

Dubai Municipality



Digital Data Delivery General Standards

(2005)

Dubai Municipality



Civil Defence

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The following document describes the Standards of the Dubai Municipality for CAD/GIS/Mapping and digital cadastral information. All submissions of digital information to the Municipality should meet these Standards. Any questions on exceptions or variances to these Standards due to special need or project requirements should be referred to the Dubai Municipality GIS Center for further clarification.

I. General Digital Standards

Overall Digital CAD/Mapping/GIS Standard

The Municipality requires all CAD/GIS submissions to be in Two Dimension Bentley Microstation CAD or Auto-Cad format (2D) version 5 or later (excluding Microstation/J). **(Three Dimension Bentley Microstation CAD or Auto-Cad format (3D) version 5 or later (excluding Microstation/J) is highly recommended)**

Mapping Coordinate System

The Municipality currently uses the Dubai Local Transverse Mercator projection (DLTM). At present all digital data and related coordinates must in the DLTM projection unless explicitly specified otherwise by Dubai Municipality.

Dubai Municipality Primary Projection (DLTM)

| | |
|--|---------------------|
| <u>Projection:</u> | Transverse Mercator |
| <u>Parameters:</u> | |
| Longitude of Origin | 55:20:00:00 d:m:s |
| Latitude of Origin | 0:00:00.000 d:m:s |
| False Easting | 500,000.000 m |
| False Northing | 0.000 M |
| Scale Factor along Longitude of Origin | 1.0000 |

Geodetic Datum: WGS84

| | |
|---------------------|-----------------------------|
| <u>Ellipsoid</u> | WGS84 (Standard parameters) |
| Equatorial Radius: | 6378137.000 m |
| Polar Radius: | 6356752.314 m |
| Eccentricity: | 0.0818191908426215 |
| Flattening: | 0.00335281066474746 |
| Flattening Inverse: | 298.257223563002 |

Units and Formats

| | |
|--------------------------------|----------------------------|
| <u>Geographic Units:</u> d:m:s | |
| Format: Long/lat. | Precision: 4, Positive N,E |
| <u>Projection Units:</u> M | |
| Format: Easting/Northing | Precision: 3 |
| <u>Height Units:</u> M | Precision: 3 |
| <u>Geocentric Units:</u> M | Precision: 3 |
| <u>Distance Units:</u> M | Precision: 3 |
| <u>Angular Units:</u> deg | Precision: 6 |

Vertical Datum and Heights

| | |
|----------------------------|--------------------|
| <u>Vertical Datum:</u> | User defined |
| <u>Height Type:</u> | Orthometric |
| <u>Undulation Model:</u> | Average Undulation |
| <u>Average Undulation:</u> | 0.000 m |

Spherical Model

| | |
|-------------------------|-----------------|
| <u>Model type:</u> | Equatorial |
| <u>Model Parameters</u> | |
| <u>Radius:</u> | 6,378,137.000 M |

Greenwich Offset

0:00:00.000 d:m:s

Mapping Coordinate Readout

Master units, 0.123

Mapping Working Units

Dubai Municipality uses 1000 UOR's per Meter

Master Units : M
 Sub Units: MM
 Resolution: 1000 su per m with 1 positional unit per su

Mapping Global Origin

The global origin of Dubai Municipality graphic files is the lower left corner of the design plane, which has the value of 0.001,0.001. To test if a file meets this Standard, type in the following command in the Microstation Command window:

GO=\$

The result will be:

GO= -0.001, -0.001

The global origin may be set in a design file by entering:

GO=
 XY=0.001,0.001

Microstation Element Types

Microstation supports many types of graphic elements. However, not all elements are supported or desirable in the Dubai Municipality GIS environment. The Municipality allows the following type of Microstation Graphic elements, for most applications:

| Element Name | Type |
|-----------------|------|
| Lines | 3 |
| Line strings | 4 |
| Text | 17 |
| Text Nodes | 7 |
| Shapes | 6 |
| Complex Shapes | 14 |
| Arcs | 16 |
| Complex Strings | 12 |
| Cells | 2 |

Table 1: Microstation Element Types

B-spline curves are not generally allowed in the Municipality GIS environment, and must be replaced by elements from the above list before they may be included in the system.

However, cells (type 2) are only allowed as *Boundary Control Point Symbol*, *Permanent Survey Monumentation Symbol* (see page 10) and *Gate Level Symbol* (see page 6). *Shared Cells* or *Shared Cells Instance* are not accepted in any files.

Connectivity Rules

All line segments should be connected and all associated cells should be drawn as separate features on lines. (See Figure1 & Figure2)

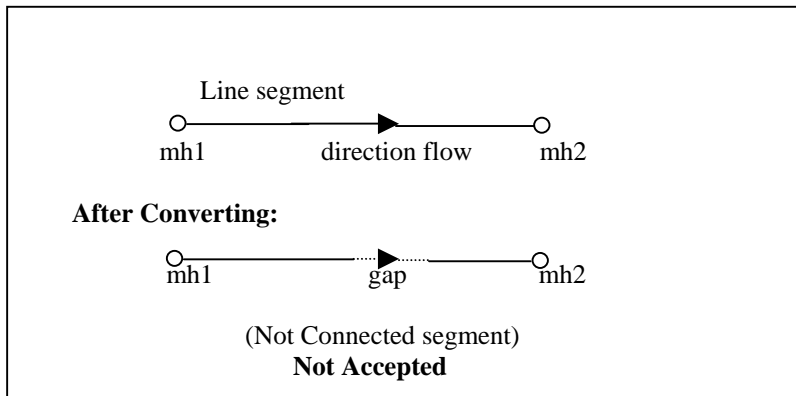


Figure1: Not accepted drawing

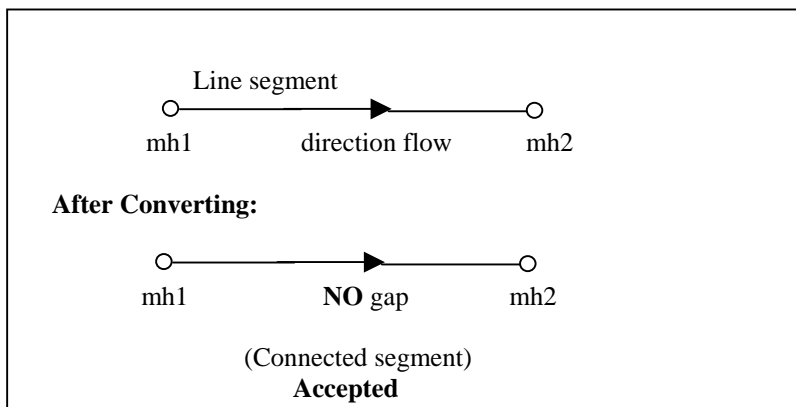


Figure2: Accepted drawing

Mapping Design file type (2D versus 3D)

All mapping data is to be submitted as two-dimensional (2D) Microstation graphic files. (Three-dimensional (3D) files are **highly recommended**).

Mapping Orientation

All mapping data is to be delivered in a non-rotated orientation.

Color Table, Font table, Symbol tables



The Municipality will furnish its Standard Color, font and Symbol tables as required. Contractors should not create or modify the Standard tables. **Contractors should also**

commit on color, level and element type for each feature. If additional Symbols are required, or exceptions or variances to the Standard tables are required due to special need or project requirements, any desired modifications should be approved by and coordinated with the Dubai Municipality GIS Center.

I. Digital Data Standards for As-built drawings Civil Defence

Directory structure

Directory Structure for drawing preparation & submission

| | File Name | Description |
|---|------------------|---------------------|
|  | As-Built | Project Description |
|  | Others | Civil Defence |

Civil Defence:

CivilDefence.DGN: Civil Defence (directory Others)

| Feature | Element | Level | Weight | Line | Color | Text | Justifi- | Font | Feature |
|---------|---------|-------|--------|------|-------|------|----------|------|---------|
|---------|---------|-------|--------|------|-------|------|----------|------|---------|

GIS Data Standards

| | Type | | | Style | | Height And width | cation | | Code |
|--------------------------|------|---|---|-------|---|------------------------|--------|----------|-----------|
| Fire Hydrant | 2 | 1 | 1 | 0 | 1 | | | Standard | CIV010001 |
| Civil Defence Manhole | 2 | 2 | 1 | 0 | 2 | | | Standard | CIV010002 |
| Duct Marker | 2 | 3 | 1 | 0 | 3 | | | Standard | CIV010003 |