

# **Considerations of the Impact on Public Privacy of Scotland's Census**

**A GROS Report**

**26 January 2011**

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## 1. Introduction

- 1.1 In this age of advanced technology, there are greater information sharing possibilities and more demand for information within both public and private sector organisations. At the same time, the public are concerned about the privacy of their personal information. The issue of the privacy of public information therefore has a much greater impact on the way that Government organisations must conduct their business. That applies particularly to the census, where everyone is obliged by law to provide a range of information about themselves and where they live. So the General Register Office for Scotland (GROS), responsible for the census in Scotland, has prepared this report on the impact of the census on individual's privacy, and the safeguards in place to protect personal information collected by the census.
- 1.2 The Information Commissioner's Office (ICO), the statutory body responsible for promoting openness by public bodies and data privacy for individuals, believes that conducting Privacy Impact Assessments (PIAs) will make a significant contribution towards addressing legitimate privacy concerns about the increasing collection and use of personal information.

### What is a PIA?

- 1.3 A Privacy Impact Assessment is an assessment process which details the personal information flows within a project (in this case, Scotland's Census 2011) and analyses the possible impacts those flows, and the project as a whole, may have on an individual's privacy.
- 1.4 A PIA can help to identify and assess the privacy impacts a project may have - for example, where too few controls are in place, where information is collected unnecessarily, where there is a lack of accountability. A PIA looks at the privacy impact throughout a project's information collection, retention and dissemination lifecycle.
- 1.5 There are two types of PIA. A full-scale PIA assesses privacy issues across an entire project and a small-scale PIA covers privacy issues only for those areas of a project where a change has occurred since the project's inception.
- 1.6 The ICO recommends a PIA should be conducted before a project is up and running, so that the project design can be influenced. Conducting a PIA on a project that is already running and where decisions have already been taken runs the risk of raising unrealistic expectations.

## 2. Scotland's Census

### Background

- 2.1 The census counts everyone in Scotland once every 10 years. It is Scotland's biggest statistics gathering exercise. Anonymised census results are a snapshot of the number and characteristics of people on census day. The figures are the only reliable measure of the entire population and they help shape everyone's future as the basis for effective public services for the next decade.
- 2.2 The census is organised in Scotland by the General Register Office for Scotland (GROS), headed by the Registrar General, and overseen by professional statisticians. GROS works with the census offices for England and Wales, and for Northern Ireland, to conduct the census on the same day and to provide comparable census results.
- 2.3 The next census is on 27 March 2011 and will be the 15<sup>th</sup> census run by GROS.

### Current status of the 2011 Census Project

- 2.4 Since the project started (in late 2004):
- A Test was held in March 2006 to check the thinking behind the question set and the public's response to those questions which had not been asked in the previous census in 2001.
  - The full specification for the elements of the census operation which were to be contracted-out started in 2006, and the subsequent procurement of these contracts was completed in 2007/2008.
  - Users of census statistics were consulted in 2007, 2008 and 2009 to help finalise the proposed census questions.
  - A Rehearsal was held in March 2009 to test the operational processes and IT systems.
  - An evaluation of the rehearsal and the feeding back of lessons into the final design was completed in December 2009.
- 2.5 A Government Statement published in December 2008 laid out the reasoning behind running the 2011 Census and the benefits to Scotland; the proposed questions and the justification for each; how the census would be taken; the data capture and data processing methods; and how confidentiality of the data would be maintained as outputs were produced and publicised. The statement can be found at <http://www.gro-scotland.gov.uk/census/censushm2011/policy-and-methodology/2011-census-gov-statement-and-supporting-docs/index.html>
- 2.6 The Order and Regulations authorising Scotland's Census 2011 were considered by the Scottish Parliament and unanimously approved in April and September 2010 respectively.

## Changes since 2001 Census

- 2.7 GROS has been responsible for running the census in Scotland for 150 years. Although technological changes in the last two censuses have seen the introduction of automated processes for image capture, data capture and data coding, the design of the census has remained largely constant. The Census Test in 2006 showed that enumerators (people hired on temporary contracts to deliver and collect the questionnaires in their own allocated area of the country) remained the best way to help the public understand, complete and hand back their questionnaires, achieving the widest coverage and most consistent data quality. That tried and tested design also proved successful during the 2009 Rehearsal.
- 2.8 For 2011, GROS has introduced on-line completion so that households can choose to complete their questionnaire via the Internet rather than on paper. More on the security arrangements for on-line completion can be found in [Section 4 \(Security\)](#).
- 2.9 A brief list of the changes since the previous census in the way the census is organised can be found in [Appendix 2](#). The design approach is documented in Chapter 4 of “Scotland’s Census 2011: A Government Statement” (link in paragraph 2.5 above).
- 2.10 Only a relatively small number of questions have changed or been added/removed since 2001, but we have investigated both the possible impact on public privacy and the relative importance of those questions to the census in [Section 3 \(Question Setting\)](#) below.

## Scotland’s Census PIA

- 2.11 PIAs were introduced in the UK long after the 2011 Census project started up in late 2004. The ICO normally recommends that a PIA should be conducted before a project is up and running. Because of the importance of privacy for the census, however, GROS wished to carry out a PIA and discussed with the ICO how best to do so. In consultation with the ICO, GROS concluded in December 2008 that a small-scale PIA would be appropriate, involving an assessment of the privacy risks to the project in relation to the changes since the last census was taken in April 2001.
- 2.12 A number of organisations or individuals which represent privacy concerns/interests (suggested by the ICO) were invited by the Office for National Statistics (ONS), which is responsible for running the census in England and Wales, to attend a meeting on the census and related privacy concerns in June 2009, or to make representations in writing. That consultation identified two main issues of concern: why it was necessary to collect census information at all and how the results could be published without identifying individuals. These concerns are addressed below.

## Why is it necessary to collect census information?

- 2.13 Governments, local authorities, the health service, business, market researchers, academics and community groups, plus many other organisations and individuals, use anonymised census results to help plan and provide services to meet public needs and to supply information about Scotland and its people. The information collected by the census is not available from alternative Government data sources. A review of using alternative data sources instead of carrying out a traditional census was carried out before work began on the 2011 Census and this concluded that a traditional census was the only way to meet the information needs for 2011. Details on some of the main uses and how the information is used can be found in [Section 3](#) below.

## Publication of census results without identifying individuals

- 2.14 Only anonymised census data, available at agreed geographical levels, will be made available to Eurostat (the statistical office of the European Union(EU)) under EU legislation. These will respect UK data confidentiality and statistical disclosure control measures designed to avoid breaching personal privacy.
- 2.15 Census data is used only for statistical purposes. Section 8 of the Census Act 1920 makes the unlawful disclosure of personal census information a criminal offence. Census information is also exempt from disclosure under the Freedom of Information (Scotland) Act 2002 and the Data Protection Act 1998.
- 2.16 Robust procedures will be put in place to ensure that published tabulations and abstracts of statistical data from the 2011 Census do not accidentally reveal personal information, especially census data for small areas or specific sub-groups of the population.
- 2.17 The statistical disclosure control measures planned for 2011 will be similar to those applied in Scotland to the results of the 2001 Census, which gave rise to no complaints that published statistical outputs breached personal confidentiality. The 2001 statement on disclosure control can be found at <http://www.gro-scotland.gov.uk/census/censushm/scotcen2/scotcen21/scotcen19.html>.
- 2.18 These measures will include some or all of the following:
- restricting the number of output categories into which a variable may be classified, for example by aggregating age groups;
  - where the number of people or households in a statistical output area falls below a minimum threshold, it will be amalgamated with a sufficiently large neighbouring area before statistical outputs are produced; and
  - modifying some of the data through record swapping before the data are released.

## Contents of this PIA for Scotland's Census

2.19 This report looks at the processes GROS has already gone through to assess the impact of the 2011 Census on personal privacy and these processes are detailed under four main sections:

### Question Setting

2.20 This section looks at the full consultation process (including the 2006 Test and 2009 Rehearsal), the stakeholders involved during this process, their reaction to the consultations, and our response to this. It covers those questions that may appear intrusive to the public and the reasons why they need to be included in the census.

### Security

2.21 This section covers the comprehensive steps that GROS has taken, either themselves or as mandatory requirements to their contractors, to ensure the safe collection of census data and the secure transportation, processing, publication and final storage of the data across the full project lifecycle. It also covers the external parties involved in assuring GROS security for the 2011 Census and the additional measures GROS has taken with their contractors to reassure the public that census data remains safely in the UK.

### Education/Publicity

2.22 This section details the ways that GROS will inform people about the census, how these worked in the 2009 Rehearsal, and the work that has been done engaging with as broad a cross section of society as possible. Informing the public about the purpose of the census, what they need to do and the final benefits to all is key to encouraging people to complete their census questionnaire. Explaining the measures taken to protect private data is an essential part of these communications. People will want to complete their questionnaire in the full knowledge that they understand why their personal information is being asked for and that they know where they can find out more about how their data is managed once it has been collected.

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## Other Useful Work

2.23 Finally, this section provides information on other work which engages the public in the census. This includes:

- The Scottish Census Steering Committee
- The United Kingdom Statistics Authority's statistical assessment;
- The Scottish Parliament's approval of the census proposals;
- The UK-wide census Independent Information Assurance Review; and
- The Gateway Reviews of Scotland's Census project.



### 3. Question Setting

- 3.1 The facts and figures from the census help decide the allocation of billions of pounds worth of funding for public services that matter to the public. Services such as health, education and transport are planned and funded based on need, and census results help estimate that need. For example, knowing how many young children there are, and how many people are approaching retirement, helps to plan the funding of future health services.
- 3.2 The six main uses of census data are:
- Resource allocation – For resource allocation it is crucial that population counts (both total counts and by key characteristics) are accurate, consistent and comparable over the area that the resources are to be allocated.
  - Targeting investment – For many Government funding uses, data must be consistent nationally. This allows investment to be made in the areas where it is most needed.
  - Planning – Basic population counts and counts by key characteristics (such as age, sex, ethnic group, household type etc.) are important for planning. If the different characteristics of an area's population can be identified, plans can then be made for the sort of services necessary. In particular, data for small areas and small groups of the population are crucial in local planning.
  - Policy making and monitoring – There is a clear drive across Government for policy initiatives to be evidence based. Since many initiatives are implemented and assessed at a local level, census data can form a crucial part of this process.
  - Academic and market research – The ability to produce multivariate statistics for small areas is vital for many research uses. Basic population counts and counts by characteristic are also required.
  - Statistical benchmarking – More generally, census data are employed to improve the quality of many other statistics, which may also be used for the above.
- 3.3 The question topics for the 2011 Census are those most in demand by the major users of census information and which meet a significant and clearly-demonstrated user need. Questions are limited to those which can be expected to produce reliable and accurate data in the census and where no comparable and accessible source of information is available in combination with other information. A fuller description of the requirements for the question topics proposed for the 2011 Census and the criteria for question selection is included at sections 3.10 to 3.20 of "Scotland's Census 2011: A Government Statement" (link in paragraph 2.5 above).
- 3.4 The final question set strikes a careful balance between meeting essential needs and asking the public for personal information. There is much continuity with the 2001 Census: 75% of questions for households and 94% of questions for individuals are the same as (or slightly modified versions of) those asked in 2001. Most of the questions have tick-boxes to make them easy to answer

quickly. Design improvements to the census questionnaire have also been made to make it easier to complete. The burden on each household in completing the questionnaire is considered reasonable for something that only happens once every ten years; for the majority of households it should take no more than about half an hour.

- 3.5 Consultation and testing have played an important part in the design and content of the questionnaires. They were developed following an extensive programme of consultation, research and testing to ensure that the questions will meet user requirements and be acceptable and understandable to respondents. This consultation process, which is described further in Chapter 2 of “Scotland’s Census 2011: A Government Statement”, is outlined below.

### **Formal consultations**

- 3.6 Three formal 12-week consultations about the 2011 Census have been held so far. The first (in 2004) sought views on the 2001 Census and on initial plans for the 2011 Census. The second (in 2007) sought views about questionnaire content, methodology and outputs. A third round of consultation, which focussed on user requirements for accessing the outputs from the 2011 Census, was completed in June 2010. Further details of these consultations can be found on the GROS website.

### **Consultation papers**

- 3.7 In addition to the formal consultations, GROS has issued a number of consultation papers inviting users to give their views on various aspects of the census, including:
- GROS proposals for new questions for the 2011 Census and how these differed from 2001 (July 2005);
  - GROS proposals for questions to be included in the 2006 Census Test and 2011 Census (September 2005); and,
  - A paper inviting views from blind and partially sighted people on how they would like to complete the 2011 Census questionnaire (February 2006).

## Questionnaire-specific consultation

- 3.8 An on-line questionnaire asking for views on the 2001 Census questions was available on the GROS website from Autumn 2004 to January 2006. The responses received were helpful in identifying the changing needs of census users.

## Topic-specific consultation

- 3.9 GROS holds meetings with a wide variety of organisations, groups and individuals to help ensure that the census is accessible to the whole community, and that it better understands the needs of these groups and of census users.

## Question testing

- 3.10 New questions must be thoroughly tested before they can be deemed suitable for the census. GROS has carried out the following testing activities.

### 2005 postal test

In September 2005, GROS conducted a small scale postal survey to evaluate a draft questionnaire design for the 2006 Census Test, including a possible new question on sexual orientation. An evaluation report of the survey is available on the GROS website at [http://www.gros-scotland.gov.uk/census/censushm2011/preparations/consultation-and-research/research/question-development-and-uk-harmonisation/sexual-orientation-in-the-census.html](http://www.gros.scotland.gov.uk/census/censushm2011/preparations/consultation-and-research/research/question-development-and-uk-harmonisation/sexual-orientation-in-the-census.html)

In developing the questionnaires for the 2011 Census, GROS has also made use of postal tests and other surveys carried out by ONS and the Northern Ireland Statistics and Research Agency (NISRA).

### Cognitive question testing

The purpose of cognitive testing is to explore, understand and explain the range and diversity of ways in which people go about answering questions in surveys or when completing questionnaires. It allows an assessment to be made of whether or not a question is working as intended and for the development of improved and unambiguous question wording, layout and routing. Cognitive testing generally takes place as a one-to-one interview or in a focus group. The interviewer probes the respondent to find out what they understand a question to mean, and how they came to the answer they gave.

GROS has collaborated closely with ONS and NISRA to gather as much evidence as possible to ensure that the questions for the census are robust and function as intended. This has involved an extensive programme of cognitive testing of question wording and questionnaire design.

GROS has also commissioned its own programme of cognitive testing to ensure that questions specific to Scotland are fit for purpose, covering

proposed questions on national identity, language and disability and long-term health conditions (on which GROS also ran an informal consultation in April 2008). GROS, together with statistical colleagues in Scottish Government, carried out a major review of the ethnicity classification used for the census and other official statistical surveys. The report of that review was published in July 2008 at <http://www.scotland.gov.uk/Publications/2008/07/29095058/0>. Finally, before the questionnaire was put to the Scottish Parliament for approval, the whole questionnaire was subjected to cognitive testing.

### Focus groups

GROS organised focus groups throughout Scotland to determine the quality and acceptability of new questions which are proposed for the census.

### 2006 Census Test

The 2006 Census Test took place on 23 April 2006. It covered around 50,000 households in selected parts of Scotland. One objective of the Test was to evaluate the impact on overall response rates of including a question about household income. Half of the questionnaires included this question and half did not.

### 2009 Census Rehearsal

GROS rehearsed its approach to the next census by delivering questionnaires to around 50,000 households in west Edinburgh and Lewis and Harris in March 2009. The rehearsal offered most householders the option to complete their census questionnaire on-line for the first time, in English or Gaelic. It also provided GROS with the opportunity to identify any necessary refinements to arrangements for Gaelic speakers, people living in rural areas and those in communal establishments such as hospitals, student accommodation and care homes.

## External advisory groups

3.11 A number of external advisory groups exist to provide GROS with advice on shaping plans for the 2011 Census. These include:

- Population and Migration (Scotland) Statistics Committee

This committee acts, among other things, as the Census Advisory Group for Scotland. In addition to GROS statisticians, its membership includes representatives from local authorities, Scottish Government, the Office for National Statistics and the academic and health sectors.

- Scottish Census Steering Committee ([Section 6](#))
- Various census advisory groups run by the ONS, covering the main census user communities.

The interests represented by these groups include those of central Government Departments, local authorities, the health service, the academic community, the business sector and professional interests, organisations with interests in special needs and minority populations, and commercial users of census information.

- 3.12 The Registrar General appeared before the Equal Opportunities Committee of the Scottish Parliament in 2008 to brief them on progress and plans for the 2011 Census.
- 3.13 Further details of the work undertaken to develop the questionnaire for Scotland's 2011 Census and the recommended content, can be found in the supporting document that was published in December 2008 alongside the "Government Statement on Scotland's 2011 Census". An evaluation of the 2009 Census Rehearsal and the results of cognitive testing research have now been published. Material from the 2010 consultation about census outputs is also available on the GROS website.
- 3.14 Plans for the publication and dissemination of the results (or outputs) from the 2011 Census are under development and these plans will be shaped by the user consultation. Robust statistical disclosure control procedures will be put in place to ensure that personal information about individual people or households is not revealed inadvertently. Other statistical uses of the data, for example linking with non-census data sources for statistical research, will be governed by stringent arrangements to ensure that these do not breach the confidentiality of personal census information. These arrangements are outlined in more detail in section 6 of the "Government Statement on Scotland's 2011 Census" (link at paragraph 2.5 above).
- 3.15 The main outputs from the 2011 Census will likely comprise a set of pre-defined standard tables of counts for national and local areas, similar to those produced for the 2001 Census. Further details on the initial set of standard pre-defined tables proposed for 2011 can be found in the February 2010 census consultation material on the GROS website at <http://www.gro-scotland.gov.uk/census/censushm2011/preparations/consultation-and-research/formal-consultations/spring-10-consultation.html>. The main method of dissemination will be through the internet, and will seek to exploit advances in technology to make the information more accessible and simpler to use, for example enabling the generation of maps, graphs and comparisons with census figures for 2001. The aim will also be to give users as much flexibility as possible in terms of defining their own summaries of the data on-line, whilst always ensuring we protect the confidentiality of personal census information. All of the outputs to be made publicly available will be created from an outputs database to which statistical disclosure control measures will have been applied in advance. The smallest geographical unit for which results will be released will be census output areas (each averaging around 50 households), with results for all higher geographies being built up from aggregations of census output areas. None of the published outputs will contain names or addresses.

## **4. Security**

- 4.1 Security has been considered in all aspects of the design and operation of the census. Assurance of the security measures, which contractors are required to meet, is provided through: our own GROS security team; the external security contractors providing advice to GROS; and through the external security consultants employed by our prime contractor.
- 4.2 During the census operation, strict confidentiality and security procedures are being adopted to protect the information gathered and to ensure all parties involved conform to the requirements of census confidentiality.
- 4.3 The Scottish Government (SG) central security team has been involved in many aspects of the census operation and indeed it is the SG Chief Information Officer who is responsible for assuring security of information across the SG and its agencies and associated departments such as GROS.
- 4.4 GROS has ensured that all relevant Government security standards are met, including:
- the mandatory requirements of the UK Government's Security Policy Framework. This is supported by compliance with the CESA Information Assurance Standards 1,2,4,5 and 6;
  - the International Security Standard (ISO27001); and
  - the eGovernment Security Assurance Framework (eGSAF) applying to internet services.

### **Management of GROS Census Security**

- 4.5 GROS has an established security team who have years of experience of working in the Information Security specialism, including experience on the 2001 Census. This team provides the most current guidance and regular direction to GROS management and staff on the appropriate security measures for the census operation and the information it collects. An advisory management and security board, the Census Security Assurance Group (which includes representatives from all areas of the census operation for both in-house and out-sourced services) oversees, monitors and reviews the security provision as it is implemented. The Group provides Information Security direction and takes security decisions at a strategic level across the whole census programme. It ensures that information security controls fit within the census security strategy and the GROS census confidentiality requirements.

### **GROS contractual security measures**

- 4.6 GROS has put in place both contractual conditions and operational checks to ensure that the same privacy standards that GROS adopts are applied by the out-sourced contractors to the work they undertake on behalf of GROS. GROS remains fully responsible for the overall census operational design.

- 4.7 GROS is working closely with its prime census contractor to ensure that captured census data is stored and processed securely. It is the contractor's responsibility to develop all the systems required to capture and process data from the paper and on-line questionnaires and ultimately provide a full census dataset to GROS. During this time only our prime contractor will have access to the full census dataset (for essential maintenance and support functions) and this access will be controlled and managed by GROS. Their contract contains restricting sections prohibiting the disclosure of personal census data.
- 4.8 All contractors working for the census in Scotland are based in the UK or Ireland. All their staff must sign the Census Confidentiality Undertaking, agreeing they have understood and agree to be bound by the confidentiality requirements of the Census Act 1920. All UK contractor staff are bound by the requirements of the Data Protection Act.

### **Security in Field Operations**

- 4.9 In 2011 nearly 7,000 temporary census field staff will be employed to deliver, check and collect the questionnaires from the public.
- 4.10 Around 94% of questionnaires are hand-delivered by enumerators who are responsible for the delivery, checking and collection of all questionnaires in their Enumeration District (ED). Each ED is made up of around 400 households with the whole of Scotland being divided into enumeration districts. The remaining 6% of questionnaires are posted via Royal Mail to households in mainly rural areas.
- 4.11 Each ED belongs to one of around 170 Census Districts (CD) and each CD belongs to one of 22 Census Regions (CR). There is a field office for each CR.
- 4.12 All census field staff are subject to the same terms and conditions of employment as permanent civil servants and will therefore be subject to the same civil service privacy obligations. So, for example, although census field staff need to check every questionnaire for completeness, they are bound by their contract to keep that information confidential.
- 4.13 Background checks for field staff are more robust for 2011 than for any previous census. All census field staff must undergo pre-screening employment security checks (and all longer-term field management staff must comply with the full Baseline Personnel Security Standard) as part of the recruitment process. All field staff must sign the Census Confidentiality Undertaking, agreeing they have understood and agree to be bound by the confidentiality requirements of the Census Act 1920.
- 4.14 Every member of census field staff is given information security training and data handling guidance explaining their obligations to hold, store and restrict access to the census information in their care.

- 4.15 Although field staff will have access to small amounts of census information at any one time, the mainly manual enumeration of households is a proven method of census taking, having been used successfully in previous censuses, in the 2006 Test and in the 2009 Rehearsal. Enumerators work from their home and, as part of their contract with GROS, each enumerator is asked to declare they are able to store census information held in their care within a locked room or secure container in their homes.
- 4.16 During 2011, many census field staff will work from one of the 22 temporary census field offices across Scotland. The field offices will be used by field managers to conduct operations such as recruitment interviews, field staff training, management workflow operations and, for a very short time, as a central collection point for completed boxed census questionnaires. Where possible, existing Government buildings have been used as census field offices, providing a known and consistent level of physical and procedural security. Where Government buildings have not been available, each field office has undergone a security risk assessment to ensure appropriate physical security measures such as alarms, CCTV cameras, electronic or coded entry systems are in place. Access controls will be implemented to prevent entry by people other than census staff, authorised visitors and maintenance staff.
- 4.17 Once the census field operation has completed and all the questionnaires returned, each field office will be closed down and decommissioned securely, ensuring complete removal of all materials, IT equipment, etc. A similar approach was undertaken during the 2009 Census Rehearsal and this proved very effective.

### **Security in the Printing Operation**

- 4.18 The printing operation involves the printing of around 80 different print deliverables containing approximately 20 million individual printable items - including over 3.5 million questionnaires. It is the responsibility of our prime contractor and is carried out in Dublin by sub-contractors experienced in printing the Irish census questionnaires.
- 4.19 The printing operation does not involve any access to personal census information but does have access to secure information, e.g. internet access codes. Other information used by the printing process, such as address information held alongside the internet access codes on the address register ([Appendix 4](#)), is not classed as confidential and is publicly available but even this information will be handled with the same security considerations as other confidential census information.
- 4.20 All contractors working as part of the census printing operation will have completed pre-employment screening checks in line with the full Baseline Personnel Security Standard. All print staff working on the census programme will sign the Census Confidentiality Undertaking, agreeing that they have understood and agree to be bound by the legislation which makes it a criminal offence to disclose personal census information. Those contractors who work



out of Dublin are bound by the terms and conditions of their contract but will have no access to personal census information.

- 4.21 The IT systems securing the census questionnaire design and its supporting information (such as the barcode list and the address register) have been security tested and access controls implemented to ensure that no unauthorised access is possible.
- 4.22 A secure disposal strategy for paper questionnaires at the processing site is being developed for 2011 and includes the on-site confidential shredding of all paper questionnaires, once the data and images have been quality checked by GROS. Confidential shredding means that GROS witnesses the shredding process at the processing site, that the shredding process is carefully managed and controlled, and a certificate is produced by the shredding contractor to confirm that all questionnaires have been securely destroyed.

### **Security in Internet Services**

- 4.23 Internet services include the Internet Data Capture (IDC) and the Internet Public Assistance (IPA) systems. These services are the responsibility of our prime contractor and are developed and operated by sub-contractors experienced in managing other secure on-line services e.g. banking.
- 4.24 All contractors working as part of the census internet services operation will have completed pre-employment screening checks in line with the full Baseline Personnel Security Standard. All personnel working with the internet services hosting provider will sign the Census Confidentiality Undertaking, agreeing they have understood and agree to be bound by the legislation.
- 4.25 On-line questionnaires are protected by robust security arrangements - the same type of proven technology that is used to keep on-line banking transactions secure for millions of people.
- 4.26 People can only complete their census questionnaire on-line if their paper questionnaire has a pre-printed Internet Questionnaire Access Code (which is unique to their address). They will then be asked to create a password as an additional measure designed to keep data secure for respondents who wish to complete their questionnaire in more than one sitting.
- 4.27 Data captured from on-line questionnaires is stored in a secure data centre in Dundee with a backup facility in Edinburgh. Strict access controls are in place at every stage of the questionnaire lifecycle and conformance to Government Baseline Standard checks is mandatory. GROS staff will personally transfer the data, which is stored in encrypted form, from the internet data centre to the processing site.
- 4.28 Following completion of the on-line questionnaire operation, IT systems and data storage are decommissioned to rigorous Government approved information security standards. External independent auditors are in place to provide comprehensive assurance to GROS that these standards have been complied with during the decommissioning and destruction process.

- 4.29 The IDC system has been secured using a defence in depth approach (layers of security measures). This approach ensures additional strength due to the use of several security measures rather than reliance on any one single security measure. The on-line connection between the public and the IDC system is via a trusted encryption process (SSL). Security testing such as application and penetration testing (tests to try to hack into the system to compromise or access data) of the IDC system have been carried out to ensure the most appropriate and robust security controls have been implemented.

### **Security in the Transportation of Census Questionnaires**

- 4.30 There are two legs for the transportation of census questionnaires. The first or outward leg is transporting the blank census questionnaires from the printing operation to the field offices. The second or inward leg occurs after the census questionnaires have been completed and collected by the field operation and need transported from the census field offices to the processing site. All logistics services are carried out under contract by our logistics contractor.
- 4.31 Blank and completed census questionnaires are transported in various ways and by various means throughout the census operation.
- 4.32 Once questionnaires have been completed they are transported to the processing site in double-manned vans, using hard sided vehicles. All transfers are carried out using scheduled vehicles and staff. Our logistics contractor has its own pre-employment screening processes and its staff are already subject to confidentiality agreements which apply throughout the Royal Mail Group. A barcode scanning system is used to track the whereabouts of all boxes of census questionnaires from receipt to delivery.

### **Security at the Processing Site**

- 4.33 All processing site services are operated by our prime contractor.
- 4.34 Completed questionnaires and Enumerator Record Books are delivered to the processing site at Livingston once the field operation has completed.
- 4.35 All physical, procedural and IT security measures for the processing site will fully meet Government guidelines for Restricted information.
- 4.36 All personnel working within the processing site will have been vetted in accordance with the Baseline Personnel Security Standard including Disclosure Scotland or Criminal Records Bureau checks and will have completed security awareness training detailing their obligations for holding, storing and restricting access to the census information stored at the site.
- 4.37 A security incident reporting framework will be implemented programme wide to help identify, manage and counteract any possible security vulnerabilities or incidents.

- 4.38 The processing site carries out three key operations: warehouse operations, processing operations and production of outputs for delivery to GROS. These are discussed below.

#### Warehouse Operations

- 4.39 A comprehensive security risk assessment ensures that appropriate physical and procedural security measures such as alarms, CCTV cameras, electronic or coded entry systems, etc. are implemented.
- 4.40 Robust access controls are in place so all personnel working within the facility need to gain entry via recognised electronically managed secure entry points using official issue security passes. All other visitors without the relevant security clearances need to be signed in and out of the site and are escorted throughout their visit.
- 4.41 Boxes of census questionnaires on arrival at the processing site are placed within a numbered bay in a secure cage or storage area of the warehouse. All box movements within the warehouse are tracked and access controls ensure that access to census boxes is restricted to a small number of personnel.

#### Processing Operations

- 4.42 A questionnaire tracking system is used to track the whereabouts of each questionnaire throughout the scanning and data capture processes. Access controls are in place to ensure access to questionnaires are controlled and access is monitored and reviewed.
- 4.43 Once questionnaires arrive at the processing site they are scanned to create questionnaire images and questionnaire data is captured, coded and stored by automated processes.
- 4.44 All the processing and imaging systems which access census information undergo full security testing (i.e. application and penetration testing) to provide additional assurance. Audit logs are created to capture every access to the data and these logs are regularly reviewed by GROS.
- 4.45 GROS is working closely with our prime census contractor to ensure that captured census data is stored and processed securely. Census data is stored on a secure network which runs standalone without any connections to the outside world. During the processing operation only a small number of technical staff from our prime contractor will have access to the full census dataset (for essential maintenance and support functions) and this access will be controlled and managed by GROS. Their contract contains restricting sections prohibiting the disclosure of personal census data. In addition, all transfers of census data and images are undertaken and managed by GROS staff.

## Outputs for delivery to GROS

- 4.46 Outputs, including data, images, microfilm and management information are transported by GROS staff using secure processes.
- 4.47 The images are stored and accessed at GROS via the Image Management System (IMS) which is a stand alone application with no external links to any networks.
- 4.48 GROS has established practices in place at its headquarters to ensure that access to census data in paper format, on IT systems, on microfilm, or on electronic media is controlled by appropriate access control policies.

## Security of census services provided in-house

- 4.49 The services provided by GROS include: central management of the operations; provision of the census helpline; an IT helpdesk and field support facility; checking the quality, completeness and consistency of the census data including comparison with other data sources such as population estimates; conducting statistical analysis and disclosure control on the census data; dissemination of anonymised census data and securely storing and controlling access to census information and IT systems for future statistical analysis work.
- 4.50 GROS has an ongoing commitment to information security. All staff undergo pre-screening employment checks prior to having access to census information. Furthermore, an ongoing security awareness programme has been established for all GROS staff to ensure they are familiar with the Government data handling requirements for census data. A security incident reporting framework is in place organisation wide to help identify and counteract any possible security vulnerabilities or incidents. Stringent access controls are applied to any area or system where census or protectively marked data is stored. Asset and configuration management and access to IT equipment and systems is strictly controlled. The network storing the census information and the manner in which it is managed has been Government assured to store information up to a Restricted level. All IT maintenance contracts ensure that equipment holding census data cannot be taken off-site, but must be repaired on-site or where repair cannot be made, then the equipment remains within the care of GROS for secure disposal.

## Data Protection Act 1998

- 4.51 Personal information collected during the census is covered by the provisions of the Data Protection Act 1998.
- 4.52 The Data Protection Act (DPA) covers any data which can be used to identify a living person. This includes names, birthday and anniversary dates, addresses, telephone numbers, fax numbers, email addresses and so on. It applies only to that data which is held, or intended to be held, on computers ('equipment operating automatically in response to instructions given for that purpose'), or held in a 'relevant' filing system.

4.53 GROS and its contractors are committed to respecting privacy and to protecting personal information, and follow the 8 legally enforceable Data Protection Principles (DPP) laid down in the Data Protection Act 1998.

4.54 **First principle** - Personal data shall be processed fairly and lawfully and, in particular, shall not be processed unless at least one of the conditions in Schedule 2 is met, and in the case of sensitive personal data, at least one of the conditions in Schedule 3 is also met.

The Schedule 2 condition that is met is that the processing is necessary for compliance with the legal obligations that GROS has under the 1920 Census Act. As the data being processed for the 2011 Census will be sensitive personal data, a condition from Schedule 3 of the DPA needs to be met. This condition is that the processing of the data is necessary for the exercise of any function of a Government Department.

4.55 **Second principle** - Personal data shall be obtained only for one or more specified and lawful purposes, and shall not be further processed in any manner incompatible with that purpose or those purposes.

Safeguards are in place to ensure that the census data is only used for statistical purposes. Once this information has been received by GROS, or its third party contractors the confidentiality provisions of S8 of the Census Act 1920 apply.

4.56 **Third principle** - Personal data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they are processed.

GROS is mindful of potential public concerns about census being intrusive and has striven to strike a balance between user needs and the amount of data collected. This is described in [Section 2](#) (Scotland's Census) which describes the alternatives considered, and in [Section 3](#) (Question Setting) which describes the consultation and evaluation carried out to determine the questions to include.

4.57 **Fourth principle** - Personal data shall be accurate, and where necessary, kept up to date.

Due to the important role the census plays in future planning for Scotland and the UK, GROS endeavours to ensure that census data is as accurate as possible. The following sections of the PIA describe the steps taken to check accuracy of the data collected. [Section 3](#) describes the questions to be asked, including those to be included to help get the count right, and the census question testing process. This section of the report describes other safeguards including creation of an accurate address register ([Appendix 4](#)), the census questionnaire on-line service using the Internet Questionnaire Access Code and the use of comparator data sources in data quality management. It is not necessary to keep census information up to date as the census is a snapshot in time.

- 4.58 **Fifth principle** – Personal data processed for any purpose or purposes shall not be kept for longer than is necessary for that purpose or those purposes.

Under section 33(3) of the Data Protection Act, personal data that is only held for statistical purposes is exempt from the fifth principle of the Data Protection Act. Longstanding Government policy is that census records remain closed for 100 years in the custody of GROS.

- 4.59 **Sixth principle** – Personal data shall be processed in accordance with the rights of data subjects under this Act.

Section 33(4) of the Data Protection Act exempts information that is only processed for statistical purposes from the provision of the DPA that gives an individual the right to see their own personal information. A data subject does not have the right to object to GROS processing their information collected during the census as GROS is processing this information in order to meet its legal obligations under the Census Act.

- 4.60 **Seventh principle** – Appropriate technical and organisational measures shall be taken against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or damage to, personal data.

This section of the report sets out the technical and practical arrangements throughout the census operation; including the field operation; data capture; on-line census; and GROS processing of census data, to ensure the security of the data.

- 4.61 **Eighth principle** – Personal data shall not be transferred to a country or territory outside the European Economic Area unless that country or territory ensures an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data.

No processing of personal information collected in the 2011 Census will take place outside Scotland. The census processing site and census helpline are both based in Scotland.

### **Additional Assurance**

- 4.62 GROS has commissioned its own independent security review exercise for all in-house and out-sourced systems and services for the 2011 Census.
- 4.63 In addition, a UK-wide census Independent Information Assurance Review (IIAR) team has been established (see Section 6).

## 5. Education/Publicity

- 5.1 GROS has worked hard to develop and implement processes to ensure that the public are well-informed about the census and have access to services to help and support them as they complete their questionnaire.
- 5.2 Our 5,800 enumerators will be the main contact between GROS and the general public. They will be responsible for delivering the vast bulk of household questionnaires, for receiving and checking completed questionnaires, and for re-visiting households to collect questionnaires.
- 5.3 Enumerators will be trained to provide assistance where necessary to householders in the completion of their census questionnaires or to arrange for assistance to be provided, for example translation services. Confidentiality and security will be emphasised in the enumerators' comprehensive training package consisting of classroom-based training, instruction handbooks and a training DVD/CD-ROM.
- 5.4 An advertising and public relations campaign will be used to alert the public to the census. A key aim will be to highlight GROS security and confidentiality measures and to advise the public that (as well as using their enumerator) they can access help and information from the helpline and census website.
- 5.5 The census website will have a dedicated Privacy and Confidentiality section covering:
- How we ensure the confidentiality of personal census information;
  - Q&A on who sees my data and what you can do to protect your information;
  - A 'what happens to my data' diagram;
  - Information on destruction/decommissioning of paper questionnaires and IT equipment; and
  - Links to census legislation.
- 5.6 Privacy will also be included in the "frequently asked questions" section.
- 5.7 The publicity campaign will include delivery of an information leaflet to every household in Scotland, with a dedicated section on confidentiality.
- 5.8 The Registrar General's pledge, that all personal information would be strictly confidential, will be clear and prominent on the front page of the 2011 Census questionnaire.
- 5.9 A key strand of GROS's engagement with the public is building awareness of the census amongst particular communities and groups of people who need additional reassurance and/or support to complete their census questionnaire. An ongoing national level contact programme will engage and support:
- people who have anxieties about the census and/or completing a census questionnaire (for example, asylum seekers, refugees etc);

- people who have difficulty in completing a census questionnaire (for example, disabled people, people with learning difficulties or literacy problems); and
- those who, traditionally, are in 'hard-to-count' groups (for example, young males, members of the ethnic community, the very old etc).

5.10 This community liaison will also take place locally as each Census Regional Manager engages with groups in their area.

5.11 GROS receives correspondence from groups, organisations and individuals about census security arrangements and tailored responses are sent promptly from either the Registrar General or Census Director.



## 6. Other Useful Work

- 6.1 Other less visible work is also being carried out behind the scenes to ensure that the arrangements for taking the census are robust, secure and appropriate for meeting the needs of our stakeholders.

### Scottish Census Steering Committee

- 6.2 For the 2011 Census, the Registrar General has established a new body, the Scottish Census Steering Committee, to ensure that he has ready access to advice from people who will be completing the census questionnaires, users of census information and experts on data security and confidentiality.
- 6.3 The main objective of the Scottish Census Steering Committee is to provide assurance that the Registrar General understands key stakeholders' needs and contributions and has integrated these, wherever possible, into the 2011 Census design. That can only be achieved with guidance from its members, drawing on their knowledge and experience of Scotland's increasingly diverse communities, the main user of census information and their expertise in confidentiality measures. [Appendix 3](#) lists the membership of this Committee.

### United Kingdom Statistics Authority Assessment

- 6.4 In the years running up to the publication of the first 2011 Census results, the United Kingdom Statistics Authority will be conducting an assessment of the 2011 Census. This assessment, which is to be split into several phases, will allow 2011 Census outputs to carry the National Statistics designation, provided that the assessment concludes that that the production, management and dissemination of these statistics complies with the National Statistics Code of Practice.
- 6.5 The report on phase one of the assessment was published in March 2010 at <http://www.statisticsauthority.gov.uk/assessment/assessment/assessment-reports/assessment-report-28---census-phase-1--8-march-2010.pdf>.
- 6.6 The assessment was positive and indicated that the censuses were on track to achieve compliance with the Code. The assessment team identified four requirements to be addressed by the Census Offices and some suggestions that could help improve planning.
- 6.7 A response by the Census offices to the requirements is at <http://www.ons.gov.uk/census/2011-census/2011-census-project/independent-assessments/uk-response-to-uksa-special-assessment---phase-one.pdf>.

## **The legislative process**

- 6.8 The power to take the census is provided by the Census Act 1920, and in particular for 2011, by the Scottish Parliament's unanimous approval of the Census (Scotland) Order 2010 in April 2010. The Registrar General has consulted widely with Committees and Members of the Scottish Parliament, to allow an informed debate on the 2011 Census plans, including the questions to be asked, to provide Parliament and other census users with the best outputs available to underpin planning of services for the people of Scotland.
- 6.9 Following approval of the Census Order, Parliament approved the Census Regulations which covers appointment of field staff, delivery and collection arrangements for census questionnaires and the provisions for safeguarding personal census information.

## **UK-wide Independent Information Assurance Review (IIAR)**

- 6.10 In 2010, the three departments responsible for the census throughout the UK commissioned an independent UK-wide information assurance review team to review the information security arrangements in place for each census taking organisation. It covers reviewing the procedures in place by both the organisation and their respective contractors, advising each organisation of any further work required, and finally providing evidence based reassurance to the public through a report to be published early 2011.
- 6.11 This review is led by John Dowdall, the former Northern Ireland Comptroller and Auditor General, who has appointed a team of consultants to help him measure how well we are placed to keep census information safe and secure. His report will be published early 2011.

## **The Gateway Review process for Scotland's Census**

- 6.12 The 2011 Census programme has been subject to a series of Gateway Reviews by a team of external reviewers to provide assurance that policies, plans and contracts prove good value, are appropriate for the programme and are managed effectively to ensure a successful census is held for the people of Scotland.
- 6.13 These reviews follow the structure and guidance laid out by the Office of Government Commerce (<http://www.ogc.gov.uk>). Seven successful reviews have been held, covering the period since March 2007, with the most recent in January 2010. Review topics have covered the strategic assessment (3 reviews), delivery strategy, investment decision (prior to award of the main service contract for the census) and readiness for service. The reviews have provided valuable assurance that our plans are appropriate and the recommendations made by the review team have been used to enhance our plans further.

## Appendix 1

**Questions removed since 2001** (question numbering as the 2001 Census household questionnaire)

### Bath/shower and toilet access

H4 Do you have a bath/shower and toilet for use only by your household?

### Lowest floor level

H5 What is the lowest floor level of your household's living accommodation?

### Rented accommodation – furnished or unfurnished

H10 Is the accommodation provided furnished or unfurnished?

### Religion

14 What religion, religious denomination or body were you brought up in?

### Size of organisation worked for

28 How many people work (worked) for your employer at the place where you work (worked)?

**Questions that have changed since 2001 Census** (question numbering as the 2001 Census household questionnaire)

### Type of central heating

H6 Does your accommodation have central heating?

### Marital status

4 What is your marital status (on 29 April 2001)?

### General health

7 Over the last twelve months would you say your health has on the whole been:  
Good? Fairly good? Not good?

### Limiting long-term health problem or disability

8 Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do?

### Religion

13 What religion, religious denomination or body do you belong to?

### Ethnic group

15 What is your ethnic group?

### Language

16 Can you understand, speak, read, or write Scottish Gaelic?

### Unpaid personal care

17 Do you look after, or give any help or support to family members, friends, neighbours or others because of:

- long-term physical or mental ill-health or disability, or
- problems related to old age?

### Activity Last Week

19 Last week were you doing any work:

- as an employee,
- as self-employed/freelance,
- in your own/family business, or
- on a Government sponsored training scheme?

### Qualifications

34 Which of these qualifications do you have?

**New questions for the 2011 Census** (question numbering as the 2011 Census questionnaire)

### Month and year of arrival in the UK

8 If you were not born in the United Kingdom, when did you most recently arrive to live here?

### National identity

14 What do you feel is your national identity?

### Language

17 How well can you speak English?

18 Do you use a language other than English at home?

### Long-term health conditions

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20 Do you have any of the following conditions which have lasted, or are expected to last, at least 12 months?

Visitors

V2 What is this person's sex?

V3 What is this person's date of birth?

## Appendix 2

### Changes since 2001 census

- Questions on the census questionnaire ([Appendix 1](#)).
- The introduction of Internet services, including an on-line questionnaire and a dedicated census website, which provides a greater service to householders and individuals and helps us reach the more hard to count groups of young, male respondents
- An increase in out-sourced services across the programme which allows GROS to benefit from the census expertise of contractors without long-term investment in a relatively short-lived project
- The introduction of field offices to support the field staff in each census region. These provides a regional base for all field staff where training and management tasks can be carried out and where the completed questionnaires for that region can be temporarily stored in a secure environment until they are picked up and delivered to the processing site
- The introduction of post out of questionnaires in rural areas of Scotland. This will be to some 6% of households in the more rural parts of Scotland where we recognise the benefits of using local Royal Mail knowledge of properties in these remote and often far flung parts of the country.
- The introduction of pre-addressed household questionnaires which helps with more accurate delivery and data capture. It also provides greater quality of questionnaire tracking.
- Better questionnaire tracking so we know where each questionnaire is as it is processed and also what stage of processing each questionnaire has reached. This is achieved through the use of unique barcodes.
- The introduction of a separate Census Quality Survey - a small follow up survey to allow GROS to produce estimates of census response accuracy. The survey will be run by computer-aided personal interviewing, making use of securely encrypted laptops to ensure the same high levels of security and confidentiality as across all elements of the Census.

## Appendix 3

### Membership list of the Scottish Census Steering Committee

Duncan Macniven (chair)	Registrar General	General Register Office for Scotland
Peter Scrimgeour	Director of Census	General Register Office for Scotland
Alan Dickson	Chief Executive	Capability Scotland
Anne Moises	Chief Information Officer	Scottish Government
Jalal Chaudry	Board Member	Muslim Council of Scotland
Jennifer Wallace	Principle Policy Advocate	Consumer Focus Scotland
Dr Eric Baijal	Joint Director of Public Health	NHS Borders
Grahame Smith	General Secretary	Scottish Trade Union Congress
Jon Harris	Strategic Director	Convention of Scottish Local Authorities
Keith Dugmore	Chairman	Statistics User Forum
Ken Macdonald	Assistant Commissioner for Scotland and Northern Ireland	The Information Commissioner's Office - Scotland
Ian Lees	Research Officer	Scottish Council for Voluntary Organisations
Professor David Martin	School of Geography	The University of Southampton
Professor Michael Anderson OBE	School of History, Classics and Archaeology	The University of Edinburgh
Ranald Mair	Chief Executive	Scottish Care
Ros Micklem	National Director, Scotland	Equality and Human Rights Commission
Professor Ken McKinnon	Board Member	Bòrd na Gàidhlig
Jenny Boag	Research Officer	RSS Statistics User Forum

## Appendix 4

### The Address Register

- GROS require accurate address and postcode based products for the Census operation. A definitive high quality national address register is not yet available for Scotland but GROS has carried out research on the quality of address information and has identified suitable products.
- Residential addresses, non-residential addresses and communal establishments are being identified using the PAF supplied by the Royal Mail. This is being supplemented with appropriate material from other sources such as Local Authority planning offices and the Assessors Portal.
- GROS is creating postcode look-up files and address files from the address register to manage the census field operation, to personalise questionnaires and Enumerator Record Books (ERBs), to support warehouse and processing operations and support creation of outputs.
- New addresses found during the field operation will be added to the ERB and a questionnaire pack will be delivered to the address. Information obtained for new addresses and any address changes will be captured and used for subsequent statistical analysis and output creation.
- GROS is intending to share the address information collected during the field operation with the main address list suppliers, where such information does not disclose any personal census information. No information on addresses identified during the census operation will be shared with any other party.