

Scan'O'Vision STAR Software



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New functions are indicated with this logo:
(the first software version including this
function is indicated under the NEW)



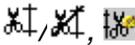
**This manual is based on the Scan'O'Vision *STAR*
software version 01.009.001.048.**

**For the latest information, please check the
ReadMe.txt file delivered with the latest upgrade.**

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1 INTRODUCTION

This manual explains the use of the software for the Scan'O'Vision *STAR*; for a general description of the whole system, please refer to the Main User's Manual of the Scan'O'Vison *STAR* [3434.500 or 3434.505].

This manual is divided in 3 main parts:

- A general description of the software (chapter 2).
- How to use the system, in logical order (chapter 3).
- The description of all the functions (chapter 4).

The software can be configured in different manner in order to block some rules, to do simultaneous judging and to run two instance of the software on the same computer; please refer to chapter 6 for these specific configurations.

All the shortcut and specific mouse function can be found in chapter 9.

1.1 Definitions

Currently, the Scan'O'Vision *STAR* family includes the following models:

- STAR 100*: Black and white camera without matrix alignment (standard).
STAR 110: Colour camera without matrix alignment (compact).
STAR 210: Colour camera with remote control of the focus and aperture, without matrix alignment (compact).
STAR 1000: Colour camera with matrix alignment (standard).
STAR 1010: Colour camera with matrix alignment (compact).
STAR 2000: Colour camera with matrix alignment and remote control of the focus and aperture of the lens (standard).
STAR 2010: Colour camera with matrix alignment and remote control of the focus and aperture of the lens (compact).
STAR 2020: Compact colour camera with matrix alignment and remote control of the focus and aperture of the lens for new lenses (for new lenses with electronic command of the focus).

This manual applies to all models; the following icons are used to indicate differences between models:



This paragraph or chapter does not apply for the Scan'O'Vision *STAR 100*.



This paragraph or chapter does not apply for the Scan'O'Vision *STAR 100*, *STAR 110* nor *STAR210*.



This paragraph or chapter applies solely for the Scan'O'Vision *STAR 100*.



This paragraph or chapter applies solely for the Scan'O'Vision *STAR 1000*, *STAR 1010*, *STAR 2000*, *STAR 2010* and *STAR 2020*.



This paragraph or chapter applies solely for the Scan'O'Vision *STAR 210*, *STAR 2000*, *STAR 2010* and *STAR 2020* (camera with lens control).

The camera is typically supplied with a support permitting the setting of its position according to 4 axes. Here are the definitions used in this manual:

Translation	Horizontal displacement, perpendicular to the finish line.
Pan	Rotation in the horizontal plane.
Tilt	Rotation in the vertical plane, in the axis of the finish line.
Swivel	Rotation in the vertical plane, perpendicular to the finish line (to have the sensor "vertical" in the plan of the finish line).

Other definitions or abbreviations:

BIB	Number identifying a competitor in the start list, used for the judgment.
DQ	Disqualified
DNF	Did Not Finish
DNS	Did Not Start
ID	Identification of a race, a name (maximum 8 characters) used to identify the race on the hard disk of the computer.

1.2 Starting the software

To work with this manual, we are assuming that the installation and Windows configuration have been completed as described in the Scan'O'Vision STAR camera User's Manual (document 3434.500 or 3434.505).

The same Scan'O'Vision *STAR* software can be used with or without a camera connected to the computer. When a camera is not connected to the computer, only viewing and judging images functions are available.

The Scan'O'Vision *STAR* software is started by launching the OSV7.EXE file on your computer or by a shortcut to this file; if a camera is connected, it will be automatically detected.

If the camera was not connected to the computer or not powered when you start the OSV7.EXE software, it is automatically detected later when you connect it or power it.

The camera and the software supports small Ethernet disconnection (<5s); in case of longer disconnection, the software will exit from "Camera Setting" mode and "Acquisition" mode. The corresponding function will again be available after the camera has been reconnected.

1.3 Duration of a race

The maximum duration of a race (time between the start and the last recorded image) is between 24 and 48 hours. In fact the software allows only one "midnight" passage during a race. So if your race starts at 23h00 on day 1, you can record images until 23h59 on day 2 (so about 25h race duration); if your race starts at 1h00 in the morning of day 1, you can record images until 23h59 on day 2 (so about 47h of race duration).

Note: this is not related to the image recording duration. For each race you can record images during at least 3 minutes, this limit increase when you reduce the acquisition speed.

2 SOFTWARE DESCRIPTION

This chapter is a short description of the design and the main part of the software.

2.1 Main screen

The screen is divided in different parts:



1. Race title
2. Menu
3. Mode selection
4. Main window
5. Function window
6. Zoom window
7. Thumbnail window
8. Status bar

The different windows are separated by splitters. The position of splitters can be moved to resize the windows. There are limits in place to ensure usability.



- A. Main splitter
- B. Zoom splitter
- C. Thumbnail splitter

2.2 Race title

When a race is open or in progress, the ID and the title of the race are displayed.

2.3 Menu

The menu of the software allows you to access the functions. Typically it is not used, the icons and tabs in the function window being the preferred option.

2.4 Mode selection

The selection of a mode is done by clicking on an icon of this tool bar:

	Configuration mode	For example, to select the kind of contact you have on the Start and Finish input.
	Race mode	To visualize the races (without judgment) and record new races.
	Acquisition mode	The acquisition mode is a sub-mode of the race mode. It is used to record the image and is accessible by pressing the  icon.
	Judgment mode	To judge existing races.
	Camera setting mode	To set and align the camera on the finish line. Two sub-modes exist: <ul style="list-style-type: none">○ line scan mode (same image as during the acquisition).○ matrix mode  (video image to easily align the camera on the finish line).
	I/O setting mode	To configure and command some peripherals such as DH, scoreboards and wind meters.
	Enable thumbnail (Shortcut : F9)	After clicking on this button, the thumbnail is displayed in the bottom of the screen.
	Disable thumbnail (Shortcut : Shift + F9)	After clicking on this button, the thumbnail is no more displayed, allowing more height to display the main image and the zoom.
	Full screen mode (Shortcut : F10)	To display the image in full screen (for TV transmission or camera setting for example); press the "Esc" key to exit this mode.
	Web mode (Shortcut : Ctrl + W)	To display the image in 800x600 resolution (for publishing low resolution images on the web for example); press the "Esc" key to exit this mode.



The tool bar can be moved to be placed at your favourite position.

2.5 Main window

This window shows the image section selected as red in the thumbnail window. Due to the high definition of the camera, not all the pixels can be shown in this window. You can also use the zoom window during judgment. The zoom displays the content of the green rectangle of the main window. You can move the green rectangle by doing a "right-click and drag" on it.

- ❖ In judgment mode, a results window is added in the upper part of the main window.
- ❖ In camera setting mode, this window shows the online image from the camera.
- ❖ In acquisition mode, this window shows the time and the status of the race.

2.6 Function window

This window changes for each mode. Generally it displays the different settings corresponding to the mode.

- ❖ In acquisition mode this window is used to display the events of the race.

2.7 Zoom window

This window mainly displays the image in the green rectangle of the main window at full resolution, or with some selectable zoom. As only this window displays all the pixels, it is very important to use it for the judgment (by placing the time marks exactly in reference to this view).

To change what is displayed in the zoom window, you have to move the green rectangle in the main window:

- Place the mouse cursor in the green rectangle.
- Press and hold the right button of the mouse.
- Move the mouse to drag the green rectangle to the required location.
- Release the right mouse button and the image is updated in the zoom window.

When you are in judgment mode and you are placing a time mark, the zoom window automatically follows the movement of the time mark.

You can zoom in by clicking on the  icon (on the left side of the zoom window) or by "Ctrl" + "mouse wheel up". You can zoom out by clicking on the  icon or by "Ctrl" + "mouse wheel down".



When *Active Link* or *Active Link+* is enabled, you can switch the zoom view between the one of your instance or the one of the other instance with Ctrl + 1 or by clicking on the  button. The other instance zoom view can be flipped horizontally with Ctrl + 2 or by clicking on the  button.

These two functions are mainly used when you are judging main and infield images on a single screen computer. If the zoom window size of the other instance is smaller than the selected instance, white will be displayed at the right and bottom of the zoom image. See also chapters [4.4.8](#) and [4.9.5](#).

- ❖ In acquisition mode, the zoom window is used to display the keyboard functions.
- ❖ In camera setting mode, the zoom window can display a zoom of the main window or a diagram to help with the camera setting.

2.8 Thumbnail window

This window, not present in camera setting mode or if disabled with  (see chapter [2.4](#)), displays a miniature of the race. Below the image, a horizontal scroll line is displayed with some divisions, grey, blue and red sectors.

A red rectangle in the thumbnail represents the section of the image displayed in the main window; to move it you have to "drag and drop" the red part of the horizontal scroll line or "drag and drop" the red rectangle (when it is on the side of the screen, the thumbnail is automatically scrolled). You can also move this red rectangle with "Ctrl" + "←" and "Ctrl" + "→" (movement of one block) or with "Ctrl" + "Shift" + "←" and "Ctrl" + "Shift" + "→" (movement of half screen). You

can also click in the thumbnail to place the red rectangle at this place or do a "drag and drop" of the red rectangle. When the focus is on the image, the mouse wheel also allows moving this red rectangle.

For very long images, only a part of the thumbnail can be displayed on the screen; it is represented by the blue sector on the horizontal scroll line. To move it you have to "drag and drop" the blue sector of the horizontal scroll line.

- ❖ In acquisition mode, the thumbnail cannot be moved, but an online image is always displayed. It enables you to adjust some camera settings during the race and to visualise what is recorded.

Depending on the settings, on top of the thumbnail, a scale allows the selection of image blocks to delete (crop, see chapter [4.9.1](#) for more detail).

2.9 Status bar

The status bar at the bottom of the screen contains some important information:



	Designation	Description
A	Time of day	Time of day of the camera (only if a camera is connected).
B	Zoom camera setting	 Green if the zoom is activated in camera setting mode.  Greyed if the zoom is not activated in camera setting mode.
C	Instance #	 For the first instance of the software (standard).  For the second instance of the software. See chapter 6.
D	Inclinometer	It indicates the same thing as the two yellow LEDs at the back of the camera (see the Scan'O'Vision STAR camera user's manual):  Vertical green line if the orientation level of the camera is correct (the sensor is vertical).  Red line when the sensor is not vertical.  Greyed when no camera connected.
E	Automatic light adjustment	 Green if the automatic light adjustment is enabled and is working well.  Red if the automatic light adjustment is enabled but has a problem due to the image content in the defined reference zone.  Greyed if the automatic light adjustment is disabled (see also chapter 4.5.6).
F	Light correction	 Green if the light correction is enabled and is working well.  Red if the light correction is enabled but has a problem due to the image content in the defined reference zone.  Greyed if the light correction is disabled (see also chapter 4.5.5).
G	Camera connection	 Green if a camera is connected.  Greyed when no camera connected.
H	Camera Network speed	Green if the speed is ≥ 1 Gbs Blinking red when the speed is < 1 Gbs Greyed when no camera connected
I	Battery level	 Green when camera works on battery and the battery voltage is OK.  Red when the camera works on battery and the battery voltage is low. A "bip" sound is emitted by the camera and by the computer; if the external power is not reconnected, the camera will automatically switch off within 5 to 10 minutes.  Greyed when external power is connected or no camera connected.
J	External power	 Green when the external power is connected.  Red when the camera works on its internal battery.  Greyed when the internal battery is not used.
K	Mirror Link	Blue when Mirror Link is enabled (specific function not documented) Greyed when Mirror Link is disabled



3 USE OF THE SOFTWARE

This chapter explains how to use the software, in logical order. It will only explain the basic functions; for all details, please refer to chapter 4.

If no camera is connected to the computer (judging computer), after the chapter 3.1, you can directly pass to the chapter 3.6.

3.1 Language selection

Selection with the "Language" menu changes the fixed text, menus and buttons to your preferred language. See also chapter 7.

3.2 Camera setting and alignment

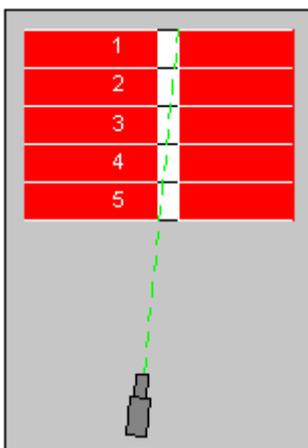
3.2.1 First adjustment

- Enter in the camera setting mode by pressing the  icon or with the "Ctrl" + "J" shortcut.
- The camera image will scroll in the main window (line scan mode). If the video image is displayed (matrix mode), press the  icon.
- If the  icon is displayed, press it to display the  icon instead (to disable the automatic reduction of light flickering).
- If the  icon is displayed, press it to display the  icon instead (to disable the automatic light adjustment).
- Select the " Camera setup" tab.
- Select the "Direction" in which the competitor passes in front of the camera (from right to left or from left to right).
- Select the speed according to the sport you are timing. Keep the "Exposure time" as its default value.
- Open the aperture of the camera lens (set the smallest number possible for the current light conditions).
- Move the "Contrast" scroll bar to have an image (black & white). If the scroll bar is too much to the right, you can increase the factor (x1 → x2 → x4) to have less noise in the image. If the scroll bar is fully to the left, you can decrease the factor (x4 → x2 → x1).
- Move the "Colour contrast" scroll bar to have the correct intensity of colour in the image. If the scroll bar is too far to the right, you can increase the factor (x1 → x2 → x4) to have less noise in the image. If the scroll bar is fully to the left, you can decrease the factor (x4 → x2 → x1). **Warning: if you set too much colour, the colours can become erroneous.**
- Enter "5" for the "Stability number".
- Press the  icon to enable the automatic light adjustment.
- Press the  icon to display the matrix image. If needed, change the "Exposure time" to get a correct image.

- On the camera lens, turn the focus ring to get a sharp image.
- Place a large white surface in the camera target area, or turn the camera support to point to a white surface.
- If the image is too light, decrease the "*Exposure time*"; if the image is too dark, increase the "*Exposure time*".
- Select the " *Image quality*" tab, then the "*Automatic*" radio button and finally the "*Apply*" button to calibrate the colour balance.

3.2.2 Camera alignment

The most important setup before timing with photofinish is to correctly align the camera on the finish line. If the camera is not perfectly aligned, the results may be wrong. In the athletic sample below, the competitor in lane 5 will be favoured in relation to the competitor in lane 1



Alignment error

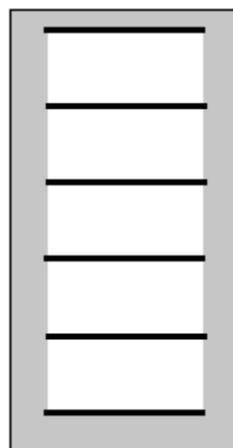
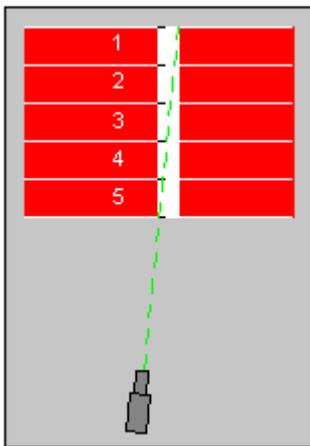


photo seems OK

For a finish line of 5cm wide (athletics) and a speed of 36km/h (10 m/s) the error will be 5 thousandths of a second. When the speed decreases (long distance races), the time error increases.



When you are looking at photofinish, you cannot see the error alignment (the finish line is white and you have the black lines for the lane separation). This is the reason why we recommend a white finish line of 5cm (according to the IAAF rules) but setting black tape for the lane separation only in the two first centimetres of the line. With a good camera like the Scan'O'Vision STAR you will have no problem correctly aligning on these two centimetres even if



Alignment error

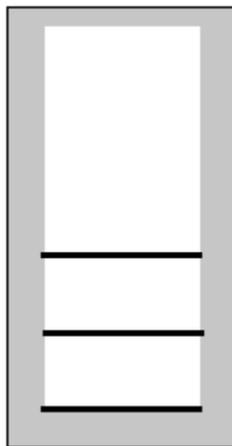
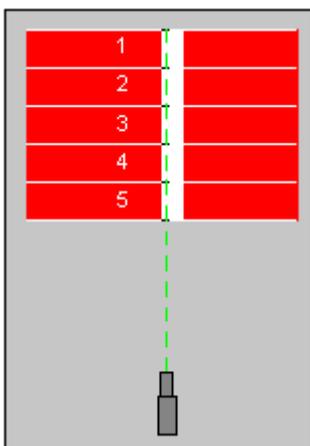


photo is not OK

the camera is far away from the track (in the top of the stand).

Here you can see on your photofinish that the camera is not aligned. Lanes 4 and 5 seem OK but not the others.



Alignment correct

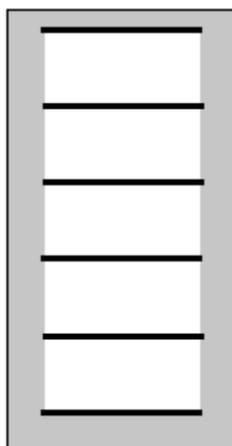
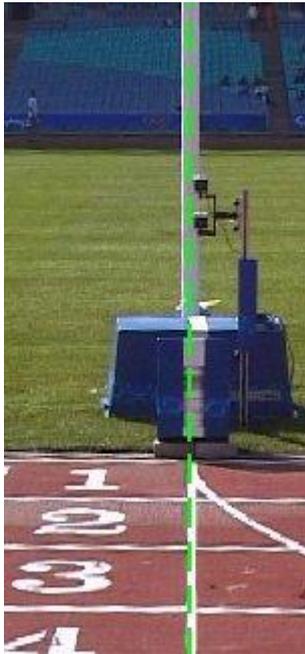


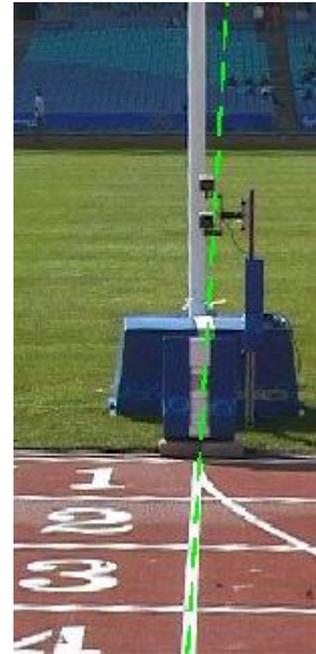
photo is OK

All the competitors will be judged correctly.



The camera must be aligned in the plane of the finish line (three dimensional). That means, if you have a vertical pole on your finish line, you must see it top to bottom.

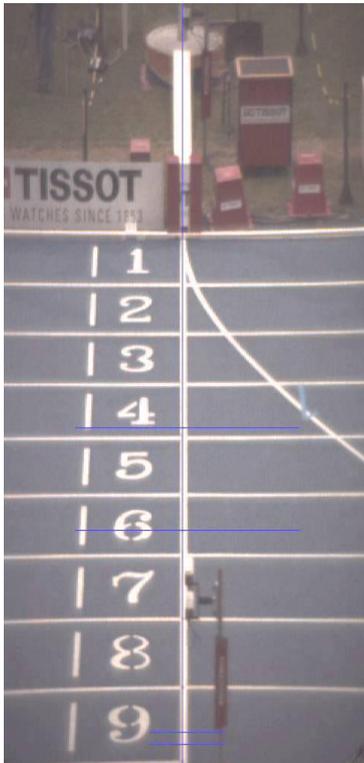
You can see in the sample on the right that we can align the camera on the finish line (on the ground) without being on the finish plane. **THIS IS WRONG.** The vertical pole on the finish line must be seen on the photofinish. The only way to have it is to have the sensor perfectly vertical and exactly on the continuation of the finish line.



Correct alignment of the camera
 Wrong alignment of the camera

STAR 1x0

In the camera setting matrix mode, the goal is to superimpose the vertical line onto the finish line while the sensor is perfectly vertical.



- Swivel the camera to set the sensor vertical. The sensor is perfectly vertical when the two yellow LEDs are ON at the rear of the camera. When the sensor is not vertical, the yellow LED blinks on the side where the camera is too high. The faster the LED blinks, the closer the sensor is to vertical.
- Pan the camera to be near the finish line.
- If needed, tilt the camera and adjust the zoom to frame perfectly the finish line making allowance for the tallest objective at the furthest point (e.g. an athlete).
- The final alignment is done by doing three movements until the camera is perfectly aligned on the finish line and the sensor is vertical:
 - Translation
 - Swivel
 - Pan
- To control the alignment, pass in line scan mode by pressing the icon, the image must be completely of the colour of the finish line (except for the background beyond the finish line).

3.2.3 Final adjustment

In the camera setting line scan mode:

- You can use the  icon to activate the zoom to help adjust the sharpness (see 4.5.3). The content of the zoom is selected by the green rectangle of the main window; it can be moved, vertically only, by doing a "right click and drag" on it. Click the  icon to stop the zoom.
- You can also use the red and green vertical bar graph in the zoom window to help the sharpness adjustment (see 4.5.8).
- Select the " Camera setup" tab.
- Press the  icon to disable the automatic light adjustment.
- Move the "Contrast" and "Colour contrast" to get the optimum image quality.
- The image can be fixed (paused) for analysis by pressing the  icon. Press the  icon if you want the online image again.
- If you are doing an outdoor competition during the day and you have white and black parts on the finish line, press the  icon to enable the automatic light adjustment; that will correct the contrast when clouds pass in front of the sun. If you are doing indoor or night competition, it is recommended to leave the automatic light adjustment disabled; in this case you have to adjust the contrast when you are changing the acquisition speed.

3.3 Synchronisation and configuration of the system

- Click the  icon to go in the configuration mode. In the "Hardware setup" tab, select the kind of contact (normally open or normally closed) according to the start and finish devices you have connected to the camera.
- Click the  icon to go in the race mode.
- Select the test function by clicking the  icon:
 - If a start transducer is connected to the start, its ready LED can be tested by using the F2 key.
 - On the screen, the green start indicator must be off and must blink during a start impulse. If not, the start is not correctly connected or the kind of the start contact is wrong in the configuration.
 - On the screen, the green finish indicator must be off and must blink during a finish impulse. If not, the finish is not correctly connected or the kind of the finish contact is wrong in the configuration.
 - Press the "Esc" key to exit this function.
- Select the synchronisation function by clicking the  icon. If synchronisation of the camera has already occurred since power on, the  bitmap is displayed in the function window; if not, the  bitmap is displayed.

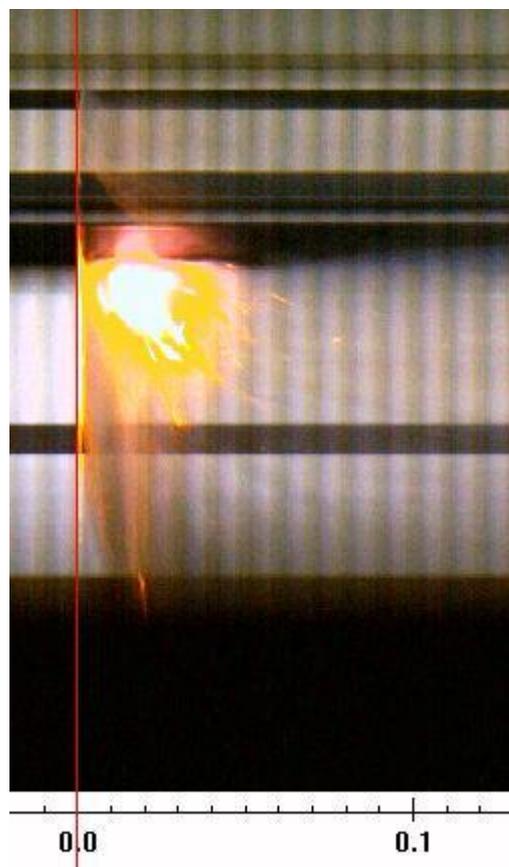
- To do a synchronisation:
 - Enter the time of the synchronisation (time of the next start pulse in the format hh:mm:ss.dcmx, for example "14:15:00.0000") in the edit box and validate it by pressing the "Enter" key.
 - Arm the start by pressing the "F3" key.
 - At the entered time, give a start impulse or manually press the "F4" key.
 - The  bitmap will be displayed on the function window and the camera is now synchronised.
 - The time of day of the camera is always displayed in the status bar.
 - Press the "Esc" key to exit this function.

3.4 Zero test

A good test is the "zero test". This test (mandatory before each athletics session according to the IAAF rules) consists of setting the starting device (gun with transducer) on the finish line and recording the image when a start is given. On the photofinish you must see the flame of the gun shot corresponding to the 0.000 ± 0.001 s in the time scale. It proves that your system is working correctly, without delay, and the camera is shooting on the finish line.

To do this test with the OSV-STAR, set the highest possible speed in the "Camera setting", enter in a new race, arm the start (with the F3 key) and start recording manually the image (with the F5 key) just before the gun shot. Then exit the race, go in the judgment, set the precision to the 1/10000s in the Preferences tab and judge on the first pixel of the flame.

Photofinish of a zero test 



3.5 Recording a race

In the race mode:

- a) Select the  "Existing races" tab, click on the "..." button and select a folder on your hard disk where the races will be recorded.
 - b) Click on  (New race icon).
 - c) Select the  "Header" tab and select your sport, if it is not listed, choose "Athletics".
 - d) Select the  "Units / Rules" tab and select the rules (rounding and in case of manual start) according to the regulations of the sport you are timing.
 - e) Select the  "Preferences 1" tab and choose "finish contact" for the "Image recording with".
 - f) Select the  "Preferences 2" tab and choose if the arming will be automatic or manual for the start and the finish.
 - g) Select the  "Parameters" tab.
 - h) If needed, enter the data for the race (title, location, sponsor, ID, length).
 - i) If needed, enter the start list. Use  (clear start list button) to clear the start list.
 - j) Click on the  icon to memorize your settings (will be used for the next races).
 - k) Click on the  icon to enter acquisition mode, and record the race:
 - When you are ready to receive the start, press the "F3" key to arm the start^{*1}.
 - Wait for the start impulse or manually start the race with the "F4" key.
 - In the case of a false start, press the "F2" key to go back to the armed status.
 - Before the first athlete arrives at the finish line, press the "F7" key to arm the finish^{*1}.
 - Each time a finish impulse is received, the corresponding image will be recorded. If there is no photocell on the finish line connected to the finish of the camera, you can connect a pushbutton and press it each time that it is necessary to record the picture^{*2}.
 - At any time (even before the start) you can start or stop the recording of images with the "F5" key.
 - At any time (even during recording of an image) you can modify the contrast , colour contrast  or acquisition speed. The contrast  and colour contrast  can be modified simultaneously using the ← and → keys. The acquisition speed can be modified using the ↑ and ↓ keys.
 - Press the "Esc" key and answer "Yes" to exit the acquisition mode.
- ^{*1}: this function may not be available depending on the configuration selected in **f**).
- ^{*2}: this function may not be available depending on the configuration selected in **e**).

To record other races, just click on  (New race icon) and continue from the point **g**) above.

3.6 Judging a race

If you exit from the acquisition mode and have recorded anything, an image is displayed. In any other case, you will first have to open a race:

- Active the " Existing races" tab.
- If requested, change the folder where the race you want to judge is by clicking on the "... " button and select the folder on your hard disk.
- In the race list, click on the line corresponding to the race you want to open and click on the  icon to open it. You can also double-click on the line corresponding to the race.

Select the judgment mode with the  icon, then you can make the judgment:

- Press (and hold) the left mouse button in the main window, you can move the mouse cursor to place the time mark at the correct location according to the rules of the sport (on the wheel, the nose, the skate, ...). The zoom window content follows the position of the mouse cursor.
- Release the left mouse button when the time mark is approximately at the correct location, the "*Identification*" tab is automatically selected.
- Adjust exactly the position of the time mark by using the left and right arrow keys of the keyboard and looking in the zoom window.
- Enter the bib and/or the lane number in the function window, or use the top and bottom arrow keys or the mouse wheel to choose the bib and the lane number in the start list.
- Validate the bib, lane and time mark position by pressing the "*Enter*" key or clicking the "*Validate*" button or cancel it by pressing the "*Esc*" key or clicking on the "*Cancel*" button.
- To delete a time mark, double-click on the corresponding line in the classification window and confirm the action. You can also right-click on the corresponding line in the classification window and select "*Delete selected result*".

Repeat these operations for each competitor to judge. You can change the image displayed in the main window by moving the red bar in the thumbnail window.

You can assign a status as DNS, DNF, DQ to a competitor in the start list who has no time:

- Select (by clicking) the competitor in the classification window, the "*Identification*" tab is automatically selected.
- Select the status in the function window.

If needed, the precision of the results can be modified in the " *Precision*" tab.

If an image or part of the image is too dark (shadow on a part of the finish line), the " *Palette*" tab can be used to modify the image appearance. You can, at any time, go back to the original image by selecting the Palette curve to 1.

4 FUNCTIONS DESCRIPTION

This chapter explains all the functions of the software.

4.1 Configuration mode

In this mode, only the function window is visible (and fill all the screen).

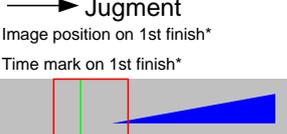
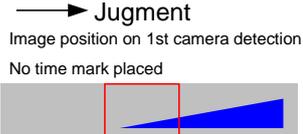
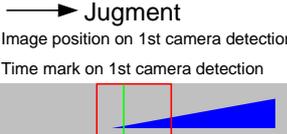
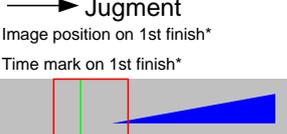
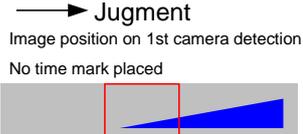
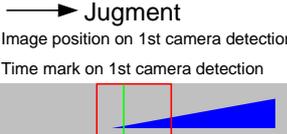
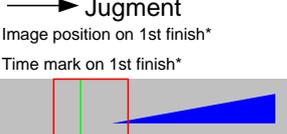
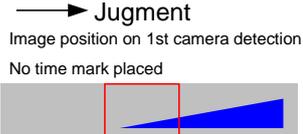
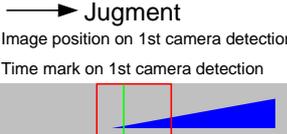
4.1.1 Hardware setup tab

In this tab, you can select the kind of contact you have for the start and the finish connection: "Normally Closed" or "Normally Open". Please refer to the manual of your start and finish sensors and set the same parameter as described. You can then verify the correct connection with the test function (see [4.2.10](#)).

In this tab you can also choose if the "not armed" pulses will be displayed or not in the function window during the acquisition mode: check the box to display the "not armed" pulses. This setting can be made independently for start and finish inputs.

4.1.2 Software setup tab

In this tab you can select some software parameters:

X/Y display ratio	Horizontal zoom factor to display the image (x1, x2, x3 or x4). x2 is the recommended value for athletics; x3 is the recommended value for cycling and horse races.											
Scrolling identification order by ...	Select which can of scrolling you want to use during the identification of a time mark in the judgment mode. The scrolling can be done with the ↑ and ↓ keys of the keyboard or with the mouse wheel and the order can be: by lanes (0 to 99), by Bibs (0 to 99999) or by start list (competitors contained in the start list).											
Automatic cursor at finish time	When one of these boxes is checked, when exiting the acquisition mode, the software will directly pass in judgment mode, show the requested image and eventually place a time mark. The time marks can then be adjusted with the ← and → keys, identified and validated.											
View 1 st camera detection	<div style="display: flex; align-items: center;">  <table border="1" style="border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Automatic cursor at finish time</th> </tr> <tr> <th style="width: 50px;"></th> <th style="text-align: center;"><input type="checkbox"/></th> <th style="text-align: center;"><input checked="" type="checkbox"/></th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: middle;">View 1st camera detection <input type="checkbox"/></td> <td style="text-align: center; vertical-align: middle;">  Judgment </td> <td style="text-align: center; vertical-align: middle;">  Judgment Image position on 1st finish* Time mark on 1st finish* </td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">View 1st camera detection <input checked="" type="checkbox"/></td> <td style="text-align: center; vertical-align: middle;">  Judgment Image position on 1st camera detection No time mark placed </td> <td style="text-align: center; vertical-align: middle;">  Judgment Image position on 1st camera detection Time mark on 1st camera detection </td> </tr> </tbody> </table> </div> <p style="font-size: small; margin-top: 5px;">*: Armed finish impulse, Trig start (F8) or camera detection.</p> <p>“View 1st camera detection” will only works if “camera detection” or “finish contact or camera detection” is selected in “Preferences 1” of the Race mode (see 4.2.18).</p>	Automatic cursor at finish time			<input type="checkbox"/>	<input checked="" type="checkbox"/>	View 1 st camera detection <input type="checkbox"/>	 Judgment	 Judgment Image position on 1st finish* Time mark on 1st finish*	View 1 st camera detection <input checked="" type="checkbox"/>	 Judgment Image position on 1st camera detection No time mark placed	 Judgment Image position on 1st camera detection Time mark on 1st camera detection
Automatic cursor at finish time												
	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
View 1 st camera detection <input type="checkbox"/>	 Judgment	 Judgment Image position on 1st finish* Time mark on 1st finish*										
View 1 st camera detection <input checked="" type="checkbox"/>	 Judgment Image position on 1st camera detection No time mark placed	 Judgment Image position on 1st camera detection Time mark on 1st camera detection										

<p>Display in the results window</p>	<p>The check boxes in this frame allow you to decide which columns are displayed in the results window (judgment mode)</p> <table border="1"> <tr> <td data-bbox="485 277 847 331">Lane number</td> <td data-bbox="847 277 1398 331">Lane number of the competitor (from the start list or to be introduced during judgment).</td> </tr> <tr> <td data-bbox="485 331 847 405">Bib number</td> <td data-bbox="847 331 1398 405">Bib number of the competitor (from the start list or to be introduced during judgment). Replaced by the "Handicap" when the "Horse racing" mode is selected.</td> </tr> <tr> <td data-bbox="485 405 847 432">Competitor first name</td> <td data-bbox="847 405 1398 432">First name of the competitor (from the start list).</td> </tr> <tr> <td data-bbox="485 432 847 459">Competitor family name</td> <td data-bbox="847 432 1398 459">Family name of the competitor (from the start list).</td> </tr> <tr> <td data-bbox="485 459 847 486">Competitor nation / club</td> <td data-bbox="847 459 1398 486">Nation or club of the competitor (from the start list).</td> </tr> <tr> <td data-bbox="485 486 847 535">Concatenation</td> <td data-bbox="847 486 1398 535">Automatically made from the first name, the family name and the first three letters of the nation /club.</td> </tr> <tr> <td data-bbox="485 535 847 562">Time</td> <td data-bbox="847 535 1398 562">Finish time of the competitor (from judgment) ^{*1}.</td> </tr> <tr> <td data-bbox="485 562 847 636">Reaction time</td> <td data-bbox="847 562 1398 636">Reaction time for some athletics races. To be introduced or comes automatically by a serial line from the False Start Detection System.</td> </tr> <tr> <td data-bbox="485 636 847 685">Time difference from winner</td> <td data-bbox="847 636 1398 685">Delta_time 1 is the time difference from the winner (automatically computed ^{*1}).</td> </tr> <tr> <td data-bbox="485 685 847 734">Time difference from previous</td> <td data-bbox="847 685 1398 734">Delta_time 2 is the time difference from the previous competitor (automatically computed ^{*1}).</td> </tr> <tr> <td data-bbox="485 734 847 831">Distance from winner</td> <td data-bbox="847 734 1398 831">DeltaD1 is the approximate distance between the competitor and the winner on the finish line (times of competitors and race length are involved in the calculation) ^{*2}.</td> </tr> <tr> <td data-bbox="485 831 847 927">Distance from previous competitor</td> <td data-bbox="847 831 1398 927">Delta D2 is the approximate distance between the competitor and the previous competitor on the finish line (times of competitors and race length are involved in the calculation) ^{*2}.</td> </tr> <tr> <td data-bbox="485 927 847 1099">Distances listbox</td> <td data-bbox="847 927 1398 1099">Possibility to give the distance from the previous competitor and from the first competitor in horse length instead of cm or inch. The conversion is done using the selected table (used for dog and horse races). This listbox only appears if the sport selected is "Horse racing". See also chapter 4.2.15 and 4.9.3.</td> </tr> <tr> <td data-bbox="485 1099 847 1173">Average speed</td> <td data-bbox="847 1099 1398 1173">Speed is the average speed of the competitor (competitor time and race length are involved in the calculation) ^{*2}.</td> </tr> <tr> <td data-bbox="485 1173 847 1247">Kilometric reduction</td> <td data-bbox="847 1173 1398 1247">Time to do one kilometre (used for trotting races). This check box only appears if the sport selected is "Horse racing". See also chapter 4.2.15 and 4.9.4.</td> </tr> <tr> <td data-bbox="485 1247 847 1299">All competitors from the start list</td> <td data-bbox="847 1247 1398 1299">If this box is not checked, only competitors with a time appear in the results list.</td> </tr> </table> <p>^{*1}: the display precision for these results is selected in the "<input type="text" value="0.1"/> Precision" tab of the judgment mode and can be different for time and time difference.</p> <p>^{*2}: the unit of these results depends of the choice made in the "<input type="text" value="0.1"/> Units / Rules" tab of the race mode.</p> <p>Remark: the rank will always be displayed.</p>	Lane number	Lane number of the competitor (from the start list or to be introduced during judgment).	Bib number	Bib number of the competitor (from the start list or to be introduced during judgment). Replaced by the "Handicap" when the "Horse racing" mode is selected.	Competitor first name	First name of the competitor (from the start list).	Competitor family name	Family name of the competitor (from the start list).	Competitor nation / club	Nation or club of the competitor (from the start list).	Concatenation	Automatically made from the first name, the family name and the first three letters of the nation /club.	Time	Finish time of the competitor (from judgment) ^{*1} .	Reaction time	Reaction time for some athletics races. To be introduced or comes automatically by a serial line from the False Start Detection System.	Time difference from winner	Delta_time 1 is the time difference from the winner (automatically computed ^{*1}).	Time difference from previous	Delta_time 2 is the time difference from the previous competitor (automatically computed ^{*1}).	Distance from winner	DeltaD1 is the approximate distance between the competitor and the winner on the finish line (times of competitors and race length are involved in the calculation) ^{*2} .	Distance from previous competitor	Delta D2 is the approximate distance between the competitor and the previous competitor on the finish line (times of competitors and race length are involved in the calculation) ^{*2} .	Distances listbox	Possibility to give the distance from the previous competitor and from the first competitor in horse length instead of cm or inch. The conversion is done using the selected table (used for dog and horse races). This listbox only appears if the sport selected is "Horse racing". See also chapter 4.2.15 and 4.9.3.	Average speed	Speed is the average speed of the competitor (competitor time and race length are involved in the calculation) ^{*2} .	Kilometric reduction	Time to do one kilometre (used for trotting races). This check box only appears if the sport selected is "Horse racing". See also chapter 4.2.15 and 4.9.4.	All competitors from the start list	If this box is not checked, only competitors with a time appear in the results list.
Lane number	Lane number of the competitor (from the start list or to be introduced during judgment).																																
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Reaction time	Reaction time for some athletics races. To be introduced or comes automatically by a serial line from the False Start Detection System.																																
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Time difference from previous	Delta_time 2 is the time difference from the previous competitor (automatically computed ^{*1}).																																
Distance from winner	DeltaD1 is the approximate distance between the competitor and the winner on the finish line (times of competitors and race length are involved in the calculation) ^{*2} .																																
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All competitors from the start list	If this box is not checked, only competitors with a time appear in the results list.																																
Crop enable	When checked, cropping images is allowed. You must have judging authorization to be able to crop images. See also 4.9.1.																																
Type: Automatic	When checked, semi-automatic crop is allowed. To check/see this box, "Crop enable" must be checked. See also 4.9.1.																																
Crop sensitivity	Select the sensitivity of the automatic crop selection. Higher the sensitivity is, smaller the size of the detected object (less image crop). See also 4.9.1.																																
Terminology	This frame is used to change the text for the different possible status of the competitors. These texts appear in the Identification tab (see 4.4.22) and in the results (printed & on the screen).																																
Full screen template	Selection of a custom template added over the image in full screen mode. Possibility to choose a different template for races with lane numbering and without lane numbering. See also 4.7.																																
Classification Files Setting	If the "Copy Classification files" box is checked, at the end of the judgment, the classification file (race ID with .cl extension) is also written in the specified directory (selectable by using the "... " button). In any case, the classification file is always up-to-date in the race directory.																																
Logo settings	This frame indicates the logo selected and their properties (repeated and or transparent). To select or change the logo, click on the "Choose logo" button; that's open a window where you can select one of the logo contains in the																																

	<p>"logo" sub-directory (generally C:\OSV-STAR\logo). You can add your own logos in this directory; they must be in bitmap format (.bmp). In this window, if you check the "Repeat" box, the logo will be horizontally repeated over the whole length of the image; if you check the "Transparent" box, the selected colour of the logo will be displayed as transparent.</p> <p>Please refer to chapter 4.9.6 to know how to place the logo over the image.</p>
<p>WEB export screen template</p> 	<p>Selection of a custom template added over the image in web mode. Possibility to choose a different template for races with lane numbering and without lane numbering.</p> <p>Possibility to choose if the time marks are displayed or not.</p> <p>See also 4.8.</p>
<p>Advanced competition</p> 	<p>"Use double race folder" not checked is the standard mode and provide you a single race folder in "Race mode" and in "Judgment mode".</p> <p>When "Use race folder" is checked, you can define two working folders in "Race mode" or "Judgment mode" and quickly change from one to the other by one click. This can be used to switch between a test folder and a competition folder in acquisition, or between main camera races and infield camera races in judgment.</p>

4.1.3 **Print setup tab**

This tab is used to select the information to be printed, two print modes are available:

Normal: *This mode is **not recommended** if you want to print the image*

In this mode some information is printed on top of the page, the image is printed in the middle of the page and the results are printed below the image; so all the race information can be printed on the same page.

You can choose which data is to be printed by checking the corresponding field. For the classification, the same columns as on the results window of the judgment mode are printed.

The print can be done in Portrait or Landscape mode.

Template: *This mode is **recommended** if you want to print the image*

In this mode the image and results are printed following a customizable template, so almost any configuration can be printed.

"Template 1" and "Template 2" allow you to select the template to be used when printing. The templates must be located in the \OSV-STAR\Template sub-directory.

The maximum number of result's lines printed can be selected with the "Number of printed bibs" (to ensure it will not overflow the template). If this field is empty, the whole results will be printed (if it fits on the template ...).

If "Print judgment cursor" is not checked, the time marks will not be printed over the image.

If "Without time scale" is checked, the image will be printed without time scale.

To modify an existing template or create your own template, you have to use the TemplatePrint.exe software.

Please refer to the TemplatePrint user manual for more details (file 3434.504.02.pdf in the \OSV-STAR\Documentation sub-directory).

If you create a new template, the OSV-STAR software has to be restarted to show this template in the list. A modification of the active template (when

saved in the TemplatePrint software) is directly used for the next print, without needing to restart the OSV-STAR software.

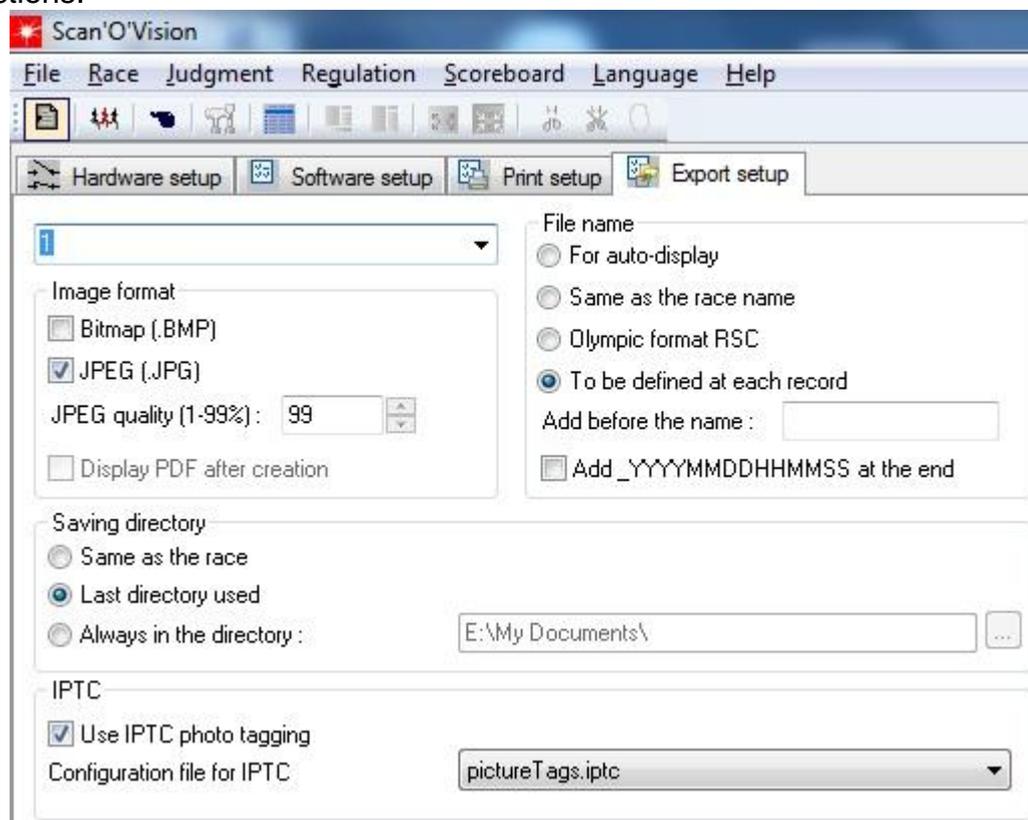
Some shortcuts exist to print directly what you want:

“Ctrl” + “P”	Print using the selected mode (normal or template 1). In full screen mode it will print a copy of the screen.
“Ctrl” + “Alt” + “P”	Always print using the normal mode.
“Ctrl” + “Shift” + “P”	Always print using the template 1.
“Ctrl” + “Z”	Always print using the template 2.
“Ctrl” + “D”	Generate a PDF file using the template 1.
“Ctrl” + “Shift” + “D”	Generate a PDF file using the template 2.



4.1.4 **Export setup tab**

This tab is used to give the parameters for the *Export* and the *Export full image* functions.



In the top left of the window, a list box is used to set the parameters for:

1	Three simultaneous exports (screen copy) done when you press “F8”.
2	
3	
Web	800x600 screen copy done when you press “F8” from the web mode.
Full image	Full image exportation done when you press “Ctrl + F8”.
PDF	PDF file generation using a template (like the print template) done when you press “Ctrl + D” or “Ctrl + Shift + D”.

You can change the other settings of this tab independently for each selection of this list box.

Image format:

Two check boxes offer a choice of format (bitmap and/or JPEG) for the exported image. If no check box is checked, the export is not done. When the JPEG check box is checked, you can choose the JPEG quality from 1 (low quality) to 99 (high quality). The JPEG is a file format with compression and some loss of data.

It is possible to create both formats (bitmap and JPEG) at the same time.

Advantage and disadvantage of both formats:

	Bitmap (.bmp)	JPEG (.jpg)
Size of the file	Big	Small
Loss of information	No	Yes
Read/write time	Short	Long

For the PDF generation, you can choose if you want to display or not the generated file with the “*Display PDF after creation*” check box.

File name:

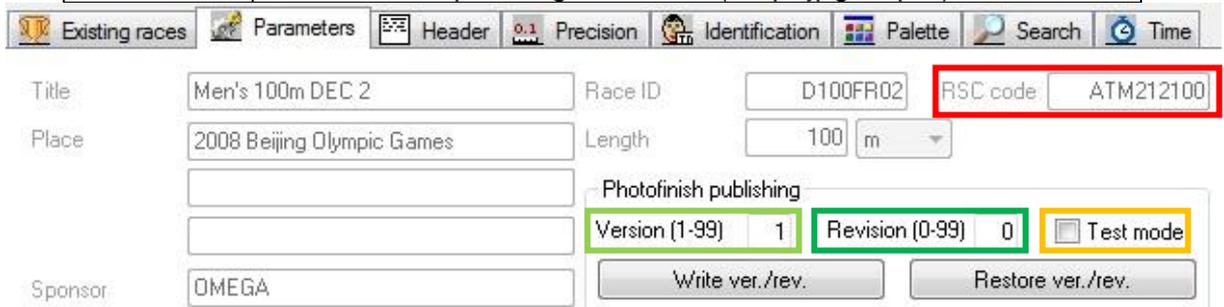
For auto-display: the image is always recorded with the same name (imgosv.bmp or imgosv.jpg). If the file already exists, it is replaced without any warning. This method must be used to work with the automatic DISPLAY software. The bitmap (BMP) format is recommended in this case.

Same as the race name: during the export the file name will be automatically created from the actual race name (with the adding of the BMP or JPG extension). A warning message is displayed if this file already exists.

Olympic format RSC: The file name is created by *RSCcode.idt.V.R.ext* or *RSCcode.idt.V.R.T.ext* where:



RSCcode	RSCcode defined in the <i>Race Parameters</i> . Format DDSEEEPUU where: DD: discipline. S: Sex (M, W, X. Fill with '0' if not applicable). EEE: Event. Fill with '000' if not applicable. P: Phase. Fill with '0' if not applicable. UU: Event Unit. Fill with '00' if not applicable. If RSCcode is empty, Race ID is used instead.
idt	OSV if "Test mode" is unchecked (production mode). TST if "Test mode" is checked.
V	Version defined in <i>Parameters</i> .
R	Revision defined in <i>Parameters</i> .
T	H if generated with <i>Ctrl + D</i> or <i>Ctrl + Shift + D</i> . L if generated from the web mode (with <i>F8</i>). Not present with other kind of exportation (<i>F8</i> or <i>Ctrl + F8</i>).
ext	Extension depending of the file (bmp, jpg or pdf).



To be defined at each record: the name and the directory of the file will be requested each time you select export. The BMP or JPG extension is automatically added.

Add before the name: add the given characters before the given name. Used for example to select the sport when export in a multi-sport directory or database, or to identify main and backup camera images of the same race.

If the check box "*Add _YYYYMMDDHHMMSS at the end*" is checked, the date and hour of the export is added at the end of the file name. This will always create a unique filename.

Saving directory:

Same as the race: the image will be saved in the directory defined in the "*Existing races*" tab of the Race mode or Judgment mode.

Last directory used: the directory is requested. By default, the last directory used for export is proposed.

Always in the directory: save the image in the selected directory. You may choose a directory of another computer connected by network. Use this method to work with the DISPLAY software. Use the "... " button to select the directory.

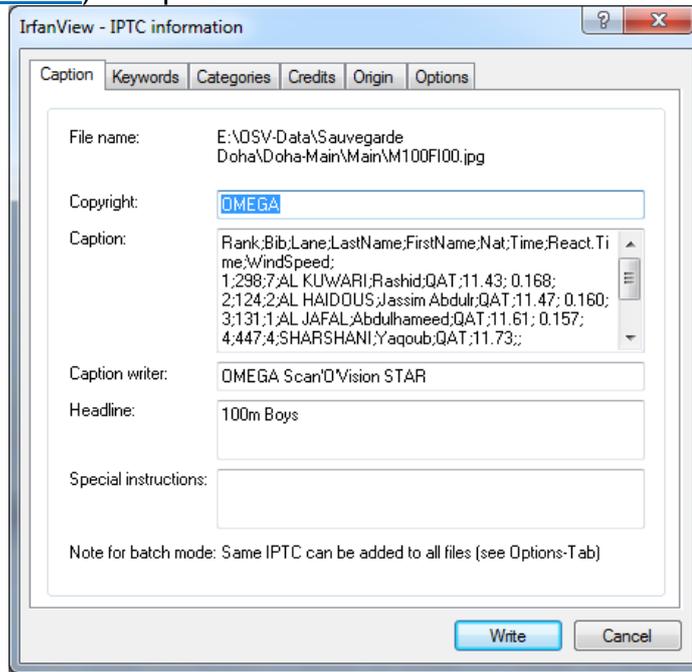
IPTC:



All photofinish in .JPG format can be tagged in their header following the IPTC (International Press and Telecommunications Council) standard. It is activated when “Use IPTC photo tagging” is checked.

A basic configuration file (*pictureTags.iptc*) is created when the box is checked; it is a text file you can modify with the Notepad software; the explanations are included in the header. You can choose another .iptc file priority customized with the list box; this file must be placed in the *Template* sub-directory (generally C:\OSV-STAR\iTemplate).

Specialized photo software can read these IPTC tags; IrfanView (www.irfanview.com) sample:



The specific IPTC-CAPTION field can contain up to 2'000 signs. This can be used to contain the ranking. When the separator variable is correctly defined ([;]), this ranking can be written in a CSV style and then can be copied in EXCEL and transformed into data columns:



Rank	Bib	Lane	LastName	FirstName	Nat	Time	React.Time	WindSpeed
1	298	7	AL KUWAFI	Rashid	QAT	11.43	0.168	
2	124	2	AL HAIDOU	Jassim Abdulr	QAT	11.47	0.16	
3	131	1	AL JAFAL	Abdulhameed	QAT	11.61	0.157	
4	447	4	SHARSHANI	Yaqoub	QAT	11.73		
5	124	99				11.86		
6	449	6	AREF	Mohammed	QAT	12.03	0.197	
								1.6 m/s

4.2 Race mode

This mode is used to prepare the races and visualize the images. A sub-mode (acquisition mode) allows you to create races and record images (see 4.3). To judge the image, you have to use the judgment mode (see 4.4).

4.2.1 Start a race (shortcut: Ctrl + G)

The  icon is used to enter in acquisition mode after the download of an empty race or creating a new race . See chapter 4.3.

Before clicking on this icon, verify that all the settings, especially the rules, correspond to the regulation of the sport you are timing.

4.2.2 Continue the race

The  icon is used to continue (enter again in acquisition mode) the opened race.

Any race with a start time can be continued, not only the last one. You can for example open a race and continue it.

The continuation of a race is mainly used if you need to do changes such as white balance in the camera setting. Some changes such as the race direction will not be taken into consideration for a race continuation.

The race continuation is also used when races occurs during another race. For example you can start a Marathon race in the stadium, when the Marathon racers are out of the stadium, you can time other races such as 100m; when the first runners of the Marathon race arrive, open the Marathon race and " Continue the race" to record the arrivals.

4.2.3 New race (shortcut: Ctrl + N)

This icon generates a new empty race in the default folder. You then enter the title and ID of the race and a start list if necessary.



The short cut **Ctrl + Shift + N** select the *Race mode*, do a *New race* and load the next start list from the race program of Data Handling or *startlist.csv* file (see also 4.2.14).

Then you can record this race with the  icon or save this empty race () to prepare another race and record this race later.

4.2.4 Load a race

After selecting a line in the list of the " Existing races", click on the  icon to load this race. You can also load a race by double-clicking on the corresponding line of the " Existing races" list.

If this race has no bitmap in the status box, it does not yet contain an image and you can do the acquisition of this race with the  icon.

If this race has a bitmap in the status box, it contains an image and this image can be displayed. You can examine the image or access judgment mode.

See the chapter 4.2.13 for the explanation of the bitmaps in the status box.

Long races takes time to be loaded; if by mistake you open the wrong race and don't want to wait until the end of the loading, you can cancel it by using the "Esc" key.

4.2.5 **Copy a race (Save as)**

This icon is used to make a copy of the actual race in another folder / hard disk (with the same ID).

4.2.6 **Save race parameters**

This icon is used to save the race parameters. This is useful if you have modified an existing race (image) and you want to save it for the next open (modification of the lane numbering or rules for example).

This icon is also used to save the race title and start list before entering acquisition mode (to prepare all the start lists of the day before the first race for example).

4.2.7 **Delete a race**

After selecting a race (line) in the  "Existing races" table, click the  icon to delete it.

4.2.8 **Enable / Disable lane numbering**

These icons toggle the display of the lane numbering to the left of the image.

4.2.9 **Synchronisation**

This function is used to set the correct daytime in the Scan'O'Vision time base (inside the camera). This is very useful if there are several systems. If there is a problem and all the systems were synchronised, you can enter the race start time from another device to restart a race time.

In the synchronisation function, a bitmap is displayed:

-  The camera has not been synchronised since its power is on.
-  A synchronisation has already occurred since camera power on.

When you start the Scan'O'Vision software after booting the camera, the computer time is automatically set inside the camera time base (this is not a synchronisation).

To perform a synchronisation:

- Enter the time of the synchronisation (time of the next start pulse) in the edit box (with the format *hh:mm:ss.dcmx*, for example 09:45.00.0000) and validate it by pressing the "Enter" key.
- Arm the start by pressing the "F3" key.
- At the entered time, give a start impulse or manually press the "F4" key. You can also program another device connected to the start input to send a pulse at the given time.
- The  bitmap will be displayed on the function window and the camera is now synchronised.
- The time of day of the camera is always displayed in the status bar.

Press the "Esc" key to exit this function.

4.2.10 **Test function**

This function allows you to verify the connection and configuration of the start and finish sensors:

- If a start transducer is connected to the start, its ready LED can be tested by using the "F2" key. The ready LED must be ON when the green indicator on the screen is ON and OFF when the indicator on the screen is OFF (dark green).
- On the screen, the green start indicator must be off and must blink during a start impulse. If not, the start is not correctly connected or the kind of the start contact is wrong in the configuration.
- On the screen, the green finish indicator must be off and must blink during a finish impulse. If not, the finish is not correctly connected or the kind of the finish contact is wrong in the configuration.

Press the "Esc" key to exit this function.

4.2.11 **Semi-automatic crop**

Please refer to chapter [4.9.1](#).

4.2.12 **Black & white image display** STAR 10x0

This function will display the image in colours () or in black & white (). When an image is noisy, the black and white display can help to place correctly the time mark.

4.2.13 **Existing races tab (shortcut: Ctrl + O)**

The "... " button selects the folder where the races are saved or opened. The actual folder is displayed on the left of this button.

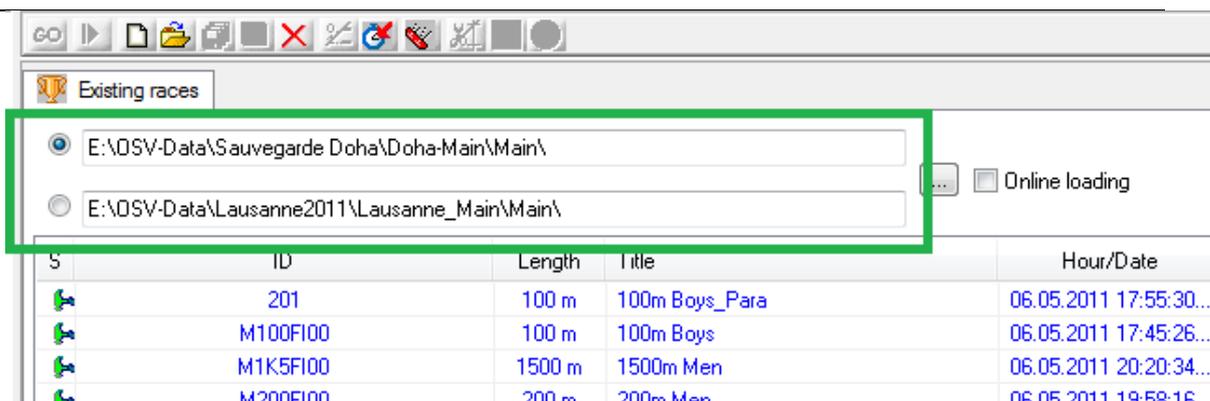
Below, a table displays the existing races in the defined folder:

Status	Status of the race: [blank]: Defined race, not yet run.  : Race in acquisition progress.  : Race finished, not judged.  : Judgment in progress.  : Judgment finished.
ID	Identification of the race (name of the folder containing all the data for this race).
Length	Length of the race.
Title	Title of the race.
Hour / Date	Hour and date of the race.

To open a race, select the corresponding line in the table and click on the icon (or double click on the corresponding line in the table).



If "Use double race folder" is checked in the "Software setup" tab of the "Configuration" mode, you can select two different folders and then quickly change between them by clicking on the corresponding radio button; if a race is opened, it will be closed. See also [4.1.2](#).



4.2.14 Parameters tab

This tab defines the title of the race, the place of the competition, the sponsor, the ID, and the length of the race. This data cannot be modified when you are in judgment mode.

The table is used to enter the start list with the lane number, BIB, first name, family name and nation or club of competitors. The  button is used to clear the start list. You can also delete a single line or the whole start list by doing a right click in the start list and use the context menu:



La	Bib	First name	Family name	Nation / Club
1	425	Jingjing	ZHAO	GGD
2	1001	Lan	CAO	TJN
3	713	Jing	CHEN	LNG
5	488	Yong	ZHANG	HBE
6	838	Li	YIN	SCH
8	470	Pengcheng	FU	HAN
9	364	Xiaobin	WEI	FJN
10	2	Alison	BAKER	VIC

Delete selected entry

Delete the whole startlist

To modify settings for the next race, do not forget to click on the  New race icon first.

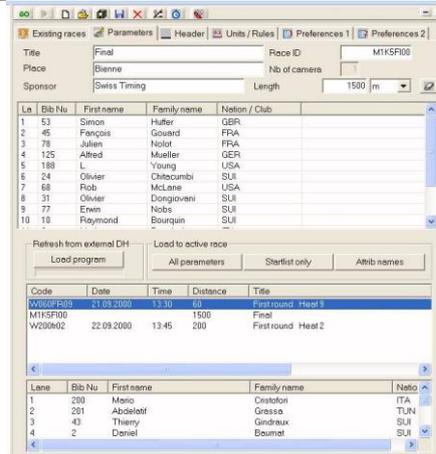
To apply the modified settings to all following races, do not forget to click on the  Save configuration icon.

When a data handling input has been configured (see 4.6.5), a start list can be loaded by selecting it (at this time the corresponding start list is displayed in the table at the bottom of the tab) and press:

- *All parameters* to download everything, including title, identification, sponsor and start list (a double click on the event in the program list will do the same action).
- *Start list only* to download only the start list, without modifying the title, the identification nor the sponsor.

By entering in the Parameters tab, the list of events (program) is automatically updated. You can also do it manually with the *Load program* button.

If the *CONCAT.TXT* file exists in the data handling sub-directory, the *Attrib names* is shown. By clicking on this button, the names in the *CONCAT.TXT* file are assigned to the corresponding bib number of the inserted start list. With this function you can create the start list just before doing the race by entering only the lane numbers and bib numbers; then, by pressing the *Attrib names* button, the first name, family name and nation will be automatically inserted in your start list.



Bottom part of this tab is only shown if a DH input is configured.

4.2.15 Race header tab

In this tab, you can select:

- the date of the race.
- the sport (Athletics, Cycling or Horse Racing): this will affect the animation displayed in the acquisition mode, some functions in the judgment and some calculations in the results. See also chapter 6.3.

To modify settings for the next race, do not forget to click on the  New race icon first.

To apply the modified settings to all following races, do not forget to click on the  Save configuration icon (except if you are not working in *Basic* mode, see 6.1).

In this tab you can also see some parameters of a race already run:

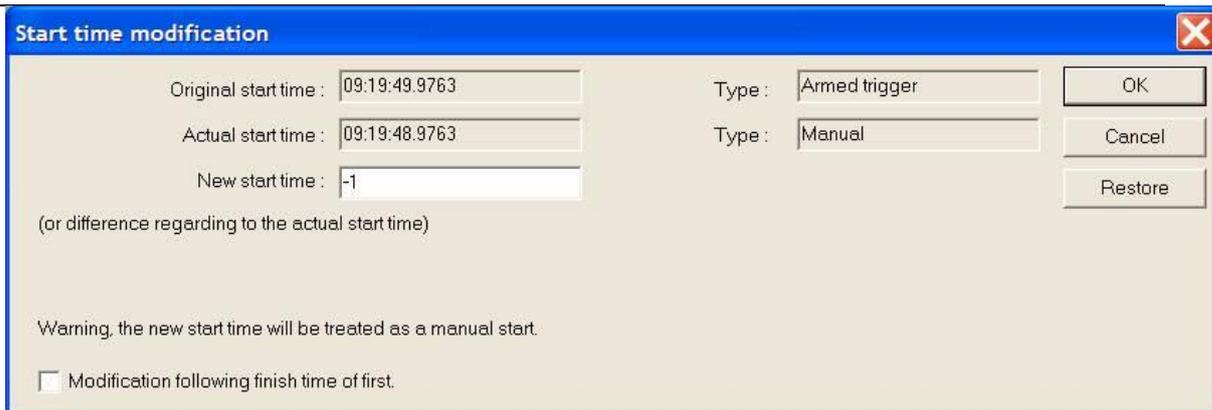
- the time of start and finish
- the kind of start
- the rule in case of manual start used for this race
- the rule for time rounding used for this race
- the version of the software during the image recording

When a race has been acquired, the "Modify start" button allows to modify the start time; see chapter 4.2.16.

4.2.16 **Modify start time (shortcut: Ctrl + M)**

When an image/race is opened, it is possible to modify its start time by <Ctrl> + <M> or by the button "Modify start" in the "Header" tab of the Race or Judgment mode.

The *Original start time* (time "recorded" in the acquisition mode) and the *Actual start time* (time used for the start of this race) are displayed with their type.



Start time modification

Original start time : 09:19:49.9763 Type : Armed trigger OK

Actual start time : 09:19:48.9763 Type : Manual Cancel

New start time : -1 Restore

(or difference regarding to the actual start time)

Warning, the new start time will be treated as a manual start.

Modification following finish time of first.

The start time can be modified by three methods:

1. Introducing a new start time. For example **08:54:23.0123**.
2. Introducing a time difference (applied on the *Actual start time*). For example **+1.23** or **-0.1**.
3. By forcing the finish time of the first competitor juggled (check first the "*Modification following finish time of first*" box, then enter the new finish time).

To confirm the start time modification, click on the "OK" button. If some judgment cursors are already existing, the question "*Do you want to change all cursor time ?*" is asked:

- If you answer "Yes", all the times contained in the classification will change (in the same way as the start time); as the image time will also change, the position of the time marks will not change in the image. This is the default answer.
- If you answer "No", the times contained in the classification will not change; as the image time will change, the position of the time marks in the image will change, it is even possible that some time marks are no longer visible in the image (because no images were recorded for these times).

Remarks:

- Modified start time are always considered as *Manual* start time.
- The "Restore" button allows at any time to get back the *Original start time* as *Actual start time*.

Restrictions:

- If an image has been recorded without start, it is not possible to introduce a start time with this function (the start time introduction must be done in the acquisition mode).
- It is not possible to check the "*Modification following finish time of first*" if no judgment has been done.
- If the *Actual start time* is the *Original start time* (no modification), the "Restore" button is disabled.

4.2.17 **Units / Rules tab**

This tab is done to select the units and the rules for the race:

Units:

- Select the "Metric" units to have the distances in meters and the speeds in kilometres per hour in the results.
- Select the "Imperial" units to have the distances in feet and the speeds in Miles per hour in the results.

Rules – Rounding:

- "Down" will truncate the times (lower numbers are ignored).
- "Up [IAAF]"* will increase the time if the numbers to cut are not 0.
- "Medium" will truncate the times that are smaller than 5 and increase the times superior or equal to 5.

Example for the 9.8725 time with the different precision and rules:

Precision	Rounding down	Rounding up	Medium rounding
1/10000s	9.8725	9.8725	9.8725
1/1000s	9.872	9.873	9.873
1/100s	9.87	9.88	9.87
1/10s	9.8	9.9	9.9
1s	9.	10.	10.

Rules – Manual start:

This setting defines the case for a manual start (given from the keyboard):

- "Normal display of time" will make no difference, a normal start.
- "Display only up to 1/10s [IAAF]"* will display all times with a precision of 1/10s.

*: must both be select for the IAAF (International Amateur Athletic Federation) rules.

The rules cannot be changed for a race already run.

To change the rules for a new race, click the  icon, select this "Units / Rules" tab and change the rules before clicking on the  icon to enter in acquisition mode.

See also chapters [6.4](#) to [6.6](#).

4.2.18 **Preferences 1 tab**

Lane Numbering

From X To Y:

Select the lane number to display from X to Y. X and Y can be a number from 0 to 99. It is possible to display a maximum of 20 lanes, so $|X - Y| \leq 20$. Y can be smaller than X to invert the lane order.

Example of correct setting: From 1 To 20, From 8 To 3, From 90 To 75.

Example of refused setting: From 1 To 21, From 90 To 100.

On/Off automatic switch:

When this box is checked, the lane numbering display is automatically enabled or disabled when doing a new race (in accordance to the race length and the "Switch Off for races longer than [m]:" parameter).

This function is used, in athletics, to automatically enable the lane numbering for races up to 400m length and disabled it for races longer than 400m.

Switch Off for races longer than [m]:

Edit box to enter the length of the races until which the lane numbering has to be displayed. The default value is 400.

This parameter is disabled if "On/Off automatic switch" is not checked.

Remark: the lane numbering can be displayed or not by using the  icons.

Images recording with

- *finish contact*: in acquisition mode, when the finish is armed, the images are recording during the finish pulses. A photocell or a pushbutton need to be connected on the FINISH input of the camera.
- *camera detection*: in acquisition mode, when the finish is armed, the images are automatically recorded following the parameters given in the Camera Setting mode (it records automatically the image when an object is detected in the selected area). See also 4.5.7.
- *finish contact and camera detection*: use of the two previous mode simultaneously. Priority is given to the "record"; it means the image is recorded is the camera detect an object OR if a finish impulse is received.

In all modes, the image can be recorded at any time in acquisition mode with the F5 key.

Number of image blocks to record

A before starting each pulse: **A** represents the number of image blocks to record before each finish pulse or automatic recording. This is used to be sure to record the "beginning" of the competition, depending on the sport and the height of the photocell. **A** can be between 1 and 12, the default value is 1.

B after finishing each pulse: **B** represents the number of image blocks to record after each finish pulse or automatic recording. This is used to be sure to record the "end" of the competition, depending on the sport and the height of the photocell. **B** can be between 1 and 12, the default value is 2.

To modify settings for the next race, do not forget to first click on the  New race icon.

To apply the modified settings for all following races, do not forget to click on the  Save configuration icon.

4.2.19 **Preferences 2 tab**

Possibility to arm and disarm

When the box is checked, the corresponding timing input (Start or Finish) can be armed and disarmed in acquisition mode with the F3/F7 keys. If the box is not checked, the corresponding timing input is always armed. See also 4.3.

Start auto switch

This button allows entering a time which will be automatically added to the start time. This time can be negative. The modified start time will be considered as a manual start time. Original and modified start times are

displayed in the events window of the acquisition mode. Later on, the original value can be restored by the "*Modify start*" function (see chapter [4.2.16](#)). This function is used when the start time is sent by radio (wireless) with a known and constant delay. Refer to the radio manual to know this delay; typical value is -0.1s. **Enter 0 or space if this function is not used.**

To modify settings for the next race, do not forget to first click on the  New race icon.
To apply the modified settings for all following races, do not forget to click on the  Save configuration icon.

This tab also shows the direction in which the image has been recorded (← or →).

4.3 Acquisition mode

This is a sub-mode of race mode. You access it by clicking the  icon after opening an empty race or creating a new race , or by clicking the  icon when a race which is already started is open (continuation of a race).

4.3.1 Status of the race

The main window displays the status of the race (competitor aspect change in function of the selected sport   , see [4.2.15](#)):

	The race has not started nor is ready to start.
	The race is ready to start, the start is armed (the next start impulse will be taken as the start for this race).
	The race is started.
	The split is armed (with Shift + F7 when the race is started and the finish is not armed). Detection will be done by the photocell or a push button connected on the finish input or by camera detection. A manual recording (F8) can also be made.
	The finish is armed for a recording with the photocell or a push button connected on the finish input. A manual recording (F8) can also be made.
	The finish is armed for an automatic recording (detection of competitors in the image).
	The finish is armed for a recording by impulse on the finish input or by competitor detection in the image. A manual recording (F8) can also be made.
	The first competitor has already crossed the finish line.
	Image is being recording.
	The image recording by finish impulse and camera detection is disabled. Toggled with F7 key after the first competitor already crossed the finish line. To be used if judges cross the finish line between finishers.
	This logo is blinking if the start input contact is in the wrong state more than 2 seconds *.
	This logo is blinking if the finish input contact is in the wrong state more than 2 seconds *.

* : it can be normal (if a lot of competitors are passing in front of the finish photocells) or it can indicates a problem (missing connection to the device, wrong setting of the device, ...).

Below the status of the race, the time of the race is displayed. If the start is not armed or in Time Trial mode, the time of day is displayed in red; if the race is started, the race time is displayed in green.

When an armed start occurs, a sound is played (see chapter [4.9.9](#) for more information).

4.3.2 Thumbnail in acquisition mode

The thumbnail window displays online a small view of the camera image and the image recorded. If "camera detection" or "finish contact and camera detection" has been selected for the "Images recording with" parameter, the detection zone is displayed in red at the beginning of the thumbnail (A).



Above the thumbnail, a red bar (B) represents the limit of recording: when it reaches the right of the thumbnail you can no more record images in this race file, you have to exit the race and start a new file (with the highest acquisition speed, you can record about 3 minutes; this time increase when you decrease the acquisition speed).

Below the thumbnail, you can sometime see a blue bar (C). It represents images inside the memory of the computer which are not yet saved on the hard disk. When this bar is not staying low at left, it indicates a problem of storing on the hard disk. It can be due because the hard disk is too slow, because the hard disk must be defragmented or because you have selected a networked or USB hard disk.

4.3.3 Functions in acquisition mode

The function window displays all impulses received on the start and the finish inputs.

The zoom window is the user interface for this mode, the useful keys are:

ESC	Exit the acquisition mode (end of the race). A confirmation will be asked.
F2	False start. Only available if the race is started. This function will cancel the start and the system will be ready for a new start impulse.
F3*	Arm or disarm the start. A start impulse will only be used if the start is armed.
F4	Trig start. Only available when the start is armed. Gives a manual start (instead of receiving it from the start input).
Shift + F4	When the race is not started, enable the Time Trial mode (recording finishers at day time, because they all have a different start time). See 4.3.5 .
F5	Start or stop the manual recording of the image. It can be used anytime even before the start.
F6	Recover finish. Only available if an armed finish has already occurred. This function will cancel the finish and the system will be ready for a new finish. Any image already recorded will remain.
F7*	Arm or disarm the finish. A finish impulse will only be used if the finish





	<p>is armed.</p> <p>After the first armed finish pulse or image detection, F7 can be used to disable and enable the automatic recording (unarm/arm the finish for additional recording). Use for example to disable recording when you see a judge or a photograph will cross the photocell between finishers.</p>
Shift + F7*	<p>Arm or disarm a split time. When armed, an impulse on the finish input and/or a competitor detected by the camera will trig the split. Split time are not saved, they are only displayed on scoreboards. They are numbered from 1 to 99.</p>
F8	<ul style="list-style-type: none"> • Trig finish. Only available when the finish is armed. Gives a manual finish (instead of receiving it from the finish input). • Trig split. Only available when the split is armed. Gives a manual split time (instead of receiving it from the finish input).

* perhaps not available, depending on the setting done in "Possibility to arm and disarm" of the "Preferences 2" tab of the race mode, see [4.2.19](#).

	<p>The  scroll bar modifies the contrast; same as the contrast in the camera setting mode (see 4.5.9).</p>
	<p>The  scroll bar modifies the colour contrast; same as the colour contrast in the camera setting mode (see 4.5.9).</p>
"←"	<p>The "←" keyboard key decreases the contrast () AND the colour contrast () in the same time.</p>
"→"	<p>The "→" keyboard key increases the contrast () AND the colour contrast () in the same time.</p>
"↑"	<p>The "↑" keyboard key increases the acquisition speed. The acquisition speed can also be done with the mouse by selecting another speed in the list box. See also chapter 4.9.2.</p>
"↓"	<p>The "↓" keyboard key decreases the acquisition speed. The acquisition speed can also be done with the mouse by selecting another speed in the list box. See also chapter 4.9.2.</p>
Set default value for contrast: "Apply"	<p>By clicking on the "Apply" button, you set the contrast at the original value when entering in the acquisition mode. It is useful if, by mistake, you change a contrast (you lose colour for example) or if the automatic regulation is "lost".</p>
	<p>The "-", "+", "---" and "+++" buttons are used to control the iris aperture of the remote controlled lens. See also chapter 4.5.11.</p>

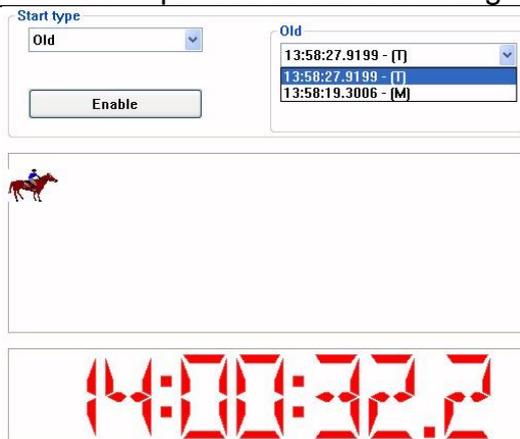
4.3.4 Start type

For most of races, you will be ready to receive the start impulse, that means the software is in acquisition mode and the start input channel is armed.

In some specific situation or by an operator mistake, you can receive the start impulse when the software was not ready. No worries; the system records all start pulses and you can retrieve them in acquisition mode.

In acquisition mode, when the status of the race is "*not started*" (start armed or not armed), you can choose the type of the start:

Start type	Description
Normal	The race starts at the next armed start impulse (default type).
Edit	The race will start with an introduced start time (you have to type the start time hour).
Old	The pulse of a previous armed start will be taken as start time to start the race.
Missed	An unarmed start pulse will be taken as start time. To be used if the start occurs when the software was not in acquisition mode or if you forget to arm the start.
Time Trial	Used when competitors starts not all together. See 4.3.5 .



When "*Old*" or "*Missed*" is selected, the list of corresponding pulses is listed to the right. A "T" after the time indicates it is a time coming from the start input, a "M" indicates it is a manual start pulse (given with the "F4" key). Select the wished start time in the list and click on the "*Enable*" button to validate it.

When "*Edit*" is selected, then you have to click in the edit time, enter the start time and validate it by clicking on the "*Enable*" button. This method is used when the start did not occurs at the same place than the timekeeping equipment (no connection between the start and the photofinish), for example in stages road cycling races. In this case the starter can transmit by phone the start time to the photofinish operator. To ensure an accurate timing, the device used to record the start time must be synchronised before the start with the OSV-STAR or both equipments must be synchronised with GPS signal.

Below the race status, a running time is displayed. When a start has been given, it is the race running time displayed in **green**; in other cases the day time is displayed in **red**.

4.3.5 Time trial



When the race is not started, Time Trial mode can be enabled with "Shift" + "F4". This mode is used when competitors start not all together (cycling road time trial for example).

When enabled, you can arm the finish and record as a normal start (with image detection and/or photocell, pushbutton or contact strip).

Start type
Time Trial

Bib	Nat	Name	Startl.
4	SWE	HARGIN	3
5	AUT	PRANGER	4
6	FRA	LIZEROUX	5
7	FRA	GRANGE	6
8	ITA	ROCCA	7

Arm [25] Auto. Delay [s] 30

Trig

New pulse

New bib

Bib	Start time	Flag
	09:22:35.2859	
3	09:22:35.0212	
2	09:22:02.4136	
	09:21:42.3033	
1	09:21:30.9897	
	09:20:43.5690	

- A** Startlist defined prior entering in acquisition mode. Next competitor to start is at the top of the list. List can be sorted by any column.
- B** Arm/Disarm button. When armed, the next start pulse received will be assigned to the selected Bib in **A** (or the one at the top of the list if no line is selected). If "Auto" is checked, as soon as a start pulse occurs, the button will re-arm after the editable delay (30 seconds by default).
- C** Trig button: create a manual pulse (will be indicated by "*" in Flag column of **F**).
- D** New pulse button: allows to enter manually a start time (will be considered as a manual start and indicated by "*" in Flag column of **F**).
- E** New bib button: to add a new Bib at the end of the **A** list.
- F** Start pulses are listed with the assigned Bib number.

Other functions:

<i>To assign a Bib to a pulse:</i>	<ul style="list-style-type: none"> Select the Bib in the A list. Do a right click on the time on the B list. Chose "Assign selected Bib".
<i>To un-assign a Bib to a pulse:</i>	<ul style="list-style-type: none"> Do a right click on the time on the B list. Chose "Unassign selected pulse". The Bib returns in the A list.
<i>Competitor did not starts:</i>	<ul style="list-style-type: none"> Right click on the competitor in the A list. Chose "DNS". To cancel a "DNS", do a right click on it in the B list and chose "un-DNS".

During judgment, time scale will indicate a time of day (not the race time). If a start time has been assigned or recorded to the judged competitor, its race time is calculated and displayed in the results.

4.4 Judgment mode

In this mode, you can visualize and judge the competitors.

4.4.1 *Time mark*

A time mark is a vertical line placed in the image to give a time to a competitor. The time marks appear in the main window, the zoom window and the thumbnail window as a vertical line.

To place a new time mark:

- In the thumbnail, move the red rectangle (with a "click and drag" on the red horizontal scroll bar) to display the competitor to judge in the main window.
- Press (and hold) the left mouse button in the main window, you can move the mouse cursor to position the time mark at the correct location according to the rules of the sport (on the wheel, the nose, the skate, ...). The zoom window content follows the position of the mouse cursor.
- If needed, block the time mark move (no more following the mouse cursor) by pressing the Shift key. This is used to then modify the vertical position of the mouse to fix the lane number.
- Release the left mouse button when the time mark is approximately at the correct location, the "Identification" tab is automatically selected.
- Adjust exactly the position of the time mark by using the left and right arrow keys (← and →) of the keyboard and looking in the zoom window.
- Enter the bib and/or the lane number in the function window ( Identification tab), or use the top and bottom arrow keys or the mouse wheel to choose the bib and the lane number in the start list.
- Validate the bib, lane and time mark position by pressing the "Enter" key or clicking the "Validate" button, or cancel it by pressing the "Esc" key or clicking the "Cancel" button.

The maximum number of time mark is 999 per race.

Remark: some other vertical lines are displayed in the image:

- A green line indicates the start.
- A white line and a black line on its right indicate "a cut of time" (image not contiguous due to a break during the recording).
- A hashed line (black and coloured) is displayed when a cursor is being placed on another linked instance.

4.4.2 *Load a race*

Same function as in the Race mode, please refer to chapter [4.2.4](#).

4.4.3 *Delete a race*

Same function as in the Race mode, please refer to chapter [4.2.7](#).

4.4.4 *Enable / ~~Disable~~ lane numbering*

Same function as in the Race mode, please refer to chapter [4.2.8](#).

4.4.5 **Colour of time marks**

The colour of time marks can be modified with the  list box (between the  and  icons) in order to be visible on different background.

4.4.6 **Mask/Display time marks during judgment (shortcut: F7)**

When some competitors are close to the others, it can be difficult to judge due to the existing time marks that hide the image. The button  (or the "F7" shortcut) is used to mask/display the existing time marks during the placement of a new time mark.

4.4.7 **Fast Open (shortcut: Ctrl + F)**

When fast open is selected (click on ) on a judging computer, the software will search and open the actual race in acquisition in the race directory (the race with the red flag ). If the acquisition computer is not in the acquisition mode, the *Fast Open* waits ( is displayed) until the acquisition computer enters in acquisition mode. Then the recording images will automatically be displayed on the judging computer and judgment can start even if the acquisition computer still records some images.

Warning: only one computer can place a time mark at a time (you need to validate or delete the time mark before any other computer can place another time mark).

Note: the "Online loading" box must be checked to use the "Fast Open" function, see also [4.4.18](#).

4.4.8 / **Active Link and Active Link+**

This button is only present if the corresponding configuration has been made in the *ConfOmegaGen.exe* software (two instances), see chapter [6](#).

Click on this button to change the status of the *Active Link*. When  is displayed, the *Active Link* is disabled. When  is displayed, the *Active Link* is enabled.

Press the **Ctrl** key and click on the **Active Link** button to enable the *Active Link+* mode. When  is displayed, the *Active Link+* is enabled but at least one of the instance did not have image loaded. When  is displayed, the *Active Link+* is enabled and both instance have the image loaded.

See also chapter [4.9.5](#).

4.4.9 **Show only local time marks or all**

When an image has been or is judged with the *Active link*, this toggle button allows to choose to display on the image all the time marks placed on this image or on the linked image (when  is visible) or only the time marks placed on this image (when  is displayed). See also chapters [4.4.8](#) and [4.9.5](#).

4.4.10 **Active/suspend the data handling output (shortcut: Ctrl + F12)**

If a data handling (DH) is connected to the Scan'O'Vision and uses the online protocol (not only the final classification), judgment must be done in the rank

order. Sometimes, in tight finish, it is difficult to judge in the rank order so, to prevent wrong provisory rank on the DH, you can suspend the DH output. When the DH output is suspended, no data is sent on the DH serial line. When the DH output is re-activated, all data are (re-)sent.

 indicates the DH output is activated.

 indicates the DH output is suspended.

4.4.11 **Black & white image display** STAR 10x0

Same function as in the Race mode, please refer to chapter [4.2.12](#).

4.4.12 **Results window**

The results window is placed on top of the main window. It displays the time of the competitors judged and the other competitor in the start list.

The lines can be sorted by any column. Click on a column header to display the lines following the alphabetic order of this column. Click again in the same column header to display the lines in the reverse order. By default, the lines are displayed in rank order.

You can modify the BIB or the lane number of a judged competitor by doing a right click on it in the results window and then modify it in the identification tab. If the new “BIB and lane number” pair correspond to a competitor in the start list, the name of the result list is changed; if not, the BIB and/or lane number are changed in the start list.

When a time mark is validated, it is not possible to move it. To change its time, you have to delete it (see [4.4.13](#)) and place it again.

4.4.13 **Delete a time mark**

To delete a time mark, double click on the corresponding line in the results window and confirm the suppression. You can also delete a result or the whole results by doing a right click on the results and use the context menu:



R...	Bib	Name	Nat	Time	R_time	
1.	16	Usain Bolt	JAM	9.81	0.178	
2.	85	Asafa Powell	JAM	9.88	0.153	
3.	120	Darvis Patton	USA	9.95	0.146	
4.	96	Michael Rodgers	USA	9.98	0.152	
5.	161	Marc Burns	TRI	10.01	0.158	
6.	162	Michael Frater	JAM	10.04	0.157	
7.	159	Richard Thompson	TRI	10.13	0.14	
8.	186	Martial Mbandjock	FRA	10.26	0.14	
9.	14	Tyrone Edgar	GBR	10.28	0.14	

Delete selected result

Delete all results

4.4.14 **Modify a time mark**

It is not possible to modify the time of an existing time mark. If a time mark as been wrong placed, it must be deleted (see [4.4.13](#)) and a new time mark must be placed.

To modify the BIB or the lane number of an existing time mark, right click on the corresponding line in the results window, then you can modify them in the identification tab.

4.4.15 **Modify the start list**

To modify a number or a name in the start list, you have two possibilities:

- In the results window, do a right click on the data to modify.
- In the function window, select the " Parameter" tab and modify the data, then validate the modification with the keyboard "Enter" key.

To delete a competitor, double click on the corresponding line in the results window and confirm the action or right click on it and use the context menu.

To add a competitor in the start list, select the " Parameter" tab and enter his data in an empty line.

4.4.16 **Reaction time**

In athletics, reaction times of sprint races can be measured with the ASC2 (Athletic Start Control) device. This device can be connected to the OSV-STAR acquisition computer with a RS422 serial line in order to transmit the reaction time in the OSV7 software. To configure it, please refer to the chapter [4.6.4](#).

You can introduce or modify the reaction time of a competitor by clicking on his reaction time in the results window (the reaction time column must be displayed to allow this operation, see [4.1.2](#)).

4.4.17 **Competitor status**

You can set a status of a competitor in the start list that does not have an assigned time:

- Select (single click) the requested line in the results window. The identification tab is automatically displayed in the function window.
- Select the status (Disqualified, Did not start, Did not finish, ...) with the radio button in the right of the function window.

The terminology of the status can be changed in the Software setup tab of the Configuration mode (see [4.1.2](#)).

4.4.18 **Existing races tab**

Same function as in the Race mode, please refer to chapter [4.2.13](#).

In addition, in the right of the used directory, the "*Online loading*" checkbox is placed. When this box is checked, it allows you to open a race in progress (acquisition in process on another computer) and do the "*Fast Open*", see also [4.4.7](#) and [6.1](#).

4.4.19 **Parameters tab**

Same function as in the Race mode, please refer to chapter [4.2.14](#).



In addition, "Version" and "Revision" of the picture can be edited (1.0 by default). This is manually managed and can be used to identify different print version (these data are available in the print template editor).

"Test mode" can be checked to add some object on the print template during test procedure.

4.4.20 **Header tab**

Same function as in the Race mode, please refer to chapter [4.2.15](#).

4.4.21 **Precision tab**

This tab is used to select the precision of the times.

The **General precision** is used to display the finish times. It will also affect the computing of the mean speed of the competitor.

Note : The background of the image will be magenta instead of white if you are viewing an athletics image and the general precision is not set to 1/100s to indicate it is out of the IAAF rules.

The **Precision for delta time** is used to display the time difference from the first and from the previous competitor. It will also affect the computing of the distance from the first and from the previous competitor.

The reaction times are always displayed to the 1/1000s.

The selected precisions are used for the Results window, the prints and all the outputs (scoreboards, data handling, ...).

See also chapter [6.7](#).

4.4.22 **Identification tab**

This tab is used to enter the BIB and lane number that need to be assigned to a time mark. It is also used to change the status of a competitor in the start list. The texts of the status can be defined in the Software setup tab of the Configuration mode (see [4.1.2](#)).

The identification tab automatically appears when you release the mouse button after placing a time mark. At the bottom of this tab, the time of the time mark (before the validation) is displayed.

The "Go to" button is used to show the time mark of the selected competitor in the results window; the mouse cursor will be placed exactly on the corresponding time mark.

4.4.23 **Palette tab (shortcut: Ctrl + R)**

This function is a gamma correction applied to the image in the display and printing memory. The original image is kept without modification. It is possible to apply a lighting correction to the image after it has been recorded, just like correcting an underexposed photograph. This correction can be made at any moment during the judgment by selecting a curve (1 to 6 or multi points). You can also go back to the original image by selecting the curve 1.

The multi points curve can be "drawn" by the operator simply by clicking in the curve to add some reference points. A reference point can be moved by a click and drag. A reference point is deleted by a right click on it. The reference point in

the bottom left and top right corner are fix. The curve between all the reference points is automatically computed and displayed in red.

Ctrl + Shift + R is used to toggle between the last palette used (gamma correction different from 1) and the default palette (no correction, gamma = 1). This is useful to judge an image with half of the image on the sun and the other half on the shadow: with this toggle you can quickly have the best image to judge the competitor depending of his location (shadow or sun). This function also works in judgment full screen mode.

4.4.24 **Search tab (shortcut: Ctrl + H)**

The "Search" function allows finding a time or a competitor identified by his BIB number or his lane number. This is particularly useful in a very long image in cycling when judging and the message "same number" appears. This means that one of the BIB numbers has been entered incorrectly; but where are they on the image? This function helps to find them.

Select the criteria of search (by lane, BIB or time) and then enter the data in the corresponding field. Then start the search with the "Search" button; the result is displayed in the list below. Click on the desired line and use the "Go to" button (or double click on the desired line) to show the corresponding image (the mouse cursor will move to the corresponding time mark) and highlight the corresponding line in the results window.

When the "All identical" box is checked, the search does not care about the data entered in the field but searches all lanes, BIBs or times which are used at least twice.

The "Next" button allows displaying the next line in the search list.

Notes:

- When a time is searched, the list shows "Image" in addition to possible corresponding time marks. After selecting this line, the "Go to" button will move the mouse cursor to the nearest time in the recorded image.
- When the mouse cursor is moved onto a time mark, it is placed vertically on the lane number of this result (or in the middle of the image if lane numbering is not displayed).

4.4.25 **Time tab**

This tab displays the mouse cursor time in a large font in the function window. This time is also visible in the bottom of the *Identification* tab and in the tooltip following the mouse cursor when placing a time mark.

4.5 Camera setting mode (shortcut: Ctrl + J)

This mode is used to adjust the image of the camera and to align the camera to the finish line. In this mode the live image of the camera is displayed in line scan mode or in matrix (video) mode.



When you are in line scan mode, you can switch the image in full screen by clicking on the  button or by using the “F10” key; use the “ESC” or “F9” key to switch back in normal view. The full screen mode helps to adjust the camera position when you are a little bit far from the computer.

Signification of the toggle icons at the top of the function window:

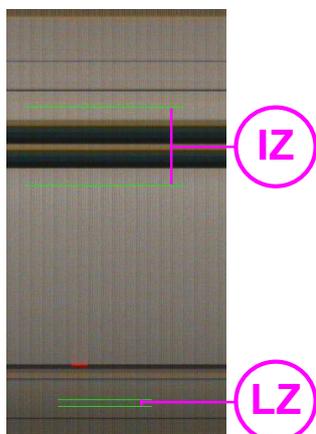
	The online image is paused; click to start it.
	The online image is displayed; click to pause it.
	The horizontal references for the suppression of light flickering and camera regulation are displayed. Click to mask them.
	The horizontal references for the suppression of light flickering and camera regulation are masked. Click to display them.
	The online zoom is displayed. Click to pause it.
	The online zoom display is paused. Click to active it
	The line scan mode is displayed (same image as during the timing). Click to change to matrix mode. STAR-1x0
	The matrix mode is displayed (image like a video camera). Click to change to line scan mode. STAR-1x0
	The light flickering self regulation function is enabled. Click to disable it.
	The light flickering self regulation function is disabled. Click to enable it.
	Manual mode (the automatic light adjustment is disabled). Click to enable the automatic light adjustment.
	The automatic light adjustment in the IZ zone is enabled. Click to disable it.
	The display of the detection zone for automatic recording by camera is enabled. Click to disable it.
	The display of the detection zone for automatic recording by camera is disabled. Click to enable it.

4.5.1 Horizontal references

The horizontal references are displayed by clicking the  icon and hidden by clicking the  icon. The colour of the references can be selected with the  list box (between  and  icons).

The references (horizontal line in the image) can be moved vertically by doing a "drag & drop" on it.

There are two reference zones:



Light regulation zone (LZ)

This zone is defined by the two shorter horizontal lines. The height of this zone is fixed, so these two lines will always move together.

This reference is used with the light flickering self regulation function; it must be placed on a light part of the finish line where nothing and nobody will pass (generally the bottom of the image).

Image regulation zone (IZ)

This zone is defined by the space between the two longer horizontal lines. Each line can be moved independently, but cannot pass over the other one.

This zone is used to compute the focus and outdoor light regulation.

4.5.2 Colour of reference lines

The  list box (between the  and  icons) allows you to select the colour of:

- the horizontal references
- the rectangle for the zoom selection
- the vertical line in the matrix mode

You can change this colour to have better contrast between these lines and the colour of the finish line.

4.5.3 Online zoom

In line scan mode, a part of the main image can be zoomed to view details. This allows a precise setting of the camera and the lens.

Click on the  icon to activate the online zoom, the corresponding indicator becomes green in the status bar (). To choose which part of the main image is zoomed, click and drag the green* rectangle in the main window. The position can only be modified in the vertical direction and only when the online image is active. The zoom view is not always online, display is made when the computer has nothing else to do. So the refresh rate will be higher with slower acquisition speed or with smaller size of the zoom window; it also depends on the processor of your computer.

Click on the  icon to stop the online zoom, the corresponding indicator becomes grey in the status bar ().

*: the colour may change following to the setting of the "Cursor colour".

4.5.4 **Matrix mode** STAR 1x0



The matrix mode is a patented function allowing easy alignment of the camera on the finish line by having a video image instead of the line scan mode. It is activated by clicking on the  icon. In this matrix mode, to align the camera, you just have to move it in a way that the green* vertical line is perfectly superposed to the finish line and the sensor is vertical (look at the yellow LED at the rear of the camera). The image luminosity can be adjusted by changing the "Exposure time" (distinct from the line scan mode).

The automatic colour balance has to be done in this mode (see [4.5.10.1](#)).

In this mode the zoom window displays the level of the different colours of the sensor on the finish line (the left part of the curves represents the bottom of the finish line, the right part of the curves represents the top of the finish line).

It may help to do a manual colour balance by superimposing all the curves on a white part of the finish line.

Click on the  icon to go back in the line scan mode.

*: the colour may change following the setting of the "Cursor colour".

4.5.5 **Light flickering**

Artificial lights are generally flickering at a frequency of 50 or 60Hz. This flickering cannot be seen by human eyes but creates vertical dark bars on photofinish images.

If nothing passes on a light part of your finish line, you can select the light flickering self regulation function by clicking on the  icon (the light correction indicator in the status bar becomes green or red). Then you have to place the light regulation zone (see [4.5.1](#)) at the correct place (light part where nothing passes). With this setting the light flickering effect on the photofinish images will be suppressed.

When the light flickering self regulation is working well, the corresponding indicator is green in the status bar () . If the light flickering self regulation is enabled but does not work (image too dark, somebody passing in the light regulation reference) the indicator is red in the status bar () .

The light flickering self regulation is disabled by pressing the  icon; the corresponding indicator becomes grey in the status bar () .

4.5.6 **Automatic light adjustment**

The automatic light adjustment is enabled by pressing the  icon; it is disabled by pressing the  icon. When the automatic light adjustment is enabled, you cannot modify the contrast nor the contrast factor; these parameters are modified automatically following the light condition in the IZ zone.

Before enabling the automatic light adjustment, you have to select the IZ zone and the stability:

IZ zone:

The IZ zone is used as reference for the automatic light adjustment; for a correct regulation, this zone must contain on the finish line a white zone and a black zone. The regulation will modify the contrast and luminosity to get the lighter part

of this zone to the white and the darker part of this zone to the black. If you change the IZ zone you have to disable and re-enable the automatic light adjustment to validate the new zone.

Stability:

The stability represents the quantity of used image blocks to make the automatic light adjustment. In case the stability is low, a passage in the field of the camera will have a great influence on the adjustment of the light but during a short period. In case the stability is high, the result of the passage is weaker but lasts longer. Recommended value for "Stability number" is between 5 and 10. The stability adjustment can only be modified when the automatic light adjustment is disabled.

When the automatic light adjustment is working well, the corresponding indicator is green in the status bar (🟢). If the automatic light adjustment is enabled but does not work (image too dark, not enough contrast in the image, ...) the indicator is red in the status bar (🔴).

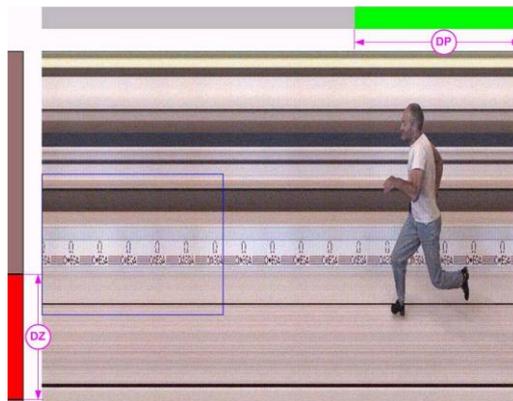
When the automatic light adjustment is disabled (🚫 icon displayed); the corresponding indicator becomes grey in the status bar (⚪).

4.5.7 **Detection zone for the automatic recording by camera**

The OSV-STAR camera can automatically detect objects. It can be used to record automatically the competitor crossing the finish line, without need of photocells. The automatic recording by camera is choosing in the "Preferences 1" tab (see 4.2.18) when doing a new race and is then activated as soon as the finish channel is armed.

To work properly, these functions have to be configured:

- In the "Camera Setting" mode (in line scan mode), the **Detection Zone (DZ)** has to be set. When the **Detection Zone** is displayed (if not, click on the 🚫 icon), you can move vertically its top and bottom limits by drag and drop; this is useful to ignore some moving background. Competitors crossing the finish line totally out of the **Detection Zone** will not be recorded. In the "Camera Setting" mode, the "object detected" will generate a green bar (DP) on the top of the online image.
- The "size" of the objects to detect can be selected by choosing the "**Detection sensitivity**" in the 🚫 **Detection sensitivity**"; higher the sensitivity is, smaller is the size of the detected object.
- As for the image recorded by photocells, the number of image blocs recorded before and after the automatic detection by camera can be set in the "Preferences 1" tab (see 4.2.18) when doing a new race.



4.5.8 **Sharpness adjustment**

In line scan mode, a green vertical bar-graph is displayed in the left part of the zoom window: it is the sharpness indicator, referring to the image regulation zone (see 4.5.1).

Ideally, you have to set the image regulation zone where a black and white transition exists and where you want the maximum sharpness (generally the centre of the image). Then turn the focus ring of the lens to have the highest green bar-graph as possible. The maximum is represented with a red horizontal line. This maximum depends on the conditions (finish line, light, camera setting) and can be very different from one day to another; the important thing is to set it at the maximum for the actual conditions.

4.5.9 **Camera setup tab**

This tab contains the main settings of the camera:

Direction	Sense of passage of the competitors seen from the camera: from right to left [←] or from left to right [→].
Acquisition speed [l/s]	The acquisition speed has to be selected according to the chosen precision, the speed of the competitors, the position of the camera, the length of the finish line and the focal length of the lens. To summarise, if on the image the competitors are too narrow you have to increase the acquisition speed and if they are too wide you have to decrease the acquisition speed. The acquisition speed can be decreased in the race acquisition mode. For best results, in the camera setting, select the maximum acquisition speed you will need. See also 4.3 and 4.9.2 .
Exposure time [ms]	The exposure time sets how much light will be received by the sensor. It is recommended to always set it at the maximum (value depends on the acquisition speed). If the image is too light, before decreasing the exposure time, decrease the contrasts and close the diaphragm of the camera lens.
Contrast	This scroll bar is used to modify the contrast of the basic image (black and white). It can be set to a value from 0 to 1023, the value is displayed in a box to the right. The higher the value, the lighter the image, but the image can also become "noisy".
Contrast factor	The contrast factor works with the contrast setting. When the contrast is higher than 400, it is recommended to increase the contrast factor and decrease the contrast.
Colour contrast	This scroll bar is used to modify the colour contrast (colour level of the image). It can be set to a value from 0 to 1023, the value is displayed in a box to the right. The higher the value, the more colour are in the image, but the image can also become "noisy". If the colour contrast is too high, incorrect colours can appear (saturation).
Colour contrast factor	The colour contrast factor works with the colour contrast setting. When the colour contrast is higher than 400, it is recommended to increase the colour

	contrast factor and decrease the colour contrast.
STAR 100 Luminosity	This scroll bar is used to modify the general luminosity of the image. It can be set to a value from 0 to 255, the value is displayed in a box to the right. It is recommended to leave this value as low as possible.

4.5.10 **Image quality tab**

4.5.10.1 *Colour balance*

This function permits calibration of the camera and restore the correct colours. The goal is that a white element on the finish line is white in the Scan'O'Vision image too.

The colour balance can be made manually or automatically (recommended):

- The manual procedure can be made from the line scan mode or from the matrix mode. Select the "Manual" radio button and then use the "R-" (decrease red level), "R+" (increase red level), "G-" (decrease green level), "G+" (increase green level), "B-" (decrease blue level) and "B+" (increase blue level) to adjust the colour to your preferences.
- For an automatic procedure, you must be in matrix mode (except for STAR 110 and STAR 210) and have a white surface (as big as possible) framed in the image. Then select the "Automatic" radio button and finally click on the "Apply" button.

4.5.10.2 *Gamma*

A gamma factor can be selected to modify the restitution of the image (lighter dark levels as the gamma becomes lower than 1.0). The gamma factor given here cannot be modified when the image is recorded, so it is recommended to use only a factor from 0.7 to 1.0.; 1.0 is the default factor (no modification of the image).

During the judgment, a modifiable gamma factor can be selected to enhance the recorded images.

4.5.11 **Lens remote tab**

The buttons in this tab allows modifying the lens aperture and the lens focus.

Button	Effect on iris aperture	Effect on focus
-	The aperture is closed a little bit (so the image becomes darker).	The focus is modified a little bit for a shorter distance.
+	The aperture is open a little bit (so the image becomes lighter).	The focus is modified a little bit for a longer distance.
---	The aperture is closed a lot (so the image becomes darker).	The focus is modified a lot for a shorter distance.
+++	The aperture is open a lot (so the image becomes lighter).	The focus is modified a lot for a longer distance.

The limit of movement of the focus ring is not detected.

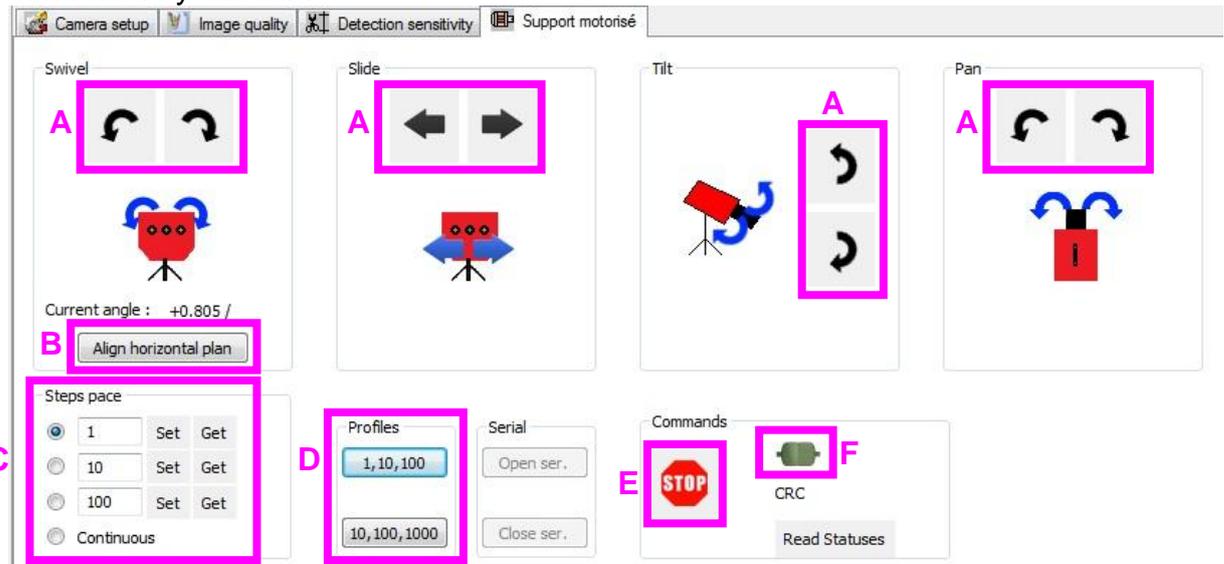
When the limit of the iris control is detected, the corresponding buttons are greyed.

4.5.12 **Detection sensitivity tab**

This tab is only visible when the "Detection zone" is displayed. In this tab you can select the "size" of the objects to detect by choosing the "Detection sensitivity"; higher the sensitivity is, smaller is the size of the detected object. See also 4.5.7.

4.5.13 **Motorized support tab**

When optional 4-axis motorized is connected by serial line to the camera, it is controlled by this tab.



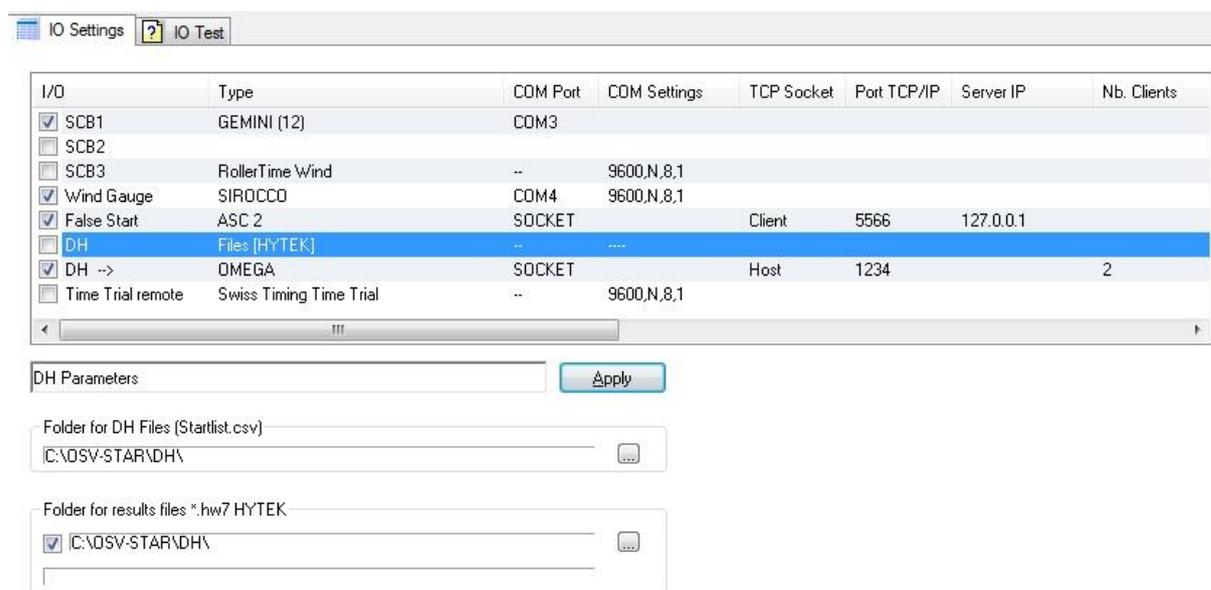
- A** Button to do movement on the indicated direction with the step selected in **C**.
During movement, is displayed. When movement is no more possible (reach the limit), is displayed.
- B** Button for automatic swivel.
- C** Radio buttons are used to select the number of steps for the movement. When "Continuous" is selected, the movement occurs as long as you keep pressing on one of the **A** buttons. To change a number of step value, modify it and click on the corresponding "Set" button. "1" represents a very small movement of about 0.01°; "1000" represents a very large movement.
- D** These buttons load preset values in Steps pace (**C**).
- E** This button is used to immediately stops all movements.
- F** Status of the serial line:
 - Connection is not working (verify the cable between camera and support, verify the support is correctly powered).
 - Connection idle (normal status between commands)
 - Connection OK (during commands).

4.6 I/O setting mode

This mode allows you to select the connection to different optional peripherals. Generally these peripherals are connected through serial port (COM) to the computer. Some peripherals need RS232 connection, others need RS422 connection; in this latest case, some interface may be needed (for example the INT131 provide two RS232 and two RS422 connection from a USB port).

4.6.1 IO Settings tab

This tab is used to do the configuration of all the serial line.



I/O	Type	COM Port	COM Settings	TCP Socket	Port TCP/IP	Server IP	Nb. Clients
<input checked="" type="checkbox"/> SCB1	GEMINI (12)	COM3					
<input type="checkbox"/> SCB2							
<input type="checkbox"/> SCB3	RollerTime Wind	--	9600,N,8,1				
<input checked="" type="checkbox"/> Wind Gauge	SIROCCO	COM4	9600,N,8,1				
<input checked="" type="checkbox"/> False Start	ASC 2	SOCKET		Client	5566	127.0.0.1	
<input type="checkbox"/> DH	Files [HYTEK]	--	----				
<input checked="" type="checkbox"/> DH -->	OMEGA	SOCKET		Host	1234		2
<input type="checkbox"/> Time Trial remote	Swiss Timing Time Trial	--	9600,N,8,1				

DH Parameters

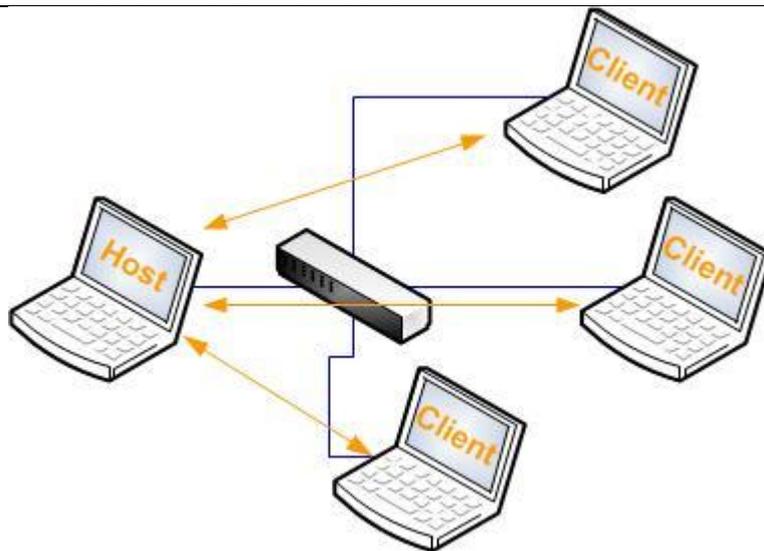
Folder for DH Files (Startlist.csv)

Folder for results files *.hw7 HYTEK

I/O	Kind of peripherals. The box must be checked to enable the serial line or the socket connection. Click in an empty box to check it; if the check does not appear, that indicates a problem of access to the specified port (see the file OxOUT.LOG in the OSV-STAR\LOG directory to have the details of the problem, generally it is because this port is not present or already used by another peripherals or software). Remove the check by clicking in the box to stop the connection. For the DH by files the box can't be checked.
Type	Click to show a list of the possible compatible connections and select the one corresponding to your peripherals. If your peripheral is not present, please have a look on our web-site to know if an update is available or contact our after-sales service to ask for an adaptation's offer.
COM Port	Click to show a list of the available COM port and select the one where your peripheral is connected. You can also select "SOCKET" to connect to software on a computer using Ethernet network connection.
COM Settings	Click to show a list of the possible COM settings and select the one corresponding to your device (referring to the manual); for some types it is possible that only one setting is offered.



TCP Socket	If "SOCKET" is chosen in "COM Port", you can choose here the kind of connection: "Host" (= Server) or "Client". If you chose "Host", the other computer/software you want to communicate to, must be set as "Client". If you chose "Client", the other computer must be set as "Host".
Port TCP/IP	This is a 4-digit number identifying the connection. This number must be the same on the host and on the client.
Server IP	If you select a client socket, you should inset in this column the TCP/IP address of the host computer with xxx.xxx.xxx.xxx format.
Nb. Clients	If you select a host socket, this column informs you how many clients are connected on this socket. You can have up to 8 clients connected on the same socket.



When you select an I/O (by clicking on it), some additional parameters can appear below the list of peripherals; you can then modify some parameters and validate these modifications by clicking on the "Apply" button.

4.6.2 Scoreboards

Up to three different scoreboards may be defined on different serial ports: SCB1, SCB2 and SCB3.

Type	Compatible peripherals
GEMINI *1	<ul style="list-style-type: none"> • Same as Swiss Timing UNT. • In addition, compatible with the GEMINI alphanumeric scoreboard to display race title (during the race) and names of classified competitors.
GEMINI Wind *1	<ul style="list-style-type: none"> • To display the wind measurement on a dedicated scoreboard, type UNT4, UNT6, UNT7 or GEMINI (a different serial line from running time is requested).
OIN4 *1	<ul style="list-style-type: none"> • OIN4 alphanumeric scoreboard (2 lines of 10 characters).
RTD/Galactica *1	<ul style="list-style-type: none"> • Matrix scoreboard allowing alphanumeric character, graphics and animation.
RollerTime *1	<ul style="list-style-type: none"> • RollerTime 6 or 9 digits scoreboards to display running time and net time (with BIB or rank and lane

	with a 9 digits SCB).
RollerTime Wind ^{*1}	<ul style="list-style-type: none"> To display wind measurement on a dedicated RollerTime 6 or 9 digits scoreboard (a different serial line from running time is requested).
Swiss Timing Std ^{*1}	<ul style="list-style-type: none"> Scoreboards generally connected to Longines timing equipment (TL5005, OGM5005). UNT4, UNT6, UNT7 and GEMINI with specific configuration.
Swiss Timing UNT ^{*1}	<ul style="list-style-type: none"> Scoreboards generally connected to OMEGA timing equipment (OSV, OSM, OTR). UNT4, UNT6, UNT7 and GEMINI with standard configuration.

^{*1}: Serial line requested on the OSV STAR computer: output only.

Depending on the scoreboard type, different additional setting or parameters are displayed below in this window (these parameters are not used for the "GEMINI/Wind" protocol:

Duration of net time display at finish:

You can choose how many seconds the net time is displayed after the first competitor passes the finish line, and then the running time is displayed again. We generally choose a permanent display for races up to 1500m and 5 to 10 seconds for races from 1500m length.

Number of line of the scoreboard:

The OSV-STAR software has to know how many lines of results the scoreboard can display. So, according to the number of classified competitors, it will send additional pages, one after the other (if the "Page scrolling" is enabled).

Page split time:

Display duration of a result page (until the OSV-STAR software passes to the next result page).

Page scrolling:

Must be checked to allow automatic page split and automatic display of judgment (if not checked, the "Scoreboard" "Send results" menu will also display results on scoreboards).

Format of time to display:

General time format: Kind of time to display for running time and results (HH:MM:SS, H:MM:SS.T, MM:SS.TH, ...).

Results format: Display bib number or rank and lane number in the three first digits.

Daytime: Format of the day time (with or without seconds, 24h or AM/PM). If "No daytime" is selected, the daytime will never be displayed on this scoreboard. See also [5.5.4](#).

Running Time: Format of the running time (1s for electromechanical scoreboards, 1/10s for LED scoreboards).

4.6.3 Wind Gauge

Type	Compatible peripherals
ALIZE ^{*2}	Alizé
SIROCCO ^{*2}	SIROCCO
Windmeter Manual ^{*2}	Sportissimo, Mistral, BOREAS, (GILL one dimension)
Windmeter Remote Controlled ^{*3}	Sportissimo, Mistral, BOREAS

^{*2}: Serial line requested on the OSV STAR computer: input only.

^{*3}: Serial line requested on the OSV STAR computer: input and output.

Wind gauge can be operated by a judge or by the OSV-STAR software. When the wind gauge is controlled by the OSV-STAR software, you have to define the duration of the measurement and when the measurement has to start following the competition rules.

The delay between the start of the race and the beginning of the wind measurement can be set to:

0: if no delay is requested

1 to 60s

255: if a manual command has to start the wind measurement. **In this case, the wind measurement will start when the ARM FINISH (F7) button is pressed.**

When you enter in acquisition mode for a race shorter or equal to 100m, the software will ask you which setting you want to use for the wind measurement (hurdles or sprint); if you need to change it after answering, unarm the start and you can again do the selection.

4.6.4 False Start

If a false start detection system is connected to the Scan'O'Vision, you have to select the "ASC2" protocol; if not, select "---".

If an ASC (with 5005) is used, the settings of the COM must be "9600,N,7,1".

If an ASC2 (with CHRONOS) is used, the settings of the COM can be "9600,N,8,1" or "19200,N,8,1" depending on the CHRONOS configuration.

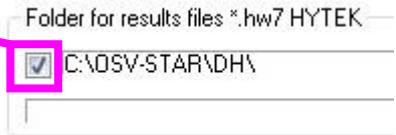
4.6.5 Data Handling

The data handling connections are used to download the start list and send the results to a data base or dedicated sport software.

Two data handling connections can be configured. The first one (DH) works as input and/or output; the second one (DH →) works only as output.

Type	Description
Files [CONCAT & STARTLIST] ^{*4}	<ol style="list-style-type: none"> All the start list in a single text file on the computer. This type of data handling was already available on request on previous Scan'O'Vision software (OSV4). See 8.1.1. Different Lstxxx.txt files are used do load the start list. Compatible with some Data Handling software like



	<i>Athletica</i> . See 8.1.1 .
<i>Files [HYTEK]</i> *4	OSV7 needs a single text file for all start. See 8.1.1 . Check the box to generate one .hw7 per race for results.  Compatible with Hy-Tek Meet Manager version 4.0 or above.
<i>HyTek Bidirectional</i> *3	Standard OMEGA bidirectional data handling (output compatible with the OMEGA type). See 8.1.2 .
<i>OMEGA</i> *1	Standard OMEGA data handling output with results. See 8.1.3 .
<i>OMEGA (Suppl. Info)</i> *1	Same as OMEGA but with supplementary information following the columns displayed in the Results. See 8.1.4 .

- *1: Serial line requested on the OSV STAR computer: output only.
- *3: Serial line requested on the OSV STAR computer: input and output.
- *4: No serial line requested

For the *Files* type, the folder where the files are located is defined (and can be modified); for all other types, a serial line has to be defined.

4.6.6 IO Test tab

After doing the configuration in the IO Settings tab, this tab is used to test the connection and the peripherals. Select the peripheral to test and then use the bottom part of this window to choose and run the test.

Note for false start system:

The  logo is displayed if the "alive" message is received from the false start detection system (so if the connection is correctly established).

The  logo is displayed if the "alive" message is not received from the false start detection system. It can be because:

- The wrong COM has been selected.
- The serial line is not open (checkbox not checked).
- The transmission parameters (speed, number of data bit, ...) are not correct.
- The serial cable is not connected to the devices or an incorrect cable is used.
- The "alive" message is not sent by the false start detection system (because the device is not running or it did not include this feature).

Warning: The ASC2 (false start detection system with CHRONOS inside) sends the "alive" message.
 The ASC (false start detection system with 5005 inside) never sends the "alive" message, so the  logo can never be displayed even if everything works perfectly.

4.7 Full screen mode

This mode displays the main image on the whole screen. It is useful to send an image to the TV (with an optional video adapter).

If the full screen mode is enabled from the race mode, the time mark will not be displayed.

If the full screen mode is enabled from the judgment mode, the time mark will be displayed and you can do judgment (you can place a time mark and identify it as in judgment mode).

The full screen mode can also be activated from the "camera setting" mode when the display is in line scan mode; this allow to have a larger view from the camera when you adjust it. X/Y ration and zoom are not available for this mode.



X/Y ratio in full screen mode:

The full screen mode can be displayed with the different X/Y factor display from x1 to x4 independently from the selection made in the software configuration; you can access the full screen mode or change the X/Y factor within the full screen mode with:

"F10" or 	Display the full screen mode (using the X/Y factor defined in the configuration).
"F11"	Display the full screen mode with X/Y factor of 1.
"F12"	Display the full screen mode with X/Y factor of 2.
"Shift" + "F11"	Display the full screen mode with X/Y factor of 3.
"Shift" + "F12"	Display the full screen mode with X/Y factor of 4.

Zoom and movement in full screen mode:

It is possible to zoom in and out and to move the image horizontally and vertically (small arrows on right, left, top and bottom are displayed when the movement is possible).

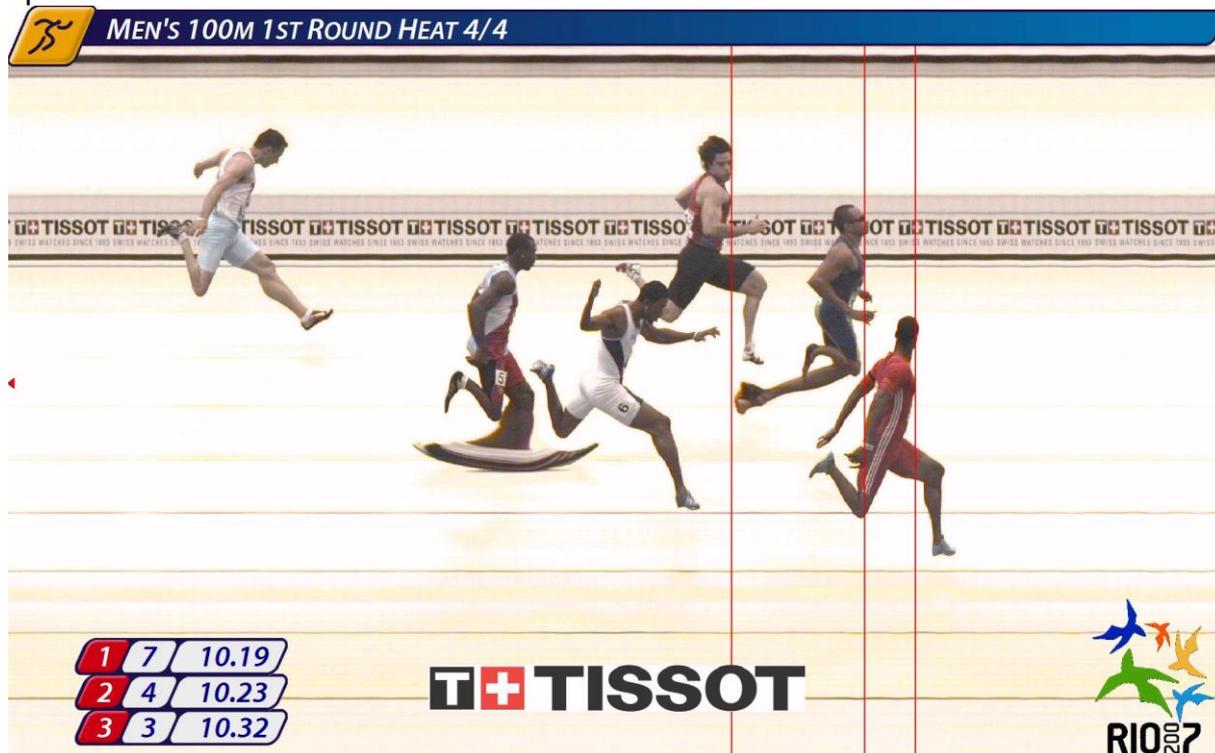
Functions	With keyboard	With mouse
Scrolls the image to the top.	"↑" (up arrow key)	"Shift" + "mouse wheel up"
Scrolls the image to the bottom.	"↓" (down arrow key)	"Shift" + "mouse wheel down"
Scrolls the image to the right.	"→" (right arrow key)	
Scrolls the image to the left.	"←" (left arrow key)	
Scrolls the image to the right (one block).	"Ctrl" + "→"	"mouse wheel up"
Scrolls the image to the left (one block).	"Ctrl" + "←"	"mouse wheel down"
Scrolls the image to the right (half screen).	"Ctrl" + "Shift" + "→"	
Scrolls the image to the left (half screen).	"Ctrl" + "Shift" + "←"	
Zoom in.	"+"	"Ctrl" + "mouse wheel up"
Zoom out.	"-"	"Ctrl" + "mouse wheel down"

If a zoom in is done when you exit the full screen mode, the next time you enter in full screen mode or in WEB mode, the same zoom factor will be used and the image will be placed corresponding to the mouse position in the main window; if the mouse pointer was not in the main window, the image display will correspond approximately to the zoom window (green rectangle).

Add a logo in full screen mode:
See chapter [4.9.6](#).

Full screen template:

In full screen mode, a custom template composed of logos, free texts and data from the race itself can be placed over the image. This is useful to send a nice image to TV or on the Web, or to print a part of the image with some logo of sponsors.



To modify an existing template or create your own template, you have to use the TemplateFullScreen.exe software. Some possibilities of the function:

- Display a gif with transparency.
- Display some components only if a result is not empty.

Please refer to the TemplateFullScreen user manual for more details (file 3434.507.02.pdf in the \OSV-STAR\Documentation sub-directory).

If you create a new template, the OSV-STAR software has to be restarted to show this template in the list. A modification of the active template (when saved in the TemplateFullScreen software) is directly used for the next time you enter in full screen mode, without needing to restart the OSV-STAR software.

See also chapter [4.1.2](#) for the configuration.

Print in full screen mode:

In full screen mode, at any time, you can print what you have on the screen with “Ctrl” + “P”. So you can print a zoom of a part of the image and, if you had placed a logo and/or selected a full screen template, they will also be printed.

Exit full screen mode:

Press the “Esc” key to exit the full screen mode and go back in the previous view. Press “F9” key to go back in the view with the thumbnail or “Ctrl” + “F9” to

go back in the view with only the main image and the zoom (without the thumbnail), see also [2.4](#).

Camera setting & full screen

The full screen mode can also be called from the camera setting line scan mode; it will display the live image over the whole screen. When you move the camera for the alignment and the computer is not near the camera, this function is useful because the displayed image is bigger.



For a complete list of the mouse and keyboard function, see chapter [9](#).

4.8 WEB mode

This mode displays the main image with 800x600 pixels resolution. It is useful to generate a small image for the web. Functions in this mode are the same as in full screen mode ([4.7](#)) except you can't judge nor print in this mode.



Time marks are displayed or not following the setting in "Software setup" (see chapter [4.1.2](#)).

X/Y ratio in web mode:

The web mode can be displayed with the different X/Y factor display from x1 to x4 independently from the selection made in the software configuration; you can access the web mode or change the X/Y factor within the web mode with:

Ctrl + W or 	Display the WEB mode (using the X/Y factor defined in the configuration).
"F11"	Display the full screen mode with X/Y factor of 1.
"F12"	Display the full screen mode with X/Y factor of 2.
"Shift" + "F11"	Display the full screen mode with X/Y factor of 3.
"Shift" + "F12"	Display the full screen mode with X/Y factor of 4.

Zoom and movement in web mode:

It is possible to zoom in and out and to move the image horizontally and vertically

Functions	With keyboard	With mouse
Scrolls the image to the top.	"↑" (up arrow key)	"Shift" + "mouse wheel up"
Scrolls the image to the bottom.	"↓" (down arrow key)	"Shift" + "mouse wheel down"
Scrolls the image to the right.	"→" (right arrow key)	
Scrolls the image to the left.	"←" (left arrow key)	
Scrolls the image to the right (one block).	"Ctrl" + "→"	"mouse wheel up"
Scrolls the image to the left (one block).	"Ctrl" + "←"	"mouse wheel down"
Scrolls the image to the right (half screen).	"Ctrl" + "Shift" + "→"	
Scrolls the image to the left (half screen).	"Ctrl" + "Shift" + "←"	
Zoom in.	"+"	"Ctrl" + "mouse wheel up"
Zoom out.	"-"	"Ctrl" + "mouse wheel down"

If a zoom in is done when you exit the WEB mode, the next time you enter in WEB mode or in full screen mode, the same zoom factor will be used and the

image will be placed corresponding to the mouse position in the main window; if the mouse pointer was not in the main window, the image display will correspond approximately to the zoom window (green rectangle).

Add a logo in WEB mode:

See chapter [4.9.6](#).

Web template:

In WEB mode, a custom template composed of logos, free texts and data from the race itself can be placed over the image. This is useful to generate a nice image. The *TemplateFullScreen* software has to be used to modify or generate 800x600 templates.

Exit WEB mode:

Press the “**Esc**” key to exit the WEB mode and go back in the previous view. Press “**F9**” key to go back in the view with the thumbnail or “**Ctrl**” + “**F9**” to go back in the view with only the main image and the zoom (without the thumbnail), see also [2.4](#).

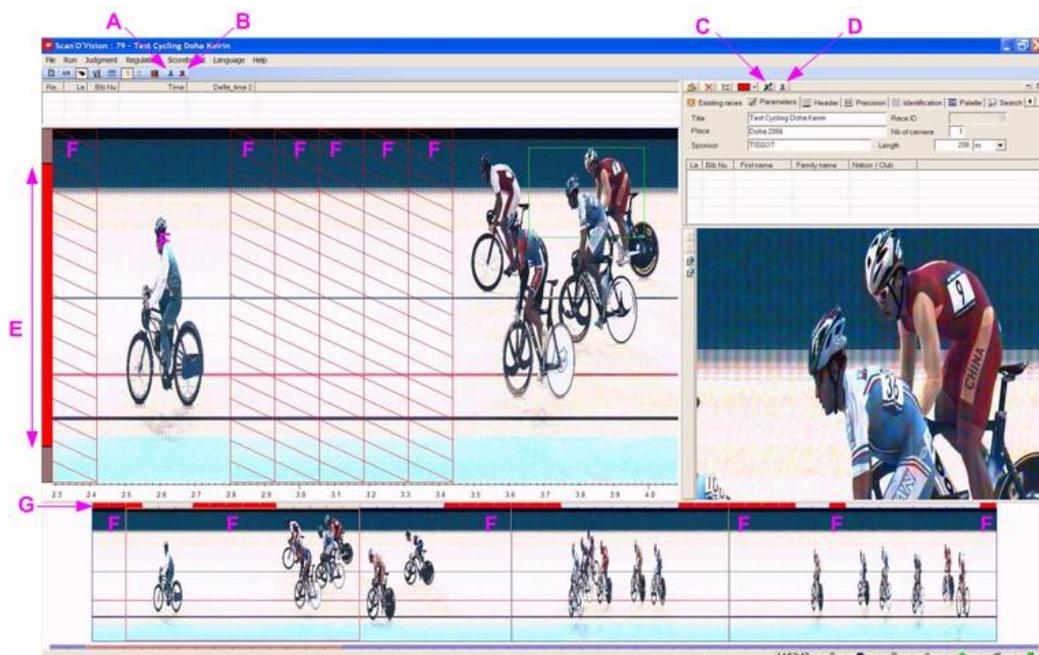
4.9 Other functions

4.9.1 Crop

The crop function allows you, when an image is displayed in *Race* mode, to delete parts of the image (image blocks). The image blocks can be manually or semi-automatically selected.

First, the crop function has to be enabled in the *Software setup (Configuration mode)*; please refer to chapter 4.1.2.

Then some image blocks have to be marked in order to be deleted. The marking can be done manually or automatically. A marked block is indicated by a red rectangle on the top of the corresponding thumbnail; a marked image block is also displayed with red cross hatching in the main window.



- A:** Execute the crop (.
- B:** Delete the selection of the crop (.
- C:** The zone for the automatic crop selection is displayed () or hidden (.
- D:** Create the automatic crop selection (.
- E:** Active zone for the automatic crop selection.
- F:** Marked image block.
- G:** Manual crop selection scale.

Manual crop selection

Right-click in the scale in the top of the thumbnail to mark a block to be deleted (a right-click & drag will mark several blocks). A right-click in a marked block will unmark it.

Automatic crop selection

By giving a sensitivity level and a vertical zone to analyse, the automatic crop selection will mark automatically any block without visible objects in the target zone.

The sensitivity is selected in the software configuration (see chapter 4.1.2). If the sensitivity is too small, some objects or competitor's limbs could be marked as to be deleted. If the sensitivity is too high and if the image is noisy (high contrast level, rain, light flickering, ...), it is possible the automatic crop selection will not mark any image block to be deleted.

The active zone for the automatic crop selection is displayed (in place of the lane numbering) by pressing the  button or hidden by pressing the  button. Only the red zone will be used for image analysis. You can click & drag on the top and bottom of the red zone to modify its position and size. You can exclude some parts of the image where something is moving and must not be taken in consideration for the crop (spectators or officials in the background for example).

To do the automatic crop selection, the active zone must be displayed and you can then click on the  button. First, all marks are removed and then the software scans the image to mark blocks according to the settings.

If final adjustment is needed, a manual crop can be done after the automatic crop selection to mark or unmark any image block (e.g. to provide for separation in a print).

Execute the crop

To erase all the marked image blocks, press the  button. This action is permanent, therefore a confirmation is required. If the original image should be retained, use the save as function and crop the copied image.

Warning: after validation, this operation deletes some image blocks and cannot be cancelled.

Cancel the selection of the crop

Pressing the  button will remove all marks with a single action (no image blocks are deleted).

4.9.2 Modifying the acquisition speed

The acquisition speed must be selected prior to the acquisition in the Camera Setting mode (4.5), but it can also be modified in the acquisition mode, even during recording an image.

In acquisition mode, the exposure time is never changed when you modify the acquisition speed (so the contrast of the image will remain the same); so before entering in the acquisition mode, it is important to set the camera with the highest acquisition speed you will use for the race; then in acquisition mode you can also select a lower speed, using the mouse on the *Speed* list box or with the “↑” and “↓” keyboard keys.

This can be particularly useful for road cycling where the first competitors arrive at high speed (sprint) while the rest of the pack passes the finish line at reduced speed.

In acquisition mode, with STAR 100, 10x0 & 20x0 cameras, you select any speed lower than the original speed (when entering in the acquisition mode).

In acquisition mode, with STAR 110 & 210 cameras, only some speeds are usable depending of the original exposure time:

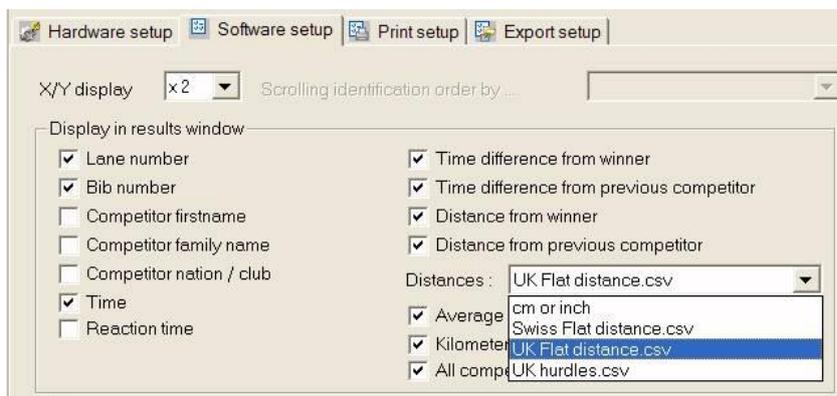
Exposure time	2000l/s	1666l/s	1428l/s	1250l/s	1000l/s	769l/s	500l/s	250l/s	166l/s	100l/s
0.5ms	✓	✗	✗	✗	✓	✗	✓	✓	✗	✓
0.6ms	✗	✓	✗	✗	✗	✓	✗	✗	✗	✗
0.7ms	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗
0.8ms	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗
1.0ms	✗	✗	✗	✗	✓	✗	✓	✓	✗	✓
1.3ms	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗
2.0ms	✗	✗	✗	✗	✗	✗	✓	✓	✗	✓
4.0ms	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
6.0ms	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
10.0ms	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓

4.9.3 Distances in horse lengths

When the “Horse racing” sport is selected in the “Header” tab (4.2.15), the distance from the previous competitor and from the first can be displayed in horse length instead of cm/inch.

Ra...	Bib Nu	Time	Acc. Distance	Flat Distance	Km Red.
1.	8	2:32.4307			1:03.513
2.	14	2:32.4982	Neck	Neck	1:03.541
3.	12	2:32.6472	1 length	¼ length	1:03.603
4.	10	2:32.7862	1 ¼ length	¼ length	1:03.661
5.	4	2:32.9102	2 ¼ lengths	½ length	1:03.713
6.	3	2:33.0162	2 ¾ lengths	½ length	1:03.757
7.	6	2:33.0357	3 lengths	Head	1:03.765
8.	9	2:33.0677	3 lengths	Head	1:03.778
9.	7	2:33.1707	3 ½ lengths	½ length	1:03.821
10.	2	2:33.4267	4 ¾ lengths	1 ¼ length	1:03.928
11.	11	2:33.6412	5 ¾ lengths	1 length	1:04.017
12.	5	2:33.9497	7 ¼ lengths	1 ½ length	1:04.146
13.	13	2:34.1507	8 ¼ lengths	1 length	1:04.230
14.	1	2:34.2082	8 ½ lengths	Neck	1:04.253
15.	16	2:35.4527	14 ½ lengths	6 lengths	1:04.772
16.	115	2:42.0902	Distance	Distance	1:07.538

The table to be used can be selected in the software setup tab (in the configuration mode).



The “*cm or inch*” selection will display the distance in centimetres or inches according to the units chosen in the “Units” tab of the Race mode.

Different tables can be selected to fit special circumstances, for example a table for flat races and another for hurdles races. In this case, you have to change the table to use when the race type changes.

The distances are automatically computed by the software using the selected table. Then the computed distance can be manually changed by clicking on it.

Note : changing the distance from previous competitor will change the accumulative distance (distance from first), but changing an accumulative distance will not change the following accumulative distances nor the distance from previous competitor.

The calculation is done using a table definition file contained in the Distance sub-directory (normally C:\OSV-STAR\Distance). Each table is in a separate .CSV file. These .CSV files can be created or modified with the Notepad software or Microsoft EXCEL software (not provided).

Description of a table definition file (.CSV):

On a line, the fields are separated by semi-colon (;). Numbers are directly written, if needed with a point (.) to separate the unit and the decimal. Text is written between quotes ("").

- The first line of the file are general information separated by semi-colon (;), in the order:
 - *Text for accumulative distance* (distance from first competitor). This text will be displayed in the header of the accumulative distance column of the *Result* window, maximum 14 characters length.
 - *Text for flat distance* (distance from previous competitor). This text will be displayed in the header of the flat distance column of the *Result* window, maximum 14 characters length.
 - *Length text* (text written after a number of lengths less than 2, in fact it is the needed translation of *horse length* [singular])
 - *Lengths text* (text written after a number of lengths higher or equal than 2, in fact it is the needed translation of *horse lengths* [plural])
 - *Length rounding*. This number indicates the rounding used to display the *Accumulative distance*. Allowed values are:
 - ❖ 1: rounding to 1 length
 - ❖ 2: rounding to ½ length
 - ❖ 4: rounding to ¼ length (default value)
 - ❖ 8: rounding to 1/8 length
 - ❖ 16: rounding to 1/16 length
 - ❖ 32: rounding to 1/32 length
- Then each line represents an entry with, in the order:
 - *Time* field (time in second, precision up to the 1/1000s, used for the comparison).
 - *Distance* field (distance in horse lengths, precision up to 1/32 = 0.03125, used for accumulative distance calculation).
 - *Text* field (text display in the result window if the time difference is less or equal (<=) to the *Time* field, maximum 14 characters in length). The *text field* must be inserted between quotes ("").
- On a line, each field is separated by a semi-colon (;).
- The last line represents the text for all the lengths greater than the longest defined, so the *Time* and *Distance* fields are ignored for this line.

Sample file:

```
"Acc. Distance";"Sample Distance";" length";" lengths";4
0.000;0;"Dead Head"
0.009;0.03125;"Nose"
0.019;0.0625;"Short Head"
0.039;0.125;"Head"
0.079;0.25;"Neck"
0.129;0.5;" ½ length"
0.174;0.75;" ¾ length"
0.224;1;" 1 length"
0.274;1.25;" 1¼ length"
0.325;1.50;" 1½ length"
0.374;1.75;" 1¾ length"
0.449;2.0;" 2 lengths"
0.549;2.5;" 2½ lengths"
0.649;3.0;" 3 lengths"
0.749;3.5;" 3½ lengths"
0.849;4.0;" 4 lengths"
1.099;5.0;" 5 lengths"
1.299;6.0;" 6 lengths"
1.499;7.0;" 7 lengths"
1.699;8.0;" 8 lengths"
1.899;9.0;" 9 lengths"
2.099;10;"10 lengths"
; ;"Distanced"
```

Each table definition file can contains up to 200 distances; if it contains more than 200 distance definitions, the last ones will be ignored. You can have up to 20 different tables (csv files) in the distance sub-directory. The name of the file is used to identify the table in the listbox of the software setup tab.

4.9.4 Kilometric reduction

When the “Horse racing” sport is selected in the “Header” tab (4.2.15), the supplementary “Km Red” column can be added in the results through the “Software setup” tab of the Configuration mode (4.1.2). This column will show the time done to do one kilometre; so it is important that the race length has been set correctly.

With the “Horse racing” sport selected, the “lane number” parameters is transformed in handicap distance (in meter). So you can insert in the start list or during the cursor’s identification the handicap for each horse to have the correct kilometric reduction calculation. If the horse has no handicap, make sure that 0 is entered in the handicap field.

The kilometric reduction is computed with the formula:

$$\text{Km Red} = \text{finish time} / (\text{length of the race} + \text{handicap})$$

The kilometric reduction is displayed with the general precision (4.4.21) and is always rounded using the medium rounding.

Remember, you can modify the handicap or the bib number of a time mark by doing a right click in the corresponding field in the results (in judgment mode).

4.9.5 Use of Active Link

When two instances have been configured (see chapter 6.9) and both instances are in judgment with a race opened, it is possible to link together the results of these races by enabling the *Active Link* function (click on ,  will be displayed, see also chapter 4.4.8). When races are linked together, their start list and results are merged.

Warning : Generally, the start list of the races linked together are the same; if not, it is possible that some entries and/or results are lost (if same BIB and lane number exists with different names and/or results).

This function is mainly used in two cases:

- When you have two cameras, one on each side of the finish line (so you have less risk to do a bad judgment because a competitor hide another one).
- When you have two cameras for the same race, but each one on a different finish line (pursuit track cycling).

When races are linked and you are placing a time mark on an instance, the corresponding image is automatically displayed on the second instance and a hashed bi-colour time mark move at the same time (placed on the same race time). This function used with a computer with dual screen is very powerful to do fast and precise judgment.

When a new time mark is confirmed, both results list are updated; the time marks are displayed on the image depending on the “*Show only local time marks or all*” parameter, select  if both cameras point on the same finish line or  if each camera films another finish line (see also chapter 4.4.9). Time marks are displayed with the colour used in the instance they have been placed.

As with separate computers on network, only one computer/instance can place a time mark at a time.



Active Link+

The *Active Link+* do the same function as the *Active Link* and, in addition, will automatically replicate the *Open* and *Fast Open* commands on the other instances; that means that during a normal judgment you only operate one instance. This is very helpful if you are using the dual instance mode with a single screen computer to judge main and infield camera image (combined with the zoom switch, see chapter 2.7). You enable the *Active Link+* by pressing the **Ctrl** key and click on  (see also chapter 4.4.8).

4.9.6 Logo over the image

With the keyboard shortcut “**Ctrl**” + “**L**”, it is possible to add over the image a logo (to add publicity before doing exportation or giving the image to the TV or to a video scoreboard). To select the logo, please refer to chapter 4.1.2.

When you activate the function (by “**Ctrl**” + “**L**”), the logo follow the mouse cursor until you click the left mouse button at the wished position. To hide the logo, use again the “**Ctrl**” + “**L**” shortcut.

When the logo is placed in the image, its position is fix referring to the top left corner of the image window: it did not move with the image scrolling nor when you change the height of the image (modification of the horizontal splitter), it is not affected by the zoom in the full screen mode.



This function is mainly used in the full screen mode but also works in the judgment mode and race mode. **Warning:** if the logo is placed too low in the full screen mode, it will not be displayed in the others mode (race and judgment modes); so it may request to do twice the “**Ctrl**” + “**L**” to show the logo (as it is out of the image, the first “**Ctrl**” + “**L**” will hide it and the second will display it again).

The logo is only displayed over the image on the screen; it is not printed (excepted in full screen mode) and not exported with the “*Export full image*” function (“**Ctrl**” + “**F8**”).

4.9.7 Judgment with transponder help

The Scan’O’Vision STAR software can be linked with a transponder system with antenna placed on the finish line and transponder embedded on each competitor. Then, during the judgment, the time marks can be automatically pre-positioned and the identification came directly from transponder system.

Ask for the specific 3434.508 user’s manual for more details.

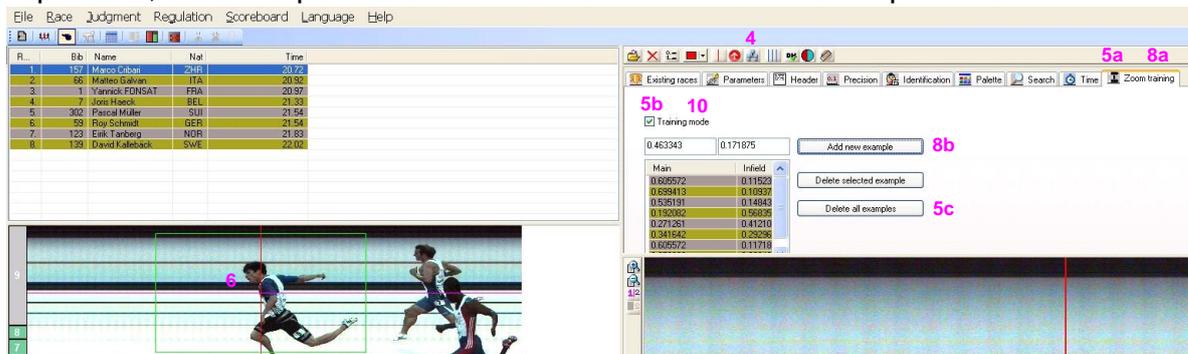
4.9.8 Zoom training



When you are judging with dual instances (main and infield images) and ActiveLink enabled, you can train the vertical zoom position in order that when you click in an image, the other instance place vertically the zoom at the same location even if camera angle are not the same:

1. Be sure your cameras are correctly setup, specially the framing (zoom).
2. Verify the dual instance mode is enabled on the judging computer (see [6.9](#)).
3. Record a race with main and infield cameras. On the judgment computer, for each instance, go in judgment mode and open this race (main image on instance 1 and infield image in instance 2).
4. Enable the *Active Link* [4] or the *Active Link+* (see [4.9.5](#)).
5. In the second instance, select the *Zoom training* tab [5a]. Check the *Training mode* box [5b] and click on the *Delete all examples* button [5c].
6. Place a time mark in the second instance image (no need to validate it); it is important that the magenta horizontal line is placed vertically at the position corresponding to do the judgment for this lane * (chest in athletics, skate in speed skating, wheel in cycling, ...) [6].
7. Click on the corresponding location in main window of the first instance (an horizontal magenta line is also displayed).
8. In the second instance, select the *Zoom training* tab [8a] and click on the *Add new example* button [8b].
9. Repeat points 6 to 8 for every lane; that will give the best results. You must enter a minimum of 3 points to allow the algorithm to work properly.
10. Uncheck the *Training mode* box [10].

*: If your sport did not have lane separation, do the training with the farthest position, a middle position on the finish line and the nearest position.



The screenshot shows the Swiss Timing software interface. On the left, there is a table with race results:

R...	Bb	Name	Nat	Time
1	157	Marco Cibani	ZHR	20.72
2	66	Mario Gabvan	ITA	20.92
3	1	Yvanick FONSAT	FRF	20.97
4	7	Joris Haack	BEL	21.33
5	302	Patric Müller	SLI	21.54
6	19	Flap Schmidt	GER	21.54
7	123	Erik Tanberg	NDR	21.83
8	139	David Kalleback	SWE	22.02

Below the table is a video feed of a race. On the right, there is a control panel for zoom training. It includes a 'Zoom training' tab (5a), a 'Training mode' checkbox (5b), and buttons for 'Add new example' (8b), 'Delete selected example', and 'Delete all examples' (5c). A table shows zoom positions for 'Main' and 'Infield' cameras:

Main	Infield
0.805572	0.11623
0.89413	0.10837
0.93191	0.14843
0.152082	0.56835
0.271261	0.41210
0.811942	0.25295
0.805572	0.11718

Now you can judge easily any new race done with these camera positions. The procedure must be redo if you change camera location or camera zoom.

Note: During judgment, you can always move vertically the zoom view with “Shift” + “mouse wheel” (it will move both zoom vertically).

4.9.9 Sounds



Some sounds (beep) are played when actions are not possible.

In acquisition mode, the `C:\OSV-STAR\GIF\StartSound.wav` is played when a start occurs (default sound is a gunshot). In case of manual start (F4 key), the `...\GIF\StartSoundManual.wav` is played (default sound is a “ding”). Delete these files to disable these sounds. You can rename any `.wav` sound to replace the default sounds.

5 MENU DESCRIPTION

This chapter explains all the menus of the software. Some menus can also be accessed by shortcut or icon.

5.1 File menu

5.1.1 **Hardware setup**

Select the “ Hardware setup” tab of the configuration mode. See chapter [4.1.1](#).

5.1.2 **Software setup**

Select the “ Software setup” tab of the configuration mode. See chapter [4.1.2](#).

5.1.3 **Print (shortcut: Ctrl + P)**

Print the image following the print setup (chapter [4.1.3](#).)

If an image has to be printed, it starts with the part of the image on the main window.

Exception: when you do **Ctrl + P** in full screen mode, you will print a copy of the screen (with the possible logo and screen template).

If you print a template which includes a zoom object, you will have to select the zoom factor and the part of the image to zoom.



5.1.4 **Print Template 1 (shortcut: Ctrl + Shift + P)**

Print the image using the template 1 (chapter [4.1.3](#).)

5.1.5 **Print Template 2 (shortcut: Ctrl + Z)**

Print the image using the template 2 (chapter [4.1.3](#).)

5.1.6 **Print setup**

Select the “ Print setup” tab of the configuration mode. See chapter [4.1.3](#).

5.1.7 **Create PDF with Template 1 (shortcut: Ctrl + D)**

Generate a high definition PDF file using the template 1 (chapter [4.1.3](#).). The file name and location follow the setup made in the “PDF” section in the “ Export setup” tab of the configuration mode (chapter [4.1.4](#)).



5.1.8 **Create PDF with Template 2 (shortcut: Ctrl + Shift + D)**

Generate a high definition PDF file using the template 2 (chapter [4.1.3](#).). The file name and location follow the setup made in the “PDF” section in the “ Export setup” tab of the configuration mode (chapter [4.1.4](#)).

5.1.9 **Export (shortcut: F8)**

Export a copy of the screen in a bitmap and/or JPEG format following the setup made in the section 1, 2 and 3 in the “ *Export setup*” tab of the configuration mode (chapter 4.1.4). Up to 3 different images exportation (in 3 different directories for example) can be made at the same time.

In full screen mode, the logo and/or full screen template will also be exported (see chapter 4.7).

5.1.10 **Export full image (shortcut: Ctrl + F8)**

Export the full image (can be a very long image) in a bitmap and/or JPEG format following the setup made in the “*Full image*” section in the “ *Export setup*” tab of the configuration mode (chapter 4.1.4).

5.1.11 **Export setup**

Select the “ *Export setup*” tab of the configuration mode. See chapter 4.1.4.

5.1.12 **Exit (shortcut: Alt + F4)**

Exit the software. You can then unplug the camera power cable to switch off the camera.

5.2 Race menu

5.2.1 **New**

Select the “ *New*” tab of the race mode. See chapter 4.2.3.

5.2.2 **Existing races**

Select the “ *Existing races*” tab of the race mode. See chapter 4.2.13.

5.2.3 **Race parameters**

Select the “ *Parameters*” tab of the race mode. See chapter 4.2.14.

5.2.4 **Race header**

Select the “ *Race header*” tab of the race mode. See chapter 4.2.15.

5.2.5 **Units / Rules**

Select the “ *Units / Rules*” tab of the race mode. See chapter 4.2.17.

5.2.6 **Preferences 1**

Select the “ *Preferences 1*” tab of the race mode. See chapter 4.2.18.

5.2.7 **Preferences 2**

Select the “ *Preferences 2*” tab of the race mode. See chapter 4.2.19.

5.2.8 **Synchronisation**

Select the “ *Synchronisation*” tab of the race mode. See chapter 4.2.9.

5.2.9 **Test**

Select the “ Test” tab of the race mode. See chapter [4.2.10](#).

5.3 Judgment

5.3.1 **Existing races**

Select the “ Existing races” tab of the judgment mode. See chapter [4.2.13](#).

5.3.2 **Parameters**

Select the “ Parameters” tab of the judgment mode. See chapter [4.2.14](#).

5.3.3 **Header**

Select the “ Header” tab of the judgment mode. See chapter [4.2.15](#).

5.3.4 **Precision**

Select the “ Precision” tab of the judgment mode. See chapter [4.4.21](#).

5.3.5 **Identification**

Select the “ Identification” tab of the judgment mode. See chapter [4.4.22](#).

5.3.6 **Palette (shortcut: Ctrl + R)**

Select the “ Palette” tab of the judgment mode. See chapter [4.4.23](#).

5.3.7 **Search**

Select the “ Search” tab of the judgment mode. See chapter [4.4.24](#).

5.3.8 **Time**

Select the “ Time” tab of the judgment mode. See chapter [4.4.25](#).

5.4 Regulation menu

5.4.1 **Camera setup**

Select the “ Camera setup” tab of the camera setting mode. See chapter [4.5.9](#).

5.4.2 **Image quality**

Select the “ Image quality” tab of the camera setting mode. See chapter [4.5.10](#).

5.4.3 **Lens remote**

Select the “ Lens remote” tab of the camera setting mode. See chapter [4.5.11](#).

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5.5 Scoreboard menu

5.5.1 Setup

Select the “ IO Setting” tab of the IO Setting mode. See chapter [4.6](#).

5.5.2 Send results (shortcut: Ctrl + F10)

Send the results to the scoreboards and data handling (automatically done in judgment mode).

5.5.3 Clear (shortcut: Ctrl + F2)

Clear the scoreboards.

5.5.4 Daytime (shortcut: Ctrl + F3)

Send the day time to all scoreboards which are configured to display daytime (will automatically do a clear before).

5.5.5 End of judgment (shortcut: Ctrl + F9)

To validate a judgment (send the whole classification and signals the results as “official”).

5.5.6 Automatic end of judgment

When this menu is checked, “End of judgment” is automatically executed when a race is closed (when doing a new race or opening another race).

5.6 Language menu

This menu allows choosing the language of the user interface. Select the requested language. New languages will be available from our web-site. See also chapter [7](#).

5.7 Help menu

5.7.1 About software version (shortcut: Ctrl + F1)

Display a window with the software version.
Press the “ESC” key or click in this window to close it.

5.7.2 About camera version

Display a window with the camera type and serial number as well as the different versions of camera internal hardware and software.
Press the “ESC” key or click in this window to close it.

5.7.3 Lens about

Display some information about the lens and the version of the lens command board. This function is only available for *STAR 2020* cameras.

6 SOFTWARE CONFIGURATION

The Scan'O'Vision *STAR* software can have different configurations; these configurations are selected or modified by the *ConfOmegaGen.exe* software (contained in the OSV-STAR main directory).

6.1 Working modes

There are 5 working modes of the OSV7 software :

Name	Description	Text written in the title bar when a race is opened
Basic	Default mode after installing the software. You can do acquisition and judgment but not simultaneous judgment.	Nothing
Standard	You can do acquisition and simultaneous judgment.	Standard mode
Race online	You can do acquisition but no judgment.	Race online mode
Judgment online	You can do simultaneous judgment but no acquisition.	Judgment online mode
Expert	You can set what you want (block only some tabs or a whole function).	Expert mode

Name	Configuration	Race	Acquisition	Judgment	Simultaneous judgment	Camera setting	IO Setting
Basic	✓	✓	✓*	✓	✗	✓*	✓
Standard	✓	✓	✓*	✓	✓	✓*	✓
Race online	✓	✓	✓*	✗	✗	✓*	✓
Judgment online	✓	✗	✗	✓	✓	✗	✓
Expert	■	■	■*	■	■	■*	■

* : only if a camera is connected.

All the modes except the Basic mode are set using the *ConfOmegaGen.exe* software. To set (back) the Basic mode, you have to delete the *OSV.CFG* file contained in the main OSV-STAR directory.

Simultaneous judging : This configuration allows to judge a race during his acquisition (even if it is not totally finished); so you can judge for example the first competitors of a cycling road race when some other still have not crossing the finish line.
 “Online loading” must be checked in the “Existing races” tab of the judgment mode to be able to see the races with the red flag and use this function.

6.2 Mode setting

When you run the *ConfOmegaGen.exe* software (contained in the main OSV-STAR directory), the first page allows you to choose the working mode (see 6.1). If you want to modify the existing configuration (instead to select all the parameters), you can load it by using the “...” button, then select the *OSV.CFG* (or *IF.OSV.CFG*, see 6.9) file in the main OSV-STAR directory.

Then, each time you press the “Next” button, you will have some setting to choose (depending of the working mode selected).

- In these pages setting, if you check the “Force values”, it means this parameter could not be modified in the *OSV7.exe* software.
- The selected parameters (sport, rules, precision, ...) will be used as default for any new race (even if you have set another parameter and save the configuration in the *OSV7.exe* software), so select them carefully.

Note: The expert mode will not be explained in this manual.

6.3 Sport

The sport can be selected for the “Standard mode” and the “Race online” mode.

Some specification of the different sports :

Athletics 	<ul style="list-style-type: none"> • Possibility to have and edit reaction time in the results window. • If the general precision of the times is not set to 1/100s, the background of the software will be magenta (as a warning).
Cycling 	<ul style="list-style-type: none"> • Possibility to use the parameter “same time” during the identification of a competitor in judgment. • For faster judgment, possibility to create group during judgment (you have not to place a time mark for every runner, you can just enter his BIB number).
Horse racing 	<ul style="list-style-type: none"> • Possibility to compute and display the Kilometric reduction. In this case the “Lane” number will represent the handicap distance. See also 4.9.4. • Possibility to compute and display the distance in horse lengths from the previous competitor and/or from the first competitor. These distances can be manually modified. See also 4.9.3.

See also chapter 4.2.15.

6.4 Rounding regulation

The rounding regulation can be selected for the “Standard mode” and the “Race online” mode.

- “Rounding down” will truncate the times (lower numbers are ignored).
- “Rounding up [IAAF]” will increase the time if the numbers to cut are not 0.
- “Medium rounding” will truncate the times that are smaller than 5 and increase the times superior or equal to 5.

Example for the 9.8725 time with the different precision and rules:

Precision	Rounding down	Rounding up	Medium rounding
1/10000s	9.8725	9.8725	9.8725
1/1000s	9.872	9.873	9.873
1/100s	9.87	9.88	9.87
1/10s	9.8	9.9	9.9
1s	9.	10.	10.

See also chapter [4.2.17](#).

6.5 Manual start regulation

The regulation in case of manual start (given from the keyboard) can be selected for the “*Standard mode*” and the “*Race online*” mode.

- “*Normal display of time*” will make no difference, as a normal start.
- “*Display only up to 1/10s [IAAF]*” will display all times with a precision of 1/10s.

See also chapter [4.2.17](#).

6.6 Units

The units of distances can be selected for the “*Standard mode*” and the “*Race online*” mode.

- Select the “*Metric [m, km/h]*” units to have the distances in meters and the speeds in kilometres per hour in the results.
- Select the “*Imperial [ft, Mph]*” units to have the distances in feet and the speeds in Miles per hour in the results.

See also chapter [4.2.17](#).

6.7 Precision

The precision of times can be selected for the “*Standard mode*” and the “*Judgment online*” mode.

The **General precision** is used to display the finish times. It will also affect the computing of the mean speed of the competitor.

Note: The background of the image will be magenta instead of white if you are viewing an athletics image and the general precision is not set to 1/100s to indicate it is out of the IAAF rules.

The **Precision for delta time** is used to display the time difference from the first and from the previous competitor. It will also affect the computing of the distance from the first and from the previous competitor.

The reaction times are always displayed to the 1/1000s.

The selected precisions are used for the Results window, the prints and all the outputs (scoreboards, data handling, ...).

See also chapter [4.4.21](#).

6.8 Save

If you want to run two instances of the *OSV7.EXE* software on this computer (see [6.9](#)), check the “*Enable 2nd instance*” box; then select which configuration (main or infield) you want to save.

Click on “*Finish*” to save the configuration (select the main OSV-STAR directory) and close the *ConfOmegaGen.EXE* software. If you had checked “*Start OSV7.EXE software*”, the *OSV7.EXE* software will start automatically.

6.9 Double instance

With a specific configuration done with the *ConfOmegaGen.EXE* software, it is possible to run automatically two instances of the *OSV7.EXE* software on the same computer; this is useful for example:

- To do acquisition and simultaneous judgment on the same computer.
- To judge two different images at the same time on the same computer (for example the images from the main and infield cameras). In addition, you can use the *Active Link* function to decrease the judging time (see 4.9.5).

In all cases, it is recommended to have a second screen connected on the computer, to run each instance on a separate screen.

Setting a double instance :

- Run the *ConfOmeagGen.exe* software; on the first page, select the wished mode for the first instance (if a camera is connected to the computer, the first instance must control it); on the last page, check the “*Enable the 2nd instance*”, select “*Save in osv.cfg (main configuration)*”; click on the “*Finish*” button.
- Run again the *ConfOmeagGen.exe* software; on the first page, select the wished mode for the second instance (the second instance can never access to the camera); on the last page, check the “*Enable the 2nd instance*”, select “*Save in if.osv.cfg (infield configuration)*”; click on the “*Finish*” button.
- Run the *OSV7.EXE* software.

When two instances are set, both starts automatically when you run the *OSV7.EXE* software. The second instance can be identified by the “*Infield*” text in the title bar and the icon  instead of  in the status bar. You can pass from one instance to the other by the **Alt + Tab** keys (Windows features). If you have a second screen on your computer, minimize one of the instances, move it to the other screen and maximize it (this setting will be remembered for the next start of the software).

Warning: when you have two instances, verify which instance has the focus for the keyboard functions.

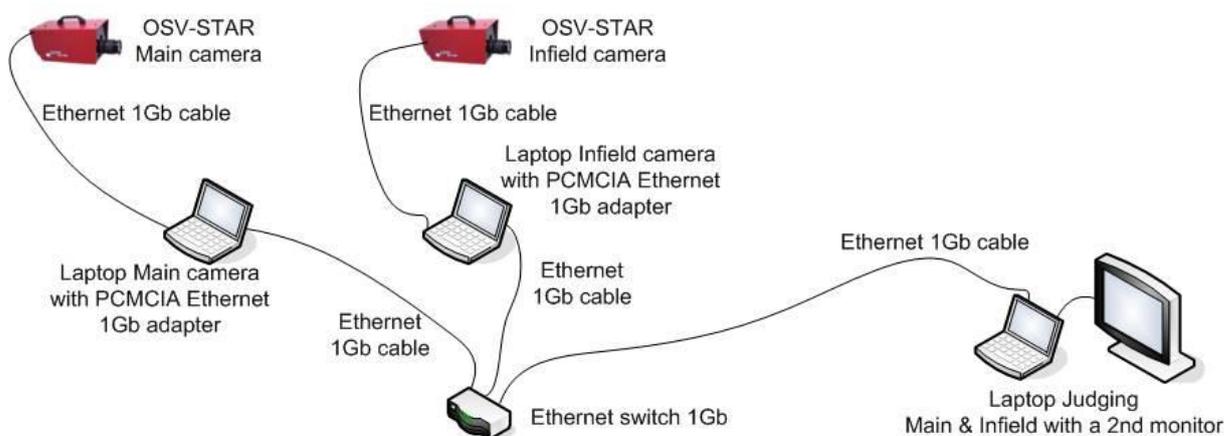
Removing a double instance:

- If you want to go back in *Basic* mode, delete the *OSV.CFG* file contained in the main OSV-STAR directory.
- If you want only to suppress the second instance, run the *ConfOmeagGen.exe* software; on the first page, load the *OSV.CFG* file; on the last page, uncheck the “*Enable the 2nd instance*”; click on the “*Finish*” button.

6.10 Networked computers

To be able to judge from another computer it is mandatory to share the data directory of the acquisition computer with the full rights (with write/modification rights); by default it is share as read only. During acquisition, the image storage must always be done on the hard disk of the acquisition computer (not through the network).

The same version of the OSV-STAR software must be installed on all computers (acquisition and judging computer). The computers must be networked (but not on the same interface than the camera, so the acquisition computer must have two network cards). It is highly recommended to network the computer with 1Gb connection (because of the size of the images, a 100Mb connection will slow down the operations). If you are using more than two computers, a 1Gb switch must be used.



7 SOFTWARE TRANSLATION

The Scan'O'Vision *STAR* software can easily be translated in different languages by any user.

Each language is defined by a file named "lang_OSV7.xxx" in the "Lang" sub-directory; xxx is the name of the language appearing in the Language menu.

Do not modify the delivered text file, otherwise your modification will be lost during a software upgrade and it will be difficult to understand the corresponding user manual.

To do a translation, it is recommended to use the "LangManager.exe" software, included in the "Lang" sub-directory. This software allows you to display two languages simultaneously, the base one and the one to translate. In addition, some comments explain the abbreviation and some texts can have a specific or maximum length.

Please refer to the LangManager user manual for more details (file 3434.503.02.pdf in the \OSV-STAR\Documentation sub-directory).

After creating a new language, start the Scan'O'Vision *STAR* software and select this new file (language) in the "Language" menu.

When you have created a new language, please send it to our after-sales service so it will be included in the next software release.

8 PROTOCOLS

8.1 Data Handling

8.1.1 Files [CONCAT & STARTLIST]

There are two possibilities:

- If the files *Startlist.csv* and *Concat.txt* are not present in the specified directory, the software will use the *Lstxxx.txt* files (compatibility with OSV4 software). Please refer to the document 3334.530 (available on request) for more details.
- If the files *Startlist.csv* and *Concat.txt* are present in the specified directory, these files will be used to define the start list and/or the competitor's names.

STARTLIST.CSV

Principles:

- The start lists are all introduced in one single file.
- The STARTLIST.CSV file can be edited in any text editor. It is nevertheless more comfortable to use an Excel file (STARTLIST.XLS) and to save it as STARTLIST.CSV at the end of the edition.
- By default, this file (STARTLIST.CSV) must be contained in the DH subdirectory of the OSV-STAR software (the parameters of the DH IO Settings permit to choose this repertory to point for example on an unit network).
- If the names are not contained in the start list, it is possible to assign them according to the CONCAT.TXT file.

Definitions:

The first line of the file is planned for the commentaries and is not used for the start lists, then the STARTLIST file can contain two line styles:

- If the first field of the line is not empty, it is the beginning of a new start list (line title).
The following fields of the line define the title and the date of the race.
- If the first field of the line is empty, it is an entry for the start list (data line).
This entry is for the race defined by the first line titles above.
- In a line, the fields are separate by the “;” character.

Line title:

In the order, the fields for the lines title are:

- Identification or code of the race [maximum 8 characters, minimum 1 character].
- Date planned for the departure of the race [maximum 10 characters, recommended format: JJ.MM.AAAA].
- Hour planned for the departure of the race [maximum 8 characters, recommended format: hh:mm:ss].
- 5 empty fields
- Length of the race in meters [number, maximum 6 numbers].
- First line of the title of the race [maximum 50 characters]. *1
- Second line of the title of the race [maximum 50 characters]. *1
- Name of the sponsor of the race [maximum 25 characters].
- Time of Record 1 [format hh:mm:ss.dc]. *2
- Time of Record 2 [format hh:mm:ss.dc]. *2
- Text for Record 1 [2 characters as WR, OR, NR]. *2

- Text for Record 2 [2 characters as WR, OR, NR]. *2
- Length and type of the race for scoreboard [maximum 11 characters]. *3
- Title of the race for scoreboard [maximum 11 characters]. *3
- Event number of the race for scoreboard [maximum 11 characters]. *3
- Heat number of the race for scoreboard [maximum 11 characters]. *3
- Unique race identification code (RSCcode), format DDSEEEPUU. *4
 - DD : Discipline
 - S : Sex (M, W, X) Fill with '0' if not applicable.
 - EEE: Event. Fill with '000' if not applicable.
 - P: Phase. Fill with '0' if not applicable.
 - UU: Event unit. Fill with '00' if not applicable.

*1: in the OSV-STAR software the second line of the title is added to the first line (only one line of title).

*2: Used in CHRONOS AT, not in OSV-STAR software.

*3: Only used in OSV-STAR software, for specific scoreboard (OIN4).

*4: Not mandatory, only used in some competition as the Olympic Games.

Data line:

In the order, the fields for the lines dated are:

- 3 empty fields (of which the first to identify the data line).
- Lane or order number [number, 0 to 255].
- Bib number [0 to 999999].
- Last name [maximum 15 characters].
- First name [maximum 15 characters].
- Nation or club [maximum 25 characters]

Notes:

- The indicated maximum lengths are those valued by the software Scan'O'Vision. The file can contain longer fields but they will be truncated at the time of the import.
- The data lines can or not contain the first name, the last name and the competitor's nation. If these three fields are empty, the OSV-STAR software will add the names automatically according to the CONCAT.TXT file.

Example of STARTLIST.CSV file:

```
Event Code;Date;Time;Lane/order;Bib No;Name;First Name;Nation;Length;Title 1;Title
2;Sponsor;Record 1; Record 2;Record Code 1;Record Code 2;SCB text length;SCB
category;SCB event;SCB heat;RSC code
W10HFR01;16.08.2011; 9h20;;;;;100;Women's 100m Hurdles Rd 1 Ht
1;;OMEGA;12.21;12.47;WR;OR;100m Hurd.;Women;1;1;ATW115101
;;;2;820;DENG;Ru;SCH;;;;;;;;;;;;;;
;;;3;672;SU;Yiping;JSU;;;;;;;;;;;;;;
;;;4;552;XU;Jia;HNN;;;;;;;;;;;;;;
;;;5;828;LIU;Jing;SCH;;;;;;;;;;;;;;
;;;6;577;KANG;Ya;HUA;;;;;;;;;;;;;;
;;;7;943;LI;Qian;SHH;;;;;;;;;;;;;;
W10HFR02;16.08.2011; 9h28;;;;;100;Women's 100m Hurdles Rd 1 Ht
2;;OMEGA;12.21;12.47;WR;OR;100m Hurd.;Women;1;2;ATW115102
;;;2;948;MENG;Yuan;SHH;;;;;;;;;;;;;;
;;;3;839;ZHANG;Rong;SCH;;;;;;;;;;;;;;
;;;4;955;ZHANG;Hongpei;SHH;;;;;;;;;;;;;;
;;;5;203;IBRAHIM;Azizah;MAS;;;;;;;;;;;;;;
;;;6;496;WAN;Jindan;HBE;;;;;;;;;;;;;;
;;;7;110;McCANN;Shannon;AUS;;;;;;;;;;;;;;
M1K5FR01;16.08.2011; 9h45;;;;;1500;Men's 1500m Rd 1 Ht
1;;OMEGA;3;26.00;3:33.27;WR;OR;1500m;Men;2;1;ATM116101
;;;1;145;NIPPERESS;James;AUS;;;;;;;;;;;;;;
;;;2;979;YU;Xingbo;SHH;;;;;;;;;;;;;;
;;;3;1021;A BULAITI;Aishen;XJG;;;;;;;;;;;;;;
;;;4;231;MAHENDRAN;Vadivellan;MAS;;;;;;;;;;;;;;
;;;5;449;ZOU;Meng;GGD;;;;;;;;;;;;;;
;;;6;973;TANG;Baojun;SHH;;;;;;;;;;;;;;
;;;7;899;JIANG;Bing;SHD;;;;;;;;;;;;;;
;;;8;982;ZHANG;Haikun;SHH;;;;;;;;;;;;;;
;;;9 ;806 ;XU ;Song ;PLA ;;;;;;;;;;;;;;
;;;10 ;560 ;HE ;Cheng ;HNN ;;;;;;;;;;;;;;
;;;11;895;DOU;Zhaobo;SHD;;;;;;;;;;;;;;
```

CONCAT.TXT

Principles:

- All the competitors bib numbers and names are introduced in one single file.
- The CONCAT.TXT file can be edited in any text editor. It can also be generated by a data base software.
- By default, this file (CONCAT.TXT) must be contained in the DH subdirectory of the OSV-STAR software (the parameters of the DH IO Settings permit to choose this repertory to point for example on a unit network).
- When you do a new race, you can simply enter the bib numbers in the start list and then press the "Attrib names" button to assign names from the CONCAT.TXT file according to the introduced bib numbers.

Definitions:

The first line of the file is planned for the commentaries and is not used for the competitor list, then each line correspond to a competitor:

- The first field of a line is the bib number of the competitor [0 to 999999].
- The first field of a line is the first name of the competitor [maximum 15 characters].
- The first field of a line is the family name of the competitor [maximum 15 characters].
- The first field of a line is the nation or club of the competitor [maximum 25 characters].

Notes:

- The indicated maximum lengths are those valued by the OSV-STAR software. The file can contain longer fields but they will be truncated at the time of the import.
- The fields are separated by the ; character.
- The fields can be (not mandatory) be inserted between " characters.

Example 1 of CONCAT.TXT file:

```
Bib;Firstname;Family name;Nation
2;Alison;BAKER;VIC
3;Diane;BARRETT;NZL
4;Sara-Jane;CATTERMOLE;WAU
5;Kimberley;COLTMAN;VIC
6;Kelly;EXCELL;NSW
7;Yuan Yu;FANG;MAS
8;Carolyn;FERGUSON;VIC
1388;Jeffrey;HUNT;NSW
1389;John;KOSGEI;KEN
1390;Paul;KELLEHER;NSW
```

Example 2 of CONCAT.TXT file:

```
"Bib";"Firstname";"Name";"Nation"
"1";"Erica";"ALFRIDI";"ITA"
"2";"Alison";"BAKER";"VIC"
"3";"Diane";"BARRETT";"NZL"
"4";"Sara-Jane";"CATTERMOLE";"WAU"
"5";"Kimberley";"COLTMAN";"VIC"
"6";"Kelly";"EXCELL";"NSW"
"7";"Yuan Yu";"FANG";"MAS"
"8";"Carolyn";"FERGUSON";"VIC"
"1388";"Jeffrey";"HUNT";"NSW"
"1389";"John";"KOSGEI";"KEN"
"1390";"Paul";"KELLEHER";"NSW"
```

8.1.2 HyTek Bidirectional

The recommended parameters are: 9600 Baud, 8 Data Bit, 1 Stop Bit, no parity and no handshaking. Please note that, for large start list, the Hy-Tek software must be configured with the input/output buffer size of the serial line at 9500 (2048 by default).

Message syntax OSV -> Hy-Tek (DH)



Type	Information	Description
IFF		Recover Finish
IFV	Hh:Mm:Ss.dcm	Valid Finish Impulse (NT)
ISF		False Start
ISV	Hh:Mm:Ss.dcm	Valid Start Impulse (DT)
HRC	nnnnns	Request for the description of a competitor
HRP		Request for the program of the competition
HRS	aaaaaaaa	Request a Start List
SNR	aaaaaaaa	Start of new Race
RCC	rrrnnnnnccHh:Mm:Ss.dcm	Result of a ranked competitor (NT)
RCS	nnnnncc	Delete a result
RCV	nnnnnccHh:Mm:Ss.dcm	Result of a competitor (NT) (instantaneous)
RDC	iii	Start of transfer of ranking
RFC		End of transfer of ranking
RFJ	aaaaaaaa	End of judgement (Now the results are valid)
RTC	ttttrrrnnnnnccHh:Mm:Ss.dcm	Result of Temporary Classification
RWM	svv.v-uuu	Result of Anemometer

DT indicates the time of the day at the moment an impulse is received.
NT indicates net time (difference between the start time and the finish time).

Message syntax Hy-Tek (DH) -> OSV



Type	Information	Description
PET		Program of the competition: End of Text
PIT	aaaaaaaaxxxxxxxxX <Title><Sponsor>	Identification complete of a course
PNR	pppppp	Program of the competition: number of races
SET		Start List: End of Text
SIC	ccnnnn <FirstName><Name> <Nation>	Start List: Identification of a competitor
SNC	jjj	Start List: Number of competitors

aaaaaaaa	Race identifier	
cc	Lane number	
Hh:Mm:Ss.dcm	Time	DNS for not started
		DNF for not finished
		DQ for disqualified
		USE for user defined status
iii	Number of listed competitors	
jjj	Number of competitors in the start list	
nnnnn	Bib number	
pppppp	Number of race in the program	
rrr	Rank	
s	Sign of wind speed (+ or -)	
S	Gender (sex) of competitor	M for male F for female X for unknown
tttt	Number of the intermediate	0: Reaction time m=: Attribution of false start m=x:false start S: possibly sign - s.dmc: Reaction time 9999: Finish
uuu	Unit of wind speed (m/s, MPH, N/A if not measured)	
vv.v	Wind speed	
xxxxxxx	Length of race	
X	Measuring unit for race length	M: meter; Y: yards; F: feet
<Title>	Title of the race (50 characters)	
<Sponsor>	Logo of Sponsor (25 characters)	

<FirstName>	First name of competitor (15 characters)	
<Name>	Last name of competitor (15 characters)	
<Nation>	Nation or Club of competitor (25 char.)	

Non standard ASCII Codes :

SOH : 01h
 STX : 02h
 EOT : 04h
 DC3 : 13h
 ␣ : 20h (space)

Transmission example

→ means OSV to Hy-Tek direction

← means Hy-Tek to OSV direction

```

→ SOH DC3 DVHRP EOT
← SOH DC3 HTPNR STX 2 EOT
← SOH DC3 HTPIT STX ident0011234567Mtitle6789012345678901234
56789012345678901234567890
Sponsor890123456789012345 EOT
← SOH DC3 HTPIT STX ident002100Mfinal100mMen
Omega EOT
← SOH DC3 HTPET EOT
→ SOH DC3 DVHRS STX ident002 EOT
← SOH DC3 HTSNC STX 3 EOT
← SOH DC3 HTPIT STX ident002100Mfinal100mMen
Omega EOT
← SOH DC3 HTSIC STX 2123JeanClaudeRapidoletBSV
Bern EOT
← SOH DC3 HTSIC STX 31012DenisVonVallenCEP
Cortaillo EOT
← SOH DC3 HTSIC STX 598765ChrisB.WergusterAth
leticClubMacolin EOT
← SOH DC3 HTSET EOT

```

Classification transmission

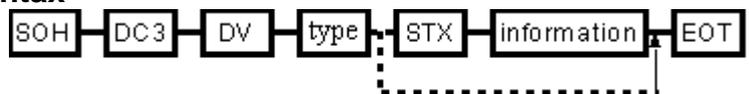
```

→ SOH DC3 DVSNR STX ident002 EOT
→ SOH DC3 DVRW STX +1.8m/s EOT
M
→ SOH DC3 DVRDC STX 2 EOT
→ SOH DC3 DVRCC STX 198765512.123 EOT
→ SOH DC3 DVRCC STX 2123212:34:56.789 EOT
→ SOH DC3 DVRCC STX 10123DQ EOT
→ SOH DC3 DVRCC STX 1234512DNS EOT
→ SOH DC3 DVRFC EOT

```

8.1.3 OMEGA

Message syntax



Type	Information	Description
IFF		Recover Finish
IFV	Hh:Mm:Ss.dcm	Valid Finish Impulse (<i>NT</i>)
ISF		False Start
ISV	Hh:Mm:Ss.dcm	Valid Start Impulse (<i>DT</i>)
SNR	aaaaaaaa	Start of new Race
RCC	rrrrrrnnccHh:Mm:Ss.dcm	Result of a ranked competitor (<i>NT</i>)
RCS	nnnnncc	Delete a result
RCV	nnnnnccHh:Mm:Ss.dcm	Result of a competitor (<i>NT</i>) (instantaneous)
RDC	iii	Start of transfer of ranking
RFC		End of transfer of ranking
RFJ	aaaaaaaa	End of judgement (Now the results are valid)
RTC	ttttrrrnnnnccHh:Mm:Ss.dcm	Result of Temporary Classification
RWM	svv.v↔uuu	Result of Anemometer

DT indicates the time of the day at the moment of *the reception of an impulse*.

NT indicates the net time (difference between the start time and the finish time).

Aaaaaaaaa	Race identification
cc	Lane number
Hh:Mm:Ss.dcm	Time
	DNS for not started DNF for not finished DQ for disqualified USE for user defined status
iii	Number of ranked competitors
nnnnn	Bib number
rrr	Rank
s	Wind speed sign (+ or -)
tttt	Number of intermediate with:
	0: Reaction time m=*: False start attribution m=x:false start S: possible sign – s.dmc: Reaction time 9999: Finish
uuu	Wind speed unit (m/s, MPH, N/A if no wind speed measurement)
vv.v	Wind speed

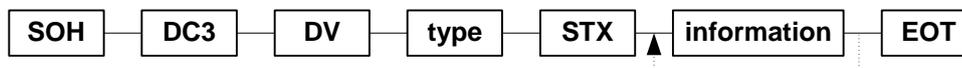
Non standard ASCII code:

- SOH: 01h
- STX: 02h
- EOT: 04h
- DC3: 13h
- : 20h (space)

8.1.4 OMEGA (Suppl. Info)

In addition to the OMEGA DH protocol (see 8.1.3), this protocol add some messages.

Protocol:



'type' have two different values: SCH (Supplementary Classification Header) and SCD (Supplementary Classification Data). Between the STX and EOT, it could be any number of information (normally from 1 to 15). The character length of each information is 6 for SCH type and variable for SCD type. The information are not separated by any character.

Information for SCH type:

Each information is always composed of 6 characters, the first four define the field and the two last define the character length of the field in the SCD type message.

List of the actual available field:

RANK05	Rank
LANE03	Lane number
HAND03	Handicap (in meter)
BIBN07	Competitor bib number
FNAM16	Competitor first name
LNAM16	Competitor last name
NATI26	Competitor nation
CCAT36	Competitor concatenation (First name, last name and 3 first characters of nation)
TIME14	Finish time
RTIM08	Reaction time
DTI114	Time difference from the first competitor
DTI214	Time difference from the previous competitor
DST108	Distance from the first competitor
DST208	Distance from the previous competitor
HDS115	Horse distance according to table 1
HDS215	Horse distance according to table 2
SPED12	Competitor average speed
KMRD09	Kilometric reduction

Notes for new software release:

- Some field could be added without prior announcement, but the four first characters of the actual fields will not be changed.
- The character length (defined by the two last characters) may change.

9 KEYBOARD SHORCUTS

For fast access, it is possible to reach some functions with keyboard shortcut:

Shortcut	Function
"Esc"	<ul style="list-style-type: none"> In judgment mode, cancel the placement of a time mark. See 4.4.1. In full screen mode, exit the full screen mode. See 4.7. In WEB mode, exit the WEB mode. See 4.8. Stop the loading of a race. See 4.2.4.
"Ctrl" + "1"	 In double instance judgment, switch the zoom view between main and infield, see 2.7 .
"Ctrl" + "2"	 In double instance judgment, horizontal flip of the other instance zoom's display, see 2.7 .
"Ctrl" + "D"	Generate a PDF file using the template 1; see 4.1.3 . The file name and location follow the setup made in the "PDF" section in the  "Export setup" tab of the configuration mode (chapter 4.1.4).
"Ctrl" + "Shift" + "D"	Generate a PDF file using the template 2; see 4.1.3 . The file name and location follow the setup made in the "PDF" section in the  "Export setup" tab of the configuration mode (chapter 4.1.4).
"Ctrl" + "F"	 Fast Open, see 4.4.7 .
"Ctrl" + "G"	 Start a race, see 4.2.1
"Ctrl" + "H"	 Search, see 4.4.24 .
"Ctrl" + "J"	 Select the <i>Camera setting</i> mode, see 4.5 .
"Ctrl" + "L"	Display or hide a logo over the image, see 4.9.6 .
"Ctrl" + "M"	Modify start time, see 4.2.16 .
"Ctrl" + "N"	 Select the <i>Race</i> mode and do a <i>New race</i> , see 4.2.3 .
"Ctrl" + "Shift" + "N"	Select the <i>Race</i> mode, do a <i>New race</i> and load the next start list, see 4.2.3 .
"Ctrl" + "O"	 Select the <i>Existing races</i> tab of the <i>Race</i> mode, see 4.2.13 .
"Ctrl" + "P"	 Print the image using the selected mode (normal or main template); in full screen mode, print a copy of the screen; see 5.1.3 .
"Ctrl" + "Alt" + "P"	Print using always the normal mode; see 4.1.3
"Ctrl" + "Shift" + "P"	Print using always the template 1; see 4.1.3 .
"Ctrl" + "R"	 Select the <i>Palette</i> tab in the judgment mode, see 4.4.23 .
"Ctrl" + "Shift" + "R"	Toggle between the default palette (gamma = 1) and the last palette used with gamma different from 1, see 4.4.23 .
Ctrl + W	 Display the WEB mode (using the X/Y factor defined in the configuration, see 4.1.2). See also 4.8 .
"Ctrl" + "Z"	Print using always the template 2; see 4.1.3 .



Shortcut	Function
"F2"	In acquisition, cancel the start (False Start), see 4.3 .
"F3"	In acquisition, arm or disarm the start, see 4.3 .
"F4"	In acquisition, set a manual start, see 4.3 .
"Shift" + "F4"	In acquisition, enable the Time Trial mode, see 4.3.5 .
"F5"	<ul style="list-style-type: none"> In acquisition, start or stop the recording of the image, see 4.3. In judgment, place a time mark to the previous unassigned transponder finish time.
"F6"	<ul style="list-style-type: none"> In acquisition, recover (cancel) the finish, see 4.3. In judgment, place a time mark to the next unassigned transponder finish time.
"F7"	<ul style="list-style-type: none"> In acquisition, arm or disarm the finish; after the first finisher, enable or disable the automatic recording, see 4.3. In judgment, toggle to mask/unmask the existing time marks during judgment , see 4.4.6.
"Shift" + "F7"	In acquisition, arm the finish for an intermediate (no image recording, only intermediate time display on scoreboard), see 4.3 .
"F8"	<ul style="list-style-type: none"> In acquisition, set a manual finish (Trig Finish), see 4.3. Everywhere except in acquisition:  Export the image, see 5.1.9.
"F9"	 Enable the thumbnail view (see 2.4); exit the full screen mode.
"Shift" + "F9"	 Disable the thumbnail view (see 2.4); exit the full screen mode.
"F10"	 Display the full screen mode (using the X/Y factor defined in the configuration, see 4.1.2). See also 4.7 .
"F11"	Display the full screen mode or WEB mode with X/Y factor of 1. See 4.7 or 4.8 .
"F12"	Display the full screen mode or WEB mode with X/Y factor of 2. See 4.7 or 4.8 .
"Shift" + "F11"	Display the full screen mode or WEB mode with X/Y factor of 3. See 4.7 or 4.8 .
"Shift" + "F12"	Display the full screen mode or WEB mode with X/Y factor of 4. See 4.7 or 4.8 .
"Ctrl" + "F1"	 Display the software version, see 5.7.1 .
"Ctrl" + "F2"	Clear the scoreboard(s), see 5.5.3 .
"Ctrl" + "F3"	Display the daytime on the scoreboard(s), see 5.5.4 .
"Ctrl" + "F5"	In judgment, place a time mark to the next transponder finish time (even if already assigned).
"Ctrl" + "F6"	In judgment, place a time mark to the next transponder finish time (even if already assigned).
"Ctrl" + "F8"	 Export the full image, see 5.1.10 .
"Ctrl" + "F9"	End of judgment (see 5.5.5).
"Ctrl" + "F10"	Send the results to scoreboards and data handling (see 5.5.2).
"Ctrl" + "F12"	 Active/suspend the data handling output, see 4.4.10 .
"Alt" + "F4"	 Exit the software, see 5.1.12 .



"↑" (up arrow key)	<ul style="list-style-type: none"> In judgment mode, changes the lane number and bib number following the start list order (only possible between mouse button released and validation). Can also be done with the mouse wheel. See 4.4.1. If transponder judgment is used, this function is not available; instead it will scroll up the zoom (green rectangle). In acquisition mode, increase the acquisition speed. See 4.9.2. In full screen mode and WEB mode, scrolls the image to the top. Can also be done with "Shift" + "mouse wheel up". See 4.7.
"↓" (down arrow key)	<ul style="list-style-type: none"> In judgment mode, changes the lane number and bib number following the start list order (only possible between mouse button released and validation). Can also be done with the mouse wheel. See 4.4.1. If transponder judgment is used, this function is not available; instead it will scroll down the zoom (green rectangle). In acquisition mode, decrease the acquisition speed. See 4.9.2. In full screen mode and WEB mode, scrolls the image to the bottom. Can also be done with "Shift" + "mouse wheel down". See 4.7.
"Shift" + "↑" (up arrow key)	In race mode and in judgment mode, move the zoom (green rectangle) to the top.
"Shift" + "↓" (down arrow key)	In race mode and in judgment mode, move the zoom (green rectangle) to the bottom.
"Ctrl" + "Shift" + "↑" (up arrow key)	In judgment with transponder, change the identification of the competitor following the transponder order (only possible between mouse button released or F5/F6 and validation).
"Ctrl" + "Shift" + "↓" (down arrow key)	In judgment with transponder, change the identification of the competitor following the transponder order (only possible between mouse button released or F5/F6 and validation).
"→" (right arrow key)	<ul style="list-style-type: none"> In judgment mode, moves the time mark of one pixel to the right (only possible between mouse button released and validation). If the key is maintained pressed, the speed of movement increase. See 4.4.1. In acquisition mode, increase the contrast (if the <i>Automatic light adjustment</i> is OFF). See 4.3. In full screen mode and WEB mode, scrolls the image to the right. Can also be done with "mouse wheel up". See 4.7.
"←" (left arrow key)	<ul style="list-style-type: none"> In judgment mode, moves the time mark of one pixel to the left (only possible between mouse button released and validation). If the key is maintained pressed, the speed of movement increase. See 4.4.1. In acquisition mode, decrease the contrast (if the <i>Automatic light adjustment</i> is OFF). See 4.3. In full screen mode and WEB mode, scrolls the image to the left. Can also be done with "mouse wheel down". See 4.7.
"Ctrl" + "→"	In Race mode, Judgment mode, Full screen mode and WEB mode, scrolls the image to the right (on block). Can also be done with the mouse wheel. See 2.8 .
"Ctrl" + "←"	In Race mode, Judgment mode, Full screen mode and WEB mode, scrolls the image to the left (on block). Can also be done with the mouse wheel. See 2.8 .
"Ctrl" + "Shift" + "→"	In Race mode, Judgment mode, Full screen mode and WEB mode, scrolls the image to the right (half screen). See 2.8 .
"Ctrl" + "Shift" + "←"	In Race mode, Judgment mode, Full screen mode and WEB mode, scrolls the image to the left (half screen). See 2.8 .
"+"	Zoom in (in Full Screen mode and WEB mode).
"-"	Zoom out (in Full Screen mode and WEB mode).

mouse wheel rotation	Action depends of the field having the focus. Most of the time it will scroll horizontally the image or scroll vertically the choice in a list. During identification of a time mark, it will scroll the competitors in a specific order (see 4.1.2 "Scrolling identification order by ..."), or, if transponder judgment is used, scroll in not assigned transponder time ID.
"Shift" + "mouse wheel up"	Scroll the zoom to the top during judgment cursor identification (see 2.7). In full screen mode, scrolls the image to the top. <i>Can also be done with "↑" (up arrow key).</i> In other mode, scroll the thumbnail to the left (long races).
"Shift" + "mouse wheel down"	Scroll the zoom to the bottom during judgment cursor identification (see 2.7). In full screen mode, scrolls the image to the bottom. <i>Can also be done with "↓" (down arrow key).</i> In other mode, scroll the thumbnail to the right (long races).
"Ctrl" + "mouse wheel up"	Zoom in for Full Screen mode (see 4.7) and for the zoom window (see 2.7).
"Ctrl" + "mouse wheel down"	Zoom out for Full Screen mode (see 4.7) and for the zoom window (see 2.7).

