CHAPTER 2 : NATURE, STRUCTURE, PURPOSES AND PRINCIPLES OF THE CLASSIFICATION

Nature and Structure of the Classification

1 The Australian Standard Geographical Classification (ASGC) is a system for the classification of statistical units, such as households and establishments, by geographical areas.

2 Each geographical area (or spatial unit) in the classification (such as the Adelaide Statistical Division) constitutes a particular 'category' of the classification, and all spatial units of a particular type which together cover a defined area, eg all Statistical Divisions in Australia, constitute a particular 'hierarchic level' of the classification.

3 Conceptually, the ASGC has been constructed as an integrated multi–structured hierarchic classification. This means that it is a classification in which the spatial units (ie the categories) at the lower levels of the classification (eg Census Collection Districts or CDs) serve as building blocks which are aggregated upwards in several parallel streams (or chains) into larger and larger spatial units at progressively higher hierarchic levels of the classification. Each of these streams, consisting of two or more vertically related hierarchic levels (of which the CD level is always the lowest), represents a different ASGC structure. These different structures are said to be integrated because they are ultimately all constructed from the same set of spatial unit building blocks.

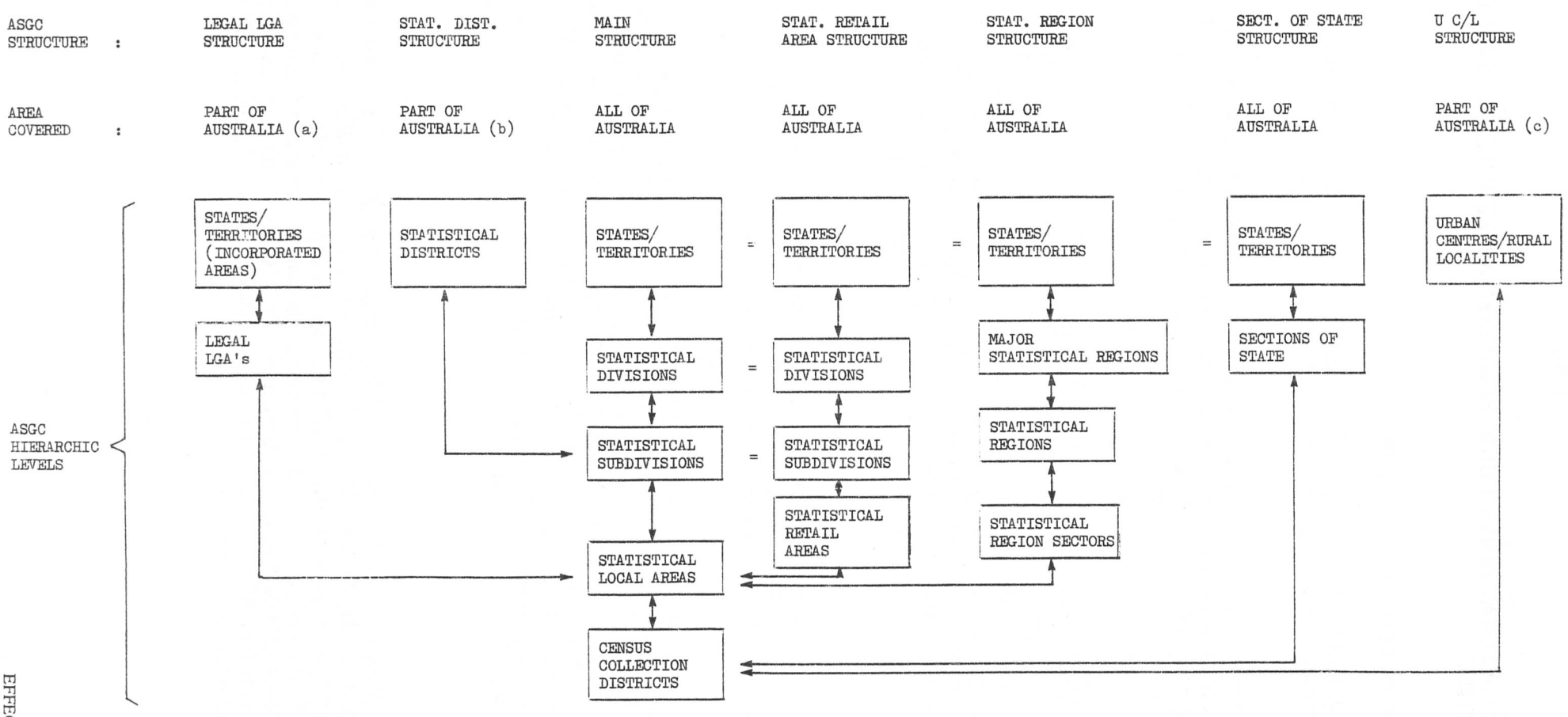
4 The diagram on page 8 depicts the conceptual ASGC in its entirety in terms of all its various structures, all the hierarchic levels in them and the relationships between them. Each of these structures is described in more detail in the following paragraphs.

5 In practice, the hierarchic level composition of the structures varies over time. This is because Census Collection Districts are defined only for those times at which a Census of Population and Housing is held. Accordingly, full ASGC structures can only exist at those times. At all other times the structures omit the Census Collection District level. These, and other 'in practice' variations (such as the update for and inclusion in population census related ASGC editions only, of the Section of State and the Urban Centre/(Rural) Locality structures will be reflected in individual ASGC manual editions which will present, for any given point in time, the structures relevant at that time.

Main Structure

6 The complete Main structure of the ASGC is depicted by the central hierarchy in the diagram on page 8. In this structure Census Collection Districts, the smallest spatial units in the ASGC, collectively cover all of Australia and add, without gaps or overlaps, to Statistical Local Areas (SLAs). Collectively, these cover the same geographical area and are either coextensive with or add, without gaps or overlaps, to Statistical Subdivisions. Similar relationships apply to the remainder of the hierarchy, ie between Statistical Subdivisions and Statistical Divisions and between Statistical Divisions and States/Territories.

ASGC STRUCTURAL CHART



NOTES/SYMBOLS:
(a) The 'incorporated' part of Australia.
(b) The part of Australia covered by all Statistical Districts.
(c) The part of Australia covered by all Urban Centres/(Rural) Localities.
'=' means equality between adjoining levels.
' — ' means that the spatial units in adjoining hierarchic levels are related to each other by aggregation or disaggregation.

EFFECTIVE: 01/07/88
REPLACES: 01/01/86

7 However, Census Collection Districts are defined only for those times at which a Census of Population and Housing is held. Accordingly, the full Main structure can only exist at those times. At all other times the Main structure of the ASGC consists of the top four hierarchic levels, ie the Statistical Local Areas, Statistical Subdivisions, Statistical Divisions and State/Territories. This situation will in general be reflected in the ASGC manual and will present, for any given point in time, the Main structure relevant at that time. The current Main structure of the ASGC down to the Statistical Local Area level is set out, in detail, in Chapter 6 of this manual.

Statistical District Structure

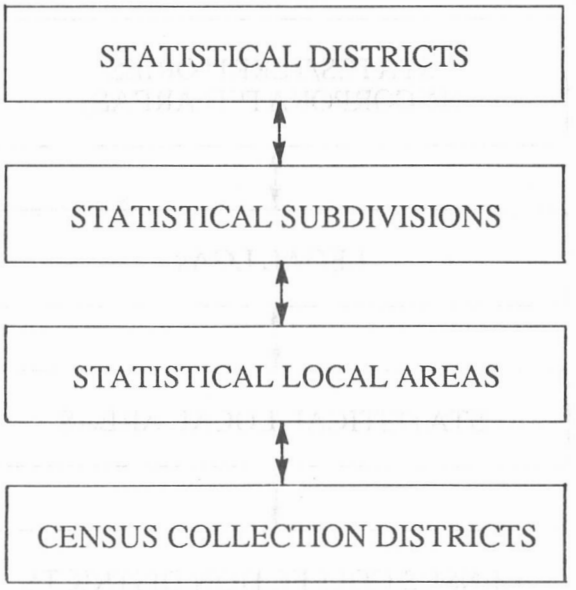
8 Statistical Districts are the more important, predominantly urban, areas of Australia other than the Capital City Statistical Divisions. Statistical Districts cannot be incorporated in the Main structure for two reasons:

(a) some (eg Gold Coast – Tweed) have boundaries that cut across State/Territory and hence, Statistical Division boundaries, thereby preventing them from being fitted into the Main structure; and

(b) the total area covered by them relates only to a part of Australia, whereas the total area covered by the Main structure categories relates to the whole of Australia.

9 Each Statistical District in the ASGC consists, as illustrated in the Statistical District structure in Chapter 6, of either one particular Statistical Subdivision or two or more particular Statistical Subdivisions. Each of these Subdivisions consists of Statistical Local Areas which, in turn, consist of Census Collection Districts at population census times.

Accordingly, the complete Statistical District structure of the ASGC can be depicted as follows:



In this structure the Census Collection Districts and higher level spatial units are confined to those which fall within Statistical Districts and relate to each other by aggregation or disaggregation as shown above.

10 Although this structure consists conceptually of the four hierarchic levels depicted above, only the spatial units in the top three levels are normally used for the presentation of statistics according to the Statistical District structure. (Further, as already mentioned in the description of the Main structure above, the Census Collection Districts only form part of this structure at those times when a Census of Population and Housing is held.) The current Statistical District structure of the ASGC down to the Statistical Local Area level is set out in detail, in Chapter 6 of this manual.

Legal Local Government Area Structure

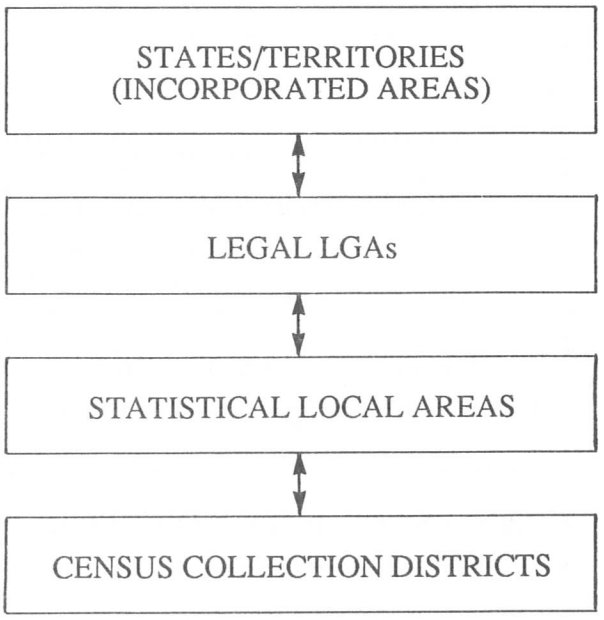
11 Each Legal LGA (Local Government Area) represents the whole, undivided geographical area of responsibility of an incorporated Local Government Council. Legal LGAs cannot be included in the Main structure for two reasons:

(a) some (eg Albert Shire in Queensland) have boundaries that cut across Statistical Subdivisions and Statistical Divisions thereby preventing them from being fitted into the Main structure; and

(b) the total area covered by them relates only to a part of Australia, whereas the total area covered by the Main structure categories relates to the whole of Australia.

12 Each Legal LGA in the ASGC consists of either one particular Statistical Local Area or two or more particular Statistical Local Areas which, in turn, consist of Census Collection Districts at population census times. Legal LGAs can be aggregated to State/Territory totals although the areas represented by these totals only cover the 'incorporated' parts of the State/Territory concerned.

Accordingly, the complete Legal LGA structure of the ASGC can be depicted as follows:



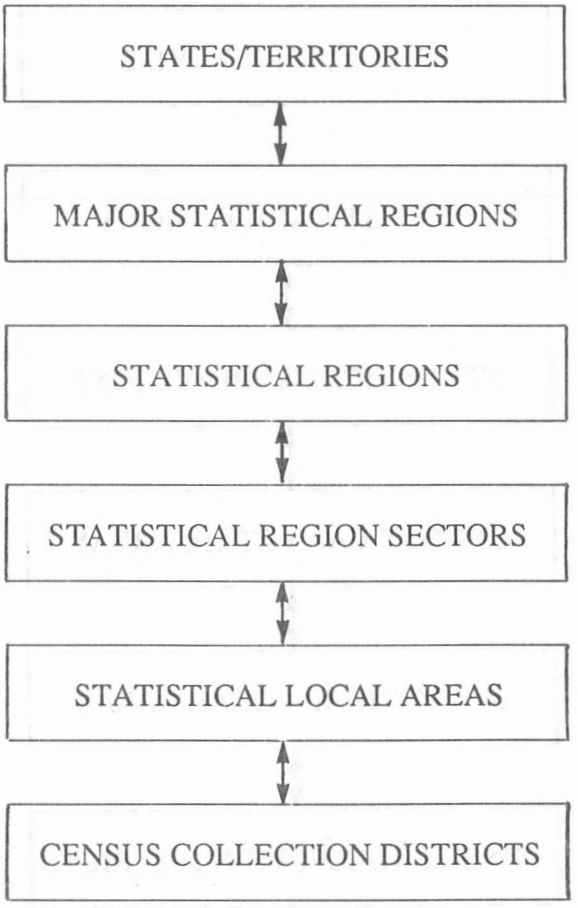
In this structure the Census Collection Districts and the Statistical Local Areas are confined to those which fall within Legal LGAs and relate to each other by aggregation and disaggregation.

13 Although this structure consists conceptually of the four hierarchic levels depicted above, only the spatial units in the top two or three levels would normally be used for the presentation of statistics according to the Legal LGA structure. (Further, as mentioned in the description of the Main structure above, the Census Collection Districts only form part of this structure in those years in which a Census of Population and Housing is held.) The current Legal LGA structure of the ASGC down to the Statistical Local Area level is set out, in detail, in the Alphabetic List of Legal LGAs and Statistical Local Areas within States/Territories in Chapter 6 of this manual.

Statistical Region Structure

14 The Statistical Region structure will be used from 1986 onwards primarily for the production of standard statistical outputs from population censuses and labour force surveys. The Statistical Regions in this structure equate, in some cases, with Statistical Subdivisions and, in others, with parts or aggregations of Statistical Subdivisions or Divisions and cannot, therefore, be incorporated in the main structure of the ASGC.

15 The complete structure consists of six hierarchic levels as follows:



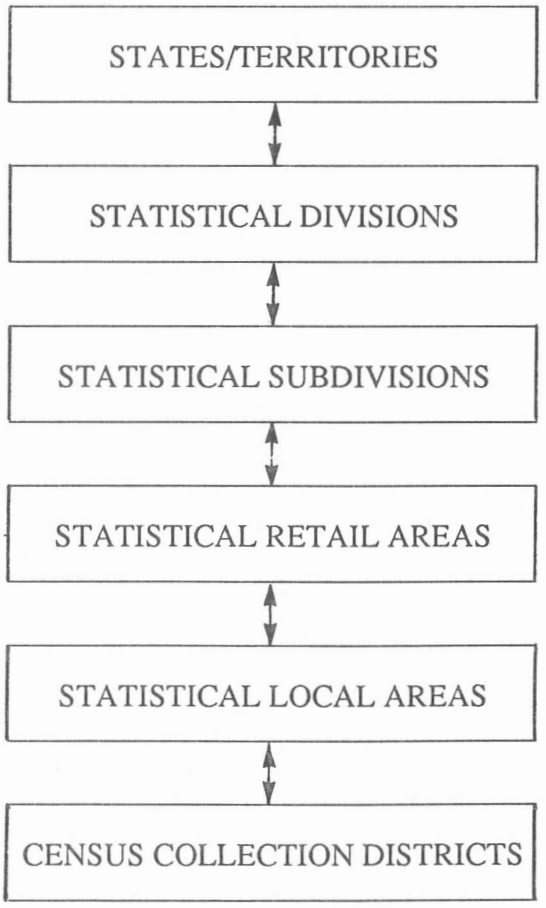
In this structure the spatial units in adjoining levels are related to each other by aggregation and disaggregation and, within each level, cover all of Australia.

16 Although this structure consists conceptually of the six hierarchic levels depicted above, only the spatial units in the top five levels would normally be used for the presentation of statistics according to the Statistical Region structure. As a consequence, this structure is presented in Chapter 6 only down to the Statistical Local Area level. (Further, as already mentioned in the description of the Main structure above, the Census Collection Districts only form part of this structure at those times when a Census of Population and Housing is held.) The current Statistical Region structure of the ASGC down to the Statistical Local Area level is set out in detail, in Chapter 6 of this manual.

Statistical Retail Area Structure

17 Each Statistical Retail Area in the ASGC consists of either one particular Statistical Local Area or an aggregation of two or more particular contiguous Statistical Local Areas within a Statistical Subdivision. In the Northern Territory, however, retail populations force the combining of SLAs across SSD boundaries.

18 The Statistical Retail Area structure can be depicted as follows:



In this structure the spatial units in adjoining levels are related to each other by aggregation and disaggregation (ie without gaps or overlaps) and, within each level, cover all of Australia.

19 The Statistical Retail Area (SRA) structure is in essence the Main structure with an additional hierarchic level for Statistical Retail Areas (see para 28 of Chapter 3). This structure is presented separately because it causes Statistical Local Areas within Statistical Subdivisions to be grouped differently from their grouping in the Main structure and because it is only valid at those times when a Census of Retail Establishments is held. It is not currently applicable and has therefore not been presented in Chapter 6 in this edition of the manual.

20 Although this structure consists conceptually of the six hierarchic levels depicted above, only the spatial units in the top five levels would normally be used for the presentation of Retail Census statistics. (Further, as mentioned in the description of the Main structure, the Census Collection Districts only form part of this structure at those times when a Census of Population and Housing is held.)

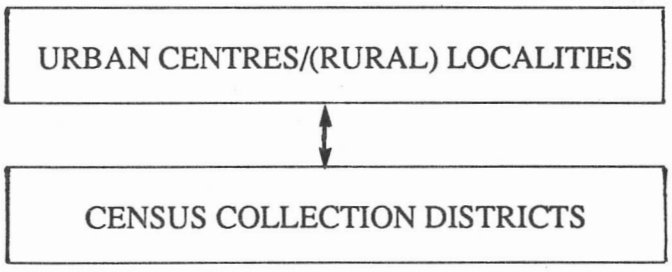
Urban Centre/(Rural) Locality Structure

21 Each Urban Centre or bounded Rural Locality consists of either one particular non–rural Census Collection District or an aggregation of two or more contiguous non–rural Census Collection Districts with the same Section of State code. Urban Centres/(Rural) Localities are defined only for those times at which a Census of Population and Housing is held and cannot be incorporated in the Main structure of the ASGC for the following reasons:

(a) their boundaries are generally inconsistent with the boundaries of Statistical Local Areas and higher level Main structure spatial units; and

(b) the total area covered by them relates only to a part of Australia, whereas the total area covered by the Main structure categories relates to the whole of Australia.

22 The complete Urban Centre/(Rural) Locality structure of the ASGC can be depicted as follows:



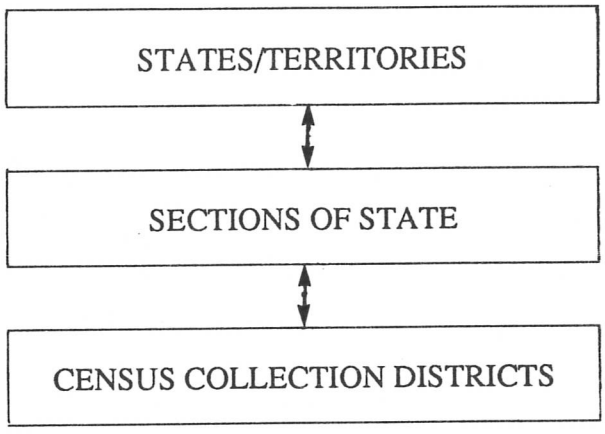
In this structure, Census Collection Districts are confined to those which fall within Urban Centres and (Rural) Localities and relate to them by aggregation and disaggregation.

23 This structure is only relevant to those times when a Census of Population and Housing is held and has therefore not been included in Chapter 6 in this edition of the manual.

Section of State Structure

24 Within each State/Territory each Section of State represents an aggregation of not always contiguous geographical areas of a particular urban type, with the rural balance constituting another Section of State. Collectively, they cover all of Australia. Sections of State are defined only for those times at which a Census of Population and Housing is held and cannot be incorporated in the Main structure of the ASGC because they do not conform to or align with any of the broader spatial unit types in the Main structure.

25 The complete Section of State structure of the ASGC can be depicted as follows:



In this structure Census Collection Districts, which collectively cover all of Australia, add without gaps or overlaps, to Sections of State which, in turn, add to States/Territories.

26 Because this structure is only relevant at those times when a Census of Population and Housing is held, it does not appear in Chapter 6 in this edition of the ASGC. (However, the particular Sections of State in each State/Territory are described in Chapter 3 'The Spatial Units of the Classification'.)

The ASGC in ABS Statistical Geography

27 The ASGC is the principal Australia–wide geographical classification of the ABS for use in the compilation and provision of geographically classified statistics.

28 The statistics classified by the ABS according to the ASGC(1) are not all classified at the most detailed, ie the Census Collection District, level of the ASGC – that level is used, with some exceptions, solely for Population Census statistics. Others, including most economic statistics, are classified, in general, at the Statistical Local Area level of the ASGC. This is largely being done for the reason that most economic statistics, including employment statistics, would generally be confidential at the very detailed Census Collection District level of the ASGC, particularly if also cross–classified by industry and other characteristics. This means, of course, that, in general, only Population Census statistics can be produced for all ASGC structures for all of their hierarchic levels while most other statistics can, at best, only be provided according to the 'Main',' Legal LGA', 'Statistical District' and 'Statistical Retail Area' structures of the ASGC down to the Statistical Local Area level of detail, confidentiality and other considerations permitting.

29 Another important aspect of the ASGC is that it cannot, for technical and other reasons, incorporate all the spatial unit types according to which geographically classified statistics are required by users. Accordingly, the ABS uses, in addition to the ASGC, other geographical classifications and individual, ie 'stand alone', spatial units for the provision of statistics. These other classifications and 'stand alone' spatial units are quite numerous and vary in use from 'regular' to 'ad hoc' depending on user demand. The spatial unit types covered by these other classifications divide into two broad classes as follows:

(a) ABS defined spatial unit types which have been devised for use in a particular State or Territory and which are relevant only to that State or Territory. An example is the Western Australian Agricultural Areas used in the ABS publication : Agricultural Sector : Livestock and Livestock Products – Western Australia (Catalogue Number 7221.4). Such spatial unit types have been excluded from the ASGC, at present, because they are relevant only to a particular State or Territory and have not been formulated in accordance with standard Australia–wide spatial unit definitions as are ASGC spatial unit types.

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(1) In classifying statistics according to the ASGC it is not usually the individual items of data that are classified but the statistical units, eg the establishment/locations, households or persons to which the statistics relate that are classified. Data about the units are then aggregated and presented in statistical tables according to the classification categories relevant to the units involved.

(b) Non–ABS spatial unit types, other than Legal LGAs and States/Territories, which have been adopted for use by the ABS for the dissemination of statistics. These cannot, in general, be exactly aligned with any configuration of ASGC spatial units. This fact and/or their special purpose nature in many cases precludes them from incorporation in the ASGC. Examples of spatial unit types in this class are –

- Postcode Areas
- Commonwealth Electoral Divisions
- State Electoral Divisions
- Victorian Parishes and Counties
- South Australian Hundreds and Counties
- New South Wales Health Regions
- Queensland Rainfall Stations and Regions
- Australian Map Grid Squares in Western Australia.

30 The extent to which the spatial units in the ASGC can be linked and aggregated to equal or approximate spatial units in the other types of geographical classifications, mentioned in (a) and (b) above, varies considerably as illustrated by the following examples –

- Western Australian Agricultural Areas are exact aggregations of ASGC Statistical Divisions and Statistical Local areas in Western Australia.

- Postcode Areas can be approximated by aggregations of ASGC Census Collection Districts but not by aggregations of broader ASGC spatial units.

- Victorian Parishes cannot be represented, with any acceptable degree of approximation, by aggregations of any ASGC spatial units.

31 The foregoing means that dual or multiple geographical coding (ie geocoding) of those statistical units must be undertaken by the ABS where the statistics are required to be produced not only according to the ASGC but also according to those other geographical classifications and 'stand alone' spatial units which cannot be related to the ASGC, such as Victorian Parishes in the case of Victorian agricultural statistics.

32 The complete configuration of geographical classifications and 'stand alone' spatial units used by the ABS, including the ASGC, and the relationships between the spatial units within this configuration will be described in a more comprehensive ABS document entitled the 'Geographical Classification Framework' (GCF). This document is currently under development and is expected to contain the following:

(a) a set of descriptive entries, one for each classification (including the ASGC) and each 'stand alone' spatial unit. In the case of the smaller geographical classifications and the 'stand alone' spatial units, the entry relevant to each would fully specify and describe the classification or spatial unit. In the case of the larger geographical classifications, which, like the ASGC, will be fully set out in separate manuals, the entry relevant to each would provide a summary description of the classification and refer the user to the detailed manual for further information;

(b) diagrams with some explanatory text which illustrate the relationships that exist between the classifications and 'stand alone' spatial units in the framework;

(c) detailed keys which link relatable spatial units in different classifications with each other; and

(d) a set of maps, where available, which portray the classifications.

33 At this early stage of GCF development there is still some uncertainty as to whether it would be preferable to incorporate Population Census Destination Zones and Work Study Areas as an additional classification in the GCF or as another structure within the ASGC. Theoretically, the latter treatment would appear to be appropriate and is likely to be implemented in future ASGC editions.

Purposes and Principles of the Classification

34 The main purposes of the ASGC are to enable spatially (ie geographically) classified statistics to be produced on a spatially useful and comparable basis and in a cost effective manner.

35 In order to serve these purposes a geographical classification such as the ASGC should satisfy a number of requirements or principles. These provide that:

(a) the categories (or spatial units) of the classification must be useful, ie represent geographical areas for which statistical information is required by users of statistics;

(b) the categories within each hierarchic level of the classification must be –

- of a particular defined type,
- clearly delimited with precisely drawn boundaries,
- uniquely identified by codes and names, and
- mutually exclusive and jointly exhaustive of the total area covered by the hierarchic level;

(c) all the hierarchic levels which constitute a particular classification structure must –

- cover the same defined geographical area (eg 'Australia' in the case of all the hierarchic levels of the Main structure of the ASGC, or all the incorporated areas of Australia in the case of all the hierarchic levels of the Legal LGA structure of the ASGC), and
- form a chain of linked levels in which the categories in adjoining levels relate to each other by aggregation or disaggregation (ie in the sense that each broader level spatial unit must be coextensive with one or more lower level spatial units), and

(d) all the structures of an integrated multi–structured classification must link up at one or more of their levels, ie share a common set of categories at these levels.

36 The ASGC has been constructed in accordance with these principles as described below.

37 With regard to the first of these principles, ie usefulness, it is worth noting that the categories (or spatial units) now incorporated in the ASGC have been used by the ABS for many years prior to the construction of the ASGC. Their usefulness has been well established over those years and has also been reconfirmed in a user survey. This survey was conducted in 1982 and inquired into statistical user needs for spatial units according to which statistics are wanted.

38 Apart from confirming a strong user demand for the types of spatial unit now incorporated in the ASGC the other main findings of the survey indicated –

- a demand for a facility that permits existing statistics to be produced for a great variety of different, customer specified, spatial units,
- a need for stability in spatial unit boundaries over time (especially in the case of Census Collection Districts and Statistical Local Areas), and
- a need to improve the delimitation of some particular spatial units, eg to make some of them more homogeneous in terms of land use or urban and rural characteristics.

39 The first two needs identified in the preceding paragraph cannot be met quickly and cheaply. The first suggests the development of a costly positional geocoding system which would permit statistics to be assembled automatically for any user defined area having a geographically referenced boundary. The second suggests the possible need to introduce a completely new type of spatial unit, such as the Australian Map Grid square, which will remain stable over time. (This latter suggestion arises because the existing ASGC spatial units, being tied to changing LGA boundaries and physical features, are inherently unstable over time.) Accordingly, further consideration has to be given to these issues before the ASGC or the broader GCF can be enhanced to meet the user needs identified above.

40 The need to improve the delimitation of particular ASGC spatial units has been accepted as a general aim and will be addressed in periodic and ad hoc reviews of ASGC spatial units which will be undertaken within the context of ongoing ASGC maintenance.

41 In view of the strong user demand for the present ASGC spatial units it is considered that they satisfy the first principle, ie that of usefulness, listed in paragraph 35(a) in spite of their relative lack of stability over time. The fact that the ASGC or GCF does not yet incorporate all the spatial units and facilities desired by users does not affect the validity of the present ASGC categories nor does it inhibit the incorporation of new spatial unit types to the ASGC or GCF if justified in terms of adequate user needs.

42 The other principles outlined in paragraph 35 are all concerned with the architecture and specification of the classification and have been rigorously observed in the construction of the ASGC. As a result the ASGC facilitates efficient coding, compilation and publication of geographically classified statistics on a spatially comparable basis.