GALACTICA

BASIC SOFTWARE USER'S MANUALS

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SWISS TIMING

User's Manual

GALACTICA

DISPLAY DIRECTOR (DD)

3311.540.02
Version 1.7
Edition March 2008

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1   INTRODUCTION – DISPLAY DIRECTOR

1.1   Description

The Display Director (DD) is the main program to interact with the matrix board. From here you collect all the information about images to send on the board and how they have to be sent. The DD interacts with almost all programs of the Omega Matrix Board Software.

To invoke the Display Director, select it from the Swiss Timing Group, and press <OK> or simply click left mouse button on its name as can be seen it on.

1.2   Definitions

Here are some definitions used within the Display Director:

An **Image** is a bitmap made by the editors or coming from a sport event. It is "what you see on the board", it may cover the whole board or only part of it.

For the definition of a **Reference Format (RF)**, see the WFED chapter.

An **Effect** is an attribute set to a rectangle. It determines how the image contained in that rectangle is displayed on the board. Examples of effects: scroll, diaphragm, animation...
An effect may itself have some attributes (or parameters) such as its speed, direction, duration, etc...

A **Frame** is an attribute that can be set to a rectangle. When set, the image contained in that rectangle will be sent to the board with a border. A frame also has some attributes (or parameters) such as color, dimension, etc...

A **Format** is a group of one or more windows which may contain an image with an effect and a frame. It is built upon an RF where images may be assigned to the rectangles of that RF. A format is given a name and stored on the disk.
For example, a format "Soccer" could be built upon the RF "Half" (see Figure 1), where the left rectangle is assigned to the image "Whistle.bmp" sent with a diaphragm open, and the right rectangle is assigned to the image "Score" of football program sent with the Static effect and with a white frame of size 3.
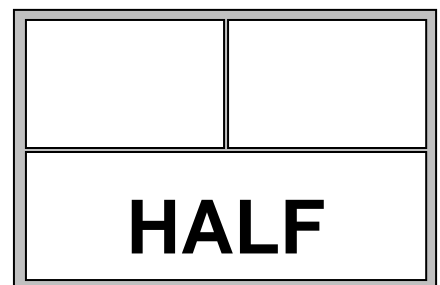
Fig. 1

A **Sequence** is a list of successive DD commands that are stored with the Recorder. A sequence is given a name and may be stored on the disk to be recalled (=load and play) later.

A sequence could, for example, look like this:

```
1.        Clear the Board.
2.        Get RF "FULL".
3.        Get Image "Welcome.bmp".
4.        Set Effect "Scroll Left".
5.        Execute.
```

1.3   The DD Working Space

On figure 2, you can see the Display Director Working Space.

Fig. 2

The Display Director appears in an ordinary window with title bar, menu bar and tools bar. The menu bar contains various DD commands (see later in this chapter). As you can see on the figure, there are the following sections in the window's client area:

The **View Online** window, containing the Swiss Timing logo, is the window that contains the image currently on the matrix board. It is the user's feedback when he has sent something to the board. This window is created when connecting the remote display controller (see "Getting Started" later in this chapter). Users cannot interact with the View window as their content is refreshed automatically by the system. You can only do a zoom by selecting *Zoom* command in contextual menu of this window (To obtain contextual menu, you just have to press right button when the mouse pointer is on the window).

Next to the View Window, is the **Preview** window containing an RF where images (OMEGA symbol, photo or video) have been assigned to some rectangles. The Preview is the user's feedback on the work he is currently doing. Note that in the Preview the RF's rectangles are identified, as they have been created by the WFED, by a system-given number.

Above the View Online window, is the ***Window Control Bar (= WCB)***. This bar is the main working area of the DD. You can drag it off the main window (Figure 3) and reduce it (Figure 4). However it is recommended to let this tool bar fixed on the top of the DD program as well as other tool bar.
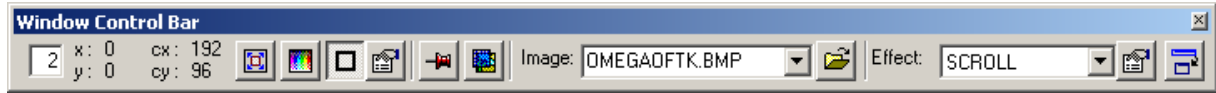
Fig. 3
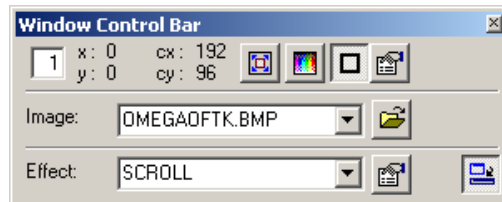
Fig. 4

Window hierarchy is displayed in the tree window. Its function is the same as in the WFED. The current selected window is displayed with a check (☑).

On the right side of the screen is the ***Recorder Remote Control Window***, used when recording or playing a sequence.

1.4   Getting Started With The DD

First ensure that the board is switched on and that the link between the computer and the board distribution box has been correctly established.

The Display Director program first performs its startup initialization procedures.

When initialization has been completed, the DD window appears on your screen. At start, it contains a cleared Preview window and an empty WCB.

In order to send images, the Display Director needs to connect to a Remote Display Controller. This is a background program managing images and sending data. Select **Connect** from the *Options* pull-down menu.

1.5 Sending Images And Working With the WCB

1.5.1 Selecting an RF

As seen before, an image must be set to a rectangle of an RF before it can be sent to the board. To do so, select **Open** from the **Ref Formats** menu bar. This causes a list box of available RFs to open. Double-click on the required RF or select it with the arrow keys and press <OK>. This removes the list box and activates the RF in the Preview.

An alternate way to get an RF is to activate the contextual menu of Preview Window and selecting **Open reference format**.

Or a third alternate way to get an RF is to press in standard toolbar.

If there are no available RFs, you should create some with the WFED. Invoke the WFED (at that time, the DD window may still be opened or minimized on your screen) and proceed as described in WFED chapter. Once your RF(s) is (are) created and saved on disk, re-activate again the DD window and select Refresh from the Ref Formats pull-down. This causes the RFs to be called into the list box contents to be refreshed.

Activating an RF implies following changes on the DD screen:

- The **Tree** displays the selected RF in a hierarchical order. A Tree element is identified by a unique number, its identifier, given by the system. Areas appear with a gray square, windows with a green square and superimposed windows with a red square (for definitions of these items, see the WFED chapter).

- The **WCB** finally displays, at left of its window, the size and position of the active rectangle of the RF. Note that only one rectangle of a RF may be active at a time.

1.5.2 Activating a Rectangle

To get an image into a rectangle of an RF, the rectangle must be active. When selecting an RF with several rectangles, the first rectangle that is not an Area is active by default. This implies that its coordinates are displayed in the WCB (these coordinates cannot be updated, they only have an informal purpose).

To activate another rectangle, following operations can be done:
(In this example, it is assumed the current RF contains more than one rectangle !)

Using the **mouse**:

1. Click with left mouse button inside the required rectangle in the Preview;
2. Click with left mouse button on the rectangle identifier of the tree.

1.5.3 Effect command toggle on a Rectangle

Click with the middle mouse button inside the required rectangle in the Preview or the tree; the corresponding effect, for this rectangle will change to NONE, and the rectangle disappears from the board.
Clicking again with the middle mouse button will restore the defined effect and play it directly on the board.

This function is useful to quickly display, then remove a superimposed window with some temporary information (for example the running time).

1.5.4 Getting an Image into a Rectangle

To be able to receive an image, a rectangle needs to be active. Thereafter, inserting an image into a rectangle can occur in following manner:

Select **Get from Disk** from the **Images** pull-down menu (or press <CTRL>+i) to retrieve an image from your hard disk (or alternately from a diskette). Valid images are the ones made by both the Graphic Editor (Paint Shop Pro i.e.) and the Text Editor. You can also press [icon] in the WCB.

The command **Get from Disk** is also available in the Preview contextual menu.

Those commands display the Open dialog.

The Current Directory will be the first directory specified in the Images Path (see Default Directories Entries, later in this chapter).

Selecting an image and confirming with the "Open" pushbutton removes the dialog and gets the image into the current rectangle. If an attempt was made to open a file that has no image in, the system displays a warning and interrupts the open operation. Otherwise, the image appears in the Preview window.

An alternate way to get an image is to select one of the dropdown combo box *Image* in the WCB. This combo box allows user to select images from default image path.

Select **Get from Maker** to request an image created by a background program. A maker can be, for instance, a program running on the computer and receiving data from an external device such as a sport system. It creates and updates one or more images according to the data received by a serial line.

This causes a dialog like the one on figure 5 to be activated. Here, it is possible to select both the maker and its related image.

Note that the makers displayed in the list are only the ones which have been started.

Press <OK> to validate your selection or <Cancel> to abort the operation.

The Get from Maker command is also available in the contextual menu of the *Preview* window.
There is a special feature to know all makers installed on your computer, just write "ALL" in Image entryfield.

Fig. 5

 Notes for the image selection:

- In case no rectangle of an RF is selected in the Preview window, a warning message displays and no image selection is possible.

- It is the user's responsibility to ensure that the rectangle is long enough to contain the required image. If not, part of the image will be lost.

- The image file name may be entered directly in the **WCB file name entryfield**. Note that the first letter of a maker image is always a '@'.
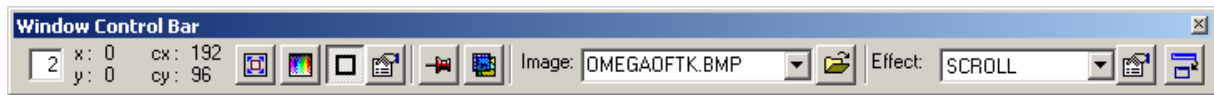
Fig. 6

On figure 6, the file name entryfield contains OMEGAOFTK.BMP which is the image currently in rectangle 2. When searching for an image, the DD first scans through the current directory and then through an images path, if one is specified. This path is said to be the default images path and it is built on one or more user-given directories.

To create, view or modify this path, select **Paths** from the **Defaults** pull-down menu. This causes a dialog to open as shown on figure 7.

The current image paths are displayed in the list box. One or more directories may be given to prompt the system to scan them for images.

The scan priority order could be changed using up or down arrow.

Fig. 7

To apply modifications to this default, proceed as follows:

1. Press Add to add a new path or select a path in list box if you want to modify it.
2. Press Remove or Modify as required.
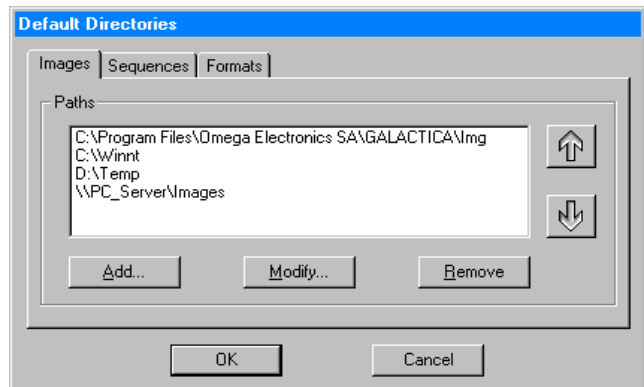3. Press <OK> to validate the change.

So, to invoke an image from the WCB filename entryfield, Drop down the *Image* combo box in *WCB file name entryfield*. This causes the system to scan through all default directories (Fig. 7) and it displays all compatible image files. Select an image and then it will be displayed in the Preview window.

To request an image from a directory that does not belong to the image paths, simply press in the WCB.

It might happen that two files have the same file name but are located in different directories, both belonging to the images path. In this case, the first directory (= "the topmost inside the list box") will be taken into consideration.

To quickly clear the filename entryfield if the WCB already has got the focus, delete filename: it will remove any previous loaded image. This also causes the current rectangle to be cleared in the Preview window.

If the WCB filename entryfield has got the focus, use the arrow keys to quickly select an image.

Note: when you get an image into an RF's rectangle, it causes the **Effect Combo Box**, located at the right side of the WCB file name entryfield, to select a default effect, and depending on the kind of image requested (effects and other rectangle attributes are described later in this chapter).

1.5.5 Positioning Images inside a Rectangle

Once an image has been requested into the Preview window, the display director may position it as required, before sending it onto the board. Use the following keypad keys to move the image inside the rectangle:

7 (or Home)	sets the image to the top left corner.
8 (or ↑)	moves the image one pixel upwards.
9 (or PgUp)	sets the image to the top right corner.
4 (or ←)	moves the image one pixel to the left.
5	centers the image inside the rectangle.
6 (or →)	moves the image one pixel to the right.
1 (or End)	sets the image to the bottom left corner.
2 (or ↓)	moves the image one pixel downwards.
3 (or PgDn)	sets the image to the bottom right corner.

If the image outgrows the size of the rectangle, following additional functions are provided:

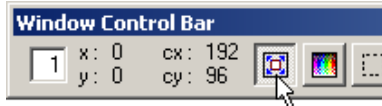|	
<CTRL>+<PgUp>	scrolls the image one page up.
<CTRL>+<PgDn>	scrolls the image one page down.
<CTRL>+<5>	sets the image according to the position of the rectangle to which it is assigned to. Example: if the rectangle is on the bottom of the Preview, the bottom of the image is shown.

Fig. 8

An image can be stretched to fit the rectangle where it has been placed. Use the stretch button to do this. Warning, this is a non-proportional stretch which means that if the image is not proportional to the board size, the image should appear with distortion.

1.5.6 *Sending Images: the Commands menu*

When images are ready, you have to issue a command that sends them effectively to the board. To do so, the connection with the remote display controller must be effective otherwise no images can be sent.

On figure 9, the **Commands** pull-down menu is displayed. Issue **Execute** from this pull-down menu (or Keypad plus) to send one or more images to the board. Note that this command effectively sends the changes made to the Preview window. We strongly recommend you to **use the '+' key of the keypad**, it's definitely the fastest way to send data to scoreboard. If no changes were made since the last **Execute**, only the actual **Activated Rectangle** is sent.

Fig. 9

If you want to force all the rectangles to be refreshed, issue **Execute All** (or press <Shift>+Keypad plus). This causes each image in each rectangle to be re-transmitted with all their attributes (frame, effect, background; see description later in this chapter).

The **Clear** command (or Keypad minus) sends an empty image to clear the whole board. If effects are still in progress, users are prompted to validate the clear operation.

The **Effects Pause** command (or "Pause" key) toggle stops sending images to the board. If the stop is enabled, a stop icon is showed in the View window. Pressing again the "Pause" key lets the images be transmitted again; this function is useful when, for example, we are showing a speech with the Float effect, and we try to follow the orator reading the talk. If, for some reason, he stops reading, we can temporarily halt the effect with the Pause function, and restart it when he continues to read.

Note that sending a rectangle to the board (with the "Execute" or "Execute All" Command) does not alter in any way the work you are currently doing in the WCB. This means the current rectangle, with its contents, remains active in the WCB, and the RF with the images are visible in the Preview window.

1.5.7 Setting Attributes to Rectangles

Often, the way an image is sent onto the board is nearly as important as the image itself. This is why the DD provides some attributes to emphasize images.

Effects are the most common attributes set to images. Actually, effects are set to rectangles more than to images, because an image itself does not change, it is only the way it arrives at the board that is different. This attribute is set in the WCB using the **Effect Combo Box** (See figure 10).
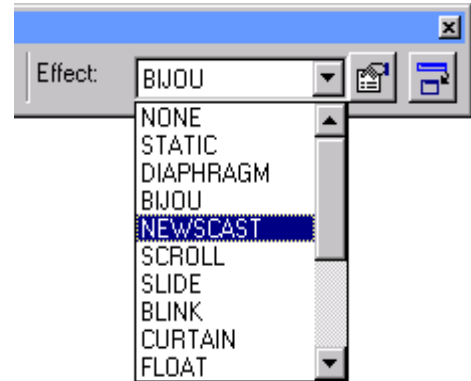
Fig. 10

An effect is set before sending a rectangle on the board. Again, only the active rectangle may receive an effect. To select one, press left mouse button on the combo box arrow. This causes the combo box to open and list the available effects. Clicking on one of them sets this one active (or makes it become the current effect) and closes the combo box. An alternate way to do this is to use the keyboard keys: First give the focus to the combo box by entering successive <TAB> keys, then press the arrow up/down keys to pass through the available effects or type the first letter of the effect name. The current effect is the one displayed in inverted colors.

Note: An effect itself requires various parameters, such as its speed, direction etc... For a full description, see chapter 1.5.8

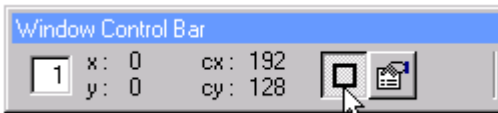*Frames* may also be set to a rectangle as an attribute.

Fig. 11

Activating the Frame push button, as does the mouse pointer in figure 11, causes the current rectangle to be surrounded by a border. This border does not alter the image in any way, neither change its dimension. It is simply placed over the image while sending. Again a border (or frame) has some default parameters (dimension and color) that may be modified as required (see chapter 1.5.9).

When working with a superimposed window, the WCB displays the **drawing pin pushbutton** as seen on figure 12.
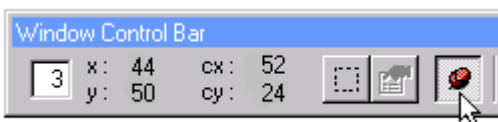
Fig. 12

Pushing this button, which is default, as the mouse pointer does on figure 12. This implies that, the superimposed window is said to be stuck to the window below it. A stuck image undergoes the same effects as the window it is stuck to. This means that applying a scroll to a window containing a superimposed window, causes this one to scroll as well.

When the push button is up, it causes the superimposed window to "free itself" from the window below it. The superimposed window remains on the board even if the window below it has its contents updated.

Note: to activate or disable those attributes with keyboard keys, proceed as follows:

1. Move the focus inside the WCB to the required button. (when a button has got the focus, a dashed rectangle appears on it.)
2. Press the Spacebar to activate/deactivate the attribute.

1.5.8 Available Effects

This section gives a short explanation of the effects and how they influence on an image's appearance.

STATIC   This effect transmits the image to the board all at once, so that every bulb is switched on at the same time.

DIAPHRAGM   This effect transmits the image to the board so that the bulbs are switched on from the middle of the image to the edges (open mode) or vice versa (close mode).

NEWSCAST   This effect is used to transmit horizontally an image that may be larger than the RF. Any image may be transmitted with that effect, but most often text files (with the .GTX extension) are sent so that one single line of text information moves horizontally on the board.

SCROLL   This effect sends an image so that it appears at one edge of the board and scrolls to the other, whereby the new image pushes the old one out.

IN-OUT   This effect scrolls the new image over the old one witch wipes away.

GLITTER   This effect provides supplementary, random, continuously changing, illumine Ted pixels.

BIJOU   This effect provides a moving border of bubbles around the image, with operator selectable bubble size.

DRAUGHT   The existing image is overwritten by the following image in a draught board (checker board) effect, moving diagonally across the display.

SLIDE   This effect sends an image so that it appears at one edge of the board and moves to the other. Thereby the new image covers the old one, from one side to the other.

BLINK　　　This effect blinks on and off the requested image on the board. The duration is variable and may be given as a parameter. Note that in any case, the image blinks at least once.

CURTAIN　　This effect sends an image so that it wipes away the existing one from one side to the other. Contrary to the slide or the scroll, this effect does not cause the new image to move on the board, it simply makes the new image appear as a curtain does in a cinema.

VENETIAN　　This effect divides the current image into equal stripes which will be filled simultaneously, line by line, until the whole of the new image covers the old one.
The size of the stripe is defined by the dimension parameter. The operator can also choose the speed and the direction.

SALT&PEPPER　This effect replaces the old image with the new one in a random replacement of pixels, with operator selectable speed.

TELETYPE　　This effect simulates a teletype writing, overwriting the old image with the new one by means of rectangles covering the surface left to right. The speed and the size of the rectangle are operator selectable.

FLOAT　　This effect is similar to the Newscast, but it may be applied only in one direction, from bottom to top. It transmits vertically an image that may be larger than the RF. This is useful when displaying text like speeches for instance.

ANIMATION　This is a special effect used with files produced by animation editors (i.e. *Animation Shop* program from JASC®, *Photo-Paint* from Corel®, etc…).
Sending *animated GIF*, *AVI* or *MPEG* files with the animation effect causes the animation to be played. Sending ordinary image files with this effect causes them to be sent with the static effect.

NONE　　This effect is used to remove an image in a rectangle on the board. Sending any image with this effect causes the rectangle to restore the image beneath it, if any. If there is none, it clears its surface.

1.5.9 The Frame and Effect Parameters Editor

Frames and effects are both attributes that may vary depending upon the rectangle they are applied to. For instance in certain cases Scroll should occur quickly while in others, when displaying some kind of text, it should not. Furthermore an image might sometimes be sent with a wider border and sometimes with a narrower border, depending upon how it should be emphasized.

The Frame Parameters Editor and the Effect Parameters Editor are tools that allow users to set these parameters as required. They both operate in a similar way.

Changing a parameter for an attribute may occur at two different levels: you may change the parameters by *Default* or *specifically* for a rectangle. Let's have a look at both methods.

To set the default parameters for Effects, (in this case: Scroll), proceed as follows:

- Select **Effects** from the **Defaults** pull-down menu. This causes a second menu to be displayed.
- Select **Scroll** from the list of available effects. At this moment, a dialog box like the one on figure 13, is activated.

As you can see on figure 13, each parameter appears in a group box. Pressing the <TAB> key sets the focus to the first element of the next group box (the Command pushbuttons are treated as a group). To move the focus inside a group box, use the arrow up/down keys.

In this example, following parameters may be set for the Scroll effect:

The **speed** parameter determines how fast the effect has to go through. Click the scrollbar arrows or track the slider to increase or decrease the speed value. You can also directly change the speed value inside the entryfield. You may choose any value from 1, which is the slowest, up to 9, which is the fastest.
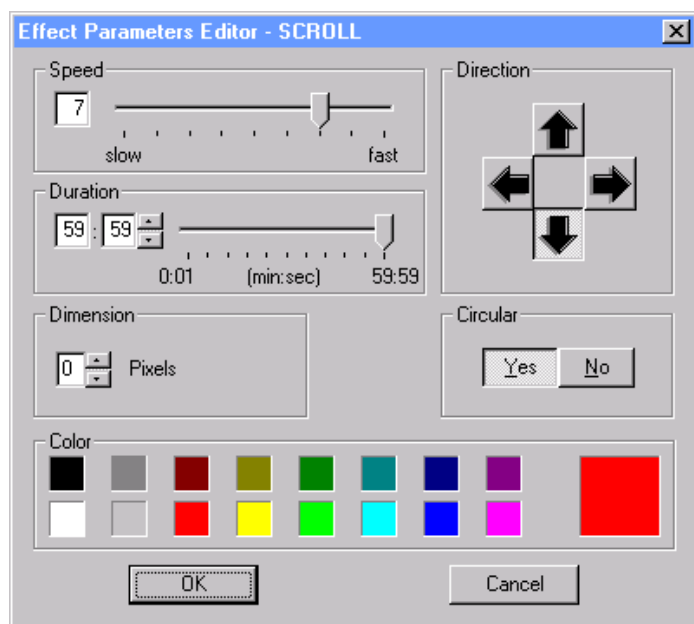

Fig. 13

The **direction** parameter indicates the direction of the effect. For example a scroll left, which is the pushbutton with the arrow pointing to the left, indicates that the scrolled image starts on the right side of the rectangle and finishes on the left side of it. Click on the required pushbutton to set the direction parameter or change the direction along the pushbuttons with the arrow keys.

The **circular** parameter indicates whether the effect is to be restarted when arriving at the end or not. Unlike a non-circular effect which is executed only once, a circular effect is limited in time. Click on "Yes" to set the circular parameter or set the focus on this pushbutton and press left/right keys to select Yes or No.

The **duration** parameter specifies how long a circular effect has to apply to a rectangle. Click on the scrollbar arrows or drag the slider to increase or decrease the values. You can also directly change them inside the "minutes and seconds" entry fields. You may choose any duration from 0 to 59 minutes and 59 seconds, which is the highest. Off course, setting a value to this parameter only makes sense if the "circular" parameter is set on (= "Yes").

The **dimension**, for the scroll, slide, diaphragm and curtain effects, specifies that the new image is separated by a strip from the old one. The dimension number specifies the width (in pixels) of this strip. A width of 0 causes no strip to appear while scrolling.
For the draught board effect the dimension specifies a factor for the size the square, and for the bijou border effect the dimension specifies the size of the bubble.
Click on the arrows to increase or decrease the dimension value or edit the number in the entryfield.

The **color** parameter specifies the color of the strip defined above (Dimension) for the scroll, slide, diaphragm and curtain effects. In this case defining a color only makes sense if the band dimension is greater than zero. For the bijou border effect, the color parameter specifies the color of the bubble.
Click left mouse button inside the required color box to set the color, or select the required color by entering successive arrow up/down keys.

Press <OK> when you are done. This causes the default parameters to be set for the scroll effect. This means that each time you apply a scroll to a rectangle, these parameters will be set to the scroll. See later in this chapter, how to proceed to overrule this default for a scroll of a specific rectangle.

<Cancel> aborts the operation and closes the parameters editor.

Repeat the operations above for all available effects to set their parameters to the required default values. Note that the amount of parameters to set depends upon the effect: Thus a scroll requires more parameters than a blink, etc...

To set the default parameters for Frames, activate the Frame Parameters Editor as follows:

Select Frame from the Defaults pull-down menu. This causes the Frame Parameters Editor dialog box to be activated on your screen, as displayed on figure 14.

Use this editor similarly to the Effect Parameters Editor to set the Band Dimension and Band Color parameters.

Press <OK> when you are done. This causes the default parameters to be set for frames. It means that each time you set a frame to a rectangle, it will display as defined in these parameters. Again, it is possible to overrule them for a frame of a specific rectangle (see later in this chapter).

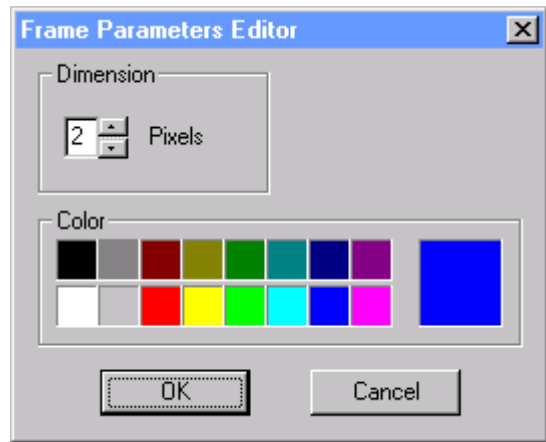<Cancel> aborts the operation and closes the parameters editor.

Fig. 14

Once you have customized both the default effects and default frame parameters as most often used, there might be situations in which you want to set a thicker frame for one particular rectangle or have its effect executed faster than the default would do it. You will then need to modify the attributes parameters for that particular rectangle.

Let's take an example of how to modify the speed of a blink effect for a particular rectangle:

1. Select an RF that fits the image.
2. Get the required image into the rectangle.
3. Select **BLINK** from the Effect Combo Box in the WCB.
4. Click the **properties button** ![icon] which is located at right of the Combo Box entryfield (or set the focus to the Combo Box by entering successive <TAB> keys and enter <CTRL>+E). This causes the Effect Parameters Editor to open for that particular rectangle. The initial values are the default ones.
5. Set the blink parameters as required.
6. Leave the editor by pressing <OK>. This sets the new values for the blink of this current rectangle without changing the default blink values.

Similarly, to set a different frame for one particular image, proceed as described before, but click the properties button ![icon] which is located close to the frame button (or enter <CTRL>+E when the frame button has the focus) to activate the Frame Parameter Editor for that precise image. Again, updating these frame parameters does not alter the default values for frames.

1.5.10 32K image color mode (only available for OVG installation)

Fig. 15

Due to the incapability of the OVG to display image in true colors with effect, the **32K colors button** lets the user to specify that the image contained in the rectangle is an image in true colors (Figure 15). By clicking this button, it will not be possible to display an image with an effect.

1.5.11 Creating transparency effect

This feature is normally used for a color matrix board.

To create a transparent effect, for example to display a text in front of an image, a special Reference Format has to be created, with a superimposed window. In figure 16, a superimposed window has been placed on the top of a full window (using the WFED program). It has exactly the same size. If the new FREF has been created and saved with WFED program without quitting the Display director program, in menu *Ref Formats* the *Refresh* command will reload all the Reference Formats.
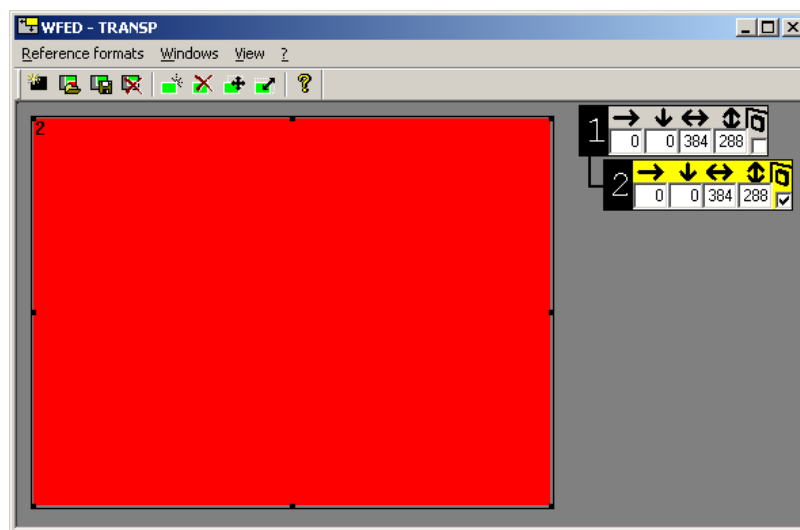

Fig. 16 *(WFED program)*

In Display director program, when the transparence reference format has been opened (in this case, its name is *TRANSP*), using the Window Hierarchy dialog (Figure 17), the user can set the background image for window 1 by selecting the back ground image as defined in chapter 1.5.4.

Fig. 17

Then by selecting the window 2 (the one which is superimposed) in red in Window Hierarchy dialog (Figure 17), the user can select another image or a text file to put in front of the background image. In figure 19, the results image (*Results 800m.grx*) as been selected to be in front of the *GradientBlue.bmp* image. Finally to validate the transparence, the **Transparency button** has to be pressed (Figure 18).
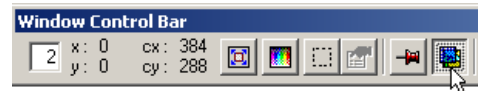

Fig. 18

Note that the *Preview* window does not show the transparency, it is only shown in *View Online* window.

It is recommended to use the stretch option for the background image.

It is also possible to set an animated image as background, in this case it is necessary to set the effect to ANIMATED in effect field for the background window (in this case: window 1).
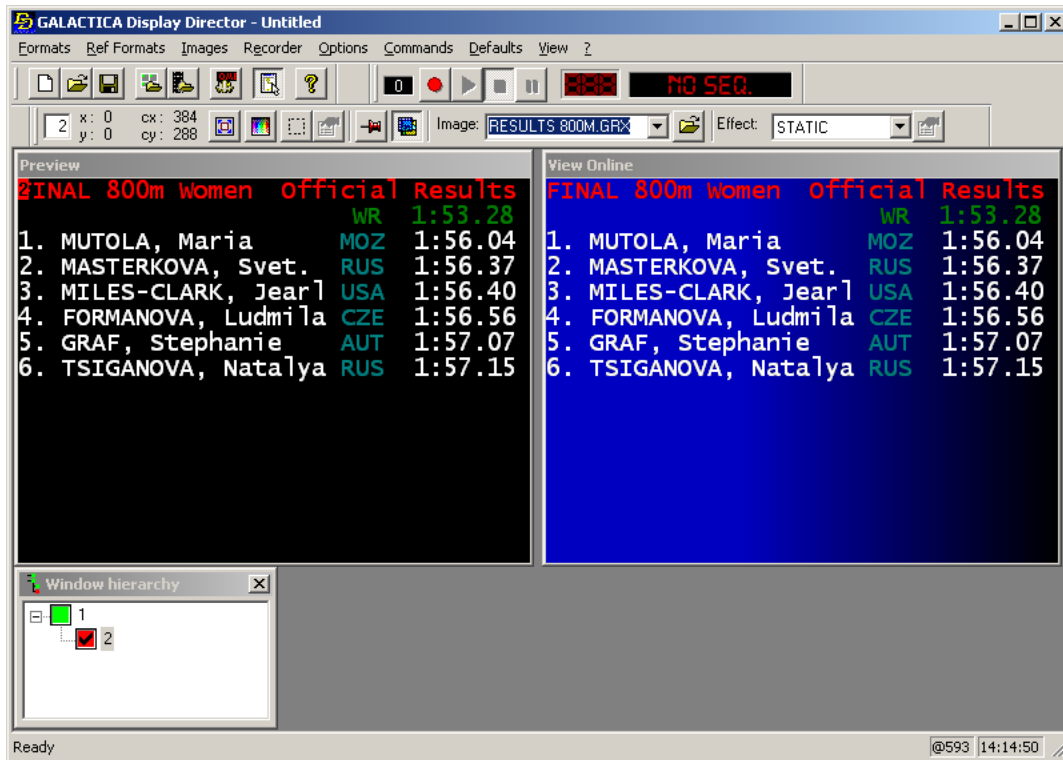

Fig. 19

1.6   Format Commands

A format is a group of one or more rectangles that contain images. Effects and Frames may be assigned to these rectangles. A format is given a name and may be stored on your disk for later use. Formats are useful to store images that are often sent to the board with the same effects and frame attributes.

1.6.1 Using Formats

Select New from the Formats pull-down menu (figure 20) to start a new format. This causes the Preview window and the WCB to be cleared. The current file name in the window title bar is replaced with "Untitled".

To build a format, select the required RF (or build a new one with the WFED and issue a "Refresh" command) and get the required images into the rectangles as described in chapter 1.5.4. Then set the required attributes to the rectangles. Once this is done, you may save your work on disk. Select Save As... (or press <CTRL>+A) from the Formats pull-down menu). This causes the Save Function dialog to open. This dialog works just like the one described in chapter (under "Save As...). "Open..." (or <CTRL>+O) activates the open dialog box to prompt you for a format file name.
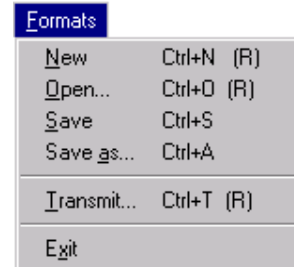
Fig. 20

You can also use buttons 🗋 , 🗀 and 🖫 to do New function, to Open a Format and to Save current Format. Those buttons are available in standard toolbar.

Note that the file to open must be a Format, otherwise a warning message like the one on will display. Formats do not require a particular file name or file extension, but it is recommended to use always the same extension for all formats (ex: .FMT), so that they are recognizable when listing a directory or scanning for files.

Furthermore, it is recommended to save your formats in the same directory or in subdirectories of that directory (Generally \FMT\ and its sub-folders). Again, this is not an obligation, but it may avoid confusion when managing a great number of image files and formats.

To this purpose, the system holds a Default Path in which formats can be saved in. This path may be modified as required. Select Paths from the Defaults pull-down menu. This causes a dialog box named "Default Directories" to open. Update the Format entryfield and press <OK>. This sets your default format path and makes the system open directly in this path when a format is requested.

Save from the Formats pull-down menu (or <CTRL>+S) saves the current format under the existing name. As a matter of fact, it saves the current state of the WCB and Preview window. Note that if you work with an "Untitled" format, "Save" prompts you for a file name just as "Save as..." would do.

Transmit (or <CTRL>+T) directly transmits a format's contents to the board without opening it into the Preview. This is useful when you do not want to interrupt your current work within the WCB while sending a format to the matrix board. Issuing this command activates the same dialog box as when an "Open" command is issued. But in this case, pressing the "Open" button causes the selected format to be transmitted to the board and the dialog to be removed.

1.6.2 Leaving the Display Director

Exit (or <Alt + F4>) quits the Display Director program. This command is similar to the "Close" command from the system menu. To quit the DD properly, proceed as follows:

1. Save your work (sequences, formats), if you need to.

2. If the remote display controller is connected, disconnect it by issuing a Connect command from the Options pull-down menu (the *View Online* window closes).

3. Leave the Display Director by issuing a "Close" command or an "Exit" Command in menu *Formats*.

1.7 The Recorder

The Recorder is a tool that allows users to store successive DD commands into a sequence. Thus, a Sequence is a file that may be given a name and stored on your disk. The Recorder can load a sequence file and play it as required. Playing a sequence means that all the commands included in the sequence file are executed. On the board and in the View window, it has the same effect as if you were issuing all these commands separately.

The Recorder is useful when you have several images that are sent always in the same manner. You can save much time by assembling them into a sequence.
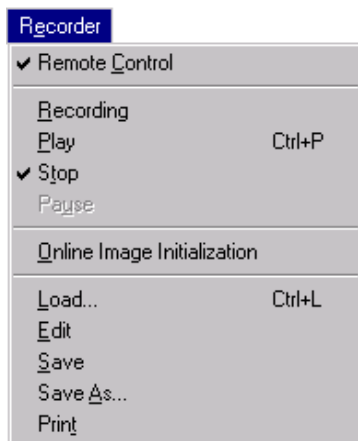
1.7.1 Managing Sequences

Fig. 21

To manage the Recorder, there are two methods. The standard method is to enter menu bar commands from the Recorder pull-down menu (figure 21). An alternate way is to open the Remote Control Window. Select "Remote Control" from the Recorder pull-down menu. This causes the command to be checked and the Remote Control Window to open (Figure 22).

This window shows graphically the development of the sequence. You may have this window active at any time: whether recording or playing a sequence, or when working with the WCB.

As shown on figure 22, a counter appears in the window. This number indicates the progress of the sequence. When starting a new sequence or

Fig. 22

invoking the remote window for the first time, this number is always equal to 0. Then there are four pushbuttons (play, stop, pause/still, rec) to enter commands. Finally at the right side is a static text that indicates the current state of the recorder. At start the state is "Stopped".

To remove the Remote Control Window from the screen, issue "Remote Control" again. This hides the window and unchecks the command.

To create, play and save a sequence proceed as follows:

1. Select Recording from the pull-down menu or press the "rec" pushbutton in the remote window. This causes the text "Recording" to appear at the bottom of the remote window and sets the counter to 1.

2. From now on, all commands marked with a "(R)" are recorded in the sequence. Get your images and apply the required attributes, as you would normally do, and send them to the board.

3. If you need to interrupt recording the sequence for a while, press the pause pushbutton or enter the "Pause" command. The pause button displays still as long as the recording is paused (meanwhile the pause command in the pull-down menu is checked).

   Press the still button or the checked pause command to resume recording.
   Note that the still command causes the preview to be cleared.

4. When you are done, press the stop button or enter the "Stop" command. This ends the sequence and displays "Stopped" as status text in the remote window.

5. You can now save the sequence if you need to: enter the Save As command from the Recorder pull-down menu. This causes the Save Sequence dialog to open.

6. To play the sequence, press the play pushbutton or issue the "Play" command. This re-executes the whole sequence (assuming, all files still exist). As status text, "Playing" is displayed. While playing, it is, of course, possible to interrupt the sequence temporarily (= Pause) or definitively (= Stop).

Note that the system keeps the created sequence in memory until another one is loaded, so you are able to re-play it as often as required.

1.7.2 The Sequence Loader

To load a new sequence, select Load from the Recorder pull-down or press ![icon] in standard toolbar. This causes the Sequence Loader window, displayed on figure 23, to be activated. If at the time you load a new sequence another one is still in memory, you may append the new one by checking the checkbox "Append to existing sequence". Note that the default state of this checkbox is always unchecked, so that the new sequence overwrites the old one in memory. If there is no sequence in memory at the time you load a new one, (as it may be when you load a sequence at start), this checkbox does not appear in the Sequence Loader window.
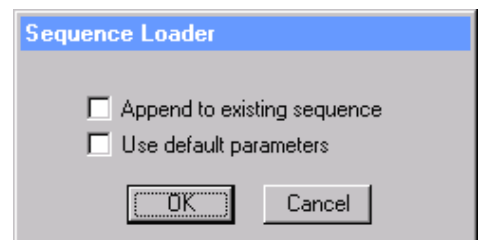

Fig. 23

Check the "Use default parameters" checkbox to have the current default parameters overrule the parameters used at the time the sequence was created. For example, if a sequence with some scrolls was created with a default scroll speed of 5, and meanwhile this default has been changed to 3, checking this checkbox causes the sequence to execute all default scrolls with a speed of 3. The default state of this checkbox is unchecked, so that all default parameters used at creation of any sequence are maintained.

Select <OK> to validate the selections made in the Sequence Loader or <Cancel> to abort the load operation.

When the options have been validated with <OK>, the Sequence Loader window is removed and replaced with a usual Open Dialog. Select any sequence file and press the "Open" button. If a sequence has been successfully loaded into memory, the status text in the remote window changes into "Loaded", otherwise an error message is displayed.

1.7.3 Editing Existing Sequences

Existing sequences may be modified by the Sequence Editor. To edit a sequence, load it in memory and issue Edit from the Recorder pull-down menu. This causes a dialog box to open and display details on the loaded sequence, as shown on figure 24.

The list box displays all the commands included in the sequence. Use the vertical scrollbar to pass along the successive commands. Clicking on a command causes it to become selected and the detailed parameters of the command are displayed in the text window below the list box.
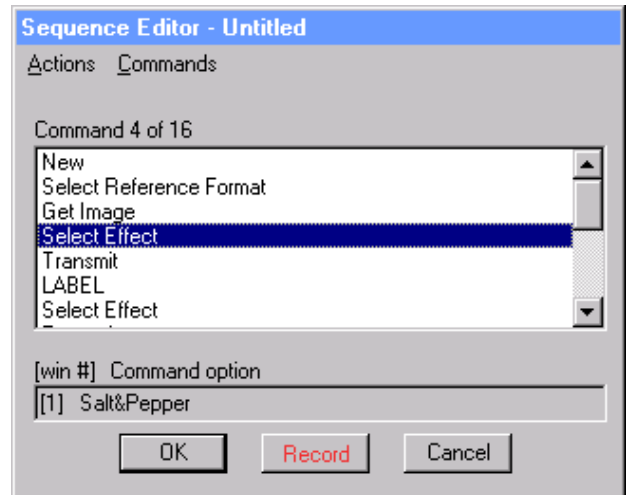

Fig. 24

Example in figure 24: The command is Select Effect Salt&Pepper and apply it to the first rectangle of the selected Reference Format.

To remove a command in a sequence, click on that command (so that it becomes selected) and issue Remove Command from the Actions pull-down menu (or use the <Delete> key).

Delay and Pause

When creating sequences, there might be situations when you want to delay the processing of the sequence. To this purpose, the Sequence Editor allows you to insert either a fixed time delay or a stop point where the sequence must pause till the user of the sequence explicitly enters a command to carry on.
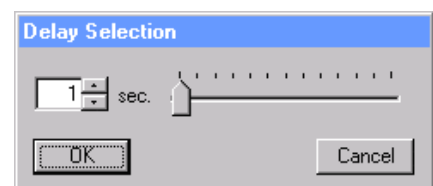

Fig. 25

Use Delay from the Commands pull-down menu to insert a delay next to the currently selected command. This causes a dialog box like the one on figure 25 to open. Here you may enter the duration of your delay. The default value is 1 second, but you may specify any values up to 600 seconds (=10 minutes). <OK> sets the delay into the sequence and removes the dialog, <Cancel> aborts the operation and returns to the sequence editor.

Use Pause from the Commands submenu in the Recorder pull-down menu to insert a break next to the currently selected command. When a sequence is being played, a pause causes it to interrupt the processing and wait for a still command to be entered by the user. Note that this command increments the Recorder counter as any other command does.

Labels & Goto

Labels and Goto are used to repeat part of or all the sequence. A Label is a fixed point in a sequence that you can reach from anywhere with a Goto command.

Example:

```
New
LABEL      START [Endless]
GET IMAGE [1] Name
GET IMAGE [2] Firstname
TRANSMIT
GOTO START
```

This short sequence uses a label named START to transmit endlessly two rectangles of an RF until the user issues a stop command. Select the command where you want to insert a label and issue Label from the Commands pull-down menu. This causes a dialog like the one on figure 26 to be activated.
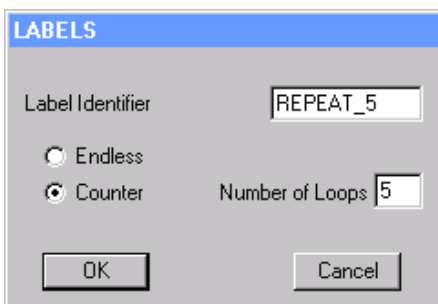

Fig. 26

Enter the Label name in the entryfield Label identifier. If the Endless radio button is activated the commands next to the label are always executed. On the other hand, if the Counter radio button is activated (with a number of loops going from 1 up to 99), it causes the commands coming next to the label to be executed the number of times required.

To insert a goto command, issue Goto from the Commands pull-down menu. This causes a dialog like the one on figure 27 to be activated. All created labels are displayed in the list box. Select the required one and press <OK>.

Fig. 27

Online Images

The Online Images feature of the Sequence Editor allows users to decide which images to insert in the sequence at the time the sequence is being played. This avoids creating 2 different sequences for a lineup presentation of 2 teams, for instance.
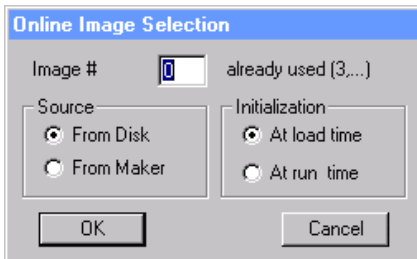

Fig. 28

Online Images are defined as follows: In the Sequence Editor, mark as selected the Get Image where you want to insert an online image. This causes the Online Images command from the Commands pull-down menu to be activated. Issue this command and a dialog like the one on figure 28 will display.

In this dialog, users may specify the image number in the Image # entryfield. There are 10 available online selections that can be made at load time (# from 0 up to 9). The image may come either From Disk or From a Maker. Check the requested radio button in the Source group box.

When the *At Load Time* radio button is checked, the system prompts users for the image name at the time the sequence is loaded, i.e. when the Load command is issued (see later in this chapter). On the other hand, when the *At Run Time* radio button is checked, the system always prompts users for the image name at the time the sequence is being played. There can be as many images as wanted set online at run time. Note that querying an image name at run time causes the sequence to pause and to display the dialog to query for a filename or maker image.

In the figure 28, the message *"already used"* on the top right of the dialog specifies that this online image (in this case # 0, defined at load time) is already used at least in another command of the sequence, in this case command number 3.

<Cancel> aborts the Online Image Selection without saving any changes, while <OK> saves the Online Image at the current position in the sequence, closes the dialog and displays the new detailed parameters of the command in the Sequence Editor text window.

While editing a sequence, it is also possible to start recording from the current position inside the sequence. Press the <Record> pushbutton (its text appears in red) to start recording. This causes the Sequence Editor window to be removed from the screen and the Preview window to display the current state of the sequence, i.e. all commands recorded previously are executed up to the current command.

To end a sequence edition, press <OK> to validate the changes made or <Cancel> to abort the edition without saving any changes. Play the sequence to test it and then save it!

When playing a sequence that contains online images that must be initialized at load time, a dialog like the one on figure 29 is displayed at start.

This dialog allows users to enter the image file names when a sequence that requires online images is being loaded. The system detects which image numbers require a name for the current sequence and displays an entryfield on this line, as it does for image number 0 and 4 in the figure. The source of an image may be the Disk or a Maker as it is displayed in the dialog. Type the required image name in the entryfield or select it by pressing the browse button, which opens the dialog to select an image according to its source (Disk or Maker).
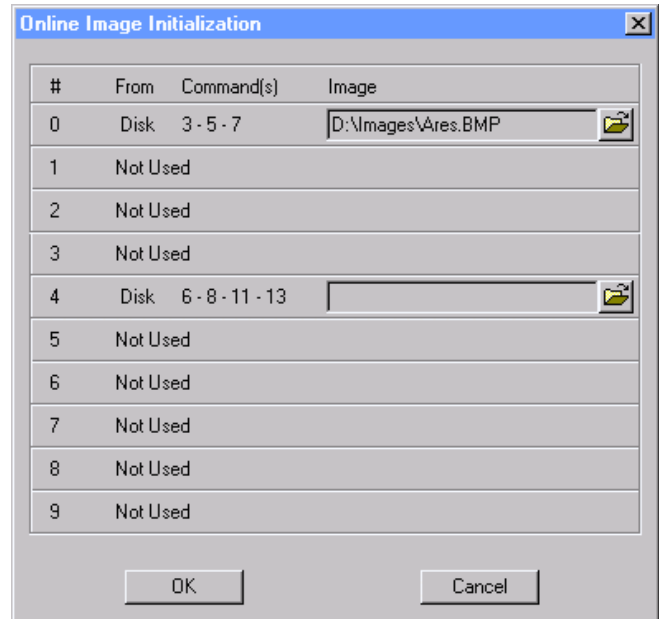
Fig. 29

Press <OK> to validate your selection. This causes the dialog to be removed and the system holds now the image names given as online parameters. If an image name is unknown or invalid, another one will be prompted at run time. To modify the image names initialization, for example when you want to play the same sequence with other images, select Online Image Initialization from the Recorder pull-down menu. This causes the dialog to be displayed again. Note that this command is only active when there is an online image defined for this sequence.

1.7.4 Naming and Storing Sequences

Like formats, sequences do not require a particular file name or file extension to be stored with. It is nevertheless recommended to use always the same extension for all sequences (ex: .SEQ), so that they are recognizable when listing a directory or scanning for files.

Furthermore, it is recommended to save your sequences in the same directory or in subdirectories of that directory. Again, this is not an obligation, but it may avoid confusion when managing a great number of image files, formats and sequences.

To this purpose, the system holds a Default Path in which sequences can be saved. This path may be modified as required. Select Paths from the Defaults pull-down menu. This causes a dialog box named "Default Directories" to open. Update the Sequences entryfield and press <OK>. This sets your default sequence path and makes the system open directly in this path when a sequence is requested.

1.8 The Quick Launch window

1.8.1 Introduction

To display the Quick Launch window (Fig. 30), use the command *View / Quick Launch* or press ![icon] in the standard toolbar. This command is used when the operator needs to access quickly formats, sequences or images which are saved on the hard disk.

1.8.2 How to add shortcuts

When you have prepared a *Format,* a *Sequence*, a *Connection with Maker*, or just an *image*, you can create a shortcut to it in Quick Launch window. This way you can have access really quickly to all your favorite board images especially those which are the most common used.

First of all create folders by clicking with the right button in Quick Launch window and selecting *New ▶ Folder…* . We strongly recommend you to sort out all your shortcuts in several folders. This will help you find again all the images according to a theme or a sport.
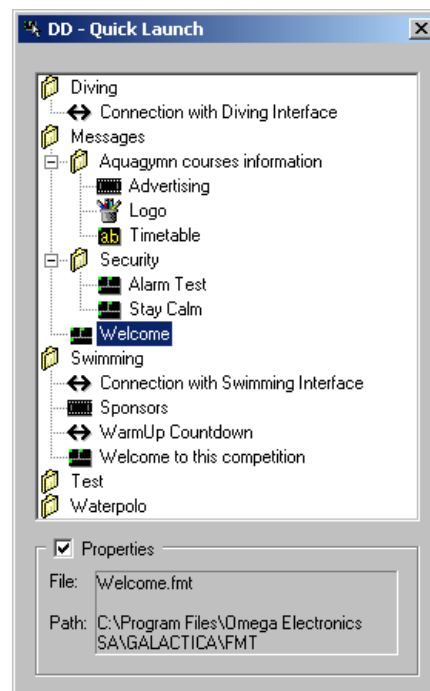
Fig. 30

When the *Format,* the *Sequence*, the *image* or the *text file* are saved on the hard disk, just right click on the Quick Launch window, select *New ▶ Shortcut…,* and browse the hard disk to find the file you want to shortcut. To create a shortcut to a Maker connection, select *New ▶ Maker Shortcut…*,then the list of running maker will appear and you just have to select one. Note that this kind of shortcut does the following thing: in background the DD opens the *FULL* reference format and inserts the maker image on it. By default, the Galactica will attribute the name of the file to the shortcut or in case of maker shortcut the name will be *"Connection to MAKER[1]"*. You can easily change this name by selecting *Rename* in the contextual menu or by left clicking on the shortcut for a few seconds. Galactica also attributes an icon to each shortcut according to the file type. This feature helps you know quickly if it's a *Format,* a *Sequence*, a *Connection with Maker*, a *Text file* or an *image*. The following array shows the meaning of each icon:

Shortcut to:				
Format	**Sequence**	**Maker**	**Image**	**Text file**
![icon]	![icon]	![icon]	![icon]	![icon]

---

[1] *Maker name*

1.8.3 How to use shortcuts

Single click with matching action:

Shortcut	Action
■ **Format**	Shows the *format*, *maker image*, *image* or *text file* in *Preview window*. But it does not send it to the board.
↔ **Maker connection**	
🖌 **Image**	To send it, you can use <+> key on numeric keypad.
ab **Text**	
▬ **Sequence**	Loads the sequence, but does not play it.

Double click with matching action:

Shortcut	Action
■ **Format**	
↔ **Maker connection**	Sends the *format*, *maker image*, *image* or *text file* to the board (*View Online window),* without changing the *Preview window*.
🖌 **Image**	
ab **Text**	
▬ **Sequence**	Loads and plays the sequence.

1.9 Other DD Features

Following commands are also available in the Options menu.

1.9.1 Connect or disconnect the link with the display controller (DPCT program)

Connect check menu allows you to be connected or disconnected with the board. (In reality it is the connection with the DPCT program which is in charge to create the final image)

1.9.2 Scoreboard settings...

The scoreboard settings open a specific dialog for each sort board. Generally this dialog lets the user set parameters of the scoreboard like luminosity, contrast, ... This dialog could be completely different between two different boards. One common command is the *Freeze* button which allows user to freeze an image on the board and test locally a sequence for example without displaying it on the board.

1.9.3 View Window Numbers

The View Window Numbers command toggle allows the operator to hide, or alternatively to show the window identifier in the Preview window. This command can be used if we are working with some very small windows or to view some particulars of the preview image hidden by the identifier.

1.9.4 Startup Options

The Display Director may be started automatically at the startup of the system. This function can be activated in the following way:

- Copy the shortcut *Display director* in Startup menu.

The Display Director Startup Options, in the Defaults menu of the Display Director are be implemented to start the program without any operator manipulation.
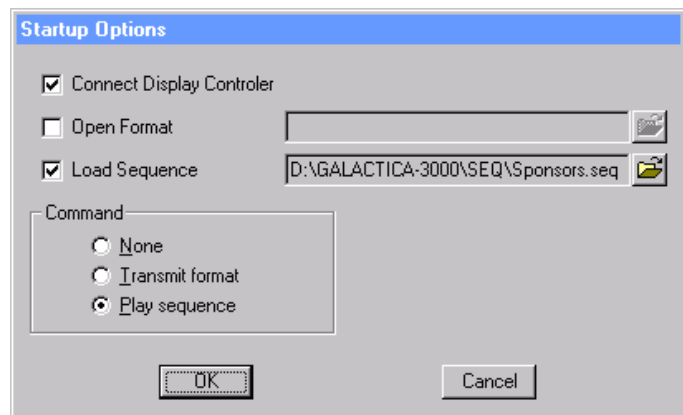

Fig. 31

To configure "how to start", select the Startup Options entry in the Defaults pull-down menu; the dialog Startup Option will be activated.

In this dialog, you can check the entry Connect Display Controller to directly connect the board.

To select a default Format and Sequence, choose it using the corresponding open button .

Check the Open Format checkbox if you want to load the corresponding format and check the Load Sequence if you want to load the corresponding sequence.

In the command group, select the radio button corresponding to the command you want to execute at startup.

1.9.5 Image options

The default settings regarding image transmission can be set by using the menu *Default / Image Options*. The dialog shown in figure 32 appears. It is possible to set that all gif images have to be considered as an Animated GIF.

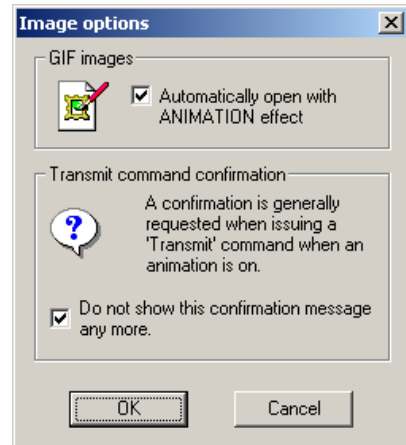The second setting let the user to disable Warning message when an effect is in progress on the board.

Fig. 32

1.9.6 View Tree

In *View* menu, the *View Tree* command toggle controls whether, or not, the hierarchy tree of windows contained in the *Reference Format*, is displayed in the DD Working Space. This command is used when the operator need more space on the screen in order to open some other programs.

1.9.7 View Quick Launch

In *View* menu, the *View Quick Launch* command toggle controls whether, or not, the Quick Launch is displayed on screen; you can also use the button in toolbar.

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GALACTICA

IMAGE EDITOR (IMED)

3311.541.02
Version 1.5
Edition March 2008

1   INTRODUCTION – THE IMAGE EDITOR (IMED)

1.1   Image editing

The image generator utility defines the content and appearance of the images created by the MAKERS programs.

Each image is completely definable by the operator, who selects the content and style of the information; these images are then updated by the MAKER program, which takes the changes to the database into account.

To prepare an image, choose the Images menu in the menu bar, then the name of the image you want to edit. The Field Parameters editor (Fig. 1) and the Preview Window (Fig. 2) are displayed.
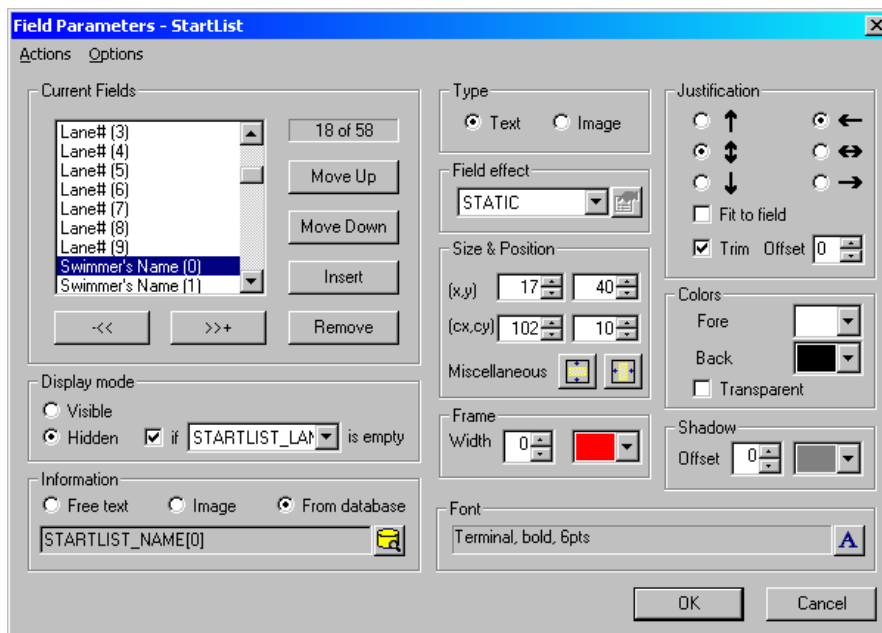

Fig. 1 *Field Parameters Editor*

Fig. 2 *Field Preview Window*

1.2 The image editing screen (Field Parameters)

An image is defined as a series of fields.

Each field is defined by a series of parameters, such as size and position.

When the image editor is open, the program defaults to the first field and displays the values and information defining it.

There are three ways to move from one field to another. The first one is to select field using the mouse in the *Preview Window*. The second one is to select the field in the field list, and the last one is to use the *[>>+]* and *[-<<]* buttons. *Insert* creates a new field, *Remove* deletes an existing field, *Move Up* and *Move Down* button change the field order.

A new field is inserted <u>after</u> the field currently highlighted. The field order is important only if one field partially obscures another; in this case, the new field will cover the previous one, which will be only partly visible.

When a new field is inserted, it is automatically called "Untitled" in the field list.
It is possible to change this field name by double clicking on it, this will open a dialog (Fig. 3) which lets the user to rename the field. If a field has to be duplicated, the program will automatically add index like (0), (1), (2), etc...

Fig. 3

When a field is deleted by using the *Remove* button, it is deleted from the list of fields comprising the image.

A *Preview Window* (Fig. 2) displays the image on line. This window can be moved around freely and can be zoomed if required. It is constantly updated with the fields that make up the image to display the editing results directly. A popup menu can be used in this window (Fig. 4), it allows the user to add or remove a field and set the zoom factor. To get this popup menu, the user has just to right click in this window.
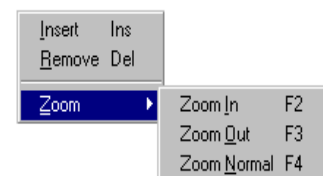

Fig. 4

The easiest way to change the zoom factor of the *Preview Window* is to use the mouse wheel when the *Preview Window* owns the focus (= is active).

Clicking on the *OK* button closes the window and saves all the changes made to the image. Clicking on *Cancel* closes the window without saving the changes.

1.3   Parameters

1.3.1   Information

Specifies the information to be displayed in the field, it could be:

- A free text: To insert information directly, position the cursor in the field and enter the information from the keyboard.   The information appears in the field if it is of the text type

- An Image: To insert an image, select one on the hard disk using menu *Actions/Get Image from disk* or using the ![button] button.

- A database information: To match the field with a database information, select the database entry on the database list using menu *Actions/Get database table* or using the ![button] button. The type is positioned automatically when the file is compared with the database, and takes precedence over manual type selection; thus for example if a field has been compared with a database entry of the bitmap type, it does no good to reposition the type because it automatically defaults to bitmap. The description of the various database fields is described in detail in the MAKERS program manuals.

1.3.2   Display mode

Normal field is generally and by default set as *Visible*.

Hidden option allows a field to be hidden temporarily. Instead of deleting a field that is required only temporarily (which would mean losing all the values defining it), it can be hidden. A condition for hiding a field could be set ("Swimmer's name(0)" in figure 1, does not appear into the image when generated if the `STARTLIST_LANE[0]`is empty).
This option allows user to decide if he wants to hide a field when another one is empty. In a *Diving* image, for example, it is necessary to display the total points received for a dive on the bottom right part of the board like *XXX pts.* The *XXX* part can be the database field `PRESDIVE_SCORE[0]` and *pts* can be a free text. As long as the *XXX* value is empty, the *pts* field has to be hidden. It has only to be displayed when the database entry `PRESDIVE_SCORE[0]`has been filled.

1.3.3   Type

Field matched with database entry could be:

- Text: defines a set of alphanumeric characters.

- Image: defines an image created by the system editors (Pictures, logo, etc...).

In example, for the country field, in *Text* mode, it will display the *IOC country code* (i.e. FRA) otherwise in *Image* mode the program will search on the hard disk (in the Flags folder or Photos folder) the matching file starting by FRA and having extension .bmp. This feature is explained in details in chapter **1.4**.

1.3.4 Colors

Allows definition of field "background" and "foreground" colors. If the field is text type, the background color is used to fill in the background of the field and the foreground color is used for the text. If the field is the bitmap type, the background color fills the part of the field that will not be covered by the selected image.

For RGB board, an additional cell is available to select a custom color. By selecting this cell the standard Windows® dialog box to select colors will be displayed.

For non-RGB board, clicking in the drop down list shows only the available colors (*black* and *white* for Monochrome board, and *red, orange* and *green* for 3 colors board (RG)).

When there is a multi layers image the *transparent* checkbox is really useful. It allows to set the background color as transparent. By this way it is possible to have a background image and all the data coming from the database in front.

Fig. 5

1.3.5 Size & Position

Defines the size and position of the field (values in pixels) (Fig. 6). These fields can be edited, but generally are used only for visualization; positioning is easier using the mouse (Fig. 7).
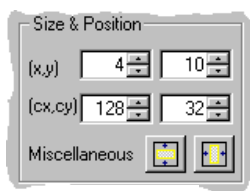
Fig. 6
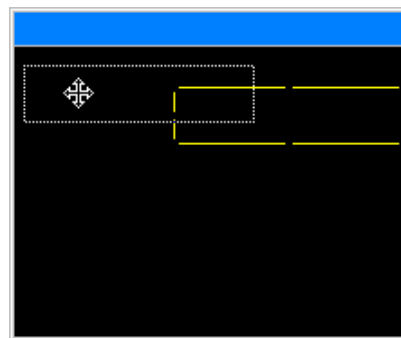
Fig. 7

When the positioning window is displayed, the field can be dimensioned and positioned easily using the mouse. The new values in main window are automatically updated during the move. The two buttons and allow the user to center the field respectively vertically or horizontally on the board.

In *Preview Window*, the keyboard arrows can be used to change the position of the field and whilst maintaining the *Shift* key down, its size can be changed pixel per pixel.

1.3.6 Field effect

This function defines the effect that will be used to display the field.
Available effects are:

STATIC   Default effect, it means that no effect is applied on the field, the content of the field is displayed all at once.

BLINK   The content of the field blinks.

NEWSCAST   The content of the field moves horizontally from right to left.

1.3.7 Justification

Text fields can be justified horizontally and vertically so that when the information changes, the field will be attractively displayed.
Horizontally, the operator has a choice between flush left, flush right, and centered text. Vertically, the text can be positioned at the top or bottom of the field or centered.
All database fields have a defined size. Every program which write data in those fields fill them with spaces and then write data. Those spaces can be removed by using the *Trim* option.
It is also possible to change the position off first displayed character by using *Offset*. Offset can be lower than 0 for offsetting from the end.
Note that vertical positioning is done relative to the character as defined by its total matrix, so that characters that descend below the baseline or go up to the last pixel of the matrix (accented characters, for example) will be displayed correctly.
Note also that if the selected font is larger than the field or if the text is larger than this same field, the text will be only partially displayed. But there is a possibility to insure that all the characters are displayed in the field, by checking the checkbox *Fit to field*. By this way, the software will automatically stretch or reduce the font size without taking into consideration the one selected by the user. This feature is really useful to display a score. For example, as the score generally is less than 10 to 10, the user wants to be sure that when it is higher, all the numbers are displayed.

1.3.8 Attributes

Bitmap fields can either be Stretched or Centered.

Stretched means that the bitmap must fill the field completely. If the dimensions of the bitmap do not match the dimensions of the field, the bitmap is redrawn to fill the entire field. If larger, it is reduced by deleting lines and columns of points; if smaller, it is expanded by adding adjacent lines and columns of points.

Centered positions an image starting at its center.

The Stretched mode takes precedence over the Centered mode. The two are incompatible simultaneously.

1.3.9 Frame

Draws a frame around the field. The numerical value specifies the size of the frame (0 means no frame, 9 is the largest). The drop down list is used to select the color of the frame.

1.3.10 Shadow

Text fields can be displayed with a shadow. This is especially useful when generating colored images. The numerical value specifies the displacement of the shadow relative to the text (negative values are allowed). 0 indicates that no shadow is desired. The drop down list is used to select the color of the shadow.

1.3.11 Font

For text fields, the font used to display the text can be selected. All system fonts are available.
The font selection screen can be called up directly using the menu *Actions/Select Font* or using the ![A] button. Note that if *Fit to field* option is checked, the data in field will be written without taking into consideration the font size selected.

1.3.12 Duplicate Fields

The 'Duplicate Field' screen is used to generate vertical or horizontal fields with the characteristics of the current field.
Number of fields specifies the number of fields to create, *Vertical offset* specifies the number of vertical pixels from one field to another. The default value is the size of the field, or the last offset used.
Horizontal offset specifies the number of horizontal pixels from one field to another. Shortcut for this function is *Ctrl + U.*
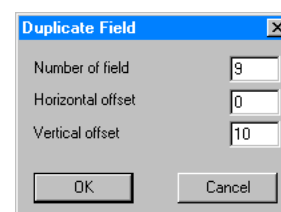

Fig. 8

We strongly recommend to use this function for generating images like *startlist* or *ranklist.* First of all, place and set all the parameters for the first competitor, test it, and finally use the *Duplicate* function to copy the selected field parameters.
If the field is a database field (like PLAYER_NAME[0]), the data referred by it will be automatically increased for the duplicated one (like PLAYER_NAME[**1**], PLAYER_NAME[**2**], PLAYER_NAME[**3**], etc…).
Warning: the program could generate fields outside the image. Be sure that all fields you duplicated are inside the image.

1.4 Special feature: displaying automatically photo and flag

Country flag, club logo or photo could be automatically displayed according to database information.

Fig. 9 Sample: Swimming presentation

In figure 9, there is a field with the athlete's picture. In fact, this is the athlete's name coming from the database, but instead of choosing *Text* type, *Image* has to be selected. The same has been done for the fields showing the country flag. The variable is country flag when *Image* type is selected. When *text* type is selected, you get the short country code coming from the database.

To allow this feature, it is necessary to set where the program could find flag images and athlete's pictures. To do that, select **General Settings...** in **Options** menu. The figure 10 shows the window which will allow user to set the pictures/flags paths. Another feature of this window is that it is possible to associate special characters like &, ✳, etc… (normally characters which cannot be a filename) to a filename.
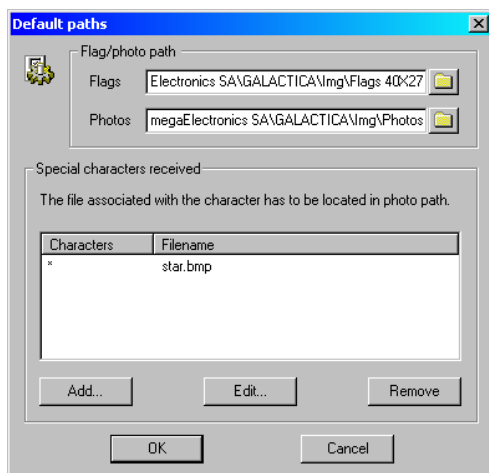

Fig. 10

In `\\SWISS TIMING\GALACTICA\IMG` there are folders called `Flags 150x100` or `Flags 40x27`. To display flags, the program uses the country code found in the database entry and checks in the *flag folder* if there is a BMP filename beginning with the same letters. In figure 9, database entry contains *RUS*, the program checks for `RUS*.BMP`, finds `RUS_Russie.BMP` and displays it.

If the competition is a regional competition, you can create your own folder with your own regional flags or logos starting with club short name for example, and then follow the competitor database with the club short name instead of nationality.

> **Note**
>
> The nationality has to be one of the IOC country code (Example: FRA: France; GER: Germany; SUI: Switzerland, etc...) to use flags defined in `Flags 150x100` or `Flags 40x27` folder.

The same system is done for photos, but in this case the program uses concatenation of the athlete's name, and adds BMP. In figure 9, the athlete's name is POPOV Alex. The program checks in `Photos` folder if there is a file called `POPOVAlex.BMP`.

1.5 Images generated

The image generator saves and reads the images to and from the disk in the MAKER directory:
`\\SWISS TIMING\GALACTICA\PRM`, with the extension `.IGF`

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GALACTICA

TEXT EDITOR

3311.547.02
Version 1.2
Edition March 2008

SWISS TIMING LTD

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1   INTRODUCTION – TEXT EDITOR

1.1   Description

This text editor has the same functions as a basic word processor; it allows to edit the *.grx and *.gtx files of the Galactica and to open the *.txt files.
It offers many options for the edition: parameterisation of the fonts, insertion of colours or background image, different work surface.
To start the TextEditor, double-click on the TextEditor icon.

1.2   Working space of the TextEditor
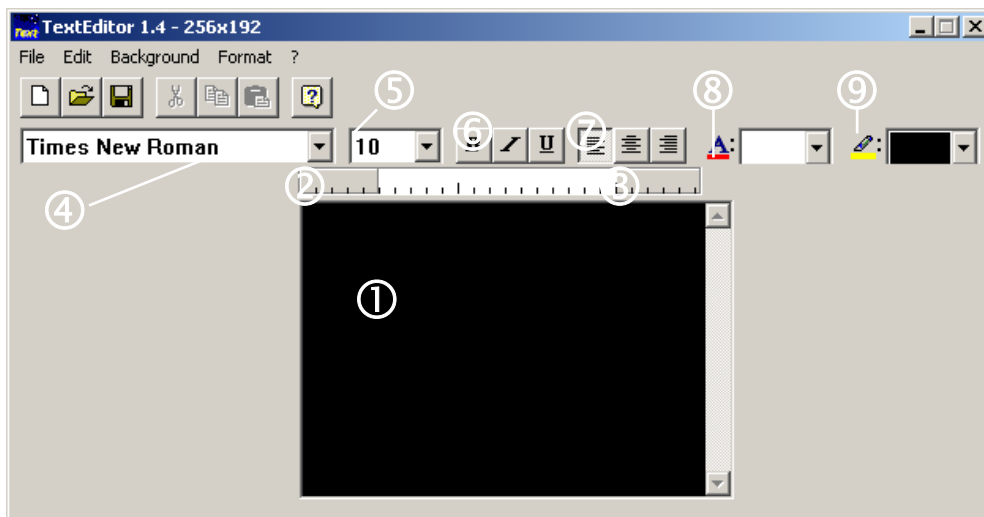
Fig. 1

①   Working surface of the TextEditor (space at your disposal to edit text). The size corresponds to the size of the board or to a RF window (Reference Format).

②   Indicator of the left margin.

③   Indicator of the right margin.

④   Drop-down list for choosing the font according to the language used.

⑤   Drop-down list for defining the size of the font used.

⑥   Font format (Bold, italic, underlined)

⑦   Text alignment

⑧   Colour of the font

⑨   Colour of the font's background

1.3 Edition of a text

The cursor blinks in the working surface; it is now possible to start the introduction of a text using the keyboard (Fig. 2).

The system senses the end of the line during the introduction of the text and automatically makes a line skip.

If the text is bigger than the working surface, the scroll bar comes on. To move into the text, use the scroll bar or the arrows of the keyboard (the arrows of the scroll bar allow to move by line).

Fig. 2

1.3.1 The current keys

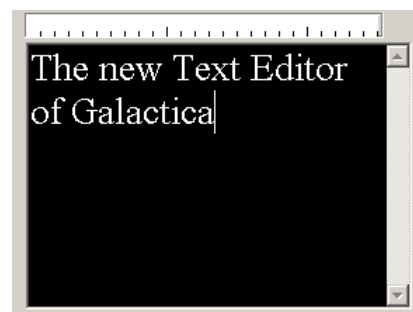|	
<Backspace>	: Erases the character situated on the left of the cursor
<Delete>	: Erases the character situated on the right of the cursor
<Home>	: Moves the cursor to the beginning of the line
<End>	: Moves the cursor to the end of the line
<Ctrl><Home>	: Moves the cursor to the beginning of the text
<Ctrl><End>	: Moves the cursor to the end of the text
<PageUp>	: Moves the scroll bar by page to the top of the page
<PageDown>	: Moves the scroll bar by page to the bottom of the page
<Ctrl> <A>	: Selects the whole text
<Ctrl> <X>	: Cuts the selection and puts it into the clipboard
<Ctrl> <C>	: Copies the selection and puts it into the clipboard
<Ctrl> <V>	: Pastes the content of the clipboard to the position of the cursor
<Ctrl> <L>	: Aligns the text on the left
<Ctrl> <E>	: Aligns the text in the center
<Ctrl> <R>	: Aligns the text on the right
<Ctrl> <I>	: Inserts a space to the position of the cursor

1.3.2 Shifting with the mouse

The mouse can be used to move the cursor quickly on a precise point of the working surface, at the beginning of a sentence or a word for example. It is not possible to position the cursor in a zone where there is no text. With a mouse equipped with a wheel in place of a central button, it is possible to move the scroll bar with it.

1.3.3 Selecting a rectangle of a Reference Format

In order to proportion the working surface, the TextEditor can work with Reference Formats created by the WFED (Window Format Editor). When starting the application, the working surface, by default, corresponds to the whole surface of the display. To change the size of the surface:

1. Select *Select a format RF* in the *Format* menu. The available RF will be displayed in a list.

2. Choose a RF by double-clicking on its name or by selecting it with the mouse and then press OK. The rectangles of the RF will then be displayed in another list.

3. Select the wanted rectangle.

If the working surface is not empty, the system will suggest you to save the work in process.

1.3.4 Copying the content of a rectangle of a Reference Format into another rectangle Reference Format

It can be useful to copy the content of a RF when there is a need to transfer the whole content of a RF into another RF format.

Here is the procedure:

1. Select *Send the current RF in an other RF…* in the *Format* menu. The available RF will be displayed in a list.

2. Choose a RF by double-clicking on its name or by selecting it once and validating with OK.

3. Select the wanted rectangle.

When going from a big RF to a smaller one, the disposition of the text can be affected because of the working surface.

1.4   Using different fonts

During the edition of a document, all the Windows fonts that are installed can be used.
The font is identified by a name and its size. Most of the fonts are proportional, which means that the width of a character depends on the character that has been typed. For example, the letter 'M' will be wider than the letter 'l' for a proportional font.

The system also offers non-proportional fonts, where each letter and number has the same width (For example Terminal, OESmall Font,…). This sort of font is really useful to align text.

It is possible, at any time, to know which font is being used by consulting the toolbar of the text editor or by choosing *Select Font* in the *Edit* menu.

The font can be changed by opening the pop-up menu of the toolbar and by selecting the font (Fig. 3).

The size of the font can be chosen in the same way, using the pop-up menu situated on the right of the fonts. Using the buttons **B** *I* U allow to define the formatting of the character respectively bold, italic and underlined.

While moving into the edition area, the toolbar shows the font that is being used at the position of the cursor, as well as its size and style.
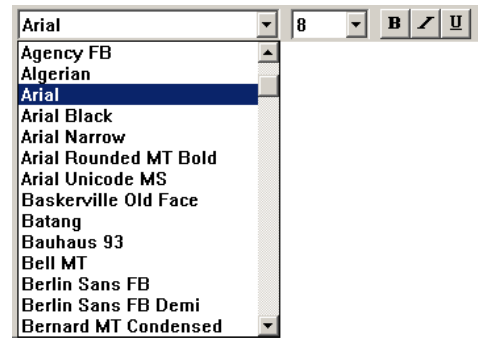
Fig. 3

If the font is not shown when one is positioned on a character, it means that the font is using the multilingual mode. For more info, please refer to chapter "Using the TextEditor in multilingual mode".

It is also possible to change the font, the size and style from the dialog box (Fig. 4) *Select Font* in the *Edit* menu.
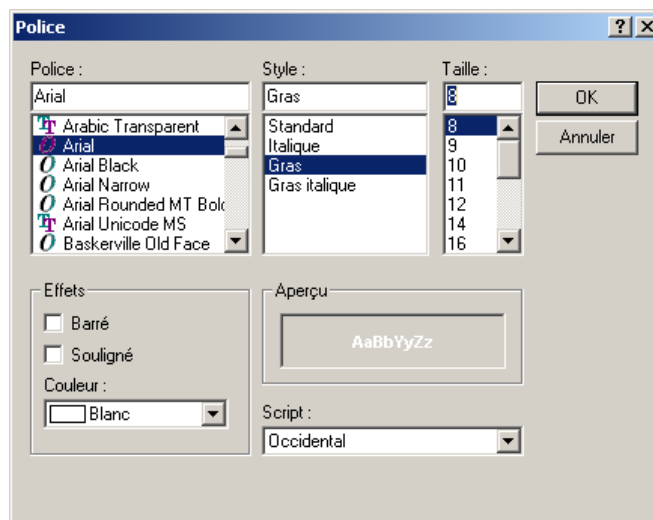
Fig. 4

In order to change a number of lines that are already written, you just need to select in brightening the wanted line(s).
Then choose a font as explained at the beginning of this chapter.

Some characters such as grammatical accents might be displayed in a different way depending on the chosen font.

Warning ! While selecting in brightening many written lines with different fonts, the name of the police does not show in the toolbar.

1.5   The colours

1.5.1   Using the colours (black & white display board)

During the edition of the text, you normally work with white characters on a black background. To invert these colours, select the colour of the font in black in the toolbar .

Fig. 5

To change the ground colour, select *Colour* of the *Background* menu and select the background colour (Fig. 5).

The brightening function only works on a white background by putting the back of the characters in black (Fig. 6).

To achieve the brightening function:

Fig. 6

1.   Change the colours as explained above.

2.   Select the text in brightening.

3.   Select the colour of the font in white .

4.   Select the background of the font in black .

1.5.2   Using the colours (colour display board)

When using a colour display board, the maximum number of available colours is 16 or less according to the type of colour display board used, this being valid for the three following entities:

1.   The first ground of the character
2.   The background of the character
3.   The background of the window, it is of one colour only (black by default).

To change the colour of the character, go in the pop-up menu of the toolbar or the font dialog box by selecting *Select Font* of the *Edit* menu*.

To change the colour of the character, use the pop-up menu of the toolbar .

By selecting many characters in brightening, it is possible to modify in one go the colour of the fonts and their background.

For the background of the window, open the *Background Colour* window (Fig. 7) by selecting *Colour* of the *Background* menu, select a colour using the pop-up menu and then confirm with OK.

Fig. 7

1.6 Work on the text

1.6.1 Using the justifications
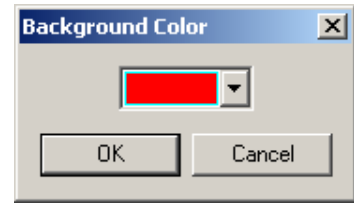
The TextEditor has different modes of justification (Fig. 8).

Fig. 8

Align left, the mode by default, aligns the text on the left margin.

Align center, centers the text so that the distances between the left and right margin are equal.

Align right, aligns the text on the right margin.

The alignment is applied to the paragraph in progress. To know which alignment has been used for a paragraph, you need to be positioned on it with the cursor, and the alignment button will activate itself in the toolbar.

An alignment can be applied to a whole block of lines by selecting the lines in brightening and by selecting the wanted alignment.

1.6.2 Using the margins

The TextEditor permits to position the margins for every paragraph.

To position the margins:

1. **Left margin**:

When the shape of the mouse's pointer changes (Fig. 9), go in the bar situated above the edition zone, click and keep pressing on the button, then move the margin (Fig. 10).

Fig. 9

Fig. 10

2. **Right margin**:

Proceed as described above.

1.6.3 Using the cut, copy and paste functions

The functions are particularly useful for duplicating text on different places of the edition zone.

How to displace some text:

4.   Select the text to be moved in brightening.
5.   Choose *Cut* of the *Edit* menu.
6.   Position the cursor where the text must be inserted in the edition zone.
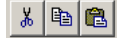7.   Choose *Paste* of the *Edit* menu.

How to copy some text:

4.   Select the text to be copied in brightening.
5.   Choose *Copy* of the *Edit* menu.
6.   Position the cursor where the text must be inserted in the edition zone.
7.   Choose *Paste* of the *Edit* menu*.

The cut, copy and paste functions can also be accessible in the toolbar or by a contextual menu. To make the menu appear, it is necessary to be placed with the mouse in the edition zone and to right click with the mouse. Then select the wanted function with a left click on the mouse.

1.7 Using the TextEditor in multilingual mode

The TextEditor permits to edit texts in several languages that have a different character style such as Greek, Arabic, Japanese, etc…

In order to do that, it is necessary to have an operating system such as Windows® 2000 or Windows® XP and have installed the different languages codes.

To install the different character codes of the wanted languages, follow this procedure:

Open the configuration panel of Windows.
Select *Keyboard* with a double click and the *Keyboard Properties* window will open*.
Select the *Input Locales* tab.
The language by default of the operating system chosen at the installation is situated in the *Input Locales* window.
Click on *Add* and the *Add Input Locale* window opens itself.
In *Input Locales,* select the language that you want to add.
In *Keyboard layout/IME* configuration, select the keyboard language that you want to add.
It is possible that in some cases, the Windows CD is required.
In the *Input Locales* window, make sure that the tick *Enable indicator on taskbar* is selected.
Click on OK and from then on the language indicator FR, EN, EL ,…, is displayed in the task bar, regarding the language that you have installed.

Using the TextEditor in multilingual mode:

1. Once the languages codes are installed, open the TextEditor application.

2. Click in the edition zone in order to define to which application the language must be affected.

3. In the task bar, left click on the FR, EN, EL,… logo, depending on the language that is being used.

4. A menu opens with the languages that have been installed; select the wanted language by clicking on it and the TextEditor automatically applies the selected language.

The modification of the language modifies the list of the available fonts in the toolbar.

When using several languages in a document, it is possible that the name of the font does not appear in the toolbar; this is due to the fact that another language for this word or line is being used. To make the corresponding font of a word or line appear, select the language that has been used again.

SWISS TIMING

User's Manual

GALACTICA

WINDOW FORMAT EDITOR (WFED)

3311.542.02
Version 1.2
Edition March 2008

1   INTRODUCTION – THE WINDOW FORMAT EDITOR (WFED)

1.1   Description

Often images which are sent to a matrix board are not full board images but rather images that are composed of several other images. To achieve this, the matrix board window has to be split up into several rectangles that are to be treated individually as independent boards.

The Window Format Editor is the tool to realize this "splitting". It may afterwards be used by the Text Editor. This allows it to edit directly in a window defined that way. Likewise, the Display Director frequently works with different board windows; it might, for instance, send images covering only part of the board or apply effects on some precise images, etc...

Thus, the WFED is often used to prepare window formats, long before the Display Director uses them.

1.2   Definitions

Here are some definitions used within the description of this program:

A *Reference Format (=RF)* defines a full board display split up into one or more rectangles which are defined by their size and position. A Reference Format is identified by a name and is stored on your disk.

Note that an RF only defines sizes and positions of rectangles; it refers in no way to images that will later be in these rectangles.

A *Superimposed Window* is a user-defined rectangle, contained in another rectangle. An image may be set to a superimposed window and an effect may be applied. On the screen a superimposed window appears in red. A superimposed window cannot contain any other window; it is always at the highest level. Superimposed windows are used to put an image over another one. Example: a running time over a game score image.

A *Window* is a user-defined rectangle in which an image may be displayed. An effect also may be applied to the image contained in a window. On your screen, windows appear in green. They may contain one or more superimposed windows.

An *Area* is a user-defined rectangle on which an effect may be applied, but no images may be sent in them. An area appears in gray and may contain one or more windows and superimposed windows. Areas are used to apply an effect to several windows at a time. For example, an area may contain two windows, or *a* window with a superimposed window.

Note about images and effects: The Display Director decides where an image is to be sent and how. But in any case there are some rules to take into consideration when building an RF:

1. There can be only three levels of rectangles: areas, windows and superimposed windows.

2. Windows cannot overlap.

3. The window width (x size) and position must be modulo 4. Example of valid sizes or positions: 144, 40, 60.

4. An RF cannot contain more than 20 rectangles.

1.3 The WFED Working Space

On Fig. 1, you can see a WFED working space: *Example* is the name of the current Reference Format, rectangle 1 is an area, rectangle 2 a window and rectangle 3 a superimposed window.
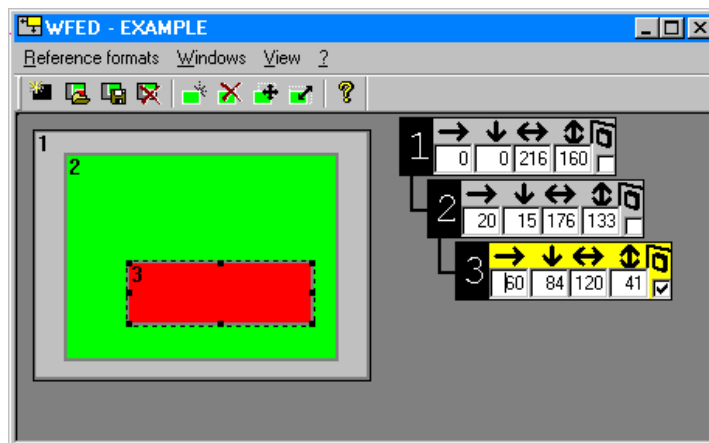

Fig. 1 *The WFED Working Space*

The WFED appears as an ordinary window. The menu bar contains four menus: Reference Formats, which allows to create, select or modify a reference format, Windows, which adds, suppresses or modifies a rectangle of an RF and View which allows to change the Zoom factor and enable or disable the toolbar.

The Tree shows the hierarchical position and definition of the rectangles built in the current reference format. Each tree element corresponds to one rectangle. It contains 4 entry fields displaying the size and positions of the rectangle as well as a rectangle identifier, located at the left edge of the tree and computed internally by the system. The size and position numbers of a rectangle may be modified as described later in this chapter. On the right edge of a tree element is the checkbox to superimpose rectangles.
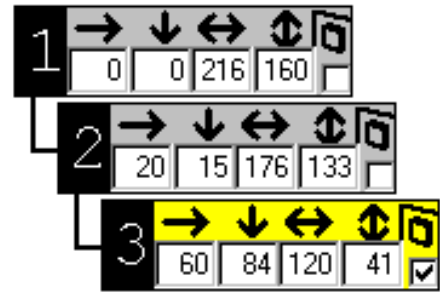
Fig. 2 The Tree

1.4   The WFED Commands

1.4.1   "Reference Formats" commands

"New":   Opens a new RF. Note that a confirmation will be asked in case the current RF has not been saved.

"Open":   Opens an existing RF. This command activates a list box displaying all the available RFs. Press <ENTER> to confirm the selection and display the selected RF on the screen. A confirmation will be asked in case the old RF has not been saved

"Save":   Saves the current RF on your disk. Note that the RFs are saved in a system file that cannot be accessed by users. In case no RF is active when this command is issued, the system displays a warning message.

"Save As": Saves the current RF under a new name. This command activates an entry field to give a new name.

"Remove":   Deletes an existing RF. This command activates a list box to select an RF name and suppresses it when the command is validated by <ENTER>. <CANCEL> aborts the deletion and returns to the WFED working space.

"Exit":   Exits the program. In case the current RF has not been saved, the system prompts for a confirmation.

1.4.2 "Windows" commands

"New": This command inserts a new rectangle into the current RF. At creation, the new rectangle is ready to be moved by using the mouse or the arrow keys. Mouse button 1 or the <ENTER> key validates its position and inserts the rectangle in the tree. At that time, the rectangle is also given an identifier by the system.

"Delete": This command deletes the current rectangle. Issuing this command makes the system recompute the tree and all its identifiers in respect to the new hierarchy.

"Move": This command moves your current rectangle inside the board space.

"Size": This command resizes your current rectangle inside the board space.

- Note that when moving or resizing, the system drags the rectangles as it does ordinary windows.

- Note that when moving or resizing, the "Esc" key removes the rectangle from the actual reference format (and from the tree).

1.4.3 "View" commands

"Toolbar": this command display or not the toolbar.

"Scoreboard zoom": this menu allows to select the zoom factor of the "scoreboard window.

Let's take an example of editing the rectangle coordinates using the keyboard:

1. Select New on the Reference Formats pull-down menu to get a new RF.

2. Select New on the Windows pull-down menu or press <CTRL> <INS> to get a rectangle.

3. Drag the created rectangle, by moving the mouse, to the required position. Press left mouse button to validate the position. At this point, the rectangle appears in green (it is a window), it becomes an element of the tree and is given an identifier. Repeat operation 1 - 3 once to create another rectangle.

4. With the keyboard you may modify any entries of the tree except the identifier which is given by the system.

To move along the entry fields of a tree element, press <TAB>/<SHIFT><TAB> to go in forward/backward direction. Entry fields 1 and 2 display the x and y board-coordinates and entry fields 3 and 4 display their sizes. If you apply any changes to these coordinates, you have to validate them by pressing <ENTER>. To make the selected window become a superimposed window, activate the checkbox at the right side of the tree by pressing the <SPACEBAR>.

To move through the tree elements, press the arrow keys <UP> and <DOWN>. This gives the focus to the new active tree element and it turns yellow.

Notes:

- If moving along the tree elements causes some windows on the working space to be hidden, it does not means that they have been removed but rather the displaying order has been changed.

- If the tree grows out of the screen because your RF contains a lot of rectangles, you can pass through the tree elements by pressing <PAGEDOWN> and <PAGEUP>.

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GALACTICA

DATA HANDLING INTERFACE (DHI)

3311.544.02
Version 1.1
Edition March 2008

TABLE OF CONTENTS

1 INTRODUCTION – DATA HANDLING INTERFACE (DHI)

The DHI (Data Handling Interface) is a program that receives information from serial lines and converts it into an image to send to the board (through the Display Director, according to the MAKER philosophy),
The DHI program can be connected to any timekeeping system or computer (connected to a serial line) which provides information with a specific protocol. A drawing of a cabling diagram is shown on the following drawing (Fig. 1).

COM2

COM1

GALACTICA Computer

Data Handling computer

Timekeeping system (*POWERTIME* for example)
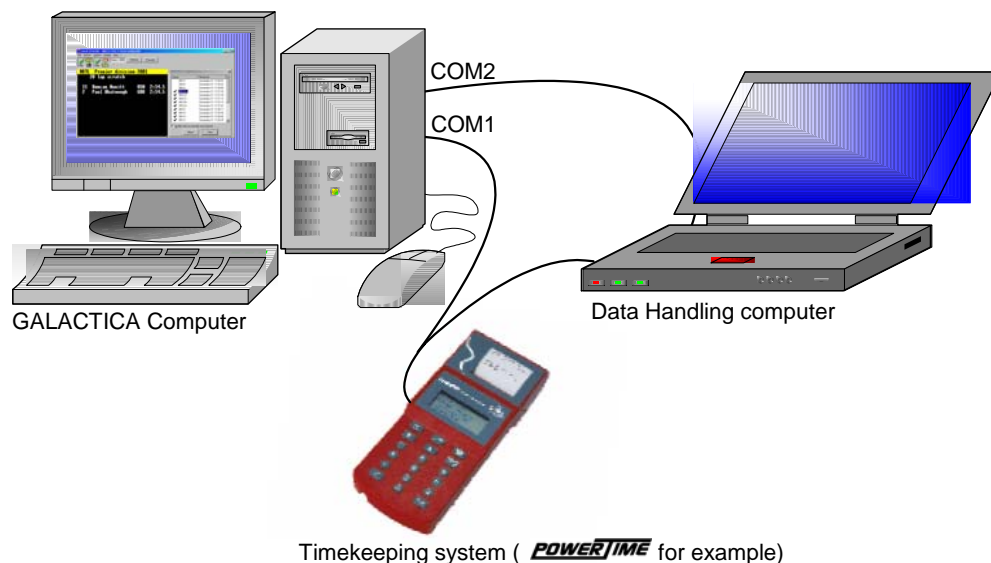
Fig. 1

Two different ways are available to keep information from serial lines: the *Editing* one, which keeps files from one serial line and transfers it into the editing buffer and the *Overlay* mode, which superimposes fields to the editing area; the mode used by the program depends on the selected protocol.

The *Editing* mode manipulates ASCII codes in a text oriented environment by using non-proportional fonts and supports part of the ANSI protocol.

The *Editing* mode may be used to manage start and result lists of several sports provided by a data handling computer.

The *Overlay* mode gives a full access to the IMAGE EDITOR (IMED) and leaves the user to manage a complete sport using *database information* corresponding to the protocol of the timekeeping system.

It is possible to mix both modes. For example, in figure 1, running time and net times are provided by the *POWERTIME* and competitor names are provided by the data handling computer.

The data handling computer fills the *Editing area* using the *ANSI – OMEGA* protocol, and the *POWERTIME* fills the *Overlay*s, because its data are sent to the DHI using a specific protocol which is associated with database fields.

That means that the scoreboard image generated by the DHI program is a multi layer image. The 1st layer is called "*Base*" layer, the 2nd layer is called "*Overlay*". The "*Base*" layer (= *Editing Area*) could be filled by using the keyboard of the GALACTICA computer as a text oriented editor or by using the files received and saved into the editing buffer (Fig. 2).

The *"Overlay"* layer is a user-defined layout (generated by the IMED) which could include some database fields of the system connected to the GALACTICA. This layer could be one of the overlay available in the *overlays selection bar* (c.f.1.1The DHI working space).

Database fields
Positioned with the IMED

OVERLAY
In this sample, filled by the *PowerTime*

FINAL IMAGE
which will be displayed on the board

```
        100m Men Final
        WR: 9.79
1 Zakari Abdul Aziz GHA
2 Malcolm Christian GBR
3 Montgomery Tim     USA
4 Greene Maurice     USA
5 Boldon Ato         TRI
6 Williams Bernard   USA
7 Collins Kim        SKN
```

BASE
In this sample, filled by the *DH computer*
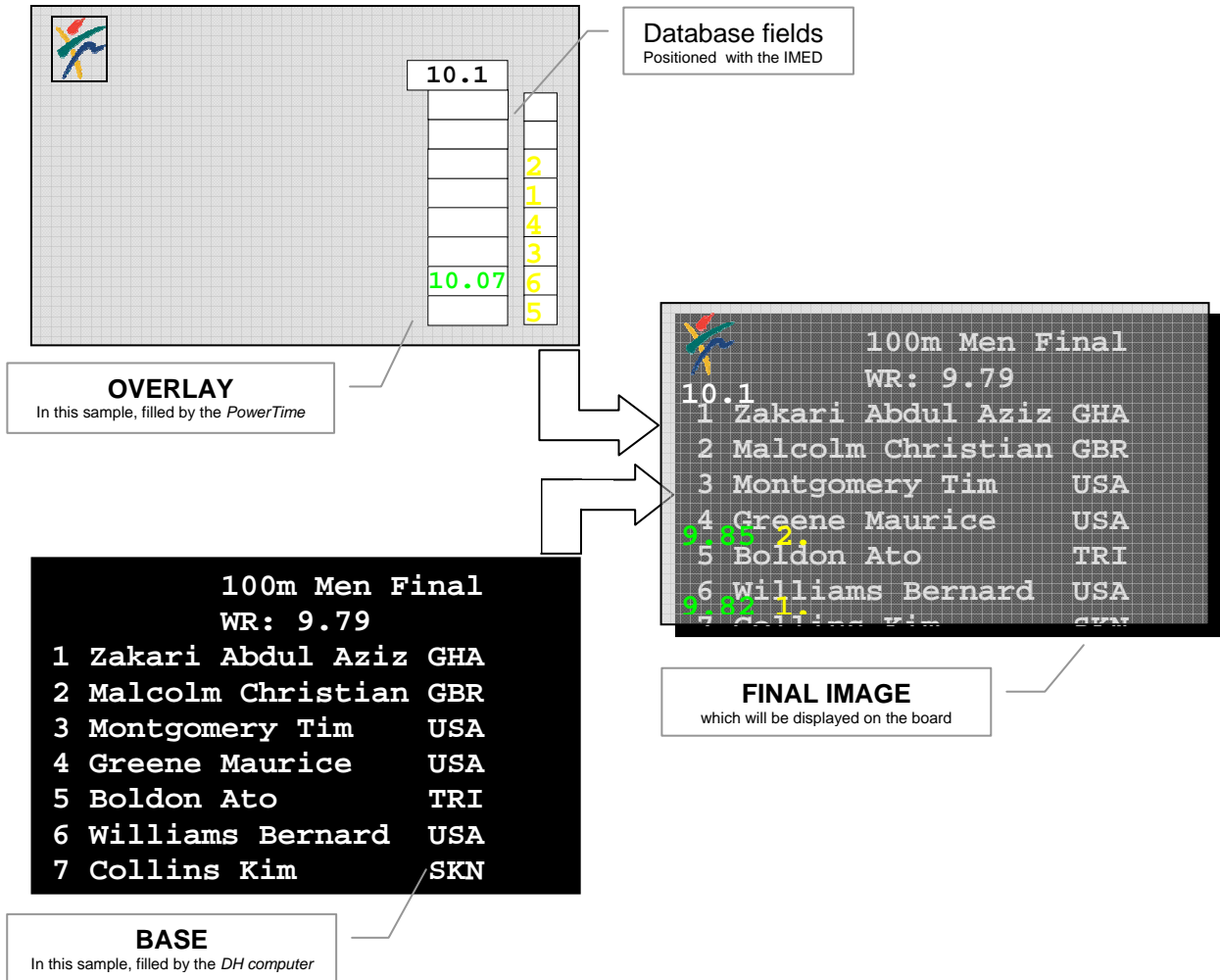
Fig. 2

1.1 The DHI working space
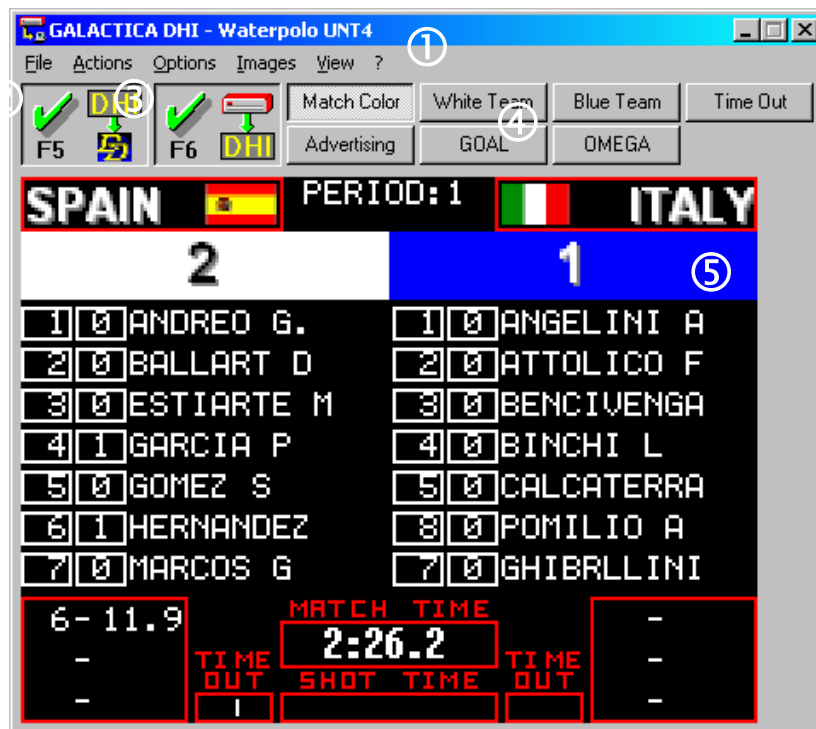
Fig. 3

①   Main window

②   Connection button with *Display Director (DD)*

③   Connection button with *Timekeeping system (ARES, TL5005, MTS, PowerTime, Scan'O'Vision, computers, etc… connected on COM ports),* F6 button opens the serial lines.

④   Overlays selection bar (26 free available images (= overlays))

⑤   Preview window (= *"Base" (Editing Area)* + *"Selected overlay"*); the size of the area corresponds to the board size (in pixels).

1.2 Connectivity

Timekeeping equipment   **F6**   *DHI*   **F5**   *Display Director*
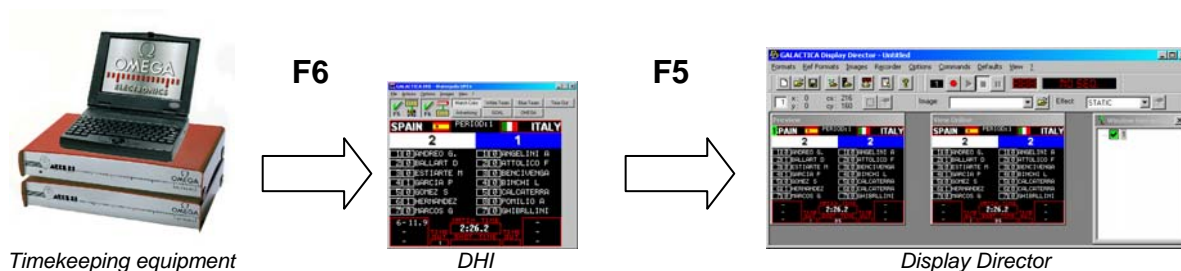
Fig. 4

1.2.1 Display Director connection, the F5 button

The generated image can be sent at any time to the Display Director (DD), which sends it to the scoreboard.

The DD must request the connection (**Get from Maker...**, **DHI**).

When the DD is connected, the function key **F5** controls the information to be sent to the scoreboard, and when it is sent.

The color of the button shows immediately what mode the program is in:

Red   *Image preparation* mode. The program does not transmit the image to the DD.

Green   D*irect mode*. Any change in the image is transmitted to the DD.

1.2.2 Timekeeping equipment connection, the F6 button

When the interfaces have been correctly assigned, you can instruct the program to start reading the information coming from the selected lines. This can be done with the **Activate competition** toggle command available under the *Actions* heading in the menu bar, or with the function key **F6**.

The program goes into a continuous reading mode and processes all the information coming in through the interfaces.

The color of the button shows immediately what mode the program is in:

Red   COM port(s) is (are) closed. No data sent by the timing equipment is interpreted.

Green   COM port(s) is (are) opened. All data sent by the timing equipment are interpreted and any changes affect the database fields.

1.3 General Settings

The *General Settings* window can be displayed by selecting the **General Settings** command in the **Options** menu. The settings are split in three tabs (*Base*, *Overlays*, *Start options*). The first tab (*Base*) is used to set the protocol that will fill the *Editing Area*. The second one, the *Overlays* tab, is used to set the protocol and database matching with the equipment connected on the computer (*Base* for the *Editing Area*, and *Overlays* for the overlays). The last one is the start options.
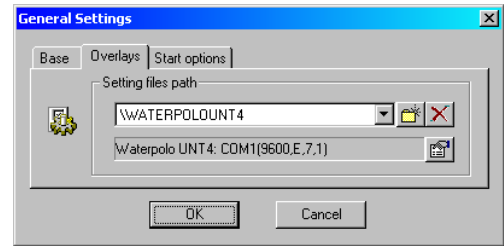
Fig. 5

1.3.1 Base tab

In the *Base* tab, you can select the protocol used and set serial settings for the connection with the equipment that will "fill" the base data. If no system fills the *Editing Area*, select the *None* option for the base protocol. The properties button shows the *COM port selection & properties* window which allows you to select and configure the serial line parameters (Fig. 6).

1.3.2 Overlays tab

In the *Overlays* tab, you can select the protocol used and set serial settings for the connection with the equipment that will "fill" the overlays data. If no system fills the overlays, select the *None* option for the Setting files path. *Default* option is the UNT4 settings, that means that the equipment connected to the GALACTICA computer sends scoreboard information using UNT4 protocol. The dropdown list displays the last *Sport settings* used. Depending on which competition or sport you do, you can easily change the settings of the DHI program (protocol, overlays, database info, etc…).

If the overlay tab is not visible, it means that the sport folder is defined in the command line of the program shortcut (generally done for the Water polo shortcut for example). You can add or remove a path in the dropdown list by using respectively the buttons and . The properties button shows the *COM port selection & properties* window which allows you to select and configure the serial line parameters (Fig. 6).
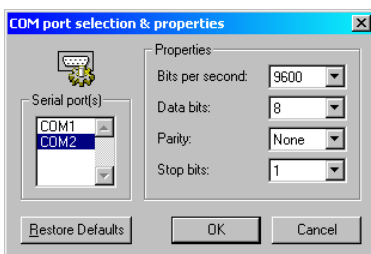
With the *setting path* in command line argument (see in *GALACTICA Basic Software - User Manuals* / *"How does it work ?"* document, in chapter 1.4.4 to know how to create a shortcut for a specific sport), the DHI is protected against unfortunate manipulations and a specific shortcut like water polo symbol will only launch a DHI with a water polo configuration. The only setting available for a "protected" DHI is the serial line settings available in menu **Options\Serial Interface settings… ▶ For Overlays**.

Fig. 6

A setting path has to contain at least a file with extension `.PRO` and another with extension `.DBE`.

> **Note**
>
> You have to select two different serial lines if you use both *Base* and *Overlays* protocol, otherwise the DHI program will generate an error when opening serial lines.

1.3.3 Start options tab

In the *Start options* tab, you can set the starting options of the DHI such as:

- ❑ **Automatically activate competition (F6) at start**
  This option automatically opens the serial lines when the DHI program starts and it begins reading the information coming from the serial lines. The program goes into a continuous reading mode and processes all the information coming in through the interfaces.

- ❑ **Automatically connect Display Director (F5) at start**
  By using this option, the *Display Director* can access the DHI generated image as soon as the program has started.

- ❑ **Automatically start in full screen mode**
  By using this option, the program shows the generated image in full screen mode on the GALACTICA computer screen. It is strongly recommended not to use this mode in a standard configuration. This option should only be used for a Plasma display installation.

2 THE EDITING AREA

The *Editing Area* is a text oriented editor. The size of the area corresponds to the board size (in pixels). It can be filled manually as explained below or with a protocol via the serial line as explained above.

To edit texts, click on the left mouse button inside the area. The pointer changes its shape and blinks in the area.

Type characters to edit, **Backspace** or **Del** key to delete, arrow keys to move, **Enter** to insert a line (in insert mode).

The **Insert** key toggles between insert and overstrike editing mode.

Fig. 7

Use the **<Ctrl> Delete** key to remove a line and copy it into a temporary buffer, and the **<Ctrl> Insert** key to insert the temporary buffer at the cursor position.

The **End** key moves the cursor to the end of the text in that line, a double **End** to the end of the line and a triple **End** to the end of the buffer.
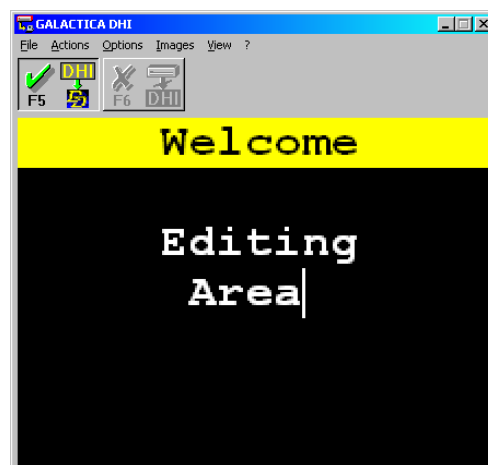
The **Home** key moves the cursor to the beginning of the line, a double **Home** to the beginning of the first line.

Note that the blinking cursor appears only in the DHI program and will not be displayed on DD and obviously not on the board.

The *Editing Area* uses a non-proportional font which could be changed by selecting ***Base image font*** in the ***Images*** menu. This will display the default *Fonts* window with all non-proportional fonts available on the Microsoft® Windows system.

2.1   Color of the base image (Editing area)

The colors used in the *Editing Area* for text or line background can be changed (as done on the first line in figure 7) by selecting ***Base image colors*** in the ***Images*** menu. This will cause the dialog *Base image colors* to become active (Fig. 8).

A background and a foreground color can be selected for each line. Click on the arrow to select the line to be assigned; it is then possible to set the foreground and the background color for it. The number of lines displayed in the line field depends on the font size selected in ***Base image font***.
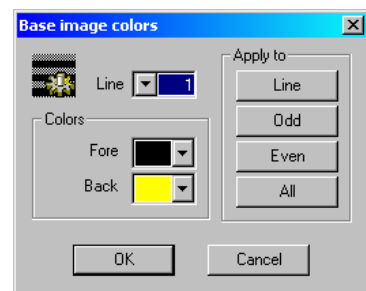
Fig. 8

When you have made some changes, you must valid them in the **Apply to** group:

Line   to apply the selected colors to the line.

Odd   to apply the selected colors to all the odd lines.

Even   to apply the selected colors to all the even lines.

All   to apply the selected colors to all the lines.

Press the **OK** button to confirm the colors modification or **Cancel** to abort the colors selection.

2.2 The Received files dialog

The *Received files* dialog (Fig. 9) shows the names of the images received by the serial line (OMEGA - ANSI Protocol) and the time when they were sent.
To display the *Received files* dialog, select **File list** in the **View** menu.
If the *Update buffer* check box is crossed, the received file is transferred directly to the editing buffer, but it is in any case stored on the hard disk, in order to re-use it afterwards. The filename is part of the protocol (c.f. 5.1 ANSI – OMEGA protocol). If no image name is specified in the protocol, the program assigns a name such as IMG1, IMG2, ..., IMG99.

To open a file from the list box, double-click on its name or select it and then press the **View** button. The file will appear in the *Editing Area*. The **Blank** button clears all the data displayed in the *Editing Area.*
When a file has already been viewed once, a check sign (✓) appears in front of its name.
To remove an entry in the list box, use the **Del** key.

Fig. 9

3 OVERLAYS

An overlay is a definition of fields defined in the rectangle of the board and it is always superimposed onto the *Editing Area.*

The program manages 26 different overlays. To select the one you want to use, select it in the *overlays selection bar* (c.f. ④ in *1.1 The DHI working space*). To remove an overlay an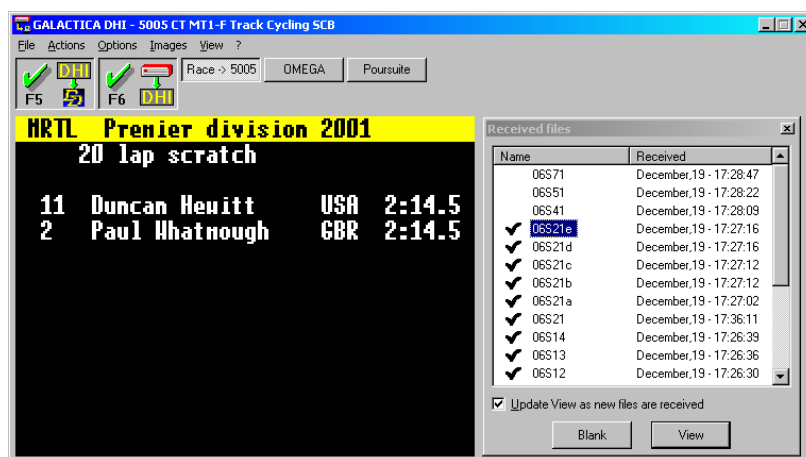d display the base only, click again on the selected overlay button. If you want to replace the currently displayed overlay by another one, just click on the new one button.

The overlays are normally used to show the running times during the competitions, but there are no limits to your imagination.

To add a new overlay use the *Insert…* function in the **Images** menu and enter the image name. To edit an overlay, use the **Edit** submenu in the **Images** menu. Those functions will call the Image Editor (**Field Parameters** Editor).

The Image Editor (see the IMED chapter in the GALACTICA Basic Softwares - User Manuals) is specially defined to try to solve all your formatting problems and is fully open to the definition of the overlays.

3.1 Automatic action

Fig. 10

Fig. 11
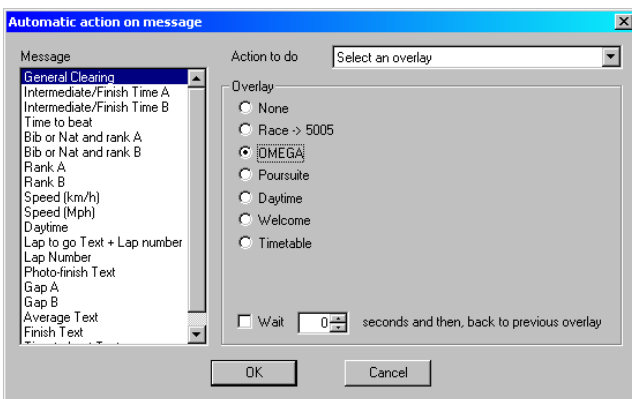
The DHI program offers the possibility to transit to another overlay or to play an overlay sequence on reception of a specific message of the overlay protocol. To set those automatic actions, select *Edit automatic action…* in the **Options** menu. This will display the *Automatic action on message* window (Fig. 10).

In figure 10, when the timekeeping equipment sends a `General Clearing` message, the DHI will automatically switch to the overlay called OMEGA, which could be in an advertising image.
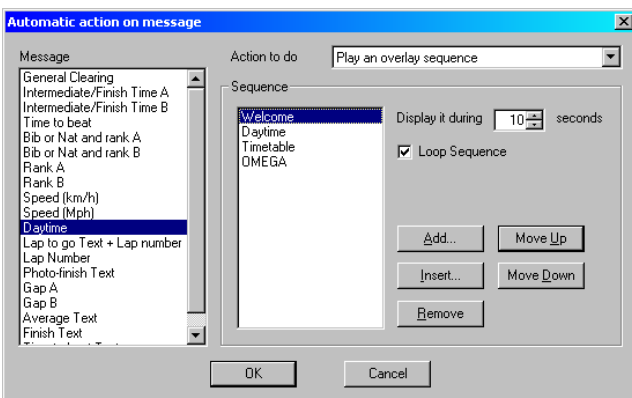
By checking the *Wait xx seconds* check box, the selected overlay will be displayed for `xx` seconds and then the DHI will automatically go back to the previous overlay.

It is also possible to play an overlay sequence on reception of a specific message. When you select *Play an overlay sequence* in the *Action to do* field, the dialog box will show you the sequence to play (Fig. 11).

You can easily add, insert, move or remove overlays in the sequence. For each overlay of the sequence it is possible to set its duration of apparition. And finally it is possible to set the sequence as an infinite sequence by checking the *Loop Sequence* check box.

In figure 11, when the timekeeping equipment sends a `Daytime` message, the DHI will automatically start the overlay sequence which will display in loop and step by step the *Welcome, Daytime, Timetable* and *OMEGA* overlay using the matching duration defined for each overlay.

Those automatic actions are really useful; if their settings are well done, it is not necessary to have an operator on the GALACTICA computer during the competition. By this way, it prevents all wrong display of information on the board and the GALACTICA DHI will be perfectly synchronized with the timekeeping equipment. In a team sport for example, when one of the teams scores, the DHI switches instantaneously to the overlay that will display the word "GOAL" on the full size board.

> **Note**
>
> The *Actions \ Automatic Action* menu enables or disables this feature. It has to be checked to allow the DHI to manage itself the competition.

3.2 Overlay management

In the *Images* menu, all features to manage the overlays are provided. The **Insert** command will ask you to enter a name for the new overlay and then it will start the *Image Editor (IMED)*. The **Edit** popup menu allows you to edit one of the existing images by starting the *IMED* with the selected image. The **Rename** command allows you to change the name of an overlay. The **Change order** command can help sorting the overlays in the *overlays selection bar*. The **Import** command is really useful if you want to have two similar overlays. In Water polo for example, you have an "*In match*" image containing all the match information like teams' name, score, players' name, number and faults, penalties and running time. When a team scores a goal, you can replace the image with the players' name and number by the word "GOAL" (Fig. 12).
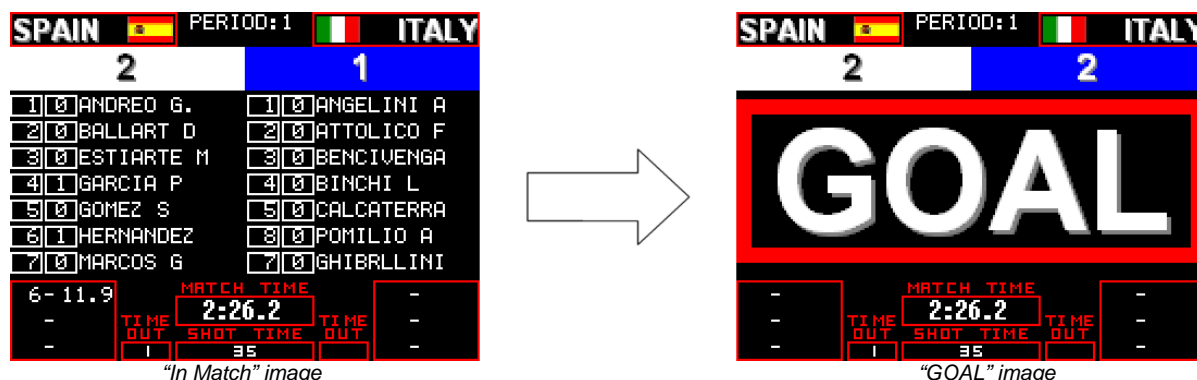

"In Match" image   "GOAL" image

Fig. 12

The easiest way to do that is to use the **Import** function. Imagine that the "*In Match"* image is the second one in the *overlays selection bar*. To prepare the *"GOAL"* image, select **Import** in the *Images* menu: the *Import a Galactica image file* window opens; then you must select `Custom_1.igf` (note that all button images are saved with a name `Custom_XX` where `XX` is a 0 based index of the button position), so in our case `Custom_1.igf` corresponds to the second image in the *overlays selection bar*. This will add a new button called "*In Match"*. Launch the **Rename** function and rename the last image as *"GOAL"*. Then you can edit the *"GOAL"* image using the **Edit** function, and with the IMED, delete all the players' name, number and faults. Finally add a *Free Text* field "GOAL" which covers the players' surface as shown on figure 12. By this way all the other fields like teams' name, score, running time, etc…, stay at the same place.

The **Remove** function removes an overlay in the overlay list and its associated button in the *overlays selection bar*. By security, a copy of the overlay which has been deleted is saved with the file extension `.~gf` in the current sport folder.

Note

If, by accident, you delete an overlay and want to restore it, you can do it by using the **Import** function and by changing the type in the *Import a Galatica image file* window to `Galactica Old Custom Files (*.~gf)`. The deleted overlays will be displayed. Note that if you delete twice the same "button", only the last one will have been saved and will have overwritten the secure copy of the previous one.

The function ***Transition effect for image*** ▶, in the *Images* menu, lets you to define the transition effect that will be used when the image is selected. The result of the effect will only be shown on *View online* in Display Director (DD) when F5 is activate, and the DHI is selected in the DD. Detail and explanation about effect could be found in DD user manual.

4   VIEWING OPTIONS

In the *View* menu, you can select the *Zoom* factor of the preview window between 33% and 300%.

The full screen mode will stretch the preview window with the generated image to the whole screen.
The *Full Screen* command is a toggle, you can switch from one mode to the other just by pressing the **Esc** key. It is strongly recommended not to use this mode in a standard configuration. This option should only be used for a Plasma display installation. When you set the *Full Screen* mode, the cursor is moved out of the screen.

The last available option of this menu is **File list**, which shows or hides the *Receiving files* dialog (c.f. *2.2 The Received files dialog*). This menu should only be used to show this window if a base protocol is set, otherwise it is better to hide this window.

5 BASE PROTOCOLS

5.1 ANSI – OMEGA protocol

The **ANSI - OMEGA** is the main protocol used to send layout. This protocol will acknowledge each received file, extract the filename, decode the ANSI colors sequences and accept the command to select an Overlay and to show/hide the overlay.

Communication protocol

`<SOH>IMAGE_NAME=[Image Name]<CR><LF>[Text]<EOT>`

Image Name

The Image Name is the name used to identify the actual working buffer.
It can be up to 8 characters (DOS format of a filename).

Example: **MLOJF1A** (Long jump men, first round, heat 1, page A).

Text

The text is a sequence of lines of ASCII characters, each one separated by **<CR><LF>**.

Example: `line 1<CR><LF>line 2<CR><LF> ... <CR><LF>last line`

Overlay selection

Index is 0 based. Note that in the GALACTICA OS/2 version, the index was 1 based and maximum was 10.

`<SOH>OVERLAY [0..25]<EOT>`

Example: `<SOH>OVERLAY 3<EOT>`

Overlay ON/OFF

`<SOH>OVERLAY [ON/OFF]<EOT>`

Example: `<SOH>OVERLAY ON<EOT>`

5.2   Swiss Timing Interface - Mode 1

Shows a text

`<SOH><STX><DLE>xxyy[Text]<EOT>`

xx is the column and yy is the line to position the text.

Erase from position xxyy to the end of the line

`<SOH><STX><DLE>xxyy<ERL><EOT>`

Erase the image

`<SOH><STX><ERP><EOT>`

5.3   Control Characters

<SOH>	hex 01	start of header
<EOT>	hex 04	end of text
<CR>	hex 0D	carriage return
<LF>	hex 0A	line feed
<ERL>	hex 0B	erase line
<ERP>	hex 0C	erase page
<STX>	hex 02	start of text
<DLE>	hex 10	data link escape

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GALACTICA

ADVANCED - HOW DOES IT WORK ?

SWISS TIMING

TABLE OF CONTENTS

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1 INTRODUCTION – HOW DOES IT WORK ?

1.1 General

Galactica is a software suite that manages a full matrix display board. Galactica contains background programs that control the hardware that drives the board, and interactive programs to give complete control over the presentation of data and images. The central program is the Display Director, through which all images to be displayed on the board are coordinated.

Sport specific programs can also be added to the suite. These programs are known as 'Makers' as they make an image, often in real time, and sent it to the Display Director to be displayed. An example is the swimming program, which can receive information from the timing system and integrate it with race titles and swimmers names to 'make' a single image on the board.

1.2 The principle

Scoreboard

Scoreboard Interface (SCBI)

Display Controller (DPCT)

Display Director (DD)

Utilities

Window Format Editor (WFED)

Text Editor

Paint Shop Pro

Animation Shop

Maker

Timer

Swimming

Data Handling Interface DHI)
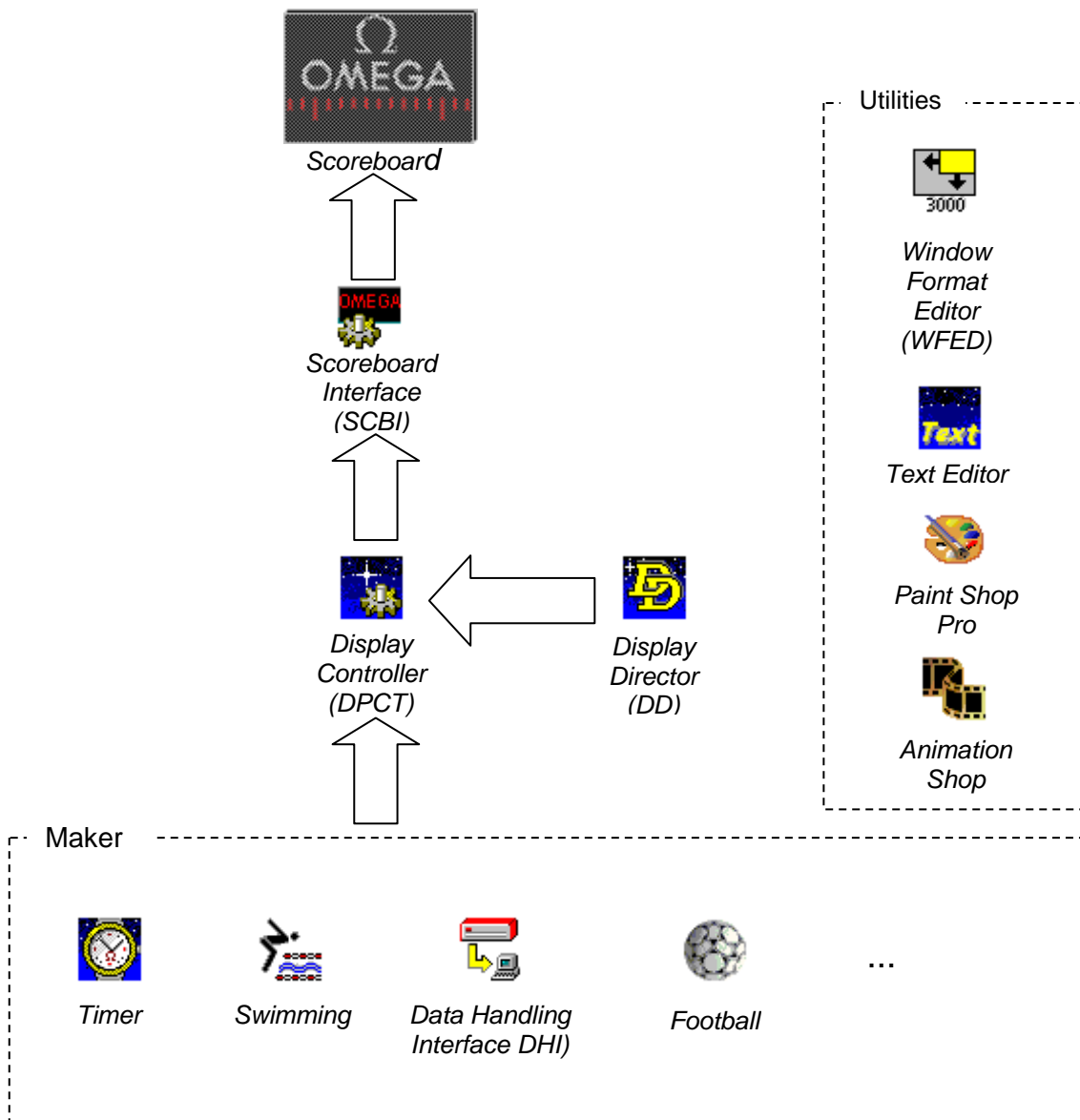
Football

...

Fig. 1

Programs

1.3 Base programs

1.3.1 Display Director (DD)

Display Director is the main program of Galactica. It must be started to send an image to the display board. It is also the main user interface. With it you can select and position images you want to send to the display board (also images built by a *Maker*), add effects to the images, and preview images before displaying them on the board. A powerful recording tool allows the creation of dazzling sequences of images that can easily be configured and left to loop continuously.

1.3.2 Scoreboard Interface (SCBI)

This is normally a background program, receiving images from the DPCT and sending it to the scoreboard.

It can be opened by selecting "Scoreboard settings" through the Display Director menu or toolbar. The functions available in this dialog depend on the type of display board connected. Typically brightness and contrast of the board can be modified from here.

This program will also generate informative error messages if Galactica cannot communicate correctly with the board.

1.3.3 Display Controller (DPCT)

DPCT is a background program, which automatically starts when *Windows* starts. When *Windows* is running you can see the DPCT icon in the "tray bar" (fig. 2).
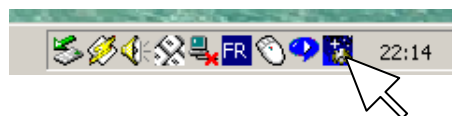

Fig. 2

This program is **the heart** of the system. It has to be running before you start any other program in the Galactica Suite. As shown on figure 1, it is the interface between Makers and DD, and between DD and SCBI.
This program can only work if the correct dongle (hardware key) is plugged into the parallel port or USB of your computer.

1.4 Makers

1.4.1 General

All makers generate .IGF files, those files define the position of each field in an image. Those files are generated by the *Field Parameters Editor, available in the menu* from all of the following makers.

1.4.2 Timer

This program allows you to display daytime and date on the scoreboard. It makes an image (that user can easily edit) that can be displayed by the DD.
With this program it is also possible to display a *countdown.*
If the Galactica computer is connected to DCF receiver, this program will use the correct time coming from the antenna, otherwise the computer date and time will be used.

Warning: If you don't use a DCF receiver, before showing date and time on the scoreboard, be sure that your computer is set at the correct time. The program allows you to set the date and time internally.

1.4.3 Swimming

This program is a specific interface for managing of a swimming event. It can work in automatic mode, receiving names and times from the ARES, or it can manage all the competition with swimmers' names and using only times coming from the ARES system.
The setup files of this program are generally located in `<GALACTICA folder>\PRM\Swimming`. In this folder there is a .PRO file and a .DBE file. Those files define respectively the protocol, and the database entries information. Those files are configured in factory by Swiss Timing Ltd. By default there are already the .IGF files for *the start list (`SW_START LIST.IGF`)*, *the result list (`SW_RESULTS.IGF`)*, *the summary list (`SW_SUMMARY.IGF`)* and *the podium (`SW_PODIUM.IGF`)*. You can add 14 personal images.

1.4.4 Data Handling (DHI)

This program is the general interface for managing all competitions which are managed by an external system like ARES, Scan'O'Vison, PowerTime, MTS, TL5005, etc… This program is based on two files. One .PRO file and one .DBE file. Those files define respectively the protocol, and the database entries information. Those files work really closely together, because the .PRO file describes the data in the protocol, the COM port to connect and where those data have to be saved in database. The database fields are defined by the .DBE file. Database entries are visible in *Field Parameters Editor* when you define a field with data coming from database.

You can use DHI for many sports and many timekeeping systems, so it is strongly recommended to save .PRO, and .DBE files of each sport in separate directories in PRM directory. The menu *Set Files path* allows you to quickly switch sport or configuration by using different sets of .PRO and .DBE files.

If you use both Diving and Water polo for example, we recommend that you create a new shortcut in *Windows Start menu* with each directory path on the command line and a new icon (Fig. 3).

Fig. 3

1.4.5 Football

This program is a specific interface for managing football championships. With it you can follow a whole championship with ranking. You can also display statistics (Goals, Scorers, Ball possession for each team, etc...). Setting files of this program are generally located in `<GALACTICA folder>\PRM\Football`. Team information is generally located in `C:\Football Teams`.

For more information please have a look in the Football user manual.

1.5 Utilities

1.5.1 Window Format Editor (WFED)

This program allows you to define and edit reference formats for Display Director. A Reference format is a group of one ore more windows which can be used to divide the display area into different regions that can be independently controlled. Each window can contain an image, or a maker image, with effects and/or a frame. It generates the .ACT file located in PRM directory.

1.5.2 Text Editor

This editor is useful to create editable images that contain only text information. It generates a .GTX file that the Display Director handles like an image.

Tip: Save your text file in the same directory as your images directory. Generally `<GALACTICA folder>\img`.

1.5.3 Paint Shop Pro

This program is provided with Galactica Suite "Full version", it is a standard graphic editor from graphics experts, JASC. It is really easy to use, and it will be really useful for users who want to convert color images to black and white images, or to resize images, downloaded from the Web for example, to fit the display board size. Further information can be found at www.jasc.com.

1.5.4 Animation Shop

This program is provided with Galactica Suite "Full version"". It is a standard animation editor from graphics experts, JASC. You can edit and create your own .AVI and .GIF animations that can then be used by Galactica Display Director.
Further information can be found at www.jasc.com.

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