

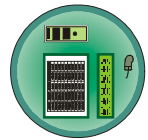
# The CEDRA Corporation's COMMAND OF THE MONTH

A monthly information bulletin

June 2010

FEATURED COMMAND

Multi-Column  
Dialog Boxes



## Application Description

In the February 2005 issue of the Command of the Month publication the CEDRA-DataEditor software was discussed. For those unfamiliar with the CEDRA-DataEditor software, this software facilitates the entering and editing of data.

To use the CEDRA-DataEditor software, the user must create a Theme Attribute Data File (the *themes.txt* file) which contains certain keyword commands for the various data fields (attributes) of each layer (theme) to be edited. The various attributes, which can be edited by a user, are displayed in a single column dialog box, one underneath the other, in the sequence of their appearance in the *themes.txt* file.

Additionally, each attribute is comprised of an identification label and a data entry field which may be a direct entry data field or a choice selection data field. Default entries or choices may be introduced in the *themes.txt* file so that they may be displayed in the dialog box.

There is no limit to the number of attributes that can be edited, but there is a limit of 50 attributes that can be displayed in a dialog box. If there are more than 50, the CEDRA-DataEditor will display multiple dialog boxes. The BACK button can be used to return to a previous dialog box, while the OK button will advance to the next dialog box.

Recently a request was made for a multi-column display of the attributes, rather than a single column display.

## The CEDRA Solution

As usual we investigated the possibility of implementing this request and determined that this functionality could be implemented fairly quickly and easily. The implementation of the multi-column dialog box involved the modification of the Theme Attribute Data File. Specifically, additional keyword commands were introduced. Shown in Fig-

### Command Of The Month bulletin

*This month's issue addresses a recent modification to the CEDRA-DataEditor software for a multi-column dialog box display.*

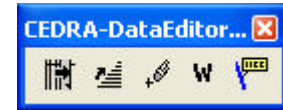


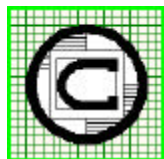
Figure 1  
The CEDRA-DataEditor-Tools Toolbar

ure 1 is the CEDRA-DataEditor-Tools toolbar. The new keyword commands effect the two left-most commands in the toolbar.

## The Theme Attribute Data File

At the core of the CEDRA-DataEditor software is the Theme Attribute Data File, which is an ASCII based text file called *themes.txt*. This file can be prepared with any text editor software and saved in the ArcView® GIS or ArcGIS®

Figure 2  
The CEDRA-DataEditor Multi-column Dialog Box



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project folder. To invoke the CEDRA-DataEditor, the user selects the left-most tool in the CEDRA-DataEditor-Tools toolbar of Figure 1, after which, a “pick” in the map area is made to select the point, line or polygon feature to be edited. If more than one feature can be found at the “pick”, confirmation of the feature will be required. Once a feature has been identified for processing, the software builds a dialog box on-the-fly and displays it to the user. The *themes.txt* file is used to build the dialog box and can be modified at any time during an ArcMap session. To reload the *themes.txt* file, the user clicks at the second tool from the left in said toolbar.

If the number of attributes to be edited is rather small, the single column design is more than adequate, see Figure 3. However, if the number of data fields becomes rather large this design may be seen as a bit cumbersome. Therefore, a multi-column dialog box (as shown in Figure 2) may be preferred. It should be noted that the user has the ability to display some layers with a single column dialog box, and others with a multi-column dialog box. So that, depending upon the case, the user is able to choose which type of dialog box is appropriate.

### The New Commands of the CEDRA-DataEditor

The structure of the *themes.txt* file remains the same as before the modification. However, the following eight new keyword commands have been introduced to accommodate the use of multi-column dialog boxes:

```
NCOLUMNS
COLUMNWIDTH
COLUMNITEMS
COLUMNHEADING
SUBCOLUMNS
SUBCOLUMNSTART
SUBCOLUMNHEADING
DISPLAYWITHCOLUMNS
```

These keyword commands should be introduced at the top of the *themes.txt* file above the first use of the THEME

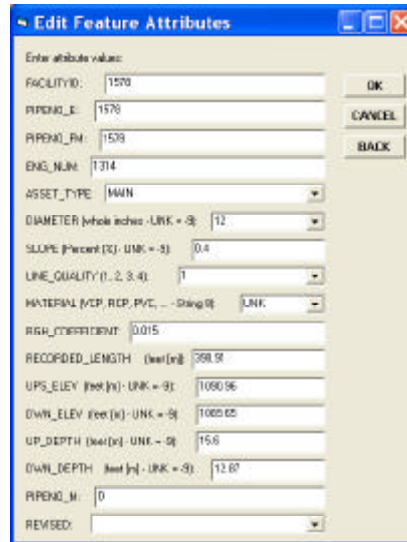


Figure 3  
Single Column Dialog Box

command. Note, all of the other keyword commands operate as before the modification.

### The Structure and Use of the New Commands

The structure of each keyword command is presented below, and each one is described in detail subsequently.

```
NCOLUMNS          Num
COLUMNWIDTH        IDc  Wid
COLUMNITEMS        IDc  Num
COLUMNHEADING      IDc  Hed
SUBCOLUMNS        IDc  Num
SUBCOLUMNSTART     IDc  IDs Str
SUBCOLUMNHEADING  IDc  IDs Hed
DISPLAYWITHCOLUMNS  Lay
```

where:

- Num denotes the number of columns, subcolumns or attribute data fields.
- IDc denotes the column identification number.
- IDs denotes the sub-column identification number.
- Wid denotes the width of a column in pixels.
- Hed denotes the user assigned column name or heading.
- Str denotes the sequential number of the attribute data field at which a sub-column is to commence.

- Lay denotes the name of the layer to be edited with the multi-column dialog box.

Note that at least one space must separate the command and each of its parameters from each other.

With reference to Figure 2, it is noted that the design of the multi-column dialog box dictated by the top seven commands listed in the left column of this page applies to all layers to be edited with the multi-input dialog box. Thus:

- The dialog box should be designed for the layer that has the most attributes to be edited with this type of dialog box. When a layer is encountered that has fewer attributes to be edited, the dialog box is condensed to the number of attributes to be edited.
- The column and sub-column headings should be rather generic if more than one layer is to be edited with this dialog box because it is the same for all layers.
- The labels to the left of each data field are assigned the name of the attribute being edited as indicated in the *themes.txt* file.
- As of this version of the software the BACK button in the multi-column dialog box is inoperable.

The **NCOLUMNS** command indicates the number of columns to be displayed in a multi-column dialog box. For example, the command:

```
NCOLUMNS 3
```

indicates that the dialog box is to contain 3 columns. There is no limit to the number of columns that can be displayed, other than what will fit within the display of the computer’s monitor.

Note that the **NCOLUMNS** command should be the first command that defines the design of the multi-column dialog

box, and should be followed by the commands described below. Certain of these commands may be needed to be repeated depending on the number of columns and subcolumns. The best way to describe their proper sequence and appearance within the *themes.txt* file is to follow the sample example included in this month's issue.

The **COLUMNWIDTH** command indicates the width, in pixels, of a column. Each column can have a different column width, if so desired. For example, the command:

```
COLUMNWIDTH 3 150
```

indicates that the width of column 3 is to be 150 pixels. The number of pixels to be specified depends upon the resolution of the screen monitor and the size of the largest attribute within the column. This requires an iterative process until the user obtains the desired results.

The **COLUMNITEMS** command indicates the total number of attributes to be displayed in a column for editing purposes. This number should include the attributes of all sub-columns within the column. For example, the command:

```
COLUMNITEMS 1 5
```

indicates that five attributes are to be included in the first column. Regarding the issue of which attributes are to be included in which columns and/or sub-columns, reference is made to the commentary later on in this month's issue.

The **COLUMNHEADING** command contains the text that is to appear at the top of the column, thereby acting as a column heading. For example, the command:

```
COLUMNHEADING 1 Column #1
```

indicates that the heading of the first column is to be "Column #1". This could be any text string, but it should fit within the width of the column. Also reference is made to the commentary in the preced-

ing section regarding the names of the columns when the dialog box is to pertain to more than one layer.

The **SUBCOLUMNS** command indicates the number of sub-columns in a column. For example, the command:

```
SUBCOLUMN 2 2
```

indicates that the second column is to contain two sub-columns. This is an optional command since the user may not wish to create sub-columns.

The **SUBCOLUMNSTART** command indicates the starting attribute number for a sub-column. For example, the command:

```
SUBCOLUMNSTART 2 1 3
```

indicates that in the second column the first sub-column is to start with the third attribute within the second column. That is to say, attributes 1 and 2 in the column belong to the main column, while attribute 3 marks the beginning of the first sub-column. All attributes including and after attribute 3 will be assigned to sub-column 1 unless another sub-column definition for column 2 is encountered, such as:

```
SUBCOLUMNSTART 2 2 5
```

in which case attribute 5 marks the beginning of the second column. In summary, attributes 1 and 2 are to be displayed at the start of column 2, followed by attributes 3 and 4 under the first sub-column, and followed by the remaining attributes for the second column under sub-column two.

The **SUBCOLUMNHEADING** command contains the text that is to appear at the top of a sub-column, thereby acting as a sub-column heading. For example, the command:

```
SUBCOLUMNHEADING 2 1 Sub-Column #1
```

indicates that in the second column the heading of the first sub-column is to be

"Sub-Column #1". This could be any text string, but it should fit within the width of the column. Also reference is made to the commentary in the preceding section regarding the names of the columns when the dialog box is to pertain to more than one layer.

The **DISPLAYWITHCOLUMNS** command identifies the layer to be edited using the multi-column dialog box. If a layer is not specified using this command, a single column dialog box will be used in displaying the layer's attributes. Thus, this command should be used for each layer to be edited with a multi-column dialog box and placed after the entry of the preceding commands and before any of the other commands of the CEDRA-DataEditor. For example, the commands:

```
DISPLAYWITHCOLUMNS WaterPipes
DISPLAYWITHCOLUMNS SewerPipes
DISPLAYWITHCOLUMNS StormPipes
```

will cause the layers WaterPipes, SewerPipes and StormPipes to be edited with a multi-column dialog box.

## A Sample Case

Presented below is a sample *themes.txt* file that contains two layer definitions and which corresponds to the multi-column dialog box displayed in Figure 2.

In this figure note that the dialog box is comprised of three columns, for a maximum of 16 attributes to be edited, and in which:

- The first column contains three attributes under the main column and two attributes under its sole single sub-column.
- The second column contains two attributes under the main column and two attributes under each of its two sub-columns.
- The third column contains five attributes under the main column and no sub-columns.

Regarding the numbering of the attributes in a layer to be edited, it is noted that when the attributes in a layer are listed under the THEME command, the program internally numbers the attributes from 1 to  $n$ , where  $n$  is the total number of attributes defined in order of appearance under said THEME command. Thus, for the sample multi-column dialog box shown in Figure 2, attributes:

- 1 through 5 are to be displayed under Column 1,
- 6 through 11 are to be displayed under Column 2, and
- 12 through 16 are to be displayed under Column 3.

Again, remember that this design is based on the layer with the most attributes to be included in the multi-column dialog box. Layers with a lesser number of attributes will be truncated backwards. For example for a layer of ten attributes, the dialog box will display two columns in which:

- Column 1 will be as stated above, and
- Column 2 will be displayed with only one attribute in its second sub-column.

The sample *themes.txt* file is presented in the subsequent pages of this month's issue.

## Summary

The multi-column dialog box facilitates the editing and data entry capabilities of the CEDRA-DataEditor software by enhancing the user interface. As in many cases this has been a reaction to user requests.

As always, users who have a need for functionality that is not presently available in CEDRA software should feel free to forward these requests to CEDRA, as well as, any other comments or suggestion you may have.

*If you have a request for Command Of The Month, feel free to phone, fax or e-mail your request to The CEDRA Corporation.*

```

/*
/* Specify the number of columns to be displayed in a multi-column dialog box
/*
NCOLUMNS 3
/*
/* Specify the column width, number of items, column headings,
/* number of sub-columns, sub-column starting attribute number and
/* sub-column headings for each column using the following commands.
/*
/* COLUMNWIDTH      column_ID  column_width_in_pixels
/* COLUMNITEMS      column_ID  column_total_number_of_attributes
/* COLUMNHEADING    column_ID  column_heading
/* SUBCOLUMNS      column_ID  number_sub-columns_in_a_column
/* SUBCOLUMNSTART   column_ID  sub-column_ID  sub-column_start_attribute_number
/* SUBCOLUMNHEADING column_ID  sub-column_ID  sub-column_heading
/*
/*****/
/* Column 1 Definition with 1 Sub-Column */
/*****/
/*
COLUMNWIDTH      1 150
COLUMNITEMS      1 5
COLUMNHEADING    1 Column #1
SUBCOLUMNS      1 1
/*
SUBCOLUMNSTART   1 1 4
SUBCOLUMNHEADING 1 1 Sub-Column #1
/*
/*****/
/* Column 2 Definition with 2 Sub-Columns */
/*****/
/*
COLUMNWIDTH      2 100
COLUMNITEMS      2 6
COLUMNHEADING    2 Column #2
SUBCOLUMNS      2 2
/*
SUBCOLUMNSTART   2 1 3
SUBCOLUMNHEADING 2 1 Sub-Column #1
/*
SUBCOLUMNSTART   2 2 5
SUBCOLUMNHEADING 2 2 Sub-Column #2
/*
/*****/
/* Column 3 Definition with 0 sub-columns */
/*****/
/*
COLUMNWIDTH      3 90
COLUMNITEMS      3 5
COLUMNHEADING    3 Column #3
/*
/*****/
/* Specify the layers that should be displayed using columns */
/* (repeat as often as needed - no limit) */
/*****/
/*
DISPLAYWITHCOLUMNS LAYER_1
/*

```

```

/*****
/*
/* DEFINITION OF ATTRIBUTES IN THE LAYER LAYER_1 */
/* which is displayed using multi-columns */
/*
/*****
/*
THEME
LAYER_1
/*
/*****
/*
/* COLUMN 1 Attributes */
/*
/*****
/*
/* Attribute 1
/*
CAPACITY
Attrib #1:
CHOICES

5A
10A
15A
30A
40A
50A
65A
80A
100A
125A
EMPTY
NA
END
/*
/* Attribute 2
/*
LAST_EDIT
Attrib #2:
/*
/* Attribute 3
/*
LAYER
Attrib #3:
CHOICES
CAP-BANK\\1 : CAP-BANK
FUSED-CUTOUT\\2 : FUSED-CUTOUT
LINE-FUSE\\3 : LINE-FUSE
END
/*
/*****
/*
/* SUB-COLUMN 1 */
/*
/*****
/*

```

```

/* Attribute 4
/*
POLE_ID
Attrib #4:
/*
/* Attribute 5
/*
STATUS
Attrib #5:
CHOICES
  \\1 : BLANK
CLOSED\\2 : CLOSED
NA\\3 : NA
OPEN\\4 : OPEN
END
/*
/*****
/*
/* COLUMN 2 Attributes */
/*
/*****
/*
/* Attribute 1
/*
COLOR
Attrib #6:
/*
/* Attribute 2
/*
CONDITION
Attrib #7:
/*
/*****
/*
/* SUB-COLUMN 1 */
/*
/*****
/*
/* Attribute 3
/*
ENTITY
Attrib #8:
/*
/* Attribute 4
/*
LOCATION
Attrib #9:
/*

```

Sample Theme Attribute Data File (con't)

```

/*****
/*
/* SUB-COLUMN 2
/*
/*****
/*
/* Attribute 5
/*
LT_POLE_ID
Attrib #10:
/*
/* Attribute 6
/*
MATERIAL
Attrib #11:
/*
/*****
/*
/* COLUMN 3 Attributes
/*
/*****
/*
/* Attribute 1
/*
METER_ID
Attrib #12:
/*
/* Attribute 2
/*
OBJECTID
Attrib #13:
/*
/* Attribute 3
/*
PS_AB
Attrib #14:
CHOICES

0
1
2
END
/*
/* Attribute 4
/*
PS_BC
Attrib #15:
CHOICES

0
1
2
END
/*
/* Attribute 5
/*
PS_PN
Attrib #16:
/*

```

```

/*****
/*
/* END OF LAYER_1 DEFINITION
/*
/*
/*****
END
/*
/*****
/*
/* DEFINITION OF ATTRIBUTES IN THE LAYER LAYER_2
/* which is displayed in a single column
/*
/*
/*****
/*
THEME
LAYER_2
AREA
Area:
PERIMETER
Perimeter:
TITLE_NAME
Tile Name:
TILE
Tile:
CHOICES
130201
130301
140201
140301
END
NAME_FULL
Name Full:
Attribute_Equation
Name_South + " and " + Name_North
NAME_NORTH
Name North:
CHOICES
C18
C19
C20
END
NAME_SOUTH
Name South:
CHOICES
C17
C18
C19
END
/*
/*****
/*
/* END OF LAYER_2 DEFINITION
/*
/*
/*****
END

```

Sample Theme Attribute Data File (con't)