Census Interaction Data and Access Arrangements

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Presentation

- Introduction
- 2011 Census questions and types of census flow data
- Three levels of user access
- Flow tables available at different access levels
- WICID: Flow data delivery services via the UK Data Service
- Summary of ODS through visualisation
- Summary/Conclusions

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Introduction

- Census interaction data are counts that involve counts of flows between two geographies: origins and destinations

- They are one of the last census data products because counts have to be collated from the 3 national statistical agencies

Northern Ireland Statistics and Research Agency (NISRA)

National Records of Scotland (NRS)

Office for National Statistics (ONS)

2011 Census questions and types of census flow data

❏ 2011 Census Origin-Destination Statistics (ODS) available in four sets for the UK:

- Migration tables – based to question 21: What was your usual address one year ago?
- Student tables – a subset of migration tables for people who indicated that their address one year ago was a student / school address
- Workplace tables – based on question 40: In your main job, what is the address of your workplace?
- Second residence tables – based on questions 5 and 6: Do you stay at another address for more than 30 days a year? What is that address?

- Some tables only available for England and Wales
- First release of ODS tables on 25 July 2014 but no data for flows within or to Scotland in migration tables

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Progression of flow data sets

1981

1991

2001

2011

Special Migration Statistics → SMS → SMS → SMS / Special Student Statistics
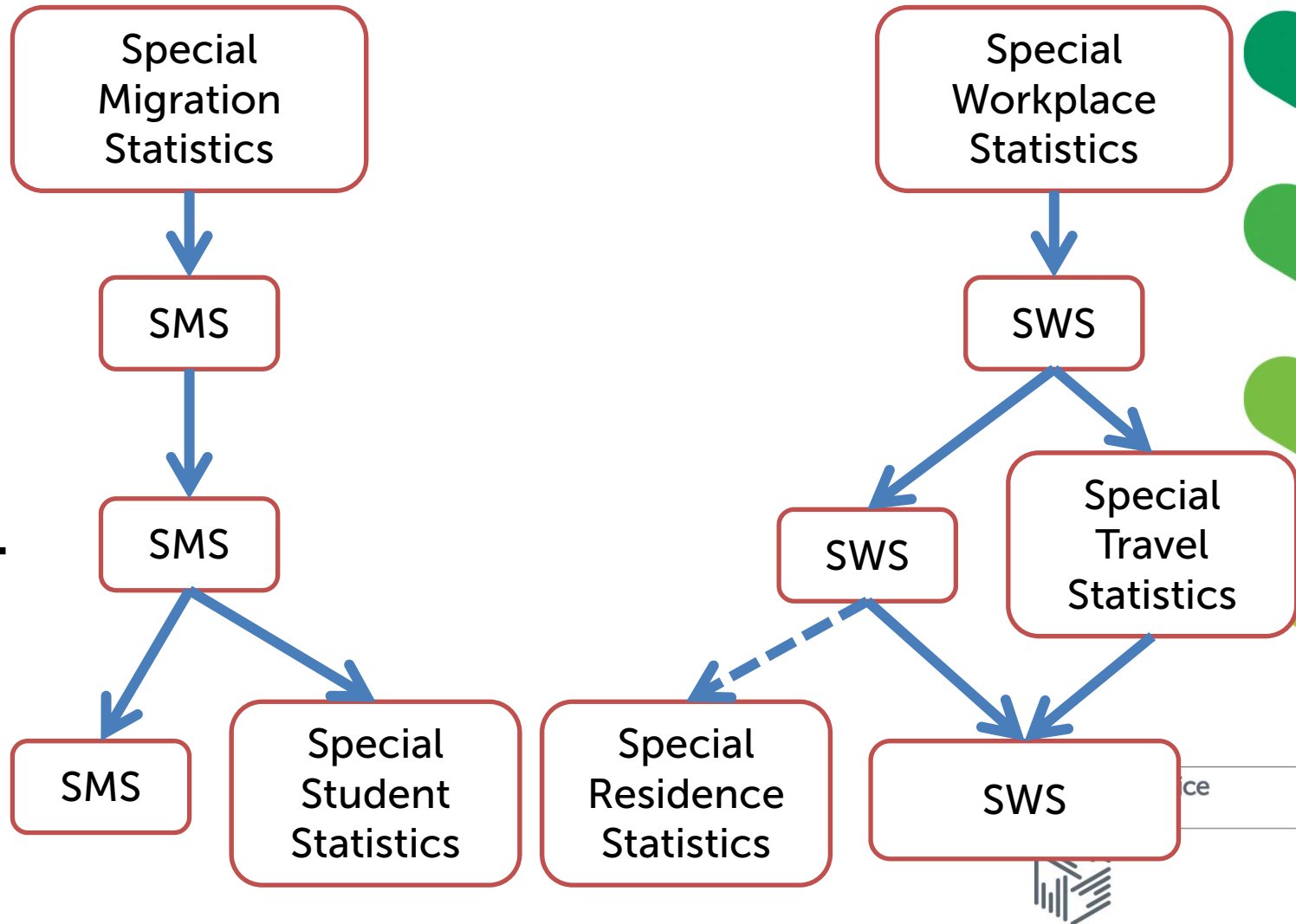
Special Workplace Statistics → SWS → SWS / Special Travel Statistics → Special Residence Statistics / SWS

Three levels of user access

- Different tables available at one of three levels:
  - **Public:** available via ONS, nomisweb and UK Data Service-CS to any users via Open Government Licence (OGL) without the need to register or login to any system
  - **Safeguarded:** available via UKDS to members of academia, local and central government, NHS, and UK parliaments and assemblies via End User Licence (EUL) so need to register and login
  - **Secure:** available to approved researchers via Approved Researcher Licence (ARL) via the ONS Virtual Microdata Laboratory

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Splitting up the data

"OD data"

Security level
- Public / Open
- Safeguarded
- Secure

Data sets
- SMS
- SWS
- SSS
- SRS

Spatial level
- LAD
- MSOA
- Ward
- OA
- WPZ

Attribute detail
- "Flow" (headcount)
- Univariate
- Multivariate
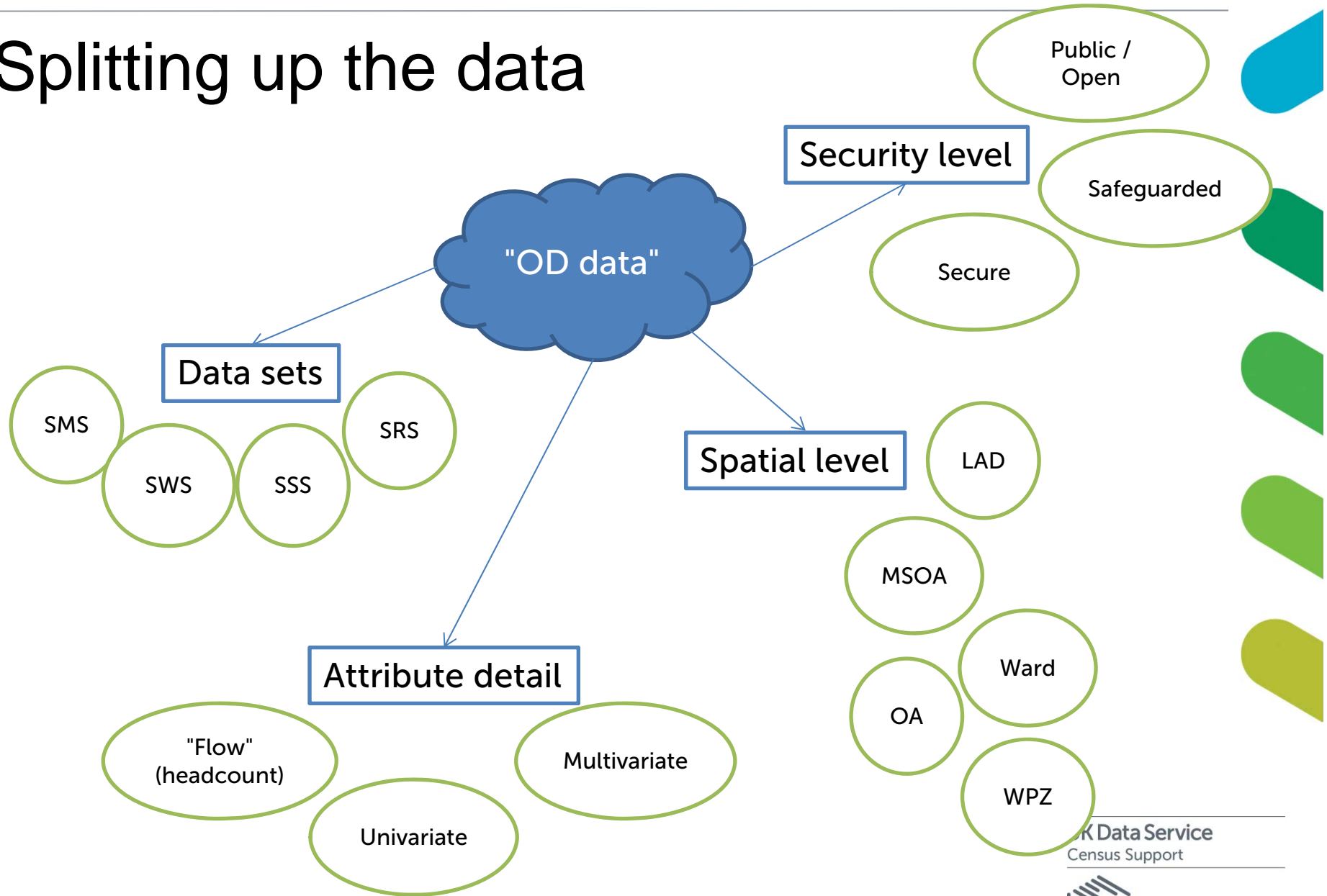
Flow data sets geographies pyramid

Local
Authorities (LA)

404

Middle-Layer Super
Output Areas (MSOA)

Licence
Breaking
point

9,326

Wards

9,505

Lower-Layer Super Output Areas (LSOA)

42,143

Work-Place Zones (WPZ)

100,819

Output Areas (OA)

232,296

Public

Safeguarded

Minimum

Level of detail

Maximum
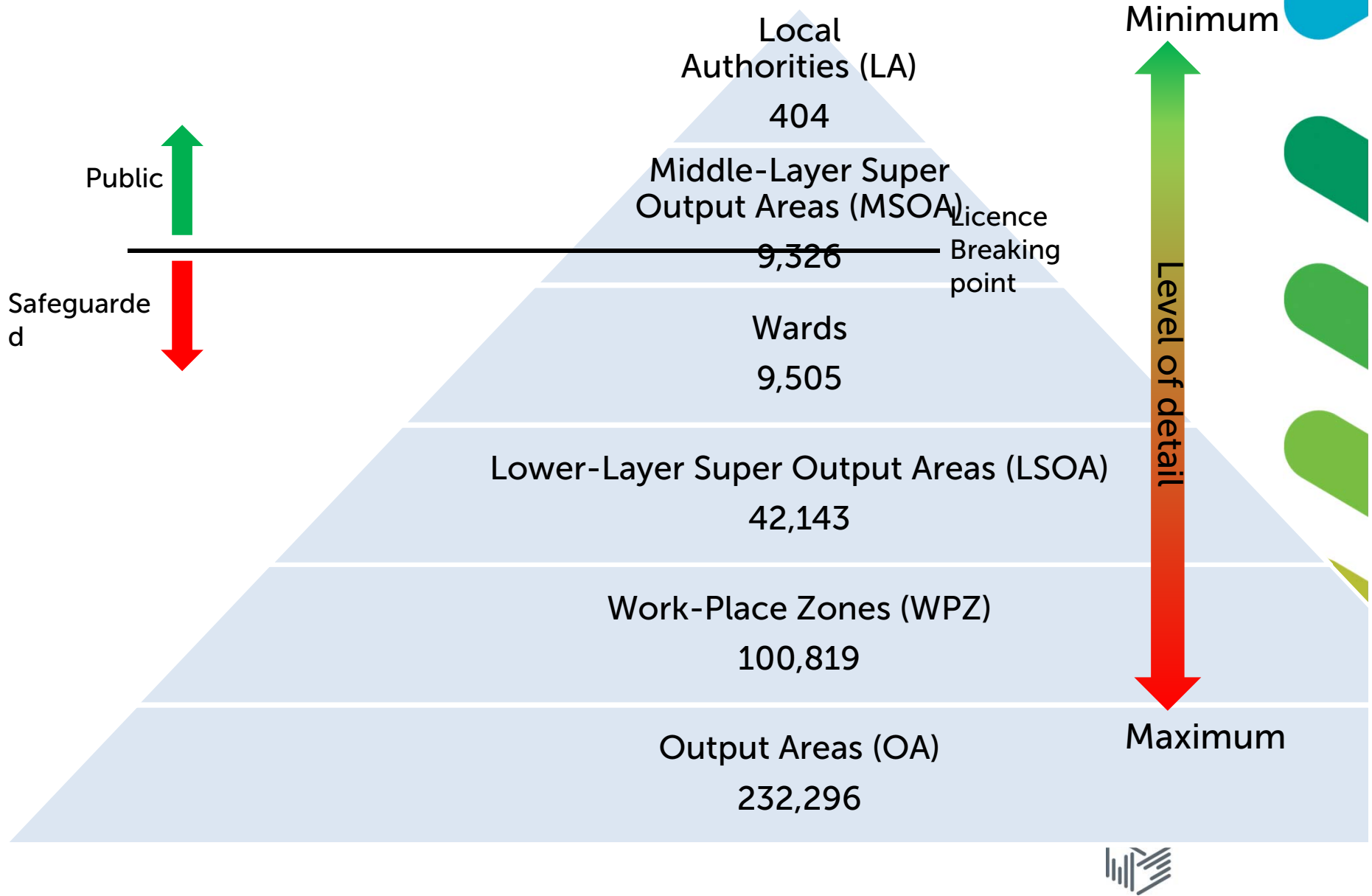
Flow (headcount) data sets:
Security classification

Geography	SMS	SRS	SSS	SWS
LA to LA	Public	Public	Public	Public
Ward to Ward MSOA to MSOA	Safeguarded	Safeguarded	Safeguarded	Public
OA to OA OA to WPZ	Safeguarded	Safeguarded	Safeguarded	Safeguarded

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Univariate data sets: Security classification

Geography	SMS	SRS	SSS	SWS
LA-LA	Sex, Age: Public Others: safeguarded	Sex, Age: Public Others: safeguarded	Sex, Age: Public Others: safeguarded	Sex, Age, Method of travel: Public Others: safeguarded
Ward - Ward MSOA-MSOA	Sex, Age: Safeguarded Others: Secure	Sex, Age: Safeguarded Others: Secure	Sex, Age: Safeguarded Others: Secure	Sex, Age, Method of travel: Public Others: Safeguarded
OA to OA OA to WPZ	All: Secure	All: Secure	All: Secure	All: Secure

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Multivariate data sets: Security classification

Geography	SMS	SRS	SSS	SWS
LA-LA	Sex by Age: Public Some vars: safeguarded Other vars: Secure	Sex by Age: Public Some vars: safeguarded Other vars: Secure	Sex by Age: Public Some vars: safeguarded Other vars: Secure	Sex by Age: Public Some vars: safeguarded Other vars: Secure
Ward - Ward MSOA-MSOA	Sex by Age: Safeguarded Others: Secure	Sex by Age: Safeguarded Others: Secure	Sex by Age: Safeguarded Others: Secure	Sex by Age: Public Some vars: safeguarded Other vars: Secure
OA to OA OA to WPZ	All: Secure	All: Secure	All: Secure	All: Secure

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UK Tables: Origin-Destination Migration Flows
9 tables (but no flows within or to Scotland)

Level	Variable	Variable detail	Geography level	Count
Public	Internal migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	Merged LA/LA	18
	International migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex (59 countries of origin)	Merged LA/LA	18
	International migrants	(184 countries of origin)	Merged LA/LA	1
Safeguarded	Internal migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	Merged Ward/Ward	18
	International migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	Merged Ward/Ward	18
	Internal migrants		OA/SA	1
	International migrants		OA/SA	1
Secure	Internal migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	OA/SA	18
	International migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	OA/SA	18

UK Tables: Origin-Destination Commuting from Usual Residence to Workplace Flows   15 tables

Level	Variable	Variable detail	Geography level	Count
Public	WU01UK	Flow by sex	Merged LA/LA	3
	WU01UK	Flow by sex	MSOA/SOA/Intermediate Zone	3
	WU02UK	Flow by age (16-24, 25-34, 35-49, 50-64, 65-74, 75+)	Merged LA/LA	7
	WU02UK	Flow by age (16-24, 25-34, 35-49, 50-64, 65-74, 75+)	MSOA/SOA/Intermediate Zone	7
	WU03UK	Flow by method of travel to work	Merged LA/LA	12
	WU03UK	Flow by method of travel to work	MSOA/SOA/Intermediate Zone	12
Safequarded	WF01AUK	Flow (excluding those with quasi-workplaces)	OA/SOA/WPZ	1
	WF01BUK	Flow	OA/SOA	1
	WF02UK	Flow (with 'outside UK' collapsed)	OA/SOA/WPZ	1
Secure	WM03AUK	Flow by method of travel to work by sex by student employment status (excluding those with quasi-workplaces)	Merged LA/LA level	144
	WM03AUK	Flow by method of travel to work by sex by student employment status (excluding those with quasi-workplaces)	MSOA/SOA/Intermediate Zone	144
	WM03AUK	Flow by method of travel to work by sex by student employment status (excluding those with quasi-workplaces)	OA/SOA	144
	WM03BUK	Flow by method of travel to work by sex by student employment status	Merged LA/LA	144
	WM03BUK	Flow by method of travel to work by sex by student employment status	MSOA/SOA/Intermediate Zone	144
	WM03BUK	Flow by method of travel to work by sex by student employment status	OA/SOA	144

UK Tables: Students   1 table

Level	Variable	Variable detail	Geography level	Count
Public	Usual residents aged 16 and over who moved from a student term-time/boarding school address in the year before the census	by age (16-17, 18-19, 20-21, 22-24, 25+) by sex by student status (Full-time, Not full-time)	Merged LA/LA	54

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England and Wales Tables: Second residence
6 tables

Level	Variable	Variable detail	Geography level	Count
Public	RF02AEW	Location of second address and place of work (with 'second address outside UK' collapsed) of those aged 16+ in employment	Merged LA	1
	RF03EW	Location of usual residence and place of work of those aged 16+ in employment with work related second address	Merged LA	1
	RF04AEW	Location of where people live when working and place of work (with 'second address outside UK' collapsed) of those aged 16+ in employment	Merged LA	1
	RF05EW	Location of usual residence and second address (Dependent children where second address is another parent or guardian)	Merged LA	1
	RU02AEW	Location of usual residence and second address by sex (with 'second residence outside UK' collapsed)	Merged LA	3
	RU03AEW	Location of usual residence and second address by age (All, 0-15, 16-49, 50-64, 65-74, 75+) (with 'second residence outside UK' collapsed)	Merged LA	6

Geographies

Geography	Migration	Workplace	Student	Second residence
Merged LA/LA	**404** areas: 346 Merged LAs in England & Wales, 32 LAs in Scotland and 26 LAs in Northern Ireland	**404** areas: 346 Merged LAs in England & Wales, 32 LAs in Scotland and 26 LAs in Northern Ireland	**404** areas: 346 Merged LAs in England & Wales, 32 LAs in Scotland and 26 LAs in Northern Ireland	**404** areas: 346 Merged LAs in England & Wales, 32 LAs in Scotland and 26 LAs in Northern Ireland
Merged Ward/Ward	**9,481** areas: 8,546 Merged Wards in England and Wales, 353 Wards in Scotland and 582 Wards in Northern Ireland		**9,481** areas: 8,546 Merged Wards in England and Wales, 353 Wards in Scotland and 582 Wards in Northern Ireland	**9,481** areas: 8,546 Merged Wards in England and Wales, 353 Wards in Scotland and 582 Wards in Northern Ireland *
MSOA/SOA/Intermediate Area		**9,326** areas: 7,201 MSOAs in England and Wales, 1,235 Intermediate Zones in Scotland and 890 SOAs in Northern Ireland		
OA/SA	**232,296** areas: 181,408 Output Areas in England and Wales, 46,351 Output Areas in Scotland and 4,537 Small Areas in Northern Ireland	**232,296** areas: 181,408 Output Areas in England and Wales, 46,351 Output Areas in Scotland and 4,537 Small Areas in Northern Ireland	**232,296** areas: 181,408 Output Areas in England and Wales, 46,351 Output Areas in Scotland and 4,537 Small Areas in Northern Ireland	**227,759** areas: 181,408 Output Areas in England and Wales, 46,351 Output Areas in Scotland
WZ		**53,578** Workplace Zones in England and Wales		

* Second residence tables are for people enumerated in E&W but information down to ward level will be available if their second residence is in Northern Ireland or Scotland

Access to the 2011 Flow Data

Type	Channel
Public	Disseminated via NOMIS (and WICID) under Open Government Licence in late July Also from ONS on optical media
Safeguarded	Disseminated via an End User Licence
Secure	Produced for July but dissemination is dependent on a VML solution. ONS has constructed a VML at Titchfield as an interim measure from November 2014.

Timetable for further releases on the Flow Data:

November 2014: Remaining Secure files
December 2014: Remaining Safeguarded files

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Release priorities and batches

- Priority 1: UK SWS

  Batch 1 (37 Tables) and Batch 2 (54 Tables):

- Priority 2: UK SMS

  Batch 1 (52 Tables) and Batch 2 (54 Tables)

- Priority 3: UK SSS

  Batch 1 (26 Tables)

- Priority 4: EW SWS

  Batch 1 (44 Tables) and Batch 2 (52 Tables)

- Priority 5: EW SMS

  Batch 1 (32 Tables) and Batch 2 (32 Tables)

- Priority 6: EW SSS

  Batch 1 (8 Tables)

- Priority 7: EW SRS

  Batch 1 (33 Tables), Batch 2 (44 Tables) and Batch 3 (32 Tables)

Aggregate statistics for UK Migration

- Counts of Inflows, outflows and overall net migration by area disaggregated by age, ethnic group, economic activity, etc.

- Geography down to MSOA and Merged ward level and to OA level with less detail

- Available through *InFuse*

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UK Data Service website: http://ukdataservice.ac.uk/

UKDS Census Support website:
http://census.ukdataservice.ac.uk/

Accessing Flow Data through WICID

WICID: Data selection page

User has begun to build a query by selecting counts of persons by each of the different ethnic groups …..

… and will go on to select origins and destinations

WICID | **Data** | **Geography** | Finalise | Run | Output

Data

Status: 8 data items currently selected
[Unselect all]

Select individual cells or totals and then click "Add selected cells". Checking the checkbox next to row or column labels will lead to all cells in that row or column being selected

Ethnic group by sex (GB destinations) (*2001 SMS Level 1 Table 3*)

Add Selected Cells | Select All | Clear All

	Total	Male	Female
☐ Total	☑ 1	☐ 2	☐ 3
☐ White	☑ 4	☐ 5	☐ 6
☐ Indian	☑ 7	☐ 8	☐ 9
☐ Pakistani and other South Asian	☑ 10	☐ 11	☐ 12
☐ Chinese	☑ 13	☐ 14	☐ 15
☐ Caribbean, African, Black British and other Black	☑ 16	☐ 17	☐ 18
☐ Mixed	☑ 19	☐ 20	☐ 21
☐ Other	☑ 22	☐ 23	☐ 24

Alternative options

One or more data items correctly selected

You have not yet selected any origins
You have not yet selected any destinations
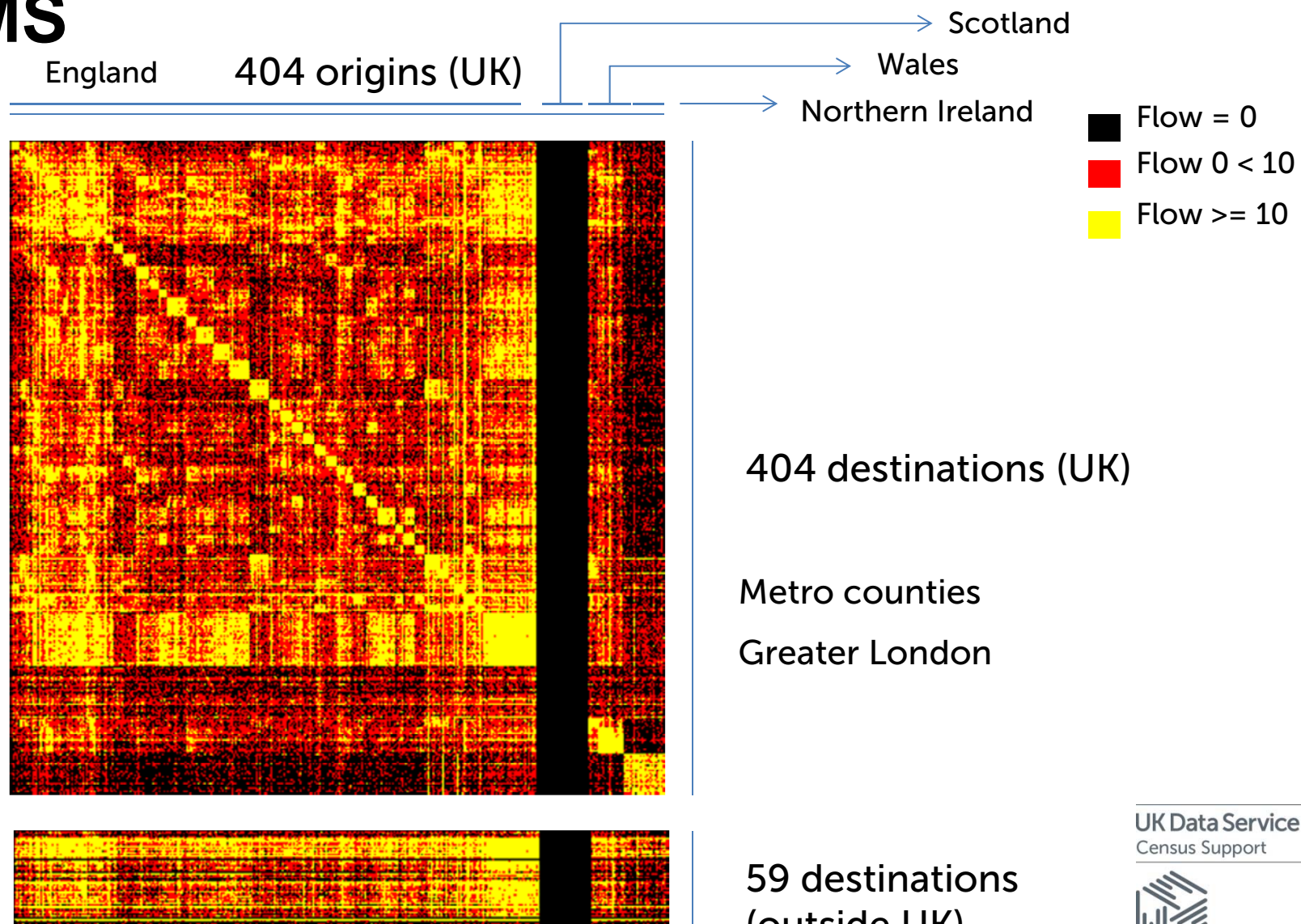You have successfully selected some data

Summary of ODS through visualisation: SMS

England   404 origins (UK)

Scotland

Wales

Northern Ireland

Flow = 0
Flow 0 < 10
Flow >= 10

404 destinations (UK)

Metro counties

Greater London

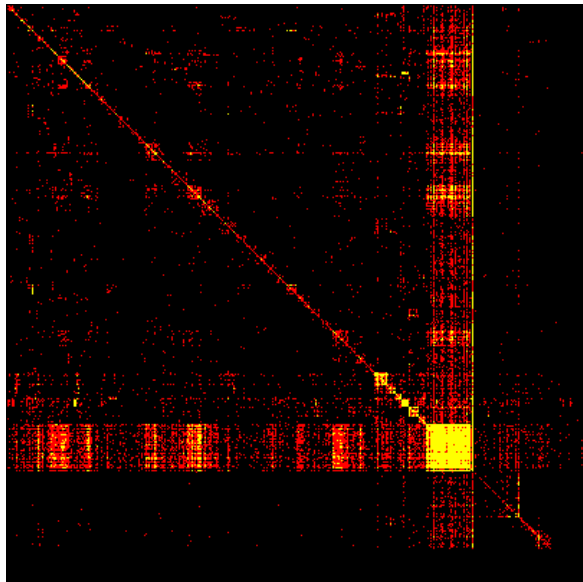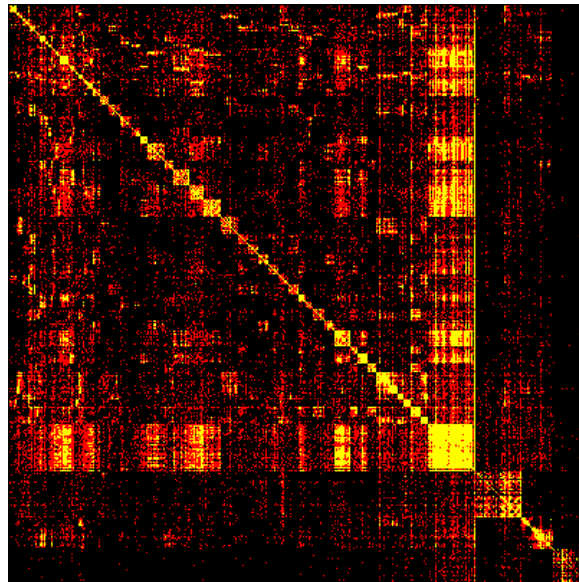59 destinations
(outside UK)

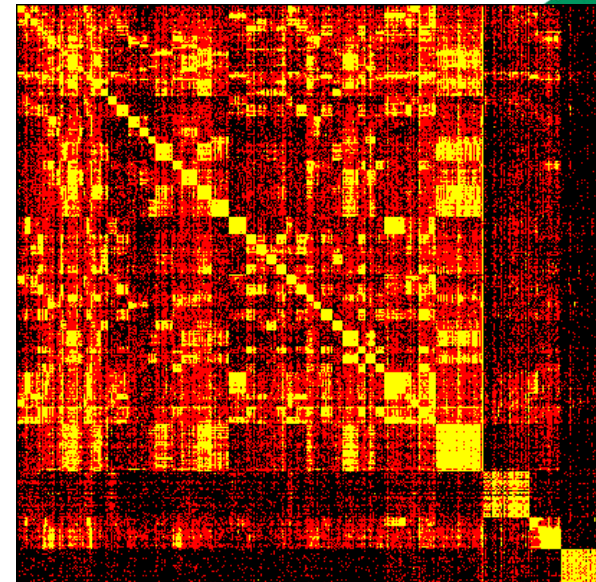UK Data Service
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Summarising 2011 SWS: transport modes

Tube / light train etc

Train

Car driver

Flow = 0

Flow 0 < 10

Flow >= 10

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Summarising 2011 SWS: transport modes

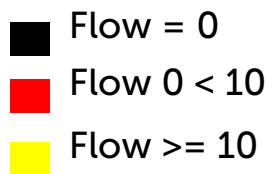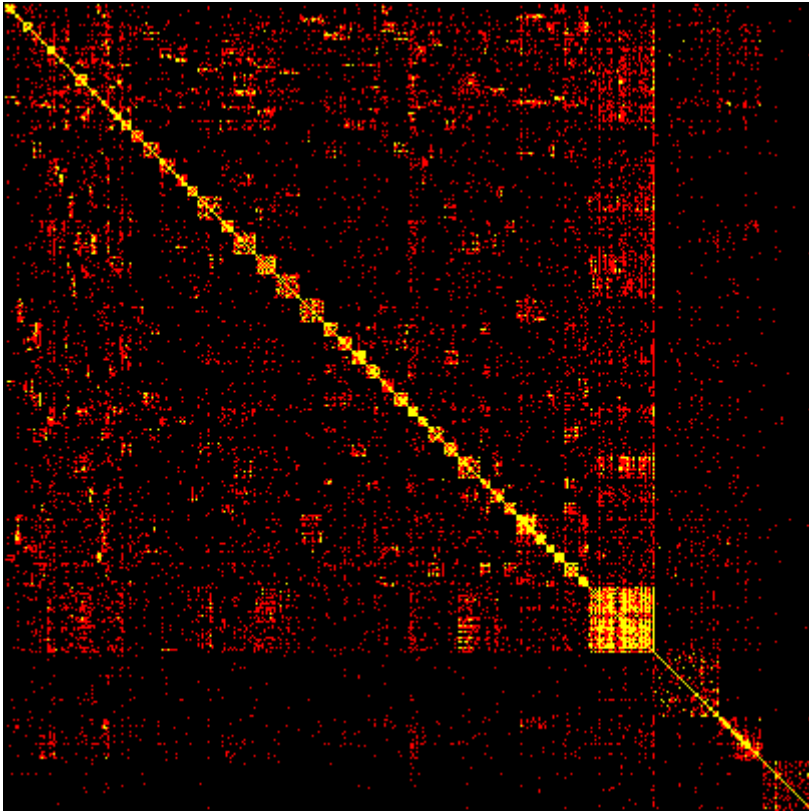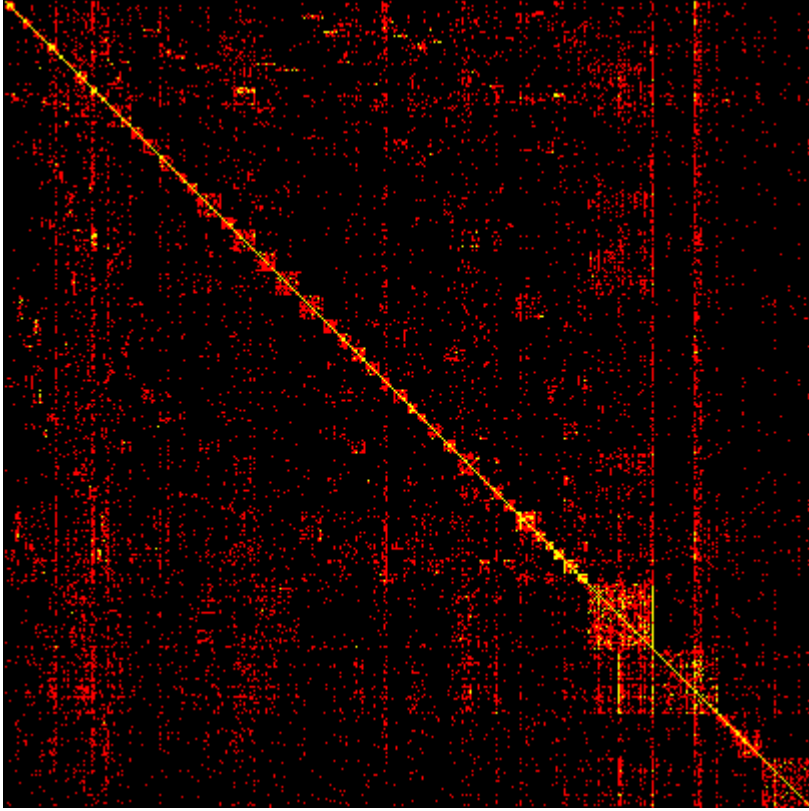Bicycle

Other

Flow = 0
Flow 0 < 10
Flow >= 10

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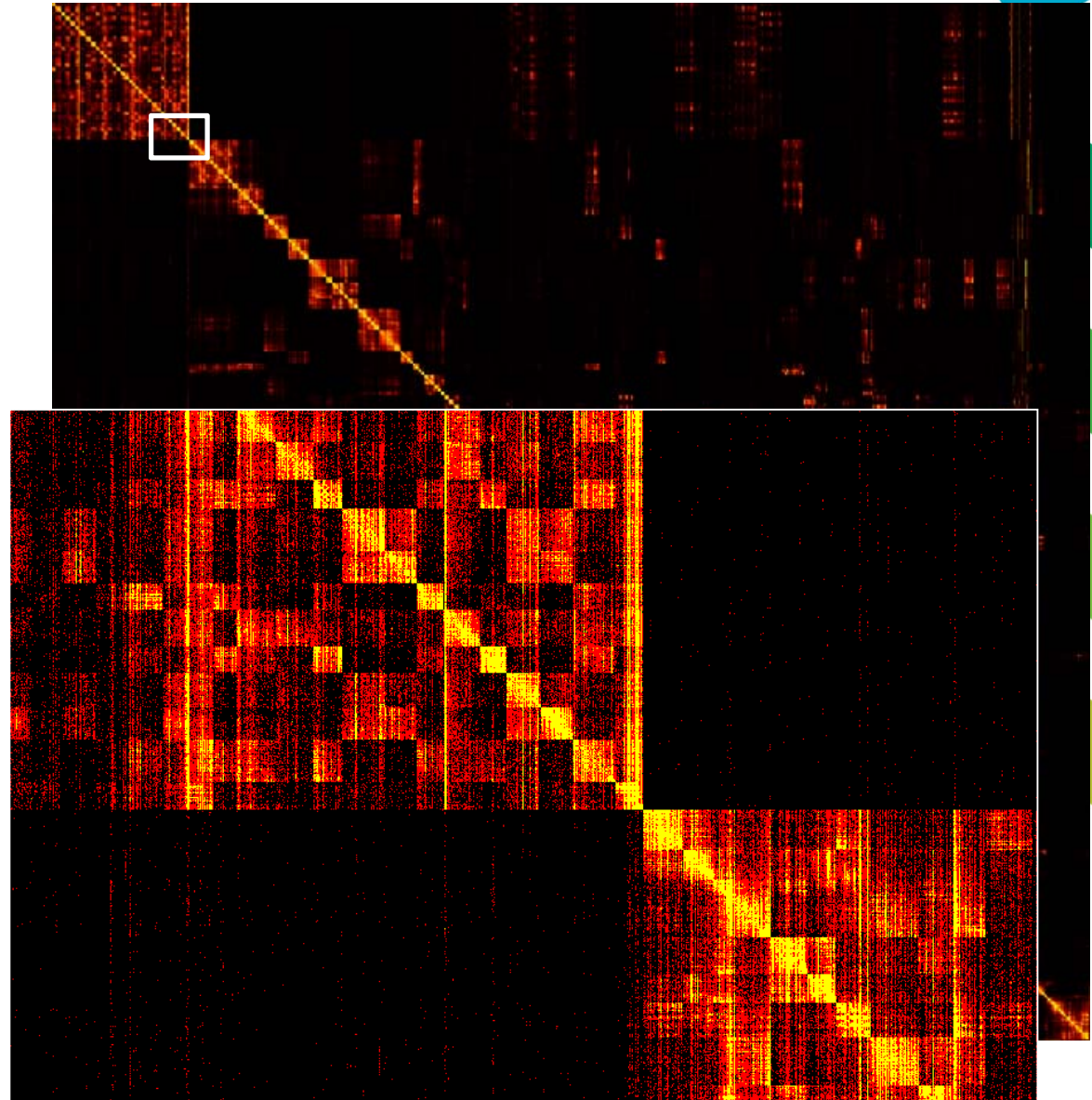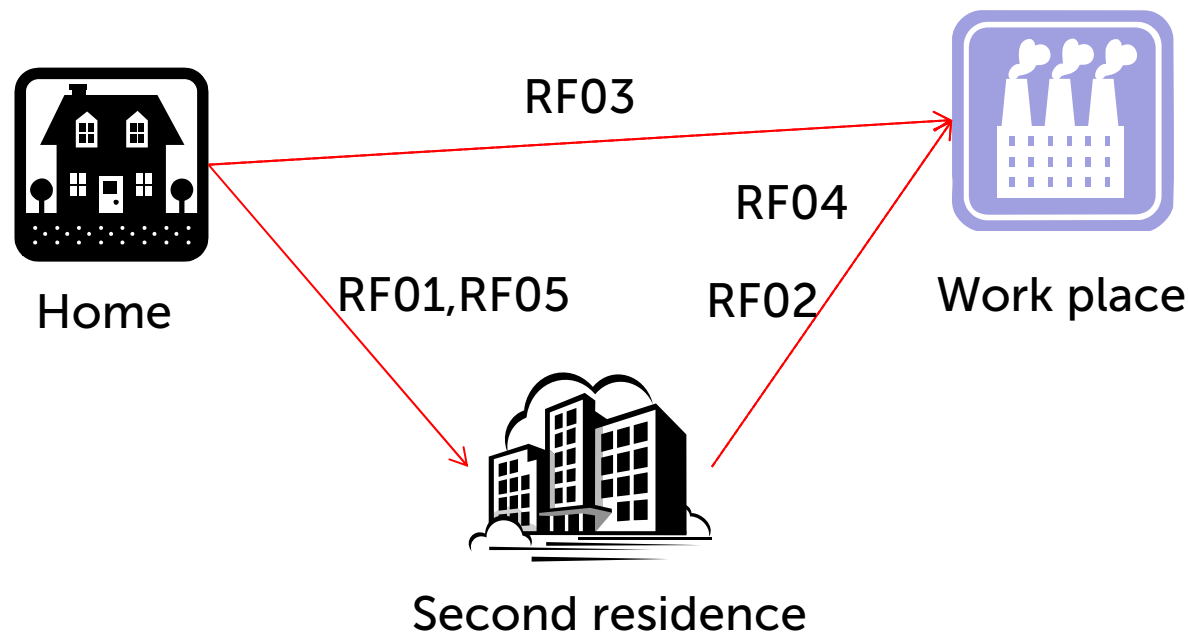
2011 SWS: MSOA level data (England and Wales)

- Order of MSOAs does not reflect order of LADs
- MSOA data highlights sparsity of matrices

Second residence data

- Multiple locations and relationships identified
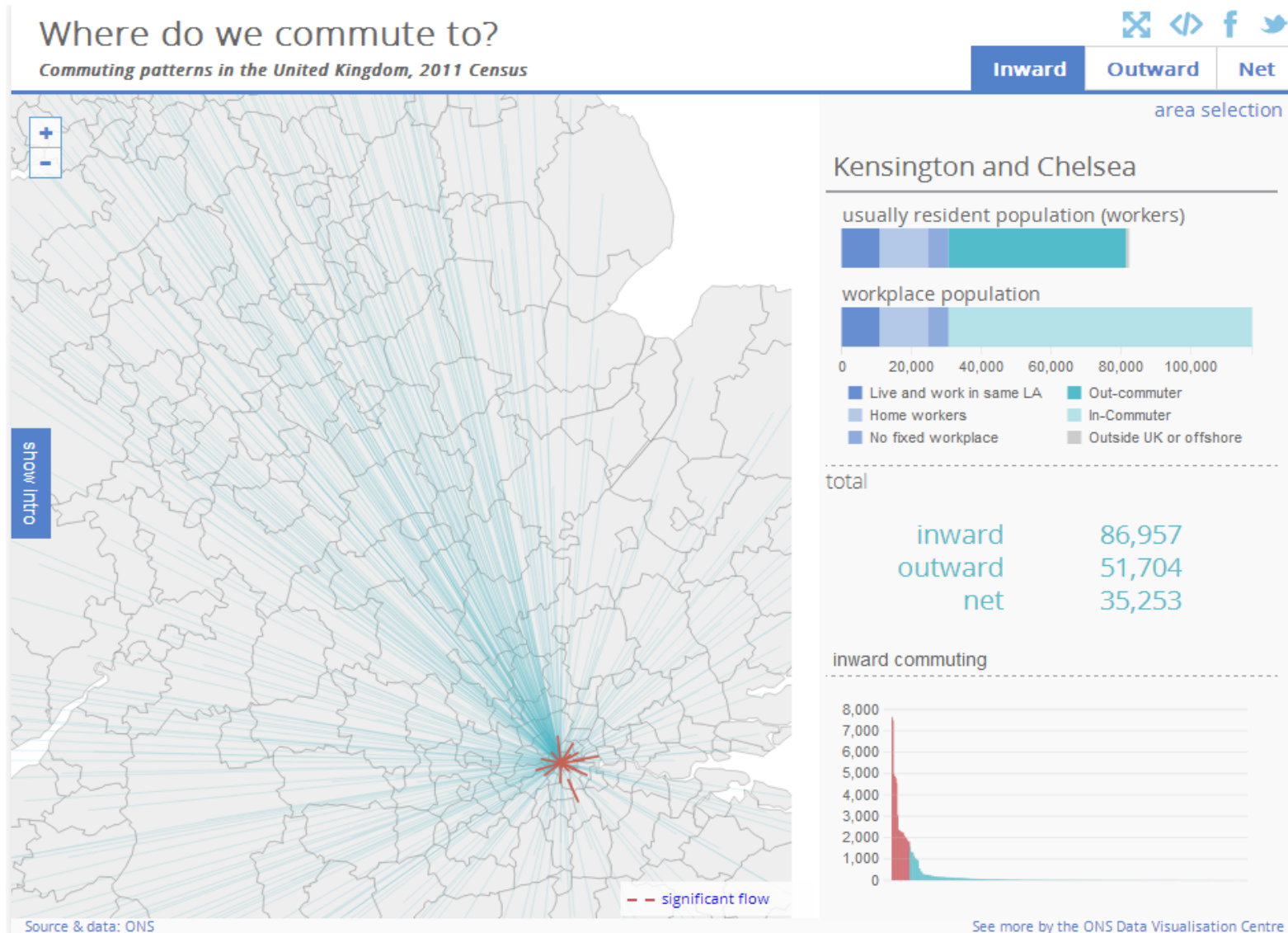

RF01: All persons
RF05: Dependent children

RF02,03,04: Workers

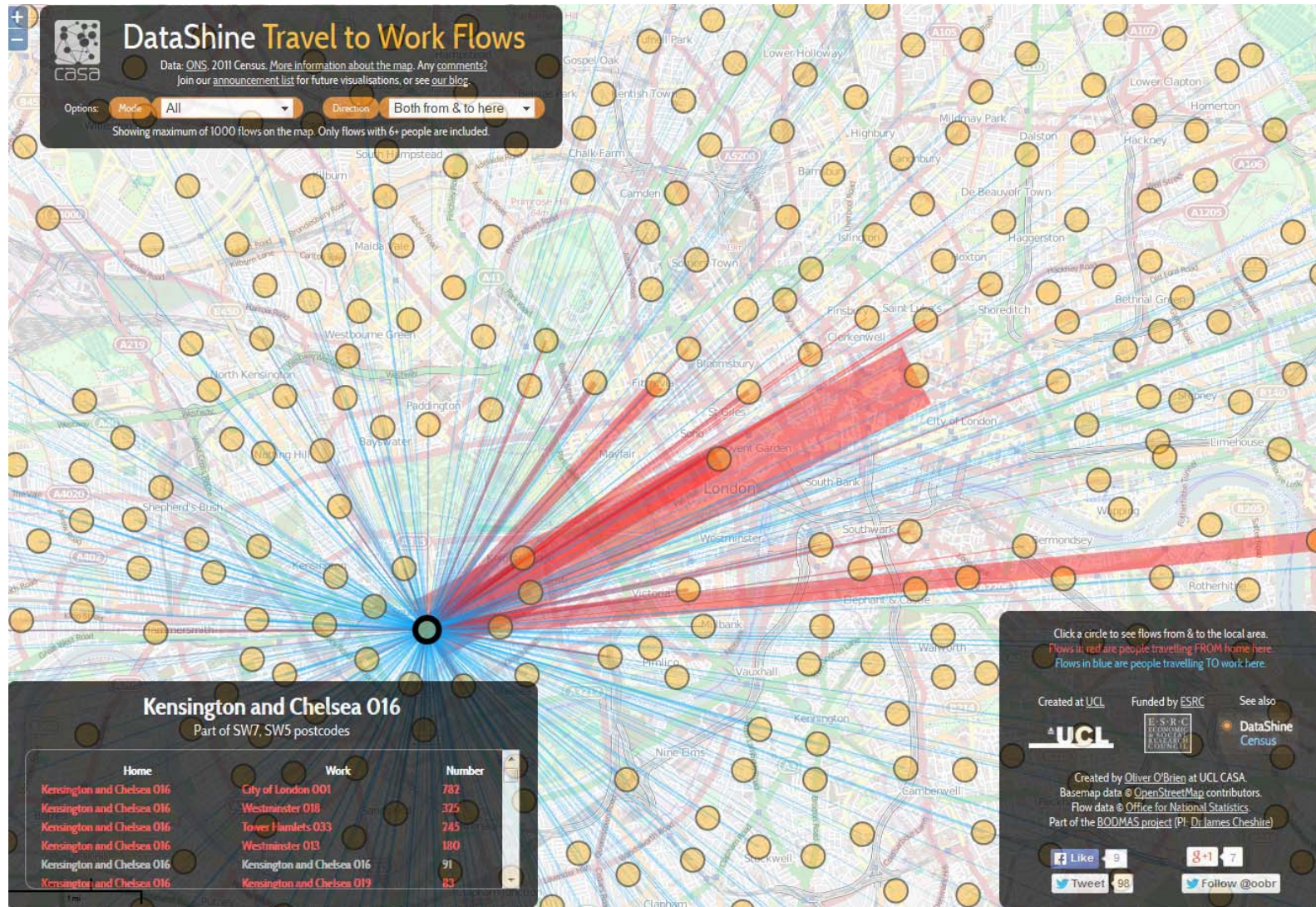# Visualisation tools for commuting patterns
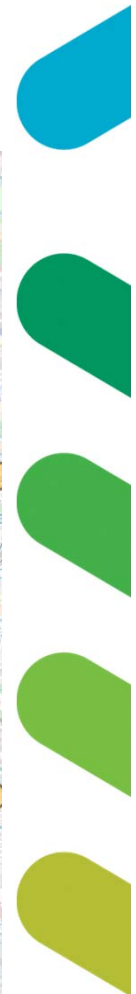## ONS' Where do we commute to?

http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc193/index.html

DataShine Travel to Work Flows

http://commute.datashine.org.uk

Summary/Conclusions

- ODS continued to evolve from previous censuses – more extensive than ever before and not adjusted using SCAM as in 2001

- BUT.... new security classification (public, safeguarded, secure) will mean that detailed tables (for smallest areas in most cases) will only be available from a secure setting

- Remaining tables of safeguarded and secure data will be released by the end of 2014

- All the public and safeguarded data will be available through WICID via the UK Data Service- census Support web site

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Link to ODS pages in ONS prospectus

- http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-prospectus/release-plans-for-2011-census-statistics/subsequent-releases-of-specialist-products/flow-data/index.html

Link to WICID on UK Data Service Census Support

- https://wicid.ukdataservice.ac.uk/cider/wicid/query.php

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- the University of Edinburgh and
- University College London

Questions

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