



DAT/EM Systems International  
8240 Sandlewood Place, Suite 101  
Anchorage, Alaska USA 99507  
Phone (907) 522-3681  
Support Department Email: [support@datem.com](mailto:support@datem.com)  
Web: [www.datem.com](http://www.datem.com)

The following changes have been made to the **DAT/EM Capture and MapEditor for AutoCAD** products between Release 6.5 and Release 6.6. Please review these revisions made to the software and update your software to implement changes.

As always, DAT/EM welcomes comments and suggestions from you, our clients, so please don't hesitate to contact our support department at [support@datem.com](mailto:support@datem.com), or by calling in or faxing us with your requests.

## Operating Systems

Release 6.6 is supported on Windows XP Professional and Windows 7 Ultimate or Professional operating systems. Testing no longer occurs for Windows 2000 or VISTA Ultimate. If you have a question, please contact Support.

## Hardware Locks/Dongles

Please install Microsoft Updates and Service Packs for your operating system before applying lock reset programs. Network licensing should have the same Sentinel driver version on both the server and the local computers running the software.

## DAT/EM CAPTURE and MAPEDITOR for AutoCAD

### **Changes apply to:**

**32-bit AutoCAD 2004-2013 versions with the latest service packs.**

**64-bit AutoCAD 2008-2013 versions with the latest service packs.**

**BE ADVISED: Version 6.6 no longer supports AutoCAD 2000-2002 versions. If you use these old AutoCAD versions, please upgrade to AutoCAD 2004 or higher before installing DAT/EM version 6.6.**

**DAT/EM software will install for multiple AutoCAD products of different year numbers on the same computer; however, it will not install for multiple same-year versions together. For example, it will install for AutoCAD 2011 and AutoCAD Map3D 2012 together, but it will not install for both AutoCAD 2012 and AutoCAD Map3D 2012.**

**Reminder: You must run AutoCAD at least one time to activate its license before installing DAT/EM software.**

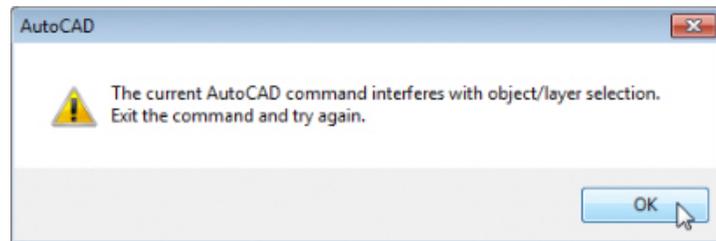
The following changes were made to DAT/EM Capture and MapEditor for AutoCAD:

1. Version 6.6 is the first version to be compatible with AutoCAD 2013.
2. DATDRAW has the following changes:
  - a. DATDRAW's rubber banding was causing Summit Evolution's superimposition to be slow. Since superimposition has its own rubberbanding, DATDRAW's rubberbanding has been removed.
  - b. During stream digitizing mode, key in "N" or "n" to activate a "pen up" mode. The polyline will still be in process, but no points will be added to the line until the digitizing button is pressed again to resume the "pen down" mode.
3. The stand-alone CROSSCHECK command (as well as the version in MapEditor) has performance improvements. One example file that contained many polylines previously processed in 7 hours and now takes 20 minutes. Please be aware that the time it takes to process polyline crossings is exponential based on the total number of polyline segments. Please plan to allow enough time for the process to run.

4. The stand-alone GRIDIT command could insert the wrong block due to incorrectly alphabetizing the block list. This has been fixed so that the selected block name is the block that is inserted.
5. AUTOLIST no longer causes AutoCAD to crash if the application is loaded, unloaded, and loaded again.
6. AutoCAD polyline closing “segments” that have an arc bulge factor now display correctly as arcs in SUMMIT’s superimposition.
7. DTMIT has improvements:
  - a. Previously, when a point was skipped, the stereoplottter would move to the correct (x,y), but an incorrect elevation for the next point; now the elevation does not change during the skip.
  - b. When both **Show grid** and **Alternating drive direction** were on, **Collect** could start at the last point of the first row, skipping any previous points in the first row. Now **Collect** always starts on the first point of the first row.
  - c. If Osnap was on during DTMIT data collection, it would give unreliable results. Now DTMIT saves the previous Osnap state, turns Osnap off during data collection, and restores the original Osnap setting when finished.
  - d. It could show all the same IDs for individually selected objects on the **Select** tab. This was a display-only problem; the proper IDs were used internally. The display has been fixed.
  - e. If **Define Sample Points** (also known as “Sparse Points”) is on with **Free Movement** on and **Drive To Ground** off, only one digitized point is necessary to insert each data point. Note that for all other settings combinations, two digitized points per data point are still necessary.
8. MapEditor for AutoCAD has the following changes:

MapEditor Operational Changes:

- a. Some AutoCAD commands such as PAN can interfere with MapEditor’s selection tools. Only one command that requires a selection should run at a time. If a command such as PAN is active when a MapEditor selection tool is started, a message now appears:



*A message appears if an AutoCAD command such as PAN is running when a MapEditor selection tool is started*

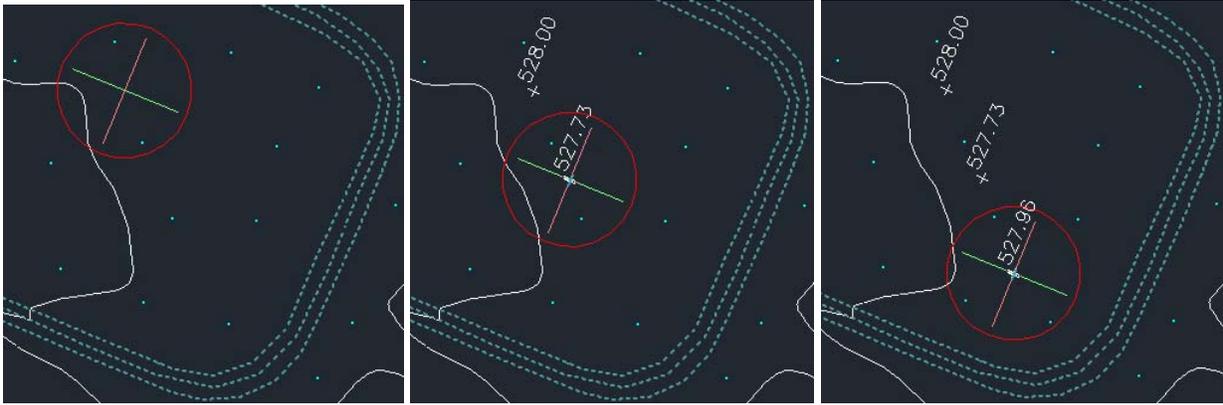
If this message is received, select **OK**, cancel the current AutoCAD command, and try again.

- b. Some select-layer-from-object controls were visible on the dialog, but not operational. These have been activated.
- c. AutoCAD could sometimes give multiple “!” error messages or a loud double beep sound as it closed after having had the MapEditor loaded. This was annoying to the user, but did not have any lasting bad effects. These messages and sounds have been eliminated.

MAPEDITOR New Tools:

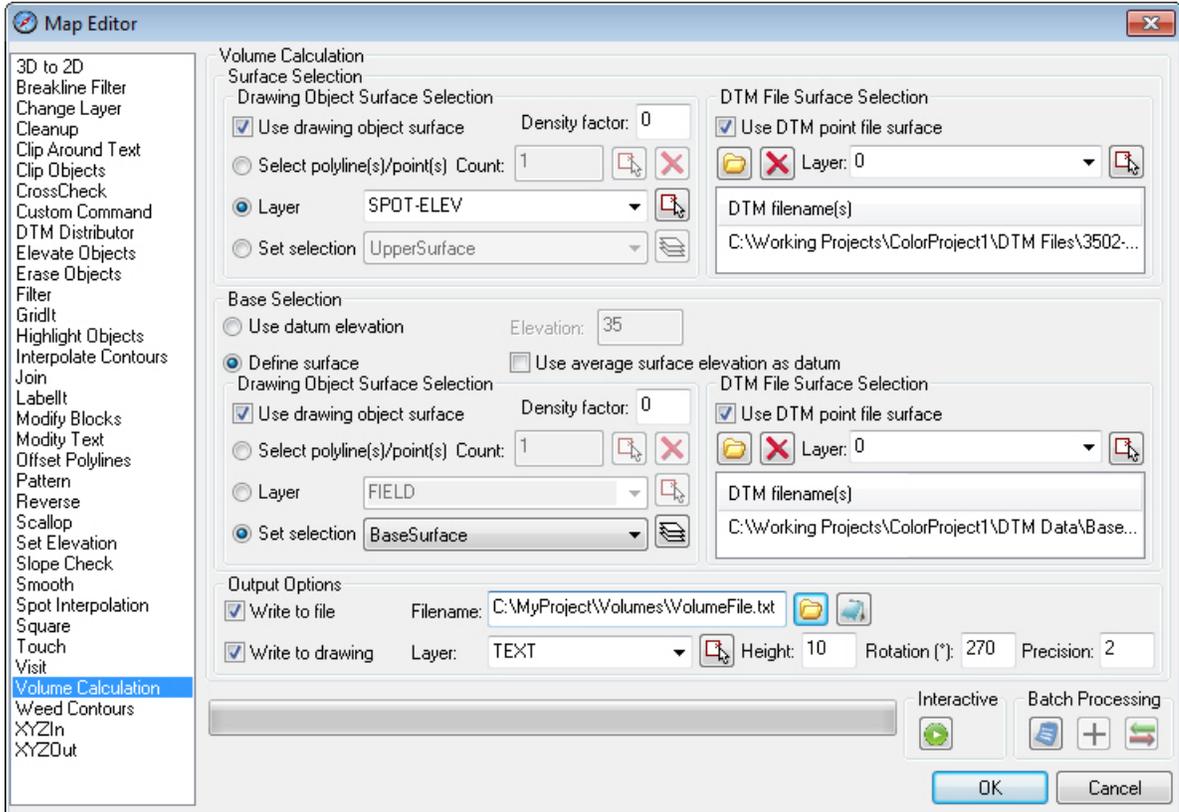
- d. **Spot Interpolation** is a new tool to interactively insert spot elevations based on the elevations of nearby existing objects. This tool runs interactively only; it cannot be added to a batch file. Set “**Interpolation Objects**” to define the existing objects that will provide the elevation data, for example, breaklines and

elevation contours. Choose “**Nearest Neighbor...**” to determine the elevation based only on the single closest possible point in the input set. Set “**Use interpolation objects within search range**” to determine the elevation based on all input objects within the “**Radius**”. Make settings for the text and mark appearance. Select the green **Run** button. Click once in the AutoCAD view to activate a circle around the cursor. Objects that fall within this circle will be used as interpolation objects. Follow the prompts to select locations for new spot elevations. When finished, key in a blank return or <Esc> to return to the dialog.

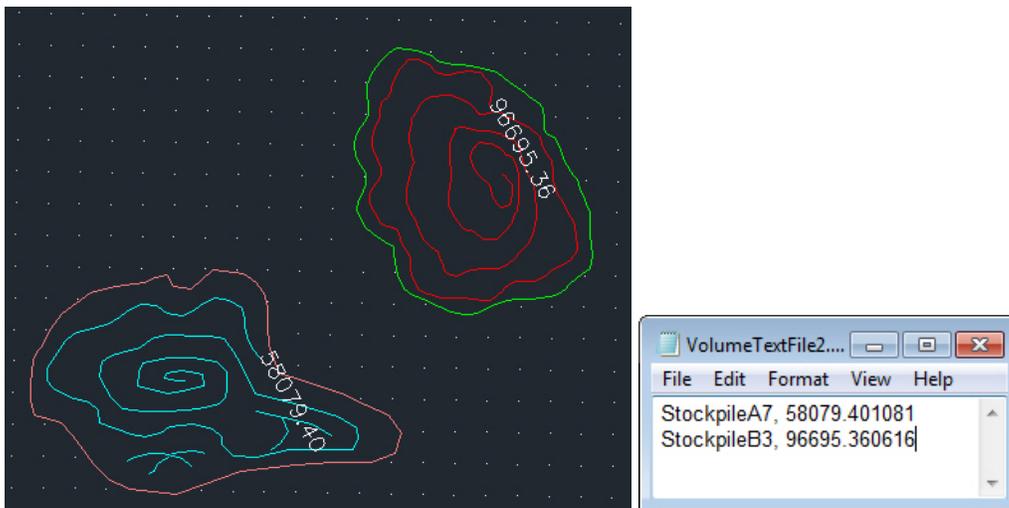


*Example of **Spot Interpolation** selections*

- e. **Volume Calculation** is a new tool to calculate volumes based on an upper surface and base elevation definition. Create a base definition and a surface definition. The definitions may either be objects in the drawing file, a DTM/DEM in a file, or both. If running more than one distinct area at one time (for example, two gravel piles drawn with polylines), place any base and surface definition objects on separate layers. The **Base Selection** has a **Densify factor** setting for drawing objects; this setting interpolates points at the set ground distance along polyline vectors, so that long segments are treated as having more vertices. The results are expressed in cubic ground units.

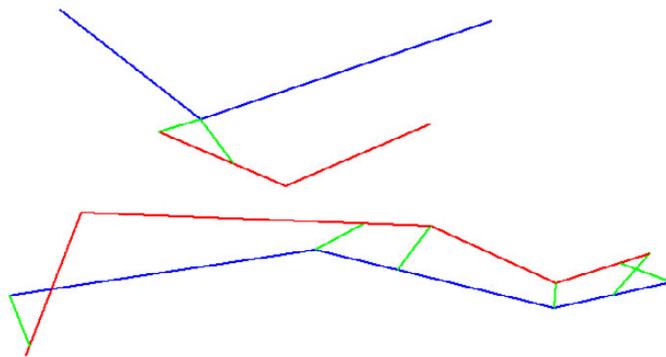


*New MapEditor Volume Calculation tool*



MapEditor Existing Tools:

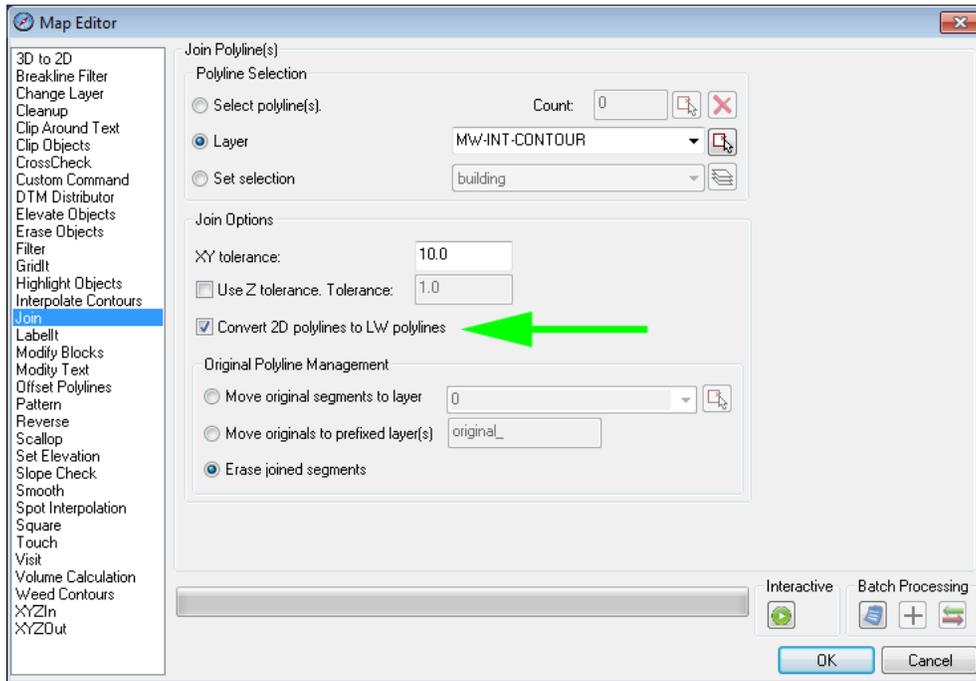
- f. In rare cases, **Cleanup**'s zero-length polyline check could remove polylines that had a non-zero length. This has been fixed.
- g. **Clip Object** now clips splines and lines in addition to polylines.
- h. **CrossCheck** has the following changes:
  - o **CrossCheck** will now make a new layer from a keyin in the **Insert text > Layer** field. Previously, it would not make the new layer, and after running, the text would be on layer 0.
  - o **CrossCheck** has a new option to find intersections inside or outside one or more closed polyline boundaries. If the setting is not checked, the whole file will be searched. To use boundaries, check on **Use boundaries** and use the arrow button to activate the settings dialog. Both the boundary settings and the previously existing marking/reporting options have been moved to separate settings dialogs.
  - o **CrossCheck** has performance improvements. One example file that contained many polylines previously processed in 7 hours and now takes 20 minutes. Please be aware that the time it takes to process polyline crossings is exponential based on the total number of polyline segments. Please plan to allow enough time for the process to run.
  - o **CrossCheck** uses an Autodesk ARX function that should not project the end of the polyline, but unfortunately, it projects the line in some cases. This could lead to false "intersections" being indicated a certain small distance away from the end of a polyline, where the polyline actually falls short of another polyline instead of intersecting it. **CrossCheck** now additionally checks that there is an actual intersection at the location. This could increase the processing time, but will also increase the accuracy of the results.
  - o **CrossCheck** has a new "near intersection" option to mark polylines that are within a distance tolerance of each other. In the case that two input lines are parallel and within the "near" x-y search distance, there are an infinite number of near intersections; therefore, the algorithm is restricted as follows: The algorithm finds near intersections at each "from" and "to" line vertex. At each vertex, intersections are determined by intersecting a circle centered at the vertex with other input polylines. The radius of the circle is the x-y tolerance. The marking label is centered on the "from" vertex where the search was conducted. The corresponding "to" marking label is centered at the closest point that the search circle intersected the "to" polyline or, if there are vertices between the two intersections, the intersection point or vertex that is closest to the circle center. (The closest distance is relative to the "from" vertex.) There is an option to draw a line that connects the near intersections.



*Example of "Near intersections". Green lines are from the "Add line" marking option.*

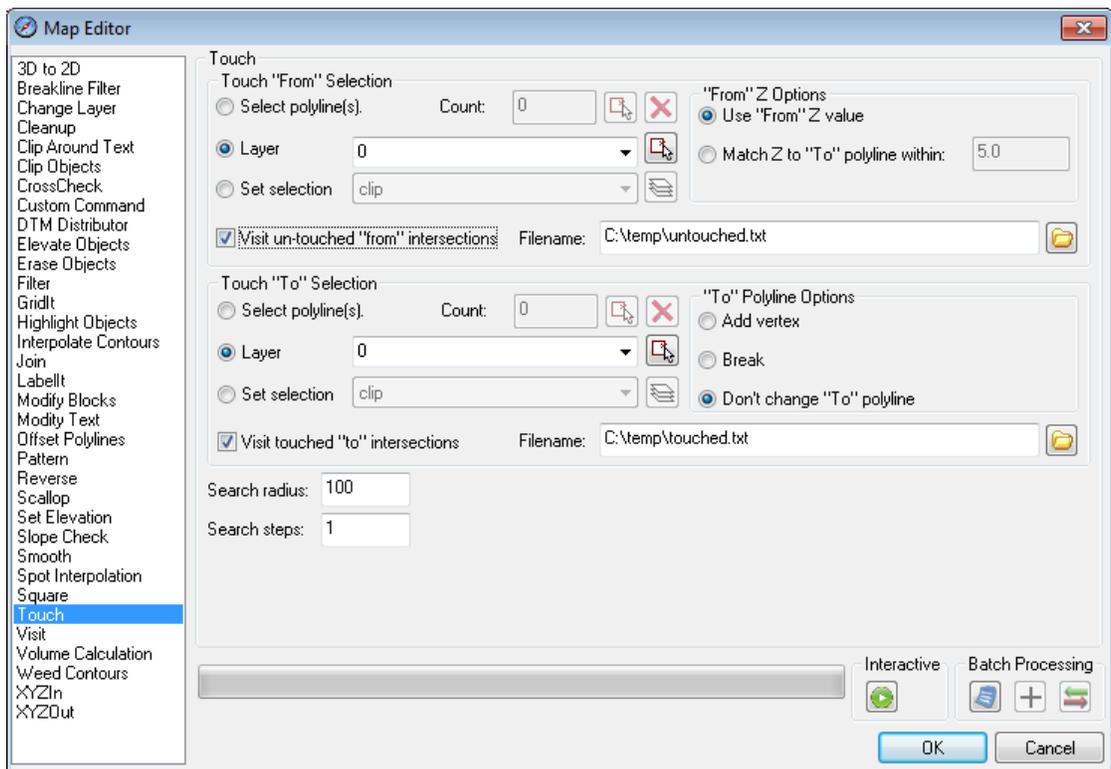
- i. **XYZOUT** previously ignored the **Y** and **Z Decimal precision** settings and used the **X Decimal precision** setting for all coordinates. This has been fixed so that the **Y** and **Z Decimal precision** settings are applied correctly.

- j. **Join** has a new checkbox to allow older 2D polylines to be converted to LW polylines. This enables the 2D polylines to be joined to LW polylines. If the setting is not on, 2D polylines will not join to LW polylines.



*Join's new "Convert 2D polylines to LW polylines" setting*

- k. **TOUCH** has new output file options to write "touched" and "untouched" coordinates to two separate Visit files. "Untouched" coordinates are polyline endpoints that were checked for touching, but did not find anything to touch within the **Search radius**.



*New TOUCH file output options: "Visit un-touched..." and "Visit touched..."*