

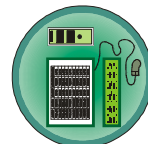


DXF Exporting

CEDRA-DxfExport is an extension to all versions of **ArcView GIS** and **ArcGIS**, which enables the user to create an AutoCAD Drawing Interchange File (DXF file) for all visible features in the current map. Unlike other DXF export utilities, which process only one theme (layer) at a time, the CEDRA-DxfExport software processes all visible themes (shapefiles, personal geodatabases, enterprise geodatabases and coverages). In addition, the CEDRA DxfExport software will process annotation features and graphic text elements. As such, a DXF file created by CEDRA-DxfExport can include features and text.

In creating a DXF file, note the following:

- If a theme has selected features, then only the selected features are processed. If there are no selected features then all features in the theme will be processed. If the option *Export Features, displayed in the Current Extent*, is selected, then all visible features in the current view will be exported.
- If there are selected MARKER, PEN, FILL and/or TEXT graphic elements, then these graphic elements will be processed (if the user desires), and placed in separate layers in the DXF file.



Data Entry and Maintenance

CEDRA-DataEditor is an extension to all versions of **ArcView GIS** and **ArcGIS**, which facilitates the editing of feature attribute data. It is an ideal tool for those involved with facility maintenance and/or data capture applications, or for those who wish to enhance the native table editing functionality of **ArcView**.

The user creates an ASCII based file that contains the desired attribute labels and default values or equations for each attribute within a theme to be edited. There is no limit to the number of attributes or themes that can be specified. When the user selects a feature for editing, a customized dialog box is displayed with the specified attribute labels and default values. An attribute's default value may be a specific value, or may be computed as the feature's area or perimeter. Ranges of allowable numeric attribute values, as well as, attribute drop-down lists may be specified.

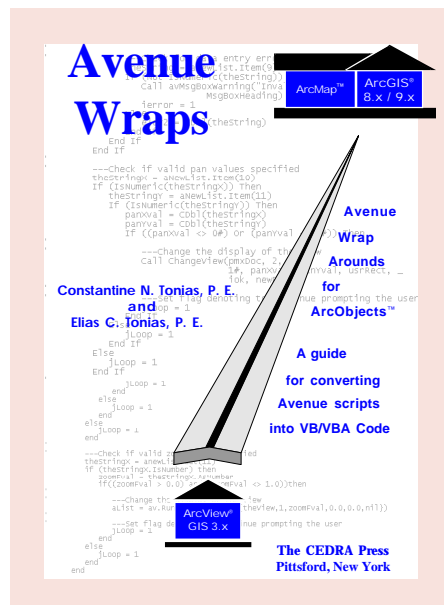
- The name of the theme will serve as the name of a layer in the DXF file.
- The user has the ability to select one or more attributes from a theme for inclusion in the DXF file, if desired.

Avenue Wraps

Avenue Wraps is a 608 page book which can be used by software developers to migrate Avenue based applications to **ArcGIS**, be it the 8.x 9.x, or 10.x environment platforms. Additionally, the book is an ideal tool for developing brand new applications within **ArcGIS**.

Avenue Wraps provides a simplified approach to programming applications with **ArcObjects™**, and it is accompanied by a CD with sample code and a Dynamically Linked Library (DLL), which the developer can utilize immediately.

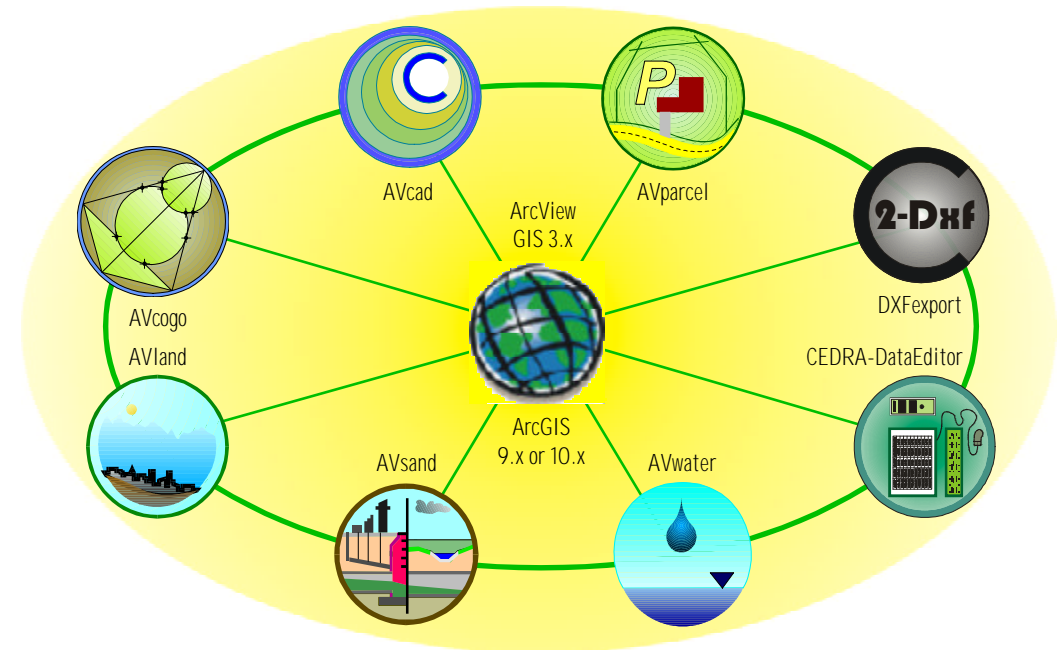
Efficient conversion of Avenue code is achieved by providing a "one to one" mapping with the most popular



Avenue requests. For new code, the more than 300 Avenue requests, which have been converted to ArcObjects, provide ready written subroutines comprising thousands of lines which the programmer can use immediately and directly. In so doing, Avenue developers can migrate and/or develop software in the ArcGIS environment using an "Avenue like" approach.

Avenue Wraps discusses a wide range of topics from VB/VBA syntax differences to application deployment. Using Avenue Wraps, can reduce conversion, or new development effort by more than 70%.

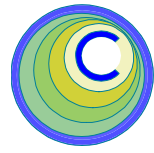
The CEDRA-AVseries™ Software GIS BASED SOFTWARE SOLUTIONS



The CEDRA Corporation provides state-of-the-art software for public works agencies, tax assessors, engineers, surveyors, utilities and others for querying, analyzing and maintaining geographic data bases. CEDRA's AVseries™ suite of software work directly within ESRI's GIS software (ArcView® GIS and ArcGIS® 9.x or 10.x), thus eliminating the need to switch back and forth between various software packages.

CEDRA's AVseries software:

- Bridges engineering and GIS by addressing a wide range of applications including CAD, surveying, COGO, roadway and site design, tax mapping and land parcel management. CEDRA users can also create engineering databases of water distribution and sanitary/storm/combined sewer systems, and model them and maintain them all within any of the above referenced ESRI's GIS software in a tightly integrated Desktop and Server environment.
- Provides inter-operability for small, medium and large municipalities, and engineering design offices that want to establish, explore, query, analyze and maintain a central database (enterprise SDE geodatabase), that serve both the public works and GIS departments.



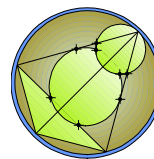
CAD Tools for ArcMap

CEDRA-AVcad is an extension to all versions of **ArcView GIS** and **ArcGIS**. It provides more than 100 menu, button and tool commands for creating and editing point, line, polyline, polygon and curve features, as well as annotation features in a CAD like environment. The geometric commands include a variety of procedures for traversing to create points or lines, projections, tangencies, intersections, feature group translation, rotation and scaling, traverse adjustment by the least squares, Crandal, compass and transit methods, editing of features, and other operations.

Besides the wide range of geometric commands, major strengths of this software include:

- Various abilities to generate, edit and manipulate text strings.
- Mass importation of points, lines and polygons from ASCII files in a variety of formats.
- Mass annotation of points, lines, curves and polygons with one or many database attributes.
- Orthogonal and inclined dimensioning.
- Point snapping across all visible layers.
- Support of a three dimensional database.

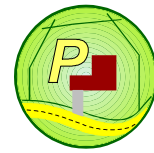
Because of its robustness, **CEDRA-AVcad** can be thought of as a "lite" COGO or Parcel Mapping product. In addition to being a stand-alone extension, it is an integral component of the **CEDRA-AVcogo** and **CEDRA-AVparcel** software, which are described herein.



COGO Tools for ArcMap

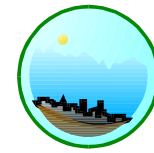
CEDRA-AVcogo is an extension to all versions of **ArcView GIS** and **ArcGIS**, and provides all of the functionality of the **CEDRA-AVcad** and **CEDRA-DataEditor** extensions plus a multitude of additional geometric commands to assist in the creation and editing of points, lines, curves and polygons, including intersections, tangencies, projections, and other geometric operations. In all, more than 150 commands are available to the user for creating and editing geometric and annotation features.

This extension is of particular interest to those who are involved in the building and maintenance of base maps, in which geometric command flexibility and precise geometric configurations of existing or new infrastructure features is desirable, and to those in general desiring an extensive suite of commands to solve geometric problems. A variety of built-in formats for the import of field survey and GPS observations make this extension an indispensable tool in the building and maintenance of infrastructure databases.



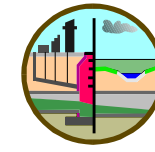
Parcel Mapping and Maintenance

CEDRA-AVparcel is an extension to all versions of **ArcView GIS** and **ArcGIS**, and enables the user to create, edit and manage two and three dimensional (high-rise condominiums) topological polygons of parcels for tax (cadastral) mapping, parcel maintenance and other applications that involve the manipulation of polygons and/or boundary information. **CEDRA-AVparcel** contains all the functionality of the **CEDRA-AVcad** and of the **CEDRA-**



Roadway and Site Design

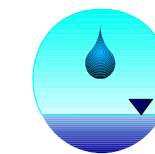
CEDRA-AVland is an extension to all versions of **ArcView GIS** and **ArcGIS**, and provides the engineer the functionality to perform surveying, COGO, contouring, traverse adjustments, stakeout, road design, earth work, tax mapping and site modeling applications in an environment that integrates Civil Engineering and GIS. **CEDRA AVland** offers the engineer the ability to take a project from field collection through design, drawing preparation and construction. Automatic lot subdivi-



Sewer Modeling

CEDRA-AVsand is an extension to all versions of **ArcView GIS** and **ArcGIS**. It enables the engineer to create the geometric model of a storm water, wastewater or combined system, impose associated loads, and model the flow performance. When combined with **CEDRA-AVland**, it provides a powerful tool for the design of new sewer facilities. Some of its features include:

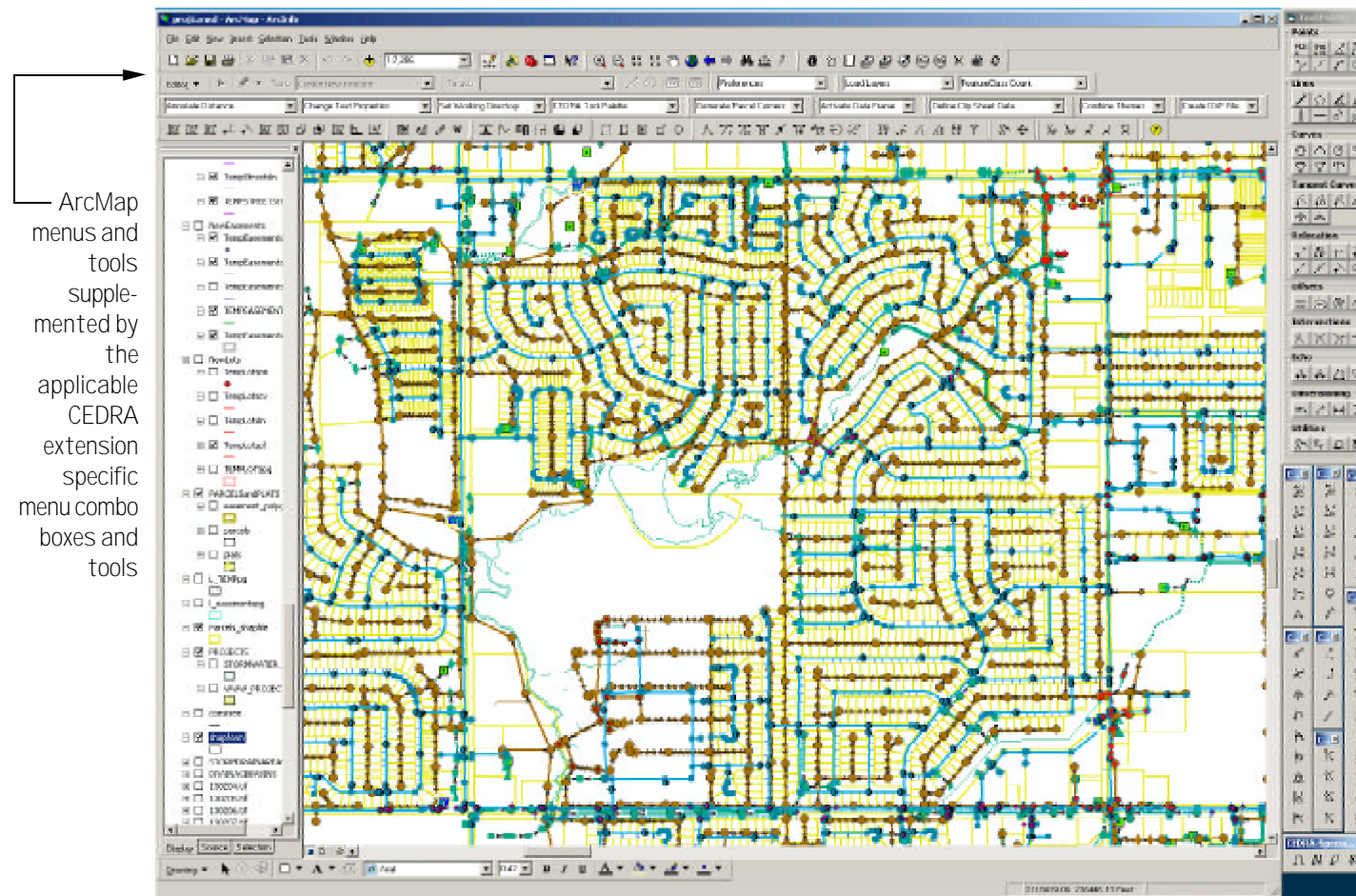
- Introduction of storm and waste water loads as flow rates, inflow hydrographs and/or land use polygons.
- Use of custom peaking factors to average daily wastewater contributions.
- Adequacy determination of systems with open and closed conduits, siphons, and diversions.
- Use of over 30 built-in conduit shapes, and definition of custom conduit shapes.
- A database of geometric, hydraulic analysis, inventory and historic data, and special query commands.
- Static, dynamic, and backwater analysis with one of the available modelers, **CEDRA-AVsand** or USEPA **SWMM** (Versions 4.31 and 4.4h).
- Generation of flow hydrographs, stage-storage curves, and a variety of time related graphs.
- Production of fully annotated sewer profiles.



Water Distribution Modeling

CEDRA-AVwater is an extension to all versions of **ArcView GIS** and **ArcGIS**. It enables the engineer to define the geometric configuration of a water distribution network, establish the materials inventory, introduce supply and demand loads, perform analyses, and display pertinent results in graphic and/or tabular format. Some of its features include:

- Introduction of water demands as flow rates and/or land use polygons.
- Establishment of models containing storage tanks, pressure regulating, sustaining and open/close valves, pumps, meters, etc.
- Segmentation of a network into smaller nets.
- A database of geometric, hydraulic analysis, inventory and historic data, and special query commands.
- Performance of static and Extended Period Simulations with one of the available modelers, **EPANET™** (Versions 1 and 2).
- Modeling of multiple fire flows and generation of comparison results.
- Generation of time related graphs (pressure vs. time, flow rate vs. time, velocity vs. time, etc.), and reports of computational results.
- Production of fully annotated water profiles.
- Generation of flow direction arrows, and of pressure contours.



ArcMap menus and tools supplemented by the applicable CEDRA extension menu combo boxes and tools

CEDRA Tool Palette containing the core AVcad geometric tools

Some Additional AVcad and AVcogo geometric tools

DataEditor extensions. In addition to their abilities, the user has the ability to:

- Transcribe deeds, ascertain and record the error of closure and adjust the parcel.
- Create a customized topological data structure cognizant of shared sides.
- Store record deed data including metes and bounds.
- Customize parcel identification (PIN) numbers.
- Populate and edit parcel specific information.
- Mass annotate parcel specific information extracted from the database attributes.
- Split, Combine (parcel with a hole) and Union parcels, as well as, edit parcel vertices.

sion in accord with local zoning regulations is available. All functionality of the **CEDRA-AVcad** and **CEDRA-DataEditor** extensions is included. Some of the additional abilities, provided by **CEDRA-AVland** include:

- Interactively design horizontal and vertical alignments, and automatically station them.
- Design of typical road sections, and extraction of existing cross sections and profiles.
- Generate pavement ribbons, and ROW lines
- Generate annotated plan and profile sheets.
- Compute earthwork accounting for shrinkage and swelling and muck removal.
- Generate alignment and earthwork reports.