GINO v7.0 Functional Summary

GINO

General Drawing
- 2D and 3D primitives (lines, arcs, ellipses, arrows, polygons)
- curve drawing (parametric, bezier and splines)
- polygonal windowing, masking and viewports
- simple and complex area fill

Colours and LineStyles
- colour definition (true colour, RGB, HLS, HSV)
- variable line widths and ends
- 16 re-definable line styles
- 16 re-definable polygon fill styles
- XOR, OR, AND, NOT drawing modes

Text
- Access to TrueType fonts
- 25 fixed-pitch/proportional software fonts
- 1000+ symbols
- ASCII, string and numeric output
- any size, any angle text
- justification, italic, bold, underline, super/subscript
- fit text to line or curve

Image Handling
- pixel read, write
- pixel bit packing
- pixel copy, replicate and transform
- cell array handling

Interaction
- multiple cursor types (including 50 X cursors)
- define polygonal cursor shapes
- cursor actions including rubber line, square, circle
- set/enquire mouse position
- event handling including mouse movement, window resize, button release, segment hit

Geometric transformations and viewing
- shift, rotate, scale and shear in 2D and 3D
- transformation matrix manipulation
- projection viewing with zoom, distortion, perspective and parallel control

OpenGL Lighting and Shading
- draw facets with optional fill styles
- material properties
- ambient/directional/point/spot lights
- fog and shadows
- texture mapping
- Gouraud shading of textured facets

OpenGL modelling
- cube, box, wedge, sphere, cylinder, cone, volume
- bezier surface, sphere, volume (ruled/swept/tabulated)

Operating System Commands
- file and directory handling
- date and time
- random numbers
- environment variables
- program execution with priority control

Picture Segments
- hardware segments or software display file
- segment building and hierarchical structure definition
- segment manipulation (visibility, sensitivity, highlighting, colour, drag, intensity, position, name, transformation, deletion)

Additional Features
- metafile handling (DXF, BMP, XWD, JPEG, PNG)
- DXF entity, limits and layers enquiry
- double buffering
- multiple auxiliary bitmaps and windows
- extensive enquiry routines
- access to Windows registry

GINOGRAF

2D Plotting
- histograms and area charts
- bar charts and gantt diagrams
- step charts, vector diagrams, scatter diagrams
- line graphs, curve or spline graphs
- error bars, square wave interpolation
- polar charts, pie charts, text charts
- colour scale charts

Axes
- complete control over axis positioning and scaling
- discrete, linear, log, polar, date
- multiple data-sets and axes per plot

Annotation Control
- font, size, angle, colour, justification
- radial, internal, external for pie charts
- raised power, scientific notation, engineering notation
- British, US, logical, alphanumeric, numeric date format

Utilities
- curve-end types for curve fitting
- optional key/legend
- arrows and reference lines
- prefix and suffix strings for numerical annotation
- associate data areas with GINO segments to allow for picking and drill-down operations

GINOSURF

3D Plotting and Contouring
- contour plots - filled/line-drawn
- surface plots with any eye-point
- cross-section plots

GINO v7.0 Functional Summary

Data Interpolation
- random, gridded or triangulated
- weighted average of points
- weighted least squares parabolic surface
- Clough-Tocher C1 cubic
- constrained network with break points and fault lines

Display Styles
- line drawn, hatch filled, colour filled
- add data points, grid lines, triangulated network
- optional legend/key

Contour Control
- fill or line style attributes
- control of annotation (colour, frequency, size, position, orientation, format)
- straight line or curve drawn contours
- polyline overlay

Surface Control
- hidden line/surface removal
- fill or line style attributes
- height to base ratio control
- surface to screen coordinate interaction
- polyline overlay
- gradient fields
- 3D/4D contour overlay
- 3D viewing allowing OpenGL lighting, shading and animation
- calculate surface area/volume between two surfaces
- calculate/display cut/fill values and surfaces
- import DXF polymesh surface

GINOMENU

Windows
- MDI parent and child windows, SDI parent and floating child windows, docking panes, menu bar and menu entries with separators, checked status, deselectable entries, cascading entries and dockable toolbars

Dialogs
- combo-boxes, list-boxes, RTF text entry, value entry, panels, tabbed-dialogs, graphics frames, tree views, table boxes, TTY entry, video input, property Lists

Grids
- text and value grids including importing and exporting data to other spreadsheet applications via File or Cut, Copy & Paste facilities
- control is provided over the grid cells' width and height, the cell background colour, axes labels, cell text colour and the justification of the text

Common Dialogs
- File browser, colour selector, print dialog, message box, font selector, calendar, find text, page setup, printer setup

Interaction
- Mouse movement detection
- Mouse position detection
- Mouse left/right key detection
- Hot-key detection for any other key on keyboard
- Built-in cursor shapes
- Built-in cursor actions (rubber-line, rubber-band..)
- Object detection (using GINO's segment facilities)

Other features
- tooltips/bubble help, progress bars, gauges, radio-boxes, spinners, buttons, toggles, check-boxes, sliders, timer & motion callbacks, on-the-fly widget creation, hypertext link callbacks, optional manifest file, tablist control

GINOMENU Studio

Design
- fully drag-and-drop
- windows, dialogs, grids plus all other common controls available
- snap-to grid alignment
- multiple cut/copy/paste of controls
- horizontal/vertical alignment

Code Editor
- coding in Fortran or C++
- access to all GINO functions with code-assist popups and argument prompts
- context-sensitive F1 help
- language-sensitive syntax highlighting
- compile and Run within IDE
- hot links to debugging errors
- read-only source code viewer

Application Management
- access to external files and compiler switches for full project control
- synchronisation between project file and source file
- auto-backup
- automatic generation of manifest file