

Purpose: Create and use a System 1200 Codelist.

Instrument: 1200 Series (GPS & TPS)

This guide explains the different coding types and how to create and use a codelist for the System 1200. We strongly recommend that you first use this guide to familiarize yourself with an existing codelist (call Global Survey for samples) before creating a new Codelist.

Further information: Refer to your instrument reference manual and the Leica Geo Office help menu for further details

Definitions

- Code – An identifier for surveyed features. There are different code types;
Note – A Code can be either Thematic or Free. If you intend to use the same code as a Free code and a Thematic code, it will need to appear twice in the Codelist
 - Thematic codes
 - Point Code – A code that applies to a single point
 - Line Code – A point code that includes linestyle information for use by LGO. Surveying practices in New Zealand typically do not utilize line codes
 - Area Code – A point code that includes linestyle and block shading information for use with LGO. Surveying practices in New Zealand typically do not utilize Area codes
 - Free Code – A code that applies to multiple observations based on chronological order.
Note - The use of Free codes depends on the capabilities of the office software.
Hint – JOIN could be used as a Free code to instruct the office software to join all the subsequent codes with a line
Hint - CH (Chainage) with a numerical attribute could be used as a Free code to assign a given Chainage value to all subsequent observations. The observations may also have individual Point Codes such as EOS, CL, TB, BB to control symbols or linework.
- Quickcode – A short Alphanumeric version of the Code (for example 1=SH or T=Tree) used to speed up field data collection by triggering the coding, measuring and recording of an observation in one action.
- Attribute – Additional information relating to a feature, in addition to position information. Attributes are associated with Codes.
- Code Group – A group of Codes that are in some way related (Example – Topography, Buildings, Street Furniture). A Codelist may contain several Code groups.
- Codelist – A collection of codes that can be loaded on to the instrument for recall in the field, or to aid processing in the office software.

A *Basic* codelist is defined by:

- Only Free Codes are allowed.
- Code Groups *cannot* be defined.
- Attribute types are fixed to *Normal*, the Value type is fixed to *Text* and the Value Region is fixed to *None*.
- Attribute names are pre-defined ranging from *Attrib1* to *Attrib8*.

An *Advanced* codelist is defined by:

- Free *and* Thematical Codes are allowed, including Point, Line and Area Types.
 - Code Groups can be defined.
 - Attributes are fully user-configurable
- Codelist Manager – A tool within Leica Geo Office for creating and editing codelists

1. Prepare for creating the codelist

- a. List all the codes you typically use in the field
- b. For each code, list the attribute information that you want to collect at the same time (if required), including attribute type and default attribute values.
- c. For each code, note a Code Group name (if required)
- d. For each code, list a Quickcode identifier (if required). *Hint – 95% of your coding may only require 10-20 codes. Assign Quickcodes to these codes and use the longhand version of the code for the rest.*

2. Create the codelist

- a. Run Leica Geo Office
- b. Select Codelist management from the Tools menu
- c. Right-click in the Contents pane and select New Codelist from the menu that appears
 - i. Type a Name for the Codelist
 - ii. Select the Instrument class
Note – This Quick Reference Guide uses the System 1200
 - iii. Select the Codelist Type
Note – This Quick Reference Guide uses the Advanced Codelist
 - iv. Click OK

3. Create the Code Groups

- a. Click on the Codelist name in the Contents pane
- b. Right-click in the main (Right-hand) pane and select New Code Group from the menu that appears
 - i. Type a name for the Code Group
 - ii. Click OK
 - iii. Repeat step e. for each Code Group you require

4. Create the Codes

- a. Expand the Codelist tree structure in the Contents pane by clicking on the ‘+’ icon for the Codelist
 - b. Click on a Code Group
 - c. Right Click in the main (Right-hand) pane and select New Code from the menu that appears
 - i. Type a Code name
 - ii. Type a description (optional)
 - iii. Choose a Code Type.
Note – If a code is to be used interchangeably as Free or Thematic, two versions of the code must appear in the Codelist; each with a different Code Type
 - iv. Enter a Quick code value (optional).
 - v. Click OK
 - vi. Repeat step c. for all Codes in the same Code Group
 - d. Repeat steps b. and c. for all other Code Groups
- 5. Assign attributes to the codes (optional)**
- Hint – Attributes can be used by String-based software (such as LISCAD or 12D) to assist with stringing of coded features.*
- Hint – Attributes can be used to control the size of CAD symbols (such as Tree spreads) provided the Codelist, export format file and office software are synchronized to do so. Discuss your requirements with Global Survey if this functionality is required.*
- a. Expand the Code Group tree structure in the Contents pane by clicking on the ‘+’ icon for the Code Group
 - b. Click on a Code
 - c. Right Click in the main (Right-hand) pane and select New Attribute from the menu that appears
 - i. Type an Attribute name
 - ii. Select an Attribute Type
 - iii. Select a Value Type
 - iv. Select a Value Region.
Note – value regions of Range or Choice List require additional input in the Right Hand panel of the New Attribute dialogue box.
 - v. Enter a Default value (or leave at null)
 - vi. Click OK
 - vii. Repeat step c. for all attributes for a Code
 - d. Repeat steps b. and c. for all Codes in the same Code Group
 - e. Repeat steps a., b. and c. for all Code Groups in the same Codelist
- 6. Transfer the Codelist to the instrument**
- a. Insert the Compact Flash card into the computer or card reader
 - b. Right-click on the Codelist name in the Contents pane
 - c. Select PC Card from the Send To menu
 - d. Ensure the correct drive letter is selected and click OK
 - e. Stop the card, then place the CF card in the instrument and turn the instrument on
 - f. From the Tools menu, select Transfer Objects
 - g. Select Codelists
 - i. Transfer From – CF card

- ii. Codelist – Choose from the available codelists
 - iii. Select CONT (F1)
 - h. Escape back to the main menu
- 7. Configure the instrument – Coding Settings**
- Note – Coding Settings and Display Masks must be configured correctly to make adequate use of Codelists
- Note – Coding settings can be accessed either by editing Configuration Sets globally from within the Manage main menu, or by editing only the current Configuration Set via the CONFIG main menu
- a. From the Main Menu, Select CONFIG
 - b. From the Survey Settings menu, select Coding Settings
 - i. Quickcode options
 - 1. Never – removes Quickcode icon from the status bar
 - 2. Off or On – Quickcoding is off or on by default, but this can be changed from the status bar
 - 3. Digits – Select 1, 2 or 3-digit Quickcodes. *Hint – only choose 2 or 3 if you have more than 9 or 99 Quickcodes defined.*
 - ii. Record Free Code
 - 1. Before Point or After Point – Consult your software manual for instructions.
Note – You may need to set Quickcode to On or Off to gain access to the Record Free Code setting
 - iii. Attributes
 - 1. Default – Presents the default values of the attribute (see 5.c.v above) for every new observation
 - 2. Last Used – Presents the last entered value of the attribute, from the last time the Code was used in a particular job. *Hint – This is useful for keeping track of multiple string numbers for string-based data collection (for software such as LISCAD)*
 - iv. Mand Attributes
 - 1. Always Prompt – always prompt for a value whenever an attribute is mandatory (See 5.c.2 above)
 - 2. Only if no value – Only prompt if the default value for a mandatory attribute is null
 - v. Thematic Codes
 - 1. With Codelist – Use a codelist by default if one is associated with the job (recommended)
 - 2. Without Codelist – Allow freeform entry of codes as required
 - c. Select CONT (F1) to accept all settings and return to the main menu.
Note – Press ESC to Escape without saving changes.
- 8. Configure the instrument – Display Mask**
- Note – Display Masks and Coding Settings must be configured correctly to make adequate use of Codelists. Display Masks control the information that is viewed or keyed in by the operator in the field. For coding, the display mask must provide access to the Code field, and any additional attribute lines that need to be collected. We recommend that Display masks are configured to provide access to Point Codes and Point Code Attributes. See Section 9, below for how to access Free Codes.
- Note – Display Masks can be accessed either by editing Configuration Sets globally from within the Manage main menu, or by editing only the current Configuration Set via the CONFIG main menu
- a. From the Main Menu, Select CONFIG
 - b. From the Survey Settings menu, select Display Settings

- c. Choose the Display Mask you use for Coding and Press DMSK (F3)
- d. Use the cursor keys to highlight the display line to use for the Point Code, and press Enter
- e. Select “Code (pt)” and press Enter
- f. Use the cursor keys to highlight the display line to use for Attributes (if any), and press Enter
- g. Select “Attribute (pt) 01” and press Enter
Note – If your codes have multiple user-entered attributes, add additional lines for “Attribute (pt) 02”, etc, or consider using a separate display mask purely for code and attribute values
- h. When Complete, Press CONT (F1) twice to return to the main menu

9. Use codes in Survey

- a. From the Codelist tab of the New Job or Edit Job page, select a Codelist
Note – Refer to ‘QRG_Setup & Topo with System 1200’ for further details
- b. In the Survey screen, highlight the Code field and start typing the code name
Note – If the Coding Settings are set to “Use Codelist”, the codelist will appear and the code selection will settle on the code being typed
- c. Press Enter to accept the Code.
- d. If the code has Attributes, the attribute fields will be available for entry of information. Enter the necessary attribute information.
- e. Press ALL (F1) to make an observation and record a point with coding

10. Use Quickcodes in Survey

- a. Ensure that Quickcoding is set to On. *Hint – the Qcode icon on the status line has a ‘tick mark’ when Quickcoding is On. On the RX1220T, touch the icon to toggle the setting, otherwise, see section 7.b.1 above for further information*
- b. To measure a point, simply type the Quickcode value. A point will be measured, coded and stored in one action. *Hint – If using 2-digit Quickcodes, type 01, 02 or 03, or alternatively type 1-Enter, 2-Enter or 3-Enter for codes 1 through to 9.*

11. Adding codes in the field

Note – If you are using a Codelist and the code you need is not in the list, you can add a code to the list in the field.

Note – The ability to create a new code in the field does not provide the same level of configurability as creating a new code in the office. The process is adequate for creating simple, temporary codes, but consideration should be given to editing the original version in codelist manager at a later time.

- a. Type the complete new code in the code field. The Codelist appears
- b. Select NEW (F2) to create a new code
- c. Key in a Description (optional)
- d. Assign the code to a Group
- e. Select NEW-A (F2) to add an attribute name and default values
Note – If an attribute name is important for subsequent office processing, ensure the name you assign the new attribute (for example, String) is identical to that used elsewhere in the codelist.
- f. Select STORE (F1) to store the new code
- g. Select CONT (F1) to choose the new code from the codelist.

12. Update the master codelist on the instrument with new codes added within a job

Note – Adding a code within a job only changes the copy of the codelist that is associated with the job. To update the master codelist on the instrument, proceed as follows

- a. From the main menu, select Manage

- b. Select Jobs. Choose the job and select EDIT (F3)
- c. Press PAGE (F6) to move to the codelist page
- d. Select Shift, and then EXPRT (F2)
- e. Select the codelist to update and Press CONT (F1). An informational message appears. Press CONT to return to the Job menu, and Escape to the main menu.