**LISCAD Computations**

It All Adds Up...

to a good investment when you get maximum use of your software. The powerful and flexible database and comprehensive application software of LISCAD ensures the best investment return.

“Computations” creates, edits and examines points, lines, splines, polygons, text and alignments.

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**The benefits....**

**Powerful Graphical Interface...**

allowing “See as you do” graphics for easy use.

**Topological Database...**

LISCAD’s unique topological database design ensures the integrity of your data is always maintained. When editing an object, any other object related to it is automatically updated to maintain the relationships you have established.

**Automatically Attach Attributes...**

symbols and line types to points, lines, polygons and alignments.

**No Software Limitation...**

to the size of the 3D database for calculations and results.

**Powerful Computation Options...**

for a variety of objects, including points, lines, circles, arcs, splines and spirals.
Creation Methods

The powerful Computations Task in LISCAD enables you to create a variety of object types, including points, lines, polygons, circles, arcs, splines and spirals. Complex objects are handled easily through the Combined Curve option, while the Create Alignment option can turn any lines into a design object. All of these objects can be created using a variety of creation methods, as illustrated by the point selection below, whether working on a local plane, ground or map projection.

Create Line Segments

When creating lines, LISCAD is able to create either line strings or line segments. Creating individual line segments is ideal when forming lot boundaries before creating polygons by element selection.

Best Fit – Line / Arc

The ability to create best-fit lines / arcs through a series of existing points is an ideal tool for the cadastral surveyor. This option enables you to create a line, or arc, that forms a least squares best fit through a set of specified points. The specified points can be easily selected graphically, while points that the line or arc must pass through can be fixed. Following the computation, offsets from each point to the line or arc are displayed, allowing you to modify selection criteria and repeat the computation until satisfactory results are obtained. The computed line/arc can then be saved in the project database.
**Polygon Creation**
LISCAD contains powerful options for creating / editing polygons. While polygons are traditionally used for cadastral lot calculations, they can also be utilised when mapping theme areas for GIS applications.

Once polygons have been created, they can be edited dynamically. When points are added, moved or deleted, the polygon dimensions and area are automatically updated.

The polygon areas are computed in accordance with the units that are currently set in the units configuration.

**Polygon Attributes**
During creation, polygons can be easily enhanced with either line, crossed or symbol hatching.

While elements are computed with the attributes that are set before the computation, LISCAD contains powerful editing options that allow any individual element, or attribute to be edited at any time.

**View / Edit**
One mouse click is all it takes to examine all the attributes of a point, any one of which can be dynamically edited, with the results immediately displayed on screen. LISCAD now has enhanced editing capabilities to allow you to select multiple ranges of objects when editing.

If major changes are required to a whole range of points, then this can also be easily accommodated with LISCAD’s powerful editing tools. Any number of elements can be edited, by either block, code, point range, description or group.

Objects can be moved by a variety of methods, rotated or rescaled. Elevations can be updated and any attribute modified.
**Combined Curves**

The creation of compound curves for road or engineering alignments is powerful, yet easy to perform in LISCAD.

Combinations of arcs and spirals can be generated via an easy-to-use editor, which allows you to view the curves and associated design parameters, before accepting the new design.

**Alignment Creation**

Any number of complex lines can be saved as an alignment, using one of several creation methods. Individual elements of an alignment can be edited, resulting in an automatic update of the alignment.

**Alignment Editing**

The chainage of any point can be edited, using the Chainage Equation dialog box, with all subsequent chainages along the alignment being automatically adjusted accordingly.

Alternatively, the entire chainage of an alignment can be changed to suit pre-existing conditions.

**Section Markers**

Section marker points may be optionally created and inserted into the alignment. Section Markers can be created at any location along primary alignments, to control the display of chainages and the locations for cross sections.

**Alignment Attributes**

While default attributes can be applied to each alignment, you control the amount and position of data displayed.

**Enabling and Disabling Objects**

Points, Lines and Text Objects can now be disabled. Disabling objects allows them to be ignored without deleting them or having to put them on a new Group and switching them off. It provides a quick means of overlaying design data on top of existing data, allowing an integrated design model to be generated without interfering with the original data.

**Exchanges Axes**

Swap the X, Y and Z axes with each other. Ideal for working with façade surveys where it is desirable to view a building from the front rather than from above.