



SRWR Guidance Note

SRWR Gazetteer AOI Submission Formats

Introduction

One of the prime objectives of the Scottish Road Works Register is the sharing of information about activities on the roads, so that all such activities can be co-ordinated in such a way as to avoid conflicts and minimise disruption to road users. This is achieved by sending notices about the activities to the other organisations that have an interest in the locality of the activity. For example:

1. When an undertaker records details of a work activity in a road, the SRWR needs to know which authority is responsible for maintaining the road, and which other organisations (including undertakers and possibly other roads authorities) also have an interest in the road.
2. When an authority is planning to resurface a road and wishes to restrict works on that road for a period after the resurfacing, the SRWR needs to know which undertakers work in that locality, so that the correct organisations can be informed.

This is determined by means of an "Area of Interest" (AOI) for every organisation (or Operational District of an organisation), which is effectively a list of the roads in which they have an interest. A default Area of Interest can be created for each roads authority from the gazetteer and ASD data that is submitted and updated on a quarterly basis. However, other additional information is required by the SRWR to determine the AOI for undertakers, and even roads authorities may wish to express an interest in additional roads beyond those within their boundary area.

This document defines the conventions for submitting the related AOI information and the processes involved, which will enable each organisation, or sub-division of organisation, to define:

- the area(s) or lists of roads for which they wish to receive notifications.
- the area(s) or lists of roads to be included, by default, within system enquiries.
- the area(s) or lists of roads for which works data may be created and updated.
- additional sub-areas or lists of roads to sub-divide an area into inspector patches.
- areas or, more likely, lists of roads to be used as a grouping for co-ordination checking.
- additional area(s) or lists of roads for any other general enquiry/reporting function.

In addition to defining the AOI for an organisation (or Operational District sub-division of an organisation), AOIs can also be used to tailor the system to restrict each user to a geographical area of the register that is relevant to their needs. This should greatly improve efficiency as users will not waste time scanning information that is irrelevant to them. Examples of groups of users who might benefit include:

- a bridges section, which is only interested in works on roads with bridges.
- inspectors who deal only with the activities within their own "patch area", although a supervisor/manager may require access across the whole Operational District area.

Efficient operation of the SRWR is totally dependent on the existence of accurate AOIs, It is therefore essential that all SRWR community members fully understand these processes. Each organisation is directly responsible themselves for ensuring that the information in the system is updated to reflect their own operational requirements for receiving notices, enquiry, reporting and co-ordination.

“Road Owner” and “Data Maintaining Organisation”

The Level III Street Gazetteer itself is created and maintained by each of the individual roads authorities, covering every road within their geographical area. For the majority of these roads the local roads authority is also the organisation that is responsible for the care and maintenance of the road. However, there will be some of the roads that will not be the responsibility of the local roads authority, in particular trunk roads and private roads.

It is crucial to the operation of the SRWR, that the system has an accurate record of both:

1. the organisation that is responsible for the maintenance of the street (referred to within Insight as the “Road Owner”) - this is crucial to determine who is authorised to issue Directions and Road Restrictions, carry out inspections and potentially issue Fixed Penalty Notices.
2. for each piece of data, the organisation that submitted the data (the “Data Maintaining Authority”) – this is essential so that when updates are provided, the system knows which elements of the total database are being replaced by the updated set of information, e.g. can ensure that a trunk road operator only over-writes their own data, not the local authority data, and vice versa.

This fundamental data is established from the gazetteer and ASD files which are submitted, and is not affected by any of the other processes described in this document. It is therefore crucial that this data is provided accurately. Inaccurate data, or lack of data elements altogether, will not necessarily prevent the system from operating, but it is likely to lead to situations where the correct organisations are not notified, or the roads are not inspected by anyone.

It should be noted that, given “Uncoupled ASD”, this data can be submitted by both local authorities and trunk road agents, and it is possible for there to be conflicts between the data provided. It is, of course, possible for valid data to be provided by two organisations for the same road; it is possible for part of the road to be “owned by” the trunk road operator, and part of the road not to be “trunk” and be “owned by” the roads authority.

However, if both organisations claim to own the whole road, or one claims to own the whole road whilst the other claims to own part, there is clearly a conflict. This will be reported when the conflicting data is entered. Of course, this should not happen on a frequent basis.

It is important to understand however, that if conflicts occur and they are not corrected, the nature of the “Uncoupled ASD” process (by which the roads authority gazetteer is loaded first and the trunk road operator data is overlaid) means that in general the trunk road operator data will take precedence over the roads authority data.

It should also be noted that the “Owner” of the road, as defined above, will always be sent notices for all works/activities on that road. This will be the case whether or not any of the actions specified in the rest of this document, in relation to defining areas of interest, are taken. This aspect, and the other default structures that will be created as a result of processing the Associated Street Data, are considered further in Appendix A of this document.

Explanation of Index Groups and Index Group Types

Within the Insight system, Areas of Interest and other groupings of roads are achieved by means of Index Groups. Index Groups can be used for a number of different purposes, and it is important to understand the following terminology:

Index Group Type

An Index Group Type is a label that determines what the component Index Groups of that type will be used to represent. For example, the SRWR has an Index Group Type of INS for Inspector Patches; every Group of that type is expected to represent an Inspector Patch.

Index Groups

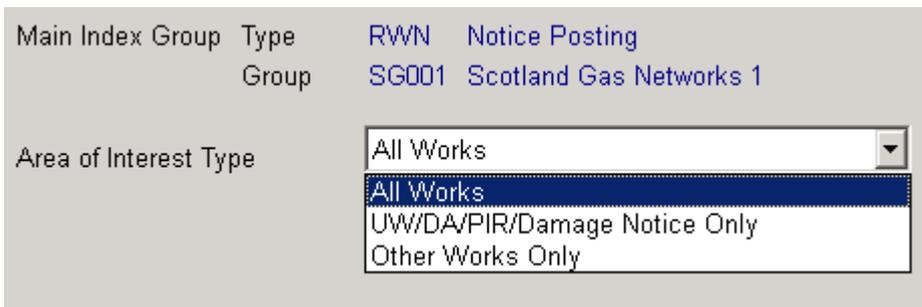
For each Index Group Type you can define any number of Index Groups. Each Index Group comprises a set of Gazetteer entries (roads). For example, within the Index Group Type INS, if you have six inspectors, you can define six Index Groups, each one comprising the set of roads which are the responsibility of one inspector.

There is no restriction against Street Gazetteer entries appearing in more than one Index Group. Therefore in the example above, it is also possible to create two "super-groups" for supervisors, each of which is the equivalent of three of the inspector patches.

Within the Insight enquiry screens, it is then possible to use the Index Group Type / Index Group selections, to filter the results so that each user is provided with an output that is automatically limited to their area of operation.

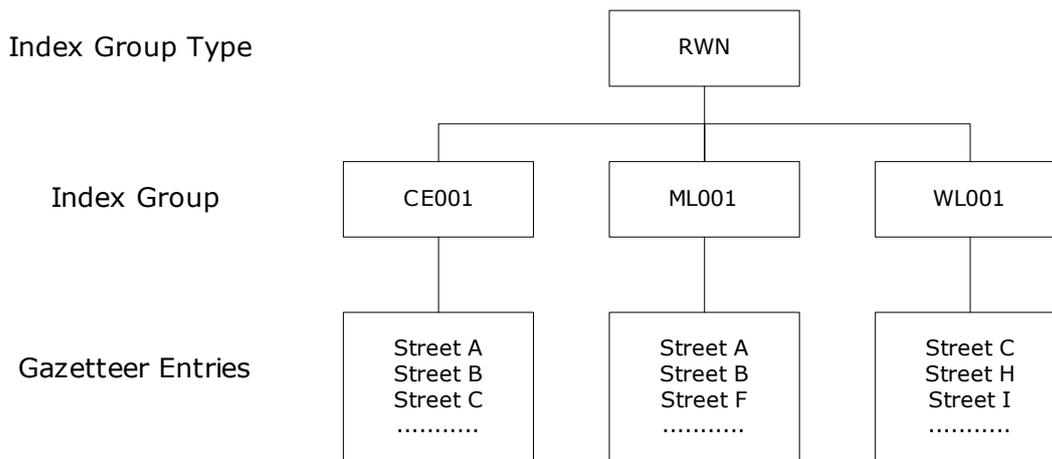
It is further possible to allocate an Operational District or OD (this may be a "division" of a utility organisation, or an area office of a roads authority) against an Index Group, which then identifies the list of roads as being of interest to that OD. The term "Area of Interest" is often used for these lists of streets because they are literally areas where a user or organisation has an interest in creating or viewing works. Within the SRWR system, there are 6 Index Group Types:

- **RWN - Road Works Notice Posting Area** – The OD associated with the Index Group will be notified on roads in the defined Notice Posting Area. The notices will appear in the Notices Awaiting Assessment enquiry for the OD, for the attention of a user who is allocated that OD. The Operational District definition screen also provides an option for defining the types of notices that will be sent to the District. If required, this allows for a distinction between notices that require a specific response and notices that are for general co-ordination purposes:



- **RWU - Road Works Update Area** – Defines a list of roads against which a user who is restricted to that area, can propose and update Road Works. For roads authority users, this should typically be set to comprise the roads that are "owned" by them.
- **RWV - Road Works View Area** – Defines a list of roads for which information will be displayed in system enquiries. This may be a wider geographical area than the Update Area.
- **INS – Inspection Patches.** Defines a list of roads that can be used by an Inspector to filter inspections that are due to be performed or other information, to limit it to their "patch".
- **COR – Coordination Group.** Defines a list of roads that the application will treat as being influenced by works appearing on other roads within the group. For example, coordination groups could be created to represent a grouping of a principal route with its diversionary routes, or inter-connected sets of roads that make up a one-way system.
- **GEN** – General Group. Defines a list of roads to represent any other user requirements not catered in the above.

For example:



In the example above any works recorded on Street A will appear in the “Notices Awaiting Assessment” enquiry for both Index Group CE001 (City of Edinburgh) and ML001 (Mid Lothian).

From the outset, basic lists have been provided for each SRWR organisation. For example, City of Edinburgh (short code CE) will have RWU/CE001, RWV/CE001, and RWN/CE001. Each of these Index Groups contains every road in City of Edinburgh area. Whilst that was an approximation to enable the system to work with reasonable effectiveness, it can be refined to a considerable extent, e.g.:

- the Update Group (Index Group Type RWU) could be adjusted to exclude roads which are trunk roads, so that road authority works cannot be created on these roads.
- the View Group area (Index Group RWV) could be extended to cover some roads just outside the City of Edinburgh area, so that for co-ordination purposes, City of Edinburgh staff are informed of “nearby” road works on major routes in and out of Edinburgh.

There can only be one Notice Posting (RWN) Index Group associated with an Operational District, to determine which notices are directed at that Operational District. However, many additional Groups of other Group Types may also be created to reflect user “patch areas”, to provide the appropriate sub-set of information to each individual.

In each case, the lists of roads that comprise the Groups can be established and adjusted by a set of facilities, which include:

- submitting in a file a polygon of map co-ordinates, which the Insight system can automatically translate into the set of roads which exist (fully or partially) within the area defined by the polygon.
- submitting in a file a set of roads (each defined by its USRN) which are to comprise the Group.
- Creating or adjusting the group of streets within the Index Group, using interactive screen-based facilities to add or subtract roads from the group. It should be noted that this is almost certainly the best method for specialised Groups that contain a small selection of roads, such as Co-ordination Groups.

The remainder of this document defines the mechanisms for the first two of the above; the manual adjustment is covered within the SRWR Administrators training course. Please note that any new Group must be created within the system, via the interactive interface, prior to submitting any files, as described in this document to create the group of roads.

Index Group Submission Process definition

The following sections determine the structure and content of the Index Group file definitions. There are two methods of defining the contents of an Index Group, using an input file:

Polygon Based Index Group Definition. The contents of an Index Group are determined by a polygon of grid-coordinates defining the geographic boundary of the polygon. This is relevant for area-based definitions, such as roads authorities Update and View Areas, inspector patches, etc. The SRWR has the ability to update the contents of these Index Groups automatically during gazetteer updates. This function can be switched on and off by use of the 'Maintain Entries Using Polygon' checkbox on the Index Group creation/update screen.

So, if you want to ensure that the Index Group always contains every road within the polygon area, you can set this checkbox when initially creating the Group. Conversely, if you want to create the Group from the polygon, but then adjust it manually to remove selected roads, and you don't want them added back in at the time of the next gazetteer update, then you can leave this checkbox unset. However, it then becomes your own responsibility to ensure that the Index Group is kept up to date with gazetteer changes.

If you are considering the use a polygon, you should note the warning at the end of this document, about the level of accuracy required to achieve the desired result.

Note also that Roads Authorities who want notices on trunk roads to appear on their "Awaiting Assessment" lists, and do not wish to identify further roads of interest from outside their area, can simply leave the default Notice Posting Group, which is created from the ASD unchanged.

Street Based Index Group Definition. The contents of an Index Group are determined by specifying the individual USRNs that belong to the Index Group. This is appropriate for groupings which relate to very specific streets (e.g. Co-ordination (COR) groups which comprise diversionary routes or city-centre one-way systems, or Network Rail defining a Notice Posting Group related to the specific roads in which they have an interest). These types of Groups would normally be defined as not to be updated automatically from new gazetteer submissions, even if a polygon is also supplied.

It is not necessary, or indeed normal, to provide both of the above definitions for the same Index Group. With each Index Group submission there will be a requirement to complete the "SRWR Gazetteer AOI Submission Template (see example at the end of this document). This details to Symology the structure and content of the file and also identifies the person responsible for creating the definitions. Full instructions are provided on the template.

We will process the Index Group definitions for any files submitted in line with the quarterly cycle of gazetteer submissions.

Index Group Naming Convention

To manage the Index Groups efficiently all the Index Groups names must conform to the following naming convention definition.

XXUUU, where

XX is the 2 character SRWR organisation code. E.g. AB for Aberdeenshire Council

UUU is a 3 character user definable reference to allow the Index Groups to be distinguished locally.

This will ensure that all the Index Groups applicable to one organisation are grouped together on drop-down lists, and will thus assist users in the selection of the required Group. Where an Index

Group is associated with an Operational District, it is conventional that the Group is given the same identity as the OD, i.e. Operational District AB001 would have associated Index Groups AB001, of each Group Type required; whilst not mandatory, this aids understanding.

Street Based Index Group Definition

For this method, a text file is required containing a list of streets for each Index Group. The naming convention for the file is **USRN_XX_NNN.TXT**, where:

XX is the two character SRWR Organisation Reference. E.g. AB for Aberdeenshire Council

NNN is a sequential number, incremented per submission, starting from 001

Example File Name (Aberdeenshire submission): USRN_AB_001.TXT

The file **USRN_XX_NNN.TXT** will be in CSV format and have the following record layout:

Description of the fields

Index Group Type – one of the Types defined in 3.0

Index Group – the 5 character Group Identifier, in accordance with the naming convention in 5.0

Index Group Description – a textual description of the Group (up to 25 characters)

NSG Prefix – the 3-digit prefix assigned to the Street Naming authority for the street

Road Identifier – the 5-digit street number

Note: the last two fields combined represent the USRN for the road.

Operation Rules

- a) The NSG Prefix must exist on file.
- b) Any combinations of NSG Prefix and Road Identifier that do not exist on file will be ignored.

Example File Format

```
RWU,CE001,Group Description 1,080,04103
RWU,CE001,Group Description 1,080,04377
RWU,CE001,Group Description 1,080,04347
RWU,CE001,Group Description 1,080,04347
RWU,CE001,Group Description 1,080,04104
RWU,CE002,Group Description 2,080,04092
RWU,CE002,Group Description 2,080,04092
RWU,CE002,Group Description 2,080,04104
RWU,CE002,Group Description 2,080,04215
RWU,CE002,Group Description 2,080,04104
RWU,CE002,Group Description 2,080,04331
RWU,CE002,Group Description 2,080,04104
RWU,CE002,Group Description 2,080,04330
```

RWU,CE002,Group Description 2,080,04104

RWU,CE002,Group Description 2,080,12166

Polygon Based Index Group Definition

For this method, two text files are required. Firstly, an Index Group definition file containing a list of Index Groups being provided; secondly, a file containing the polygon co-ordinates for each of the AOIs. The naming convention for the files is **IODS_XX_NNN.TXT** and **ICOORDS_XX_NNN.TXT**

Where

XX is the two character SRWR Organisation Reference. E.g. AB for Aberdeenshire Council

NNN is a sequential number, incremented per submission, starting from 001. This number must be consistent for both files.

Example File Names (Aberdeenshire submission): IODS_AB_001.TXT and ICOORDS_AB_001.TXT.

The two text files **IODS_XX_NNN.TXT** and **ICOORDS_XX_NNN.TXT** files will be in CSV format with the following record layouts:

IODS_XX_NNN.TXT

Description of the fields

AOI Identity – a unique AOI reference, which is used solely to cross-reference to the corresponding records in the ICOORDS.TXT file

Index Group Type – one of the Types defined in 3.0

Index Group – the 5 character Group Identifier, in accordance with the naming convention in 5.0

Example File Format

AOI1,RWU,CE001

AOI2,RWU,CE002

AOI2,RWV,CE002

ICOORDS_XX_NNN.TXT

Description of the Fields within the record

AOI Identity – the unique reference, as supplied in the IODS.TXT file.

Co-ordinate Set – a sequential number for each polygon within the AOI

Sheet – Ordnance Survey Sheet Numbers (documentary and optional)

Easting – 7-digit easting to 1 metre accuracy

Northing – 7-digit northing to 1 metre accuracy

Operation Rules

a) The first and last Easting/Northing pair within each Co-ordinate set specified within ICOORDS.TXT must be equal.

b) As part of the import process any existing co-ordinates associated with the Index Group will be removed.

c) Multiple polygons can be used to define an AOI. The Co-ordinate Set parameter is used to sequentially number the polygons for an AOI, starting at 1.

d) The AOI Identity field in the IODS.TXT file must match the AOI Identity field in ICOORDS.TXT.

e) If the Sheet field is not provided, two consecutive commas must exist between Co-ordinate Set

and Easting.

f) For reasons of system performance the maximum number of co-ordinates that can be defined to represent a single polygon is 500.

Example File Format

AOI1,1,TL,0320038,0805286
AOI1,1,TL,0324712,0812892
AOI1,1,TL,0340959,0843494
AOI1,1,TL,0320038,0805286
AOI1,2,TL,0340546,0839351
AOI1,2,TL,0339124,0840075
AOI1,2,TL,0340959,0843494
AOI1,2,TL,0340546,0839351
AOI2,1,TL,0320038,0805286
AOI2,1,TL,0324712,0812892
AOI2,1,TL,0340959,0843494
AOI2,1,TL,0320038,0805286

or, without the Sheet:

AOI1,1,,0320038,0805286
AOI1,1,,0324712,0812892
AOI1,1,,0340959,0843494
AOI1,1,,0320038,0805286
AOI1,2,,0340546,0839351
AOI1,2,,0339124,0840075
AOI1,2,,0340959,0843494
AOI1,2,,0340546,0839351
AOI2,1,,0320038,0805286
AOI2,1,,0324712,0812892
AOI2,1,,0340959,0843494
AOI2,1,,0320038,0805286

Important Technical Notes

The incoming coordinates must have 7 digits. Apart from the outer Scottish islands, all coordinates in Great Britain begin with zero. If generating these coordinates from standard packages such as Excel, it should be noted that they usually strip any leading zeroes during the export, so these will need to be restored. e.g. 0010379 may appear as 10379_ _ . In this case, each trailing space must be replaced by a leading zero, using an "editor-type" product which allows creation of a standard csv format file, such as Notepad.

The process of converting a polygon into a set of roads that exist within the area places a heavy load on the computing power of the system. The extent of this is dependent on the number of co-ordinate pairs used to define the polygon. It is recommended that a polygon should generally comprise a boundary point on each road which crosses the boundary, together with the minimum number of extra points which may be necessary to make the boundary appear reasonably realistic when displayed on the map.

Important Warning on the Use of Polygons

Great care is necessary in both gazetteer creation and in polygon definition if the approach is to achieve the expected result. For example, a Roads Authority may be hoping that a polygon representing their boundary will include all the roads supplied in their own gazetteer, and none of the roads supplied in their neighbours' gazetteers. However, the perfect scenario will only be achieved if:

- the polygon contains a precise point (to the accuracy of 1 metre) on each road that crosses the boundary.
- that exact same point is used as the start/point for their own LSG record for the road.
- that exact same point is also used for the start/end point on their neighbour's LSG record for the road.

If the start/end points of the roads on the two Street Gazetteers are not identical, there will obviously be a gap, a disjoint or an overlap on the centre-lines. Disjoints or overlaps are also likely to result in one authority's roads appearing in the other's polygon area.

Appendix A Basic Areas of Interest without using Index Groups

As indicated in previously in this document, Areas of Interest may be derived by default from the Maintenance Responsibility (Record Type 51) table of Associated Street Data (ASD). Roads Authorities (RAs) and Trunk Road Operators and Concessionaires (TROs) may find this a suitable way forward, for defining at least some of the areas of interest available within the Symology System. This defaulting which is enacted automatically by the system could, for some authorities, limit the extent to which there is a need to submit Areas of Interest in the form defined in the document.

However, some RAs for which such defaults are not adequate to meet all their areas of interest requirements, will need to submit Index Group definitions as specified in **Sections 3 to 7**. All other organisations such as utilities, for which there is no defaulting, must also submit their Index Group definitions.

There can only be one default area of interest for any body. For a Roads Authority this is effectively its complete geographical area by virtue of all the roads for which it is responsible having that authority's code attached. However, it should be noted, by the same reasoning, that the default area of interest will exclude trunk and private roads.

Similarly, a TRO's default area of interest would only be the trunk roads for which it had provided ASD.

Before continuing, it is essential that the definitions of Index Group Types as provided in **Section 3** of the document are understood.

The default area of interest (which is derived from the ASD) is most likely to be of use for the RWN (Notice Posting) and RWU (Update Area) Group Types, i.e. respectively, the Group of Roads for receiving and posting notices, and for the list of roads on which an RA or TRO is able to promote, create and update works.

The RWV area could also use the default area of interest but there is little advantage in doing so. It would neither allow a 'view' beyond boundaries nor would it allow RAs or TROs a view of notices on adjacent trunk road or RA roads respectively for co-ordination purposes.

Bodies deciding to use the default area of interest need do nothing in respect of registering such area of interest.

The use of a default area of interest for any purpose does not preclude one or more Index Groups being set up for other purposes. Other Index Groups may also be set up for the purposes of subdividing an RA or TRO's area or for other Index Group Types, such as Co-ordination Groupings.

