TDM Location Management System 5.4

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Contents

LOCATION INFORMATION

INTRODUCTION

In ICIS, location information is stored to record the origin or destination of germplasm or the location of sites where information or data on germplasm was collected. Locations may be very small precise sites such as fields or plots or quite large places like countries or even regions.

A distinction is made between (a) locations named for administrative or political reasons unrelated to germplasm, such as towns, provinces and countries, and (b) locations that have been used in a particular way for germplasm, such as locations where germplasm trials have been conducted or germplasm has been collected. ICIS provides for hierarchical classification of locations by country and three sub-national administrative levels. This classification may be used to help identify the administrative setting of locations used for germplasm.

A distinction is also made between location information and environmental data. Location concerns geographic position and relationships and does not concern environmental characterization such as climate and soil chemistry and land use. Such data are stored in DMS or specialist databases, not in the location management system.

ICIS stores location information in a set of tables duplicated in the central and local databases. This information is managed by the Location Management Module (LMM) described in Chapter 9. One aspect of this management is unique identification of locations, which is handled in exactly the same way as for germplasm (2.4) with local location IDs and descriptor types being negative until they are updated to the central database when unique positive identifiers are assigned.

Primary Location Information

The primary objectives for storing location data are to describe locations with sufficient precision to permit a researcher, with no additional knowledge, to relocate a specified location and to link the location to spatially referenced data such as soil maps or climate databases. The primary information stored in the location table is therefore a location name, and the primary hierarchy of country, province, district, and municipality. The last three sub-divisions are not uniquely defined for all countries and so are referred to as first, second and third sub-national divisions in order to be more generic.

The LOCATION Table

Columns - Long Name (Name)	Description	Type	Length (bytes)
LOCATION_ID (LOCID)	The unique identifier of the location.	Long	4
LOCATION_TYPE (LTYPE)	Specifies the type Location E.g., Country, Province or Nursery test site. Links to types defined in the UDFIELDS table	Integer	2
NO_LATLONG (NLLP)	Number of LAT-LONG points in the polygon describing the Location. Zero if no LAT-LONG	Integer	2
PREF_LOC_NAME (LNAME)	Preferred name of the location This may be a standardised name, such as from a digital gazetteer, or a coded name such as BUR010, or a text description, such as "2km E of Los Baños". Note that there is no requirement to assign a name to an unnamed location; an unnamed location may instead be identified by its latitude-longitude and/or altitude coordinates (in table GEOREF) and/or the country and subnat divisions in which it is located.	Character	60
ABBREV_LOC_NAME (LABBR)	Preferred abbreviated name of the location	Character	8
SUBNAT _LEVEL3 (SNL3ID)	Name of third level of political subdivision within country (e.g. Township or Vereda).	Long	4
SUBNAT _LEVEL2 (SNL2ID)	Name of second level of political subdivision within country (e.g. Municipality or County).	Long	4
SUBNAT _LEVEL1 (SNL1ID)	Name of first level of political subdivision within country (e.g. State, Province Department)	Long	4
COUNTRY_CODE (CNTRYID)	Country code linked to CNTRY lookup table	Long	4

Columns - Long Name (Name)	Description	Type	Length (bytes)
LOCATION_REPLACE (LRPLCE)	Own LOCID for deletion, replacement LOCID for replaced records, zero otherwise	Long	4

Secondary Location Information

Additional information about locations is stored in user defined descriptors which are defined in the USER DEFINED FIELDS (UDFLDS) table (3.6.1). Care should be taken to ensure that only descriptors relating to location are stored. This requires attention to the distinction between location and environmental data made earlier. Values of descriptors are stored in the LOCATION DESCRIPTOR TABLE. One example of a location descriptor might be a description of a route to the location with reference to more readily located sites.

The LOCATION DESCRIPTOR TABLE (LOCDES)

Columns - Long Name (Name)	Description	Type	Length (bytes)
LOCDES_ID (LDID)	Identifier for location descriptor	Long	4
LOCATION_ID (LOCID)	Identifier for the location	Long	4
DESCRIPTOR_TYPE (DTYPE)	Descriptor type, links to the UDFLDS table	Integer	2
USER_ID (DUID)	Identifies the ICIS user who entered the value.	Integer	2
DESCRIPTOR_VALUE (DVAL)	Specific value assigned by a user to the location.	Text	255
DESCRIPTOR_DATE (DDATE)	Date the value was assigned.	Long	4
DESCRIPTOR_REF (DREF)	Reference for descriptor source, links to BIBREFS table	Long	4

Georeferencing Locations

The best way to specify locations is through geo-referenced polygons, but this is not always feasible. Providing an accurate definition of a location as the clockwise polygon joining a number of lat-lon points (NLLP) provides the possibility of linking to GIS software. In most cases a single lat-lon point (NLLP=1) is given.

Description of the GEOREFERENCE (GEOREF) Table

Columns - Long Name (Name)	Description	Type	Length (bytes)
LOCATION_ID (LOCID)	Identifies the location. Link to the LOCATIONS table.	Long	4
LATLON_POINT_NUMBER (LLPN)	The lat-lon point (1 to NLLP).	Integer	2

LATITUDE (LAT)	Latitude in decimal degrees (+ for North, - for South, -1E36 for missing).	Real	8
LONGITUDE (LON)	Longitude in decimal degrees (+ for East, - for West, -1E36 for missing).	Real	8
ALTITUDE (ALT)	Altitude (m above sea level, -1E36 for missing)	Real	4

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