

## The SURPAC CADASTRAL (Extended) Module Applications



### The General Plan CAD Application

- This CAD application incorporates specific functions for the creation of General Plans. The format of the General Plans created conforms with the requirements of the Surveyors General in all provinces of South Africa, in Namibia, Swaziland, Lesotho, Zimbabwe, Malawi and Zambia.
- Up to 30 General Plan Sheets may be created for any Co-ordinate File. The Sheet numbering is from Sheet #02 to Sheet #30. Sheet #01 is a reserved number for the GP Data Sheet.
- The Co-ordinate File is used as the source of Point data. These Point Data may be used for the construction of the necessary Plan Lines, and/or the Lines may be imported from a variety of external sources.
- Figural data, areas and stand numbering may either be auto-generated, or User generated.
- A variety of Text related functions may be employed for completing the headings, street names etc.
- Using simple mouse or keyboard commands, the on-screen view of a General Plan may be :-
  - Zoomed Up,
  - Zoomed Down,
  - Zoomed to a defined window,
  - Zoomed to the defined Plotting scale,
  - Zoomed to a User defined scale,
  - Rotated positively or negatively,
  - Panning or scrolling the display
- The General Plan application functions are accessible from :-
  - a Drop Down Menu system,
  - a Tool Bars system (that includes most of the common functions), or
  - using Single or Double Keyboard entered commands.
- The standard CAD functions included are :-
  - Importing Line, Arc and/or Text Data :-
    - from a SURPAC General Plan, Data Sheet, Working Plan or General CAD plotting She
    - from a TopoCAD Sheet, or
    - from a DXF file.
  - Line construction/editing :-
    - Draw using various colours, widths and styling,
    - Generate,
    - Replicate (using Polar data),

- Dimension,
- Trim/Snap,
- Subdivide,
- Part Walls,
- Draw arrows, rectangles, arcs, circles.
- Point functions :-
  - Add, Edit or Delete a Point,
  - View a Point's information
  - Calculate Polars,
  - Calculate Joins,
  - Calculate Intersections,
  - Circle and Name Points
- Text functions :-
  - Write a Text Item using any Font, any Size, any Direction, any compaction or styling,
  - Edit or Delete a Text Item,
  - Dynamically Move a Text Item,
  - Dynamically Copy a Text Item,
  - Dynamically Resize, Position and/or Orientate a Text Item,
  - Import Text Items from an ASCII file,
  - Reset the attributes of all, or selected Text Items.
- Graphic Image functions :-
  - Import Graphic Images (BMP, JPEG, GIF, ICO, WMF or EMF formats)
  - Create Graphic Image of Sheet, or portion of the Sheet (BMP format)
  - Flip an Image (Horizontal, Vertical or both)
  - Set Images to be in front of, or behind, drawing information
  - Move an Image
  - Re-Size an Image
  - Shift an Image
- Use the SURPAC "Frame" function to :-
  - Copy defined a block of Data from Position to Position, or Sheet to Sheet,
  - Move a defined block of Data from Position to Position,
  - Delete a defined block of Line/Text data,
  - Create an Inset at a User defined Scale,
  - Align a defined block of Text Items (Left/ Centre/ Right Justify, plus horizontal spacing),
  - Rotate a defined block of Data,
  - Zoom Up, or Zoom Down, a defined block of Data,
  - Store and recall Data Blocks from disk for repeated Sheet application.

- Output of the General Plan to :-
  - A Printer or Plotter,
  - A HPGL File, or
  - A DXF File.
- The specific General Plan CAD functions are :-
  - Figural Data :-
    - Auto generate and display Stand Sides and Directions, Area and Number
    - Compute Stand Area using either auto-line detection, or Point definition,
    - Auto Generate the Block Sides and Directions (if not part of Stand information),
    - Carry out a Data and Consistency calculation.
  - Line Data :-
    - Display Line Distance (Side),
    - Display Line Direction,
    - Display Line Distance and Direction on same side or opposite sides,
    - Display perpendicular Splay Distance and Direction,
  - Other functions include :-
    - Generating Line Running Placing/Checking Data,
    - Listing all Named (Block Corner) Points,
    - Listing and/or Editing all Areas on a Sheet,
    - Setting an Erasure Polygon for :-
      - Erasing Lines,
      - Erasing Text Items,
      - Erasing Points, or
      - All Data.
    - Displaying a Grid Mesh used to select Grid Intersections,
    - Displaying a North Point.



## **The GP Data Sheet CAD Application**

- This CAD application incorporates specific functions for the creation of GP Data Sheets. The format of the Sheets created conforms with the requirements of the Surveyors General in all provinces of South Africa, in Namibia, Swaziland, Lesotho, Zimbabwe, Malawi and Zambia.
- A GP Data Sheet extracts its necessary information from any, or all, of the existing General Plan Sheets, related to the current Co-ordinate File.
- Up to 10 Data Sheets may be created for any Co-ordinate File. For large developments, for example, one Data Sheet may be used for the Co-ordinates and another for the Areas.
- For small developments, the Data Sheet information may be transferred to a General Plan,

so that all plan and tabular data can be displayed on a single sheet.

- Once User defined options have been set, the application will automatically generate the tables of Co-ordinates and/or Areas, extracted from the General Plan Sheets.
- After generation of the table(s), CAD functions exist for User modification of any displayed Line or Text Items.
- A variety of Text related functions may be employed for completing, or modifying the headings, etc.
- Using simple mouse or keyboard commands, the on-screen view of a Data Sheet may be :-
  - Zoomed Up,
  - Zoomed Down,
  - Zoomed to a defined window,
  - Zoomed to the defined Plotting scale,
  - Zoomed to a User defined scale,
  - Rotated positively or negatively,
  - Panning or scrolling the display
- The Data Sheet application functions are accessible from :-
  - a Drop Down Menu system,
  - a Tool Bars system (that includes most of the common functions), or
  - using Single or Double Keyboard entered commands.
- The standard CAD functions included are :-
  - Line construction/editing :-
    - Draw using various colours, widths and styling,
    - Generate (using Polar data),
    - Replicate,
    - Dimension,
    - Trim/Snap,
    - Subdivide,
    - Draw rectangles.
  - Text functions :-
    - Write a Text Item using any Font, any Size, any Direction, any compaction or styling,
    - Edit or Delete a Text Item,
    - Dynamically Move a Text Item,
    - Dynamically Copy a Text Item,
    - Dynamically Resize, Position and/or Orientate a Text Item,
    - Import Text Items from an ASCII file,
    - Reset the attributes of all, or selected Text Items.
  - Graphic Image functions :-
    - Import Graphic Images (BMP, JPEG, GIF, ICO, WMF or EMF formats)
    - Create Graphic Image of Sheet, or portion of the Sheet (BMP format)

- Flip an Image (Horizontal, Vertical or both)
- Set Images to be in front of, or behind, drawing information
- Move an Image
- Re-Size an Image
- Shift an Image
- Use the SURPAC "Frame" function to :-
  - Copy defined a block of Data from Position to Position, or Sheet to Sheet,
  - Move a defined block of Data from Position to Position,
  - Delete a defined block of Line/Text data,
  - Align a defined block of Text Items (Left/ Centre/ Right Justify, plus horizontal spacing),
  - Rotate a defined block of Data,
  - Zoom Up, or Zoom Down, a defined block of Data,
  - Store and recall Data Blocks from disk for repeated Sheet application.
- Output of the GP Data Sheet to :-
  - A Printer or Plotter,
  - A HPGL File, or
  - A DXF File.
- The specific GP CAD functions are :-
  - Options to :-
    - Select or Deselect the Main Figure & Block Corner Listings,
    - Select or Deselect the extracted Area Listings,
    - Select or Deselect the Main Figure Data Block,
    - Select or Deselect spacing between text blocks,
    - Select or Deselect common Area Grouping,
    - Setting an Erasure Polygon for :-
      - Erasing Lines,
      - Erasing Text Items,



## **The Sectional Title CAD Application**

- This CAD application incorporates specific functions for the creation of Sectional Title Plans. The format of the Sectional Title Plan sheets created conforms with the requirements of the Surveyors General in all provinces of South Africa.
- Up to 30 Sectional Title Plan sheets may be created for any Co-ordinate File.
- The Co-ordinate File is used as the source of Point data. These Point Data may be used for the construction of the necessary Plan Lines, and/or the Lines may be imported from a variety of external sources.

- A number of Base Sheets are incorporated in the application. These supply the basic layouts, for the individual Sectional Title Plans, in either English or Afrikaans, i.e. :-
  - The Title Sheet, or Sheet #01, in size A4
  - Block Plan Sheets in size A4 or A3,
  - Floor Plan Sheets in size A4 or A3, and
  - The Percentage Quota Sheet, sizable according to the number of Areas involved.
- Figural data, areas and stand numbering may either be auto-generated, or User generated.
- A variety of Text related functions may be employed for completing the headings, street names etc.
- Using simple mouse or keyboard commands, the on-screen view of a Sectional Title Sheet may be :-
  - Zoomed Up,
  - Zoomed Down,
  - Zoomed to a defined window,
  - Zoomed to the defined Plotting scale,
  - Zoomed to a User defined scale,
  - Rotated positively or negatively,
  - Panning or scrolling the display
- The Sectional Title application functions are accessible from :-
  - a Drop Down Menu system,
  - a Tool Bars system (that includes most of the common functions), or
  - using Single or Double Keyboard entered commands.
- The standard CAD functions included are :-
  - Importing Line, Arc and/or Text Data :-
    - from a SURPAC Sectional Title Base Sheet,
    - from a SURPAC Sectional Title Plan, General Plan, Data Sheet, Working Plan or General CAD plotting Sheet,
    - from a TopoCAD Sheet, or
    - from a DXF file.
  - Line construction/editing :-
    - Draw using various colours, widths and styling,
    - Generate (using Polar data),
    - Replicate,
    - Dimension,
    - Trim/Snap,
    - Subdivide,
    - Calculate mid-wall positions, and
    - Draw arrows, rectangles, arcs, circles.
  - Point functions :-

- Add, Edit or Delete a Point,
- View a Point's information
- Calculate Polars,
- Calculate Joins,
- Calculate Intersections,
- Circle and Name Points
- Text functions :-
  - Write a Text Item using any Font, any Size, any Direction, any compaction or styling,
  - Edit or Delete a Text Item,
  - Dynamically Move a Text Item,
  - Dynamically Copy a Text Item,
  - Dynamically Resize, Position and/or Orientate a Text Item,
  - Import Text Items from an ASCII file,
  - Reset the attributes of all, or selected Text Items.
- Graphic Image functions :-
  - Import Graphic Images (BMP, JPEG, GIF, ICO, WMF or EMF formats)
  - Create Graphic Image of Sheet, or portion of the Sheet (BMP format)
  - Flip an Image (Horizontal, Vertical or both)
  - Set Images to be in front of, or behind, drawing information
  - Move an Image
  - Re-Size an Image
  - Shift an Image
- Use the SURPAC "Frame" function to :-
  - Copy defined a block of Data from Position to Position, or Sheet to Sheet,
  - Move a defined block of Data from Position to Position,
  - Delete a defined block of Line/Text data,
  - Create an Inset at a User defined Scale,
  - Align a defined block of Text Items (Left/ Centre/ Right Justify, plus horizontal spacing),
  - Rotate a defined block of Data,
  - Zoom Up, or Zoom Down, a defined block of Data,
  - Store and recall Data Blocks from disk for repeated Sheet application.
- Output of the Sectional Title Plan to :-
  - A Printer or Plotter,
  - A HPGL File, or
  - A DXF File.
- The specific Sectional Title Plan CAD functions are :-
  - Figural Data :-

- Auto generate and display Figure Sides and Directions, Area and Number
- Compute Figure Area using either auto-line detection, or Point definition,
- Compute Area of Figure components and then combine with main Figure,
- Auto Generate the Block Sides and Directions,
- Auto-generate mid-wall positions for a graphically defined Figure,
- Carry out a Data and Consistency calculation.
- Line Data :-
  - Display Line Distance (Side),
  - Display Line Direction,
  - Display Line Distance and Direction on same side or opposite sides,
  - Display perpendicular Splay Distance and Direction,
- Other functions include :-
  - Auto-generate the Participation Quota Sheet,
  - Personalization of Sectional Title Base Sheets,
  - Listing and/or Editing all Areas on a Sheet,
  - Setting an Erasure Polygon for :-
    - Erasing Lines,
    - Erasing Text Items,
    - Erasing Points, or
    - All Data.
  - Displaying a Grid Mesh used to select Grid Intersections,
  - Displaying a North Point.