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The 2011 Census

Supplier Information Meeting 14th July 2005

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Welcome

Ian Cope

Supplier Open Meeting

- Background to Census
- UK harmonisation
- The procurement strategy
- Inform the market place
- Give you the opportunity to meet other suppliers
    - List of attendees available

Introductions

- **Representatives from**

  - Office for National Statistics (ONS)
    - on behalf of England and Wales

  - General Register Office for Scotland (GROS)

  - Northern Ireland Statistics and Research Agency (NISRA)

Agenda

- Importance of the Census   Karen Dunnell
- 2011 Census   Ian Cope
- High Level Design   Pete Benton
- NISRA   Robert Beatty
- GROS   Peter Scrimgeour

- Break - 14:00 approx

- Procurement Strategy & process   Catriona Flear
- Activities, timetables & volumetrics   Claire Stretch,
                                                              Henrie Brown

- Questions
- Informal discussions & coffee – 16:00 to 17:00 approx

Questions & Information

- Question session and open discussion at the end

- During presentation – clarification questions accepted

- Information presented today represents our current thinking but may be subject to change

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Importance of the Census

Karen Dunnell
Executive Board Member
Senior Responsible Officer

2011 Census

- Large and complex project planned over a long period

- Important to local and central government and the people

- In early stages so keen to inform the market place

Joint Working

- ONS responsible for England & Wales
- GROS responsible for Scotland
- NISRA responsible for N Ireland

- Harmonisation agreement signed by all 3 Registrar Generals

Commitment to the Project

- ONS required to prepare for the next Census

- Funding arrangements up to March 2008 are being finalised

- Investment bid to Treasury in 2006 Spending Review for the whole Census

- White Paper to Parliament July 2008

Supplier Information Meeting

- This event gives you an introduction to the Census and our requirements and how we envisage moving forward

- Thank you for giving your time

- We hope you enjoy the afternoon

2011 Census

Ian Cope
Census Director

Outline

- UK Harmonisation
- Drivers of 2011 Census design
- 2001 Census Key Lessons
- Changing Society
- Additional requirements
- Strategic Aims – Statistical
- Strategic Aims - Operational

UK Harmonisation

- Governance structure
  - UK Harmonisation Committee
  - UK Census Committee

- Organisations working together to produce consistent outputs

Drivers of 2011 Design

- Evaluations of 2001 Census
  - Treasury Select Committee
  - National Audit Office
  - Public Accounts Committee
  - ONS internal evaluation
  - User response to 2001 Census results
- Changes in context
  - society
  - available technology
  - addressing infrastructure

2001 Census - key lessons (1)

- Postback
  - successful, 88% postal response
  - localised delays in mail system caused problems
  - £10m overspend in unnecessary field follow-up?
- Differential non-response
  - 96% overall response rate
  - but below 70% in some areas
- Coverage assessment / adjustment
  - worked well generally, but problems in low-response areas
  - need to do even more to understand coverage

2001 Census - key lessons (2)

- Lack of control in field
  - no central questionnaire tracking system
  - management information system failed
  - didn't know how many questionnaires delivered or returned
  - pockets of poor enumeration undetected
- Significant recruitment and payroll problems
  - hard to recruit in inner city areas
  - 40% paid late
  - £500,000 overpaid
- Late start to development - no full Rehearsal

Changing society

- Increasingly mobile population
  - Local populations change by day of week; time of year; across years;
  - With complex geographical patterns
- More complex structures
  - Some reside in more than one address; household; family; geographic area; country
- Strong drive for small area data

Additional requirements

- Increased frequency
- More flexible counting base
    - usual residence
    - daytime/service population
    - others …
- Further improve accuracy / confidence in estimates
    - build on the One Number Census

Strategic Aims - Statistical

- Maximise response, reduce differences in response rates

- Develop robust initiatives and procedures for hard-to-count areas/groups

- Enable outputs on a number of population bases

- Build more ways to assess coverage into the operation

- Speed up delivery of data, more time to QA

Strategic Aims - Operational

- Reduce recruitment, retention and pay problems of large field force

- Accurate, "real time" information on response

- Good management of publicity and public engagement

- Multiple response routes

- Develop effective partnership with Local Authorities

- Be cost effective

2011 Census High Level Design

Pete Benton

Outline

- Design overview
  - Delivery
  - Collection
  - Follow-up
  - Control Systems
  - Public Interface
  - Channel Management
  - Data Capture operations
  - Follow-up Surveys
  - Outputs
- Summary of major changes from 2001 Design
- Development Timetable

Delivery

- Flexible Approach - mix of delivery strategies
  - targeted through analysis of hard-to-count groups and areas
- Post-Out in 'easy' areas
  - using pre-addressed census questionnaires with unique id
  - development of address register is a key activity
- Traditional delivery in 'hard' areas
  - smaller field force, team based?
- Possibly face to face interview in hardest areas

Response

- Post-Back
  - questionnaires mailed directly to central processing centre
  - response management system provides rapid updates to field managers
  - enables early start to processing as soon as questionnaires checked in
- Internet capture
- Telephone capture for certain population groups
- Face to face interview

Non-response follow-up

- Possible postal follow up
- Field follow-up
  - local field force
  - acting on central intelligence from response management system
  - using technology for two-way communication
- Publicity message: moves up a gear to reinforce legal requirement to complete a questionnaire
- Non-compliance proceedings

Partial response follow-up

- Field follow up for completely blank questionnaires
- Telephone follow-up for partially completed questionnaires
- Challenges for rapid identification during paper data capture
- Extent of follow-up yet to be decided
  - Likely to be sample-based
  - Possible geographical prioritisation of questionnaires for scanning

Control Systems

- Every questionnaire uniquely identified
- Progress tracked at key stages
  - from printing to destruction
  - near real time
- Enables multiple response routes
- Provides intelligence to field force
- Enables central Post-Back and earlier processing
- Provides central operational management info
- Underpinned by accurate address register, with tight control of additions and robust reconciliation
- Requires field communication technology

Public interface

- Publicity
  - increased to address lack of face-to-face contact
  - targeted at specific areas / population groups
  - better timed, responsive to events
- Even stronger 'community liaison' programme
- Contact Centre
  - issue additional questionnaires, update address register and response management system
  - provide guidance, respond to queries
  - enables telephone capture
- Web Self Help facility

Data capture operations

- Paper data capture modelled on 2001 approach
- Additional elements
  - Internet and telephone response routes
  - Integration of data from multiple response routes
  - Fast questionnaire receipting to enable non-response follow-up
  - Identification of blank / partial responses
- Other changes
  - 'Continuous' flow of data to ONS, not batched
  - Earlier start and finish to paper data capture
  - Improved integration at Processing/Field interface

Channel Management

- Not clear what the internet response rate will be
- Assumptions will affect sizing of web and paper capture systems
- Need to have an explicit channel management strategy, implemented through publicity campaign
  - based on clear understanding of the costs and benefits of different levels of response through different routes
  - will evolve over time as societal context develops
- Need to carefully research assumptions, and be prepared for alternative scenarios
- ONS will decide the publicity messages
  - working closely with suppliers of data capture services

Follow-up surveys

- Coverage survey
  - re-enumeration of 1% of the population
- Quality survey
  - much smaller sample
- Likely to use many of the census systems, with modifications
  - will be included in the main census contracts
- Extent to be determined

Census Design - Outputs

- Similar timetable to 2001 for first release
  - Sept 2012
- Earlier start and finish to data capture gives more time for Quality Assurance

Summary of Major Changes to 2001 Methodology

- Multiple delivery strategies, including post-out, targeted through geo-demographic analysis
- Multiple response routes, including internet
- Central Postback
- Robust response management systems
  - individual questionnaire tracking
  - fast receipting
  - field communication technology
- Faster and more complex data capture operations
- Response integration
- Increased PR with better targeting

Timetable

- 2007 Field Test
  - Response rates
    - Income question
    - Post out
  - Operational capability
    - Post out
    - Dynamic field force/response management
- 2008 Integration Test
  - Evaluating systems & interfaces
- 2009 Rehearsal
  - Full test of systems & operations
- 2011 Census
  - You have to get it right first time

abcdef

Robert Beatty

Demography and Census

Legislation

- Devolved function

- Separate legal authority – Census Act (Northern Ireland) 1969

- Final approval by local Assembly

2011 Volumetrics

- NI expected population around 1.74m

- Approximately 700,000 households

- 3% of total UK population

Northern Ireland Differences

- At least some different questions

- Operational processes/design e.g.
  - Enumeration strategy (possibly hand delivery with local postback)

UK Harmonisation

- Consistent UK outputs

- Similar timetable

- Work together to meet the needs of UK data users

Peter Scrimgeour

Census

Legislation

- Devolved function

- Separate legal authority

- Responsibility of General Register Office Scotland

- Brought before Scottish Parliament for approval

2011 Volumetrics

- Scottish expected population around 5m

- Approximately 2m+ households

- 8% of total UK population

Scottish Differences

- At least some different questions

- Operational processes/design e.g.
  - Enumeration strategy follows more traditional approach of hand delivery / post out and local post back to the field staff (similar to NI)
  - Differences in the processing and timing of form return
  - Central operational intelligence requirements are less

UK Harmonisation

- Differing timetable – Scotland is running its own test in 2006 and procurement for this is in progress

- Currently 2008 Rehearsal

- Work together to meet the needs of UK data users

- Consistent UK outputs

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COFFEE BREAK

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Procurement Strategy

Catriona Flear

Background for procurement

- Involvement of other UK Census Offices

- Activities for contracting out

- Procurement strategy

UK Census Offices

- ONS, GROS & NISRA – aim for consistent UK outputs

- Recognise the differences and similarities between the different organisations and designs

- Joint working to achieve economies of scale, solutions that suit us all and consistency of quality of data

Joint Contracts

- Currently GROS & NISRA expect to be involved in all contracts except for Recruitment of field staff

- Working closely with both on developing requirements
  - Joint requirements – common to all
  - Specific – required for that country

- Final decision on involvement in contract will be made at the appropriate time

Sourcing Strategy

- Reviewed all activities within the design

- Recognised some are not our core competences

- Clear about what ONS must continue to be responsible for

- Identified interfaces between the activities

- Result:

    - A significant increase in what we are contracting out

    - Proposed minimum grouping of activities into contracts

    - Service contracts

Activities for contracting out

- Operational Intelligence & document tracking

- Data capture operations & web capture

- Printing (census questionnaires)

- Contact Centre (including web self help)

- Recruitment

- Payroll

- Training

- Printing (other matter)

- Logistics & warehousing

- Field supplies

- Translation Services

- Publicity

- Postal Services

Issues

- Time available within the timetable for 2011 Census

  – doesn't lend itself to the traditional procurement method of producing detailed specifications of requirements

Key reasons

- Key decisions later in the project
  - Preventing full specifications being developed early

- Some strategies still to be tested
  - Impact on detailed design and specifications

- Timing of Test and Rehearsal
  - Lack of time after evaluation of 2007 field test to tender and select final supplier

Fitting the design & project plan

- **Between now and Spring 2007**
  - procure and award contracts to support the 2007 Test

- **Spring 2007 to Spring 2009**
  - build final systems, integration testing and prepare for Rehearsal. Procure and award contracts for Rehearsal and Census

- **Spring 2009 to Spring 2011**
  - scale up, full operations, system testing through 2010

- **Spring 2011 to end of contracts**
  - completion of all work

Procurement Strategy

- We need a strategy that allows:
  - the final suppliers to work with us early in some activities to understand the complexities of the whole project

- Significant risk of change and escalating costs if detailed specifications were used now

- Outputs based
  - Specified where appropriate

Phased approach

- Build some systems and Test in 2007
  - Evaluation and agree final design

- Build all systems and integration testing in 2008

- Rehearsal in 2009
  - Evaluation and agree capacity

- Scale up for 2011 Census

Grouping of activities

- Reviewed
  - which activities have strong interfaces
  - which activities we want the final supplier in place for the 2007 Field Test
  - what ad hoc services we need for 2007
  - where we need the final supplier(s) in place for the 2009 Rehearsal onwards
  - where we should use existing government arrangements

- Proposed grouping of activities into routes

Procurement Routes

- Route A
  - Contract through Test, Rehearsal & Census

- Route B
  - Contracts for Test in 2007 only

- Route C
  - Contracts for Rehearsal and Census

Activities grouped into Route A

- Operational Intelligence & document tracking

- Data capture operations & web capture

- Printing (census questionnaires)

- Contact Centre (including web self help)

- Contract through to 2011

- Outputs based requirements

- Negotiated route

- 2 suppliers selected for 2007 test

- 1 supplier then awarded contract for ongoing work

Route A Contract

- Phased approach to selecting the supplier

- OJEU, PQQ - bidders list

- High level requirements – long list

- Specification of requirements – short list

- Select 2 suppliers

- Evaluation after 2007 Test – award contract

After award of contract

- Phased approach to delivery:
  - Agree stages and deliverables including testing plan
  - Understand capacity in each channel and decision points

- Build systems for Rehearsal in 2009
  - Evaluation after Rehearsal
  - Final adjustments to channels
  - Scaling up for Census

Activities for Route B

- Recruitment
- Payroll
- Training
- Printing (other matter)
- Logistics & warehousing
- Field supplies

- Contract to support the 2007 Test only

- Specified requirements

- Framework agreements or purchase order direct with supplier

Activities for Route C

- Recruitment
- Payroll
- Training
- Printing (other matter)
- Logistics & warehousing
- Field supplies
- Postal Services

- Decision on requirements and grouping after 2007 Test

- OJEU
- Framework agreements

Other services required

- Publicity

- Translation Services

- COI

- Framework agreements

Challenges

- Finding suppliers who can and will work with us over a long period

- Phasing to firm up on requirements

- Using latest technology while minimising risk

- Making the design cost effective without losing quality

- Incentivise suppliers

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Activities

Claire Stretch

Henrie Brown

2007 Field Test

- Focus on effectiveness of enumeration strategy
  - delivery and collection methods for different population groups
  - enumeration targeting
  - address register development and quality assurance
  - response management and field communications
  - contact centre and website functionality
- Recruitment, payment and elements of training of field staff outsourced
- All supporting systems included, but some partial
- Aim to culminate in final 2011 Census Design
- 100,000 - 200,000 households?

Recruitment - Employment Dates

	2007	2009	2011
Regional Managers	-	-	04/09-07/11
Area Managers	08/06-07/07	08/08-07/09	08/09-07/11
Pre-delivery staff	09/06-10/06	09/08-10/08	08/10-09/10
Team Managers	11/06-07/07	11/08-07/09	09/10-07/11
Delivery staff	01/07-05/07	01/09-05/09	01/11-05/11
Follow-up staff	04/07-07/07	04/09-07/09	04/11-07/11
Communal Establishment staff	01/07-06/07	01/09-06/09	01/11-06/11
Non-compliance staff	-	-	04/11-12/11

Recruitment - Estimated Numbers

	2007	2009	2011
Regional Managers	0	0	10
Area Managers	0-2	0-2	300
Pre-delivery staff	130	100	5,600
Team Managers	40	30	2,000
Delivery staff	450	200	25,400
Follow-up staff	200	150	11,000
Communal Establishment staff	12	10	1,500
Non-compliance staff	0	0	400

Recruitment - Key Issues

- Recruitment is becoming increasingly difficult, particularly in certain parts of the country, such as the 'inner cities'

- Attracting suitable staff willing to work unsociable hours - evenings and weekends

- Balancing the pay likely to be on offer against the need to recruit suitable quality staff

- Coping with an increasing level of staff turnover
  - in 2001 was in the range 5% - 8%

Payment - Key Issues

- Improving the performance levels achieved in 2001 when some payments were made very late

- Simplifying the payment system whilst introducing a results/performance based element to pay, with possible terminal bonuses

- Improve management and reporting arrangements to ensure ONS and National Audit Office requirements are being met

- Assess the feasibility to procure the payment aspects as part of a contract that includes recruitment

Training

- Training programme complete ahead of employment dates for each role
- Consistent delivery & message
- Encompassing
  - Field technology
  - Routine tasks
  - Dealing with exceptions
- Delivery flexible to deal with staff turnover
- Must allow for significant variation in basic ability
- Delivered locally

Public Interface - Publicity

- Responsive to current events
- National and local
- Targeted media & messages to key groups
- Aims:
  - Encourage participation
  - Provide general information
  - Provide specialist information
- Reinforce legal requirement
- Support channel strategy

Public Interface – Contact Centre

- Contact Centre provides direct interface to public:
  - Supported by Web Self Help Facility
  - Scalable to meet unexpected demand
  - Activities include:
    - General enquiries
    - Requests for new/additional forms
    - Interface with Address Register & RMS/MIS
    - Help with form completion
    - Technical support for Internet completion
    - Requests for field visits
    - Translation & interpretation services
    - Telephone capture – targeted to specific groups
    - Telephone follow-up of incomplete forms

Public Interface – Web Self Help Facility

- Web Self Help Facility (WSHF) provides primary interface to public:
    - Backbone of information provided to Contact Centre
    - Dynamic & responsive to events & changing situation
    - Scalable to meet unexpected demand
    - Linked to publicity messages
    - Support to Field staff
    - Email requests & queries supported
    - Extensive translation support

Address Register

NSAI (National Spatial Addressing Infrastructure):
- Delivered by Ordnance Survey in phases up to 2008
- supplies base Address information
- Around 24 million addresses
- ONS add Census related attributes – 2008 onwards

Updates as result of pre-delivery check
- Sept 2008/Sept-Oct 2010

Interfaces
- Printing - Jan-March 2009/ Dec 2010 – March 2011
  - address/form type/enclosure info/delivery type/delivery point sort code
- Basis of MIS/RMS - in use throughout Census period
- Contact Centre/WSHF for verification of address information
- Support to Coding & Output - April 2011 – Dec 2012

Pre Delivery

- Checks carried out
  - Sept-Oct 2008 for Rehearsal
  - Sept-Oct 2010 for 2011 Census
- Either all addresses, or targeting areas of change
  - Dependent on confidence in Address register & independent and local information on areas of change
- Activities
  - Capture additional addresses
  - Verify existing addresses
  - Capture additional attributes

Printing (1)

Questionnaires
– depends on outcome of Channel Strategy work – max 30+ million(UK)

Several types of forms
– (household/communal/individual)

Currently to be printed English & Welsh – other variations still under discussion

Printing in several tranches starting after Pre Delivery
– Jan-March 2009/ Dec 2010 – March 2011

Personalise each form with address & link to unique formid
– forms basis of Response Management System

Information leaflets for delivery/ envelopes for return

Mail merge appropriate documents

Enclose

Sort for delivery

Need to consider post out & return requirements from Postal provider

Printing (2)

- All other documentation, including
  - Training material
  - Recruitment material
  - Pay documents
  - Translation leaflets
  - Publicity
  - General information leaflets

Translation

- All public documents (including training) must be in both English & Welsh

- Scotland & NI position?

- Translation of supporting information into other languages
  - In 2001 there were 26 languages supported
  - Languages required likely to change, and ideally more languages supported in 2011

Logistics & Warehousing (1)

- Storage & distribution for:
  - Replacement/ spare/ alternative Census questionnaires
  - Field documentation
  - Other documents & literature
  - Field supplies
- Stock control system
- National distribution requirement
  - England & Wales
  - Scotland & NI?

Logistics & Warehousing (2)

- Collection
  - Secure transport of completed questionnaires
  - Documentation & literature: unused & finished with
  - Field supplies (incl. any high value items)
- Disposal
- Interfaced with:
  - Operational intelligence system
  - Public help facilities
    - Back office fulfilment

Delivery

- April 2009 for Rehearsal
- April 2011 for 2011 Census
- Postal delivery
  - 18-22 million
  - Record undeliverable (vacant/demolished)
- Hand Delivery
  - 2-6 million
  - Find new addresses, capture, link to formid & deliver
  - Record delivery status (delivered/ vacant/demolished)

Response

Paper

- April-June 2009 for Rehearsal
- April-June 2011 for 2011 Census
- Postback direct to processing centre
- 5 million returns a day at the processing centre in 2001
- Ideally returns receipted within 24hrs of arrival, must be receipted before start of follow-up
- Receipt recorded on Response Management System

Internet & Telephone

- April-June 2009 for Rehearsal
- April-June 2011 for Census

Non-response Follow-up

- Impossible to accurately predict
  - Between 5% & 20%
  - Higher in some areas
- Field follow-up in April-June 2011
- Activities
  - Addresses to be followed-up provided by RMS
  - Interrogate RMS on doorstep – ideally real-time
  - Record result of follow-up
    - No contact/ replacement delivered/ refusal/ success
    - By date & time
  - Deliver replacement form
  - Collect completed form

Non-Compliance

- 400 – 500 Field Staff
  - Recruitment aimed at (but not exclusive to) ex-police and ex-military personnel
  - Operate in teams of 2
  - Required nationally but with specific geographical areas to cover
- Required to take forward refusals to prosecution:
  - Interviews under PACE
  - Developing the prosecution supported by ONS and legal representatives
  - Giving evidence in court

Operational Intelligence

- Required to support all activities from Recruitment to Output
- MIS requirement
  - Area levels
    - Government Office Region/Local Authority/Census Area Manager/Regional Manager/Team Manager/Output Area etc
  - Counts of respondents by channel
  - Counts of non-respondents
  - Analysis of follow-up actions
  - Record of information for pay purposes
  - Enabling dynamic allocation of field staff
  - Analysis of result of dynamic allocation of field staff
  - etc….

Data Capture operations – Set-up

- Software development – from 2007 test to 2011 Census
  - Paper/web/telephone capture
  - Coding
  - Image management
  - Partial follow-up
  - Workflow
- Lead time for getting suitable accommodation in area where appropriate staff can be recruited
  - for 2001 Census site was acquired in November 2000
- Accommodation – processing site & warehouse
  - Staffing
  - Training
  - Payroll
  - Security
- Hardware acquisition
- Software deployment
- Operational Readiness Testing

Data Capture - Paper

- From arrival of first completed form to Census day + 20 weeks
- After receipting – forms boxed & stored
- Ready for processing – de-envelope & guillotine spines
- Scan & recognise marks & characters
- Partial completion & blank form checks
  - approx 1.3 million
  - Route blank questionnaires for field follow-up via RMS
  - Find telephone number for partial completion
  - Route partial information to contact centre via RMS
- Key correction of characters failing automatic confidence levels
- Route data to coding

Data Capture – Internet & Telephone

- Internet
  - Unclear what level of internet take-up is likely
  - Channel Strategy to be developed in partnership with chosen supplier to understand the trends in internet usage over next 5 years & define target take-up levels
- Telephone Capture
  - Operation within Contact Centre
  - Limit use to specific groups – possibly extend during follow-up
- Available from start of delivery to end of follow-up
  - Approx 3 weeks before to 8 weeks after Census day
- Secure authentication using unique form identifier & address via RMS & Address Register
- Create Images of data captured for archive purposes
- Route data to coding

Data Capture - Coding

- Code text responses from all channels
    - Simple (simple classifications)
    - Complex (occupation & industry information)
    - Address (may be carried out within ONS)
- Majority coded automatically
- Remainder coded interactively
- Coding indexes supplied by ONS
- Corporate coding tool available, but not mandated to suppliers

Data Capture – Coding Volumetrics

Question	Volume Coded	% Coded Automatically	% Coded Manually
Country of Birth	3,780,151	81.6	18.4
Religion	1,045,874	74.4	25.6
Ethnic Group	3,866,964	75.7	24.3
Address 1 year ago	4,720,878	83.6	16.4
Workplace address	22,056,446	71.8	28.2
Industry	27,970,005	66.8	33.2
Occupation	29,611,276	72.2	27.8

Data Capture – Delivery & Closedown

- Merge data from all channels
- Deliver data & images to ONS
  - current requirement is for daily delivery
- Prepare images for archive
- Recycle paper questionnaires
- Degausse equipment
- Decommission site

Questions

- Any further questions

- Copies of today's presentation and additional information will be available on the National Statistics web site at:

- http://www.statistics.gov.uk/about/Census/census2011/research.asp

- Any questions after today should be directed to Jane Dumayne at the ONS Procurement Unit

Informal discussions & Coffee

- Coffee

- Thank you for attending