

Content Standard for Digital Geospatial Metadata V. 2 Extension for Bathymetry Raw Data

Summary:

In order to create metadata for bathymetric raw data, it is necessary to extend the CSDGM. Two new sections are defined, the first new section provides information about the data collection environment, the second section offers information about the datasets itself like statistical values.

The document starts with a view of the main metadata structure, listing standard and new sections (bold letters), next the new sections are described according to the CSDGM.

(30.3.2006)

Metadata Structure

- 0 Metadata -- data about the content, quality, condition, and other characteristics of data.
Type: compound
Short Name: metadata

Metadata =

Identification_Information +
 0{Data_Quality_Information}1 +
 0{Spatial_Data_Organization_Information}1 +
 0{Spatial_Reference_Information}1 +
 0{Entity_and_Attribute_Information}1 +
 0{Distribution_Information}n +
 Metadata_Reference_Information +
0{Cruise_Description}1 //new section, S. 1
0{Bathymetry_Data_Description}1 //new section, S. 2

Cruise and Equipment Information (New Section)

- 11 Cruise Description – information about the cruise on which the data were collected and the equipment, i.e. the navigation system and the sonar system.
Type: compound
Short Name: cruise_descr

Cruise_Description =

Vessel_Name +
 Vessel_Operating_Institute +
 Sonar_Platform +
 Sonar_Model +
 0{Sonar_Version}1 +
 Navigation_System +
 Cruise_Name +
 Main_Investigator +
 Main_Investigator_Institute

- 11.1 Vessel name --
Type: text
Domain: free text
Short Name: vessel
- 11.2 Vessel Operating Institute --
Type: text
Domain: free text
Short Name: vessel_opinst
- 11.3 Sonar Platform --
Type: text
Domain: "Ship" "Vehicle" free text
Short Name: sonar_platform
- 11.4 Sonar Model --
Type: text
Domain: "Hydrosweep" "Seabeam" free text
Short Name: sonar_model
- 11.5 Sonar Version --
Type: text
Domain: "DS1" "DS2" free text
Short Name: sonar_version
- 11.6 Navigation System --
Type: text
Domain: free text
Short Name: nav_sys_descr
- 11.7 Cruise Name --
Type: text
Domain: free text
Short Name: cruise_name
- 11.8 Main Investigator --
Type: text
Domain: free text
Short Name: main_invstgtr
- 11.9 Main Investigator Institute --
Type: text
Domain: free text
Short Name: main_invstgtr_inst

Bathymetry Raw Data Description Information (New Section)

- 12 Data Description – information about the collected data, i.e. about the settings and the track section as well as statistical information about the measurements in the dataset

Type: compound

Short Name: data_descr

Data_Description =

Swath_Angle +
 Swath_Angle_Units +
 Swath_Spacing +
 Surveying_Mode +
 Beams_per_Swath +
 Number_of_Records +
 Bathymetry_Data_Statistics +
 0{Amplitude_Data_Statistics}1 +
 0{Sidescan_Data_Statistics}1 +
 Range_of_Depths +
 Navigation_Description

Bathymetry_Data_Statistics =

Number_of_Beams +
 Number_of_Good_Beams +
 Number_of_Zero_Beams +
 Number_of_Flagged_Beams +

Amplitude_Data_Statistics =

Number_of_Beams +
 Number_of_Good_Beams +
 Number_of_Zero_Beams +
 Number_of_Flagged_Beams +

Sidescan_Data_Statistics =

Number_of_Pixels_per_Swath +
 Number_of_Good_Pixels +
 Number_of_Zero_Pixels +
 Number_of_Flagged_Pixels +

Range_of_Depths =

Minimum_Depth +
 Maximum_Depth +

Navigation_Description =

Time_Period +
 Time_Period_Units +
 Length_of_Track_Section +
 Length_Units +
 Average_Speed +
 Speed_Units

- 12.1 Swath Angle --
Type: text
Domain: "90" "100" "120" free text
Short Name: swath_angle
- 12.2 Swath Angle Units --
Type: text
Domain: "Degrees" free text
Short Name: swath_angle_unit
- 12.3 Swath Spacing --
Type: text
Domain: "Equal Spacing" "Equal Footprints" free text
Short Name: swath_spacing
- 12.4 Surveying Mode --
Type: text
Domain: "Hardbeams" "HDBE" "HDBE Standard" "HDBE ASLC"
"HDBE Max Level" free text
Short Name: mode
- 12.5 Beams per Swath --
Type: integer
Domain: Beams per Swath ≥ 0
Short Name: beams_per_swath
- 12.6 Number of Records --
Type: integer
Domain: Number of Records ≥ 0
Short Name: num_of_recs
- 12.7 Bathymetry Data Statistics --
Type: compound
Short Name: bat_data
- 12.7.1 Number of Beams --
Type: integer
Domain: Number of Beams ≥ 0
Short Name: num_of_beams
- 12.7.2 Number of Good Beams --
Type: integer
Domain: Number of Good Beams ≥ 0
Short Name: num_of_good_beams
- 12.7.3 Number of Zero Beams --
Type: integer
Domain: Number of Zero Beams ≥ 0
Short Name: num_of_zero_beams
- 12.7.4 Number of Flagged Beams --
Type: integer
Domain: Number of Flagged Beams ≥ 0
Short Name: num_of_flag_beams

- 12.8 Amplitude Data Statistics --
 - Type: compound
 - Short Name: ampl_data
- 12.8.1 Number of Beams --
 - Type: integer
 - Domain: Number of Beams ≥ 0
 - Short Name: num_of_beams
- 12.8.2 Number of Good Beams --
 - Type: integer
 - Domain: Number of Good Beams ≥ 0
 - Short Name: num_of_good_beams
- 12.8.3 Number of Zero Beams --
 - Type: integer
 - Domain: Number of Zero Beams ≥ 0
 - Short Name: num_of_zero_beams
- 12.8.4 Number of Flagged Beams --
 - Type: integer
 - Domain: Number of Flagged Beams ≥ 0
 - Short Name: num_of_flag_beams
- 12.9 Sidescan Data Statistics --
 - Type: compound
 - Short Name: sscan_data
- 12.9.1 Number of Pixels per Swath --
 - Type: integer
 - Domain: Pixels per Swath ≥ 0
 - Short Name: pixels_per_swath
- 12.9.2 Number of Good Pixels --
 - Type: integer
 - Domain: Number of Good Pixels ≥ 0
 - Short Name: num_of_good_pixels
- 12.9.3 Number of Zero Pixels --
 - Type: integer
 - Domain: Number of Zero Pixels ≥ 0
 - Short Name: num_of_zero_pixels
- 12.9.4 Number of Flagged Pixels --
 - Type: integer
 - Domain: Number of Flagged Pixels ≥ 0
 - Short Name: num_of_flag_pixels
- 12.10 Range of Depths --
 - Type: compound
 - Short Name: limits
- 12.10.1 Minimum Depth --
 - Type: real
 - Domain: Minimum Depth ≥ 0.0
 - Short Name: depth_min

- 12.10.1 Maximum Depth --
Type: real
Domain: Max. Depth \geq 0.0
Short Name: depth_max
- 12.11 Navigation Description --
Type: compound
Short Name: nav_descr
- 12.11.1 Time Period --
Type: real
Domain: Time Period $>$ 0.0
Short Name: total_time
- 12.11.2 Time Period Units --
Type: text
Domain: "hours" "seconds" free text
Short Name: time_units
- 12.11.3 Length of Track Section --
Type: real
Domain: Length $>$ 0.0
Short Name: total_time
- 12.11.4 Length Units --
Type: text
Domain: "meters" "feet" free text
Short Name: length_units
- 12.11.5 Average Speed --
Type: real
Domain: Speed \geq 0.0
Short Name: avg_speed
- 12.11.6 Speed Units --
Type: text
Domain: "km/h" "knots" free text
Short Name: speed_units

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