

## Population And Migration Statistics (PAMS) Committee (Scotland)

### Development of a Scottish Address Register (SAR) for National Records of Scotland (NRS)

#### Introduction

1. Since the 2011 Census Geography has been working towards creating an all-inclusive address list which utilises information held on a number of external data sources. These are; the Royal Mail Postcode Address File (PAF) and the One Scotland Gazetteer (OSG) via Ordnance Survey (OS) AddressBase (AB) product and Scottish Assessors information, refer to [Annex D](#) - Glossary for explanations of each product.
2. The SAR will be used to support production of NRS geography data and feed into projects such as 2021 Census, e-Registration as well as Data linkage activities. A prototype SAR already supports Geography branch work, several Scottish Government (SG) directives as well as 3 key SG statistical surveys:
  - The Scottish Household Survey,
  - The Scottish Crime and Justice Survey, and
  - The Scottish Health Survey.

#### What information will SAR hold?

3. The proposed fields and sources which will be used to compile the SAR are set out in Annex A. A diagram showing the relationship between all the input and output tables is at Annex B and a detailed specification for the SAR is set out in Annex C.

#### Currency

4. A new SAR will be created every quarter and historical archived. The aim in the longer term will be to move to a six weekly update cycle in line with availability of SAR main input file, OS AddressBase product.

#### Quality of SAR

5. The SAR is being created from well-established address sources SAR overall quality and fitness for purpose will largely be determined by the quality and completeness of the original source data.
6. Data quality is highly important to us and we will be developing a number of measures to monitor and assess the quality of SAR on a continued basis. The project set up to replace existing Geography systems and deliver SAR includes setting up a Quality Assurance programme.

7. So far we:

- have maintained the current NRS PAF based Address Register to act as a back-up address database and to facilitate quality assurance work.
- have produced (Management Information Systems) MIS from PAF and AB in order to monitor stability and change and to highlight discrepancies and/or other oddities.
- are monitoring change in Unique Property Reference Number (UPRN) and the Unique Delivery Point Reference Number (UDPRN).
- will provide MIS and metadata with SAR for users.
- have confirmed AB address matches by conducting our own independent matching of PAF address to the OSG address. About 92 per cent of our matches agree with AddressBase and our independent matching will continue for the foreseeable future.
- are investigating dubious address matches and trying to match remaining unmatched address records in AB.
- are planning a pilot address check later in May to support the above work and confirm our treatment of certain types of address record.
- are monitoring the accuracy of the grid reference in AB (from OSG) as previously Geography relied on grid reference information from OS AddressPoint product.
- are planning several projects to investigate how and if we can use AB indicators (originally from OSG) in order to enhance the SAR or validate information we have obtained from another source. For example we are keen to understand the parent/child data from AB and whether that can help to identify multiple households or provide other useful information to help census and whether there is any relationship or link between that information and the multi occupancy, multi residence data from PAF.
- are planning work to improve how we classify address including identification of non-residential addresses and communal establishments by looking at data from AB and other sources such as Assessors and Inter Departmental Business Register (IDBR). Depending on findings it may mean that some fields are left blank and/or health warnings provided with the SAR.
- will eventually add a schools table to the SAR.
- will keep users informed via our website and we will actively encourage feedback from users and potential users.

### **Communal Establishment Register (CER)**

8. Geography also maintain a CER. SAR holds a CE indicator and using the UPRN a link between the SAR and the CER database which provides more information about communal establishments than held on SAR can be made.

### **Availability**

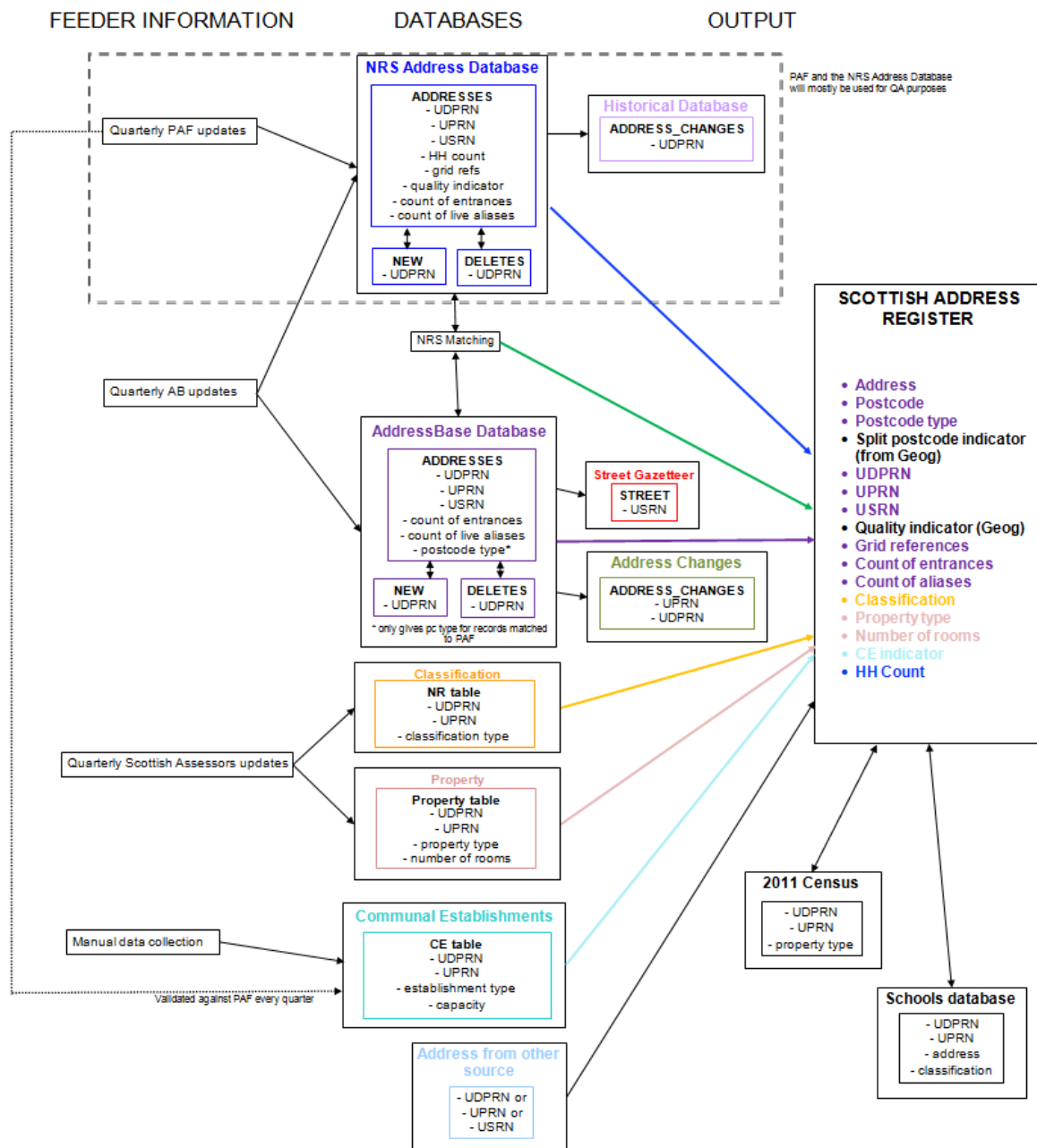
9. The SAR is scheduled for delivery later this year. SAR will be available to all NRS business areas requiring address as well as to the wider SG and other OSMA members who require access to 'ready to use' address data. SAR will be available in a number of formats; Plain text (txt)/ Comma delimited (csv), Access and SAS.
10. Please contact [Geography Customers Services](#) for more information or if you'd like to be kept informed of progress. We would also be pleased to hear any comments or suggestions you may have.

NRS: Geography  
28 April 2015

**Annex A - Proposed fields and sources used to compile the SAR**

<b>Field Name</b>	<b>Type</b>	<b>Size</b>	<b>Source</b>	<b>Description</b>
Postcode	Text	9	AB	Postcode
PostcodeType	Text	1	AB	Indicates if the postcode belongs to a single, non-postal, child or 'parent' address
SplitPostcodeIndicator	Text	1	Geog	Is the postcode split? Y or N
Organisation	Text	120	AB	Name of occupying organisation (if applicable)
Property	Text	100	AB	Sub-building name (e.g Flat 1)
BuildingName	Text	120	AB	Building name
BuildingNumber	Text	10	AB	Building number
Street	Text	120	AB	Street name
Locality	Text	70	AB	Locality name
Town	Text	50	AB	Town name
UDPRN	Text	8	AB	Unique RM reference
UPRN	Text	12	AB	Unique OSG building reference
USRN	Text	6	AB	Unique OSG street reference
QualityIndicator	Number	1	Geog	Shows quality of the match
HouseholdCount	Number	3	PAF	Indicates how many households occur at an address
CountOfEntrances	Number	3	AB	The number of possible entrances to a property
CountOfAliases	Number	3	AB	The number of address variations for a property where greater than 1
PropertyType	Text	50	SAA	Building type from Assessors
NumberOfRooms	Number	3	SAA	The number of habitable rooms within a property
Classification	Text	50	SAA	Classification of the property e.g. residential, religious, office
CEIndicator	Text	1	CER	Is the address a CE? Y or N
GridRefEasting	Number	10	AB	Grid reference easting
GridRefNorthing	Number	10	AB	Grid reference northing

Annex B - Relationship between all the input and output tables



**Annex C - Scottish Address Register Specification**



*Preserving the past, recording the present & informing the future*

**Scottish Address Register  
Specification**

**April 2015**

**This Document was**

Prepared by:	K McDonald	Geography Addresswork Manager	April 2015
Reviewed by:	T Couper	Head of Geography	April 2015
Authorised by:			

**Document Distribution**

All members of staff in the National Records for Scotland (NRS).

**Amendment Suggestion**

If you have suggested amendments please make them to Geography.

**Status Control**

Version	Date	Status	Prepared by	Reason for Amendment
0.1		Draft	K McDonald	

**Table of Contents**

1. Background.....	4
2. Contents of the Scottish Address Register.....	4
3. System Requirements.....	9



## Background

1.1 NRS Geography create a new quarterly Scottish Address Register (SAR) containing address information, property details, classification of type and three unique identifiers, the Royal Mail Unique Delivery Point Reference Number (UDPRN), the One Scotland Gazetteer (OSG) Unique Property Reference Number (UPRN) and the OSG Unique Street Reference Number (USRN).

1.2 This is done by comparing the contents of the previous version of the Ordnance Survey (OS) AddressBase product against the latest version and creating a new version of the Scottish Address database. Additional information is then added from a suite of Geography addressing products, for example Communal Establishment (CE) Indicator from the Communal Establishment Register, using the unique reference numbers.

## Contents of the Scottish Address Register

2.1 This database will hold 6 tables:-

### Address tables

1. New
2. Deleted
3. Addresses

### Lookups

4. QualityIndicatorLookup
5. PropertyTypeLookup
6. ClassificationLookup

### Address tables - New

This is a list of UPRN's and UDPRN's for new addresses – added since the last SAR update.

Field Name	Index	Data Type	Size	Nullable	Comments
UPRN	P	Char	12	N	Unique Property Reference Number
UDPRN		Char	8	Y	Unique Delivery Point Reference Number (leading 0's)

### Address tables - Deleted

This is a list of UPRN's and UDPRN's for deleted addresses – deleted since the last SAR update.

Field Name	Index	Data Type	Size	Nullable	Comments
UPRN	P	Char	12	N	Unique Property Reference Number
UDPRN		Char	8	Y	Unique Delivery Point Reference (leading 0's)

## Address tables - Addresses

This is the current Scottish Address Register table.

Field Name	Index	Data Type	Size	Nullable	Accepted Format	Description
Postcode		VarChar	9	N	G4 9QT or G78 1WD or AB12 7FY	Postcode of the address. Compiled from Table 21 Postcode_Locator field
PostcodeType		Char	1	N	S, C or M	Indicates if it is a single address which received post (S), a parent (M) or child (C) postcode which may not receive post. Compiled from Table 21 Postal_Address field
SplitPostcodeIndicator		Char	1	N	Y or N	Indicates if the postcode is split across council areas or by water.
Organisation		VarChar	120	Y		Name of occupying organisation. Compiled from Table 31 Organisation field
Property		VarChar	120	Y		Name of the sub-building (e.g. flat). Compiled from Table 24 using all SAO fields
BuildingName		VarChar	100	Y		Name of the building. Compiled from Table 24 PAO_Text field
BuildingNumber		VarChar	10	Y		Number of the building. Compiled from Table 24 using all PAO number and suffix fields
Street		Char	120	Y		Name of street the address is in. Compiled from Table 15 Street_Description field
Locality		VarChar	70	Y		Name of locality the address is in. Compiled from Table 15 Locality_Name field
Town		Char	30	N		Name of town the address is in. Compiled from Table 15 Town_Name field
HouseholdCount		Integer	3	N	0 to 999	Total number of households for the delivery point. Compiled from PAF Household field
UPRN	P	Char	12	N	Uses only numbers 0 to 9	Unique Property Reference Number. Taken from Table 24

Field Name	Index	Data Type	Size	Nullable	Accepted Format	Description
UDPRN		Char	8	N	Contains leading 0's. Uses only numbers 0 to 9	Unique Delivery Point Reference. Taken from Table 28 RM_UDPRN field
USRN		Char	6	N	Uses only numbers 0 to 9	Unique Street Reference Number. Taken from Table 24
QualityIndicator		Char	1	Y	0 to 4	Indicates the quality of the UDPRN to UPRN match. See <i>QualityIndicatorLookup</i>
CountOfEntrances		Integer	3	N	1 to 999	Number of possible entrances, by street, for an address
CountOfVariations		Integer	3	Y	2 to 999	Number of possible variations for the address record (e.g. Flat 1 or Flat A) where greater than 1
PropertyType		VarChar	4	Y		Whether the property is a detached, semi-detached, terraced or flat. See <i>PropertyTypeLookup</i> . Compiled from SAA
NumberOfRooms		Char	3	Y	1-999	Count of habitable rooms within an address. Compiled from SAA
Classification		Char	4	Y	0001-0022	The classification of the address, taken from SAA e.g. religious, residential, office, school. See <i>ClassificationLookup</i>
CEIndicator		Char	1	N	Y or N	Indicates if the address is deemed to be a CE by Geography. Taken from CER
GridRefEasting		VarChar	10	Y		Grid Reference Easting Position. Compiled from Table 21 X_Coordinate field
GridRefNorthing		VarChar	10	Y		Grid Reference Northing Position. Compiled from Table 21 Y_Coordinate field
DateLastChanged		Date		Y		Date Address Changed

## Lookups - QualityIndicatorLookup

This table details the confidence level in the match between the UDPRN and UPRN.

Indicator	Quality Level	Description
0	No match	no match found by Geography or AddressBase (AB)
1	High	matching criteria used by Geography is fairly strict and the match is in agreement with that on AB
2	Medium	mix of automatic matching and manual interpretation have been made. AB have not matched or the match does not agree
3	Low	matched to a deleted UPRN, non-postal UPRN or is a possible match. AB agrees or have not matched
4	AddressBase only	Geography have not matched but AB have or Geography match is an Indicator 3

## Lookups - PropertyTypeLookup

This table gives further details on the property type as taken from the Assessors portal.

Indicator	Property Type	Description
4BLK	Four in a block	flat in a flatted 2 storey building
DETD	Detached	not attached to another building
FLAT	Flat	flat in a building of 2 or more storeys
MAIS	Maisonette	duplex flat
MULT	Multi-storey	flat in a modern building of more than 8 storeys
NULL	Not available	detailed attachment not available
SDET	Semi-detached	attached to another building at one side
TENE	Tenement	flat in a building with communal access to the building
TERR	Terraced	attached to a range of three or more properties
VILF	Villa flat	flat created in a villa

## Lookups - ClassificationLookup

The table gives further details on the classification type as taken from the Assessors portal. Checks are made to ensure that the classification field corresponds to a record flagged as a CE.

**CLASS**

Code	Description	Extended Description
0001	Shops	Shop, supermarket, post office, garden centre and other retail premises
0002	Public Houses	Public house, bar, wine bar, restaurant and other licensed premises.
0003	Offices	Office, bank, ATM, laboratory, surgery and other administrative premises
0004	Hotels etc	Hotel, guest house, motel, B&B and self-catering accommodation
0005	Industrial subjects including Factories, Warehouses and Stores	Premises used for the manufacture, modification or storage of goods i.e. the legislative definition of "industrial" e.g. bakery, dairy, brewery, cold store, depot, engineering works, factory, garage, jetty, mill, oil storage depot, sorting office, repeater station, refuse disposal works, warehouse, wind turbine, workshop
0006	Leisure, Entertainment, Caravans and Holiday Sites	Premises used for leisure purposes e.g. cinema, clubhouse, swimming pool, recreation ground, visitor centre, golf course, night club, bingo hall
0007	Garages and Petrol Stations	Filling station, motor vehicle garage, service station, bus depot, filling station, tyre depot
0008	Cultural	Art gallery, museum, ancient monument, theatre, library, and other premises used for cultural activities
0009	Sporting subjects	Premises primarily used for sporting activities e.g. sports pitches, sports stadiums, running and cycling tracks
0010	Education and Training	School, college, residential school, university, nursery
0011	Public Service subjects	Premises owned and operated by public bodies e.g. airport, bus station, bus shelter, community centre, courthouse, fire station, prison
0012	Communications (non-formula)	Radio, television and telephone infrastructure e.g. aerial, radar station, telephone exchange, telecommunications, telecom relay station
0013	Quarries, Mines, etc	Mines, quarries and associated sites e.g. bing, colliery, minerals, quarry, peat
0014	Petrochemical	Subjects related to the processing, transport and storage of petrochemicals e.g. Gas terminal, oil terminal, refinery, pipeline, tank farm
0015	Religious	Religious buildings and associated subjects e.g. burial ground, chapel, church, temple, mosque
0016	Health and Medical	Premises used for the medical treatment of people and animals e.g. clinic, health centre, hospital, nursing home, veterinary surgery
0017	Other	Subjects not classified into the other categories e.g. market, car park, grotto, pier, stable, showground, weather station
0018	Care Facilities	Premises used for the care of people and animals e.g. Residential home, home, day nursery, hostel, soup kitchen, respite care centre, cattery
0019	Advertising	Sites used for the display of advertisements e.g. advertising station, advertising shelter, electro map
0020	Statutory Undertaking	Subjects which are currently formula-valued e.g. electricity undertaking, rail undertaking, water undertaking
0021	Not in Use	Subject not in use

## System Requirements

- 3.1. Create a new/blank Scottish Address Register.
- 3.2. Populate the Addresses table using the data from the latest version of AB –
  - a. Exclude known English postcodes.
  - b. If the postcode is a split Small User, set the SplitPostcode indicator = 'Y'.
  - c. If the postcode is not a split Small User, set the SplitPostcode indicator = 'N'.
- 3.3. Compare the current Addresses table against the previous version of the Addresses table.
- 3.4. Select the records that are not in the current version of the Addresses table but were in the last version. These addresses have been deleted by the Local Authority or OS and should be added to the Deleted table (of the new Scottish Address Register).
- 3.5. Select the records that are in the current Addresses table but were not in the last version. These addresses have been added by Local Authority or OS and should be included in the New table (of the new Scottish Address database).
- 3.6. Amended addresses – identify these by comparing the address content of the current Addresses table against the address held in the previous version of the Addresses table (link using the UPRN). If the address content does not match, update the 'DateLastChanged' field accordingly.
- 3.7. Link the Addresses table to the CE Register, using the UPRN and populate the CEIndicator field accordingly.
- 3.8. Link the Addresses table to the Scottish Assessors database, using the UPRN, and populate the PropertyType, NumberOfRooms and Classification fields accordingly.  
[note: UPRN's appearing on the CT list with no classification on VR should be given a classification of 0022 - residential]

## **Annex D - Glossary**

### **AddressBase (AB)**

An Ordnance Survey product which combines the One Scotland Gazetteer (OSG) with matched address information from the Royal Mail Postcode Address File (PAF).

Three versions of the product are available;

1. AddressBase – list of the PAF matched addresses
2. AddressBase Plus – OSG and matched PAF address information for live records only
3. AddressBase Premium – full OSG data with matched PAF addresses

### **Address Point (AP)**

Address Point is an Ordnance Survey product which provides geo-referenced data for addresses in the UK. Our Geography Branch uses the product as a quality assurance check against its digitised postcode boundaries.

### **Council Address Gazetteer (CAG)**

The local authority address list. *Also see One Scotland Gazetteer (OSG).*

### **Geoplace**

Partnership between local government, in England and Wales, and Ordnance Survey. They are the custodians of the National Address Gazetteer and the National Street Gazetteer for England and Wales.

### **Matched Address**

A property record for which an entry has been found on the Royal Mail Postcode Address File and the One Scotland Gazetteer. A link has been created using the unique identifiers from both datasets.

### **One Scotland Gazetteer (OSG)**

Scottish address list combining the 32 council address gazetteers. It contains address and property lifecycle information. *Also see Council Address Gazetteer (CAG).*

### **Royal Mail Postal Address File (PAF)**

The Postcode Address File is a database of all UK addresses and postcodes. It is produced by Royal Mail and is continuously updated. NRS, receives this file on a quarterly basis through a third party provider. This file provides the information for the digitising of new postcodes and the removal of deleted postcodes

### **Unique Delivery Point Reference Number (UDPRN)**

Unique identifier allocated to each delivery point on the Royal Mail Postcode Address File.

### **Unique Property Reference Number (UPRN)**

Unique identifier allocated to each property record on the One Scotland Gazetteer.

### **Unique Street Reference Number (USRN)**

Unique identifier allocated to each street entry on the One Scotland Gazetteer.