



Advisory Group Paper AG (04) 07

**Discussion Paper: Population Base for 2011 Census Enumeration:**

**Summary**

This paper outlines the various options for the enumeration base for the 2011 UK Census, focusing on the enumeration of individuals. The implications of each option are discussed and recommendations made on the further information required to inform the final selection of the enumeration base. Whilst at present there is insufficient information available to support a conclusive recommendation, the issues set out in this paper suggest that the final recommendation will involve collecting information on both usual residents and any visitors present at an address on Census Night. The precise questions asked of visitors and usual residents temporarily absent will be driven by user requirements for outputs.

This paper should be read in conjunction with the user response to consultation on population bases required for outputs as this is a key driver behind the recommendations of this paper.

**Advisory Group members are invited to discuss the paper.**

## **Discussion Paper: Population Base for 2011 Census Enumeration:**

### **1. Summary**

This paper outlines the various options for the enumeration base for the 2011 UK Census, focusing on the enumeration of individuals. The implications of each option are discussed and recommendations made on the further information required to inform the final selection of the enumeration base. Whilst at present there is insufficient information available to support a conclusive recommendation, the issues set out in this paper suggest that the final recommendation will involve collecting information on both usual residents and any visitors present at an address on Census Night. The precise questions asked of visitors and usual residents temporarily absent will be driven by user requirements for outputs.

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### **2. Introduction**

The choice of population bases is one of the most important decisions underlying a census. Traditionally, the population base is the way we count people, but it can also be used to describe the census definition of households, families, dwellings and so on. The enumeration of different sub-groups within the population, such as students, the armed forces, people in communal establishments and visitors must also be taken into consideration when defining population bases. The decision on enumeration base has consequences across the whole Census operation, including questionnaire design and enumeration strategies. The 3 Census Offices across the UK view it as a priority to have a common enumeration base across the UK.

This paper considers the population base for the 2011 Census enumeration. The focus is on the enumeration of individuals, although reference is made to the implications of each option on relationship, household and family structure data and the enumeration of population sub-groups and dwellings. The paper forms one of a set of papers focusing on population bases, including *Consultation with users on population definitions for the 2011 Census* (June 2004) which focuses on user's requirements for outputs and the Summer Population Trends article *Covering all bases: Early thoughts for population bases for the 2011 Census*.

This paper starts by describing the context of the 2011 Census operation (section 3) before moving on to consider the various options for enumeration bases (section 4) and the key issues to be considered when comparing these (section 5). Finally, a comparison of the enumeration base options (section 6 and Annex A) is followed by a suggested way forward, including further work required to underpin the choice of enumeration base.

### **3. Context**

Before discussing the 2011 Census enumeration base options, it is helpful to consider the context of the operation. This section describes the historical and international context and touches on user requirements for outputs, the changing characteristics of the society we are trying to measure and the aims and high-level design of the 2011 Census.

#### **3.1 Review of enumeration bases used in previous UK Censuses**

Traditionally, the UK Census has been conducted on a 'persons present' basis, where information is collected on individuals at the address at which they are present on Census night. However, some outputs on a usually resident basis have been produced since 1931. The collection of information on the usually resident population was limited until 1981, when it became clear that users wanted outputs on this basis primarily. Since then, the key user requirement has been for population data on a usually resident basis (see section 3.2 below).

In 1981, census information was collected for all persons present and, in households where at least one person was present, for usual residents who were temporarily absent. Therefore, two usually resident counts were possible:

- those produced by transferring people who were away from home on Census night back to the area in which they usually resided; and
- those based on information captured directly on the usually resident population.

These two counts differed, since there was no obligation to complete a questionnaire where a household had been wholly absent on Census night. Therefore, in 1981, the transfer method provided the key base for usually resident outputs. However, since people were only transferred back into the Local Authority in which they usually resided, small area and household composition statistics could not be produced for usual residents. The county reports and small area statistics produced from the 1981 Census were available on a population present basis only.

In 1991, information was again collected for both the population present and usual residents temporarily absent. As for 1981, individuals were only legally obliged to complete a questionnaire at the address where they were present on Census night. However, an attempt was made to collect information from wholly absent households on a voluntary basis. A questionnaire was delivered to addresses that were identified by enumerators as being occupied but temporarily vacant with a request for it to be completed and posted back by the householders on their return. Information for any such household that did not subsequently return a questionnaire was imputed. This approach aimed to overcome the problems with small area data and household structure information encountered in 1981. However, success was limited and there remained substantial unexplained differences between the population present and usual resident counts.

The 1991 UK Census suffered from a degree of underenumeration that had not been experienced in previous censuses. Furthermore, the underenumeration was not uniform across all areas or age-sex groups. The main causes of underenumeration were thought to be: respondent burden; confusion over where individuals should be enumerated; and respondent attitudes, which may have been affected by the recent introduction of the Community Charge. For the 2001 Census it was decided to minimise respondent burden by collecting information on each individual once only. Since the key user requirement was for outputs on a usually resident basis, consistent with the base defined for the mid-year population estimates, this was

the base chosen for enumeration. No data were collected on visitors. Despite these measures, the 2001 Census suffered from similar levels of underenumeration to 1991.

### **3.2 User requirements**

The choice of population base for enumeration has an impact on the range and quality of Census outputs achievable. It is of fundamental importance that the Census Offices have a good understanding of user needs for basic population data in order to inform the selection of enumeration base.

Increasingly diverse and dynamic living patterns (see section 3.3 below) mean that the reference population required for particular decisions will need careful thought. The Census Offices need to recognise this complexity by providing information on a range of definitions to suit different purposes. Recent ONS consultation on population definitions for the 2011 Census has suggested that the main base required for census outputs continues to be the usually resident population. However, this consultation also identified a requirement for:

- Population present information in order to identify those without a usual residence and to inform utilities about demands above usual resident levels; and
- Day-time population, potentially estimated via work-place data as in the 2001 Census.

Further information on the findings of this consultation exercise can be found in the ONS information paper *Consultation with users on population definitions for the 2011 Census: summary and analysis of written responses* (September 04).

The choice of enumeration base and the consequent design of the Census questionnaire can impact on the availability of information on households and families, as well as other census topics for small areas. The user requirement for information on dwellings, households and family structures and relationships should be taken into consideration when selecting the appropriate base.

### **3.3 Changes in society**

The UK population is changing and this needs to be recognised when planning the 2011 Census and selecting the appropriate enumeration base. The population is becoming more ethnically and culturally diverse, with increasing life expectancy, low fertility, increased mobility and changing living patterns. These changes impact our living arrangements and family structures and call into question the traditional concept of 'usual residence'.

Within the UK there are now significant numbers of people who live and work away from home, either for a period of time or for part of the week. International commuting is on the increase, with people working in other countries for short periods of time. Furthermore, larger numbers of older people are spending significant periods of time living abroad, taking advantage of improved health and greater access to international property markets.

Changes in the patterns of marriage, divorce and cohabitation have implications for family formation and dissolution, resulting in different household types to the traditional nuclear family. There are increasing numbers of children whose natural parents live at separate addresses, with the children dividing their time between two homes.

Increased mobility and complex living arrangements mean that the concept of usual residence is becoming less clear. There are significant numbers of people who no longer associate

themselves with a single residential address, thus there has been a weakening of the link between people and dwellings. This has a huge significance for data collection exercises that have been based on the traditional premise that such a one-to-one association exists. The more complex living arrangements of the 21st Century also have implications for the definition of a household and family. Information about family and household structures and how they are changing, their formation and dissolution is key to understanding UK society. The census is a key source of information on families at small area level since surveys tend not to be big enough to capture all nuances.

### **3.4 2011 Census aims and design**

The key aims of the 2011 Census programme are described in the ONS Information Paper *The 2011 Census: Strategic Aims and Key Research in England and Wales* (June 2004), which states that:

“The central objective of the 2011 Census is to provide high quality population statistics as required by key users such as policy makers and service providers, on a consistent and comparable basis for small areas and small population groups. Currently, these may be expected to include counts of people, dwellings, households and families, with a breakdown of key characteristics.

To achieve this objective, we will strive to maximise response rates whilst minimising differential response. Where there is a conflict of priority or direction, the impact on response rates will be a key determining factor in making decisions. These include those relating to any post-enumeration survey or other coverage assessments process, recognising that coverage adjustment is second best to getting the initial count right.”

The context within which the 2011 Census will be conducted will be substantially different from that of previous censuses. The world is changing, not only in terms of technological advancement, but also the attitudes of society and how people live and work. As a result of this and lessons learned from the 2001 Census the proposed design of the 2011 Census is significantly different from those of its predecessors.

The 1991 and 2001 UK Censuses both suffered from falling response and, in particular, differential response that led some areas and population subgroups to have response rates significantly lower than the national average. This respondent behaviour is in keeping with that experienced by those conducting social surveys and with electoral turn-outs over this period. In all likelihood, contacting and eliciting a response from some sectors of society will continue to become increasingly difficult. This is the key issue we face when designing the 2011 Census.

Changes in the statistical context of the census will also affect how the 2011 Census will be designed. Increased use of administrative data and advances in record linkage techniques may provide us with new opportunities for supplementing the data collected by the census, assessing and adjusting for item and person non-response and quality assuring the census results. The possible development of population and address registers may further enhance our understanding of the population and we must be ready to take advantage of any such developments.

The proposed ONS design for the 2011 Census includes some significant changes to how censuses have traditionally been run. These changes are outlined in the information paper *The*

*2011 Census: A Design for England and Wales* (March 2004). The most relevant change is the aim for a mixed enumeration strategy, with post-out/post-back being the main, but not sole, approach, underpinned by a comprehensive national address list. This approach would significantly reduce face-to-face contact with respondents - reducing our ability to explain residence and household definitions. This would increase the requirement for the population bases and definitions to be readily understandable.

### 3.5 International approaches

This section concentrates on countries that still conduct a traditional census. The population definitions used in countries that now use administrative data, such as Finland and Israel, and those that have moved to a rolling-census, such as France, are not considered.

**Table 1** below shows some of those countries that use a population usually resident definition at enumeration. Of these countries, only Italy attempts to collect visitor information. **Table 2** shows some countries that use a population present enumeration base. These countries still require a usually resident population definition in order to collect usual address of visitors and basic demographic information on those people usually resident but temporarily absent from an address.

**Table 1: Selection of countries that collect census data on a usually resident basis**

Country	Information Collected
Canada	No visitor information collected
Italy	Information collected on visitors and people who occasionally stay at enumeration address
Switzerland	Ask address of second place of residence if the respondent has one
USA	No visitor information collected

**Table 2: Selection of countries that collect census data on a population present basis**

Country	Information Collected
Australia	Collect usually resident address and basic demographics on those usually resident but temporarily absent, for households occupied on Census night.
New Zealand	Collect usually resident address and basic demographics on those usually resident but temporarily absent, for households occupied on Census night.
Ireland	Collect usually resident address and basic demographics on those usually resident but temporarily absent, for households occupied on Census night.

### 4. Options

Four key enumeration bases are considered here:

- population present;
- population usually resident;
- population present plus usual residents temporarily absent; and
- population usually resident plus visitors.

The precise wording of the definitions to accompany these bases is not discussed here and would need to be the subject of further research. Rather, this paper aims to explain the broad characteristics and implications of each option.

Annex B shows the various possible states of a residential dwelling on census night and how the associated population would be required to respond under each of the four options.

#### **4.1 Population present**

A population present enumeration would aim to collect census information for everyone present at a given address on a single night in the year (Census night). For the purposes of this paper, it is assumed that a population present enumeration would not collect information on the population usually resident but temporarily absent from a particular address, as this option is covered by the definition at section 4.3 below. However, information on usual address is usually collected.

In order for usually resident outputs to be produced from data collected on this basis, it would be necessary to include a question on usual residence and transfer individuals back to the area in which they are usually resident (as was the case in 1981). The level of geography at which this transfer took place would be dependent on the user requirement for outputs, the quality of the data supplied by the respondent and whether we have the technological ability to undertake the transfer accurately.

Under this approach, consideration must be given to how and what information is collected on people who are temporarily out of the UK.

#### **4.2 Population usually resident**

A population usually resident enumeration would aim to collect census information for individuals at the address where they were usually resident. For those without a usual address, enumeration would be conducted at the place where they were on Census night (the 2001 model). For the purposes of this paper, it is assumed that a population usually resident enumeration would not collect information on visitors, as this option is covered by the definition at section 4.4 below.

#### **4.3 Population present plus usual residents temporarily absent**

This option would collect full information about everyone present at an address on Census night and *some* information about usual residents temporarily absent on Census night. The number of questions asked of those usually resident but temporarily absent would depend on user requirements for outputs. Potentially, the full question set could be asked of everyone, as in the 1981 UK Census. Under these circumstances, this option becomes the same as that described in section 4.4 below.

Under this population base, respondents might only be obliged legally to complete their details on one form, either where they are usually resident or where they were present on Census night, as specified in the appropriate Census legislation. However, if required, it would be possible to frame the Census Order in such a way that those away from their usual residence on Census night would have an obligation to complete a census return both where they were present on census night *and* where they were usually resident. This follows the precedent set by the enumeration of students in 2001. This approach, whilst placing an increased burden on the respondent, would reduce issues surrounding the treatment of wholly absent households and family and household relationships where some family members are temporarily absent.

#### **4.4 Population usually resident plus visitors**

This option would attempt to collect full information about all usually resident at an address and *some* information about those visiting on Census night. The number of questions asked of visitors would depend on user requirements for outputs. As for the base described in section 4.3 above, the full question set could be asked for all people included on a questionnaire. Similarly, under this population base, consideration must be given to whether people temporarily absent from their usual residence on Census night should be obliged to have their details captured in two locations.

The population bases described in sections 4.3 and 4.4 build an element of double counting into the census operation. Filter questions would be necessary to allow us to distinguish between usual residents and visitors. Before adopting either of these approaches, consideration should be given to whether collecting information twice from some respondents is consistent with the National Statistics Code of Practice. The protocol on Managing Respondent Load commits us to balance the needs of users against the burden on providers and, in particular, to ensure that “the load placed on respondents is the minimum practicable to produce results of the required quality”. This may influence the number of questions we ask of either usual residents temporarily absent or visitors.

#### **5. Issues for consideration when comparing options for enumeration base**

Whichever population base is selected for enumeration, we must be confident that the 2011 Census will deliver outputs that meet user requirements. However, there are a number of other factors that must be considered when selecting the appropriate base. These issues are described in this section.

Within this section, specific questions are listed which help inform the selection of the appropriate population base. Annex A assesses these questions for the four key options for an enumeration base. Note that ONS is NOT seeking formal responses from users to these questions.

##### **5.1 Coverage**

A central aim of the 2011 Census programme is to maximise census response whilst minimising differential non-response. The key issues relating to the choice of enumeration base that can affect response are:

- *Clarity and inclusiveness of the enumeration base and supporting definitions:* In order to achieve maximum coverage of the 2011 Census, it is critical that we have an enumeration base that is inclusive and easy for respondents to understand. Ambiguity about whether or not someone should be included on a questionnaire may lead to unacceptable levels of underenumeration that will ultimately affect the quality of the results and/or user confidence in them.
- *Respondent burden:* If respondents are required to complete their details more than once the burden on them is increased. Similarly, if additional complex (that is, write-in as opposed to tick-box) questions (such as address questions) are required respondent burden also increases. The impact of this increased burden on response should be considered when selecting the base for enumeration.
- *Respondent compliance:* Excuses such as “I wasn't here on Census night” or “I don't usually live here” are easily made and difficult to challenge on the doorstep or in court without documentary evidence of residence. When selecting the appropriate base for enumeration, the potential avenues for avoiding compliance should be considered.



- *Over-count*: The extent of over-count in censuses internationally has been increasing. In the 2000 US Census over-count was estimated to exceed under-count for the first time. Although differences in field methodologies mean that there is less potential for double counting in the UK census, evidence from the 2001 Census suggests that levels of over-count are increasing in the UK too. Serious consideration of the impact of over-count should be given throughout the design of the 2011 UK Census.
- *Population temporarily out of the country*: We need to consider what information we wish to collect about these people and how we could set about doing so. It may be more appropriate for this information to be collected via surveys.

The questions relating to coverage that should inform the decision on the population base for enumeration are:

- |           |  |
|-----------|--|
| Qu. 5.1.1 | How easy is this base to understand and apply?   |
| Qu. 5.1.2 | Does the base include everyone we want to capture information on?                                |
| Qu. 5.1.3 | What is the respondent burden associated with this base?   |
| Qu. 5.1.4 | How easy is it to avoid completing a census return and how easy to prosecute for non-compliance? |
| Qu. 5.1.5 | How is this base likely to affect over coverage?   |
| Qu. 5.1.6 | How would this base be applied to people temporarily out of the UK on Census night?              |

## 5.2 Range of outputs

When selecting the base for enumeration, consideration should be given to the impact it will have on the quality and range of outputs. For example, if data are collected on one basis, but outputs are required on another, how accurately can the data be manipulated to provide the required outputs? Furthermore, if additional questions are required for a particular base, consideration should be given to the user requirement for other information not collected as a consequence. The user needs for the data provided from additional residency questions must be balanced against the user requirement for questions that may have to be omitted as a result.

The questions relating to the quality and range of outputs that should inform the decision on the population base for enumeration are:

- |           |   |
|-----------|---|
| Qu 5.2.1  | Can small area population estimates be produced for individuals usually resident?   |
| Qu. 5.2.2 | Can small area data be produced for other topics covered on the census questionnaire?   |
| Qu. 5.2.3 | Is sufficient relationship information possible to allow the production of family structure and household statistics?                 |
| Qu. 5.2.4 | Will questions have to be dropped to accommodate additional residency questions and what is the user requirement for these questions? |

## 5.3 Operational considerations

The choice of enumeration base has a number of operational implications, most notably surrounding the enumeration of communal establishments, where large numbers of people may be present on Census night without being usually resident there.

The choice of enumeration base will also influence strategies for following-up non-response. For example, if enumerating on a population present basis, it may be necessary to visit

communal establishments more quickly after Census day than if enumerating on a usual resident basis, or for field staff to enumerate communal establishments personally rather than relying on the institution manager to do so.

Some enumeration bases will require an increase in the number of individuals to be covered by a questionnaire (for example where a usually resident household has visitors on Census night), potentially increasing the number of households needing a continuation questionnaire. A 2011 Census post-out/post-back design could be vulnerable to respondents in large households leaving people off their census returns rather than contacting the call centre for a continuation questionnaire. Furthermore, where some people are included on more than one questionnaire, their information will require capturing and processing more than once, thus adding to the cost and time taken to process the data.

Some population bases for enumeration will require respondents to complete and return their questionnaire on a single particular date, increasing the peak demand on services such as the internet, mail services and the call centre.

Furthermore, some bases will require more field staff than others, with the associated recruitment and pay issues.

The operational considerations when selecting the base for enumeration are:

- Qu. 5.3.1           What is the implication for the enumeration of communal establishments?
- Qu. 5.3.2           What is the impact on non-response follow-up strategies?
- Qu. 5.3.3           What are the implications for number of persons per questionnaire and the delivery of continuation questionnaires?
- Qu. 5.3.4           What are the processing implications?
- Qu. 5.3.5           What is the likely impact on demand for services such as the internet, mail and call-centre?
- Qu. 5.3.6           What is the likely impact on the numbers of field staff required?

#### **5.4 Coverage assessment**

Experience in the UK, mirrored in other countries, is that it is becoming increasingly difficult to conduct a census that successfully enumerates the whole population. Therefore it is necessary to adopt a variety of methods to take account of underenumeration. The incidence of overenumeration has also been increasing internationally and for the 2011 UK census overenumeration should, for the first time, form a significant part of any coverage assessment strategy.

As discussed in section 5.1 above, the choice of enumeration base will impact the coverage of the 2011 Census. However, further to this, the choice of enumeration base will impact our ability to estimate the extent of any over- and under-enumeration, particularly if attempted through a post-censal survey. For example, the 2001 Census approach to estimating underenumeration relied on re-visiting a sample of households four-to-six weeks after Census day for an independent assessment of who should have been on the Census questionnaire. Whilst this approach is reasonable under a usually resident enumeration base, it is less straightforward under the less stable population present base.

The key coverage assessment considerations when selecting the base for enumeration are:

- Qu. 5.4.1 How does the enumeration base impact our ability to estimate underenumeration?
- Qu. 5.4.2 How does the enumeration base impact our ability to estimate overenumeration?

## **6. Comparison, conclusions and recommended way forward**

It can be seen from Annex A that, whilst the population present enumeration base is straightforward to understand, it would not provide the outputs most required by users. These include small area data for the usually resident population, particularly with respect to households and family structures.

The other three options for enumeration base all require respondents to understand the usually resident definition. This caused confusion in the 2001 Census, despite being the subject of much research. However, in order to provide outputs on the key usually resident population base, it will be necessary to have a usually resident definition that can be applied in the field.

The usual residents only enumeration base would provide the key outputs required by users. However, the lack of visitor information in 2001 had an impact on user's confidence in the Census results, because of concerns that it allowed a number of UK residents to avoid inclusion on a Census questionnaire. The composite options provide more flexibility in terms of outputs than the usually resident only or population present only options. However, for either of the composite options, consideration should be given to respondent burden when determining the questions to be asked of visitors or usual residents temporarily absent.

Of the four options for enumeration base, the composite options appear to be most promising. These options provides the key user requirement for small area outputs for the usual resident population, whilst additionally providing some information on visitors. The 2011 Census programme will progress on the working assumption that a composite enumeration base will be used.

There are a number of issues that need to be researched further before the precise enumeration base and the questions to be asked of usual residents and visitors can be agreed. Key amongst these are:

- *User requirements for outputs:* Not just for population bases, but also for family structure, household and dwelling information and the bases on which users require other topics to be covered in the census.
- *Impact of respondent burden on response:* If the additional residence questions and asking some questions of some people more than once prove to have a significant impact on response the balance between providing information on a number of bases and the level of overall response required will be reassessed.
- *Compliance:* We need to consider whether we can and should compel some people to complete their details more than once. If we find that there can only be a legal requirement for respondents to complete their details once, we need to decide whether this should be at their usual residence or where they are present on Census night. This decision should be driven by the user requirements for outputs and the numbers of questions asked at each location.
- *Operational costs and risks:* These should be compared in more detail for the key options.

## References

ONS Consultation Paper *Consultation with users on population definitions for the 2011 Census* (June 2004)

[http://www.statistics.gov.uk/about/consultations/general\\_consultations/downloads/Population\\_definitions.pdf](http://www.statistics.gov.uk/about/consultations/general_consultations/downloads/Population_definitions.pdf)

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National Statistics Code of Practice

National Statistics Protocol on Managing Respondent Load

Section 3.3 draws heavily on an as yet unpublished paper 'European wide issues in population statistics' by Judith Jones and Roma Chappell.

**Jen Woolford**

**October 2004**

## Annex A: Comparison of enumeration base options

Question	Impact	Population present	Population usually resident	Population present + usual residents temporarily absent	Usually resident + visitors
5.1.1 How easy is this base to understand and apply?	Medium	Very straightforward for majority. Some issues for those travelling overnight or temporarily out of the country. Not logical to short-term visitors to the UK. Would probably still require a usual residence definition in order to establish usual address.	Complicated. No simple legally established definition. Subject of much research in the run-up to 2001, but still caused confusion in the field.	Complicated, as for population usually resident.	Complicated, as for population usually resident.
5.1.2 Does the base include everyone we want to capture information on?	High	No. The base will not include residents who are temporarily outside the UK such as holidaymakers, armed forces, offshore workers etc. For people within the UK but not at their usual residence, the base captures their information, but not in the correct place for the key outputs required by users.	Does not cover short-term visitors to the UK. Need to establish whether this information is required by users. Does not provide visitor information.	Yes.	Yes.
5.1.3 What is the respondent burden associated with this base?	High	An extra address question is required for usual address of visitors. Address questions can have a major contribution to respondent burden - particularly if postcodes are not known.	Minimal - apart from applying the definition.	Significant. Many people will appear on more than one questionnaire. Precise respondent burden will depend on the questions asked of the usually resident population temporarily absent and the number of address questions.	Significant. Many people will appear on more than one questionnaire. Precise respondent burden will depend on the questions asked of visitors and the number of address questions.
5.1.4 How easy is it to	Medium	Proving where someone was	Easier for ONS to obtain	More difficult to avoid	More difficult to avoid

Question	Impact	Population present	Population usually resident	Population present + usual residents temporarily absent	Usually resident + visitors
avoid completing a census return and how easy to prosecute for non-compliance?		on Census night could be difficult. It is attempted in Ireland but probably not feasible here with a larger population and smaller field-force per capita.	evidence of residency than of presence on a particular night.	census obligations than for the first two definitions, although it is hard to see how we can ever hope to get a response from someone determined not to be counted without resorting to prosecution.	census obligations than for the first two definitions, although it is hard to see how we can ever hope to get a response from someone determined not to be counted without resorting to prosecution.
5.1.5 How is this base likely to affect over coverage?	Medium	Should not have a significant impact. However, respondents may be tempted to include usually resident but temporarily absent members of a household.	Should not have a significant impact, although the US enumerate on this basis and experienced overcount problems in 2000. May be issues where people may have more than one address where they are considered 'usually resident' e.g. children of separated parents, people in nursing homes.	Significant potential for over coverage since respondents may be required to appear on more than one questionnaire. Many people may have more than one address where they are considered 'usually resident' e.g. children of separated parents	Significant potential for over coverage since respondents may be required to appear on more than one questionnaire. Many people may have more than one address where they are considered 'usually resident' e.g. children of separated parents
5.1.6 How would this base be applied to people temporarily out of the UK on Census night?	Low. This information may be better provided from another source	People outside of the UK on Census night would not be counted.	Wholly absent households would be required to complete a questionnaire on return to the UK. In 1981 and 1991 there was no legal obligation to return a questionnaire under these circumstances. For households where some household members were present on Census night, the questionnaire should have been completed for all usual residents by the household members present.	For wholly absent households, usual residents would be required to complete the questions for usual residents temporarily absent on their return to their usual address. As for the previous base, if someone was present in the household on Census night, they would be responsible for completing the Census questionnaire for all present and those usual residents temporarily absent,	As for the previous two definitions, where the whole household was absent on Census night, there would be a requirement for usual residents to complete a questionnaire at their usual address on their return. Where an address was occupied on Census night, the questionnaire would be completed by the occupants.

Question	Impact	Population present	Population usually resident	Population present + usual residents temporarily absent	Usually resident + visitors
5.2.1 Can small area population estimates be produced for individuals usually resident?	High. This is a key output required by users.	It may be possible to return people to their usual household if usual residence address is collected. However, the feasibility of this needs to be researched. This is not attempted anywhere in the world at present, although New Zealand are investigating the possibility for 2011. Quality issues around the accuracy of usual residence addresses would also need to be investigated.	Yes	Yes	Yes.
5.2.2 Can small area data be produced for other topics covered on the Census questionnaire?	High The key user requirement is for these data for usual residents	<b>Usually Resident Base:</b> feasibility needs to be researched as outlined above (5.2.1)  <b>Population Present Base:</b> Yes	<b>Usually Resident Base:</b> Yes  <b>Population Present Base:</b> No	<b>Usually Resident Base:</b> Depends on the questions asked of usual residents temporarily absent or our ability to transfer visitors back to their usual residence.  <b>Population Present Base:</b> Yes	<b>Usually Resident Base:</b> Yes  <b>Population Present Base:</b> Depends on the questions asked of visitors
5.2.3 Are family structure and household statistics possible?	High	No.	Yes.	Yes – if relationship questions asked of population usually resident but temporarily absent.	Yes
5.2.4 Will questions have to be dropped to accommodate additional residency questions and what is the user requirement for these	Medium	Some questions asked in 2001 may have to be dropped to accommodate extra address questions. User requirements are not sufficiently understood at	None - no additional residency questions required.	Likely to require a number of address and residency questions, so impact on other census topics or size of questionnaire substantial.	Usual residents would not have to be asked additional residency questions.

<b>Question</b>	<b>Impact</b>	<b>Population present</b>	<b>Population usually resident</b>	<b>Population present + usual residents temporarily absent</b>	<b>Usually resident + visitors</b>
questions?		present to determine impact of not collecting some information.			
5.3.1 What is the implication for the enumeration of communal establishments?	Medium	Substantial. Many more people would be enumerated in communal establishments, caravan parks, hotels, hospitals etc. than under a usual resident definition.	Minimises numbers of people enumerated in communal establishments and problems associated with caravan parks, hotels etc.	Significant - as for population present.	Significant - as for population present.
5.3.2 What is the impact on non-response follow-up strategies?	Medium	Intensive follow-up would be required straight after census night. Particularly in communal establishments, caravan parks, hotels etc. It is not clear that we have the capability to process forms quickly enough to achieve this follow-up under the 2011 post-out post-back model.	More time can be taken over follow-up. Enumerator workloads can be more evenly distributed over time.	Significant - as for population present.	Significant - as for population present.
5.3.3 What are the implications for number of persons per questionnaire and the delivery of continuation questionnaires?	Low	Would require research to look at the optimum number of people per questionnaire.	Minimal. Information from 2001 Census, conducted on the same basis, can be used to understand this issue.	Substantial – collecting information on usual residents temporarily absent and visitors will lead to larger households than enumerated in 2001. Further research required to understand this issue and predict where this is likely to occur.	Substantial – collecting information on usual residents temporarily absent and visitors will lead to larger households than enumerated in 2001. Further research required to understand this issue and predict where this is likely to occur.
5.3.4 What are the processing implications?	Medium	Could be significant if trying to transfer visitors back to their usual residence.	Minimal - processing similar to 2001.	Significant - far more people to process. However, likely to be more straightforward than transferring people	Significant - far more people to process. However, likely to be more straightforward than transferring people



Question	Impact	Population present	Population usually resident	Population present + usual residents temporarily absent	Usually resident + visitors
				under population present model	under population present model.
5.3.5 What is the likely impact on demand for services such as the internet, mail and call-centre?	Low	Significant peaks likely as respondents will be required to complete questionnaires on or soon after Census night.	Peaks less pronounced since usually resident population more stable than population present so questionnaire completion by respondents can be more spread out over time.	Significant - as for population present.	Significant - as for population present.
5.3.6 What is the likely impact on the numbers of field staff required?	Medium. Recruitment of large field force caused problems in 2001.	Likely to be significant due to enumeration of communal establishments and impact on follow-up strategies.	Fewer enumerators required than under population present due to reduced work loads associated with enumerating communal establishments and follow-up.	Significant - as for population present.	Significant - as for population present.
5.4.1 How does the enumeration base impact our ability to estimate underenumeration?	Medium	Assessing underenumeration via a follow-up survey is problematic under a population present base. Much more difficult for respondents to remember who was present than usually resident, which is more stable over time. Likely to have a significant impact on the quality of the estimates. Australia and New Zealand manage it, however they do not attempt anything as sophisticated as the One Number Census approach used in the UK in 2001.	Coverage assessment more straightforward as the usually resident population is more stable than population present.	Would probably choose to assess undercount on one base only - population usually resident would be more straightforward.	Would probably choose to assess undercount on one base only - population usually resident would be more straightforward.
5.4.2 How does the	Low	Same issues as for 5.4.1	Coverage assessment more	Would probably chose to	Would probably chose to

Question	Impact	Population present	Population usually resident	Population present + usual residents temporarily absent	Usually resident + visitors
enumeration base impact our ability to estimate overenumeration?	Although levels of over-enumeration increasing, likely to be small compared to levels of under-enumeration.		straightforward as the usually resident population is more stable than population present.	assess overcount on one base only - population usually resident would be more straightforward.	assess overcount on one base only - population usually resident would be more straightforward.

## Annex B: Possible states for residential households on Census Night

Occupancy status on Census night	Requirement under population present	Requirement under population usually resident	Requirement under population present + usual residents temporarily absent	Requirements under population usually resident + visitors
<b>Household type: Usual Residence</b>				
All usual residents at home, no visitors	Include all usual residents on questionnaire	Include all usual residents on questionnaire	Include all usual residents on questionnaire	Include all usual residents on questionnaire
All usual residents at home, some visitors	Answer full question set for usual residents and visitors. No requirement for visitors to complete a questionnaire on return to their usual residence	Complete questionnaire for usual residents and visitors without a usual residence only. Other visitors complete a questionnaire on return to their usual residence if within the UK.	Full question set for usual residents and all visitors. Visitors who are usually resident elsewhere in the UK should also be included on the Census return at their usual address.	Full question set for usual residents and any visitors without a usual residence elsewhere. Reduced (?) question set for other visitors, who should also be included on the Census return at their usual address if within the UK.
Some usual residents at home, no visitors	Full question set for usual residents present on census night only. Usual residents temporarily absent elsewhere in the UK should be included on the questionnaire where they are present on census night.	Answer full question set for all usual residents, whether present on Census night or elsewhere.	Answer full question set for all present on Census night, (reduced?) question set for usual residents elsewhere. Additionally, those usual residents temporarily elsewhere in the UK should be included on the Census return where they are present on Census night.	Answer full question set for all usual residents, whether present on Census night or elsewhere. Additionally, those usual residents temporarily elsewhere in the UK should be included on the Census return where they are present on census night.
Some usual residents at home, some visitors	Answer full question set for those usual residents present on census night and all visitors. Those usual residents temporarily absent elsewhere in the UK will be included on the questionnaire where they are present on census night	Answer full question set for all usual residents, whether present on Census night or elsewhere. Any visitors without a usual address elsewhere should also be included. Other visitors complete a questionnaire on return to their usual residence if within the UK.	Full question set for all present on Census night. Reduced (?) question set for those usual residents temporarily absent. Usual residents temporarily elsewhere in the UK should also be included on the Census return where they are present on census night.	Full question set for all usual residents, including those temporarily absent, and any visitors without a usual residence elsewhere in the UK. (Reduced?) question set for other visitors, who should also be included on the Census return for their usual residence if within the UK.
Unoccupied on Census Night	No requirement to complete a	Complete a questionnaire for all	Complete a questionnaire for all	Complete a questionnaire for all

<b>Occupancy status on Census night</b>	<b>Requirement under population present</b>	<b>Requirement under population usually resident</b>	<b>Requirement under population present + usual residents temporarily absent</b>	<b>Requirements under population usually resident + visitors</b>
	questionnaire.	usual residents on return to the address.	usual residents on return to address (reduced question set?). If usual residents were elsewhere in the UK on census night, they should be included on the Census return at that address.	usual residents on return to address. In addition, if usual residents were elsewhere in the UK on census night, (reduced) questions should have been completed where they were present on Census night.
Visitors only	Answer full question set for all visitors present on census night.	No requirement for visitors to complete a questionnaire. Usual residents should complete a questionnaire on return to the address.	Full question set for all visitors. Reduced (?) question set usual residents temporarily absent. If visitors have a usual address within the UK they should also be included on the Census return for that address. If the usual residents are elsewhere within the UK on Census night they should be included on the Census return at the address where they spend Census night	Full question set for all usual residents and any visitors who do not have a usual residence elsewhere within the UK. Reduced (?) question set for other visitors present on census night, who should also be included on the Census return at their usual address.
<b>Household type: Not usual residence (e.g. second home, holiday accommodation)</b>				
Visitors	Full question set for all present on census night.	No requirement to complete a questionnaire at this address, although if the visitors have a usual residence in the UK, they would be required to complete a questionnaire on their return.	Full question set for all present on Census night. Those visitors with a usual address elsewhere within the UK should also be included on the Census return at that address.	Reduced (?) question set for visitors present on census night. Those visitors with a usual address elsewhere within the UK should also be included on the Census return at that address..
Unoccupied on Census Night	No requirement to complete a questionnaire.	No requirement to complete a questionnaire.	No requirement to complete a questionnaire	No requirement to complete a questionnaire.
<b>Household type: Communal Establishment</b>				
All usual residents	Full question set for all present.	Full question set for all residents, including those temporarily elsewhere.	Full question set for all residents present on Census night, reduced (?) question set for those temporarily elsewhere.	Full question set for all residents, including those temporarily elsewhere.

<b>Occupancy status on Census night</b>	<b>Requirement under population present</b>	<b>Requirement under population usually resident</b>	<b>Requirement under population present + usual residents temporarily absent</b>	<b>Requirements under population usually resident + visitors</b>
Some usual residents, some temporary residents	Full question set for all residents and visitors present on census night.	Full question set for all residents. No information collected on temporary residents who should be included on the questionnaire at their usual residence.	Full question set for all present on Census night. Reduced (?) question set for usual residents temporarily elsewhere. Usual residents temporarily elsewhere in the UK should also be included on the Census return for that address.	Full question set on usual residents. Reduced (?) question set for temporary residents, for whom full details should be collected on the questionnaire at their usual residence.
All temporary residents	Full question set on all present on census night.	No requirement to complete a questionnaire unless some temporary residents do not have a usual residence elsewhere.	Full question set for all present on Census night. All temporary residents should also be included on the Census return at their usual address.	Reduced (?) question set for all present on Census night. All temporary residents should also be included on the Census return at their usual address.