SCAR WG-GGI project: Standards
Status report - XXVI SCAR, Tokyo, July 2000

A. Map and data

A full list of features to be shown on large- and small-scale topographic maps of Antarctica, and in databases, has been prepared, a feature code system developed and a data dictionary for all features has been compiled. A summary of the coding system released in draft form on the WG-GGI web site in June 2000 is shown below. Designs for the symbology and the full cartographic specifications for the reproduction of the symbology are under development at present. Although a digital library of symbology has not been incorporated into the draft version, a sample of what is possible can be seen on: http://www-antdiv.gov.au/mapping.symbols.Standard_Symbols.pdf.

Notes on the draft coding system
A list of the features that are likely to be found on maps of Antarctica at scales of 1:2000 to 1:20,000,000 is shown below. A system of feature codes is also proposed. It is hoped that sufficient flexibility has been built into the feature code system to allow for additional features, and sub-sets of features, to be included at a later date, should the need arise.

Features. The list of features has been developed from the SCAR *Standard symbols for use on maps of Antarctica*, to meet the needs of large-scale map production and the creation of databases. The features listed have been divided into distinct categories: oceanic, coastal and terrestrial, human-related, fauna and flora, and projection details. Related features, for example coastal ones such as ice-free coastline and ice-covered coastline, are grouped together in the table for ease of reference, and they have consecutive feature code numbers. Definitions of the terms used are included in the table.

Feature codes. A six-digit code provides the following information about a feature:
a) the first number indicates the feature category: 1, oceanic; 2, coastal; 3, terrestrial; 4, human-related; 5, fauna (birds); 6, fauna (animals); 7, flora; and 8, projection details,
b) 2nd to 3rd digit (1–99), feature*,
c) 4th digit (0–9), subset of feature,
d) 5th digit, class of feature: 0, class not known; 1, point or mark; 2, line; 3, polygon; 4, annotation,
e) 6th digit, whether text is associated with the feature: 0, without text; 1, with text.

Specification. The complete list provides a look-up table for replication of the required symbology. Standards for line weight, colour, screens and patterns for area fill, size and shape of graphical symbols, style of annotation, etc. are based on a number of different sources, including the original 1980 SCAR document. This column of the table is incomplete at present but several of the proposed symbols are available in digital form at http://www-aadc.antdiv.gov.au/mapping.symbols.Standard_Symbols.pdf.

Acknowledgements: These draft documents have built on the solid work undertaken by Norsk Polarinstitutt in preparing the "Map specification standards recommended for use on topographic maps of Antarctica", tabled at XXIV SCAR in 1996. Cheryl Hallam and Jerry Mullins, US Geological Survey, and Paul Cooper, British Antarctic Survey, have contributed greatly to the development of the feature code system proposed herein.

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* Note that the term "undifferentiated" means that the subset of the feature is not known.

Oceanic features **100-113**
Permanent **100-105**
Sea 100
Bathymetric contours 101
Isolated bathymetric depression 102
Sounding 103
Offshore rocks 104
Continental shelf 105
Transient **110-113**
Antarctic Convergence 110
Sea-ice extension 111
Fast or bay ice 112
Stranded iceberg 113
Coastal features **200-210**
Coastline, undifferentiated 200
Ice-free coastline, undifferentiated 201
Ice-free coastline against open sea 202
Ice-free coastline against ice shelf 203
Ice-covered coastline, undifferentiated 204
Ice-covered coastline (ice wall) against open sea 205
Ice-covered coastline against ice shelf (grounding line) 206
Ice shelf features 207
Ice front 208
Ice tongues 209
Tidal zones 210
Terrestrial features **300-346**
Inland, ice-covered **300-304**
Ice-covered area, undifferentiated 300
Disturbed ice features 301
Elevated features 302
Depression area 303
Blue ice 304
Inland, ice-free **310-311**
Ice-free areas 310
Ice-free elevated features 311
Inland, drainage **320-324**
Glacier 320
Stream/river 321
Alluvial fan 322
Swamp/marsh/flooded area 323
Lake 324
Inland, elevation **330-337**
Contours, undifferentiated 330
Contours, ice-covered ground 331
Depression contour on ice-covered ground 332
Elevation point on ice-covered ground 333
Ice thickness 334
Contours on ice-free ground 335
Depression contour on ice-free ground 336
Elevation point on ice-free ground 337
Survey **340-346**
Control point, undifferentiated 340
Astronomical control point 341
Gravimetric control point 342
Geodetic control point 343
Geodetic satellite control point 344
Bench mark 345
Tide gauge 346
Human-related features **400-453**
Tracks **400-403**
Tracks, undifferentiated 400
Oversnow route 401
Permanent tractor track 402
Road 403
Aircraft **410-416**
Aerodrome, undifferentiated 410
Aerodrome, wheeled aircraft 411
Aerodrome, ski-equipped aircraft only 412
Aerodrome, helicopter 413
Water aerodrome 414
Landing strip 415
Aircraft wreckage 416
Ships and boats **420-422**
Anchorage/landing place for vessels, undifferentiated 420
Shipwreck 421
Beacon 422
Constructions **430-440**
Buildings 430
Scientific station 431
Refuge 432
Storage facilities 433
Radio mast 434
Pipe line 435
Power line 436
Automatic weather station 437
Signpost 438
Disturbed ground 439
Burial site 440
Environmental **450-454**
Historic site or monument 450
Antarctic Specially Protected Area 451
Antarctic Specially Managed Area 452
Site of Special Scientific Interest 453
Environmental zone 454
Fauna: birds **500-508**
Bird colony, undifferentiated 500
Albatross 501
Cormorant 502
Petrel 503
Penguin rookery, undifferentiated 504
Adélie rookery 505
Chinstrap rookery 506
Emperor rookery 507
Gentoo rookery 508
Fauna: animals **600-601**
Animal colony, undifferentiated 600
Seal colony 601
Flora **700-704**
Vegetation, undifferentiated 700
Moss bank 701
Lichen colony 702
Grass patch 703
Algae 704
Projection-related features **800-806**
Isogones 800
Magnetic declination 801
Magnetic pole 802
Geographical pole 803
Antarctic circle 804
Geographical graticule 805
Non-geographical grid 806