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SuperGIS Desktop 10 Specification

2017/04

Basic Map Manipulation Function

- Numerous map navigation functions are provided, including:
  - ✓ Zoom in/out, Pan and Rotation.
  - ✓ Fixed Zoom in/out.
  - ✓ Zoom to visible scale.
  - ✓ Add the commonly used scales to the Map Scale list on the standard toolbar.
  - ✓ Zoom to the specified layer or feature.
  - ✓ Record the specified extent for future quick positioning.
  - ✓ Move map center to a specified position.
  - ✓ Support Go to X, Y, which now includes functions of flashing the specified coordinates, adding markers, recording the recent queried coordinates and switching the units.
  - ✓ Quickly position the X, Y coordinates of the center of the map window.
  - ✓ Stop the drawing process.
  - ✓ With shortcut keys, mouse cursor can be switched as Zoom in, Zoom out, Pan and continuously pan and zoom tools.
  - ✓ Support the mouse wheel to be used together with Ctrl key to fixed zoom in/out or with Shift key to pan.
  - ✓ Map can be panned by pressing upward, downward, leftward

and rightward keys.

- ✓ Support to create shortcut keys for main menu and right-click menu.

- Layers, legends and labels can be individually set to be displayed at specific scale.
- Support Reference Scale to enlarge or shrink features as the map is being zoomed in or out.
- Text labels can be added to point, polyline and polygon features.
- Provide the browsing and interactive data selection tools and users can set the selection symbol for the features on each layer.
- Use Select by Features to select features based on the spatial relationship, such as contain or intersection.
- Support to use SQL syntax to select features based on attribute data.
- Support to select features with various graphic elements.
- Various selection modes are provided.
- The feature query function is supported. The coordinates and attribute data of the feature are shown in the query dialog box at once.
- Supports to search the specific features by attribute data.
- Provides three types of measuring tools: Line Measurement, Area Measurement and Feature Measurement. The measuring results will be shown on a floating window which contains Show Sum, Change Units, Snap to Features and Clear Results.
- The external files can be opened by clicking the features with hyperlink tool.

- Support to display the attribute data in the floating window.
- Magnifier and Overview Window enable users to view the map in details.
- Provide Spatial Bookmark; users can add and save the bookmarks and manipulate the bookmarks on other computers.
- Provide Viewer Window to display map at different scales or at some specific extent. It also supports the functions that the main map window supports such as map viewing and edit function.
- Provide “Pixel Viewer” for users to view the pixel value information of raster in large extent at the same time.
- Provide Group layer to group multiple layers to create a group layer.
- In creating a new layer, the coordinate system can be defined so that the new layer can be generated with different coordinate system.
- Group Layer allows users to group the layers with the same properties or the layers that need to be processed together. Thus all of the layers can be processed simultaneously.
- Multi-level group layer is supported. Users can add sub-groups to the group layer without limits, which helps users manage large quantities of layers.
- The path of each layer can be set respectively. Through setting the relative path of layers, users can move the entire project to another location instead of losing any layers.
- Support Drag & Drop function to quickly add the specified layer to the map window by dragging and dropping.
- When the features are exported, the coordinate system of the exported layer can be set “same with the source layer” or “same with the map environment.”
- With recent layer and recent map lists, users can fast add the commonly-used layers or maps.

- Support the settings of window resizing. Users can choose the way to redraw the map; the map can be redrawn either to fit the window or to maintain the map center and scale.
- Users can decide whether to start SuperGIS Desktop with the default template or with the template saved in the project file.
- Support to create multiple map frames to allow users to manipulate and edit the layers in different map frames at the same time.

Map Display

- Support to adjust the transparency of points, line and fill symbols contained in one layer simultaneously.
- Provide various methods, including Single Symbol, Graduated Color, Graduated Symbol, Unique Values, Unique Values (multi-fields), Dot Density, Histogram and Pie Chart, to display the classifications of feature data.
- Enable users to set scale-dependent symbology.
- Point symbols can be rotated and resized based on attribute values.
- In Graduated Color and Graduated Symbol, Data Exclusion can be specified so that data in special range will be excluded in the category through expression and not be displayed on the map.
- Support to Import and Export the symbol settings.
- Raster renderer supports RGB Color, Stretched Color and Graduated Color.
- Point, line, polygon labels can be placed flexibly.
- Display vector and raster data with interactive histogram
- Support SQL syntax to select features to display.
- Enable users to specify an extent on the map and clip to display the specified extent.
- Support to calculate statistics data of current extent or the specified extent in raster layers.

- Support to set Code Page in properties of newly-added layers and the default value.

Feature Editing

- Features can be added, moved, removed, copied and pasted.
- The import of CSV and TXT files, which record X, Y coordinates, is supported to add new point features.
- Undo /Redo are supported in the editing process.
- With Rotate tool, users can rotate feature(s) by entering the rotation degrees or by the center of the selected feature(s).
- Mirror tool can quickly insert a symmetric feature of the selected feature on the opposite side of the line. The function can be applied to create a mirror image of selected features on the other side of a line you create.
- Edit tools include: Sketch tool, Midpoint tool, Nearest Distance tool, Rectangle tool, Circle tool, Extend/Trim Feature tool, Auto-Complete Polygon tool, Separate part tool, Split tool, Segment Deflection, Finish Square Sketch, Direction-distance Tool, Reshape, Parallel, Split at vertex, Generalize, Smooth, Interactive Extend and Trim, and Trace Tool.
- Advanced Editor: Copy Tool, Auto Intersection, 2-Point Line, Split Proportionally, and Point To Line.
- Copy the map in the map window directly to the clipboard.
- Snap tool can snap to Vertex, Edge, Mid and End. The tolerance value and unit for snap can also be set. When vertices are sketching, Snap Cursor will show the snap tips.
- Support to set snap tolerance for snapping features by dragging circle.
- When using snapping function, the status bar will show related information of vertex, edge, midpoint, and endpoint.
- Users can utilize right-click menu and then decide to snap to vertex, edge, midpoint or endpoint while editing.

- Allow a new vertex to be directly inserted or be added by entering the coordinates, distance, direction and deflection based on the previous vertex.
- Support to offset or remove single vertex or multiple vertices at once.
- Support to edit, insert, and add a new vertex with Z value.
- Provide Land Parcel Editor for users to edit cadastral data.
- Allow users to edit feature services published by SuperGIS Server 3.
- Mapnote Tool supports to create: horizontal, leader line and rotatable annotations.
- Mapnote Tool enables users to separate, change lines, rotate and invert annotations.
- Dimension Tool support users to create: Simple Aligned, Aligned, and Linear Dimension.

Graphic Elements

- Support to add, move, rotate, edit vertex, remove, copy and paste the graphic elements.
- Features are supported to be converted to graphic elements.
- Provide many types of annotations, such as Text, Callout and Rectangle, circle, to mark specified targets on the map.
- Support to set up the mark of graphic elements, line style, fill color, font and callout style.
- Support to group various graphic elements and change the order and arrangement of them.
- The distribution of graphic elements can be arranged.

Image Processing Capability

- Provide Image rectification and clipping functions.
- Provide Zoom to Raster Resolution function.
- The transparency, contrast and brightness of the image can be adjusted.
- Support to display images with setting Display pixel value and color

stretching.

- To strengthen the image display, RGB Color, Stretched Color, Inverse Color and adjustment of band sequence are provided.
- To Stretch image, Min-Max, Histogram Equalized, Standard deviation and Custom are provided.
- For images with multiple bands, each band can be set in color and performed with Stretch function individually.
- Nearest Neighbor, Bilinear Interpolation, Cubic Convolution and Majority are provided for image resampling.
- Graduated Color is supported, which displays a single band image in different colors based on the classifications of pixel values. The method is suitable for image that represents continuous data.
- Provide histogram to display clearly distribution of band values.
- In the histogram, breakpoints can be added to the line to adjust the distribution of pixel value and change the image display.
- Provide several filter methods for edge detection, smoothing.
- Image files can be exported and the extent, color and cell size can be set.
- Support Color Table and Unique Values to operate indexed color images.
- Provides statistical information for image files, where the Minimum, Maximum, Average, Standard Deviation of each band can be viewed. And the query of the cell count within a specific range can be displayed in Cumulative.
- Support statistical information for image files in current or the specified extent.
- Support to export raster layers to SGR, LAN, JPG, and TIFF formats.
- Support to access the raster statistics file to speed up the performance of statistics calculation.
- Support to access the raster pyramid files to accelerate the

performance of image loading and display.

- Provide Image Analyzer for users to speed up manipulation of raster layers.

Text Label

- Auto label function.
- Provide label tool for users to click on the features to label the specified field properties on.
- Provide background text to perform line features with standard symbols.
- Interactive label tool.
- Support to manage and fix duplication and conflict of labels.
- For point, polyline and polygon features, provide various different settings of label placement respectively.
- Expression enables users to utilize the results of the expression created by multi-fields to be labels. And users can save, load and preview the expression.
- Support setting of modifying label position and priority on layers.

Map Analysis

- Filters the data by attribute values and spatial positions.
- Buffer analysis is provided.
- The coordinate system of the source data can be specified in Adding X, Y Data, allowing point from different coordinate systems to be imported to the map. Excel table is supported to import.
- Provide geoprocessing tools, such as Dissolve, Merge, Clip, Intersect and Union, to operate two feature layers and create a new one.
- Provide Image Analyzer for users who usually process raster data. Image Analyzer can help users to manage raster layers by a few clicks.

- Support users to create grids for further analyzing.

Table Data

- Displays attribute data in floating windows.
- Edits attribute data.
- Relate and Join can link to attribute data dynamically and support Excel (*.xls) to be used as the data source.
- Create and implement one-to-one and one-to-many Joins, and the joint attribute data can be viewed in dialog box.
- Support to freeze the field and sort multiple fields to make the most of attribute table. While the field is frozen, users still can edit the attributes in editing. The status of fields, like freezing and order, are saved in the project file.
- The selected records in attribute table can be selected again and highlighted. The reselected record will be displayed with another color in the attribute table and on the map.
- Support to present the attribute table in the form of graphic element on the layout view for printing.
- Support to set the color, font and initial feature ID of table elements; users also can set to show the selected records in the attribute table only.
- Supports to Flash, Zoom to, Pan to the selected features, and users are able to copy the selected record contents and paste to the clipboard.
- Provide Find and Replace functions.
- Provide various graphs, such as Vertical Bar, Horizontal Bar, Vertical Line, Horizontal Line, Vertical Area, Horizontal Area, Scatter Plot and Pie.
- Support to sort attributes.
- Support to calculate the attribute values and the selected record values.
- Add function “Field Properties” for users to view field information

directly.

- Support to turn off columns those are not queried, edited or manipulated temporarily.
- Add function “Summarize” for users to summarize attribute values in columns and then output as a new table.
- Enable users to simplify field name by “Alias.” Users can name fields in the attribute table with alias.
- Unit of numeric field can be set as “Currency”, “Direction”, “Percentage”, etc.

Page Layout and Printing

- Provide the wizards for manipulating with legends, frame styles, layout templates, etc. for quickly exporting a professional map.
- Support to specify a fixed extent for drawing active elements.
- Support to add, remove, and adjust map elements in a fixed template.
- Support to add longitude and latitude lines or customized gridlines to the map.
- Support template output for users to design and save new templates.
- Provide an easy-to-use wizard tool to insert map elements.
- Support to export maps containing different extents and themes simultaneously, strengthening the diversity of maps.
- Provide Ruler and alignment functions.
- Provided Preview function for previewing maps.
- Provide What-You-See-Is-What-You-Get (WYSIWYG) mode.
- Provide the Draft mode to avoid redrawing map when the layout is being arranged.
- Support to define paper size to meet the needs of large-sized printing.
- Support to output large scale map in 300 dpi.
- Support to export map to EMF vector format or general raster formats; users can set the resolution of exporting image.
- Support to output the contents of multiple map frames in the same layout view.

- Provide Map to PDF solution for Geospatial PDF export.
- Provide Feature Guided Pages tool that allows users to output each feature in a specified layer as a map so that users can print a series of features to create a map book.

Supported Geodatabase

- Support in all editions
  - Support to read vector/ raster data in Geodatabase, such as Geodatabase for Microsoft Access, SQL Server, PostgreSQL Server(PostGIS), and Oracle Spatial.
  - Support OLE DB (Object Linking and Embedding, Database) to connect database table.
  - Support ODBC (Open Database Connectivity) to connect database table.
  - Support to establish Personal Geodatabase (*.mdb) data.
  - Support to read vector feature data in geodatabases.
- Only support in professional and advanced edition
  - Support to write vector feature data in geodatabases.
  - Support to add, save, edit, remove new layers in Geodatabase.
  - Import data into database with the built-in tool.

Coordinate Systems

- Support to convert projection systems immediately.
- Support to select, create, edit, clear and save the coordinate system of each layer.
- Support to select, create, edit, clear and save the coordinate system of Layers. The coordinate system of Layers also can be specified the same as one of the current layers' contained in Layers.
- Provide hundreds of geodetic datum and ellipse settings of coordinate systems and over fifty projection methods to facilitate layers with different coordinate systems to be overlapped together.
- Support to definite EPSG (European Petroleum Survey Group) to

optimize map display after geometry conversion.

- Support to set the parameters of geographic coordinate system transformation.
- Users are enabled to find specific coordinate system by search.

Application Framework

- Support standard window interface.
- Support dockable /floating toolbars.
- Support multi-language attributes and application interfaces.
- Extension Manager enables users to control the license status of the floating licenses of extensions.
- Support users to import image icons for custom toolbars, enabling users to switch button icons.

Application Customize

- Enable users to customize tool bar and menus without programming language.
- Support to utilize python.
- Support to customize toolbar and menu that can be saved in the project file.

User Interface and Environment

- User Interface is available in Chinese, English, Japanese, Korean, Portuguese, French, German Turkish, and Indonesian.
- Complete Chinese and English Online Help.
- Provide various sample Data.
- Support to directly open SuperGIS DataManager, SuperGIS DataConvertor and SuperGIS DataRectifier which have been installed in your PC.

- Provide many no-cost add-ons, such as GPS, OGC Client, Geodatabase Client, SuperGIS Server Client and Image Server Desktop Client.

Supported File Formats

- Supported feature layer formats are GEO, SHP, MIF, DXF, GML, DWG, DGN, LAS, and LAZ.
- Supported raster layer formats are SGR, MrSID, GeoTIFF, BMP, GIF, JPG, JPEG2000, ECW, PNG, LAN, GIS, HGT and DEM.
- Support a conversion tool to convert file formats between SHP, DXF, MIF, E00, SEF, DWG, DGN, GML, KML, BNP (cadastral file format) and GEO.
- Support to import SuperGeo Layer File (*.slr) and export maps to *.slr, enabling SuperPad and other software to open.
- Support ASCII Raster document file.

System Requirements

- CPU: 1.6 GHz or higher
- RAM: 2 GB or higher
- Operating Systems:
  - ✓ Windows 7/ 8/ 8.1/10 (32/64 bit)
  - ✓ Windows Server 2003/R2 Standard, Enterprise and Datacenter
  - ✓ Windows Server 2008 (32/64 bit) /R2(64 bit)
  - ✓ Windows Server 2012/R2

SuperGIS Add-on

Graph	Standard	Professional	Advanced
Plot data from a variety of data in a single graph	✓	✓	✓
Overlay multiple graphs in a single graph	✓	✓	✓
Show label on graph	✓	✓	✓
Selection auto-propagation between map, table, and graph	✓	✓	✓
Create 2d and 3d graphs	✓	✓	✓
Set graph render as the same as the feature layer	✓	✓	✓
Support horizontal and vertical bar, line, and area histogram bar, scatter plot, box plot, pie	✓	✓	✓
Show graph with selected features	✓	✓	✓
Flexible settings for adjust positions of legends	✓	✓	✓
Save and load graph	✓	✓	✓
Georeferencing Tool	**Standard**	**Professional**	**Advanced**

Modify position, size and orientation of the image with rotate, pan, zoom in/ out, and geometric correction.	✓	✓	✓
Apply shift, flip, rotate to display image	✓	✓	✓
Fit to display to set position of image to the current extent	✓	✓	✓
Interactively specify control points and source points	✓	✓	✓
Interactively display rectifying image with control points and source points, and also show error and accuracy information	✓	✓	✓
Save and load control points	✓	✓	✓
Support first-,second-, third polynomial transformation	✓	✓	✓
Export rectify result as a temporary raster layer	✓	✓	✓
OGC	**Standard**	**Professional**	**Advanced**
Web Map Service （WMS）1.1.0, 1.1.1, 1.3.0	✓	✓	✓
Web Feature Service （WFS）1.0.0, 1.1.0	✓	✓	✓
Web Coverage Service（WCS） 1.0.0, 1.1.0, 1.1.1	✓	✓	✓
Web Map Tile Service (WMTS) 1.0.0	✓	✓	✓
Geographic Markup Language（GML） 3.0	✓	✓	✓
Save the OGC link	✓	✓	✓
Read OGC services containing username	✓	✓	✓

and password			
An interface integrates WMS, WFS, WCS and WMTS services	✓	✓	✓
Supports DPI setting of custom map tile in WMTS	✓	✓	✓
Query WMS layer and WFS layer.	✓	✓	✓
Set the map tile DPI of WMTS layer.	✓	✓	✓
Download WFS layers and save in GML format, saving the reloading time.	✓	✓	✓
Feature Guided Pages	**Standard**	**Professional**	**Advanced**
Zoom to and print each feature to make series maps	✓	✓	✓
View each page with custom order	✓	✓	✓
Insert pages on each map with customized order	✓	✓	✓
Put the title derived from value of attribute field on layout page	✓	✓	✓
Create and manage map series and books	✓	✓	✓
Set a specified extent for export maps	✓	✓	✓
Support to maintain scale or determine scale from value of attribute field	✓	✓	✓
Assign value from attribute table as page number	✓	✓	✓
Set scale to round as a multiple of a certain number	✓	✓	✓

Cache Generator	Standard	Professional	Advanced
Minimize cache size settings	✓	✓	✓
Create cache based on an area of interest or in a specific extent	✓	✓	✓
Create vector tiles	✓	✓	✓
Avoid duplicated labels	✓	✓	✓
Avoid cut labels	✓	✓	✓
Create map caches on different machines	✓	✓	✓
Update partial caches	✓	✓	✓
Be used in other SuperGIS solutions	✓	✓	✓
Image Analyzer	**Standard**	**Professional**	**Advanced**
Adjust the transparency, contrast, brightness of multiple layers at same time		✓	✓
About 20 types of filter functions for raster processing.		✓	✓
Support users to do clip, mask, stack bands, NDVI, Colormap to RGB, Difference, sharpening analyzing for multiple layers at the same time.		✓	✓
Create the result as a temporary raster layer		✓	✓
Adjust the resample method for multiple layers at the same time		✓	✓
Time Animation and Temporal Data	**Standard**	**Professional**	**Advanced**

Create time series, layer transition, or map navigation animation		✓	✓
Animate data change with vector data		✓	✓
Export animations as sequential images		✓	✓
Create video from sequential images		✓	✓
Provide a preview before exporting to an animation		✓	✓
Provide settings for displaying temporal data in regular or irregular interval		✓	✓
View temporal data with the time slider		✓	✓
Mapnote Tool	**Standard**	**Professional**	**Advanced**
Create annotation text data from labels	✓	✓	✓
Store annotation in a geodatabase		✓	✓
Move, rotate and scale the annotation interactively		✓	✓
Provide horizontal, rotatable and leader line annotation.		✓	✓
Stack one or multiple annotations with custom delimiter		✓	✓
Split one or multiple annotations with delimiter		✓	✓
Change annotation attributes in properties layer		✓	✓
Manage annotation which could not be		✓	✓

displayed with label rules			
Edit each word in annotation string		✓	✓
Alter the symbology of annotation		✓	✓
Dimension Tool	**Standard**	**Professional**	**Advanced**
Create aligned dimensions displaying the actual distance between vertexes		✓	✓
Create linear dimensions showing horizontal, vertical distance between vertexes		✓	✓
Support to add suffix and prefix with dimension text		✓	✓
Land Parcel Editor	**Standard**	**Professional**	**Advanced**
Create land parcel features from point, line and polygon feature			✓
Make land parcel layer			✓
Make land parcel table view			✓
Append new land parcels to existing land parcels			✓
Copy land parcels			✓
Create a land parcel with bearings and distances			✓
View the parcel details			✓
Report geometry information			✓
Increase reminded parcel			✓

Split an existing parcel into several parts by angle, area			✓
Assigning sequential parcel names to a group of parcel features			✓
Manage parcel data in each plan			✓
COGO	**Standard**	**Professional**	**Advanced**
Ground to automatically modify field measures to the GIS (ground to grid) with interactive tools or by specifying an offset and scale			✓
Add new features by specifying courses along a traverse			✓
Create two-point line features with a variety of curved and straight-line construction methods			✓
Create new lines from a selected line and segment (offset line)			✓
Construct symmetrical cul-de-sacs from a street centerline			✓
Split a line at specific intervals (proportion)			✓
Update COGO measurements into fields			✓
Calculate curve from any two measurements			✓
Report geometry information of COGO lines			✓
Convert existing line features into COGO lines			✓
GPS	**Standard**	**Professional**	**Advanced**

Connect to GPS devices	✓	✓	✓
Record GPS track log in vector data format	✓	✓	✓
Pan, zoom to GPS position	✓	✓	✓
Provide GPS tracking window to get NMEA information	✓	✓	✓
Set symbology for destination, trail, and position	✓	✓	✓
DGPS	**Standard**	**Professional**	**Advanced**
View Error Log		✓	✓
View track, position, and Velocity from received data		✓	✓
Support post-processing with RINEX file and navigation file		✓	✓
Lidar Tool	**Standard**	**Professional**	**Advanced**
Display LAS files with elevation, intensity, point id, classification or RGB value			✓
Display LAS files with filter settings			✓
Provide profile view			✓
Extract a LAS file with the particular region or attribute fields			✓
Split a LAS file with extent settings			✓
Merge LAS data			✓
Convert LAS data to LAZ			✓
Convert LAS data to points			✓

Convert LAS data to Raster			✓
Convert LAA data to LAS			✓

Tools in SuperGIS Toolkit

SuperGIS Toolkit is a powerful toolset and Process Design program in SuperGIS Desktop, through the built-in Process Designer and hundreds of tools, users can design the various analyses or processing. The following tables show the functions in each edition.

Analysis Tools (18)	Standard	Professional	Advanced
Clip	✓	✓	✓
Select	✓	✓	✓
Select By Location	✓	✓	✓
Split			✓
Table Select	✓	✓	✓
Erase		✓	✓
Intersect	✓	✓	✓
Spatial Join	✓	✓	✓
Union	✓	✓	✓
Buffer	✓	✓	✓
Create Thiessen Polygons		✓	✓
Generate Near Table			✓
Multiple Ring Buffer	✓	✓	✓

Near			✓
Point Distance			✓
Frequency			✓
Summary Statistics	✓	✓	✓
Tabulate Intersection			✓
Conversion Tools (20)	**Standard**	**Professional**	**Advanced**
GPX To Feature Class	✓	✓	✓
LAS To ASCII		✓	✓
LAS To Point		✓	✓
LAS To Raster		✓	✓
Raster To ASCII	✓	✓	✓
Raster To Point	✓	✓	✓
Raster To Polygon	✓	✓	✓
Raster To Polyline	✓	✓	✓
WFS To Feature Class	✓	✓	✓
CAD To Feature Class	✓	✓	✓
Feature Class To CAD	✓	✓	✓
Feature Class To Feature Class	✓	✓	✓
Feature Class To Geodatabase	✓	✓	✓
Raster To Geodatabase	✓	✓	✓
Table To Geodatabase	✓	✓	✓
Table To Table	✓	✓	✓
Layer To KML	✓	✓	✓
Map To PDF	✓	✓	✓

ASCII To Raster	✓	✓	✓
Feature To Raster	✓	✓	✓
Data Management Tools (63)	**Standard**	**Professional**	**Advanced**
Create Feature Class	✓	✓	✓
Create Fishnet		✓	✓
Create Random Points		✓	✓
Add Line String	✓	✓	✓
Add Points	✓	✓	✓
Add Polygon	✓	✓	✓
Add XY Coordinates	✓	✓	✓
Copy Features	✓	✓	✓
Delete Features	✓	✓	✓
Feature Attribute To ASCII	✓	✓	✓
Feature Envelope To Polygon		✓	✓
Feature To Line		✓	✓
Feature To Point		✓	✓
Feature To Polygon		✓	✓
Feature Vertices To Points		✓	✓
Locate Points Along Polylines	✓	✓	✓
Multipart To Singlepart	✓	✓	✓
Polygon To Line		✓	✓
Repair Geometry	✓	✓	✓
Split Line At Point		✓	✓
Split Line At Vertices		✓	✓

Unsplit Line			✓
XY To Line	✓	✓	✓
Add Field	✓	✓	✓
Calculate Field	✓	✓	✓
Delete Field	✓	✓	✓
Transpose Time Fields		✓	✓
Append	✓	✓	✓
Merge	✓	✓	✓
Center Line			✓
Dissolve	✓	✓	✓
Simplify Line		✓	✓
Simplify Polygon		✓	✓
Smooth		✓	✓
Project	✓	✓	✓
Flip	✓	✓	✓
Mirror	✓	✓	✓
Project Raster	✓	✓	✓
Rotate	✓	✓	✓
Shift	✓	✓	✓
Define Projection	✓	✓	✓
Clip	✓	✓	✓
Colormap To RGB		✓	✓
Convert Cell Type	✓	✓	✓
Grayscale	✓	✓	✓

Mosaic	✓	✓	✓
NDVI		✓	✓
Pan-sharpen	✓	✓	✓
Resample	✓	✓	✓
Stack Bands	✓	✓	✓
Average Nearest Neighbor	✓	✓	✓
Central Feature	✓	✓	✓
Calculate Areas	✓	✓	✓
Calculate Length	✓	✓	✓
Copy Rows	✓	✓	✓
Create Table	✓	✓	✓
Delete Rows	✓	✓	✓
Get Count	✓	✓	✓
Join Field	✓	✓	✓
Pivot Table			✓
Set Field Value	✓	✓	✓
Build		✓	✓
Clean		✓	✓
Extensions	**Standard**	**Professional**	**Advanced**
3D Analysis Tools (27)[1]	✓	✓	✓
Network Analysis Tools (19)[2]	✓	✓	✓
Spatial Analysis Tools (106)[3]	✓	✓	✓
Spatial Statistical Tools (9)[4]	✓	✓	✓
Biodiversity Tools (5)[5]	✓	✓	✓

1 Only available with 3D extension

2 Only available with Network Analysis extension

3 Only available with Spatial Analysis extension

4 Only available with Spatial Statistical extension

5 Only available with Biodiversity extension