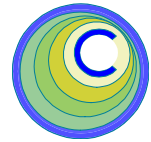


The CEDRA Corporation's COMMAND OF THE MONTH

A monthly information bulletin

July 2011

FEATURED COMMAND
Intersecting Line &
Polygon Features



Application Description

One of the basic geometric operations most users perform is the intersection of two lines. While seeming to be a straight forward operation, imagine the condition where actual line features do not exist. That is, an intersection is to be computed by picking: (a) existing point features, (b) random locations in the map, or (c) snapping to the end points of non-connected line features.

In this month's issue of Command of the Month we will address the intersecting of: (a) two lines, (b) two polygons and (c) a line and a polygon.

The CEDRA Solution

To address the application described above, the [Intersect Features] tool within the {CEDRA-Intersection-Tools} toolbar, shown in Figure 1, can be used. This tool is the left-most tool in the toolbar and can be used to intersect:

- two lines (existing or implied),
- two existing polygon features or
- a line (existing or implied) and a polygon feature.

Intersect 2 Features Overview

With the [Intersect Features] tool, the user is able to intersect (a) a single line with another single line, (b) a single line with a polygon, or (c) a polygon with another polygon.

In order to intersect a single line, the user may select an actual single line, or

two points to imply a single line (an implied line). A polyline may be intersected with a single line or with another polyline, provided (a) the program cannot determine that the selected polyline could represent a curve, in which case a warning message is presented, and (b) when intersecting a polyline with another polyline, these two lines must actually intersect, that is, cross each other.

In cases where polyline features can not be processed, the user should use one of the more generic intersection tools, the [Move endpoint of line(s) to an intersection] tool, or the [Trim Elements to Intersection and/or Introduce Fillets] tool.

Command Of The Month bulletin

This month's issue discusses how to: (a) intersect two lines, (b) two polygons or (c) a line and a polygon to create one more point features.

Once an intersection point is generated, the command remains active for the user to select another line or polygon to intersect the line or polygon that was selected first. In so doing, the user is able to intersect several features with the base feature that was selected.

This tool command makes use of the CEDRA-AVcad point snapping property.



Figure 1
CEDRA-Intersection-Tools Toolbar

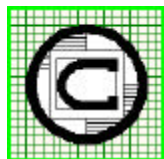
Intersect 2 Features Operation

To use this tool command, the user should:

- 1 Click at the [Intersect Features] tool.
- 2 Click in the ArcMap display at the start point of a line, a single line, polyline or polygon (**base element**) to be intersected with another implied two-point line, single line, polyline or polygon.

If the feature selection click is made:

- At a curve, a warning message is displayed informing the user of the fact. In this case, click at the OK button to acknowledge the message, and repeat Step 2.
- Where there is no nearby feature, the program assumes that the point of the click is the start point of a single line, at which point a red plus (+) sign is displayed, and expects the user to click at another point to imply a two-point line (single line). *In this case skip to Step 4.*



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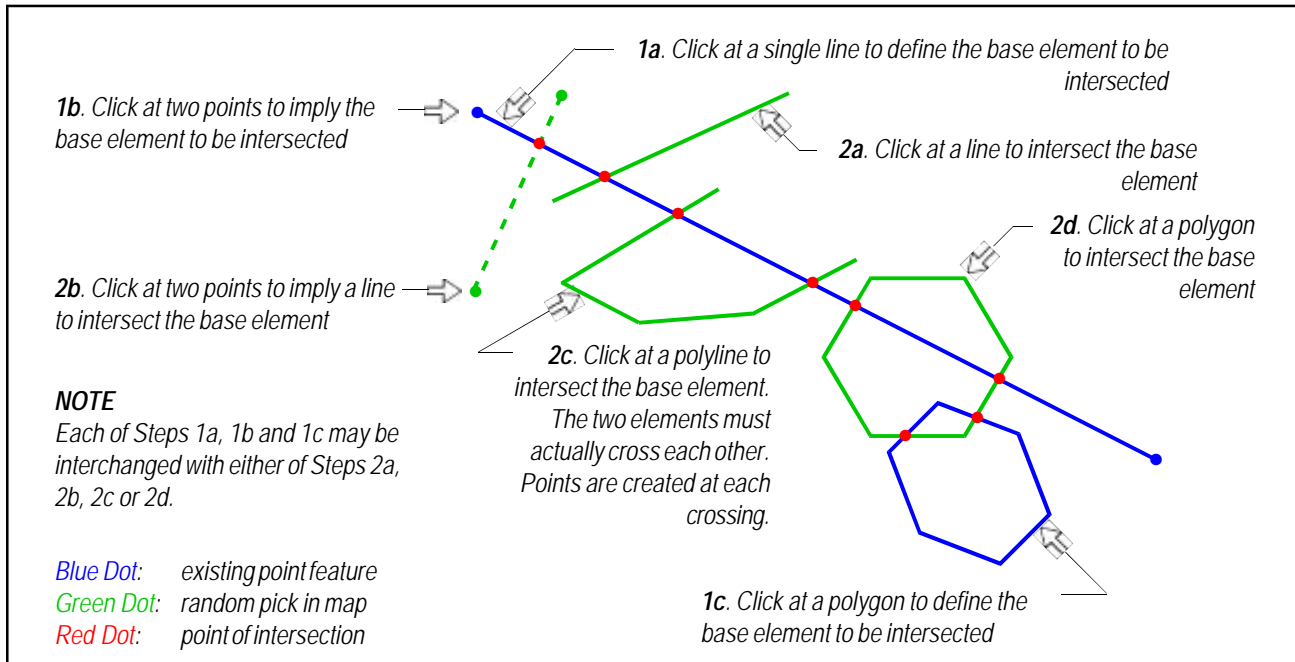


Figure 2
Sample Intersections between Lines (existing and implied) and Polygons

- **3 Confirm, or not** the selection of the found feature.

Having confirmed the feature, and if the feature is a:

- Point, continue with Step 4.
- Line, polyline or polygon feature, branch to Step 5.

- **4 Click** in the ArcMap display at the end **point** of the implied two-point line to create the base element. If this click is made where there is no nearby feature, the point of the click is considered as the end point of the implied base element. However, if the click is made at another feature, the nearest endpoint or vertex of this feature is assumed to be the end point of the implied base element.

- **5 Repeat** Steps 2 and 3, and if necessary Step 4, to define the feature to be intersected with the base element.

Having selected the second element, the point or points of intersection is or

are displayed. The tool stands ready to repeat Steps 2 and 3, and if necessary Step 4, to define another feature to be intersected with the base element. Various sample intersections are shown in Figure 2. To terminate the subject tool command, click at any menu or tool command.

Summary

Although a simple geometric operation, there are enough nuances, which the [Intersect Features] tool provides, that makes it a little more flexible than native ArcMap intersection functionality. The ability to intersect lines with polygons and polygons with polygons is also extremely useful.

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.