

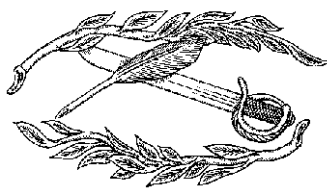


New South Wales Government

Surveyor General's Directions

No. 4

Using the Survey Control Information Management System (SCIMS)





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Survey Control Information Management System

1. Introduction

The Survey Control Information Management System (SCIMS) is a computer database of coordinates and other attributes for the State Survey Control Network. This information is collected through the operation of the Surveying Act, 2002, and the current Surveying Regulation.

SCIMS stores information in the Geocentric Datum of Australia 1994 (GDA94) coordinate system. Limited information is maintained in the former Australian Geodetic Datum 1966 (AGD66) coordinate system. Access to SCIMS is via the Lands Department Internet site at: www.lands.nsw.gov.au/OnlineServices/SCIMS/

2. Search Facilities

SCIMS has a number of standard search facilities that assist the user to obtain the desired information. All searches display reduced levels (where available) referenced to the Australian Height Datum 1971 (AHD71) and the user may select horizontal coordinates in a variety of systems depending on the datum:

GDA94:	Geographic,	or the Map Grid of Australia (MGA)
AGD66:	Geographic,	or the Integrated Survey Grid (ISG), or the Australian Map Grid (AMG).

Note: The record of AGD66 coordinates has not been fully maintained since 2000. Therefore many new marks do not have AGD66 (i.e. AMG or ISG) Coordinates

Listed below are the different search types available:

2.1 Single Mark Search

A single mark search will provide survey control information on a specific survey mark. The search is undertaken by way of Mark Type and Number or Trigonometrical Station Name (or part of the name).

2.2 Radial Mark Search

A radial mark search will recall all survey marks that lie within a specified radius from a specified survey mark.

2.3 Radial Coordinate Search

A radial coordinate search will recall all survey marks that lie within a specified radius from a specified horizontal coordinate.



2.4 Polygon Area Search

A polygon area search will recall all permanent marks that lie within the boundaries of a polygon specified by survey marks and /or a set of horizontal coordinates.

3. Special Search Criteria

All searches (apart from single mark) allow the user to refine the search using special criteria which help filter information that is not required. These criteria are based on mark types and /or the accuracy "CLASS" of the coordinates.

4. Interpretation of Output

To assist the user of the system, a glossary of terms is included at Appendix A and an outline of the "CLASS" & "ORDER" accuracy classifications for coordinates is included at Appendix B.

For the purpose of the current Surveying Regulation, an "established permanent survey mark" is any Trigonometrical Station, Permanent Mark or State Survey Mark which has a horizontal "CLASS" listed as 3A, 2A, A, B, or C.

Where height is to be determined for new marks placed, only marks that have a vertical "CLASS" of L2A, LA, LB, LC, LD, 2A, A, or B should be used for adoption of AHD.

5. Destroyed or Disturbed Marks

Permanent Mark Notification forms (see Appendix E) **or add hyperlink** are available to convey information about the status of Permanent Marks. These can be forwarded to Survey Information, Sydney.

By Fax to 02 82587555

Mail to Manager Survey Information GPO Box 15, Sydney 2001 NSW

E-mailed to scims@lands.nsw.gov.au

Reply paid postage "Permanent Mark Notification" cards are available to convey information about the status of Permanent Marks. These cards can be obtained from Survey Services, Sydney.

If a mark is disturbed, destroyed, not found or found intact when reported in SCIMS to be otherwise, then that information must be conveyed to the system and the system users as quickly as possible. Only by having up-to-date mark status knowledge is it possible to thoroughly search and plan survey activities. Therefore, it is essential that all surveyors contribute to the system by filling out the "Permanent Mark Notification" form and forwarding it to the Manager, Survey Information, Survey Services, Sydney, when a mark is found to be destroyed, disturbed or not found or when some other anomaly may exist. It is also a requirement of annual registration as a licensed Land Surveyor that to



the Surveyor General is notified as soon as practicable of all marks placed, or marks removed, damaged, destroyed, displaced, obliterated or is in a state of disrepair (see Clause 4I of the Surveying Regulation). If a mark is notified as being destroyed a credit will be given against a future search.

6. E-Sketch

This web-based system will provide electronic delivery of locality sketch plans initially through a separate web-site. E-sketch will eventually be fully integrated with SCIMS Online to provide sketch plans of Survey Control Marks from a single application.

7. Searching

The preferred method to obtain survey control information is by using SCIMS-Online on the internet via www.landsnsw.gov.au/OnlineServices/SCIMS (Registered users only).

Alternately, information can be obtained:

- a) From the counter at:

Survey Services
Land, Property and Information NSW
2nd Floor,
Queens Square Building
SYDNEY
Phone: (02) 8258 7500
between the hours 8.30am to 4.30pm, Monday to Friday.

- b) By mailing the "Search Request" form to:

The Manager
Survey Services
Land, Property and Information NSW
GPO Box 15
SYDNEY NSW 2001

- c) By faxing the "Search Request" form to:

The Manager
Survey Services
Fax: (02) 8258 7555

8. The Search Request Form

A "Search Request" form is shown at Appendix C. All details are to be included in the form to ensure prompt and thorough service. Following, is an explanation of the key information required on the Search Request form.



8.1 Customer Details

“Contact Person” - It is important that the name of a specific contact person be given as it is often necessary to contact a client to clarify aspects of the search request.

“Cust Job Ref” - (Customer Job Reference) This should be completed as a reference for accounting purposes; it will be added to the invoice.

“Customer No” - This ensures that the right person/company is invoiced. This number can be found on a previous invoice.

8.2 Return Instructions

The completed search can be collected from the counter, posted or faxed. If you require information to be faxed, an extra charge is incurred.

8.2 Search Locality

The current lot and DP number or a Portion, Parish and County should be supplied for verification of the search area.

It is helpful if a diagram indicating the extent of the survey is supplied. In urban areas, the street name, the nearest cross street and a distance to the survey from that cross street should be supplied. In addition, the name of the Town or Suburb should be shown.

"CMA/UBD ref": A reference to either a CMA map or a page of a UBD street directory may be used to give the locality of a survey. The reference to the CMA map is to include the following information if known:

Map name, map number, scale and grid references,
eg: Bathurst, 8831-3-S, 1:25000, 471983

If a UBD street directory is used, then the following information is to be included:

Street directory name, edition, page, locality reference
eg: Sydney UBD, 25th Edition, Page 150, A1

8.4 Basic Radial Search

The Basic Radial Search is the search that should be used for most surveys. It will provide coordinates for all marks, whether established or not, within the standard radius centred on the nominated point. Where necessary the search is to be used as supporting evidence for an exemption request.

The standard radius for the Basic Radial Search is:



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350 metres for a City or Suburban area (urban) or
1100 metres for a country survey (non-urban).

This standard radius will be extended to provide at least three established marks
In urban areas where two established marks are located within the standard radius.

The search also includes all non-established marks so that the most appropriate
connections can be made to the Survey Control network.

An A4 size image of the DCDB showing the approximate location of the
permanent marks in the search area is included with the listing of the marks.
The Basic Radial Search requires the following specific information to be
provided (If this information is missing a search fee may be charged):

- a) The type of area in which the survey is being undertaken (ie urban or non-urban) and
- b) The radial search centre as:
 - i) an MGA coordinate including the zone, or
 - ii) a specific permanent mark (PM, SSM, or TS) and number which is already in SCIMS.

Locality Sketch Plans are not provided as part of the Basic Radial Search but may
be ordered for specific marks at an additional cost. (See Appendix C)

8.5 Specific Mark Search

Locality Sketch Plans and values will be supplied for the specific marks listed.

8.6 AHD Level Search

When marks with levels only are required this section should be completed.

8.7 Polygon Search

For this search a diagram showing the survey marks and/or co-ordinates of the
vertices of the search area should be supplied.

8.8 Special Search Instructions

If specific information is required, additional instructions can be included in this
section.

8.9 Search Response

8.10 Office Use Only

Details of information supplied and costing is included on the search request as



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an immediate indication of the costs incurred and for checking purposes.
Payment for services can be made in person at Survey Services or, if preferred, an invoice will be sent at the beginning of the month.

For further information contact:

The Manager
Survey Services
Land, Property and Information NSW
2nd Floor,
Queens Square Building
SYDNEY NSW 2000
Or

GPO Box 15
SYDNEY NSW 2001

Telephone: 02 8258 7500
Facsimile: 02 8258 7555



Appendix A - Glossary of Terms and Abbreviations

Mark Type and Number - consists of one of the following:

TS -	Trigonometrical Station	GB -	Geodetic Bench Mark
SS -	State Survey Mark	MM-	Miscellaneous Survey Mark
PM -	Permanent Mark	CP-	Mapping Control Point
CR	Cadastral Reference Mark		

Followed by a number in the range 1-999999.

This may or may not be followed by a witness / eccentric mark number in the range 1-99.

Name In conjunction with trig station mark type and number this consists of the Geographical Names Board approved name of the station. If [P] appears at the end of the description the station is marked with a concrete or steel pillar.

Alias Used for cross-reference to mark identifiers issued by other organisations.

Status	Description	Code	Remarks
	Destroyed	(D)	Evidence was found that the mark is destroyed.
	Not Found	(N)	Mark was searched for, not found, but no evidence exists to indicate that it was destroyed.
	Uncertain	(U)	Mark was found, however it was in an unstable condition or there was evidence that it had been disturbed or moved to another location. Status will remain "uncertain" until verified by survey.
	Subsidence Area	(S)	Mark is located in an area identified by the Mines Subsidence Board as being subject to movement. Coordinates are to be used with caution.
	Found Intact	(F)	Mark was found in good condition.

Height or Reduced Level (RL) in metres related to the Australian Height Datum 1971 (AHD71).

Coordinates May be expressed in terms of projection coordinates (Eastings & Northings) or geographic coordinates (Latitude & Longitude).

Zone MGA or AMG zones shown as 56, ISG zones shown as 561.

Source A unique number, which identifies the source of the coordinate or height.



Appendix B - Standards of Class and Order

Refer to: **Inter-governmental Advisory Committee on Surveying and Mapping
Standards and Practices for Control Surveys
ICSM Publication No. 1
(SP1)**

This publication is available from the ICSM website:
www.icsm.gov.au/icsm/publications/sp1/sp1.htm

The following are extracts from SP1:

Class

CLASS is a function of the planned and achieved precision of a survey network and is dependent upon the following components:

- the network design,
- the survey practices adopted,
- the equipment and instruments used, and
- the reduction techniques employed,

all of which are usually proven by the results of a successful, minimally constrained least squares network adjustment computed on the ellipsoid associated with the datum on which the observations were acquired.

Order

ORDER is a function of the CLASS of a survey, the conformity of the new survey data with an existing network coordinate set AND the precision of any transformation process required to convert results from one datum to another.

Stations in horizontal control surveys are assigned an ORDER commensurate with the CLASS of the survey and the conformity of the survey data with the existing coordinate set.

The ORDER assigned to the stations in a new survey network following constraint of that network to the existing coordinate set may be:

- (a) not higher than the ORDER of existing stations constraining that network, and
- (b) not higher than the CLASS assigned to that survey.



Interpretation of CLASS codes as per SCIMS search results CLASS for Horizontal Coordinates

CLASS	Typical Applications
3A	Special high precision surveys
2A	High precision national geodetic surveys
A	National & State geodetic surveys
B	State survey control networks
C	Cadastral control surveys
D	Cadastral & other surveys
E	Approximate & lower order surveys
U	Unknown or unreliable

CLASS for Heights

It is accepted that some heighting techniques such as differential levelling propagate errors in proportion to the square root of the distance. Other techniques such as GPS and trigonometric levelling propagate errors mainly in proportion to the distance. This is particularly apparent on distances greater than 1 km. Therefore different types of class and order are assigned according to the heighting technique used. Refer to SP1 for details of observation techniques.

CLASS	Typical Applications
L2A	Precise levelling (Forward & backrun misclose <2 d)
LA	1st order levelling (Forward & backrun misclose <4 d)
LB	2nd order levelling (Forward & backrun misclose <8 d)
LC	3rd order levelling (Forward & backrun misclose <12 d)
LD	Levelling (Forward & backrun misclose <18 d)
LE	Levelling (Forward & backrun misclose <36 d)
2A	Precise trigonometric or GPS heighting. (Standard deviations of observations < 3(d+0.2)mm)
A	Trigonometric or GPS heighting for state survey control. (Standard deviations of observations < 7.5(d+0.2)mm)
B	Trigonometric or GPS heighting for cadastral control. (Standard deviations of observations < 15(d+0.2)mm)
C	Trigonometric or GPS heighting. (Standard deviations of observations < 30(d+0.2)mm)
D	Trigonometric or GPS heighting. (Standard deviations of observations < 50(d+0.2)mm)
E	Trigonometric or GPS heighting. (Standard deviations of observations < 100(d+0.2)mm)
U	Unknown or unreliable.

("d" in the above table refers to distance in kilometres)



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Appendix C - Search Request Form SEARCH REQUEST - SURVEY INFORMATION

GPO Box 15 Sydney NSW 2001
Phone : (02) 8258 7500

2nd Floor, 1 Prince Albert Road, Queens Square Sydney NSW 2000
Fax : (02) 8258 7555 <http://www.lands.nsw.gov.au/>

Contact Person : _____ Cust Job Ref: _____ Customer No : _____
Company : _____ Phone: _____ Fax: _____
Address : _____ Signature: _____
Postcode: _____ Date: / /

RETURN INSTRUCTIONS Please Fax Please Post Will collect from Survey Information Sydney

SEARCH LOCALITY (Attach Diagrams if applicable) Proposed Survey is a subdivision creating more than 10 Allotments

Lot _____ DP _____ OR Portion _____ Parish _____ County _____

Street _____ Distance _____ Direction _____ to cross st _____

Suburb/Town _____ Council _____ MAP/UBD Ref _____

BASIC RADIAL SEARCH Min. 350m (urban) OR Min. 1100m (non-urban)

Centre search on PM/SSM _____ OR Coords (MGA/AMG/ISG) E: _____ N: _____ Zone: _/_/

SPECIFIC MARK(S) SEARCH Mark N- _____

Locality Sketch Plans MGA(Coords) ISG(Coords) AMG(Coords) AHD Level Other : _____

AHD LEVEL SEARCH 2 marks OR ___ of marks (Please specify) _____ Distance Limit (eg 1km) _____

Centre search on PM/SSM _____ OR Coords (MGA/AMG/ISG) E: _____ N: _____ Zone: _/_/

Locality Sketch Plans Part of Control Survey Plan Other : _____

POLYGON SEARCH (Please attach diagram of search area showing coords of vertices) eg: Road, Easement or large Subdivision

Locality Sketch Plans MGA(Coords) ISG(Coords) AMG(Coords) AHD Levels Other : _____

SCIMS ONLINE LOCALITY SKETCH PLANS

SPECIAL SEARCH INSTRUCTIONS _____

SEARCH RESPONSE

Comments: _____

OFFICE USE ONLY

ABN 21 804 973 362

Manual search @ \$ 20.00 per 15 minutes _____ . _____
Basic Radial Search @ \$ 25.00 per search _____ . _____
SCIMS printout @ \$ 7.00 per mark _____ . _____
Sketch or Trig card @ \$ 3.95 per copy _____ . _____
DCDB Plot - Part @ \$ 3.95 per A4 plot _____ . _____
Fax @ \$ 5.00 first page + _____ . _____
@ \$ 2.00 per extra page _____ . _____
Other : _____ . _____

Account : 20-82000-20541-1000 TOTAL \$ _____ . _____

PLEASE QUOTE JOB NUMBER IN ANY CORRESPONDENCE

Job Number : _____

Officer : _____

Date Received : _____

Date Completed : _____

Request by : Phone Mail Fax Online

Returned by : Phone Mail Fax



Appendix D - Scale of Fees

SURVEY CONTROL INFORMATION AND SURVEY CONTROL MARKS

SCALE OF FEES

The scale of fees for goods and services from Survey Services, Land and Property Information is:

ITEM/SERVICE	FEE/CHARGE
Locality Sketch Plans	\$3.95 per copy
Survey Control Information (Counter, Phone Fax/Written)	\$7.00 per information set
SCIMS Online (Internet Access)	\$3.50 per information set (ie Co-ords, Height, Latitude, Longitude etc)
Trig Card Information	\$3.95 per page
Search Fee	\$20.00 per 15 minutes + cost of information required
Basic Radial Search	\$25.00 per search area
Fax	Transmission Cost \$5.00 for first page plus \$2.00 per page thereafter, plus any copying costs incurred where copying is required prior to faxing.
Permanent Mark Cover Box	\$25.30 (includes GST)
Permanent Mark Stainless Steel Pin	\$11.00 (includes GST)
Permanent Mark Brass Plate + Screws (includes Survey Plaque)	\$6.10 (includes GST)
State Survey Mark Type 1	\$10.75 (includes GST)
State Survey Mark Type 2	\$9.10 (includes GST)
Survey Plaque if purchased separately	\$2.00

Freight charges are not included in prices. Freight will be charged at cost based on mass and destination rounded up to nearest 10 cents.

These prices are subject to change.

Confirmation of prices is available from Survey Services, Sydney (see page 4-6).