InSight
Graphical User Interface
Design Guidelines

June 2001
1.0 Introduction
This standard is designed to assist software programmers in creating a graphically unique and consistent interface for the InSight Program. It follows recognized Java look and feel standards and uses themes to create a unique program 'flavor'. All conventions described in this standard are based on the standards described in the book: Java Look and Feel Design Guidelines (JLFDG), from Sun Microsystems. Where the finer details of the InSight design scheme are identical to those described in the Java look and feel book, references are made throughout this document to the appropriate pages or sections in the book, these references are shown in brackets like this: (Ref;P101), all other references are made to other sections in this document.

1.1 Dimension Information
All graphical elements and layout information are measured in pixels, all typographic elements are measured in points. One pixel and one point are both equal to 1/72”

2.0 General Guidelines
2.1 The Display Grid
The InSight interface uses a standard perceived 6 x 6 pixel display grid for laying out all elements. The actual distance will be set at either 5 or 6 pixels depending on the colour of the elements edges. Elements that have a highlighted edge will have an increased perceived distance between it and the adjacent element and will therefore need only a 5 pixel space (Ref: Between-Component Padding and Spacing Guidelines, page 48, and specific spacing details on pages 143, 151, 156 and 154).
3.0 **Color**

The InSight interface uses the Java default colour theme. The specifications for the colors and their application in the program are described in this section (Ref: Colors page 40 - 43).

3.1 **Primary Colors And Their Application**

3.2 **Secondary Colors And Their Application**
### 3.3 Color Specs And Where The Colors Are Used

<table>
<thead>
<tr>
<th>Name</th>
<th>Basic Drawing</th>
<th>3D Effect</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary 1</td>
<td>Active window borders</td>
<td>Shadows of selected elements</td>
<td>System text (e.g. labels)</td>
</tr>
<tr>
<td>RGB 51-102-153</td>
<td>Hex #336699</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary 2</td>
<td>Highlighting and selection (e.g. of menu titles and menu items); indication of keyboard focus</td>
<td>Shadows (colour)</td>
<td></td>
</tr>
<tr>
<td>RGB 102/153/204</td>
<td>Hex #6699CC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary 3</td>
<td>Large colored areas (e.g. the active title bar)</td>
<td>Text selection</td>
<td></td>
</tr>
<tr>
<td>RGB 153/204/255</td>
<td>Hex #99CCFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary 1</td>
<td>Dark border for flush 3D style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RGB 102-102-102</td>
<td>Hex #666666</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary 2</td>
<td>Inactive window borders</td>
<td>Shadows; buttonmousedown menu items or labels</td>
<td>Dimmed text (e.g. inactive</td>
</tr>
<tr>
<td>RGB 153-153-153</td>
<td>Hex #999999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary 3</td>
<td>Canvas colour (that is, normal background colour); inactive title bar</td>
<td>User text and control text (incl. items such as menu titles)</td>
<td>Background for user text area</td>
</tr>
<tr>
<td>RGB 204-204-204</td>
<td>Hex #CCCCCC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RGB 000-000-000</td>
<td>Hex #000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
<td>Highlights</td>
<td>Background for user text area</td>
</tr>
<tr>
<td>RGB 255-255-255</td>
<td>Hex #FFFFFF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.0 **Text**

There are some issues that should be considered with regards to fonts and font sets. The JLFDG describes default font styles (Ref; P45 )that will automatically be applied to the host system’s default font in order to maintain consistency and readability in the different situations where text is displayed. Themes can be used to redefine font typefaces, sizes, and styles that override the host system’s default fonts and styles. Applying such a theme would mean that Klocwork Solutions would always know how the text will look throughout the inSight program, however there may be compelling technical or practical reasons that the Design Team is unaware of for not doing this. The decision to apply a theme or not will have to be made by Klocwork Solutions. Should Klocwork Solutions decide to use a theme to customize the fonts and styles the following theme has been defined for inSight and has been used in all the window and dialog box examples in this document.

4.1 **inSight Fonts and the Font Theme**

All inSight fonts come from either the Verdana or Arial typeface families. Type styles and sizes are as follows:

<table>
<thead>
<tr>
<th>Type Style</th>
<th>Default Theme</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>12-point bold</td>
<td>Buttons, checkboxes, menu titles, primary and secondary window titles</td>
</tr>
<tr>
<td>Small</td>
<td>10-point plain</td>
<td>Keyboard shortcuts in menus, tool tips, list and nav.pane titles, tool drop downs.</td>
</tr>
<tr>
<td>System</td>
<td>12-point plain</td>
<td>Tree view, tool tips, dialog box text, menu items.</td>
</tr>
<tr>
<td>User</td>
<td>12-point plain</td>
<td>Text fields and tables</td>
</tr>
</tbody>
</table>

note: do not use Courier as display font, Verdana or Arial should be substituted
5.0 **Graphical Elements - Windows**

The windows use colour sparingly. Only the header bar on the tri-split window, dialogue boxes and tool palettes use the InSight primary colors (indicating that these windows belong to the InSight program), everything else except for the colour in standard icons is modeled in shades of gray or black. This leaves more scope for the use and recognition of colored elements inside the panes. The windows have a drag texture styled specifically for the InSight program, it is based on a steel grid pattern and is intended to reflect the ‘construction’ or utility aspect of the program. This is one of the primary visual cues that identifies the program, it is used to indicate places where graphic elements can be dragged using the cursor.

1. *Tri-split window with the Architect/Flowchart pane active*

Within the tri-split window only one pane can be active at a time. The active pane is indicated by a strong black outline around the inside edge of the pane and full contrast graphic elements such as text and scroll handles etc. The other panes and their graphic tools are grayed out showing that they are unavailable. Graphics that are unavailable still convey certain information such as the last tab settings which can be identified by slightly darker text and enhanced tab modeling. When re-activating a tabbed pane, the last active tab will become active again.
5.1 Size Standards for Windows
Interface: maximized upon opening regardless of screen size
Nav pane: default 200 pixels wide upon opening
List pane: default 200 pixels tall upon opening

6.0 Graphical Elements - Dialog Boxes
The following details describe the standards that should be used for inSight
(Refer to chapter 8: Dialog Boxes.).
InSight should use standard JLF alert dialogs (Ref: P.122). These will be easy to
implement and have been considered in the design of the rest of the dialog
boxes so that all dialogs have a similar look and feel. Small dialog boxes similar
to alert boxes, (i.e. Find dialog box, or login dialog box) and progress bars etc.
can be built using the guidelines in this document.
This document provides a system for constructing larger dialog boxes that may
contain many elements and notes situations where deviation from the preferred
standards might occur and how to handle those situations.
The design grid and the construction system are tools that set goals and
guidelines, technicians building dialogs should make every effort to work within
those guidelines. If there is a layout situation that does not appear to be covered
by these guidelines the technician must use good judgment to adapt the intent
General guidelines for dialog boxes

- Dialog boxes should be built as secondary windows so that they use the platform's native window, this allows them to move outside the multiple document interface (MDI) of the tri-split window (Ref:P112).
- Always use the form “Application Name:Title” for the title in the title bar of the dialog box (see other basic principals that should be followed,(Ref:P 113)

6.1 The Design Grid

A design grid helps to organize the elements in a dialog box and by using it a consistent look and feel will be maintained throughout the interface. The inSight design grid differs slightly from the standard grid described in the JLFDG,(Ref:P.49 and 50).

The outside border space

The outside borders or margins (top, bottom, left and right spacing provided between the window frame and any element inside the dialog) for the inSight grid are the same as those described in the JLFDG(Ref;P115); 12pxls at the top and left border, and 11pxls actual(12pxls perceived) at the bottom and right border.

6.2 The Division of Horizontal Space

Columns

The division of horizontal space in the inSight grid is determined by the components that will be arranged in the dialog box. There are two types of components, titles, and elements, each have distinct rules for determining the column width and for the fixed amount of space between columns.

Titles and Title Columns

Titles are used to identify an element or a group of elements. They are most frequently located in the first column of the dialog, but occasionally are located elsewhere where they identify a small group or subgroup of elements.

The basic rules for titles are:
- Titles are always set in a bold font (see fonts, section 4)
- Titles always use headline capitalization (Ref;P46 ).
- Titles are colored with the primary 1 colour (see colors, section 3.1)
- Titles are always aligned flush to the right side of the title column panel and they are always separated from the next column to the right by a space of 8pxls, this keeps the elements close to the title that they belong to.

If titles appear somewhere else in the dialog box other than the left hand column, they follow the same rules as elements, the title aligns flush right in the column to the left of the element that it identifies, being separated by the
element column space of 12pxls (see the Print dialog skeleton on page 11, ‘Copies’ section of the dialog)

- The default width of a title column, and the one which is preferred, is 70pxls. As often as possible try to make titles fit this width. The minimum width for a title column is 60pxls. Here are a couple of situations where the title column might be enlarged or shortened:
  1/ If there is a row of very short titles (or the dialog contains only one short title) make the title column the minimum width, 60pxls.
  2/ If there is a title (or a number of titles) that are just a few characters wider than 70pxls the column can be widened to accommodate the longest title, BUT a title should not get too long (more than 100pxls). If a title needs to be longer than the title column can accommodate it can run above a component but this is not advised, first consider shortening the title or dividing the title into a primary and secondary description, i.e. in the ‘Dump to file’ dialog currently used in the inSight program, ‘Enter’ is a title that can be applied to more than one of the dialogs elements, it would be a primary title and would appear in a 60pxl title column. ‘Path or folder name’, and ‘file name’ would be secondary titles positioned in a component column adjacent to their graphic components.

Elements and Element Columns

Elements are any components which are not titles. Checkboxes, radio buttons, and any other small graphic element and the name of that element are handled as a single graphic component, the graphic and the name will be spaced a standard 5 actual (6 perceived) pxls apart. The entire component (name and graphic) will be positioned flush left in an element column. Elements are arranged in columns determined by their size.

3. Default and preferred columns and horizontal spacing.

![Diagram showing default title column, element column, and horizontal spacing](image)

The basic rules for arranging elements are:

- Columns of elements are separated by a 12pxls space.
- Graphics (radio buttons etc.) and their names are always separated from each other by a 5 actual (6 perceived) pxl space. Each graphic and name unit is
Visual Design Standards - Graphical User Interface

separated by a 12pxl space (see the Print dialog skeleton on page 11, the Print Range page number fields are separated by a 12pxl space).

• Try wherever possible to arrange elements in columns of the same width (see diagram 3, previous page) by either dividing the total width of the element columns into equal parts or by making all the columns the same width as the largest column (but only if the columns are similar in width). If the columns are very different widths then arrange the column widths to suite the elements (diagram 4. below).

• Element columns within one section of a dialog box may be different from the element columns in another section of a dialog box as long as the sections are separated by a section break graphic (diagram 5. below).

4. Column example 1

5. Column example 2
6.3 The Division of Vertical Space

Similar to the horizontal division of space in a dialog box, the vertical space is divided into horizontal sections. Sections contain either an element, or act as a spacer between elements. Element sections vary in size depending on the size of the element, space sections are always standard sizes determined by their located (see diagram 6. below).

6. Exploded diagram of the division of vertical space

![Diagram of the division of vertical space]

- Label: Text field
- Element - Button
- Element - Single line text field, 20pxls*
- Element - Checkbox or radio button, 12pxls**
- Element - Command Buttons, 20pxls
- Element - Section Break Graphic, 2pxls
- Space - after title, 5 actual, 6 perceived
- Space - after last element between it and Section Break Graphic, 17pxls perceived
- Space - after a Section Break, 10pxls
- Space - between elements in a group, 5 actual, 6 perceived
- Space - between distinct or groups of elements, 11 actual, 12 perceived
- Space - between elements in a group, 5 actual, 6 perceived
- Space - Bottom border, 11pxls actual, 12pxls perceived

*(Label aligns with center of first line of text in field)

**(Label aligns with center of checkbox or radio button)
6.4 Examples of Common Dialogs
The following dialog box examples were built using the guidelines previously described. Construction was started at the top left corner and proceeded to the right and to the bottom, adjusting panel sizes as needed. Dialogs can also be built from the bottom up using the same method.

Printer Dialog
The title column for this dialog was widened to accommodate the longest title; Print Frames. The column widths in the first two sections are the same, the column width in the third section has been adjusted to accommodate the radio button names.

7. The Print dialog box

The following page, diagram 8 shows the graphic skeleton of the vertical and horizontal sections that make up the print dialog box above.
8. Print dialog skeleton

Find Dialog
The title column for the Find dialog was made narrower because the title is short, it was set at 60pxls (the minimum size). Note that the command buttons in this dialog line up flush left in the second column similar to the JLFDG default alert boxes (Ref:P122, Alert boxes)

9. Find dialog