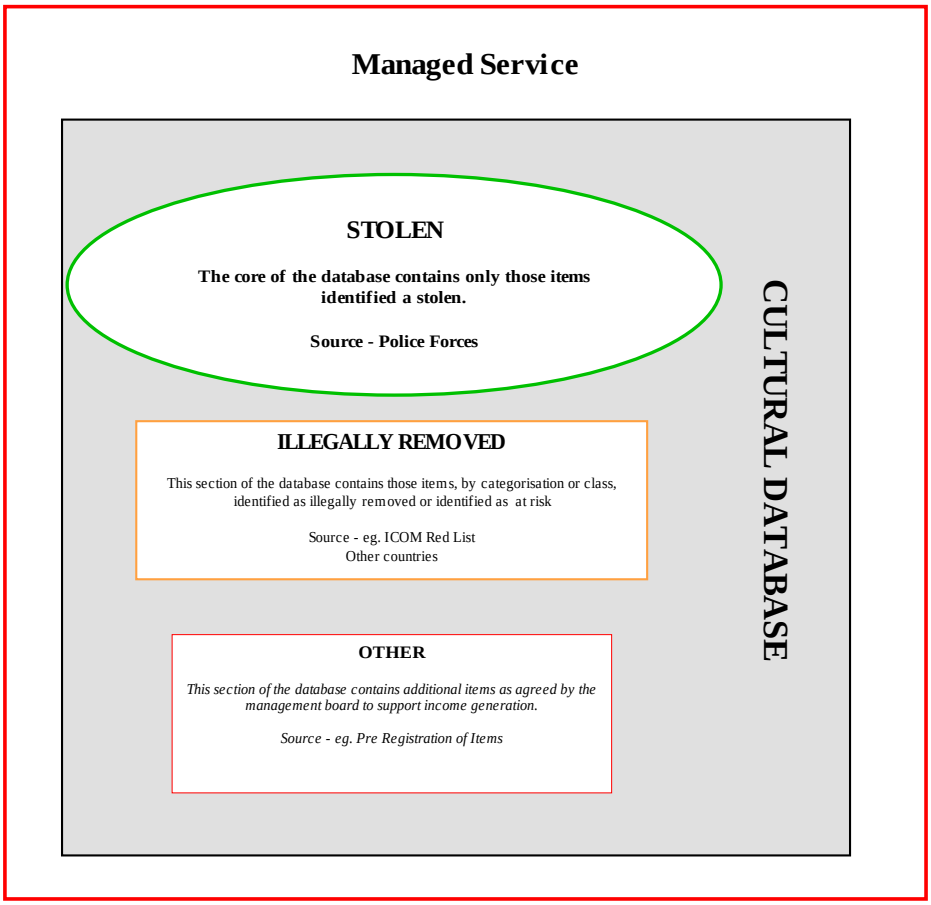


Figure 1 - Indicative Structure of a National Database

5.1.2.1 Object Record Qualification

In order to qualify, an object must be defined as 'cultural'. It could be argued that at its inception, the database should only contain information on cultural objects as defined by qualification criteria determined by Government or a body of experts nominated by the Government. This qualification criteria should initially be based on definitions provided in the UNESCO convention of 1970 and the Annexes of Council Regulation (EEC) No 3911/1992 and Council Directive 1993/7/EEC. However, we believe that very soon thereafter the criteria for inclusion should be widened, subject to agreement by a management board so that the maximum number of objects can be captured.

For a solution wholly based on the MPS database, this is unlikely to be achieved. The Police do not recognise whether an artefact is of cultural value - as previously stated, it is regarded as either stolen of not. Even if the Association of Chief Police Officers (**ACPO**) agree to extending the work of the Police forces, we believe that this service is better suited to provision by the public sector. A PPP solution would be able to broaden the scope of objects recorded on the database.

Objects classified as 'at risk', along the lines advertised in the ICOM Red List, present a more complex issue. To provide a one-stop-shop, as indicated by many respondents, would require this type of information to be included on the database. Its treatment and access could, however, be different from that of the stolen items. In the initial stages the outward-facing interface could 'point' or provide a hyperlink to these areas but a long-term aim may be to include the data within the database itself. However, there is a

© 2004 VEGA Group PLC

perception amongst dealers that this has the potential to restrict trade. We believe the aim is to alert dealers to the possibility that the item is 'at risk' and suggesting that they conduct further investigations into its provenance.

This issue needs to be treated sensitively as to openly deter traders from using the national database will reduce its effectiveness.

Illegally removed items would also need to be included on the database[35]. To achieve this would require some form of notification to be provided which would rely on the host nation notifying the UK authorities. We expect them to be treated in a similar manner to those identified as 'at risk'.

For a solution based on the MPS database, it is unlikely that it will progress beyond providing web links to other areas.

The Database should not hold sensitive information such as intelligence or criminal investigation reports, but links will need to be made to, for example, Crime Reference Numbers (though these would not be visible to the public). Personal information on owners and finders may be held but access to such information should be restricted to the required level of access approval. A clear security policy will cover this.

In summary, the Database should only contain information on qualifying cultural objects that have been declared stolen or illegally removed by the relevant qualifying authorities and the minimum personal/sensitive data for it to be effective. We believe that data on items declared to be 'at risk' will need to be associated with the database and used for reference purposes only.

5.1.2.2 Value

For items recorded as stolen, there is no logical argument that limits their value for inclusion. Recovery of items of low value may lead onto finding items of higher value. For practical searching purpose, particularly for bulk searching, it may be necessary to set a lower limit search value. We believe that this is a commercial issue between the database provider and the commercial entity, and therefore do not recommend a lower value for stolen items, irrespective of the solution.

The impact of a lower limit does not affect the viability of either the MPS or PPP solution.

5.1.2.3 Police Provided Information

Information provided to the Police is provided for the purposes of investigating crime. It will always be an operational decision as to whether the details of an object can be made public. We believe that the establishment of a national database of stolen or illegally removed cultural objects will have substantially more credibility if the Police are involved. Should the Police be involved then a clear protocol will need to be agreed. Similar protocols already exist eg. TER Plant database[36], and we do not see this as an obstacle to Police involvement. In all cases, only object data would be released

---

[35] *Telecon Hartley/Williamson (NCIS) - 24 Mar 04.*

[36] *TER maintains a database of owned and stolen plant and equipment funded by the construction and industries. It manages the data quality for the PNC stolen plants section and provides a searching service in response to both police and due diligence enquiries. It provides expertise on plant and equipment identification to the police. The parallel with the possible partnership for arts and antiques is very close*

The Police have indicated, however, that they may wish to charge for their data[37]. Should they do this, then a PPP solution would need to generate additional income to cover the cost. We have not been able to investigate this further and have been advised that the decision to charge would need to be taken at a senior level.

The Art and Antiques Unit has some 50,000 items on their database. As the information was provided for Police use, they believe they have a duty to write to all the owners and ask for their permission to release the data to a PPP. In addition, each item would need checking to ensure it is accurate, an exercise that would require considerable effort. Again this information came to light only recently and has not been investigated further.

In principle we believe that a PPP operating a national database of stolen and illegally removed cultural artefacts, sponsored by a Government Department, would not be credible without Police involvement.

5.1.2.4 Data Standards

The need to support the unskilled user, to ensure the highest degree of data quality and to automate the identification process clearly points to the use of a data catalogue and rigid data standards in order to define and exchange information effectively using a common format. Such standards should be based on those that have been proven to operate in the cultural environment and which have been proven to be effective in the user environment. In our opinion the standards currently used in the art market to describe objects are too narrow in their sphere of applicability and too flexible in their definition of values.

More rigid approaches exist within the Museum sector and by auction houses when drawing up catalogues. There are, unfortunately, many different thesauri and each auction house or sector of the trade is likely to have a different approach. It is clear that a data catalogue will improve the standard of data entry by confining it to set fields. For progression to a PPP, a set of data standards would need to be agreed with the Service provider that met the requirements of the community it would serve. We therefore, at this stage, make no recommendation as to the data standards to be used, but do recommend that they are established.

5.1.2.5 Data Ownership

Several of the attributes associated with an object record stored in the Database have to be assigned in a responsible manner if the contents of the Database are to obtain a level of integrity that is accepted by users and stakeholders. We believe this integrity can only achieve the highest level of assurance if responsibility for the value of the attribute is assigned to the most appropriate and qualified authority. For instance, the declaration 'Cultural' could be assigned by a Government body responsible for protecting cultural heritage. An item should only be identified as 'stolen' if information comes from the Police. Such an ownership scheme should be applied on all the data in the Database.

For an expanded MPS system dealing only in stolen artefacts this is not an issue. For any solution, once it involves illegally removed items, or indeed at risk items, the issue of data ownership needs to be addressed.

5.1.2.6 Security

A Security Policy for the Database Service should be developed as soon as possible and this policy should be based on existing Government body standards, such as those

[37] *Meeting Hartley/Rapley(MPS) - 23 Mar 04.*

developed by the Police and CESG. We understand that PITO will need to be involved to ensure the right security protocols are in place to protect police data. It should be noted, however, the establishment of a cultural database is currently a low priority for PITO.

5.1.3 Providing Information to the Database

There is a natural time lag between the reporting of an item as stolen and its appearance on a database. The Police need to investigate the alleged crime before it is confirmed as stolen. In addition, there is no separate category for the reporting of cultural theft, and there are 43 Police forces placing different emphasis on stolen artefacts. During this delay there is the potential that an artefact has been traded several times and may even have left the country. For arts, antiques and antiquities the situation is further delayed as it may not be recognised by an individual Police Officer that an item falls within the definition of arts, antique or antiquity.

If the Police are the authoritative source of information on stolen objects, then a PPP provider will need to interact with 43 different constabularies, potentially adding a further delay into getting information onto the database. The MPS already undertake this kind of liaison in the course of their duties but it is not seen as comprehensive, nor does it cut down time in information being placed on the database.

One solution to this is for information to be provided direct to the database provider (assuming a PPP approach) either by an insurance company or by the individual deprived of his/her artefact. When searched, the database could indicate that this item has been initially reported as stolen but also indicating that it is awaiting Police confirmation. It does, however, increase the possibility that a dealer would refuse to buy and item thinking it may be stolen and that, if this subsequently proves to be incorrect, a legal claim against the operator. It is situations like this that the commercial sector is used to dealing with.

Getting information to the database quickly favours a PPP solution, though *confirmation* for stolen artefacts will be dependent on the frequency of data exchange between the MPS and the PPP.

We do not see individuals, outside of the database operator, being able to input data directly into the database. In order to maintain data quality an 'expert' will need to be involved, either to enter or assist in the entry of data.

Mechanisms will need to be put in place to remove items from the database once they have been returned to their rightful owner.

Comparisons have been made to the DVLA and TER databases. There is one fundamental difference in that vehicles are uniquely identifiable and there is a legal requirement for it to be registered. This is not the case with cultural artefacts, arts antiques or antiquities. In addition DVLA is an agency and therefore has greater scope to pursue commercial initiatives. Companies such as hpi, buy data from the DVLA for the operation of their database.

5.1.4 Providing a Service[38]

The national database provider will need to provide access to the database at reasonable cost and accessibility, and may wish to offer a range of additional services to generate income. Commercial providers already provide a range of services including support to

[38] *Examples provided by ALR - National Database Annexes_ALR.doc*

law enforcement agencies. Below are examples of what could be considered under an extended service.

Active Searching

It is in the interests of those members of the art trade who do due-diligence searches that their competitors do not handle items which may be stolen and on which there will tend to be a large profit mark up. This brings the reputation of the art trade into question, and is unfair competition to those dealers exercising proper due diligence. It is therefore in the interests of the art trade (as well as the insurers, victims, and police) that there is an active effort to search the web-sites of dealers and auction houses who may not exercise due diligence, may be overseas, or items offered on sites such as eBay.

Follow up to Matches

Matches must be pursued in order to turn them into recoveries and the police may not be prepared to do this in many cases because it will be a civil rather than a criminal matter or too low a priority. If matches are not pursued then a great deal of dissatisfaction results from items left in storage, which cannot be sold or repatriated. Because of the complexities of different jurisdictions, the elapse of time, statutes of limitation, and limited value of many cases, the legal process is not usually as efficient as a commercial compromise.

Examples of cases relating to Antiquities/World Heritage.

(Extra research carried out on pieces not registered on the ALR database)

1. Assyrian relief. Nimrud. Excavated in 1970's, stolen in 1991 Gulf War. Showed to ALR by London dealer. ALR researched with two professors from Buffalo University who were involved with the excavations in the 1970's (Polish team). A match was made with the original drawings, made by Prof. Paley.

2. Iranian tombstone relief (Yazd, central Iran). Stolen two years ago from a main "Friday Mosque" in Yazd region. Shown to ALR by dealer/collector, who was trying to sell the piece to The Davids Collection, Copenhagen. ALR worked with British Museum staff (& archives) to find visual match. Successful match with Tehran University 1970's publication on "Tombstone Mihrab calligraphic panels." Referred to Scotland Yard. Tombstone seized in London; owner and dealer arrested. Route to UK of tombstone: Yazd, Iran – Antiquities dealer in Dubai – UK – Gallery in London – dealer in London. Tombstone returned to Iran through the Iranian Cultural department.

The credibility of the database will depend on its efficient matching and follow up without which it will become, at best, a fictitious umbrella of good faith.

5.1.5 Fees

5.1.5.1 Recovery Fees

Recovery fees are contentious. It remains unacceptable that should the national database use information provided to the Police in pursuant of there duties, that once the item is found, a fee is charged based on the value of the item. Current database suppliers largely remain solvent through the charging of recovery fees, relying to a greater or lesser

degree on a large find to remain viable. The draft protocol we have seen[39] between the Police Information Technology Organisation (**PITO**) and TER for the running of the Police National Computer (**PNC**) plant database has the following phrase:

> PITO envisage that TER will gain commercially from all police equipment recoveries of plant and equipment being handled by TER with the ability to charge a recovery fee from the legal owner prior to the return of the property.

A more palatable approach would be to offer a recovery service, aimed at the actual cost of recovering the item and not as a percentage of its value. However, the scale of these fees is unlikely to match the scale of value-based recovery fees, which implies that there would always be a funding input to the national database.

In principle the Police will pay for information under 'normal conditions' that leads to the arrest and recovery of property. They will not participate with loss adjusters, for example, for recovery only. The Police, are not in a position to determine legal ownership; this is the function of the courts

5.1.5.2 Access Fees

Access to the database should be via registration. It is through this process that information can be collected on users to show if and how they go about conducting due-diligence. Much of this activity will be unseen to the user and only available to certain authorities.

The size of the fee will need to be low enough to attract users and generate sufficient income to offset some of the costs of the national database. We have used in our financial model the level of fee suggested by the BAMF (£25) and made a judgement as to what reduction in fees would attract the larger dealers/auction houses.

If a PPP is established, then it is likely that it will become a monopoly supplier and so fee levels will need to be controlled. However, profits will need to be generated to assist in the development of the national database.

5.1.6 Management

Any solution that bears the title of national database will require a management board. This will need to consist of representatives form government as well as key individuals within the art, antiques and antiquities communities. Representation will also be required from the Police, as they are providing and using data, as well as HMCE.

Some of its early work will be to agree what goes onto the National Database, level of charges and subscriptions, data standards.

5.1.7 System Requirements Issues

We have considered the position of whether the national database should be stand-alone or directly connected to other systems. Connections to other systems require the necessary interfaces to be established and would speed up the transfer of data. A stand-alone system will exchange data via disk or hard copy.

Whilst many respondents require data to be synchronised and kept up to date, it is our opinion that the database should initially be a stand-alone system and not connected to

[39] *Source: Information provided by ALR - National Database Annexes_ALR.doc*

either trusted or other systems. Connecting the national cultural database to other systems will inevitably introduce interface issues and has the potential to slow down its implementation. Physical to other systems could be planned for in a future development strategy. There should be a strategy put in place to establish connections to Trusted Systems but to do this at the outset may involve un-necessary delays for a requirement that has been outstanding for a number of years.

The MPS solution would not face interface issues unless it was required to connect their standalone system to the Police National Computer.

Availability of the system should be 24/7. The trade in artefacts is worldwide and therefore not constrained by geographical time zones. The issue of staff availability will need to be addressed for any solution, but more appropriately for a PPP.

Bulk searches will require turn round times of the order of 14 working days and individuals will require responses within minutes. Both of these could be achieved within the MPS or PPP solution, but on balance the expertise to undertake the bulk searching task is within the private sector and well established.

5.2 Financial Analysis

Our terms of reference directed us to consider 2 options:

- An assessment of an MPS solution (without a PPP) to meet the needs of the stakeholders.
- Assessment of PPP solution.

However, for the reasons outlined above, we have concluded that neither is viable. Instead, we propose a combined solution.

Costs have been obtained from a variety of sources. Police and Civilian salaries were drawn from the MPS website. Costs of access are based on interpretation of information provided by ALR, Bonhams and Sotheby's. Costs of software, hardware and licences from commercial sources.

5.2.1 Introduction

This section, and the accompanying cost model (APPENDIX J), is modelled on a three-step approach to creating a widely available database of stolen cultural artefacts. The purpose of this approach is to provide an indication of the costs involved at various stages. We have concluded that the national database cannot exist without some form of Police involvement, as they are the authoritative source of data on stolen artefacts. The approach allows the investigation of the issues as we progress from the current MPS situation to a PPP situation. The steps are:

1. Expand the current MPS system to all forty-three police forces based on current technologies and using a minimum of staff resources.

2. Enhance the expanded MPS system (now a national database for stolen artefacts) to become web-based, allowing a limited number of trusted (i.e. registered) organisations to access some of the national data.

3. Split services available to stakeholders into ‘core’ and ‘extended’. Core services will be delivered by the new national system (based upon the expanded MPS system). Extended services will be provided by the private sector.

© 2004 VEGA Group PLC

At this point it will be necessary to set up a 'managing' organisation to take the 'core' services to the widest possible audience, including all stakeholders as well as members of the public.

It will have the freedom to develop new and innovative services, possibly based on extensions to the national database or by associating or linking to related databases under their own control or those being managed by other organisations.

The organisation will be outside the police force and will be funded by a combination of Government funding and charges made for services provided.

In this way, the police force can continue to focus on their priorities of reducing crime and controlling the definitive database of stolen cultural artefacts. This is a core service to the stakeholders.

The combination of core services and privately delivered extended services will:

- Meet all stakeholder requirements.
- Keep costs to a minimum.
- Allow police forces to concentrate on crime reduction and prevention.
- Allow controversial (but valuable to crime reduction) mechanisms for revenue generation alive in the private sector, for example, recovery fees.

5.2.2 Main Issues

- Charges for the new services must be very competitive to attract Art Dealers, Auction Houses, Insurance companies' etc. - who are receiving an adequate service today.
- There will be an ongoing requirement for funding unless charges / revenues can be increased.
- The receipt of recovery fees from Insurance companies should be added to revenues if at all possible. This will reduce the requirement for Government funding.
- The speed with which all three steps can be completed.
- The authoritative source of stolen artefacts is in the public sector; the expertise to manage and interpret the data is in the private sector.
- Costs do not include the cost of checking data before its release for access by the general public.

The table below provides a summary of the costs for each step. It also demonstrates that there will be a continued funding requirement from the Government.

Cost and Revenue Summary

	Year 1	Year 2	Year 3	Year 4	Year 5
Cost of Extending MPS to all forces	122,590	144,742	131,423	86,534	88,635
Cost of Making Police system public-facing	283,248	146,054	150,005	154,067	158,243
Cost of PPP Organisation	580,935	382,708	392,276	402,083	412,135
	986,773	673,504	673,704	642,684	659,013
Revenues Estimate - CORE SERVICES	500,000	512,500	525,313	538,445	551,906
Funding Requirement	486,773	161,004	148,392	104,239	107,107

Table 1 - Summary of Costs

5.2.3 Variations of the Financial Summary.

The summary above demonstrates the funding requirements over five years based on the currently modelled scenario. Applying the following variations could change the scenario:

- Savings could be possible (across line 1 and line 2) if the MPS system was expanded straight into an Oracle environment.
- Revenues could be increased to fund more of the costs of the service. New services could also be developed and charged for over time.
- Some technology costs could be dropped from Year 4 and 5 (line 1) if MPS decided to discontinue the Cardbox technology after Year 3.
- Revenues from Extended Services have been excluded from this summary to demonstrate the highest level of public funding to run the national system. By far the largest element is recovery fees.

5.2.4 Step 1: Expansion of the Metropolitan Police System to all other Forces.

The expansion of the Metropolitan Police System to all forty-three forces could be achieved at a very reasonable cost – but would be at a cost to the public purse as there is no customer base to earn revenues from.

Costing is based on 2 full time staff in London with accommodation based in existing offices.

Technology would be based on single workstation in each participating force. Data transfer would be over the police network or by disk.

- ***Pros:*** *Fast, cheap method of including all police forces in collecting and managing data on stolen cultural objects.*
- ***Pros:*** *Makes use of Due Diligence Officers located within each Force.*

- ***Cons:*** *Limited impact on crime reduction, as data is not available to the Art market or the public (except when invited to participate by police forces on an ad-hoc basis).*

- ***Cons:*** *Without the existence of a supporting business case the initiative for a national database remains a low priority.*

Year 1	Year 2	Year 3	Year 4	Year 5
122,590	144,742	131,423	86,534	88,635

Table 2 - Summary of Costs for Expanding to all Police Forces (Step 1)

5.2.5 Making the Expanded Police Database available over the Internet.

Expanding the MPS system to be available over the Internet carries increased costs. It has the potential to meet all of the mandatory requirements, but in its early days is likely to be less efficiently than the commercial sector. It has added benefits in that it has the potential to draw in users who find the current commercial arrangements too expensive. There is no guarantee that commercial dealers will switch to the new system, as they are well provided for by existing database providers.

More staff will be needed to liase with outside organisations, by email, telephone and fax. Data related issues raised by these outside organisations would need to be resolved.

Underlying technology will need to be expanded and improved – most importantly implementation of an Oracle database in line with proposed system architecture[40].

However, the semi-public database can now be a source of revenue.

Initial audience *may* be the three large Auction Houses, and a small number of Insurance companies.

This estimate allows for 8.5 further staff, in addition to the 2 staff in Step 1. It is entirely possible to expand the existing database to be accessible via the internet for viewing and limited searching purposes by individuals and not to provide a direct service to dealers. Costs of staff to provide a service have been included to show the cost of providing such a service. With the exception of an additional administrative assistant no additional staff would be required to provide the contents via the Internet without a supporting service.

There are no costs included for re-developing or re-designing the database or for re-skilling staff in Oracle technologies through training. We anticipate the training bill would be quite small and largely be aimed at database managers rather than users of the database.

- ***Pros:*** *Data is available to a limited number of non-police organisations. Charges can be made to start recouping costs.*

- ***Pros:*** *Service could be delivered across the Police National Network (**CJX**).*

- ***Cons:*** *Not all stakeholders have their requirements met. Increased costs.*

- ***Cons:*** *No guarantee that already well served organisations will switch to this system.*

[40] *PITO presentation - Intelligence.ppt*

Year 1	Year 2	Year 3	Year 4	Year 5
580,935	382,708	392,276	402,083	412,135
Combined Costs of Step 1 and 2:				
703,525	527,450	523,699	488,617	500,770

Table 3 - Summary of Costs for Making MPS Database Available to a Wider Audience

5.2.6 Step 3: Public-Private Partnership.

The organisation to manage the delivery of the core service to a far wider audience should not be part of the police service – but should be some form of public-private partnership funded by revenues earned and Government funding.

However, the police will need to keep the organisation built in Step 2 (or part of that organisation) in place to enable adequate liaison between the police and the new organisation.

Staff estimate includes the addition of 19 staff in the new organisation to a base of 10.5 staff on the police side.

New staff will include a number of art experts who will search the database, add items to the database, work with law enforcement forces on investigations etc.

- ***Pros:*** *All stakeholders now have their requirements met.*
- ***Cons:*** *Cost to the public purse.*
- ***Cons:*** *May have an impact on existing database providers.*

Year 1	Year 2	Year 3	Year 4	Year 5
320,980	152,555	156,368	160,278	164,285
Combined costs of Steps 1, 2 and 3				
1,024,505	680,005	680,067	648,895	665,055

Table 5 - Summary of Additional Costs Associated with Establishing a PPP

5.2.7 Revenues: Core Services & Extended Services.

The revenue estimates are based on existing levels of business within Art Loss Register and Invaluable. They are also based on the reality that charges will have to be lower than private sector charges to attract business fast enough to make the new organisation viable.

Core services would be provided by the organisation fronting the expanded MPS system, leaving the private sector to deliver extended services that are not appropriate to a public-sector service.

As an example: A core service is reporting back to an enquirer that an item has been reported as stolen, or that there is no trace that the item has been reported stolen. An

© 2004 VEGA Group PLC

extended service is working on a physical recovery of a stolen artefact on behalf of an Insurance company.

	Year 1	Year 2	Year 3	Year 4	Year 5
Core Service Revenues	**500,000**	**512,500**	**525,313**	**538,445**	**551,906**
Extended Service Revenues	**670,000**	**686,750**	**703,919**	**721,517**	**739,555**
	1,170,000	1,199,250	1,229,231	1,259,962	1,291,461

Table 6 - Summary of Core and Extended Service Revenues

5.2.8 Sponsorship

The sponsorship unit within the Metropolitan Police Service has been approached to investigate whether the establishment of this type of combined (with private operator) national database would be feasible. We have made contact but have not been able to pursue the matter further at this stage.

5.2.9 Early Implementation

We have chosen as our approach to firstly expand the MPS database to all 43 forces then make it accessible to a wider audience. An alternative approach could be to make the MPS database accessible to a wider audience in the first instance, before expanding to all 43 Police Forces.

To make the police information available to a wider audience through the Internet, with a limited no cost searching facility, with no support services, can be achieved relatively quickly. It has the potential to provide an indication of the use of the data (by tracking hits on the website and of the searches undertaken) though it would meet few of the mandatory requirements.

We estimate that making the information available through the Internet, subject to a fuller technical evaluation can be achieved within a month and cost of the order of £180,000[41].

- ***Pros:*** *May encourage smaller dealers to actively partake in search the database.*
- ***Pros:*** *Demonstrates an early commitment to addressing the problem.*
- ***Cons:*** *Few stakeholders have their requirements met.*
- ***Cons:*** *May have a short-term impact on the commercial database market.*

5.2.10 Financial Analysis Summary

The purpose of the exercise was to expose the costs at varying stages from expanding the MPS database to the establishment of a PPP. Whilst the authoritative source of information on stolen artefacts resides in the public sector, with the expertise to use that data in support of the commercial art market lies in the private sector.

At all stages there is a cost to the public purse in both establishing and maintaining the national database. The ongoing funding requirement is dependent on the ability of the

[41] *This figure has been arrived at using our own figures and includes cost for security. It is compatible with the indicative costs provided informally by Decoder Software who manufacture the software on which the MPS system is based.*

private sector supplier to obtain funds from recoveries. This is shown in more detail at J.5.

6. CONCLUSIONS

The full establishment of a service supported by a national database of stolen or illegally removed cultural artefacts requires the combination of public sector data and private sector expertise. Both options considered have a cost to the public purse.

The requirement for a national database is well supported amongst all stakeholders. Art, antiques and antiquities dealers are currently well served by existing database providers and will need a sound commercial reason to switch to another service provider. Accessibility and cost, provision of an audit trail and quality of data are essential if the national database is to function effectively. A set of data standards and data definitions needs to be established.

The authoritative source of information on stolen artefacts is the Police, whilst the source of information on illegally removed cultural objects is harder to define. The Database should only contain information on qualifying cultural objects that have been declared stolen or illegally removed by the relevant qualifying authorities and the minimum personal/sensitive data for it to be effective. We believe that data on items declared to be 'at risk' will need to be associated with the database and used for reference purposes only.

In respect of the value of an item, we conclude that there should be no lower limit. It further concluded that with regards to items being placed on the national database the definition of a cultural object should remain at the discretion of a management board, but initially may be confined to Annexes of Council Regulation (EEC) No 3911/1992 and Council Directive 1993/7/EEC.

The database requires authoritative information on stolen articles to provide credibility if it is to be a Government sponsored national database. The private sector is best placed to exploit information to provide a wider and more comprehensive service, which would require a considerable time to build up within the public sector. A protocol will need to be established with the Police for exchange of data. A security policy needs to be established based on Government body standards, such as those developed by the Police and CESG.

The database supplier will need to offer a range of services in order to generate additional income. We conclude that there will be a significant cost to the public purse if recovery fees are not allowed.

Access to the database should be via registration based on an annual fee.

The national database will need a management team to oversee its functions, regulate costs, advise on what should and should not be placed on the database.

Initially, the national database should be a stand-alone system and not connected to trusted or other systems. Connections to other system should form part of its development.

There are no major technical problems in establishing a national database

© 2004 VEGA Group PLC

7. RECOMMENDATIONS

It is recommended that:

- To achieve an early indication of intent, The MPS Art and Antiques Unit database is made available to a wider audience.
- The establishment of a national database is based on a core of information provided by the police with additional services provided by the private sector. A combination of the MPS and PPP options.
- A management board is established to oversee the work of the national database.
- Access to the MPS Art and Antiques Unit database is made available to those police forces that require it.
- A draft set of data standards and data definitions is drawn up as part of the implementation plan.
- A security policy is drawn up, based on existing Police standards.
- That the use of recovery fees be allowed, but closely monitored.
- On establishment of the national database no lower limit is placed on the value of a stolen item, subject to agreement with the database supplier.
- The national database be a stand-alone system.

© 2004 VEGA Group PLC

APPENDIX A GLOSSARY

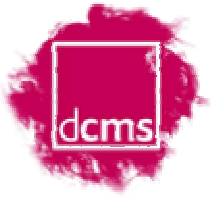
The following acronyms and abbreviations have been used in this report.

AAU	Art and Antiques Unit
ACIS	Article Classification Intelligence System
ACPO	Association of Chief Police Officers
BAMF	British Art Market Federation
CI	Cultural Item
CJX	Police National Network
CoPAT	Council for the Prevention of Art Theft
DCMS	Department for Culture Media and Sport. Department for Culture Media and Sport
DTI	Department of Trade and Industry
HMCE	HM Customs and Excise
IP	Internet Protocol
ITAP	Illicit Trade Advisory Panel
MPS	Metropolitan Police Service
PAS	Portable Antiquities Scheme
PITO	Police Information Technology Organisation
PNC	Police National Computer
SAND	Stolen Art National Database
TOR	Terms of Reference

© 2004 VEGA Group PLC

APPENDIX B *TERMS OF REFERENCE FOR THE STUDY*

APPENDIX C *AIDE MEMOIRE*



Aide-memoir for the Requirements Capture of a Database of Stolen and Illegally Moved Cultural Artefacts

Issue 1

© 2004 VEGA Group PLC

TABLE OF CONTENTS

INTRODUCTION 3
Purpose and Scope 3
Guidance 3

USER'S CONTACT INFORMATION 5
Confidentiality 5

USER'S JUSTIFICATION AND BENEFITS 6
Business Plans 7

USER'S BUSINESS PROCESSES AND INFORMATION FLOWS 8

USER'S EXISTING SYSTEMS AND INTERFACES 9

PROPOSED DATABASE FUNCTIONALIY, PERFORMANCE AND USABILITY 11

PROPOSED DATABASE SECURITY AND ACCESS POLICY 14

FINANCING AND MANAGING THE PROPOSED DATABASE 16

MISCELLANEOUS 17

AMENDMENT RECORD SHEET

ISSUE	DATE	REASON
A	16 Feb 2004	Initial release to Client for comment.

© The Copyright of this document is the property of VEGA Group PLC. It is supplied on the express terms that it be treated in confidence, and may not be copied, or disclosed, to any third party, except as defined in the contract, or unless authorised by VEGA in writing.

VEGA Group PLC
Delme Place, Cams Hall Estate, Fareham, Hampshire PO16 8UX, United Kingdom
Tel: +44 (0)1329 223838
Fax: +44 (0)1329 238319
www.vega.co.uk

INTRODUCTION

Purpose and Scope

1. Under contract 135/276 the Home Office in conjunction with the Department for Culture, Media and Sport has commissioned VEGA to conduct an options appraisal and derive a set of requirements for the development of an electronic database that will record the movement of illegally removed objects or possessions that are of cultural significance. This document is intended to assist stakeholders in the preparation of information that VEGA will require in order to conduct a thorough and accurate assessment of the requirements for this facility.

2. At this current point in time the scope of the database's functionality is not known since it has also not been agreed what constitutes a Cultural Item (**CI**). It is also not agreed what aspects of illegal movement should be recorded. Therefore, the aim of this document is to assist users and stakeholders in providing their views and knowledge so that a consensus can be derived on what the proposed database service should provide and cover.

3. Considerable work on this subject has already been conducted and so the terms of reference of the VEGA study has been limited to the following:

   - To produce a Requirement Specification for the preferred solution.
   - To examine the CoPAT[42] and MPS[43] proposed solutions and to conduct an options appraisal. Alternative solutions should only be examined if there is a strong business case.
   - To produce a Business Case for the investment.

Guidance

4. This pamphlet has been developed as a generic form allowing readers and users to provide whatever information they can and to inform on the type and relevance of the information the VEGA Consultants require.

5. If users feel an interview would be mutually beneficial to this process, they should get in touch with the VEGA Project Leader named below. Whilst every effort will be made to accommodate users wishes, restrictions on the time allowed to produce subsequent reports may limit VEGA's ability to agree to hold an interview session.

Steve Hartley
VEGA Group PLC
Tel: +44 (0)1329 223838
Mobile: +44 (0)7956 050479
Email: steve.hartley@vega.co.uk

6. Users are not obliged to complete all sections and may add additional information wherever they wish.

---

*[42] Essentially looking at a Public/Private Partnership approach but using the framework put forward by the Council for the Prevention of Art Theft (**CoPAT**) Registered Charity No 1071753as a steer. They propose a Stolen Art National Database (**SAND**) which would be managed as a public utility.*

[43] Metropolitan Police Service is proposing to replace their ACIS system and develop a web-based access.

© 2004 VEGA Group PLC

7. The form has been designed to allow the electronic entry of information if users find that more convenient. The boxes will expand to accommodate the amount of text. Users are also invited to modify the form if they so wish if they find the current format to restrictive especially when including figures or tables.

8. The proposed database for illegally removed or stolen cultural items will be referred to as the **Database** throughout this document.

© 2004 VEGA Group PLC

USER'S CONTACT INFORMATION

Applicability **All users.**

1.1	Name	
1.2	Organisation	
1.3	Role or Position	
1.4	Location or Address	
1.5	Telephone Number	
1.6	E-mail Address	

Confidentiality

9. The information provided by the User will be treated as confidential and where requested the anonymity of information providers will be respected. However, Users should note that the Client is not obliged to accept the authenticity of the information where the source has not been verified.

If you wish to remain anonymous to our client then please state reasons here.

USER'S JUSTIFICATION AND BENEFITS

10. In this section we require information on the organisations, representatives of groups or interested parties and individuals that intend to use the proposed Database service and what benefits they or their clients would gain from using the facility.

Applicability **All users.**

2.1 From your or your organisation's prospective outline the purpose, aims and scope of your business and its relationship or interest in the Database.

2.2 What is your or your organisation's considered opinion on what objects qualify to be included in the Database and to what purpose the information should be used.

What qualification should be used to determine whether an object is cultural? Simply marked cultural by an authoritative source such as the courts or committee, tainted as defined in the Dealing in Cultural Objects (Offences) Act 2003, etc.
Provide any references to standards or sources of authenticity or any **value** thresholds that should be considered.

2.3 Outline the benefits you or your organisation would gain from the development and use of such a Database and how are these justified.

Provide as many subjective, quantitative and qualitative measures as you feel necessary. If you were able to attach a monetary value to any gains or losses then this would be of great assistance.

Business Plans

11. Copies of your business or project plans, which identify an interest or dependency on the movement of illegally removed or stolen cultural objects, would be most beneficial to our assessment. Obviously all such material will be treated in the strictest confidence.

© 2004 VEGA Group PLC

USER'S BUSINESS PROCESSES AND INFORMATION FLOWS

12. In this section we are interested in discovering how your enterprise intends to communicate and use the Database. Identification of the interfacing business processes and the corresponding information flows will assist the Consultants is determining the most appropriate and beneficial data entities to be included.

Applicability **If you are a proposed user of the database or a representative of an organisation that will exchange information with the depository.**

3.1 Describe the business processes and information flows that will interface to such a Database.

Please feel free to provide any flow diagrams.

Provide both actual and idealised versions.

3.2 Describe the content of the information flows.

Provide references to any data set standards (e.g. Object ID) or forms that would apply.

© 2004 VEGA Group PLC

USER'S EXISTING SYSTEMS AND INTERFACES

13. This section covers the more detailed aspect of existing systems and services and how they will interface to the proposed Database.

Applicability **System or Service Providers**

4.1 Describe the systems and interfaces that you propose or believe should connect to the Database.

Provide as much detailed information as possible
e.g. operating system, database system, hardware platform, file and network transfer protocols, file formats, electrical interfaces, performance, mobile and fixed workstations

4.2 System Metrics and Record Formats.

Provide any information on the size or amount of information you expect to exchange with the Database.
Provide information flow rates.
What range of data formats should be accommodated,
e.g. data sets and types, pictures, video stream, audio files, free text, categorised values

4.3 Provide information on your existing database contents and their usage.

© 2004 VEGA Group PLC

4.4 Describe the access and security policy of your service.

Include details of quality assurance, service continuity, disaster recovery, risk assessment.
How do you prevent someone from launching a port scan probe against your network?
Is your IT network connecting to the Internet?
How many firewalls do you have?
What is the type of the firewall(s) (is it FireWall-1)?
What are their functions?
What type of Operating System (NT platform or Unix) is your firewall running on?
Do you have a Web server?

© 2004 VEGA Group PLC

PROPOSED DATABASE FUNCTIONALIY, PERFORMANCE AND USABILITY

14. This section covers the more detailed aspects of the Database's capabilities and functionality. Users should not be influenced by the two preferred options (see paragraph 3) and concentrate on the service requirements regardless of solution and technology. It is the task of the Consultants to determine which solution best meets the requirements.

Applicability **Users, System Designers or Service Providers**

5.1 ***What information should be captured in the Database?***

Name and type of the object

Object ownership details

Object image,

Estimate value

Provenance

Etc**.**

5.2 ***What data formats should be covered?***

(i.e. free text, currency, pictures, scans, video and audio streams, etc.)

5.3 ***Who many user(s) will have access to the Database?***

Total count of registered users.
Maximum number of simultaneous access sessions.

5.4 ***How will users communicate with the Database?***

Directly only via local network

Remotely from a fixed or mobile workstation.

Via the Internet or other Intranets

Through a remote hosting organisation's system or network

© 2004 VEGA Group PLC

5.5	***Describe the range of reports the Database will have to support.*** Ad hoc Regular Alerts Guidance	
5.6	***Describe the type of query the Database must support.*** Structured e.g. SQL Free text	
5.7	***List the languages the Database must support.***	
5.8	***Should the new Database contain stand-alone data or integrate with other databases holding the appropriate information?*** Why? What are these databases?	
5.9	***If the Database is to be stand-alone should existing data be migrated into the new Database and why?***	
5.10	***If the Database is to be stand-alone should existing data be synchronised with duplicate data in other databases and how often?***	

© 2004 VEGA Group PLC

5.11 ***What is the expected rate of throughput for the items/objects to be recorded in the database?***

5.12 ***How often do you think the Database contents should be updated?***

Regular relevance checks, existence or authentication checks, data field changes such as synchronisation with other data sources, status, movements, provenance updates.

5.13 ***What type of Operating System should the Database operate on and why?***

5.14 ***What form of user help and support should be provided?***

Context related
Formal training
Telephone support

© 2004 VEGA Group PLC

PROPOSED DATABASE SECURITY AND ACCESS POLICY

6.1 ***Should the Database include personal data and be subject to the subsequent legal ramifications?***

Data Protection Act 1984 and 1998
EU Data Protection Directive (95/46/EC)
Freedom of Information Act 2000

6.2 ***Should the Database contain sensitive information and why?***

E.g. due diligence reports, criminal investigations, prosecutions, owners, value, location, suspicions, judicial deliberations, etc.

6.3 ***Who should be allowed to use the Database and what restrictions should apply and why?***

6.4 ***What level of security should apply to the contents of the Database?***

State level, item and standard.

6.5 ***Should the physical location of the Database hardware platform be restricted and why?***

6.6 ***What is the minimum acceptable level of service continuity given that the cost of the service will increase with increased availability?***

© 2004 VEGA Group PLC

6.7 ***Who should be allowed to change or correct the data once it is loaded into the Database?***

Outline a data ownership policy

6.8 ***Should entering new data be restricted in any way? E.g. subject to quality review, police clearance in order to minimise the risk of compromising investigations?***

6.9 ***Should the database provide an audit trail and if so, in what form?***

© 2004 VEGA Group PLC

FINANCING AND MANAGING THE PROPOSED DATABASE

7.1 Outline your thoughts and views on how the Database service should be financed.

Include details of who should pay.
Distinguish between capital and revenue.
Describe any financing schemes that are appropriate.

7.2 Provide any opinions you may have on how and who should manage and maintain the Database service.

Public body, private body, charitable, police, academia.
Distinguish between managing the data and hosting the Database service.
If possible through your own experiences provide indications of expected workload and level of resources required.

MISCELLANEOUS

Please feel free to provide any other views and comments.

© 2004 VEGA Group PLC

APPENDIX D *CONSULTATIONS AND STAKEHOLDERS*

D.1 Consultations Undertaken

CONSULTATIONS			
INTERVIEWS			
Date	Interviewee	Capacity	
18-Feb-04	Hilary Bauer	DCMS	
	Jamie Willaimson / Colin Smith / Chris Bennett	NCIS	
19-Feb-04	Dr. David Gaimster	Royal Society of Antiquities	
	Julian Radcliffe	Art Loss Register	
20-Feb-04	Kevin Robson	PITO	
23-Feb-04	Mark Dalrymple / Richard Ellis / Rob Wirszycz	CoPAT	
24-Feb-04	Martin Brassell	hpi	
	Dr. Roger Bland	British Museum / Portable Antiquities Scheme	
25-Feb-04	Ann-Marie Dryden / John Badley	HMCE	
26-Feb-04	Maurice Davies	Museums Association	
01-Mar-04	Andrew Sladen	MPS	
02-Mar-04	Richard Allan	MP	
03-Mar-04	Professor Palmer	ITAP	
	Chris Mills	Natural History Museum	
	Roland Whitehead	Bonhams	
04-Mar-04	Julian Radcliffe	Art Loss Register	
18-Mar-04	Representatives	British Art Market Federation	
	Professor Palmer	ITAP	

© 2004 VEGA Group PLC

CONSULTATIONS			
TELECON INTERVIEWS			
	Sgt Walker	Norfolk Police	
	Mark Lees	DVLA	
QUESTIONNAIRES			
	Nominee	Organisation	Response
	Peter Addyman	York Archaeological Trust	Yes
	Joanna van der Lande	Head of Antiquities, Bonhams	Yes
	Anna Somers Cocks	The Art Newspaper	
	Professor Lord Renfrew	McDonald Institute for Archaeological Research	
	Kevin J Chamberlain		
	Catherine Johns	British Museum	Discussions held with Dr. Bland
	James Ede	Antiquities Dealers Association	Meeting 18 Mar 04
	Anthony Browne	British Art Market Federation	Meeting 18 Mar 04
	Sarah Hunt	Royal Institution of Chartered Surveyors	Yes
	David Todd	Find Stolen Art	Not interested
	Sgt Walker	Norfolk Police	Yes
	Sarah Saunders	Avon and Somerset Police	
	Phil Carter	Sussex Police	Attended Workshop
	Christopher Battiscombe	Society of London Art Dealers	Yes
	Earl Howe	The Association of Art and Antiques Dealers - LAPADA	Yes
	Mark Dogson	British Antiques Dealers Association	Yes

Table D.1.1 - List of People and Organisations Consulted

© 2004 VEGA Group PLC

D.2 Stakeholder Map

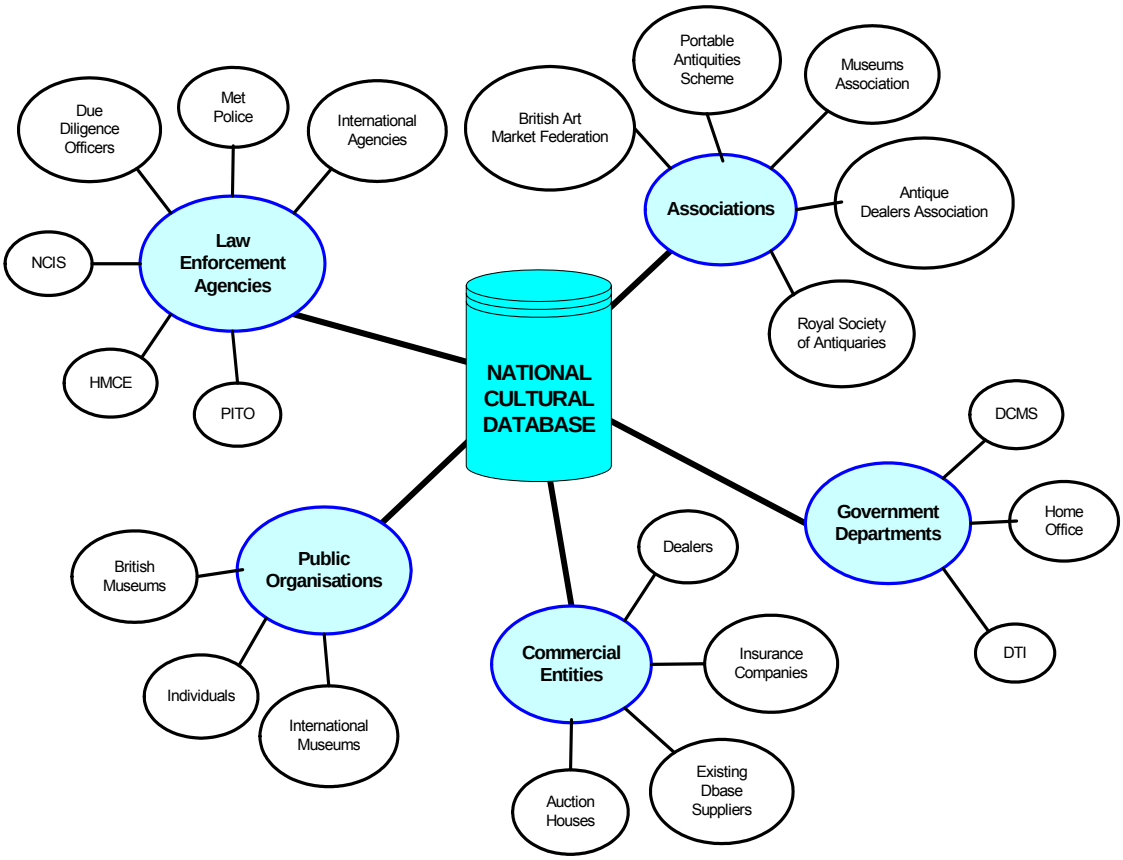


Figure D.2.1 - Stakeholder Map

APPENDIX E *REQUIREMENTS ANALYSIS*

E.1 Approach

Analysis of the requirements is based on an interpretation of the information gathered from forms, documents, interviews and further research mainly from reference sources and Web sites. A summary of the requirements can be found at APPENDIX A. Requirements have been grouped into a series of categories with positive responses indicated as a requirement or an agreement with a statement that does not necessarily constitute a requirement. Respondents have also been grouped into application sectors since the analysis found there was significant commonality between the needs of organisations working within similar business environments.

Certain aspects of the requirements have also been translated into a series of process models centred on the functionality that will form the core of the Database. These are shown in APPENDIX A. The models have been further refined into to a series of common procedures again due to commonality of requirements from the various organisations. This analysis procedure is based on well proven systems analysis techniques and is used initially to help define the enterprise nature of the requirements i.e. ignoring any existing political or organisation responsibility boundaries.

The analysis is evidence based using recorded statements that have been authenticated by the respondents, the majority of whom are project stakeholders. On the whole the weighting of a requirement has been based on quantitative measures such as a simple ballot or a count of the number of users represented by a requirement vote. However, factors such as business benefits, costs, complexity, legal constraints and business priorities have also been taken into account in order to ensure that the proposed ways forward are acceptable, achievable and affordable. Where subjective measures or interpretations have been assumed these will be clearly stated within the text.

E.2 User Requirements

Tables F.7and F.9 demonstrate there is a major consensus on the usability of the Database in that it has to be:

- User friendly or easy to use.
- Responsive to requests for information.
- Contain accurate and topical data.
- English language support.
- Web enabled.
- Contain high quality images.
- Provide an audit trial.

The following sections look at the specific areas of Usability or Human Interface Requirements of the Database functionality at the workstation or access point.

E.2.1 Access Mediums

In recognition of the development in computer terminal portability the majority of users would like to communicate with the Database through a wide range of media terminals and access paths (see Table F.1). We believe the objective of the Database Service should be to allow users to access the Database from wherever they are working on or away from their normal site of work. This includes working from outside the UK.

© 2004 VEGA Group PLC

In our conversations many users believed this clearly indicated use of the Internet Protocol (**IP**) for data exchange. However, this is an implementation issue that is best decided by the service supplier.

Users with established corporate systems and networks such as the Police and Customs & Excise indicated a need to access the Database from their own workstations. Generally this can be achieved in two ways:

- Connection via an Internet portal on the user's host network.
- Connection via the user's host system using a dedicated and trusted interface port to the Database.

This requirement is primarily a systems issue and as such is discussed in section E.3.

E.2.2 Ergonomics

Users clearly indicated that workstations must support the exchange of text and image data although the latter is primarily for viewing only (see Tables F.3 and F.5). User comments made during interviews indicated that the form of the workstation is not important so long as it is fast, effective and easy to use.

E.2.3 Image Support

Being able to display high quality images is a high priority for those users involved in object identification particularly Law Enforcement, HMCE and users that are not skilled in cultural object identification. This represents a significant part of the user community (>50,000 see also Table F.12) and as such must be considered a high priority.

Several users also expressed a wish for image capture and comparison capability in order to help automate the process of identification and help supplement poor knowledge of the object in question. This requirement was generally expressed as a nice to have feature since all the users were conscious of the cost and complexity of such a facility. We concur with this view. Such a facility would require complex technology, rigid operating procedures and a certain level of expertise in image capture and comparison results interpretation. Solutions that meet this requirement are also very expensive and not totally reliable. As such the business case for such investment would not compare to the current most cost effective means of image comparison; the discerning human eye and brain. However, as scanning and image comparison technology will improve the requirement for automated image checking should remain a medium to long-term aspiration.

E.2.4 Language Support

Users indicated that language support is primarily for English with an option to support other languages in the future as demand grows and funding becomes available (see Table F.7).

E.2.5 Interface Format

The majority of stakeholders interviewed believed a Web based or Browser type user interface would be most appropriate (see Table F.7).

E.2.6 Help and Support

Our analysis of the requirement information clearly indicates that a vast majority of the intended users of the Database will not be skilled in object identification and computer systems operations (see Table F.7). Consequently the Database must provide services

© 2004 VEGA Group PLC

and mechanisms that support unskilled users in generating search queries and interpreting results. This is one of the primary justifications for automated image capture and comparison.

In our opinion it is good practice to provide context-related support for semi-skilled or fully qualified users in entering or changing Database data. Therefore easy to use context related help with embedded context related subject guidelines would be an important requirement of the Database.

E.2.7 Standards

We have assumed application of EU and UK standards associated with the ergonomics and welfare of the user of the Human User Interface of the Database would apply by default and as such was not discussed with respondents.

E.2.8 User Requirement Issues

In our opinion there is a general consensus on the form and functionality of the Human User Interface. The main issue appears to be the prioritisation of requirements as a result of budget restrictions.

E.3 System Requirements

We have limited our analysis of system requirements for two reasons. Firstly by concentrating on the service and user requirement stakeholders, system purchasers are allowed the flexibility to pursue a service or a system solution. The service option is the more flexible and has to be considered if the procurement is to seek a Public Private Partnership arrangement. Secondly the use of primarily service requirements also allows the purchaser to transfer risk associated with the choice of technology over to the supplier.

However, our analysis of the user and stakeholders requirements indicates that certain criteria needs to be applied to the system solution. These are discussed in the following sections.

E.3.1 Systems Integration

Respondents placed great emphasis on the following requirements:

1. Duplication of data held on different databases must be minimised (see Table F.8).
2. The Database must exchange information with other databases (see Table F.13).
3. Any duplication of data held on different databases must be synchronised so that the data is consistent and topical (see Tables F.4 and F.8).
4. The Database should not hold sensitive information such as intelligence, criminal investigations and personal information on owners and finders. (See Table F.5).

It should be noted that requirement option 4 above is a majority view since two respondents believed the system should hold sensitive data with the proviso that access to this data be restricted to authorised users (see Tables F.5 and F.11).

The views stated indicate a need for some form of systems integration with other databases. Only one respondent believed a stand-alone system should be considered.

External systems fall into two categories - trusted and untrustworthy. The former will allow the connected systems to automatically exchange data without user authentication checks in some cases. Generally this allows for full data integration and a common user

directory. Connections to untrustworthy systems would entail user authentication for every session of data exchange, if this were allowed.

Possible examples of Trusted and Untrustworthy services are:

Trusted Systems/Networks/Sources

Customs & Excise

DCMS

Home Office

UK Police

UK Police (ISS4PS)

Interpol

Schengen

GSI

Pnn2

Other Systems/Networks/Sources

Commercial Lost Articles Databases

Art Dealers

Auction Houses

Libraries

Museums

Professional Institutions

Foreign Police

Internet

E.3.2 Metrics and Performance

The information provided by the respondents gave some indication of the scale of the task and the performance and scope of the Database parameters.

It should be noted that many of the measures provided were estimates based on subjective views. Consequently the metrics discussed here are only provided for guidance only[44] (see Table F.9).

Total number of object records	> 60,000 (140,000)
Maximum number of users at any one time	Not known

[44] *This information has not been updated from recently received hard copy information. This information is supplied in brackets*

Number of users	> 10,000+
Number of access sessions per month	> 11,000+ (individual)
Availability	< 24/7
New objects records per annum	> 10,000
Total number of missing objects	> 1,000,000

In terms of performance no indication could be given other than the system should respond quickly to any queries.

E.3.3 System Requirements Issues

The Issues to be addressed are:

Should the system support connections to trusted and untrustworthy systems?

What level of availability should be considered?

What response times should be considered normal?

E.3.4 Supporting Functions

The process diagrams shown in APPENDIX A and the contents of Table F.12 clearly call for the Database service to be supported by effective management and expert services in order to ensure high performance and data quality.

Many users believe that an automated identification service was required in order to support a large range of user capabilities and to ensure data quality. However, in our conversations with users there was general agreement that such a service is not foolproof and that expert support was required for object identification and interpretation of standards and regulations. Access to expert knowledge of the object is particularly important for Law Enforcement agencies and for most organisations involved in due diligence checks and forensic analysis. This requirement was also supported by academics who are expected to be the main source of this expertise.

Table F.12 also shows that respondents supported the need for guidelines in order to support the identification of objects. Such guidelines could be embedded in the search engine as part of the general help and support facility.

Our analysis has found the need for a qualification criteria in order to determine what objects should be placed on the Database. This was supported by users (see TableF.12) and the process models shown in APPENDIX A.

Nearly all the respondents we interviewed agreed that an expert body of adjudicators should be created in order to support and advise on the operation and management of the Database Service.

E.3.5 Service Requirement Issues

The issues to be addressed in respect of service requirements are:

What are the priority outcomes?

How should the service be managed?

Who should own the data?

E.4 Data Handling

E.4.1 Data Definitions

E.4.1.1 At Risk

Table F.2 shows that items 'At Risk' should be identified in the Database. This was also discussed at the Workshop where it was concluded that initially the Database should concentrate on its original terms of reference and only to consider items 'At Risk' once the Database development stabilises and the scale of the task is further refined.

Such a requirement to include 'At Risk' is implied in the UNESCO convention of 1970 under the justification of protection of cultural property. The concerns of many stakeholders are the scale of the task and the risk of loosing control. Items 'At Risk' are identified in the ICOM Red Lists[45]. There are also several other sources of 'At Risk' information especially from the academic sector. The question is what objects constitute an 'At Risk' qualification, who should define the term and should such items be included on the Database?

E.4.1.2 Cultural

In our discussions with respondents and stakeholders the issue of what is meant by the 'Cultural' qualification was prominent. Many suggestions were proposed as reflected in the contents of Table F.2. The majority of owners, dealers and trade organisations consider the term 'Cultural' to cover a wide range of items and the right of the owner to declare. Law Enforcement Agencies such as the Police and Customs defer to Government declarations such as the UNESCO convention of 1970 and recent Acts of Parliament. Academia believe the term 'Cultural' indicates of importance to a society's culture and that the use of the term is determined by representatives of the culture and those who understand the item's cultural significance. Respondents from the art market and the Police also questioned whether the term Cultural should distinguish one stolen art object from another.

What is clear is that by signing up to the UNESCO 1970 convention Government has a clear obligation to protect cultural objects and so must take responsibility for the application of the term 'Cultural' and accept the consequences of ownership obligations. Consequently the term should be based on a measure that is accepted by Government and that this measure should be quantitative in nature such as that used in the UNESCO and EU Mandates and the recent Dealings in Cultural Objects Act and developed further as suggested by ITAP.

E.4.1.3 Stolen

One Respondent suggested that owners of objects should be allowed the option to declare an object stolen on the Database but not report the incident to the legal authorities. This we find unacceptable since it leaves the owner of the declared stolen property, the owners of the Database data and the database operators subject to unnecessary liability claims risk. This is also the view of a minority. However, it does raise the question of what is meant by 'Stolen'. Law Enforcement agencies have an obligation

[45] *International Council of Museums, Red Lists, http://icom.museum/redlist*

to prove provenance and that a theft has taken place before an investigation can be initiated. Consequently we have assumed that the term 'Stolen' refers to a theft which has been reported to a Law Enforcement Agency (Police), theft has been proven by the Police and the Agency has assigned an alphanumeric case reference identifier.

E.4.1.4 Illegally Removed

The UNESCO convention of 1970 states that Member States have an obligation to restrict the movement of an object against the wishes of the owner if the object is considered to be of cultural interest to the societies they represent. This points to the Government declaring an interest or share in the ownership of an object on behalf of a Culture or State. The same principle can also be applied to an object whose legal ownership has yet to be determined such as objects that have been excavated.

E.4.2 Data Definition Standards

Many respondents presented numerous standards that are used to define objects and which could be used to describe the contents of the Database. The more common are listed in Table F.2. There was no clear agreement as to what standard should be applied. The art market has used the Object ID[46] standard quite widely but this standard specifies the fields to be used and not the contents of the fields. Academia and in particular Museums have developed a wide range of thesauri in order to help catalogue finds and exhibits. Many respondents agreed that in order to pursue the automation of the identification process a rigid data catalogue would be beneficial. Examples of such thesauri are:

Publisher	Title
English Heritage National Monuments Record	NMR Monument Type Thesaurus
English Heritage Museums Documentation Association	MDA Object Type Thesaurus, Archaeological Objects thesaurus working group, Generated by EH software - 09/04/2002
English Heritage	NMR Main Building Materials Thesaurus
English Heritage	NMR Defence Of Britain Thesaurus
English Heritage	NMR Components Thesaurus
English Heritage	NMR Maritime Place Name Thesaurus
English Heritage	NMR Maritime Craft Type Thesaurus
English Heritage	NMR Cargo Thesaurus
English Heritage	NMR Evidence Thesaurus
English Heritage	NMR National Trust Thred Thesaurus
English Heritage	NMR Aircraft Type Thesaurus
English Heritage	Forum on Information Standards in Heritage

[46] *Object ID ™ is a trademark of the J. Paul Getty Trust. The Council for the Prevention of Art Theft, The Estate Office, Stourhead Park, Stourton, Warminster, Wiltshire BA12 6QD, United Kingdom. © The J. Paul Getty Trust, 1999. All rights reserved*

Table E.4.1 - Examples of Thesauri

We believe that the use of a data catalogue is essential. Of the existing databases we have seen, those not based on a rigid data catalogue such as Object ID required users to have a certain level of expertise in identifying cultural objects. Databases such as the Portable Antiquities Scheme[47] that use a rigid data catalogue can be used by the relatively unskilled user quite successfully. In our experience this has also been the experience of other sectors such as the NHS who have developed one of the largest data catalogues of clinical terms in support of the modernisation programme of healthcare services.

E.4.3 Data Quality Assurance

A common requirement of respondents was the need for a rigorous quality assurance regime in order to ensure the quality of data. The main schemes proposed were:

- Checks before the information is loaded into the database.
- Consistency checks with other databases.
- Internal data quality checks possibly using an embedded intelligent agent.

It is clear that a data quality policy is required and that this policy should be developed by a knowledgeable group of stakeholder representatives or nominations.

E.4.4 Data Ownership

As shown in Table F.12 this is clearly an issue. The question of who owns the data in the Database has been proposed from two fronts. The commercial or art market sector propose the data should be owned by the owner of the article in question and that it is managed by the Database Service operators. The Law Enforcement and Academic sectors propose that Government must take responsibility for data held in the Database.

The art market stance is understandable given that current commercial databases are primarily there to protect and recover owner's property. As discussed by signing up to the UNESCO convention of 1970 Government must take ownership of the cultural share of an object. Since the prime function of the Database is to support Government in implementing its policy to protecting cultural artefacts and not to protect all art and antiques then the data in the Database is unique to the Government.

E.4.5 Data Handling Issues

The data handling issues to be addressed are:

Should 'At Risk' items be included on the Database and who should declare them?

Should a rigid data catalogue be used?

How should such a catalogue be developed? Cost/Time.

[47] *The Portable Antiquities Finds Database, http://www.findsdatabase.org.uk/*

E.5 Access Issues

There is a general agreement (see Table F.11) that the contents of the Database should be freely accessible to the public. This is the case with many of the current existing databases. However, there is also a majority opinion that all users should be registered for auditing reasons. The main access issues surround the sensitive nature of the data and who should view and change this data.

Table F.11 shows that there is little support for the inclusion of sensitive data especially that associated with personal information. This is understandable given current legislation governing computer held data and the availability of information.

Our analysis showed that most of the personal data associated with a cultural object is clearly linked to theft and recovery of the object and that this information would be held by the Police as part of their investigation. UK Police computer systems are governed by a rigid security policy[48]. Hence, the Police systems are better suited to protect personal information.

The analysis clearly points to the need for a Security Policy to cover Database operations and that this should be developed and approved before the Database service is procured.

E.6 Economics

Table F.6 demonstrates that there are mixed views on the way that the Database is financed. Proposals include:

- A subscription based system based on a scaleable measure of usage.
- A free service to the public.
- Financed by those who would benefit the most financially.

Most agree that the service should be non-profit making and that there is a general call for a public private partnership.

[48] *PITO, Police Community Security Policy, Unified Police Security Architecture, ISS4PS*

APPENDIX F *REQUIREMENTS ANALYSIS SUMMARY*

F.1 Access Paths

		Organisations' Requirement												
Path	**Medium**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Internet	All	●	●	●	●			●	●		●	●	●	
Trusted System	All			●	●		●							●

F.2 Data Definitions

				Organisations' Requirement												
Group	**Term Used**	**Source**	**Ref**	**Art Loss Register**	**CoPAT**	**Customs & Excise**	**DCMS**	**Home Office**	**Police**	**Professional Institutions**	**Museums**	**Interested Party**	**NCIS**	**Bonhams**	**RICS**	**Norfolk Constabulary**
At Risk	At Risk	IOM				●			●	●	●	●		●	●	●
At Risk	At Risk	Police							●		●			●	●	●
At Risk	Graduated At Risk	Interviewee									●					
Cultural	Cultural	UNESCO	1964							●	●			●	●	
Cultural	Cultural Heritage	UNESCO	1972							●	●			●	●	
Cultural	Cultural Institution	UNESCO	1976							●	●			●	●	
Cultural	Cultural Object	Interested Party								●						
Cultural	Cultural Object	Owner		●	●					●				●	●	
Cultural	Cultural Object	UK Parliament Act	2003			●	●		●	●	●					●
Cultural	Cultural Property	UNESCO	1964							●	●					
Cultural	Cultural Property	UNESCO	1968							●	●					
Cultural	Cultural Property	UNESCO	1976							●	●					
Cultural	Cultural Property	UNESCO/EEC	1970/1992			●	●		●	●	●					●
Cultural	Cultural Property	UNESCO/EEC	1970/1993			●	●		●	●	●					●
Cultural	Movable Cultural Property	UNESCO	1978							●	●					
Cultural	Not Required		2003	●	●											
Cultural	Tainted	UK Parliament Act	2003			●	●			●	●					

Group	Term Used	Source	Ref	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Party	NCIS	Bonhams	RICS	Norfolk Constabulary
Cultural	Underwater Cultural Heritage	UNESCO	2001							●	●					
Cultural	Waverly Criteria	Government Memorandum								●						
Illegally Moved	Illegal Removal	UK Parliament Act	2003			●	●				●					
Illegally Moved	Illegally Moved	UNESCO	1964								●					
Illegally Moved	Illegally Moved	UNESCO	1968								●					
Illegally Moved	Non-export lists	Foreign Police									●					
Ownership	Protectors	UNESCO	1964								●					
Standards	Building material thesaurus	English Heritage			●	●	●			●	●					
Standards	Monument thesaurus	English Heritage			●	●	●			●	●					
Standards	Object description	ARLIS									●					
Standards	Object description	Dublin Core									●					
Standards	Object description	mda Spectrum		●	●					●						
Standards	Object ID	J. Paul Getty Trust		●	●					●						
Standards	Object thesaurus	English Heritage			●	●	●			●	●					
Stolen	Illicit Transfer of Ownership	UNESCO	1964			●	●		●		●			●	●	●
Stolen	Theft or stolen	UK Parliament (92 Acts post 1988)				●	●		●					●	●	●

© 2004 VEGA Group PLC

F.3 Data Exchange

				Organisations' Requirement												
Query Type	**Criteria 1**	**Criteria 2**	**Criteria 3**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Identification	Classification	Image	Free Text	●	●		●			●	●			●	●	
Identification	Image	Description	Expert		●	●	●		●	●	●			●	●	●
New Object					●					●						
Object Update					●				●	●				●	●	●
Reporting	General				●				●	●	●			●	●	●
Advocacy					●				●	●	●					
Reports	Usage Trends				●				●	●				●	●	
Reports	Letters								●							●

F.4 Data Quality

		Organisations' Requirement												
Metric	**Value**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Data Checks	=>Daily			●	●		●	●				●	●	●
Data Relevance	Topical	●	●	●	●		●	●				●	●	●
New Data Quality Checks		●	●	●	●		●	●	●			●	●	●

F.5 Data Type & Scope

			Organisations' Requirement												
Subject	**Type**	**Scope**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Art	Text	All	●	●	●	●		●	●				●	●	●
Antiques	Text	All	●	●	●	●		●	●				●	●	●
Antiquities	Text	All	●	●	●	●		●	●				●	●	●
Archaeological Finds	Text	Home & Abroad		●	●	●			●	●					
Architectural	Text	All		●	●	●			●						
Manuscripts	Text	All		●	●	●		●	●						●
Movement History	Text			●	●	●		●	●	●			●	●	●
Art	Images		●	●	●	●		●	●	●			●	●	●
Antiques	Images		●	●	●	●		●	●	●			●	●	●
Antiquities	Images		●	●	●	●		●	●	●			●	●	●
Archaeological Finds	Images			●	●	●			●	●					
Architectural	Images			●	●	●			●	●					
Manuscripts	Images			●	●	●		●	●	●					●
Sensitive Data															
Intelligence	Text							●[1]							●[1]
Provenance	Text		●	●				●	●	●					
Value	Currency				●	●			●						
Personal Data	Text	Owners								●[2]					
Personal Data	Text	Finders								●[2]					

NOTES:
1 NCIS only
2 Museums Association only

F.6 Economics

			Organisations' Requirement												
Criteria	**Source**	**Form**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Search Fees	User	Free	●		●			●	●				●	●	●
Other Usage	User	Scalable	●							●					
Other Usage	User	Flat Rate		●		●									
Financing	PPP		●	●				●	●				●	●	●
Financing	Public	Set-up		●				●	●	●			●	●	●
Profit Making															
Financing	Commerce	Beneficiary	●					●	●						●

F.7 Ergonomics

		Organisations' Requirement												
Metric	**Value**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Usability	Friendly	●	●	●	●		●	●	●			●	●	●
Language	English	●	●	●	●		●	●	●			●	●	●
Language	Other							●				●	●	
Content Usability	Unskilled	●	●	●	●		●	●	●			●	●	●
System Usability	Unskilled	●	●	●	●		●	●	●			●	●	●
Interface Format	Browser	●	●	●	●		●	●	●	●		●	●	●

F.8 Implementation

		Organisations' Requirement												
Criteria	**Measure**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Stand Alone System		●										●		
Data Migration			●	●				●				●	●	
Synchronised Data		●	●	●			●	●	●			●	●	●
Location	Anywhere	●	●	●			●	●	●			●		
Location	EU													
Location	UK												●	
Paper Record Migration		●	●	●										

F.9 Metrics and Performance

		Organisations' Requirement												
Unit	**Value**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Number of object records	>60,000	●	●						●					
Number of users	Global	●	●	●					●			●	●	
Local Users	<5	●						●	●					
Local Users	>5000			●			●							
Session Rates (per month)	>11,000			●			●							
Availability	24/7	●	●	●			●							
Availability	Affordable							●	●					
New objects (annual)	>10,000								●					
Number of Missing Objects	>1,000,000													

F.10 Outcomes

		Organisations' Requirement												
Outcome	**Scope**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Reduce Number of Stolen Objects	Archaeological finds	●	●		●		●		●			●		●
Support market self-regulation			●		●			●					●	
Increase Recovery Rate		●	●	●										
Improve Identification Speed		●		●	●		●							●
Pool Resources & Skills			●	●			●							●
Increase Efficiency			●	●			●							●
Increase Prosecution Rate							●							●
Protect Sensitive Items from Damage							●							●
Due Diligence	All	●	●	●	●	●	●	●	●	●		●	●	●

© 2004 VEGA Group PLC

F.11 Security

		Organisations' Requirement												
Criteria	**Access**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Object Description Information	All		●				●		●					●
Object Description Information	Registered Users	●		●			●	●	-			●	●	●
Personal (finder)	Registered Users		●					●	●					
Location (found)	Registered Users		●					●	●					
Change Data	System Operators	●	●				●	●	●			●	●	●
Change Data	Registered Users													
Change Data	Owners (Data)							●						●
Change Data	Owners (Object)													
Change Data (Part)	Law Enforcement						●	●	●					●
Delete Records	System Operators	●	●					●	●			●	●	
Delete Records	Registered Users													
Delete Records	Owners (Data)							●						●
Delete Records	Owners (Object)													
Delete Records	Law Enforcement							●						
Input Data Checked		●	●	●			●	●	●			●	●	●
Audit Trails	All activity & changes		●				●	●	●			●	●	●
Standards	Police Community Security Policy						●							●
Standards	Unified Police Security Architecture						●							●

F.12 Support and Management

	Organisations' Requirement												
Service	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Object Identification Expertise	●	●	●			●	●	●			●	●	●
Automated Object Identification	●	●	●			●	●	●			●	●	●
Object Qualification Expertise	●	●				●	●	●			●	●	●
User Guides Production Expertise		●	●			●	●	●					●
Government Appointed Steering Group Management		●					●	●					
Academia Managed Service													
Data owned by Custodians		●											
Data owned by Government													

© 2004 VEGA Group PLC

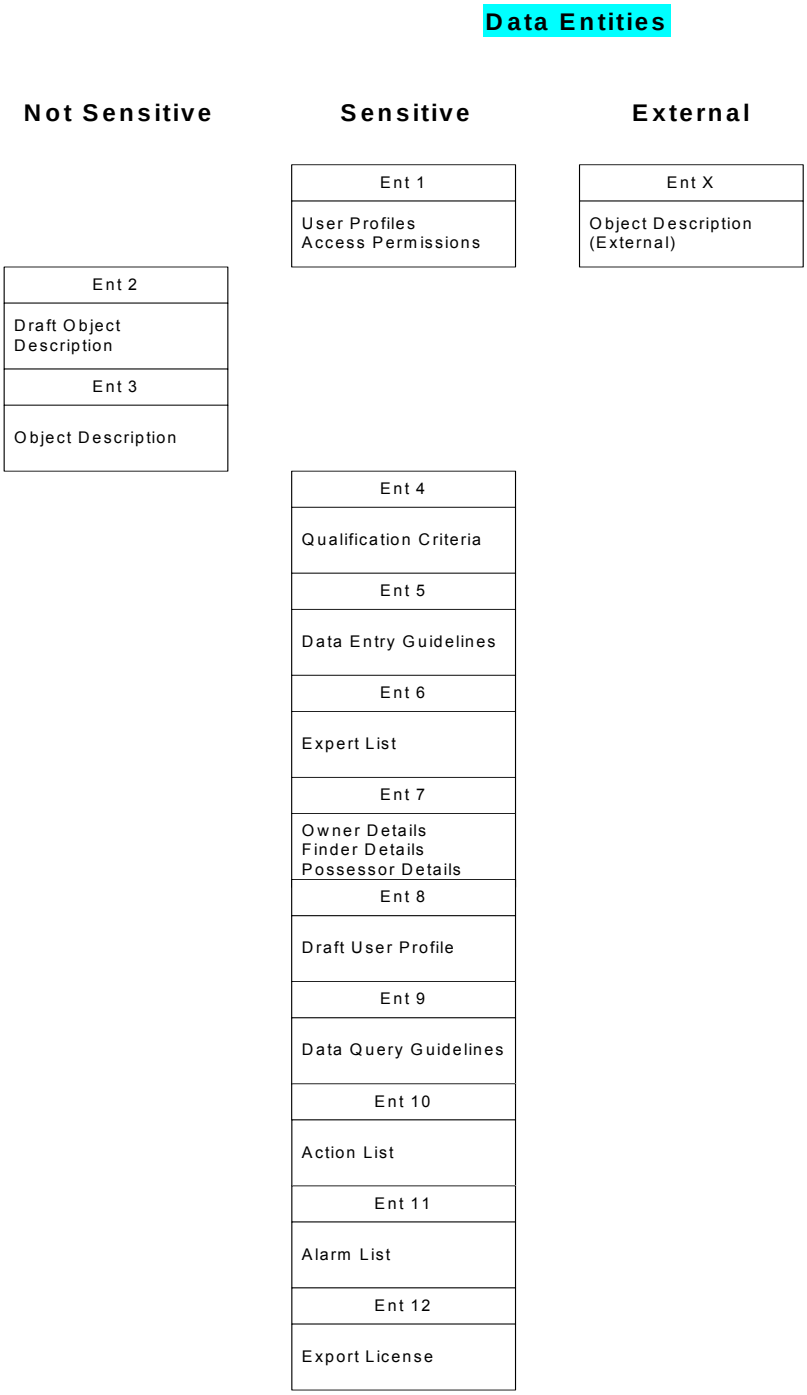
F.13 Systems Integration

		Organisations' Requirement												
Type	**System**	Art Loss Register	CoPAT	Customs & Excise	DCMS	Home Office	Police	Professional Institutions	Museums	Interested Parties	NCIS	Bonhams	RICS	Norfolk Constabulary
Untrusted	Lost Articles	●	●					●				●	●	
Untrusted	Art Dealers	●	●					●				●	●	
Untrusted	Auction Houses	●	●					●				●	●	
Untrusted	Libraries		●											
Untrusted	Museums		●											
Untrusted	Professional Institutions		●					●				●	●	
Untrusted	Foreign Police	●	●					●	●					
Trusted Systems	Customs & Excise	●	●	●				●	●					
Trusted Systems	DCMS		●											
Trusted Systems	Home Office		●											
Trusted Systems	UK Police	●	●				●	●	●			●	●	●
Trusted Systems	UK Police (ISS4PS)						●							●
Trusted Systems	Interpol						●							●
Trusted Systems	Schengen													
Trusted Network	GSI			●										
Trusted Network	pnn2						●							

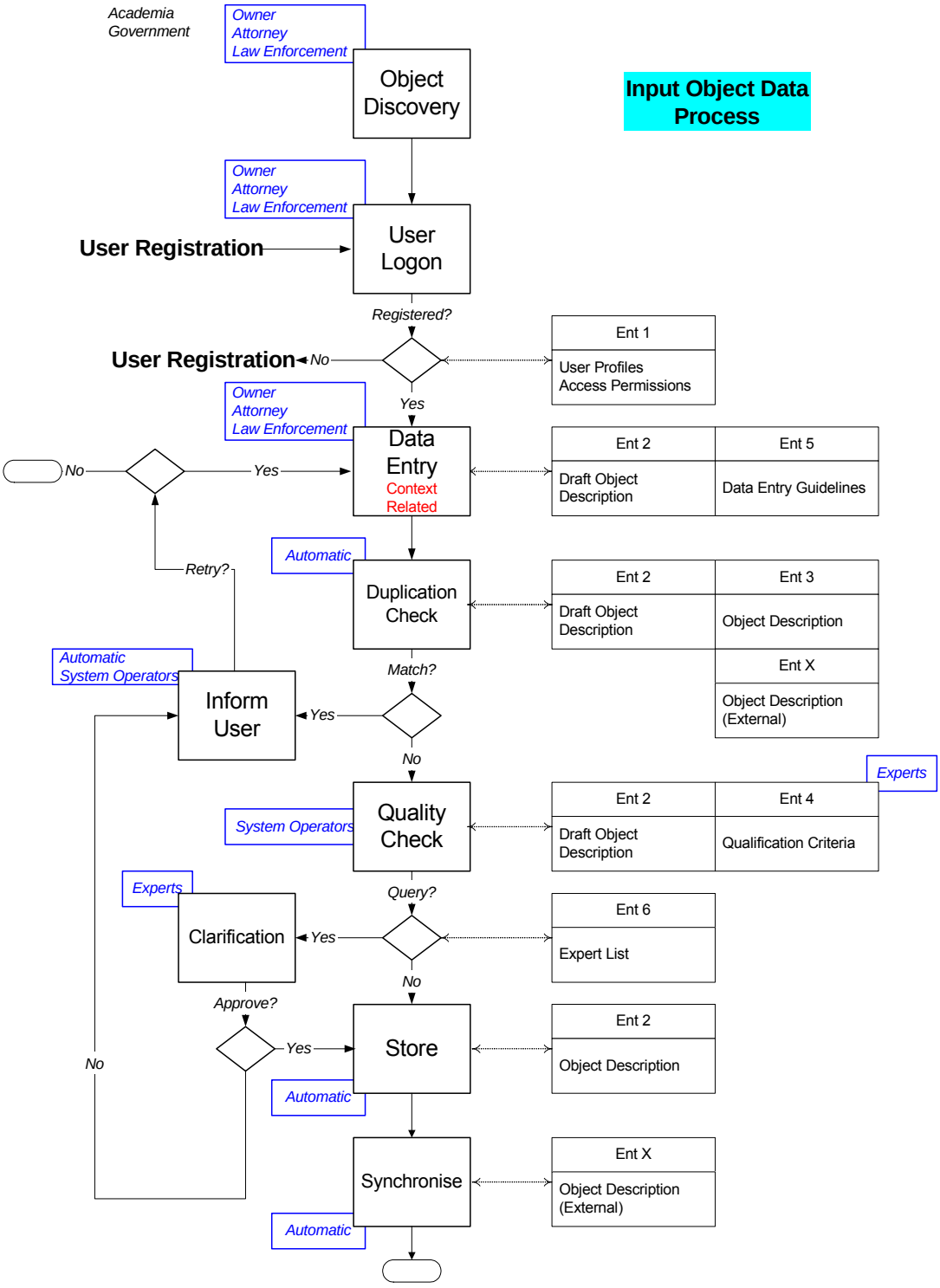
© 2004 VEGA Group PLC

APPENDIX G *PROCESS MODELS*

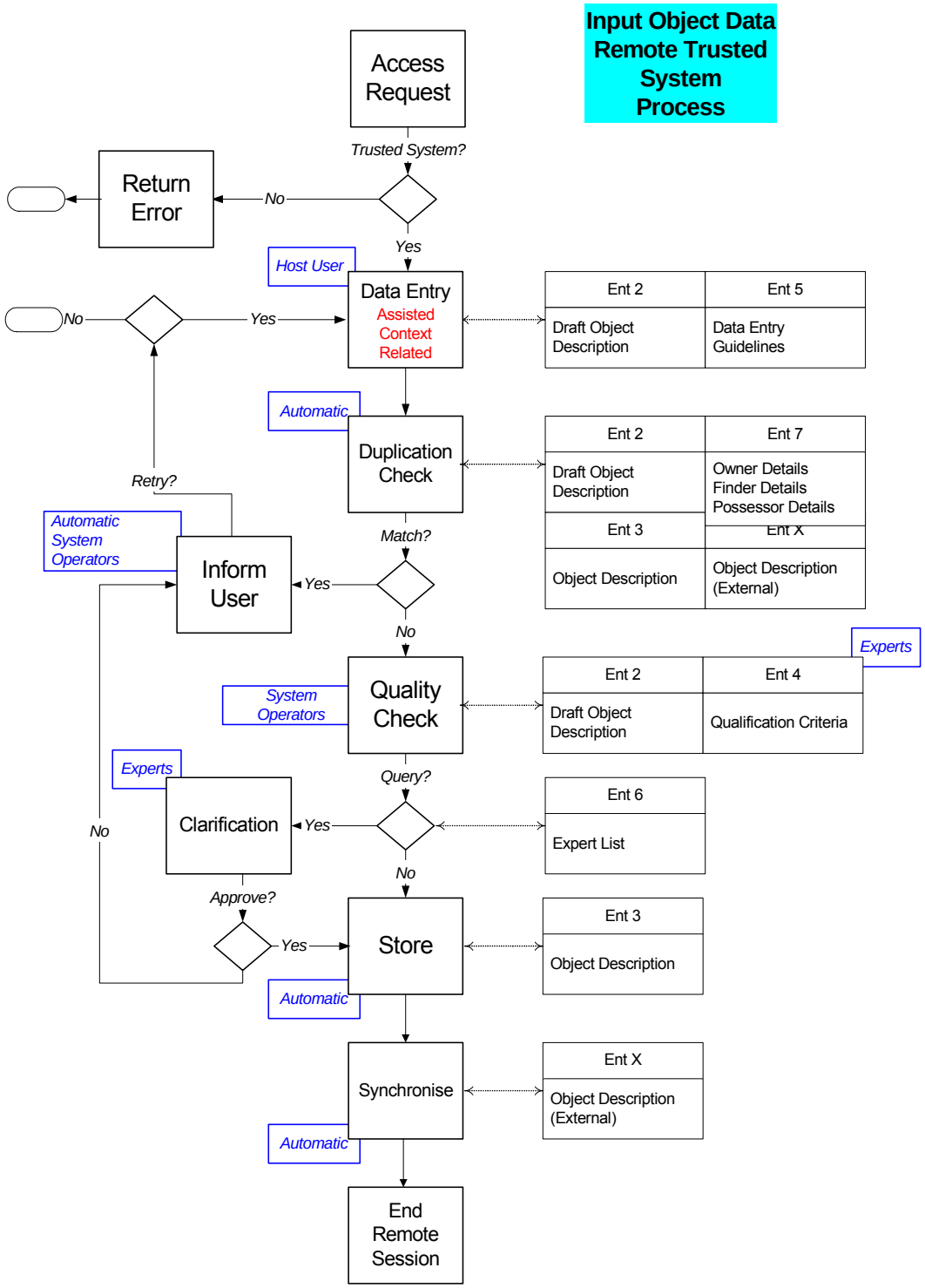
G.1 Data Entity List



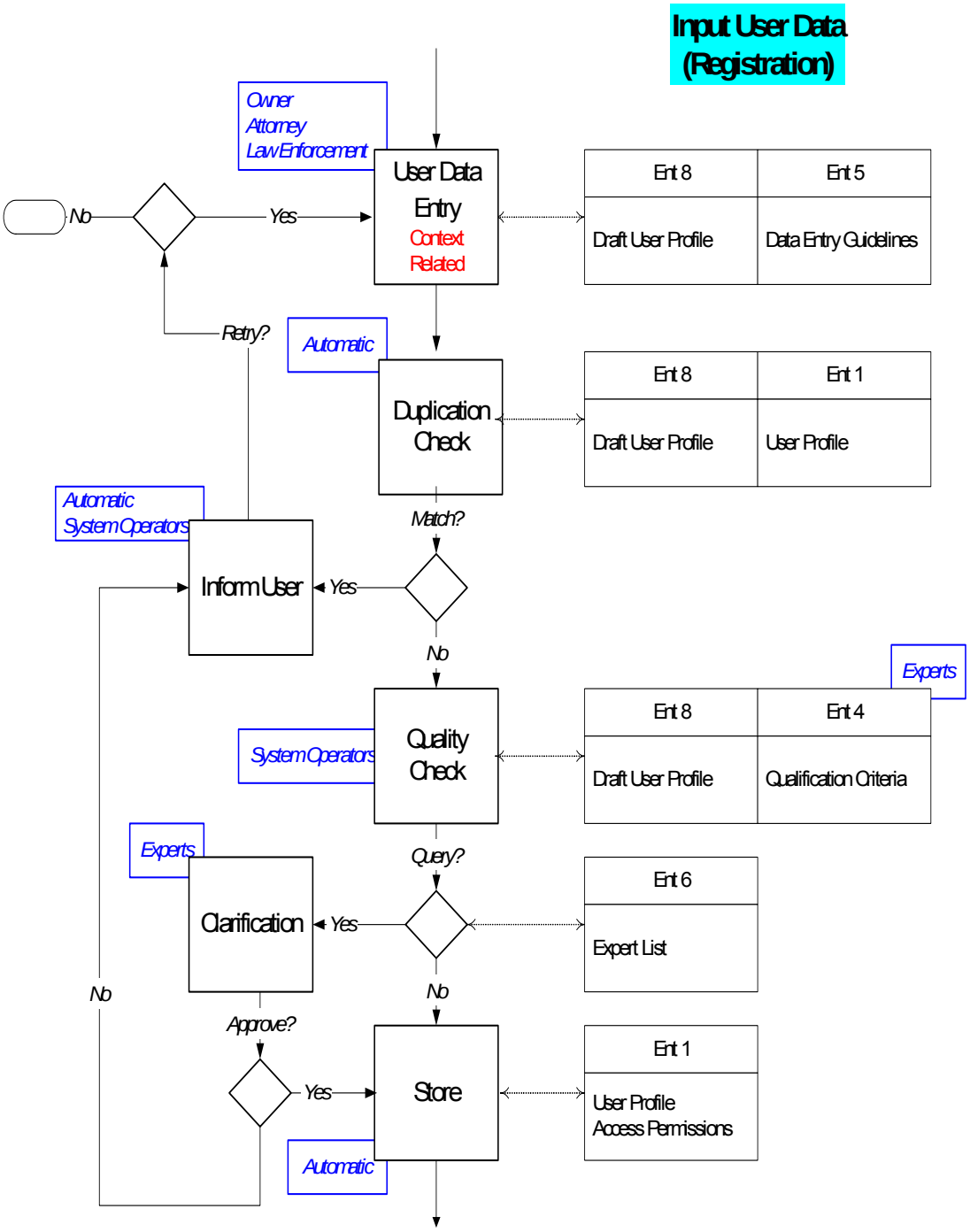
G.2 Input Object Data



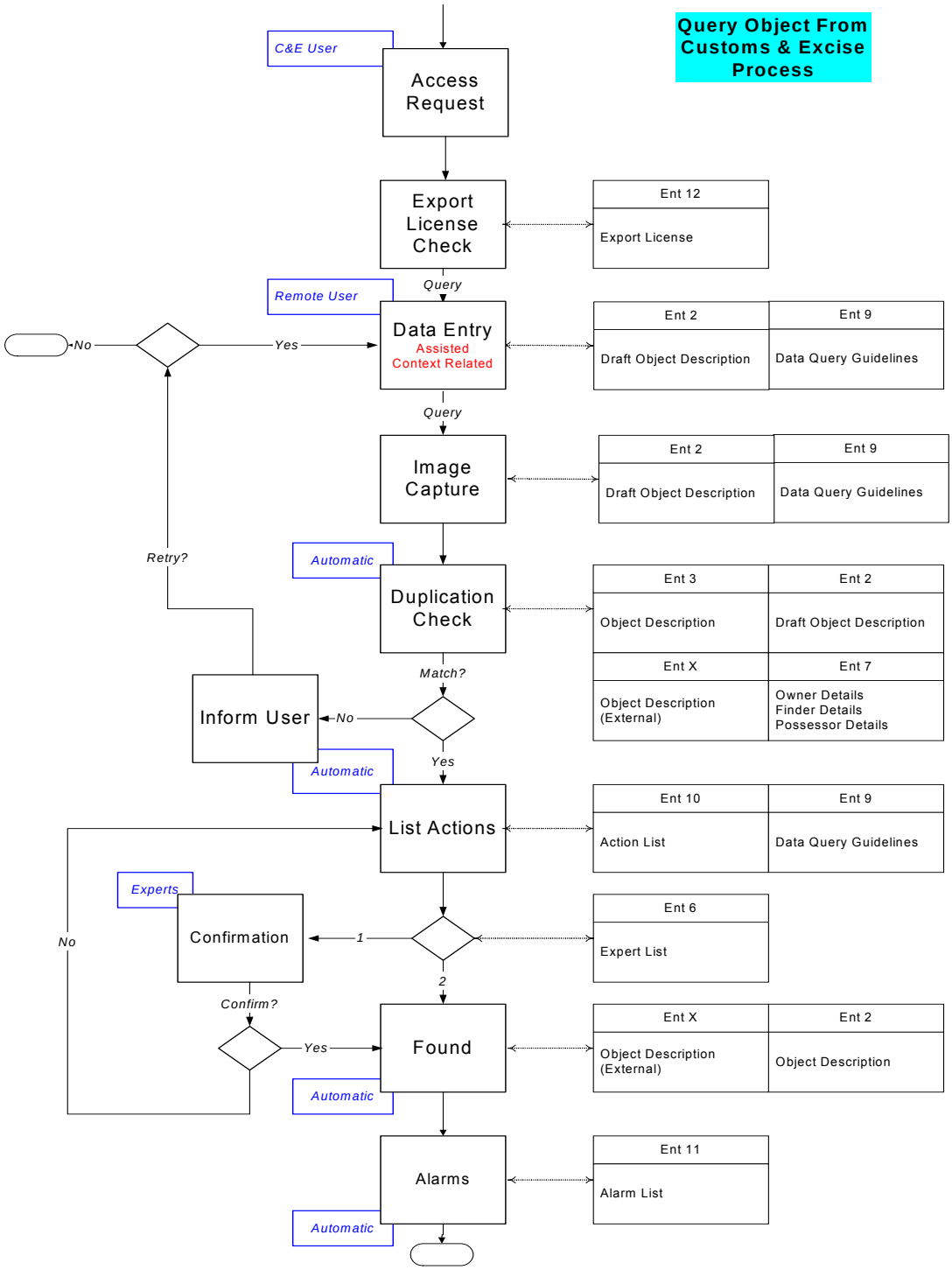
G.3 Input Sensitive Object Data From Remote Trusted System



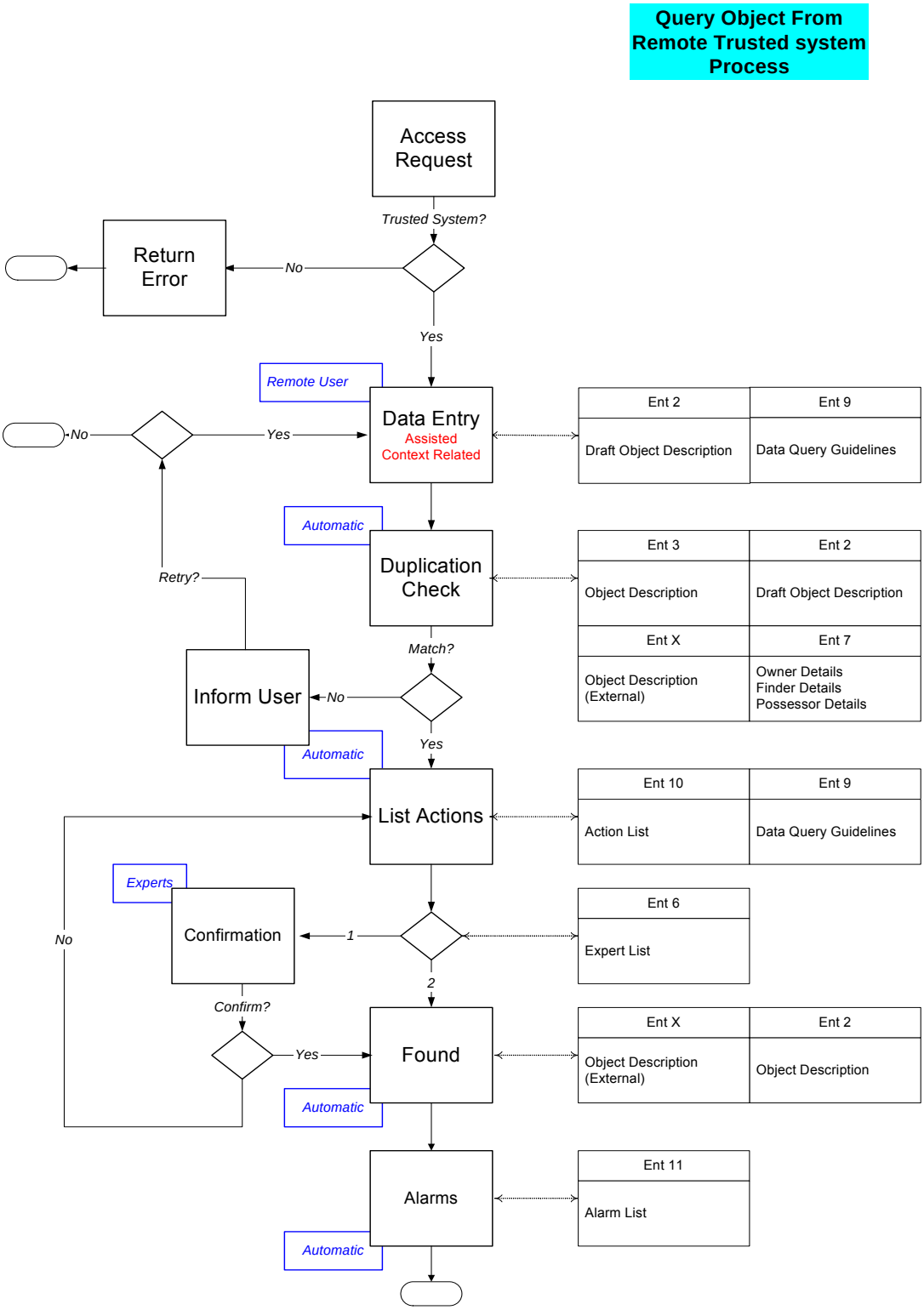
G.4 Input User Data



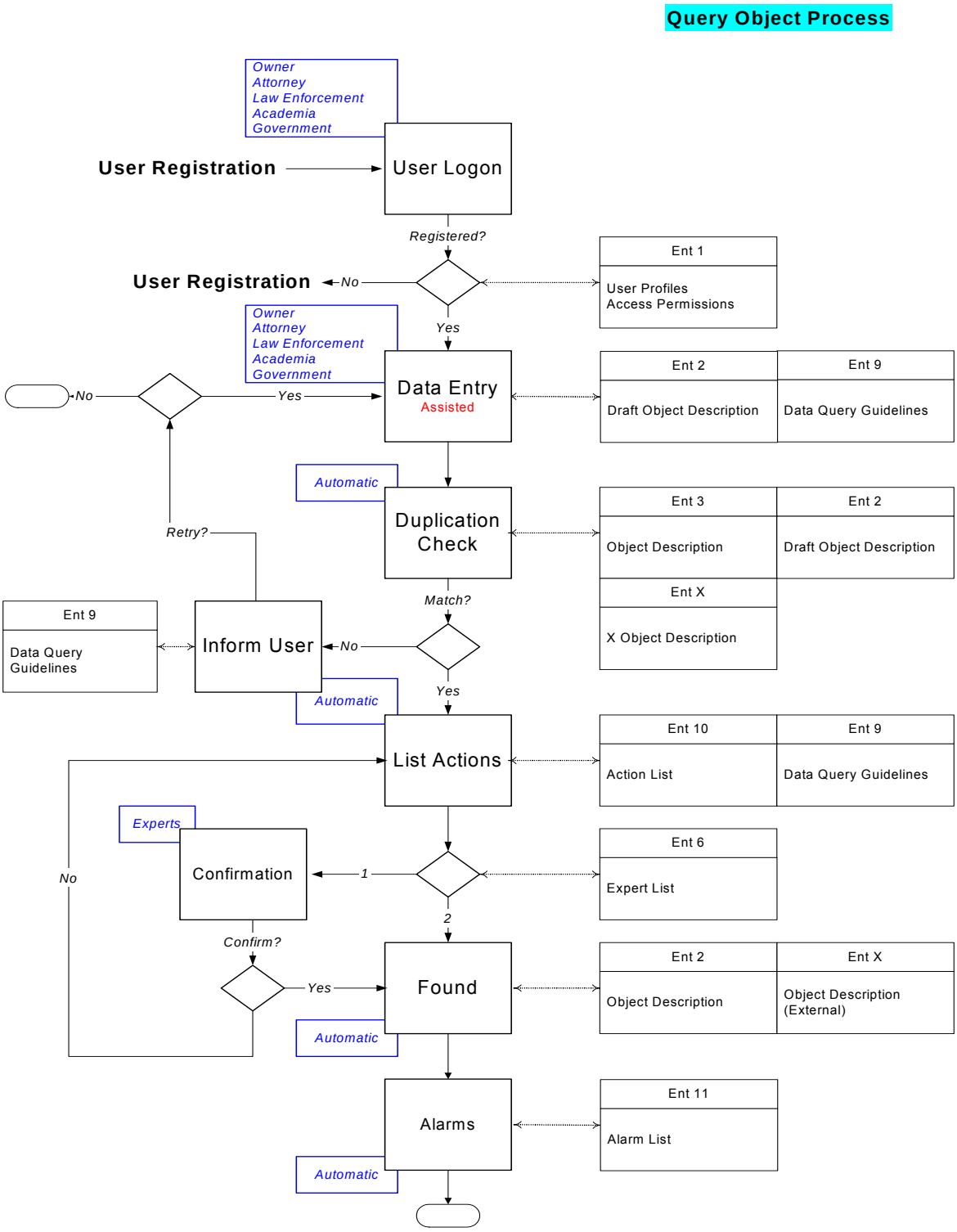
G.5 Query Object From Customs & Excise



G.6 Query Object From Remote Trusted System



G.7 Query Object.



APPENDIX H *KEY USER REQUIREMENTS*

The requirements for Cultural Database were divided into 2 different priorities:

Mandatory requirements are required by most or all users and must be included in the development.

Desirable requirements are required by a small group of users but considered necessary to be included in the database in order to satisfy all requirements.

A *user* is defined as someone who will access the database to enter, amend or conduct searches of data. Further work will be required to define different levels of user/access once the final solution has been identified. The list below highlights the key requirements irrespective of the solution chosen.

The original investigation produced a set of over 100. This was reduced to 53 and removed many that overlapped. These were then subject to a review by contributors at a workshop to try to identify common and key requirements. The workshop highlighted that only the requirement for an audit trail and the requirement for a set of data standards was common to all stakeholders.

Contradictory requirements were then removed, and the remaining requirements split into *user* and *system* requirements. The user requirements were then subjected to a rigorous review and re-written in a common style. Judgements were then made in conjunction with information provided by stakeholder to arrive at a list of the top 10 requirements. These were labelled 'mandatory'. They were subsequently amended in consultations with the Home Office and DCMS[49]. A single statement of user need was also developed. The remaining user requirements were listed as desirable.

H.1 Mandatory User Requirements

Single statement of User need:

The system shall provide for the storage of, and search against, details of

stolen and illegally removed cultural objects in the conduct of due-diligence.

1. The database will link the object with its Crime Reference Number for stolen objects.

Justification: The police need to link an object to CRN in order to carry out further investigations.

2. The user shall be provided with an audit trail on content history and on certification of search.

Justification: Essential for investigations by law enforcement agencies and to establish due-diligence.

3. The database shall be able to generate audit reports.

Justification: Required for due-diligence purposes.

4. The user shall be able to store and display high quality images of an object.

Justification: Essential in identifying similar objects.

[49] *e-mail from Owain Lloyd-James (DCMS) dated 25 Mar 04 incorporating Home Office comments. e-mail from Steve Wilkes - dated 26 Mar 04*

© 2004 VEGA Group PLC

5. The database shall use the Object ID approach as part of a set of data standards.

Justification: This is the most common approach currently in use and had worldwide recognition. A set of data standards will increase the integrity of the data.

6. The database shall have the capability to conduct of bulk electronic searching.

Justification: A significant user will be auction houses who require this facility. Without it they will use alternative providers.

7. The user requires a response to an individual search within a specified time.

Justification: This type of searching is required by the vast majority of users who currently do not use commercial sources because of there speed of response, and will be required to entice them to use the national database.

8. The user shall require expert support for both the entry of data and with comparing 'matched' items.

Justification: Evidence collected indicates that a purely electronic system will not be effective and the use of experts will be required for final matching of items. The presence also provides for the ability to provide other support services.

9. The user requires that access to data shall be controlled with differing levels of access.

Justification: Any sensitive data eg. Owner details, crime reference number will need to be partitioned and only accessible by approved individuals.

10. The database shall be accessible over the Internet.

11. The user requires a security policy.

Justification: To maintain the security and integrity of the data.

H.2 Desirable User Requirements

12. The user requires details on all aspect of the object description, provenance, object status (i.e. lost, stolen, recover, illegally removed, fake) to be stored on the database

13. The user requires a filtering capability on object status to allow different group of users/agencies to access the data.

14. The user requires that the use of Thesauri to be considered.

15. The user shall have the ability to categorise items.

16. The user shall be provided with Telephone support.

APPENDIX I *ASSESSMENT OF MPS ART AND ANTIQUES UNIT SOFTWARE*

Currently the Art and Antiques Unit (**AAU**) is using a shelf software 'Cardbox' produced by Decoder Software Ltd, to captured intelligence information on suspected art thieves.

The following information was extracted from http://www.cardbox.co.uk as well as correspondence with Decoder Software Ltd.

I.1 Cardbox Specifications

Capacity

- 20 databases or windows open at a time
- 16,000,000 records per database
- 4,000 fields per record and could be indexed for fast retrieval
- Record size: 32 KB, plus 32 KB of extra text (un-indexed) and unlimited images.
- Record layout: up to 1,000 rows x 1,000 columns
- Image size: unlimited.

Security

- Password protection for databases
- User profiles control access to individual fields, formats and commands
- Data encryption

Indexing and searching

- Powerful text retrieval engine
- Advanced index and search facilities
- Can index any word or phrase anywhere within the record
- Cardbox has a fuzzy matching mechanism, user can do exact matches and similar matches (1,2,3+ differences – letter missing, inserted, switched, etc.)

Languages

Cardbox supports Unicoding. More information can be found at http:///www.cardbox.net/client/unicode.htm

Accessing other programs

- OLE and DDE links to other programs
- Can load data from ASCII files in various formats, include comma-delimited
- Can import data from dBase, SQL, Access and Paradox files
- Visual Basic programs can read and write Cardbox databases directly

I.2 Cardbox client/server concept

Web enabled (version 3.0 only)

The next release of Cardbox (version 3.0) comes in two parts: Cardbox Server (Windows/Linux) and Cardbox Client (windows)

The Cardbox client has a programming interface, which allows ASP or ASP.Net web pages to be developed. Alternatively, Decorder Software Ltd also has a Java package, which allows dynamic web pages to be created. This Java client version is much smaller, faster, more flexible and can run complete solution in Linux. The Java solution can do about 500 queries a minute, about 720,000 a day and about 21M a month. There are some simple online examples at http://www.decodersoftware.co.uk/ver3/index.html that use the Java technology.

More information about Cardbox client/server concept can be found at http://www.cardbox.net

© 2004 VEGA Group PLC

APPENDIX J *DETAILED FINANCIAL BREAKDOWN*

(This Appendix is also provided electronically as a separate 'excel' spreadsheet.)

J.1 Summary

National Cultural Database

Cost and Revenue Summary

	Year 1	Year 2	Year 3	Year 4	Year 5
Cost of Extending MPS to all forces	122,590	144,742	59,123	60,539	61,990
Cost of Making Police system public-facing	283,248	146,054	150,005	154,067	158,243
Cost of PPP Organisation	580,935	382,708	392,276	402,083	412,135
	986,773	673,504	601,404	616,689	632,368
Revenues Estimate - CORE SERVICES	500,000	512,500	525,313	538,445	551,906
Funding Requirement	486,773	161,004	76,092	78,244	80,462

I© 2004 VEGA Group PLC

J.2 Step 1 - Expansion to Cover 43 Forces

Additional Staff when Expanding to 43 of 43 police forces

				Year 1	Year 2	Year 3	Year 4	Year 5	
	Civil Staff - Band E + London Weighting	2	20045	**40,090**	**41,092**	**42,120**	**43,173**	**44,252**	Based on current Police/Civil salary scales
	Accomodation Cost		3000	**3,000**	**3,075**	**3,152**	**3,231**	**3,311**	Assume additional floorspace in existing accomoda
Technology	Hardware - Purchase		4000	**40,000**	**80,000**	**52,000**	**0**	**0**	Assume 10 foces (Year 1), 20 forces (Year 2), remainder year 3
	Hardware - Support			**0**	**8,000**	**24,000**	**34,400**	**35,260**	Assume 20% cost of ongoing support
	Networking	1	350	**3,500**	**7,000**	**4,500**	**0**	**0**	Assume minimal amount of networking for each pie of hardware (350)
	Software - Purchase	1	15000	**15,000**	**0**	**0**	**0**	**0**	Assume Cardbox licenses for 10, 20 workstations
	Software - Support			**3,000**	**3,075**	**3,152**	**3,231**	**3,311**	Assume Cardbox support for 10, 20 licenses
Training	Write Training Materials		3000	**3,000**	**0**	**0**	**0**	**0**	Assume one-off cost of writing a training course
	Deliver Training			**15,000**	**2,500**	**2,500**	**2,500**	**2,500**	Assume delivery of training course to all interested parties, re-delivery as staff change
				Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	
				122,590	**144,742**	**131,423**	**86,534**	**88,635**	

© 2004 VEGA Group PLC

J.3 Step 2 - Making Police Database Available over the Internet

Additional - Making the Police Database available over the internet

		Team	Utilised	Cost	Year 1	Year 2	Year 3	Year 4	Year 5	
Staff	Technical Staff - Setup	25	Days	500	**12,500**	**0**	**0**	**0**	**0**	No cost of re-developing or re-designing the database O
	Technical Staff - Ongoing Support	1.5		20045	**30,068**	**30,819**	**31,590**	**32,379**	**33,189**	One full time resource to manage server, web site etc.
	Interface Staff	4		20045	**80,180**	**82,185**	**84,239**	**86,345**	**88,504**	
	Call Centre / Call Handling			20045	**0**	**0**	**0**	**0**	**0**	
	Telephony Costs			100	**0**	**0**	**0**	**0**	**0**	
Technolog	Firewalls + Support	1		8000	**8,000**	**1,600**	**1,640**	**1,681**	**1,723**	2 x firewalls + support (20%)
	Routers + Support	1		4500	**4,500**	**900**	**923**	**946**	**969**	2 x routers + support (20%)
	Various software components (SS	1		1500	**1,500**	**300**	**308**	**315**	**323**	
	Networking	1			**1,500**	**0**	**0**	**0**	**0**	Assume small amount of networking work during setup
	Server to Host Web Database - Pu	1		15000	**35,000**	**0**	**0**	**0**	**0**	Assume powerful, robust server to host service
	Server - ongoing support				**7,000**	**7,175**	**7,354**	**7,538**	**7,727**	Assume 20% for cost of support of server
	Disaster Recovery	1		3000	**3,000**	**3,075**	**3,152**	**3,231**	**3,311**	Minimum Disaster Recovery costs for a public-facing sy
	Additional Software purchase				**100,000**	**0**	**0**	**0**	**0**	Assume moving to Oracle-based system
	Additional Software support				**0**	**20,000**	**20,800**	**21,632**	**22,497**	Assume moving to Oracle-based system (support inflatic
					Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	
					283,248	**146,054**	**150,005**	**154,067**	**158,243**	

J.4 Step 3 - Organisation to Manage the Service

Organisation to Manage the Service

		Team	Utilised	Cost	Year 1	Year 2	Year 3	Year 4	Year 5
Staff	Technical Staff - Setup	200	Days	500	**100,000**	**0**	**0**	**0**	**0**
	Technical Staff - Ongoing Support	1		20045	**20,045**	**20,546**	**21,060**	**21,586**	**22,126**
	Interface Staff	2		20045	**40,090**	**41,092**	**42,120**	**43,173**	**44,252**
	Admin Staff	2		16000	**32,000**	**32,800**	**33,620**	**34,461**	**35,322**
	Art Expert Staff (London)	6		19000	**114,000**	**116,850**	**119,771**	**122,766**	**125,835**
	Management Staff (London)	2		30000	**60,000**	**61,500**	**63,038**	**64,613**	**66,229**
	Call Centre / Call Handling	2		15000	**30,000**	**30,750**	**31,519**	**32,307**	**33,114**
	Accomodation	1		50000	**50,000**	**51,250**	**52,531**	**53,845**	**55,191**
Technology	Firewalls + Support	2		8000	**16,000**	**3,200**	**3,280**	**3,362**	**3,446**
	Routers + Support	2		4500	**9,000**	**1,800**	**1,845**	**1,891**	**1,938**
	Networking	1		15000	**15,000**	**0**	**0**	**0**	**0**
	Server to Host Web Database - Purchase	2		15000	**30,000**	**0**	**0**	**0**	**0**
	Server - ongoing support				**0**	**6,000**	**6,150**	**6,304**	**6,461**
	Disaster Recovery	1		3000	**3,000**	**3,075**	**3,152**	**3,231**	**3,311**
	Workstation for each employee	15		4000	**60,000**				
	Support for Workstations					**12,000**	**12,300**	**12,608**	**12,923**
	Telephony Costs	18		100	**1,800**	**1,845**	**1,891**	**1,938**	**1,987**

Year 1	Year 2	Year 3	Year 4	Year 5
580,935	**382,708**	**392,276**	**402,083**	**412,135**

© 2004 VEGA Group PLC

J.5 PPP Costs

Revenue - CORE SERVICES			**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	
Search Charges to Auction Houses/D	3	25000	75,000	76,875	78,797	80,767	82,786	Assume largest contribution from three largest Auction houses, fees equate to HALF of current fees to private sector
Licenses to Insurance Companies (10	10	25000	250,000	256,250	262,656	269,223	275,953	Assume 10 insurance companies at 25k pa for unlimited searches
Charges to Police Forces	0	0	0	0	0	0	0	No charges to law enforcement agencies
Recovery Fees	0	0	0	0	0	0	0	No recovery fees
Advertising	1	50000	50,000	51,250	52,531	53,845	55,191	Assume small income through advertising on web site
Art Dealers	5000	25	125,000	128,125	131,328	134,611	137,977	Assume 50% of traders sign up to annual registration
			500,000	**512,500**	**525,313**	**538,445**	**551,906**	
Revenue - EXTENDED SERVICES - provided by third-parties								
Searches by Auction Houses	1000	5	5,000	5,125	5,253	5,384	5,519	Auction houses (possibly small ones) search on ad-hoc basis only
Single Searches by Art Dealers	5000	1	5,000	5,125	5,253	5,384	5,519	Assume 50% of traders do not sign up to annual registration, but continue to use third-party searching
Recovery Fees	650000	1	650,000	666,250	682,906	699,979	717,478	Recovery fees
Searches by members of the public	1000	10	10,000	10,250	10,506	10,769	11,038	Assume low level of individuals searching on an ad-hoc basis
Insurance companies								
			670,000	**686,750**	**703,919**	**721,517**	**739,555**	

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Core Service Revenues	**500,000**	**512,500**	**525,313**	**538,445**	**551,906**
Extended Service Revenues	**670,000**	**686,750**	**703,919**	**721,517**	**739,555**
	1,170,000	1,199,250	1,229,231	1,259,962	1,291,461

© 2004 VEGA Group PLC