

# FinishLynx Release Notes



# Release Notes

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## Obtaining Lynx Products and Information

There are three ways to obtain Lynx products and information:

- » Go to the Lynx website (<http://www.finishlynx.com/product/>)
- » Call (978) 556-9780 and ask to speak with someone in sales, or
- » Send an email to...
  - » Domestic Sales: [domsales@finishlynx.com](mailto:domsales@finishlynx.com)
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# What's New

## Remote Control Commands

The Remote Control Commands are now part of the standard FinishLynx installation and available to all users. This feature allows for remotely controlling FinishLynx by issuing commands through a serial port or TCP socket connection.

Details can be found here: [FinishLynx Remote Control Specification](#)

### Existing Commands

- » **ResultsPrint**
- » **ImageGetInfo**
- » **ImageDraw**
- » **ImageExport**
- » **ImagePrint**

### Additional Command

- » **ImageExportVideo** when executed, this command will create a video file of a specified Identilynx image capture based on the following parameters:
  - » Window number
  - » File name
  - » Race time
  - » Area

## ADVANCED - Other Settings

Additional *Other settings* are included:

- » **Event\Image\ExportBitmap\MaxMemory** default is now 32MB (instead of 16MB).
- » **Event\Start\TTAdvance** controls when the current start is advanced in Time Trial mode.
- » **Hardware\Focus\Precision** controls the decimals shown for the Focus Helper.
- » **Hardware\Window\BlackLevel** allows the Black Level field to be added to the camera list in the Hardware Control window.

**TIP:** These advanced settings are for experienced users only. For more information on how to access these settings, please contact our support team.

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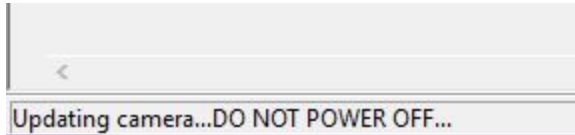


# What's New

## Vision-Series Camera Firmware

This version of **FinishLynx** includes a firmware upgrade for Vision (5L500) and Vision PRO (5L600) cameras. The upgrade will be done automatically the first time these cameras are booted when running **FinishLynx** 10.10 and takes an additional 2-5 minutes per camera. During the upgrade process, never turn off or disconnect the camera.

*Status Bar during upgrade*




**NOTE:** Vision-Series cameras update their firmware as defined by the **FinishLynx** version used to boot the cameras. If after updating with version 10.10, a camera is booted on a computer with an older version of **FinishLynx**, the camera will load that older firmware and will require an update to the latest version yet again the next time 10.10 is used.

**TIP:** We recommend updating all **FinishLynx** computers and upgrading all cameras at home or the office before an event day to avoid delays at critical times.

## Internal RadioLynx

Vision-Series cameras now offer the Internal RadioLynx option (contact our sales team for a quote). Instead of connecting the RadioLynx Receiver (DecRadio) to the camera or C-Box, simply connect an antenna directly to the camera back panel.

» To configure the *Internal RadioLynx*:

1. Select a camera with *Internal RadioLynx* in the *Hardware Control* window.
2. Click  to access the *Camera Settings*.
3. Click the **RadioLynx** tab.
4. Click Internal for the **Port**.
5. Select the **Frequency** that matches the RadioLynx Transmitter (EncRadio).

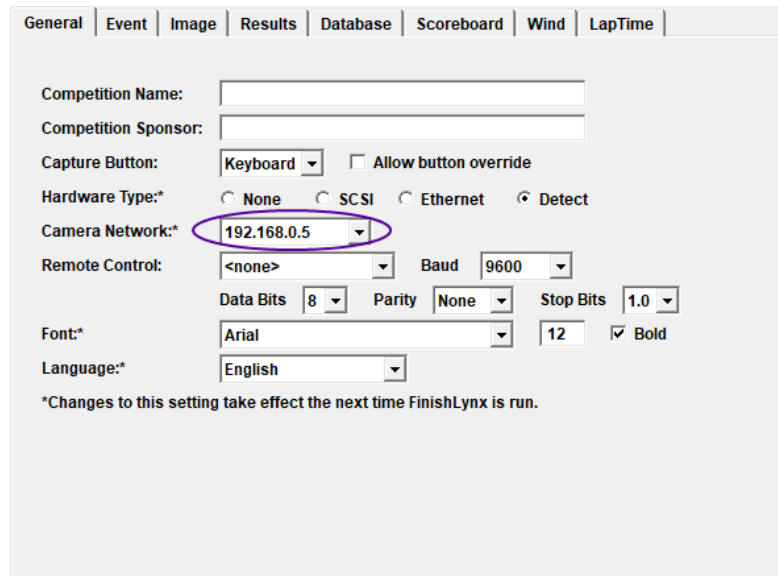
**NOTE:** Each digit of the **Frequency** (left to right - 0=OFF; 1=ON) match a DIP switch (1 to 4) on the RadioLynx Transmitter (EncRadio). For example, setting the DIP switches 1=OFF, 2=OFF, 3=OFF, 4=ON is the same as selecting 0001.

## Camera Network Selection

**FinishLynx** can be configured to exclusively monitor a specific Network Interface Card (NIC) to load cameras. This feature allows users to easily work with a computer that has multiple network cards enabled. By default, **FinishLynx** will set a NIC with 192.168.0.5 as the camera network.

» To manually select the *Camera Network*:

1. Go to **File|Options...**
2. Click the *Camera Network*: drop-down of the *General* tab and select the IP address of the NIC used to connect cameras.
3. Click **Ok**.
4. Restart **FinishLynx** and reboot cameras.

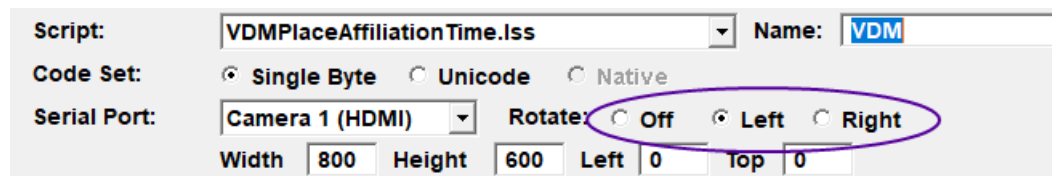


The screenshot shows the 'General' tab of the 'Options' dialog. The 'Camera Network' dropdown menu is highlighted with a red circle and displays '192.168.0.5'. Other visible settings include 'Competition Name', 'Competition Sponsor', 'Capture Button' (Keyboard), 'Hardware Type' (Detect), 'Remote Control' (<none>), 'Baud' (9600), 'Data Bits' (8), 'Parity' (None), 'Stop Bits' (1.0), 'Font' (Arial, 12, Bold), and 'Language' (English). A note at the bottom states: '\*Changes to this setting take effect the next time FinishLynx is run.'

**NOTE:** Select <not specified> to disable this feature and return to the old behavior.

## Video Display Module (VDM) Rotation

Support to rotate the VDM output is included in the Scoreboard|Options dialog when a scoreboard object with a VDM script is selected.



The screenshot shows the 'Scoreboard' tab of the 'Options' dialog. The 'Rotate' dropdown menu is highlighted with a red circle and displays 'Left'. Other visible settings include 'Script' (VDMPlaceAffiliationTime.Iss), 'Name' (VDM), 'Code Set' (Single Byte), 'Serial Port' (Camera 1 (HDMI)), 'Width' (800), 'Height' (600), 'Left' (0), and 'Top' (0).

**TIP:** Add an additional argument to the end of the Display Defaults line on the first row of a VDM scoreboard script to set the rotation automatically. A value of 0=off, 1=Left and 2=Right. ; Display Defaults: 800,600,0,0,1 would rotate the output to the left.



## Scoreboard Scripts

- » **Dak-Extended.Iss** replaces DakRTDExtended.Iss
- » **Gill\_E4982x.Iss** add to support displaying wind readings on the Gill Countdown Timer.
- » **Gill 6 Digit.Iss** has been updated to include a Results section.
- » **Example2.Iss** has been updated to include about sections used in Raw vs Normal mode for running time.

## ADVANCED - Other Settings

Additional *Other settings* are included:

- » **Event\Results\Delta\SkipSame** Causes results with the same time to be skipped over when calculating the delta time.
- » **Hardware\Ethernet\EqualTime** now defaults to 100, giving all cameras equal time to transfer image. This allows faster cameras to transfer their image more efficiently when used on the same network as older and slower cameras.
- » **Hardware\Ethernet\BindIPAddress** allows to specify the NIC used to connect to cameras.
- » **Hardware\Ethernet\IdentifyLynx\CacheSize** now defaults to 100MB (100000000 bytes).

**TIP:** These advanced settings are for experienced users only. For more information on how to access these settings, please contact our support team.

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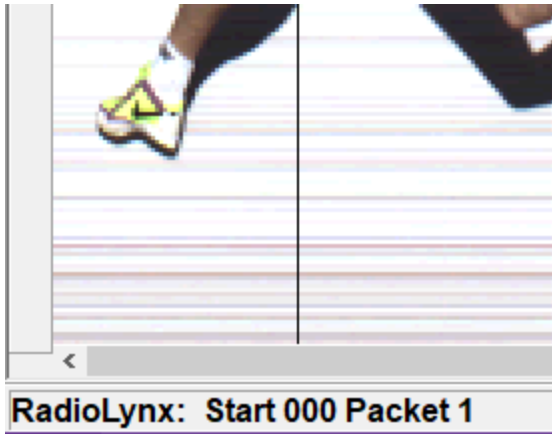


## What's New

### RadioLynx Performance Information

FinishLynx *Quick Info* displays the number of attempts the latest RadioLynx signal was sent by the transmitter before it was received. When the transmission is strong and clear, a low *Packet* number will be displayed.

- » To view the RadioLynx performance:
  1. Configure RadioLynx and send a signal.
  2. Look at the bottom left corner of the window, in the *Help Zone* of the *Status Bar*.
  3. The *Quick Info* reads: "RadioLynx: <Start or Photoeye> <Id> Packet #"
- » The number (#) represents how many times the signal was sent before it was received by FinishLynx (up to 16 for a long transmission).



**NOTE:** The Help Zone will display a Camera name or Tool Tips if the mouse hovers over an image pane or an icon. Simply move the mouse to view the RadioLynx Quick Info.

### LapTime Offset

The LapTime Module can be configured with a preset time offset. This offset can be used to adjust the times reported by an external LapTime device to match the official times produced by an EtherLynx camera.

- » To use a LapTime offset:
  1. Click **LapTime | Options...** from the *Menu Bar*.
  2. Enter a value in the **Time Offset:** field (*hh:mm:ss.ddd*).
  3. Click **Ok**.
- » The **Time Offset:** is added to split times for the selected device.

The screenshot shows the 'Options' dialog box with the 'LapTime' tab selected. The 'Time Offset' field is highlighted with a red circle. The dialog includes tabs for General, Event, Image, Results, Database, Scoreboard, Wind, and LapTime. The LapTime section contains a table with 'LapTime' and 'Running' status, and buttons for 'New' and 'Delete'. Below this are fields for Device (Lynx), Name (LapTime), Serial Port (Network (connect)), Port (2002), and IP Address (192.168.0.50). There are also radio buttons for Active Splits (All, Selected), Sync. Source (External, Internal, None), and a Time Offset field (0.000). At the bottom, there are sections for Masks, Results, Sort By Split, Final Split, and Map File.

**TIP:** The offset can also be configured in the LapTime settings dialog. Select the LapTime line in the *Information Zone* and click Event | Get Info...

## Lynx LapTime Protocol Update

The Lynx LapTime protocol has been updated to allow the use of Event, Round and Heat information. If this information is included in the data from the LapTime device, then LapTime data will be directed to the matching open FinishLynx event, regardless of the event with current LapTime focus.

This can be useful in rowing, canoe or kayak for example. When multiple races are on the water at the same time and multiple event windows are opened in the main FinishLynx computer, splits will flow to the right event without the need to verify that the LapTime current event is correctly set.



**NOTE:** An exact match is needed between the Event, Round, Heat information sent by the LapTime device and the FinishLynx event. Otherwise the split information is discarded.

**TIP:** When FinishLynx is used as the LapTime device, the new LapTime\_ERH.lss script should be used if this new feature is required.

## LapTime Device Update

The LapTime Device drop-down list is updated:

» *TAGHeuer CP540* is renamed *TAGHeuer THCOM08*.

## Wide Pixel Modes

EtherLynx Vision PRO cameras support additional *Pixel Modes* (Wide 50%, 33% and 25%).

» To change the *Pixel Mode*:

1. Access the Camera Settings for an EtherLynx Vision PRO.
2. Click to select the radio button next to the preferred **Pixel Mode**.
3. Adjust the **Frame Height**: to allowable values.
4. Click **Ok**.

## Black Level Control

EtherLynx Vision PRO cameras offer a *Black Level* setting that controls the level of brightness of the darkest part of the image. Increasing this value can improve the dynamic range, but decreases color saturation and adds noise to the dark part of the image. Decreasing this value can improve color saturation, but may lead to low dynamic range and excessive contrast.

» To change the *Black Level*:

1. Access the **Camera Settings** for an EtherLynx Vision PRO.
2. Click the **Setup Tab**.
3. Type in a new **Black Level**: value (range -50 to 50).
4. Click **Ok**.

## Remote Focus

New F-mount adapters for EtherLynx Vision PRO cameras are available for sale and offer remote focus control for Nikon lenses with a built-in focus motor (AF-S and AF-P models).

## Scoreboard Scripts

Four new scripts have been added for the Video Display Module (VDM):

- » VDMPlaceNameTime.lss
- » VDMPlaceNameAffiliationTime.lss
- » VDMPlaceLaneAfflAbvTime.lss
- » VDMPlaceAffiliationTime.lss

One new script added for the Daktronics T2022:

- » DakMDP\_TI2022.lss

One new script added to use FinishLynx as a LapTime device to support the optional Event, Round and Heat information added the latest Lynx LapTime Protocol:

- » LapTime\_EHR.lss

One script has been renamed:

- » *TAG\_HL985.lss* is renamed *TAGHeuer THDIS08.lss*

## Language Files

The German (de\_DE.lng) language file has been updated.

## FinishLynx Offline Manual

The FinishLynx Online Manual is now available to install locally and launch from within FinishLynx.

- » To install the FinishLynx Offline Manual:
  1. Go to **Help | Contents**.
  2. Click on the link to download the installer.
  3. Run the FinishLynx-Help.exe installer and follow the prompts.

**NOTE:** The Offline Manual does not have its own uninstaller. **When you uninstall FinishLynx, the Offline Manual will also be removed.** If you install FinishLynx over a previous FinishLynx installation that had the Offline Manual already installed, then the previous Offline Manual will remain.

- » To view the FinishLynx Offline Manual:
  1. Go to **Help | Contents**.
  2. The default browser will open the Offline Manual.

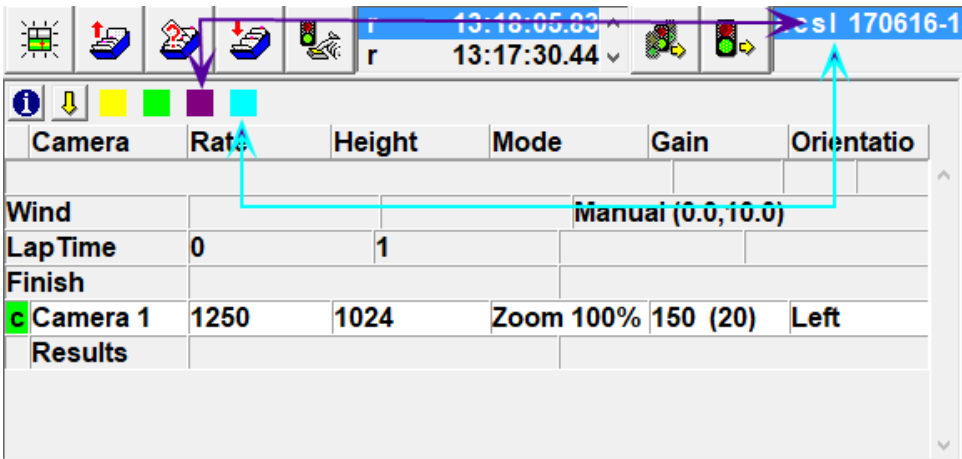


**NOTE:** The FinishLynx Offline Manual is updated with each new version of FinishLynx. After installation, an Internet connection is not required to view the content. To access the latest updates, go online and visit: [help.finishlynx.com](http://help.finishlynx.com).

## ADVANCED

Additional Other settings are included:

- » **Event\StatusFlags** Optional colored squares available in the Information Zone to indicate scoreboard (purple) and LapTime (teal) use.



- » **Event\NextEvent** Controls which event gets capture, scoreboard and LapTime focus when the current event is closed. The Legacy option, the default value, maintains the behavior from previous FinishLynx versions. Options to use the newest or oldest opened event are now available.
- » **Event\ShowEvent** Controls which event is displayed when the current event is closed. The Legacy option, the default value, maintains the behavior from previous FinishLynx versions, which is the most recently used event. Options to show the capture event, scoreboard event or either (capture if it exists, otherwise scoreboard) are added.

**TIP:** These advanced settings are for experienced users only. For more information on how to access these settings, please contact our support team.

# Release Notes

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# What's New - 10.01

## Vision PRO support

Support is added for the [Vision PRO](#), the newest EtherLynx Vision-Series camera.

» For more information: [Vision PRO Datasheet](#)

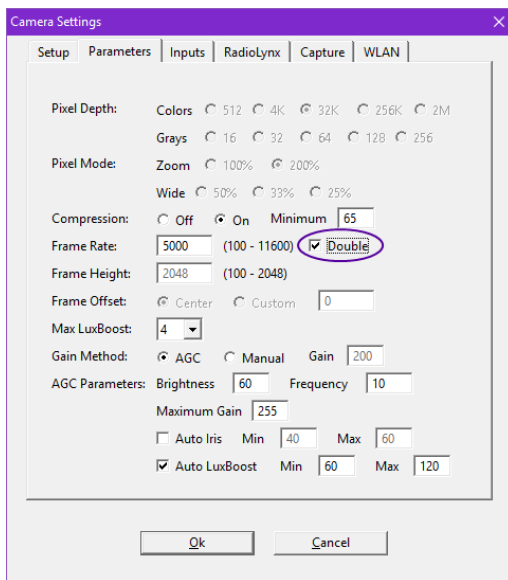
## Frame Rate: Double Mode

Double the light - when Double mode is activated, EtherLynx Vision PRO 6K/20K cameras require half the amount of light for the same frame rate.

Double the rate - when Double mode is activated, EtherLynx Vision PRO 20K cameras can capture up to 20,000 frames per second.

» To activate Double mode:

1. Click to open the Camera Settings dialog > Parameters tab
2. Set Pixel Mode: to Zoom 200%
3. Click the Double checkbox



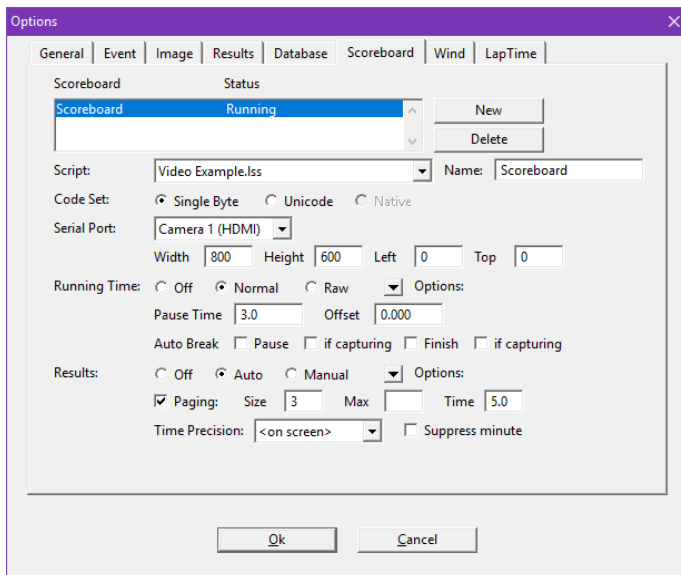
**NOTE:** Time precision is limited to 1/10,000ths of a second.

## Video Display Module

The Video Display Module (VDM) is available as an option or upgrade on all EtherLynx Vision-Series cameras. VDM allows configurable graphics display of scoreboard data and photo-finish images via the HDMI output on the camera back. Show running time, results or a close finish image on any HDMI compatible device (TV, LED panels, etc...).

» To send scoreboard data using VDM:

1. Connect the EtherLynx Vision-Series camera's HDMI port to a display
2. Configure FinishLynx scoreboard settings
  - a. Go to Scoreboard|Options...
  - b. Click New
  - c. Select a VDM compatible script (ie. Video Example.Iss)
  - d. Select Serial Port: <Camera Name> (HDMI)
  - e. Set output size {Width/Height} and position {Left (x)/Top (y)} to match the display (default : 192x96 pixels)
  - f. Set Running Time: and Results: preferences
  - g. Click OK
3. Restart FinishLynx
4. Create a new event or open an existing one to view the output

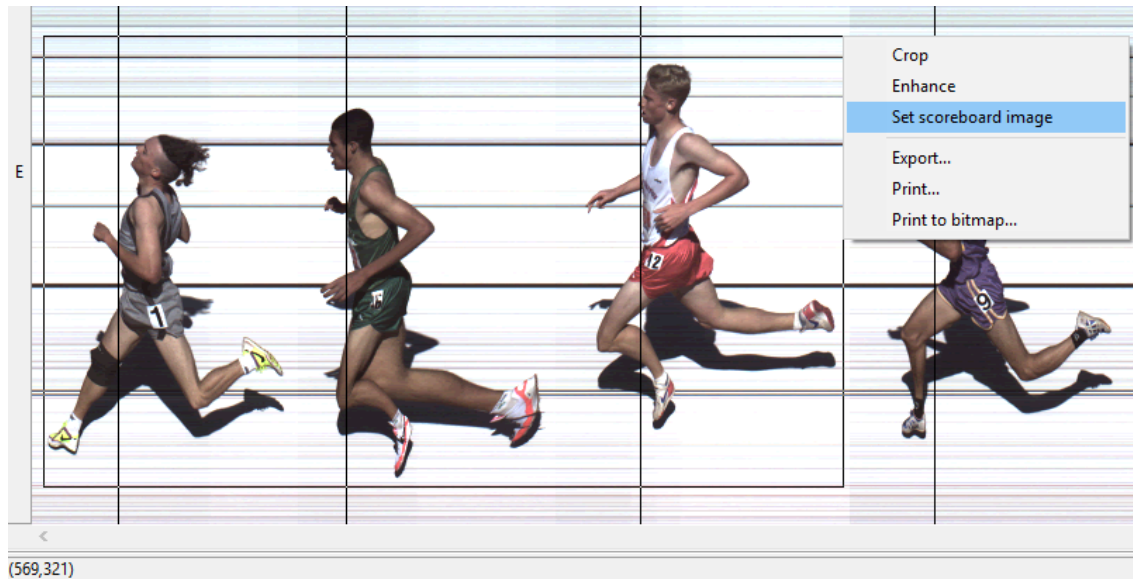


» To send a photo-finish image to a display using VDM:

1. Right-Click the image pane and draw a box around the selection region.
2. Click Set Scoreboard Image from the image pop-up.
3. Click Scoreboard|Show Image to toggle the image display on and off.







**TIP:** CTRL+Right-Click to maintain the correct scoreboard image aspect ratio when drawing the selection.

» For more information on how to customize the output style and data:

1. Go to C:\Lynx
2. Open the Video Example.Iss
3. Scroll to the Video Display Notes section

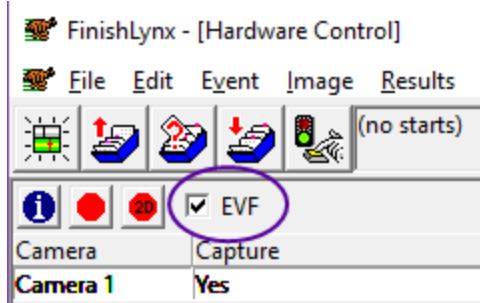
**NOTE:** VDM max resolution defaults to 800x600 - Contact technical support if higher resolution is required (up to 1600x900).

## Electronic View Finder

The Electronic View Finder (EVF) function is available as an option or upgrade on all EtherLynx Vision-Series cameras. EVF allows an external video display (sold separately) to be connected to the camera's HDMI port for local viewing during alignment. This can greatly facilitate the alignment process of EtherLynx Vision cameras far from the FinishLynx computer.

» To output the alignment view to a video display via the camera's HDMI port:

1. Connect the EtherLynx Vision Series camera's HDMI port to a video display.
2. Check the EVF box on the Hardware Control window in FinishLynx.
3. Click the 1D or 2D alignment buttons.
4. Use the Zoom buttons (+ -) to zoom in the alignment view.



**NOTE:** Visit our website to find out more on [Electronic Viewfinders](#) available for purchase.

#### Remote operations:

Alignment mode can also be controlled by pressing the A button on the camera back. Each press will cycle through different views - 2D Zoom 100% > 2D Zoom 200% > 2D Zoom 400% > 1D 100%.

**NOTE:** When both EVF and VDM are enabled on a camera, the EVF check box is used to coordinate the output type.

1. EVF checked + Alignment OFF = VDM Output
2. EVF checked + Alignment ON = EVF Output
3. EVF unchecked + Alignment ON/OFF = VDM Output

## Auto LuxBoost

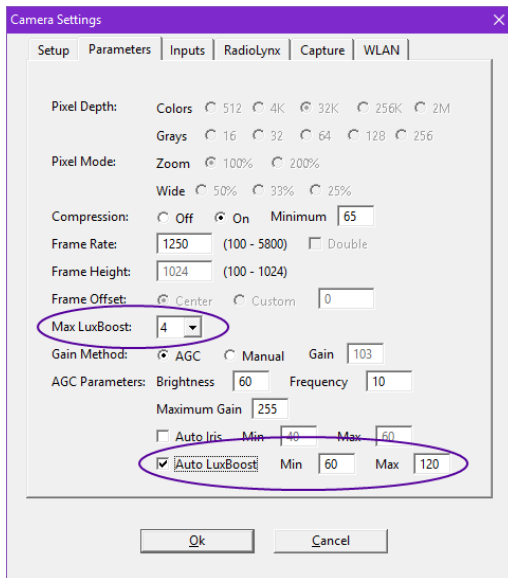
Automatic selection of the LuxBoost setting has been added to maximize the performance of EtherLynx Vision and Vision PRO cameras in low light environments. Similar to Auto-Iris Control (AIC), Auto LuxBoost (ALB) extends the capabilities of Auto Gain Control (AGC) by varying the LuxBoost setting based on the current gain value.

With these combined features, the user need only modify the brightness value to control the image exposure under a wide range of light conditions.

- » To access LuxBoost settings of a selected EtherLynx Vision or Vision PRO camera:



1. Click to open the Camera Settings dialog > Parameters tab
2. Click to check (default) or uncheck the Auto LuxBoost box
3. Set preferred parameters:
  - a. Max LuxBoost: – Highest LuxBoost value to be used.
  - b. Min – Below this gain value, LuxBoost will be lowered.
  - c. Max – Above this gain value, LuxBoost will be increased.



**NOTE:**

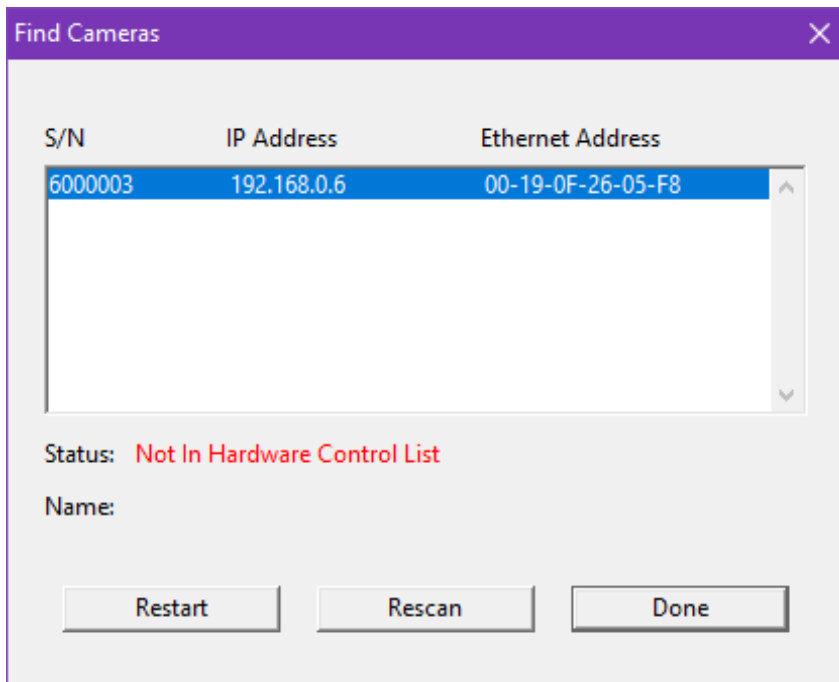
1. The max available Frame Rate: is dependent on the Max LuxBoost setting.
2. The LuxBoost: label is renamed Max LuxBoost: when ALB is activated.
3. ALB will only change the LuxBoost setting when capture and alignment are turned off.
4. Available on all EtherLynx Vision Series. LuxBoost sold separately.

## Find Cameras Function

The Find Cameras dialog lists all EtherLynx cameras with a solid boot light found on the network, including some that may not appear in the Hardware Control list. This can happen when multiple network cards are enabled during the boot process (Base IP Error) or lost connectivity on a poor quality network such as Wi-Fi. This is particularly useful for EtherLynx Vision Series cameras in this state which can be restarted from within FinishLynx.

>> To find all cameras:

1. Click Help|Find Cameras...
- » To restart an EtherLynx Vision Series camera:
  1. Click to select a camera
  2. Click Restart
  3. Click Ok
- » To scan for other cameras:
  1. Click Rescan



**NOTE:** IdentiLynx cameras do not appear in this dialog.

## Upgrade Code

FinishLynx supports upgrading some EtherLynx camera features without having to ship it back to Lynx HQ.

- » To upgrade an EtherLynx camera using an upgrade code:
  1. Contact the Lynx sales team to purchase an EtherLynx camera upgrade.
    - a. Provide the EtherLynx camera's serial number
  2. Load the EtherLynx camera to be upgraded in FinishLynx.



3. Go to the Camera Settings|Setup tab.
4. Type or copy the upgrade code.
5. Click Apply.
6. Click Ok on the "Upgrade code accepted." message.

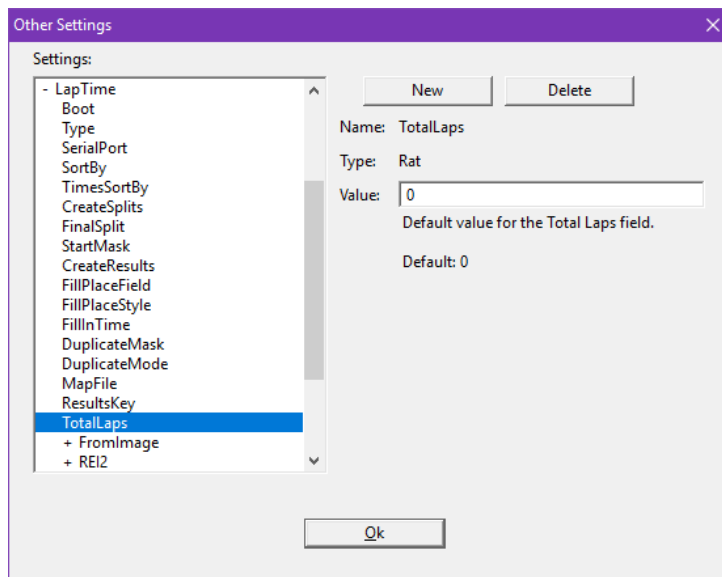
The screenshot shows the 'Setup' tab of a camera configuration window. The 'Upgrade Code' field at the bottom is highlighted with a purple oval, along with the 'Apply' button next to it. Other settings visible include: Information (S/N: 6000003, RAM: 1024MB, IP: 192.168.0.6), Name (Camera 1), Image Orientation (Left), Identify By (Nothing), Lanes (0), White Balance (Red, Green, Blue all at 0), Gamma (0.80), Phased Light Comp. (Off), Iris Type (Normal), Sensor Filter (None), and Auto-Boot (On).

**NOTE:** Upgrade codes can only be used once and are tied to a specific EtherLynx camera serial number.

## Advanced: Total Laps

Set the default number of total laps for new events to be used by a LapTime device.

- » To change the default value of total laps:
1. Access Other Settings
    - a. File|{CTRL-SHIFT}Options
  2. Go to +LapTime|TotalLaps
  3. Type the default value for the Total Laps field.



## Temperature compensation

Improved image quality with a new sensor temperature compensation for the EtherLynx Vision PRO.



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# ***FinishLynx 9.10***

## **Release Notes**



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# FinishLynx 9.10

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## Obtaining Lynx products and information

There are three ways to obtain Lynx products and information:

- Go to the **Lynx website** (<http://www.finishlynx.com/>) and click the **Products** link
- Call (978) 556-9780 and ask to speak with someone in sales, or
- Send an email to...
  - **Domestic Sales:**            domsales@finishlynx.com
  - **International Sales:**    intlsales@finishlynx.com

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## Obtaining technical support

There are three ways to obtain technical support for Lynx products:

- Go to the **Lynx website** (<http://www.finishlynx.com/>) and click the **Support** link
- Call (978) 556-9780 and ask to speak with someone in tech support, or
- Send an email to...
  - **Technical support:**       support@finishlynx.com

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## New general features

### New warning of offline wind gauge

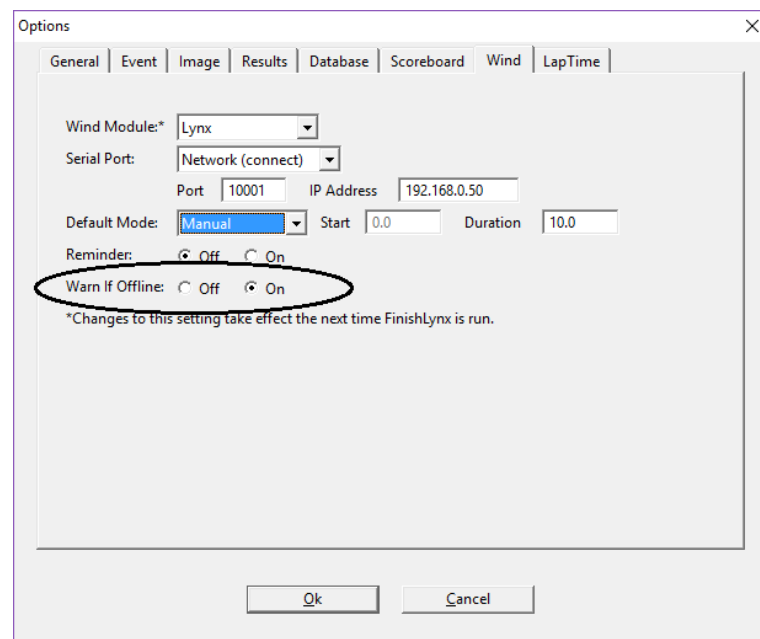
The user can now be warned when the wind gauge does not respond as expected. This feature is specifically added to support real time results when using Regatta Master.

For the **Lynx** wind gauge, a warning can be received any time there is a problem. For other wind gauges, a warning will only appear after a failed attempt to retrieve a reading.

After a warning is received, there is a two minute hold before another warning will appear.

➤ **To turn the warning off/on:**

- Click **File|Options...** and select the **Wind** tab
- Select **Off** or **ON**.
- Click **Ok**.



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**Note:** Warnings are never received while capture or alignment is enabled.

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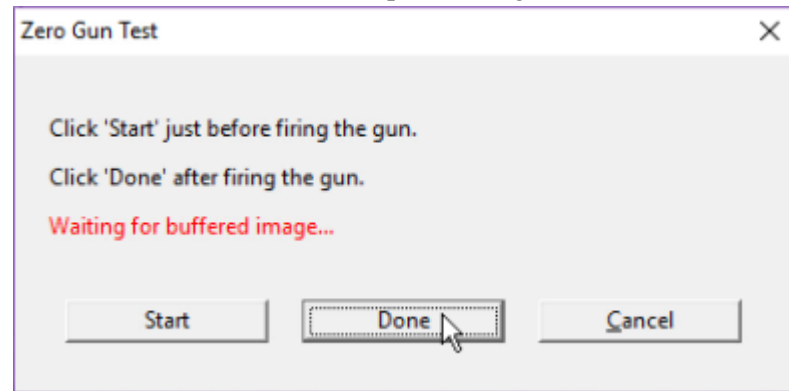
### Improved Zero gun test feature

The **Zero gun test**... now waits for all image to be transferred before the dialog goes away.

➤ **To use the Zero gun test... feature:**

Create a new event and click **Event|Zero gun test...** with capture disabled:

- Click **Start** to start the image capture.
- Wait for a start signal.
- Click **Done** to transfer all captured image.



**Note:** Hit **Cancel** at any time to stop the transfer.

## New smart zoom feature

In align mode, you can now shift-click the zoom buttons to “shrink to fit” the image to the vertical size of the window, avoiding the need to scroll.

**Note:** *2D Align* for **Vision** cameras supports repeated shift-clicks to adjust the horizontal zoom. This can facilitate alignment by zooming into the finish line while still seeing the entire vertical image.

## New access to brightness setting

When **Auto Gain Control (AGC)** is used, the **Gain** field in both the hardware control and event windows now displays the current **Gain** as well as **Brightness** values in the following format:


- **<gain> (<brightness>)**

Clicking on the field allows the user to edit the **Brightness** value.

## Improved Enhance function

The **Enhance** function now works on the entire visible image area if no selection is made.

## New image Quick Adjust feature

There is a new **Quick Adjust**  image toolbar button that allows one click Image Adjustments by changing the gamma value by 0.10.

### ➤ To use the Quick Adjust feature:

- Click to adjust by 1-step
- Shift-click to undo 1-step
- Ctrl-click to reset

## New keyboard shortcuts

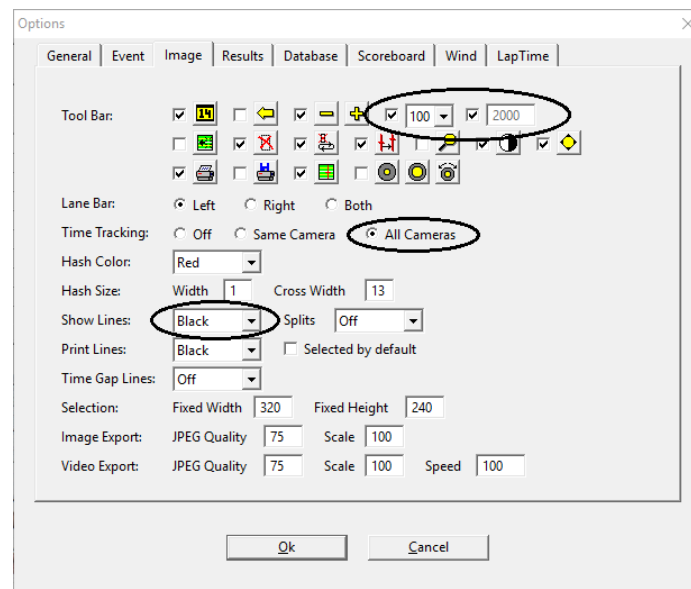
Two new keyboard shortcuts have been added to facilitate common operations:

- **Alt-B** = Set **White Balance**
- **Alt-N** = Enable/disable **Line Labels...**

## New image options defaults

Changes have been made to the following default **Image|Options...**:

- **Time Tracking:** = All Cameras
- **Show Lines:** = Black
- **Zoom selector** checked
- **Zoom aspect control** checked



## Improved image transfer with Lines Labels...

Newly captured image is now displayed faster when **Lines Labels...** are enabled.

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## New scoreboard features

### New scoreboard scripts

The following scoreboard scripts are now included:

- **uTab3S\_wind.lss**
- **DakRTDEExtended.lss**

### New scoreboard script fields

The scoreboard script **::Results** section has two new fields available:

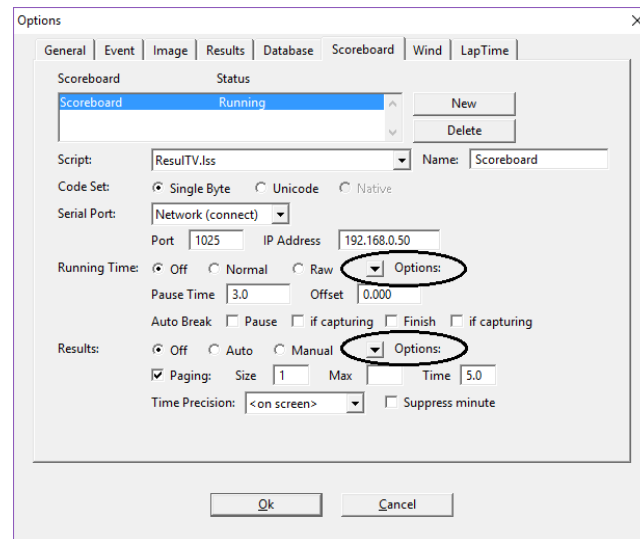
- **\19** – Shows the participant's start time. This is the same field that appears in the LIF file.
- **\1a** – Shows the participant's start time for Time Trial mode, only when there is a key match.

The scoreboard script **::TimeRunning** has two new methods available:

- **\05** – Shows tenths when running and stopped
- **\06** – Shows hundredths when running and stopped

### Scoreboard options dialog layout changes

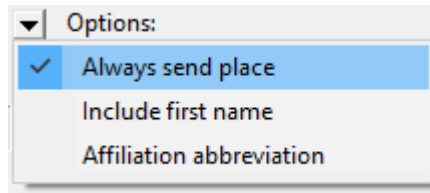
**Running time:** and **Results:** have additional options grouped into a single menu control.



➤ **To select these grouped options:**

Click **Scoreboard|Options...**

- Click the **Options:** down arrow to expand the menu.
- Click the desired **Options:** to select it.



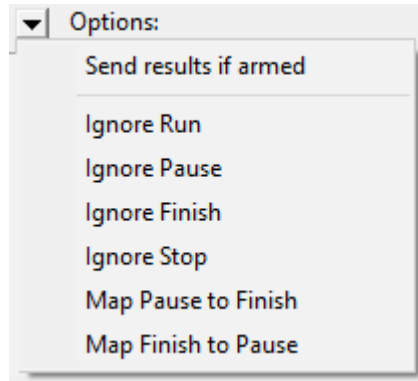
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**Note:** Selected options will appear with a check mark. Click a selected option to deselect it.

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## New scoreboard running time controls

There are new options to give the user additional flexibility and control over the running time sent to scoreboards.



Four options allow the scoreboard to ignore any or all of the following user commands:

- **Run, Pause, Finish and Stop.**

The last two options allow mapping the **Pause** time to **Finish** function and vice versa.

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**Note:** These new options can be set independently for each scoreboard. For example, one scoreboard could stop at the finish of a race, while another continues to show the running time by selecting **Ignore Finish**.

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## New LapTime features

### Improved RRS LapTime device support

Protocol version 1.5 is now used by default and is now received every 3 seconds (instead of every 30 seconds).

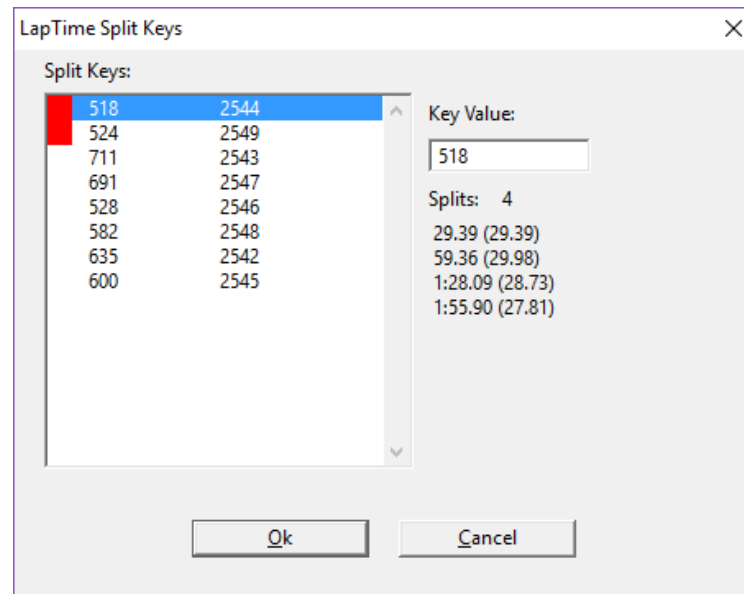
### New Edit split keys... feature

This new dialog lists all the key values received from a **LapTime** device during the current event. The user can now fix a mapping between a tag ID and a key value or map any unassociated key.

All keys not being used by a result line appear at the top of the list and are highlighted in **RED**.

Clicking on a key will show the splits for that key and allow the user to edit the key value. Clicking **Ok** will update the results zone and the map file.

- **To modify a key value:**
- Click **LapTime|Edit split keys...**
  - Select the key value to edit
  - Type in new **Key Value**:
  - Click **Ok**.



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**Note:** Using a map file is not required. If a path and name are specified in the **LapTime|Options...** dialog, the map file will be updated with new key values.

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## New Time Trial mode improvements

### New support for split features

The following features are now supported in Time Trial mode:

- Split lines
- Split overlays
- Split data modification

### Improved Find time... function

The **Find time...** function is now more flexible in Time Trial mode. If the time entered is before the first start time, it is treated as being elapsed from this start.

### Improved scoreboard support of start times

Results are now sent to scoreboards that include the start time field if “*One at a time*” mode is used and starts are created, deleted or edited.

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**Note:** “*One at a time*” mode causes results to be sent to scoreboards, always one at a time, only when they change.

➤ Set **Results:** Auto, **Paging** ON, **Size** = 1 and **Time** = 0.

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## FinishLynx Version 9.02 Release Notes

- + There is a new hidden setting LapTime\FromImage\CheckMasks. If set to 1, this will cause FinishLynx to do start mask and duplicate mask checks on "From Image" splits. Before this, those checks were never done for "From Image" splits.
- + Support is added for the RRS LapTime protocol. This support assumes RRS protocol version 1.5 or greater. If the RRS device is GPS synced \*and\* your camera is GPS synced then you probably want to use Sync Source None. Otherwise, you probably want to use Sync Source Internal.
- + The "12V" LED on the 5L500 now shows solid green when either (or both) of the external sources are present and shows blinking red if running from batteries. This only happens after the camera is booted.
- + The main toolbar start list width now defaults to 15 and the event list width defaults to 38.
- + There is now support for the External Sync "Internal GPS" option. The status of external sync (whether from Internal GPS or Photo Eye 1) is now shown on the "GPS/BT" LEDs. When External Sync is first turned on the LINK LED will blink slow amber. When a valid "top of minute" pulse is seen the ACT LED will turn green. When External Sync is ready to sync, the LINK LED will blink fast amber. When the user does the sync (with Event|Synchronize TOD...) the LINK LED turns green. When you do Event|Synchronize TOD... with Internal GPS you will notice that the suggested "New time" is already correct (assuming that your PC clock is within 30 minutes of being correct). All you should need to do is hit "Ok" to confirm the sync.
- + There is now support for the "MyLaps" LapTime device. Specifically, FinishLynx supports MyLaps Protocol Version 1.1, which is also referred to as "TCP/IP Exporter from Toolkit".

## FinishLynx Version 9.0 Release Notes

### + Added Support for EtherLynx Vision Cameras

+ There is a new hidden setting (`\Scoreboards\<n>\PageMask`, where `<n>` is the scoreboard's directory number). The default of 0 gives the old behavior. A value of 1 will suppress the sending of any participant information for participants that are merely "filling out" the current page. In other words, while evaluating a race you won't see any participants with no time assigned (nor any with a code assigned). Once every participant is assigned either a time or a code then you will see all participants.

+ You can now independently select text justification (left, center, or right) for each field in the results area. This is done on the Options Dialog Results Tab. Below the Enable/Disable button is a new Justification combo box. The selected justification is used both on-screen and for printouts.

+ There is a new "Event|TOD start..." function that allows you to create a start with a defined TOD. This is useful if, for instance, the start of the race was defined to be exactly at 10AM. Or, entering zero will give you TOD everywhere (image, results, scoreboard, etc) while also allowing things that rely on a start (running time for instance) to work properly. This function can work two ways. **\*If\*** 1 or more timing cameras are booted then the start that is created will be added to the start list in the toolbar just like any other start would be. From there the start can be added to any capturable event (just like any other start would be). **\*If\*** no timing cameras are booted **\*and\*** there is a currently open event (that was created when timing cameras were booted) then the start that is created will be added directly to the event. Note that however many digits are present past the decimal point defines the precision of the start (and all values calculated from that start). If you want "full" precision then there should be 4 digits past the decimal point. To emphasize this the default value in the dialog box is "0.0000"

+ There is a new hidden setting "SortBy" for each scoreboard that allows you to specify the order that results should be sent in. Like with other scoreboard specific settings, there is a comment for the first scoreboard's "SortBy" setting. The choices are: 0=Place 1=Last 2=First 3=Affil 4=Lane 5=Id 6=License 7=User1 8=User2 9=User3. The default is 0. Note that care should be taken when setting this to a non-zero value. Any alternate sort order causes the enumeration of the results to be less efficient. There shouldn't be any problem with "normal" numbers of results (10, 20, 30, etc), but there could be a problem with hundreds or thousands of results.

+ There is a new "Zero Gun Test" function in the Event menu. To use this you must create a new event, that event must be armed, and capture must be turned off. These requirements are designed to prevent accidental running of the function. Using the function should be pretty simple. When this function is run LUXBOOST is forced to 1, ACM is turned off, and manual capture is used. The "manual capture" isn't the normal method (keyboard or button), but rather a button you click in the function's dialog.

+ There is a new hidden setting `\Hardware\Window\ListHeight` that controls the percentage of the window height used by the camera list. Default is 28. Reduce this to get more height for the align area.

+ Changed capture method "Photo Eye" to say "Photo Eye A".

+ The WarnDiskLow hidden setting is changed from 20 (MB) to 200 (MB). This controls when the user is warned of low free disk space.

+ Nautronic\_1400.Iss is added.

+ Added Domtel.Iss.

+ OstarLDX.Iss is added.

+ Updated uTabLED\_Scroll.Iss.

## FinishLynx Version 8.24 Release Notes

+ Improved Windows event processing during long cancellable operations (like Video Export). It has been observed that FinishLynx can stop updating the progress bar and get the "(not responding)" message in the title bar while it is actually still making progress on the operation. For a long operation (Video Export can easily take 30 or 60 minutes) this is indistinguishable from FinishLynx "hanging".

+ The status bar progress meter now shows tenths of a percent for "Export Video" operations that are expected to take a long time. Specifically, it shows tenths when 500 or more frames are being exported and recompression is necessary and when 5000 or more frames are being exported and recompression is not necessary. We have found that recompression increases the export time by a factor of 10-50.

+ The status bar message during "Export Video" now includes "Hit Esc to cancel" to remind people that the operation is cancellable.

+ Optimized the "Export Video" recompression. The run time is now reduced by about 1/3.

As a reminder, these are the conditions that trigger the need for recompression:

1. A subset of the entire frame (view) is selected.
2. There are overlays, either regular and/or line labels.
3. The video scale option is not 100.
4. The image is enhanced in any way (brightness/gamma/etc).
5. The video quality option is set lower than what the image was captured at.

If none of these conditions are present then "Export Video" becomes a simple copying of data from one file to another and goes much faster.

+Fixed a problem that allowed bad 5L100/5L200 image data to cause FinishLynx to crash.

+ Fixed a problem with certain Turkish characters in text overlays is fixed.

## FinishLynx Version 8.23 Release Notes

- + The front LED of the 031 IdentiLynx camera is now turned off during boot.
- + This version adds support for the IdentiLynx-XR and IdentiLynx-XS Cameras.
- + Hidden setting comments can now be formatted with newlines. The comment for MainFont takes advantage of this.
- + There is a new "Image Adjustments" floating window (similar to the Keypad floating window). You select it under the Window menu (right next to Keypad). The floating window is "associated" with a particular enhancement region whenever you click on some part of an image (or move the hash line with the arrow keys). When the floating window is associated the controls are made active. When not associated (because it was just brought up or you closed the active event) the controls are inactive.
- + In the remote control interface the "Time" option of the ImageExport and ImagePrint commands has been expanded. You can now specify a start time and end time for the image area to be exported or printed. The remote control spec PDF has been updated to reflect this.
- + There is a new "Export" button on the "Extra Info" version of the splits dialog. This function writes a text file with a single line for each of the participant's splits. Each line has this format: <laptimer name>,<tag id>,<peak signal strength>,<hit count>,<elapsed time>,<first seen time>,<last seen time>,<first peak time>,<last peak time> The file's name is automatically generated as the "event filename" + "-" + <split id> + ".txt".
- + A drawing glitch with the LinkPod Address (on the Options Dialog LapTime Tab) is fixed. This only happened when there were no LapTimers in the list.
- + Fixed a problem with combo boxes on Windows 8. Any click in the drop down list would cause the list to disappear. This prevented the use of the scrollbar and also caused the list to prematurely disappear when selecting an item.
- + The main program font is now settable on the Options Dialog General Tab. You can select font name, size, and whether you want it bold. The "<default>" font name option gives you the system defined font that FinishLynx uses (and has always used) by default. This is actually setting the \General\MainFont hidden setting, which has been around for a while. (Arial 15 Bold or 16 Bold adds considerable readability without taking up much additional space)
- + The \General\MainFont hidden setting now has a comment that details its format:  
<f>,<s>[B][I],[<h>|A],[<w>|A] <f>=font name <s>=font size B=Bold I=Italics <h>=extra line height  
<w>=extra line width A=Auto extra line height/width The "A" is a new option for automatically determining how much to increase the line height and/or width. The new Options Dialog "Font" setting always enables this new automatic mode. So, for instance, selecting "Arial 16 Bold" in the dialog will result in \General\MainFont being set to "Arial,16B,A,A".

- + You can now explicitly select the first (\17) and last (\18) names in a scoreboard script. Example2.lss is updated to document this.
  - + The Remote Control interface has a new "R" image coordinate unit that is like the "r" unit but with zoom compensation.
  - + The Remote Control interface "ImageGetInfo" command has a new "Options" parameter that can be used to select which information is returned. In addition to the existing pieces of information, there are 3 new ones: "Rate" (frame rate), "FirstTime" (time of first frame), and "LastTime" (time of last frame).
  - + The Remote Control Spec has been updated ("FinishLynx Remote Control.pdf").
  - + Exported video (AVI) files that reach 2GB are now kept instead of being deleted. The user is shown a message describing what happened and the last frame that fit in the AVI file is shown on screen. The message is: ----- AVI 2GB limit reached; last exported frame showing.
- To avoid this limit try selecting fewer frames, lowering the video export quality, and/or lowering the video export scale. -----
- + FinishLynx will now recompress exported video if the video export quality is set lower than the quality that the video was recorded in, even if there is no other reason to do recompression (like overlays, less than full frame selected, enhancement, etc).
  - + A problem is fixed that caused new IdentiLynx cameras to not work correctly in locales that don't use a period as the decimal separator. A similar (though less noticeable) problem was happening with old IdentiLynx cameras in this situation.
  - + There is now LapTime support for the RMonitor protocol.

## FinishLynx Version 8.22 Release Notes

+ Fixed a bug which caused the Focus Indicator to display Blocks per second, rather than Focus value.



## FinishLynx Version 8.21 Release Notes

+ There is a new "Enter serial number..." option under the Help menu. It will keep asking for a serial number until you either enter a valid number or hit Cancel. After you enter a valid number you must quit and re-start for it to take effect.

+ \Event\Image\SplitLineClose now defaults to 5000 (milliseconds).

+ There is a new "Time Offset" field in LapTime splits. This is displayed (and editable) in the "Edit split times..." dialog. You can use this field to "correct" where a split should be without having to change the time value that actually came from the LapTime device. While somewhat useful on its own, this field was really added to support the next item.

+ You can now "correct" (or move) split times directly on the image. You do this by holding down the Alt key while clicking (within 10 pixels) on the split line. The split line will turn the same color as the hash line to indicate that you are in this "correct" mode. When you release the mouse button the split will be moved from its original location to the current hash line location. This is accomplished by setting the split's Time Offset field to the appropriate value. You can repeatedly do this to the same split and the Time Offset field will always be set appropriately. To undo this go into the dialog and set the offset to zero. Note that if you release the Alt key before you release the mouse button the operation will not happen (useful if you realize that you "picked up" the wrong split).

New IdentiLynx stuff:

+ Added Support for the 031 Camera that will replace the model 511 camera.

+ The in-camera contrast value is now supported (these cameras don't support gamma, but they do support contrast). This setting appears above the gamma setting. Note that all cameras default to a value of 0.25, and have a range of 0.01 to 1.00, but they don't treat deviations from the default the same. For instance, 0.45 is moderately more contrast on the 765 and extreme on the 031.

+ A few unused settings (manual gain, AGC frequency, gamma) are now disabled.

+ Resolution is now selected from a menu rather than having to enter a legal height.

+ FinishLynx takes more time to change settings, and this delay is now shown in the status bar. Bootup takes a good bit longer, but now the camera is "ready to go" when boot is finally finished.

## FinishLynx Version 8.20 Release Notes

+New Scoreboard Script, uGraphLED.lss is included.

+ There is a new hidden setting directory \Event\Results\Breaks\Names\ that is used to look up a break's name based on the distance of the race. You create "distance" subdirectories in this directory, and in those subdirectories you create strings numbered 1, 2, 3, etc, whose value is the name to be associated with the corresponding break time. For example: \Event\Results\Breaks\;,1=

\Event\Results\Breaks\Names\;,1= \Event\Results\Breaks\Names\800\;,1=

\Event\Results\Breaks\Names\800\1:String,1=100M

\Event\Results\Breaks\Names\800\2:String,1=200M

\Event\Results\Breaks\Names\800\3:String,1=300M

\Event\Results\Breaks\Names\800\4:String,1=400M

\Event\Results\Breaks\Names\800\5:String,1=500M

\Event\Results\Breaks\Names\800\6:String,1=600M

\Event\Results\Breaks\Names\800\7:String,1=700M

\Event\Results\Breaks\Names\800\8:String,1=800M

An event with no distance set will look for strings in the ...\Names\0\ directory. Currently these values can only be used in the scoreboard interface.

+ There is a new .lss group code (\18) used to access the break names. Example2.lss is updated to document this.

+ There is now aspect ratio control for FinishLynx images. This image toolbar control (a simple edit box) is off by default; you'll have to enable it in the Options Dialog. The primary way that you specify the aspect ratio is to indicate what the "effective" frame rate should be. By default, the current frame rate is displayed in this box to indicate no aspect ratio change. Entering a different frame rate (type the number and hit Enter) will cause the image aspect ratio to change. The change actually takes place in the vertical dimension so that you still see all of your frames at 100% zoom, but the aspect ratio will be as if you had captured at the entered frame rate. An alternate way to specify the aspect ratio is to simply specify how much to zoom in the vertical dimension. You do this by appending a "%" to the number. So entering "200%" will make everything twice as tall (equivalent to halving the frame rate). You can also do both of the above things but instead alter the horizontal dimension instead of the vertical. Entering a number with "h" appended creates that effective frame rate by stretching (or compressing) horizontally instead of vertically. Entering a number with "H" appended means to zoom horizontally by that percentage. For completeness, you can also append "v" or "V", which are the same as blank and "%", respectively.

+ You can now use the mouse scroll wheel to scroll scrollable elements in FinishLynx (lists and the image windows). For simple lists it moves the list up and down. For image windows it moves the image backwards and forwards

- + Scoreboard running time Auto Break has been enhanced to allow one action (Finish, say) to happen when capturing and the other action (Pause, say) to happen when not capturing.
- + LapTime support for the Microgate LinkPod is added. You specify the camera port that the LinkPod is attached to on the RadioLynx tab. You then create a LinkPod LapTimer on the LapTime tab. Instead of specifying a serial port you specify the LinkPod Address (0-15).
- + The RadioLynx ID (bib number) field sent by newer EncRadios is now used to fill in the start's ID field when in Time Trial mode.
- + The Chronolec LapTime module will now request and report the Decoder's status (which consists of noise and threshold for loops 1 and 2). There are two hidden settings that control this (\LapTime\Chronolec\StatusMode and \LapTime\Chronolec\StatusTime). The Mode default is to only request status if ACKing (ie, "Chronolec No ACK" not selected) and the Time default is to request status every 3 seconds. Both have comments in the hidden settings.
- + The Database Module now attempts to keep its connections "fresh" (both the schedule connection and the ReacTime connection). This will help to make the "Import ReacTime" function work the first time whenever possible.
- + The Import ReacTime error handling is improved. If a "real" error happens it gets reported in a pop-up dialog box. The actual error could vary depending on what went wrong, but if you see "Serial communication handshake error" that specifically means that the CC firmware is old and doesn't support the needed command. If the communication all seemed to work fine but no ReacTimes actually got updated then it will beep.
- + There is support for the new lynx wind gauge p/n "WG-Lynx". This wind gauge reads both wind vectors (N-S and E-W). FinishLynx stores both vectors and calculates the wind direction. The direction is displayed after the wind unit. How (and if) the direction is displayed is controlled by the hidden setting \WindGauge\DirectionMode. This wind gauge is listed as "Lynx" in the Options Dialog.
- + You can now import reaction times directly from the Command Center (requires the latest 1.51b01 firmware). You can control which protocols are used with the hidden setting \Database\ReacTime\Mode.
- + The "Import ReacTime" menu item is now always enabled. It used to only be enabled if the E-R-H numbers were valid, but now those aren't always necessary (for serial connections). The ReacTime Command Center uses 19200,8,N,1.

## FinishLynx Version 8.10 Release Notes

+ Nearby starts are now saved with an event and can later be selected from a list (even when the event is no longer capturable). This feature is controlled by a hidden setting (`\Event\Start\Saved`) that defaults to 5. This causes the 5 most recent starts to be stored in an event when it is first created or when it is re-loaded (and is capturable). In addition, all starts that are received when an event is loaded (and capturable) are also stored in the event. And finally, if for some reason a start is added to an event that isn't already stored in the event then that start (and those around it) are also stored in the event. If you want to disable the storing of starts then set the hidden setting to 0.

+ IdentiLynx line label overlays now have leader and trailer (both hidden settings) default to 1 second. The default format string has also changed.

+ There is a new "Speed" setting for "Video Export" in the Options Dialog. The default is 100 (percent), which exports the video at the same frame rate as it was recorded. You can set this higher or lower than 100 to make the video play faster or slower. You can even use negative numbers to have the video play backwards. For instance, -50 will play the video backwards at half speed.

+ The current on-screen playback speed is now displayed on the IdentiLynx image toolbar. The current speed is also retained between stops and starts of playback.

+ You can now independently control the overlay colors for "show lines" and "split lines". The "Line labels" dialog has two color settings now ("Lines" and "Splits") and each of those settings now has an "Off" option so you have full control of which information is shown on both FinishLynx and IdentiLynx images.

+ You can now sort the results area using any of the "simple string" fields (id, lane, first name, last name, affiliation, license, user 1, user 2, or user 3). The alternate sort appears on-screen and in results printouts, but not on the scoreboard or in the .lif file. You set the sort field by clicking on any of the column headings that don't already have their own pop-up menu (place, id, lane, etc). The underlying order is still the same as it has always been, meaning that when there are ties in the sort those results will be listed in place order. This is nice when sorting by Affiliation, as you get a team by team printout with each team being in finish order. This setting isn't "sticky" in any way. It isn't saved with the event and the last value set isn't used the next time an event is created. If you really want a different sort field all the time there is a hidden setting (`\Event\Results\SortBy`) that can be used to set the sort method each time a results pane is created. There are 3 hidden settings that affect how the sort is done. Each setting is a bitmap that can control how each field is sorted. A value of 0 turns off the setting for all fields, a value of -1 turns on the setting for all fields. Other values can be used to turn on the setting for a subset of fields. You determine this value by summing  $2^f$  for each field  $f$  that you want to use that setting. The field numbers are in the comment for the `\Event\Results\SortBy` setting.

`\Event\Results\SortCase` - Set this to ignore case in the sort. `\Event\Results\SortInvert` - Set this to invert the order of the sort. `\Event\Results\SortJustify` - Set this to "right justify" the sort, which will essentially cause the strings to be treated like numbers. The first 2 default to 0 (sort is always case sensitive and in

normal order). SortJustify defaults to 48 (24 + 25), which causes Lane and Id to sort like numbers are sorted. Without this, you would get this order for lanes 1-10: 1, 10, 2, 3, 4, 5, 6, 7, 8, 9.

+ You can now have the equivalent of "Line labels" on IdentiLynx images (including exported video). The same menu item is used (Image|Overlay|Line labels...) and the same Dialog Box is used, though all of the settings (font, format string, etc) are kept separate. There is one slight change in the meaning of the format string, which is that semicolon means "new column" instead of "new line". (The Dialog shows this.) There are some hidden settings in \Event\Image\Overlay\IdLLines: Mode - 0 for default, 1 for results only, 2 for splits only, and 3 for both. Right now, 0 is equivalent to 1 because I'm not really sure what the "default" should be. Lines - Max lines displayed. Leader and Trailer - Range (milliseconds before and after a frame) that is used to decide which times to display. HorOffset and VerOffset - Pixels from upper left to offset the text. HorSpace - Pixels between columns. VerSpace - Pixels between lines.

+ es\_ES.lng is updated.

+ Hidden settings dialog is bigger.

+ \SerialPort\TypeMask now defaults to -1, which causes all types of COM ports to be listed.

+ FinishLynx now remembers its window state.

+ When not maximized FinishLynx now centers dialogs on the main window instead of the entire screen.

+ You can now Ctrl-Click to add a split with the popup menu. Any participants that have been assigned a code will not appear in the list. Any participants that are "full" of splits (laps count down and the participant shows zero laps left) will not appear in the list.

+ There are checkboxes on the System Info Dialog that will cause the .cfg and/or .cdf files to be deleted when FinishLynx quits.

+ The LIF file now includes each participant's start time in field 12. This field has been used for the start time (on input) but was always blank on output. For "normal" races the start time will be the same as what is on the event header line (except that the precision will be the same as the participant's time field). For time trial races the start time will be the start used for that particular participant.

+ Support is added for the BEST wind gauge.

+ You can now override the automatically generated special length in each of the delta fields. Clicking in one of the delta fields (when set to decimal or fractional lengths, but not when set to time) will bring up a menu with a "Special length" submenu. The "None" option will turn off special lengths for that field (you will see the numerical length for that field). The "Auto" option (the default) will show the calculated special length (as it has always worked). The options below that are the special lengths defined in the .cfg file that you can choose for "override."

+ BibLynx info is now saved with the event (tag number, signal strength, hit count, first seen, last seen, first peak, last peak). This can be accessed (along with the calculated average values) through Line Label

codes: %101: tag number %102: signal strength %103: hit count %104: first seen %105: average seen %106: last seen %107: first peak %108: average peak %109: last peak This info is also available on the Splits Dialog if you hold down the shift key when selecting "LapTime|Edit split times...". Finally, if you hold down the shift key when selecting "LapTime|Options..." you'll get settings at the bottom for time method (first seen, average seen, last seen, etc) as well as the settings for computing average seen and average peak (percents from 0-100).

+ Changed the line labels Levels default to 10 and the maximum to 20. The default was 3 and the max was 10.

+ You can now use internal photo eye with non-timing cameras if ACM is installed. This will only work, of course, if the non-timing camera is time tracking with a timing camera.

+ Closing a dialog box (with the upper right "x" button) is now equivalent to hitting the Escape key (which sends a "cancel" event if the cancel button is present or a "no" event if the cancel button is not present).

+ Improvements to the new line labels feature: If you hold down the shift key when selecting the "Line labels..." menu item when it's already checked then it stays checked and the dialog comes up. This saves you from having to uncheck it and check it again to get to the dialog. There is an "Insert" pop up menu in the dialog box that lists all of the field codes and the line break character. Selecting one of these will insert it into the text field at the current cursor position. If the text field doesn't currently have focus then nothing is inserted and a beep (default sound) is produced. There is an Apply button on the dialog that saves the current settings and redraws all image areas. Line labels are now shown in full screen mode. Hidden settings HorOffset, VerOffset, and VerSpace are added that control distance from the line, distance from the top, and extra distance between lines, respectively. Note that you probably would want to use negative numbers for VerSpace to "tighten things up" for fonts that leave a lot of space above and below the glyphs.

+ You can now label the lines in the image. This setting is toggled by the "Image|Overlay|Line labels..." menu item. If checked, selecting this item will turn off line labels. If unchecked, selecting this item will bring up an overlay dialog box that allows you to select the font and set the format string (defined below). You must select "Ok" to turn on line labels. By default you'll get labels on enabled lines ("show lines" and "split lines", if enabled). If you don't like this behavior you can override with the hidden setting \Event\Image\Overlay\Lines\Mode. The default is 0. Setting it to 1 gives "show lines" only, 2 gives "split lines" only, and 3 gives both. Note that this can even be used to turn on labels for lines that aren't enabled. There is also a hidden setting \Event\Image\Overlay\Lines\Levels that controls how many levels of labels will be used (how far down into the image the labels will go). The default is 3, max is 10. If lines are close enough together that a free level can't be found for a particular line's label then that label won't be shown at all. The format string allows you to display pretty much any information any way you like. A percent (%) followed by a number will be replaced by that field value. A percent followed by a non-digit will be replaced by that non-digit character. A semicolon (;) will cause a line break. All other characters will appear as entered. The field values are: 1: The line's time. 2: The line's

split number or a "T" if not a split line. 3: The line's LapTimer name or blank if not a split line. 4: Place. 5: Id. 6: Lane. 7: First name. 8: Last name. 9: Affiliation. 10: License. 11: User 1. 12: User 2. 13: User 3. 14: Time. 15: Delta 1. 16: Delta 2. 17: Delta 3. 18: ReactTime. 19: Cumulative split time. 20: Last split time. 21: Best split time. 22: Laps. 23: Speed. 24: Pace.

+ The new scoreboard option "If capturing" is now created for existing scoreboards, eliminating the need to delete your old scoreboards and create new ones.

+ There is a new hidden setting "General\MainFont" that can be used to set the font in most of FinishLynx (most parts except menus and system dialogs). The format of the setting is: <font name>,<font size>[B][I][,<extra height>[,<extra width>]] <font name> is the name of an installed font <font size> is the desired size and can be made Bold and/or Italic by appending a B and/or I <extra height> allows you to increase the dialog box line height if the desired font is much higher than the standard font <extra width> allows you to increase the dialog box cell width if the desired font is much wider than the standard font For example, "Arial,15B" or "Arial,16B" adds considerable "punch" on my system without adding excessive height or width. Going larger ("Arial,20,4") needs some extra height or else dialog box lines run into each other. And larger still ("Arial,24,8,4") needs some extra height and width.

+ There is a new "Length Time" override field on the Results line in the Info Zone. This defaults to blank, which means to use the global value set in the Options Dialog. There is also a new "Image|Set|Length time" function that allows you to draw a selection box in the image and set the Length Time to the time span represented by the box.

+ There is a new "If capturing" checkbox on the "Auto Break" line of the scoreboard settings. If checked, this option will only allow breaks that occur while manual capture is active to stop the running time.

+ The scoreboard refresh command will now send all participants when in the "one at a time" mode (Results Automatic, Paging On, Page Size 1, Page Time 0). Note that only 1 participant is sent per scoreboard update (approximately 100 milliseconds), so you'll get about 10 participants sent per second.

+ LapTime.lss is now included. This is a scoreboard script that sends LapTime events in the "Lynx" LapTime format.

+ The serial port settings are now hidden when ReactTime Port is set to Files.

+ You can now set per-LapTimer overrides of all LapTimer-specific global settings. For instance, this is what part of lynx.cfg looks like:

```
\LapTime\IPICO\;,1= \LapTime\IPICO\Suffix:String,1= ... \LapTime\1\;,1=
\LapTime\1\Name:String,1=LapTime \LapTime\1\Type:Int,1,,=11
\LapTime\1\SerialPort:String,1=0,9600,8,N,1.0 \LapTime\1\ActiveSplitsOn:Int,1,,=0
\LapTime\1\ActiveSplits:String,1= \LapTime\1\SyncSource:Int,1,,=0 \LapTime\1\Token:Int,1,,=52566367
```

The IPICO Suffix is blank. If that's what you want by default but you want to change the Suffix for LapTimer 1 you can now do that by adding a couple of lines at the end of the LapTimer 1 section:

```
\LapTime\IPICO\;,1= \LapTime\IPICO\Suffix:String,1= ... \LapTime\1\;,1=
\LapTime\1\Name:String,1=LapTime \LapTime\1\Type:Int,1,,=11
\LapTime\1\SerialPort:String,1=0,9600,8,N,1.0 \LapTime\1\ActiveSplitsOn:Int,1,,=0
\LapTime\1\ActiveSplits:String,1= \LapTime\1\SyncSource:Int,1,,=0 \LapTime\1\Token:Int,1,,=52566367
\LapTime\1\IPICO\;,1= \LapTime\1\IPICO\Suffix:String,1=FS
```

This will cause LapTimer 1 to use a Suffix of "FS" and all other LapTimers to use a blank Suffix.



## FinishLynx Version 8.04 Release Notes

- + The max filename length for the "Quick Open" dialog has been increased from 63 to 127 characters.
  - + The hidden setting \WindGauge\Reminder can now be set greater than 1. When greater than 1, it will cause the reminder message to be displayed for all events with distance greater than zero and less than or equal to Reminder. For instance, a value of 200 will show the message for all races of distance 200 or less.
  - + There is a new LIF File Name Suffix option in the Options Dialog. The only choice ("Filters") will cause the name of every enabled Results Filter to be appended to the LIF file name.
  - + You can now enter more than one Id value for each received start in Time Trial Mode. To enable this you must set the hidden setting \Event\Start\IdDelim to the character you want to use to delimit the Id values. When IdDelim is blank (the default) you cannot enter multiple Ids and all behavior is as before. With IdDelim set to something (like a comma) the "Enter Id" dialog will always appear (even if it wouldn't have appeared before) so that you have an opportunity to enter multiple Ids. For each Id entered a separate Start object is created in the Event with that Id. From there, everything works just as it otherwise would. Entering more than one Id in the dialog is functionally equivalent to adding that Start multiple times from the main toolbar. Note that whitespace is not stripped from the entered text, meaning that "1, 2" will probably not do what you want. You need to enter "1,2" with no whitespace.
- To be clear, this just affects the \*name\* of the LIF file, not the contents of the LIF file. The LIF contents have always been affected by the currently enabled Results Filters.
- Say you have an event called "Event" and it has filters called "10-19", "20-29", and "30-39" that select for those Id values. If the new Suffix option is checked, depending on which filters are enabled, you could get these various LIF file names when you save the event (or do "Save LIF"):
- Event 10-19.lif Event 20-29.lif Event 30-39.lif Event 10-19 20-29.lif Event 10-19 20-29 30-39.lif etc.
- + There is a new hidden setting (\Event\Results\Delta\LengthDecPrec) that controls decimal length precision. Valid settings are 0-3 (default 1), which specifies the number of digits to the right of the decimal point.
  - + All values in the scoreboard script group \13 (Results Header/Trailer) are now cached except for code \08 (number of participants). This means that all of these fields can be included in running time output without them "dropping out" when the event is marked as busy (saving the event, adding new image, etc).
  - + Two additional delta fields have been added to the results pane. These default to disabled and at the end of the list; you can move and enable them in the Options Dialog. They are included in the .lif file and their scoreboard codes are documented in Example2.lss.
  - + There is a new hidden setting (LapTime\TimesSortBy) that controls how participants with times are sorted based on their lap count. A value of 0 (the default) sorts as it always has without any use of the

lap count. A value of 1 is "Laps Major" order, meaning that participants are first sorted by lap count and then within a given lap count participants are sorted by time and then time string. A value of 2 is "Laps Minor" order, meaning that participants with time strings are all moved below participants with real times, and only the participants with real times are sorted by lap count. If you never use time strings (entering an arbitrary string in the time field) then both 1 and 2 will produce the same order.

+ You can now override the following settings (found in Event\Results\Delta) for each Delta field: Length, LengthDecPrec, TimeGap, and SpecialLengths. To do this you must create the hidden setting with the Delta field's number appended. So to use a different LengthDecPrec for Delta field 3 you would create the hidden setting Event\Results\Delta\LengthDecPrec3. To prevent Delta field 2 from using any special lengths you would create the hidden setting Event\Results\Delta\SpecialLengths2\ and not put any special length values inside it. If these "override" hidden settings are not present (which is the default) then the additional Delta fields will use the same setting as the first Delta field.

## FinishLynx V8.03 Release Notes

- + Improved error code reporting for more efficient trouble-shooting.
- + TagHeuer CP 540 LapTime support is now included. The CP 540 has both RS232 and Ethernet ports. To connect on Ethernet you need to choose "Network (connect)" and use port 7000.
- + LapTime devices that have a standard TCP port number now have that port number automatically filled in. The Tag Heuer CP 540 is 7000, Chronolec is 2008, and IPICO is 10000.
- + There are two new scoreboard fields that are specifically intended to help integrate the Chronolec system with FinishLynx. Code\14\13 is the "From Image" Cumulative Split Time field and always reports the most recent split time that came from image. If there aren't any split times from image for that participant then this field will be empty. Code \14\14 is the "From Image" Window Number field. This reports which window number the "From Image" Cumulative Split Time came from. This value can be used to request image (through the Remote Control Interface) from the correct image window.
- + The reported "type" of COM port (as reported by Windows) is now displayed in parenthesis after the port name in the drop-down lists.
- + You can now open events that are missing image files.
- + Added "Gill 6 Digit.lss" script.



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FinishLynx 8.0 Release Notes

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# Introduction

This document contains release notes describing new features available in:

- » *FinishLynx 8.0* (see "*FinishLynx 8.0 Release Notes*" on page 9)
- » *FinishLynx 7.5* (see "*FinishLynx 7.5 Release Notes*" on page 27)
- » *FinishLynx 7.3* (see "*FinishLynx 7.3 Release Notes*" on page 43)
- » *FinishLynx 7.2* (see "*FinishLynx 7.2 Release Notes*" on page 53)
- » *FinishLynx 7.1* (see "*FinishLynx 7.1 Release Notes*" on page 73), and
- » *FinishLynx 7.0* (see "*FinishLynx 7.0 Release Notes*" on page 77).

## Obtaining technical support

There are three ways to obtain technical support for Lynx products:

- » Go to the *Lynx website* (<http://www.finishlynx.com/>) and click the **Support** link
- » Call (978) 556-9780 and ask to speak with someone in tech support, or
- » Send an email to the *technical support department* (<mailto:support@finishlynx.com>).

## Obtaining Lynx products and information

There are three ways to obtain Lynx products and information:

- » Go to the *Lynx website* (<http://www.finishlynx.com/>) and click the **Products** link
- » Call (978) 556-9780 and ask to speak with someone in sales, or
- » Send an email to our *sales department* (<mailto:sales@finishlynx.com>).



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## Chapter 1

# FinishLynx 8.0 Release Notes

This chapter contains release notes describing new features available since the release of FinishLynx version 7.5.

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## General New Features

### Support for Black and White EtherLynx 2000+ camera

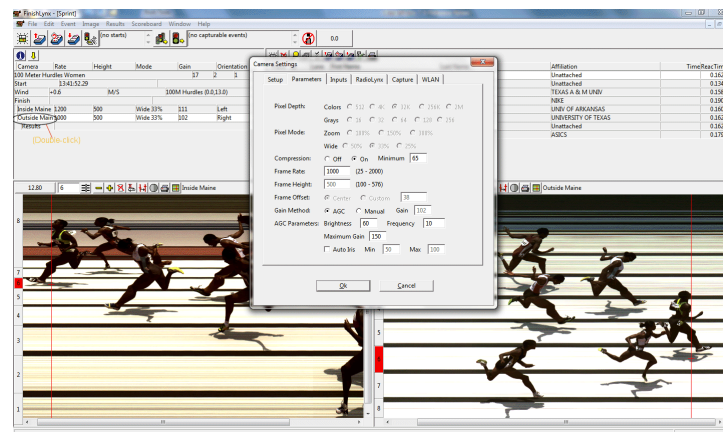
FinishLynx now supports the **Black and White EtherLynx 2000+ Camera**.

### Camera boot failure messages improved

A unique error code is now displayed each time an EtherLynx camera fails to boot properly.

### Easier Camera Settings dialog access

Now, you can access the **Camera Settings** dialog for a particular camera by double-clicking the camera line in the Hardware Control window.



## Ability to set status in \*.evt file

You can now set a status for a participant in the \*.evt file.

When you do this, the first character of the participant line must be a backslash (\) so that FinishLynx knows that the line is a participant line with a status, rather than the first line of a new event block.

### *For example:*

```
E1,R1,H1,Test  
  
,11,1,Smith,Joe  
  
\DNS,22,2,Jones,Bob  
  
,33,3,Murphy,Steve  
  
\DQ,44,4,Johnson,Mike
```

## Ability to undo an overlay

You can now undo, or delete, the last image overlay that was added.

### *To undo an image overlay:*

Click **Image | Remove overlays**.

## Ability to change position of overlay images

You can now change the position of the last image overlay that was added using the arrow keys.

---

**Note:** As soon as you add an overlay, no hairline or selection boxes appear on the image. As long as no hairline or selection boxes appear, then you can use the arrow keys to control the last overlay added.

---



## Ability to enter text into Time field

It is now possible to enter arbitrary text into the **Time** field in the **Results** area. If the result's status is valid, then the result is sorted and assigned a place number based on this text. That is, all "text" results come after "time" results. If the result has a code (DQ, DNS, DNF, etc.), then this text is used to sort those results with the same code.

---

**Note:** Anything entered into the Time field that does not scan as a valid time is considered "arbitrary text." A string that starts off resembling a time is scanned as a time, not text. For example, **-1LAP** is interpreted as a manually entered time of **-1** seconds. **LAP-1**, however, is interpreted as text.

---

***The following hidden settings affect how text in the Time field is interpreted:***

`\Event\Results\TimeString\Enabled:`

- » 0=Off, 1=On
- » Enables text input.
- » Default 1.

`\Event\Results\TimeString\SortTimes:`

- » 0=None, 1=Ascending, 2=Descending
- » How valid results are sorted.
- » Default 1.

`\Event\Results\TimeString\SortCodes:`

- » 0=None, 1=Ascending, 2=Descending
- » How coded results are sorted.
- » Default 1.

## Applications for entering text into the Time field

Entering text into the Time field is helpful with the sport of cycling, for example. In cycling, riders are lapped, do not finish the race, but still are still assigned a "finish place" in the race based on when they were lapped. Also, riders can drop out (marked DNF) and race officials order the riders by when they dropped out. Both of these goals can be accomplished with this new feature.

For instance, you can set **SortTimes** to 1 and **SortCodes** to 2 and use the convention *LAP-n* to indicate how many laps behind someone is that should be ranked. You can also use the convention *DNFn* to indicate on which lap someone dropped out for someone who is marked DNF. You could then generate a results list that looks like this:

Place	Time
1	15:12.34
2	15:14.56
3	LAP-1
4	LAP-2
4	LAP-2
6	LAP-3
DNF	DNF3
DNF	DNF1

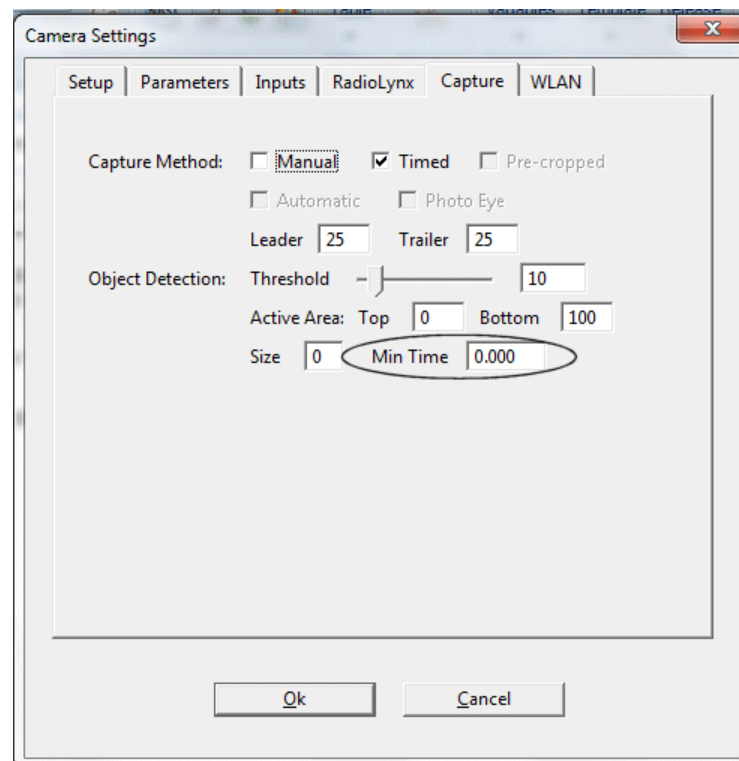
## Minimum time parameter

There is a new minimum time parameter for object detection, called **Min Time**. This setting forces the relative width of the detected object to be at least the specified time. The leader and trailer frames are added in addition to this time.

For example, if Min Time is set to 1 second and something passes by the camera very briefly, you should see 1 second of capture plus the leader and trailer frames. By default, the option is set to 0. The maximum supported value is 1 minute. This setting affects **Find Object** and **Auto Crop** in FinishLynx as well as **Automatic Capture Mode** in the camera.

### *To access the Min Time parameter:*

In the **Camera Settings** dialog, click the **Capture** tab. Enter the **Min Time** parameter in the text box in the lower right area of the dialog.



## New hidden setting controlling event title

There is a new hidden setting, `\Event\Image\FullScreen\TitleOffset`, which controls how far down from the top the event title is in full screen mode. The default is 10 pixels.

## New warning when arming an event

You now get a warning if you try to arm an event that already has a start and already has at least one result entered with a time.

## New ways to customize FinishLynx

### Ability to customize the Main Menu bar

You can now customize the **Main Menu** bar and the image selection pop-up menu by blanking out the text of unwanted items.

#### *To remove an entire menu or sub-menu:*

Blank out the title of that menu. The text of the sub-menu items does not need to be blank.

Removing all of the items in the image selection pop-up causes the menu to not appear at all.

For example, to get rid of the Quick Open item, the entire Edit menu, and the LapTime Clear sub-menu, add this to the end of your language file:

```
Strings\MenuBar\File\QuickOpen:String=
```

```
Strings\MenuBar>Edit\Title:String=
```

```
Strings\MenuBar\LapTime\Clear:String=.
```

## Ability to customize the Options and Camera dialogs

You can now customize the Options and Camera dialogs by blanking out the text of unwanted items. Additionally:

- ▶▶ for an item that is labeled by static text, you generally can remove the item by blanking the label.
- ▶▶ for checkboxes, blank the text that follows the checkbox.
- ▶▶ to remove an entire tab, blank the tab's text. Some items cannot be removed, either because they didn't have some convenient text to blank, or because the functionality of the dialog would be too compromised.

---

**Caution:** It is possible to remove certain items and leave certain other items that will result in odd or incorrect behavior depending on what is grayed out or not. Remember that some items rely on other items to know whether they are active or not.

---



## Language Files Updated

### Russian language file

The Russian language file, **ru\_RU.lng**, file has been updated.

***To run FinishLynx in a different language:***

- 1) Click **File | Options....** The **Options** dialog appears.
- 2) Click to select the language you want from the **Language:** drop-down list at the bottom of the dialog.
- 3) Close FinishLynx. The next time you run FinishLynx, it runs in the language file you just selected.

### French language file

The LIF file WindManual string is now blank in the **fr\_FR.lng** file.

***To run FinishLynx in a different language:***

- 1) Click **File | Options....** The **Options** dialog appears.
- 2) Click to select the language you want from the **Language:** drop-down list at the bottom of the dialog.
- 3) Close FinishLynx. The next time you run FinishLynx, it runs in the language file you just selected.





## New LapTime Features

### Support for Chronelec No Ack

FinishLynx supports a new LapTime device, **Chronelec No Ack**. This works the same as Chronelec, except that no ACKs and no Resends are sent to the decoder. Use **Chronelec No Ack** if another device, like the Chronelec software, is sending the ACKs.

### New IPICO LapTime device default

The IPICO LapTime device suffix now defaults to blank.



## New Scoreboard Features

### New scoreboard code

There is a new scoreboard code, `\11\04`, for sending time with ten thousandth precision.

### Tag Heuer HL985 is supported

A new scoreboard script to support the **Tag Heuer HL985** is included.

### Nevco scripts updated

The **Nevco.lss** scripts have been updated.

### New Adaptive scoreboard scripts added

There are two new Adaptive scoreboard scripts:

- » **Adaptive32x128 3line.lss**, and
- » **Adaptive32x128 4line.lss**.

#### *To select a new scoreboard script:*

- 1) Click **Scoreboard | Options...** from the Menu bar. The **Scoreboard | Options** dialog appears.
- 2) Click the **New** button to activate the Scoreboard settings.
- 3) From the **Script:** drop-down list, click to select a scoreboard script. FinishLynx automatically populates the settings for that dialog.
- 4) Click **Ok**.



## New External Sync Plug-in Available

The new External Sync Plug-in, **FinishLynx-ES.exe**, is available.

External Sync allows you to attach an external timer to a current generation EtherLynx camera (5L300, 5L400, or 5L420) through the **Photoeye A** input.

---

**Note:** The external timer must make a closure on these inputs exactly once per minute in order for FinishLynx to follow the external timer's clock. The **TagHeuer CP540** only does once per minute, so there is nothing to set there. The **MicroGate MicroSync** has several options, one of which is once per minute.

---

To obtain the External Sync Plug-in, please *contact Lynx* (see "*Obtaining Lynx products and information*").

## Setting up the External Sync Plug-in

- 1) Turn on the external sync device and make sure it is configured according to how you intend to use it.  
**Note:** If you want the external sync device to be synced to GPS time, make sure that happens before you sync FinishLynx to it.
- 2) Double-click the camera in the Hardware Control window.
- 3) Click the **Inputs** tab, on the Camera Settings dialog.
- 4) Click to select the **Photo Eye A** radio button in the External Sync: setting.  
**Note:** We advise you to leave the **Max Error** at its default of 100 microseconds. The lowest allowed is 50, the maximum is 1,000,000.
- 5) That camera's background color turns yellow and the External Sync field says, **Waiting (0)**. When the first "top of minute" event is received, the External Sync field turns to **Waiting (1)**. When the second "top of minute" event is received, the External Sync field says **Ready (2)**.
  - ▶ The camera must have at least two events in its list before you can sync the camera to the external timer.
  - ▶ You can now perform the **Sync TOD...** function and enter the actual time as reported by the external timer of the most recent "top of minute" event. The yellow background now disappears and the status says **Synced**. As the status does not change from **Synced** (as long as the background does not turn yellow), you are synced and ready to go.

- ▶ Similar to a "red lined" camera, the camera line of a capturing event also turns yellow if external sync has failed. The event's camera line does not list the External Sync field; rather, it is displayed as yellow if something is wrong.
- 6) Once the status is **Synced**, you can revert to the **Waiting** state if an event is received at the wrong time or not received at all. If an event is eventually received at the expected time and the error does not exceed **Max Error**, then the status automatically changes back to the **Synced** state. If regular events are received again, but the error exceeds Max Error, then the status becomes **Ready**, and you must manually sync again, using the **Sync TOD...** function.

For example, you might disconnect the external timer briefly, or accidentally short the wires. When properly re-connected, the status likely reverts to **Synced** automatically. Or, if you change the time on the external timer, then the "top of minute" events will likely be off by more than Max Error, and you must perform Sync TOD... again.

## New Sync TOD... dialog option

The **Sync TOD...** dialog has a new option to **Make current event capturable**. This is enabled when using the External Sync Plug-in, and when the current event is compatible with the current camera setup.

- ▶▶ To be compatible, all of the cameras in the event must be present in the current camera setup, and they must be in the same order. That means that you should have all of the same cameras booted and in the same order as when the event was created.
- ▶▶ The purpose of this feature is to allow you to sync the cameras to an external timer, create an event, save the event and turn off all cameras, set up the cameras somewhere else, sync to the same external timer (which has been on the whole time or syncs again to GPS time), and then capture into the saved event, because it has been made capturable again.
- ▶▶ You can only make changes to a camera's External Sync settings from the Hardware Control window.
- ▶▶ You can only have one camera set to use External Sync at one time. Before turning External Sync on for another camera, you have to turn it off for the current camera.

---

Chapter 2

# FinishLynx 7.5 Release Notes

This chapter contains release notes describing new features available since the release of FinishLynx version 7.3.

## In This Chapter

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New IdentiLynx Features .....	33
New EtherLynx Features.....	35
New Scoreboard Features.....	37





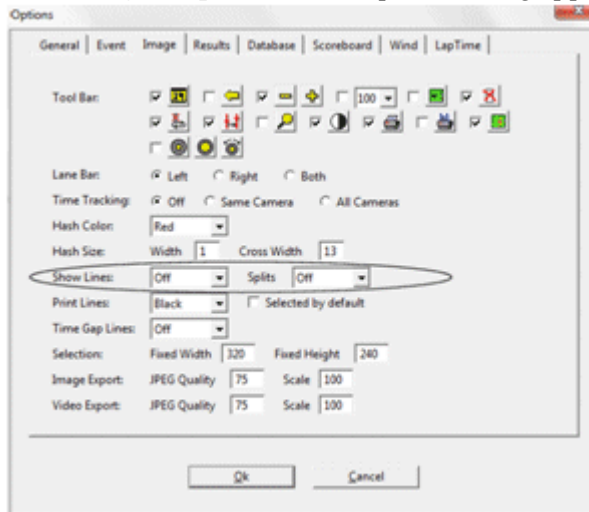
## General New Features

### Show Lines and Splits in full screen mode

If enabled, **Show Lines** and **Splits** now appear in full screen mode.

#### *To enable Show Lines and Splits:*

- 1) Click **Image | Options**. The Options dialog appears.



- 2) Next to either the **Show Lines:** or **Splits** option, click to select the down arrow to display the drop-down list.
- 3) Select a color to enable **Show Lines** and **Splits**. Click **Ok** to exit the dialog.

### Enhanced Find Object feature

When you use the **Image | Find Object** feature, it now finds the first object in the newly added image. When you run Find Object and it fails to find an object because it is at the end of the image, FinishLynx asks if you want to search from the beginning. If you choose *No*, the default, then the next time you run Find Object, it starts from the last object found.

## New Find Object hidden setting

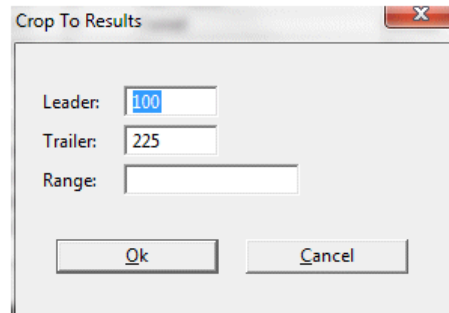
FinishLynx has a new hidden setting, *Event\Image\FindObjectMode*, default 1. This setting controls how image is scrolled when using the **Find object** feature.

- » A value of **0** reverts **Find object** back to its previous behavior, which was to move the hash to the object or to the center if the object is off screen.
- » A value of **1** always centers the hash.
- » A value of **2** moves the object to the current location of the hash. If the hash is not currently visible, it is centered.

## New Crop to results... feature

The new **Image | Crop to results...** feature crops out the entire image except for the image around each result's evaluated time.

Clicking **Image | Crop to results...** makes the following dialog appear:



The **Leader:** and **Trailer:** values are how many frames before and after the result's evaluated time are kept in the image.

If the **Range:** value is left blank, all current results are used.

---

**Note:** Range works the same as the recently added Range feature in the *Print results with image* feature. If left blank, all current results are used. This feature works for both line scan and area scan images. Separate Leader and Trailer values are retained for the two kinds of images.

---

## New Cropped Image Warning

If you try to save an event that has had the *Crop to results...* or *Keep selection* features without uncropping the image, a new **Cropped Image Warning** appears.

---

**Note:** If you select *Save as...*, an uncropped copy of the event remains, and therefore the warning does not appear. However, the warning does appear after the first *Save* or *Save as* function is used on an event because a copy is not left behind.

---

## New File | Reload feature

When an event is opened in *Reader mode*, a **File | Reload** command is enabled. Use this feature to load the latest information that the capture computer has stored in the \*.evn file. This feature is useful when you are using *Reader mode* and *Time Trial mode* together, because starts typically come in after the *Reader mode* enabled computer has opened the event.

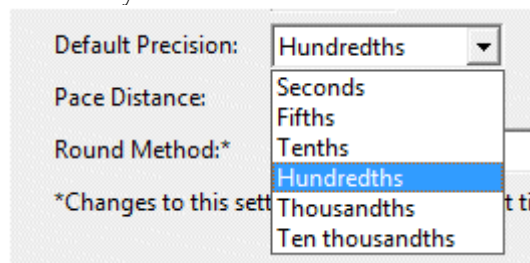
By clicking **File | Reload**, you save, close, and reopen the event.

## Default Precision value used for stop time

When the on-screen running time is set to stop, the precision used is now the same value that you assign to the **Default Precision** value.

### ***To set the Default Precision value:***

- 1) Click **Results** from the Menu bar, and then click **Options**. The Options dialog appears.
- 2) Click the arrow next to the **Default Precision:** setting and click to select the value you want to use.





## New IdentiLynx Features

### Support of IdentiLynx's native ACM

FinishLynx now supports the IdentiLynx camera's native ACM. A separate capture checkbox appears for IdentiLynx cameras. By checking the box, you can control the trigger, size, and active area in the camera dialog.

#### *To set the active area:*

- 1) Select image in an event.
- 2) Click **Image** from the Menu bar.
- 3) From the drop-down list, click **Set | Object active area**.

### Frame times available

Now, when you use an IdentiLynx camera without any EtherLynx cameras powered on, you can get **frame times**.

Also in this configuration, you can create a manual start to see **elapsed times** in the image, rather than the time of day.

---

**Note:** All times, including frame times and manual start times, come from the clock of the PC that is running FinishLynx.

---

### Ability to retain the overlay setup

You can now retain the overlay setup of your IdentiLynx camera so that it will appear in the next event that you create or load.

#### *To retain the overlay setup:*

- 1) Create an overlay or overlays.
- 2) Click **Image** from the Menu bar, and then click **Retain overlays** from the drop-down list.

---

**Note:** When this feature is active, a check appears next to the menu item.

---

***To clear the retained overlays:***

Click **Image | Retain overlays** again, and the check mark disappears.

When an event is loaded or created, the retained overlays are automatically added. You can remove these overlays and/or add more overlays without affecting the retained overlays.

## **New EtherLynx Features**

### **Ability to set size and active areas**

You can now set the size and active areas in EtherLynx ACM. These settings work the same as the size and area settings for the internal photo eye.

### **Improved camera booting and timer sync**

Multi-NIC systems now enjoy greater camera booting and timer sync capabilities. This means that you can have more than one NIC installed and active, and FinishLynx finds which one has cameras attached to it and properly boots and timer syncs those cameras. FinishLynx does this without having to set a base IP address.





## New Scoreboard Features

### New scripts

FinishLynx now features the following scoreboard scripts:

- » **Adaptive16x128.lss**, and
- » **Adaptive16x128Sprints.lss**.

#### *To select a new scoreboard script:*

- 1) Click **Scoreboard | Options...** from the Menu bar. The **Scoreboard | Options** dialog appears.
- 2) Click the **New** button to activate the Scoreboard settings.
- 3) From the **Script:** drop-down list, click to select a scoreboard script. FinishLynx automatically populates the settings for that dialog.
- 4) Click **Ok**.

### New armed/running results header

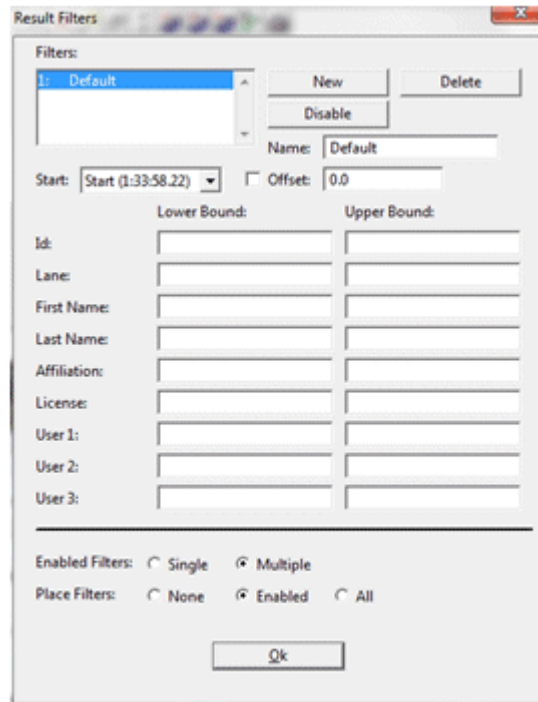
There is a new armed/running results header field in the scoreboard output.

## Ability to disable filters

You can now disable filters in the **Result Filters** dialog.

### *To disable filters:*

Click **Results** from the Menu bar and then click **Filters....** The Result Filters dialog appears.



- » Disabled filters appear in gray, and enabled filters are in black.
- » A button appears next to the filter list that says either **Enable** or **Disable**.
- » At the bottom of the dialog, there is a new setting for how many filters can be enabled at the same time. The options are **Single** and **Multiple**.
  - If **Single** is selected, then whenever a filter is enabled, all other filters are disabled.
  - **Multiple** allows as many filters to be enabled as you like.

## Ability to choose which filters are used when calculating place

The new **Result Filters** dialog allows you to choose which filters are used when calculating the place field.

Click **Results | Filters...** to make the Results Filters dialog appear. At the bottom of the dialog are three selections.

- ▶▶ Select the **Enabled** radio button if you want the place field to be assigned based solely on the visible results with regard to the currently enabled filters.

- ▶▶ Select the **None** radio button to assign places with no filters defined.

**Note:** Selecting **None** is a quick way to see the overall places when you are looking at a subset of the results. This works as long as:

- ▶ all results are using the same start time, and
- ▶ there are NO manually entered times.

- ▶▶ Select the **All** radio button to assign places with all filters, even the disabled ones, defined.

**Note:** Selecting **All** gives you more control over how places are assigned for non-visible results. For example, you can assign the correct start time to each non-visible result using a disabled filter for a race with different start times for different groups of results. Also, if you have a mix of manually entered times and automatic times, they will compare correctly because the non-visible automatic times have subtracted starts.

## Shortcut menu for choosing which filters are enabled

### *To enable this:*

- 1) In the **Results** area title bar, click on any column that does not already have a shortcut menu. For example, *do not* click on *Time*, *Delta Time*, or *Speed*, because they already do.
- 2) A menu appears containing the defined filters with check marks next to the enabled filters. Click to select a filter to enable or disable it.

## **LapTime based place numbers cleared for unread results**

When the first official time is read, the LapTime based place numbers are now cleared for all unread results.

## New Print feature

Now, when you select **Print results with image**, you can select which results are included with the printed image.

You can define which results are included using the following methods:

- » Comma separated list, such as 1,2,3,
  - » A bounded range, such as 4-99,
  - » An unbounded range, such as 4-,
  - » An unbounded arithmetic series, such as 1,3,...,or
  - » A bounded arithmetic series, such as 1,3,...15.
- Note:* The arithmetic series can also decrease, such as 15, 13,..., or 15, 13,...7.

Other results definitions:

- » If you want to specify which values are not allowed, begin the entire string with a carat, or ^.
- » If you want to invert the meaning of a single field, begin the field with a tilde, or ~.

### Results definition examples

- » *Accept 1 through 5:*

1,2,3,4,5

1-5

1,2,...5

- » *Accept 11 and higher:*

11-

^1-10

- » *Accept all odd values:*

1,3,...

^2,4,...

- » *Accept all odd values to 15:*

1,3,...15

- » *Accept all \*but\* odd values to 15:*

$^1,3,\dots,15$

▶▶ *Accept 1-5, even values to 20 (except 14), then every third value:*

1-5,~14,6,8,...20,23,26,...

▶▶ *Accept all values divisible by 5 except those also divisible by 4:*

~4,~8,~...,5,10,...

## Chapter 3

# FinishLynx 7.3 Release Notes

This chapter contains release notes describing new features available in FinishLynx version 7.2.

## In This Chapter

General New Features.....	45
New IdentiLynx Features .....	51





## General New Features

### New scoreboard script

The scoreboard script, **Adaptive16x64 Wind.lss**, is now included.

- 1) Click **Scoreboard | Options...** from the Menu bar. The **Scoreboard | Options** dialog appears.
- 2) Click the **New** button to activate the Scoreboard settings.
- 3) From the **Script:** drop-down list, click to select a scoreboard script. FinishLynx automatically populates the settings for that dialog.
- 4) Click **Ok**.

### User defined results fields

There are three new user defined results fields, called **User n**, where n = 1-3.

The fields allow you to change the text in the language file to something descriptive, such as phone, email, or owner.

The new user defined fields appear in the following places:

**Results Filter** dialog, which you can access by clicking in the Results Zone

- » **LapTime Results: Key** list, which you can access by clicking **Options | LapTime**, and
- » in the **Fields:** list, which you can access by clicking **Options | Results**.

If enabled, the new user defined fields appear on the screen and on printouts. They are read in through the database, including the lynx.ppl file, and are written to the lynx.lif file.

---

**Note:** The Start Time field has been moved three fields to the right. All of the fields, including the new user defined fields, are documented in the comments section of the sample lynx.evt file.

---

### Existing Lynx.cfg and Lynx.cdf files not overwritten

The new FinishLynx installer does not overwrite existing Lynx.cfg and Lynx.cdf files.

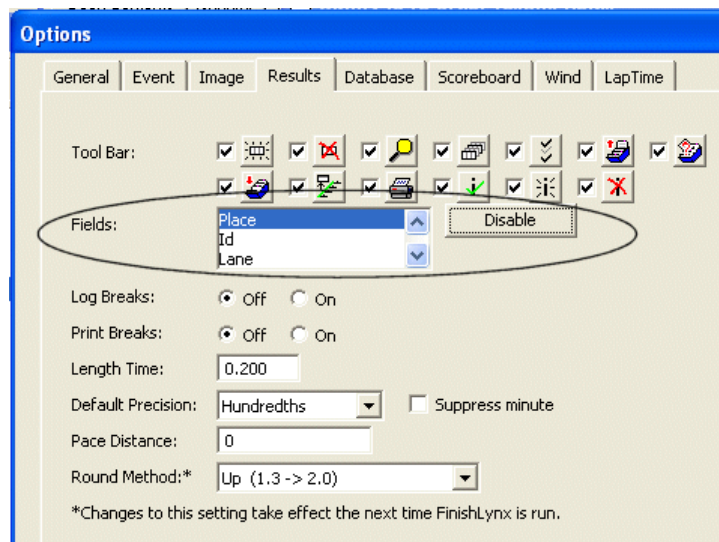
## Ability to re-order results fields

You can now re-order the results fields, using the new **Fields:** selector.

### *To access and use the new Fields: selector:*

Click **Options...** and then click the **Results** tab.

- » Enable or disable a field by clicking to select it, and then click the **Enable/Disable** button next to the selector.
- » Re-order fields by dragging and dropping them to a new location in the list.



## Results special code sort order changed

The **Results** special code sort order has been changed to:

- » DNF
- » DQ
- » FS
- » DNS, and
- » SCR.

## New Focus Helper feature

When FinishLynx is in Align Mode, the **Focus Helper** appears near the top left corner of the screen. The Focus Helper displays a number value that increases as the image becomes more in focus.

The Focus Helper looks like this. When FinishLynx is focusing an image, a number value appears in this box.



## Ability to select image in Align Mode

Now when FinishLynx is in Align Mode, clicking the right mouse button allows you to select image either while aligning, or after alignment has stopped.

---

**Note:** If you change the zoom level, either select a different camera, or left click in the image, to make the selection disappear.

---

Use with **Focus Helper** (see "New Focus Helper feature" on page 47):

- ▶ If a region of image is selected, then the Focus Helper operates only on that region.
- ▶ If no region is selected, then the Focus Helper operates on the entire image.

## New Hash Time overlay

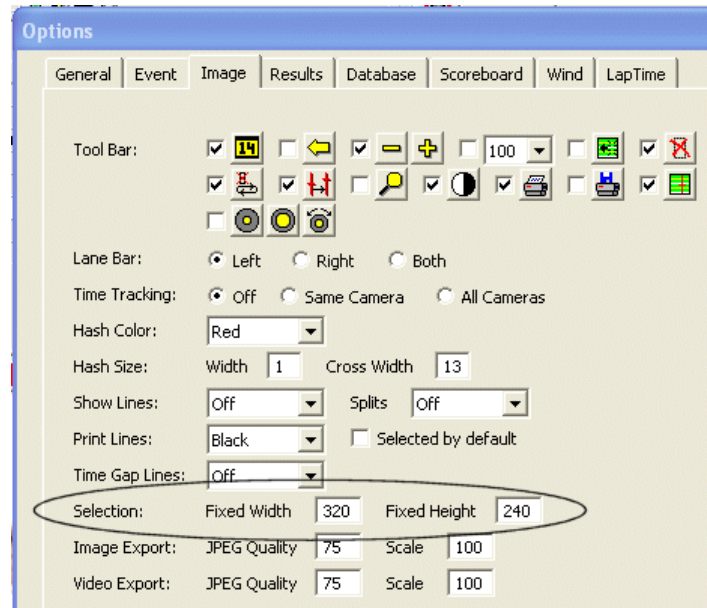
A new **Hash Time** overlay is included. The Hash Time overlay is a text overlay whose value is automatically updated with the current hash time.

### *To access the Hash Time overlay:*

With a FinishLynx image open, click **Image** from the menu bar and then select **Overlay | Hash time...** A **Text Overlay** combination box appears, allowing you to change the font, size, color, and text of the hash time overlay.

## Fixed size image selection control available

The fixed size image settings, previously accessible by holding down the Shift key while right-clicking on the image, are now available in a **Selection:** box, which is accessible from the **Options | Image** tab.



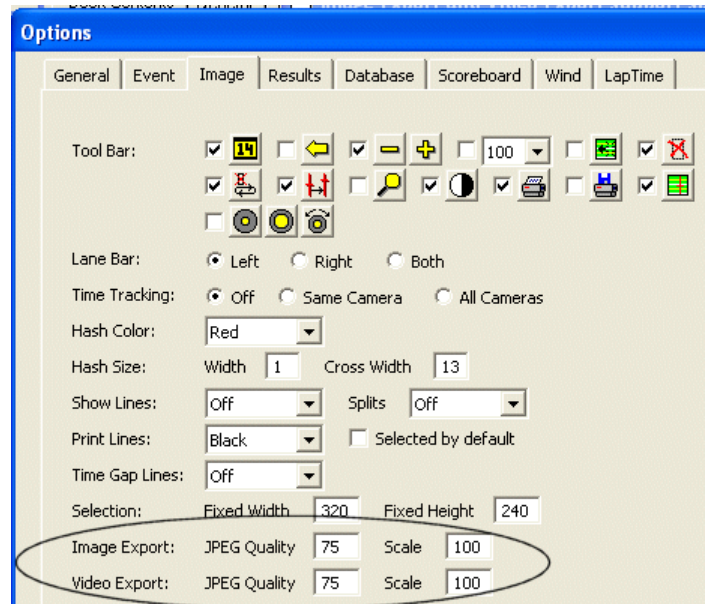
## Image Export and Video Export support size reduction

**Image Export** and **Video Export** now support reducing the size of the exported image or video.

*To reduce the size of exported image or video:*

- 1) Click **File | Options....**
- 2) Click the **Image** tab.

At the bottom of the Image tab, the **Image Export:** and **Video Export:** options are available, which allow you to enter a percent value from between 1-100; the default for which is 100.



**Note:** The hidden settings, `\Event\Image\ExportBitmap\Smooth`, and `\Event\Image\ExportVideo\Smooth`, control whether reduced images are smoothed. The default is 1, which means that it is on.

## Video Export

Video Export now supports the following:

- ▶ overlays, including *hash time overlays* (see "*New Hash Time overlay*" on page 47)
- ▶ image adjustments (brightness, contrast, gamma, enhancement), and
- ▶ selecting only a portion of the frame.

### ***Notes about video or image recompression:***

If any of these conditions exist, or if the **Video Export: Scale** is set to less than 100, then the video frames must be recompressed to include the image modifications. Each video frame is actually a jpeg image, and when this jpeg image is recompressed, the **Video Export: JPEG Quality** setting is used.

There is a hidden setting, \Event\Image\ExportVideo\Recompress, that controls when recompression is done.

The Recompress default value of 1 behaves as described above. If any image modifications exist, then the frames are recompressed. If no image modifications exist, then the frames are not recompressed, and the original image quality is preserved.

If Recompress is set to 0, then recompression never occurs, and the presence of overlays, selection, etc., are ignored during video export.

If Recompress is set to 2, then recompression always occurs.

## New Lynx LapTime device available

There is a new Lynx LapTime device that is used to receive LapTime information from IsoLynx™.

## New IdentiLynx Features

### Overlays in IdentiLynx images modified

When overlays are added to an IdentiLynx image, they only appear in frames that are part of the current frame selection. If there is no frame selection, then the overlay still appears in all frames.

### Smooth zoom enabled for IdentiLynx

Smooth zoom is now supported for IdentiLynx images. This is particularly useful when scaling an IdentiLynx image to an arbitrary size less than 100%. For example, at 60%, zoom diagonal lines in the picture look better with smooth zoom turned on.

### Export video menu item available

With an IdentiLynx image open, click **Image** from the menu bar and then select **Export video** to export IdentiLynx video to another source.





---

Chapter 4

# FinishLynx 7.2 Release Notes

This chapter describes new features available in FinishLynx 7.2, since the release of FinishLynx 7.1.

## In This Chapter

General New Features.....55

Improved Support for Wireless EtherLynx Cameras .....65

New IdentiLynx Features .....67



## General New Features

### New installer

FinishLynx 7.2 features a brand new, smaller, installer.

#### ***To install FinishLynx 7.2:***

Double-click the executable installation file, **FinishLynx-7.20.exe**.

Follow the steps on the FinishLynx Setup wizard to complete the installation.

---

**Note:** The new FinishLynx installer checks for the file **FinishLynx-Samples.exe** in the same directory as the FinishLynx installer. If FinishLynx-Samples.exe is present, a checkbox on the last page of the installer is enabled. Check this box to run FinishLynx-Samples.exe, which installs several sample events for you to practice with.

---

### New language files added

Finnish language and German language files have been added.

#### ***To run FinishLynx in a different language:***

- 1) Click **File | Options...**. The Options dialog appears.
- 2) Click to select the language you want from the **Language:** drop-down list at the bottom of the dialog.
- 3) Close FinishLynx. The next time you run FinishLynx, it runs in the language file you just selected.

## New scoreboard scripts

**Microtab16-9.lss** has been updated to support the new style of board that MicroGate is offering. The script is backward compatible with existing boards.

Also, FinishLynx now supports Adaptive Products scoreboards with the script, **Adaptive.lss**.

### *To select a new scoreboard script:*

- 1) Click **Scoreboard | Options...** from the Menu bar. The **Scoreboard | Options** dialog appears.
- 2) Click the **New** button to activate the Scoreboard settings.
- 3) From the **Script:** drop-down list, click to select a scoreboard script. FinishLynx automatically populates the settings for that dialog.
- 4) Click **Ok**.

## New wind gauge scripts

**DakMDP.lss** replaces the now removed **DakMDPWind.lss**. Support has been added for the Daktronics TI-2022 and TR-3101 displays.

Also, the wind file, **ERATON.lss**, replaces the old file, **ERATON\_Wind.lss**.

### *To configure FinishLynx's wind gauge settings:*

- 1) Click **File** from the Menu bar and then select **Options....** The Options dialog appears.
- 2) Click the **Wind** tab to display the Wind dialog.
- 3) Click **Wind Module:\*** and then select the wind gauge from the drop-down list. FinishLynx is automatically populated with the settings for the wind gauge that you selected from the list. Click **Ok** and then restart FinishLynx.

## Ability to pause results options to scoreboards

FinishLynx now allows you to pause the results output to scoreboards. This can be used, for example, to prevent any results from being displayed on the scoreboard until they have been certified or double-checked by a race official.

### *To pause the results output to scoreboards:*

- 1) Click **Scoreboard** from the main menu.
- 2) Click to select **Hold results** from the drop-down menu.
- 3) Once results have been paused, and you want to then send results, click **Scoreboard | Display results**.

### *Hidden setting available:*

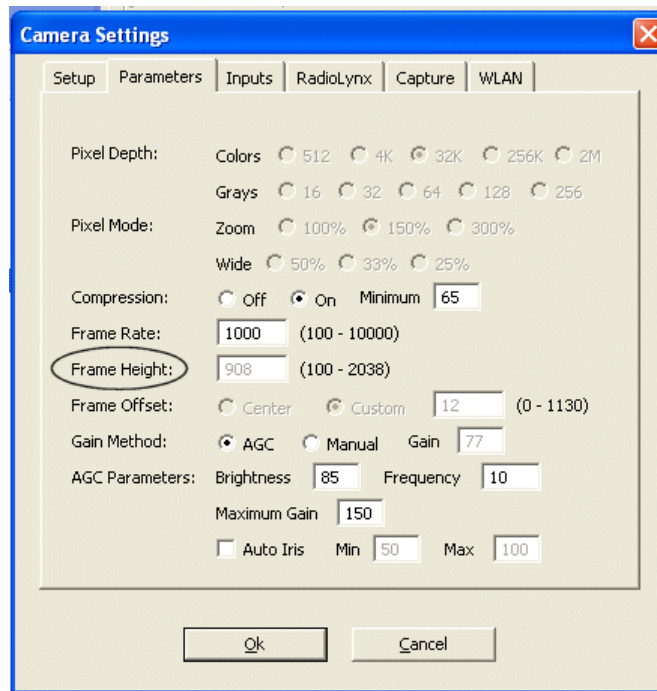
There is a hidden setting available, `\Scoreboards\ResultsReleased`, that controls whether results start out paused or not.

- ▶▶ The default value **1** means that the paused state will not change when an event gets sent to the scoreboard. It remains at the value you previously set it to. When set to 1, the initial state when FinishLynx starts up is released.
- ▶▶ The value **0** means that events start in the paused state.
- ▶▶ The value **2** means that events start in the released state.

## Frame Height referred to as "Height"

The word **Height** replaces the word, *Density*, in reference to Frame Height.

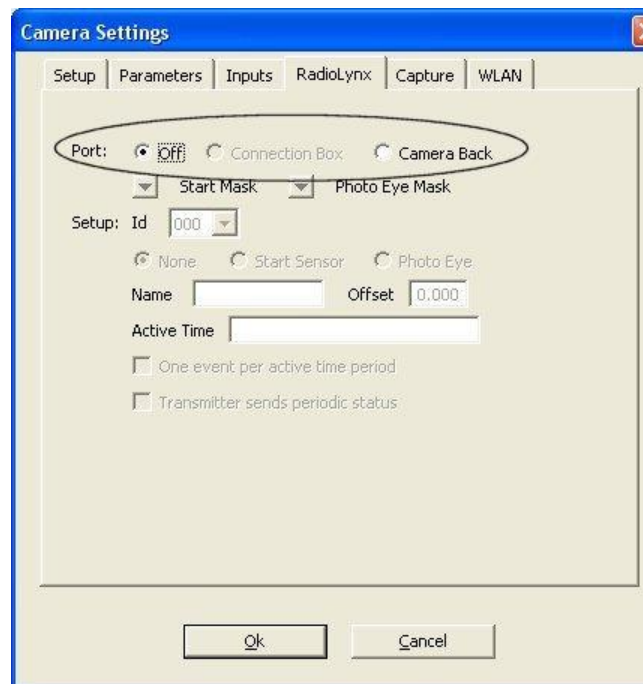
Frame Height appears in the Hardware Control window, the Event Zone, and the Camera Settings dialog.



## RadioLynx Connection Box option disabled

When using the EtherLynx Pro® or EtherLynx Fusion® camera with RadioLynx, you will find that the Connection Box radio button in the Port: selection on the **Camera Settings** | **RadioLynx** screen is disabled.

**Note:** This change applies to EtherLynx Pro and EtherLynx Fusion cameras with a hardware revision number of 200 or higher. The hardware revision number is comprised of the last three digits of the serial number marked on the camera's product label.



## Ability to change when event is auto-saved

There is a hidden setting which, when set to a value greater than 0, causes the event to automatically save the LIF file every so many seconds.

The default value is 0.

### ***To change the hidden setting:***

Access: **Database\LIF\AutoSave.**

For assistance and further instruction on changing a FinishLynx hidden setting, *contact Lynx technical support* (see "*Obtaining technical support*" on page 7).

## Participant start times are auto-loaded

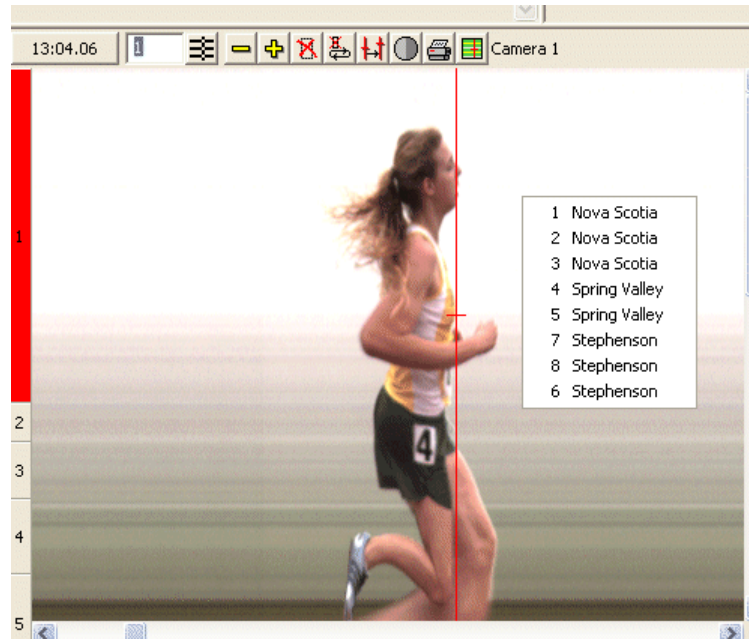
In Time Trial Mode, the Database now loads participants' start times from the .EVT file, if present. The start times appear after the license field, which is noted in the sample lynx.evt file in the installer.



## Ability to change results pop-up menu

There is a hidden setting available that controls the maximum number of entries that are listed in the results pop-up menu, which appears when you click on a FinishLynx image while simultaneously holding down the **Shift** key.

By default, ten entries appear in the results pop-up menu.



### ***To change the hidden setting:***

Access: **Event\Image\Hash\ResultPopupMax.**

For assistance and further instruction on changing FinishLynx hidden setting, *contact Lynx technical support* (see "*Obtaining technical support*" on page 7).

## Pop-up menus time out

Pop-up menus now disappear after five seconds of inactivity.

This is helpful because FinishLynx cannot accept image from a camera while a pop-up is on the screen.

## Event does not change when LapTime events get auto-deleted

LapTime events are auto-deleted either because they come from the wrong receiver, or because the associated participant has already completed the race.

Now, when LapTime events are auto-deleted, the event does not get marked as having been changed.

## Ability to zoom and scroll in Align Mode

You can now zoom and scroll an image when you are in FinishLynx's Align Mode.

When you first align a camera, it starts at Zoom 100%. If you change the zoom level and/or scroll position, the Hardware Control window remembers those settings until you select a different camera, when it reverts back to Zoom 100% and scroll offset 0.

### ***To zoom and scroll when aligning a camera:***

Click **Image** from the menu bar, and then click to select from the drop-down menu either:

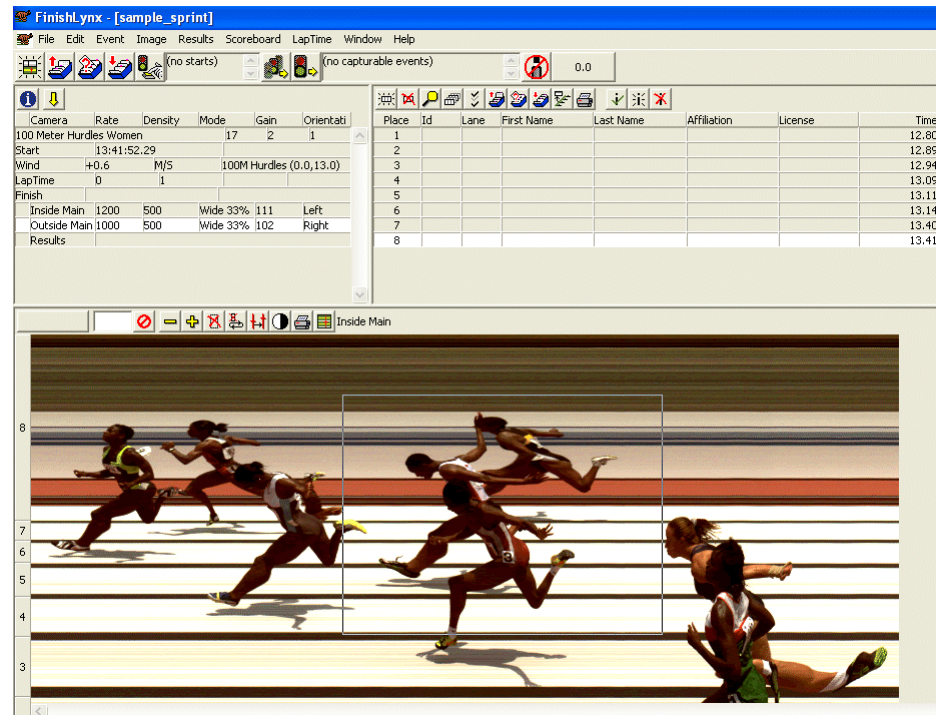
- » **Zoom out**
- » **Zoom in, or**
- » **Scroll new image.**

## New size selection box available

You can make a size selection box appear over a FinishLynx image.

### *To enable the size selection box:*

Hold down the **Shift** key while **right-clicking** on a FinishLynx image. The size selection box appears.



### **Notes:**

- » You can move the box around using the arrow keys on your keyboard.
- » The default size of the selection box is: 320 x 240 pixels.
- » You can change this default size by accessing the hidden settings `\Event\Image\Selection\FixedWidth` and `\Event\Image\Selection\FixedHeight`. If you change the size selection box dimensions, they should be evenly divisible at least by 4, or more if you plan to use the size selection box at zoom levels below 25%. For example, if you want to use the fixed selection box at 1/16 zoom (zoom 6.25%), then the dimensions should be evenly divisible by 16.



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## Improved Support for Wireless EtherLynx Cameras

### Ability to update firmware

An **Update Firmware** button is now available on the **WLAN** tab of the Camera Settings dialog for wireless EtherLynx 5L300 and 5L400 cameras that require a firmware upgrade to support wireless security.

Click the button to update the firmware. You are notified that the firmware will load the next time the camera is turned on.

---

**Note:** Once the camera is turned on again, the Update Firmware button no longer appears on the WLAN tab.

---

### Privacy key activation shows on WLAN tab

The WLAN tab now displays asterisks for the privacy key, if one has been entered.

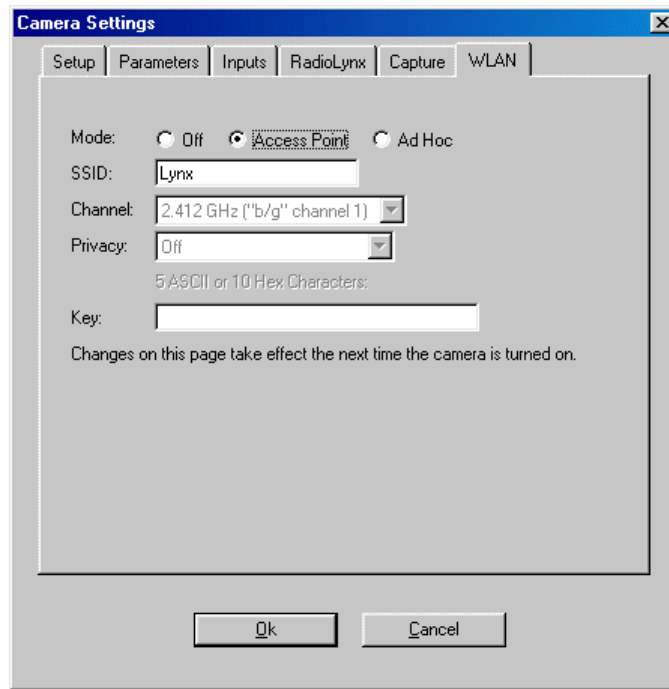
### WEP support for wireless cameras

Wireless EtherLynx cameras now have WEP support.

***To enable wireless EtherLynx camera WEP support:***

- 1) ***Contact Lynx System Developers, Inc.*** (see "***Obtaining Lynx products and information***") to obtain a **Camera Boot Monitor Upgrade**.
- 2) In FinishLynx, go to the **Camera Settings | WLAN** tab.

- 3) Once the boot monitor is upgraded, you can enter the WEP mode and key value on the WLAN tab.



---

**Important:** You must run FinishLynx 7.20 or later with a WEP-enabled EtherLynx camera if you intend to use WEP support, otherwise, the camera does not boot properly.

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## New IdentiLynx Features

### IdentiLynx image manipulation improvements

You can now zoom in or out on an IdentiLynx image, or you can change the current frame, without FinishLynx requiring you to save the event.

### Greater support for IdentiLynx cameras

IdentiLynx cameras now enjoy greater FinishLynx support.

FinishLynx now opens a command channel to the IdentiLynx camera that is used to set parameters and receive status. The status updates include the current AGC gain setting, which is updated every 3 seconds. This also allows the detection of missing IdentiLynx cameras, which causes the camera line to go red. As with EtherLynx cameras, either re-aligning the camera or updating the settings enables the camera to work again.

Note that if communication is temporarily interrupted, as opposed to the camera powering off and on, and the camera connection indicator goes red, you may need to wait for a minute or two before reviving it.

You can now control several settings through FinishLynx, including:

- » **Quality:** the standard jpeg quality setting. It has a range of 8-92.
- » **Gamma:** works like it does for EtherLynx cameras, except there is an expanded range, starting with a shutter speed of 1/30.
- » **Density:** you select density, which is image height, and FinishLynx automatically chooses the image width to maintain the sensor's aspect ratio.
- » **Shutter speed.**
- » **AGC or Manual gain:** the AGC has a frequency ranging from 1-15, and a brightness ranging from 1 - 100.

### Leader and trailer supported

Leader and trailer features of the FinishLynx image are supported by IdentiLynx cameras, to a maximum value for each of 15 frames.

## Maximum FPS support

The IQEye 511 model of IdentiLynx now has maximum frames per second support. Depending on the current Density/Mode combination, the Rate field indicates the current maximum possible frame rate, which is either 15, 20, or 30 frames per second.

---

**Note:** It is possible to not actually enter the frame rate, depending on how the current conditions and settings affect the compression ratio. In particular, if you set the compression quality very high (80 or 85 plus), the frames do not compress much, and the data rate exceeds the camera's capability, causing frames to be dropped.

---

## ACM and Photo Eye capture supported

You can now use **ACM** or a **Photo Eye** to capture FinishLynx image using an IdentiLynx camera.

### ***How it works:***

If you enable either ACM or Photo Eye capture for an IdentiLynx camera, then when an EtherLynx camera with the same type of capture enabled is actively capturing, the IdentiLynx camera also captures.

All EtherLynx cameras with the same type of capture enabled are read together to decide when the IdentiLynx camera should capture. For instance, if you have two EtherLynx and one IdentiLynx and all are set to ACM, then the IdentiLynx captures when either one (or both) of the EtherLynx cameras are capturing.



## Tool bar control for images

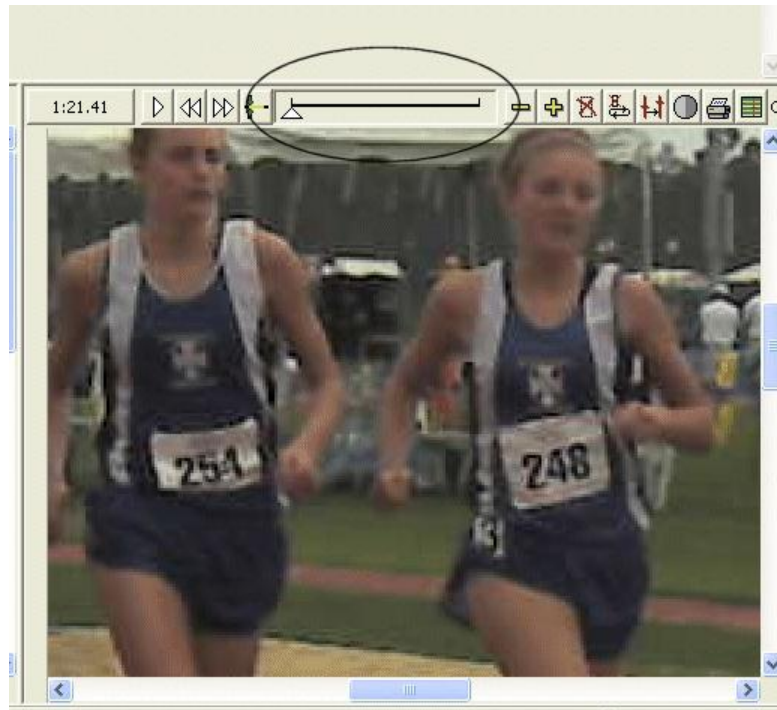
Now there is a video slider tool bar control for IdentiLynx images.

### *To operate the video slider:*

Click anywhere on the slider, and the video jumps there. If you click and hold down the mouse and move it around, then the slider and the image follow.

When you make a frame selection, the corresponding portion of the video slider bar turns yellow. When the current frame is part of the selection, the slider mark is yellow; otherwise, it is white. When dragging the mark, it is always white.

- ▶▶ Holding down the **Ctrl** key while simultaneously clicking the **Play** button allows you to play just the selected portion of the video.
- ▶▶ Holding down the **Ctrl** and **Shift** keys while simultaneously clicking the **Play** button allows you to repeatedly play the selected portion of the video.
- ▶▶ Holding down the **Shift** key while simultaneously clicking the **Play** button allows you to repeatedly play the entire video.



## Ability to select frames in images




You can now select frames in IdentiLynx images.

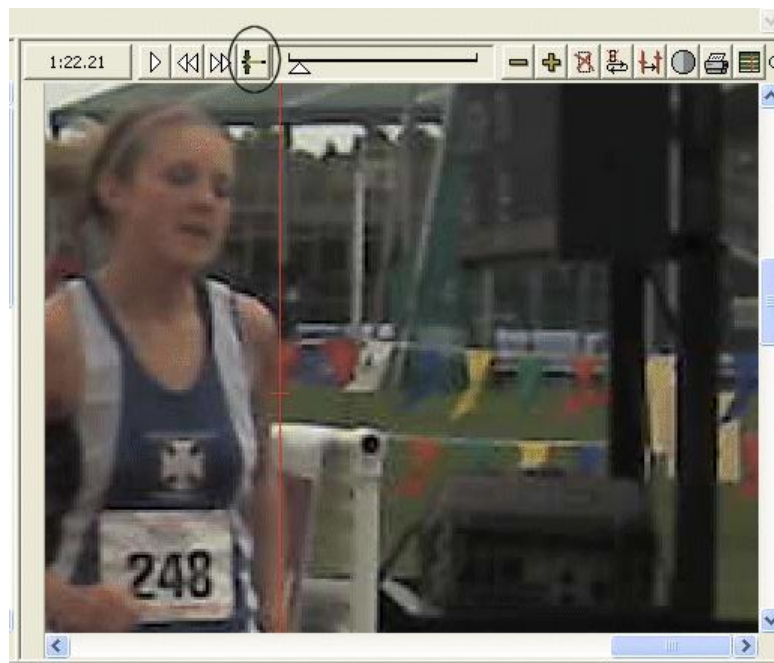
### **To do this:**

- 1) With a FinishLynx image displayed, click on the start frame.
- 2) Click **Image | Mark start frame** from the menu bar.
- 3) Click on the end frame.
- 4) Click **Image | Mark end frame**.
- 5) Now you can either crop the selection or *export it to a video file* (see "*Ability to export image clips to AVI files*" on page 71).
- 6) To clear the selection, click **Image | Clear frame selection**.

### **Note:**

You can also click the icons available above the IdentiLynx image.

- »  = mark start frame
- »  = mark end frame
- »  = clear frame selection



## Ability to export image clips to AVI files

You can export IdentiLynx image clips to AVI files, which can be played by Microsoft Windows Media Player or QuickTime.

You can either select a range of frames to export, or, if no selection is made, you can export the entire sequence of frames.

### ***To export frame/s to AVI files:***

Click **Image | Export video....** The **Save As** dialog appears.

- 1) Navigate to where you want to save the AVI file.
- 2) Click **Save**.

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**Note:** Windows Media Player does not support AVI videos larger than 2048 pixels wide. This does not affect the IQEye 511 IdentiLynx camera, which has a maximum width of 1280.

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Chapter 5

# FinishLynx 7.1 Release Notes

This chapter describes new features available in FinishLynx 7.1, since the release of FinishLynx 7.0.

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## IdentiLynx camera supported

IdentiLynx is an Ethernet based, full-frame digital video camera that, when combined with any EtherLynx line-scan photofinish camera, produces an integrated photofinish solution that maximizes the functionality of each technology.

The outputs from the two types of cameras are time synchronized, so that you can move the cursor in the photofinish window and watch the video jump to the same moment in time, helping you identify race finishers.

### **Notes:**

IdentiLynx does not currently support the ACM Plug-in or photo eye capture. It supports button or timed capture only.

- ▶ Use IdentiLynx only with 100BT or better hubs and switches, and computers with 100BT ports.
- ▶ IdentiLynx cameras do not currently support "redlining," that is, indication in FinishLynx that contact has been lost.

Unlike FinishLynx cameras, IdentiLynx cameras use varifocal, not zoom, **CS-mount**, not C-mount, lenses. Varifocal means that the lenses do not hold their focus through the zoom range. Therefore, you need to refocus if you change the zoom. Also, do not use any C-mount lenses from Lynx cameras unless you have the appropriate adapter for a CS-mount.

- ▶ There are some default camera settings that are not yet exposed to the FinishLynx user interface, for example, shutter speed and JPEG quality. For some applications, particularly cycling, you might need to change these settings. To do so, boot the camera in FinishLynx first, and then browse to the camera's IP address using a standard web browser. The username is **[root]** and password is **[system]**.

## Improved disk throughput while capturing

The amount of data that can be transferred while capturing image has been greatly improved in FinishLynx 7.1.

## Two new language files added

FinishLynx now has an **it\_IT.lng**, language file.

### *To run FinishLynx in a different language:*

- 1) Click **File | Options...**. The Options dialog appears.
- 2) Click to select the language you want from the **Language:** drop-down list at the bottom of the dialog.

Close FinishLynx. The next time you run FinishLynx, it runs in the language file you just selected.

## TimeTronics scoreboard script added

FinishLynx now supports the TimeTronics scoreboard with the script, **Timetronics.lss**.

### *To select a new scoreboard script:*

- 1) Click **Scoreboard | Options...** from the Menu bar. The **Scoreboard | Options** dialog appears.
- 2) Click the **New** button to activate the Scoreboard settings.
- 3) From the **Script:** drop-down list, click to select a scoreboard script. FinishLynx automatically populates the settings for that dialog.
- 4) Click **Ok**.

## Hidden setting allows automatic OS detection

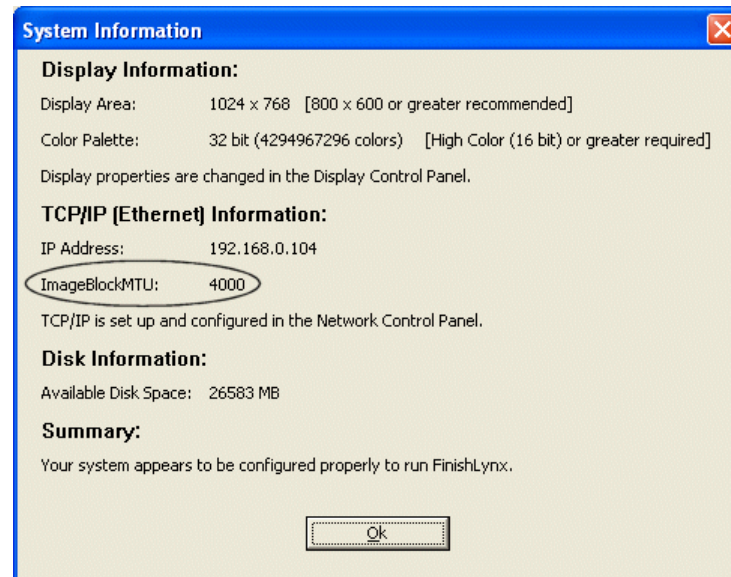
The **ImageBlockMTU** hidden setting now defaults to 0, which allows FinishLynx to detect the operating system and use an appropriate value.

For Microsoft Windows Vista, 1464 is used. For all other operating systems, 4000, the previous default, is used. You can change this setting on the fly.

The currently used ImageBlockMTU value is now displayed in the **System Information Dialog**. If the ImageBlockMTU setting is 0, then the value actually in use, 1464 or 4000, is displayed.

### *To access the System Information Dialog:*

Click **Help** from the Menu bar and then click **System info....** The System Information dialog appears.





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Chapter 6

# FinishLynx 7.0 Release Notes

This chapter describes new features available in FinishLynx 7.0, since the release of FinishLynx 6.0.

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## General New Features

### New Russian language file

A new Russian language file has been added.

***To run FinishLynx in a different language:***

- 1) Click **File | Options....** The Options dialog appears.
- 2) Click to select the language you want from the **Language:** drop-down list at the bottom of the dialog.
- 3) Close FinishLynx. The next time you run FinishLynx, it runs in the language file you just selected.



## Synchronize TOD feature

There is a new feature called Synchronize TOD.... You can use this to synchronize the EtherLynx camera Time Of Day time to another source. You tell FinishLynx what time it should have been when a certain event occurred; for example, a start signal or an image frame time.

### *To access the Synchronize TOD feature:*

- 1) Click to select **Event** from the Menu bar.
- 2) Click to select **Synchronize TOD....** A dialog appears.
  - ▶ If you are synchronizing to a start signal, select the start in the main toolbox and then run Synchronize TOD.
  - ▶ If you are synchronizing to an image, then you need to:
    1. Create an event.
    2. Capture image.
    3. Select the frame to synchronize to.
    4. Run Synchronize TOD.

When a start and image synchronized source are both present, you can choose which you want to use in the dialog box. Once Synchronize TOD is run, all previously received starts are removed, and all previously capturable events are not capturable.

**Note to NASCAR version users:** This is an enhanced version of the **Set Timer...** command, which is no longer available.

## High COM port numbers now supported

High COM port numbers are now supported. FinishLynx is now able to access ports up to COM16, and also looks for non-contiguous ports, up to COM128.

## Ability to override default start sound

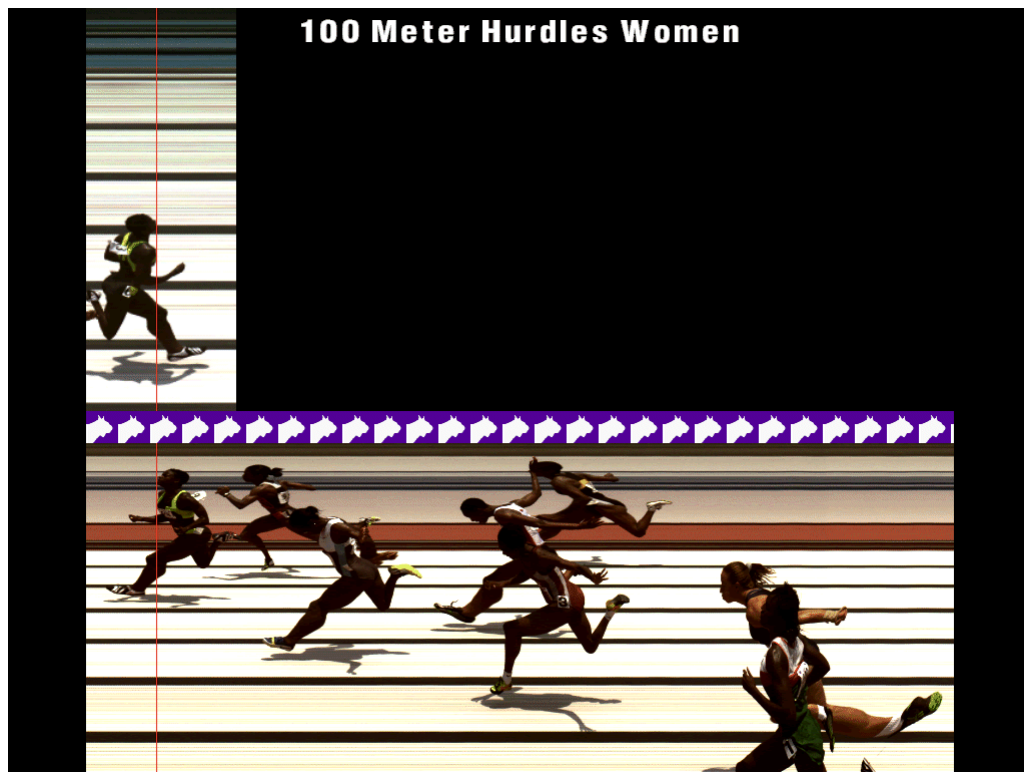
You can override the default start sound by putting a **FinishLynxStart.wav** file in your FinishLynx directory.

## New full screen two mode

There is a new **Full screen two** mode that displays two images at once.

### *Accessing Full screen two mode:*

Click **Image** from the Menu bar, and then click to select **Full screen mode two**. Both images appear, separated by a default barrier.



When using this mode, the primary, or bottom, image is chosen. This is the current, or last selected, image pane. The secondary, or top, image is the first image found that is not the primary image.

The secondary image is displayed at a zoom level that matches its frame rate to that of the primary image, so that objects in both images will be the same width. The hairline in the secondary image is displayed at the same time as the hairline in the primary image. Also, the secondary image is shifted horizontally, so that the hairlines line up.

Each image is allocated vertical screen real estate, proportional to its height. There is a special file, FullScreen.tga, which, if present in the Lynx directory, is drawn repeatedly across the screen where the two images meet. The FinishLynx installer includes a sample FullScreen.tga, but can be replaced with any file, or deleted if you do not want any banner displayed.

### ***Controlling images in full screen mode:***

Once full screen mode is active, you can control various aspects of the display.

- » The arrow keys move the images left, right, up, and down.
- » Holding down the **1** key while subsequently holding down an arrow key moves the top image only.
- » Holding down the **2** key while subsequently holding down an arrow key moves the bottom image only.
- » Holding down the **0** key allows you to again control both images.

Press the **PgUp** and **PgDn** (page up and page down) keys to move the separation between the two images, giving more space to one and less to the other, if both images do not fit entirely on screen vertically.

---

**Note:** When controlling just one image, you can only move it up or down, because the hairlines must remain lined up.

---

### ***To exit full screen mode:***

Press the **Esc** (escape) key.

## New Image: Set sub-menu

**Set** is a new sub-menu in the Image menu. It allows you to access several image options, including:

- » Set white balance,
- » Set photo eye balance,
- » Etc.

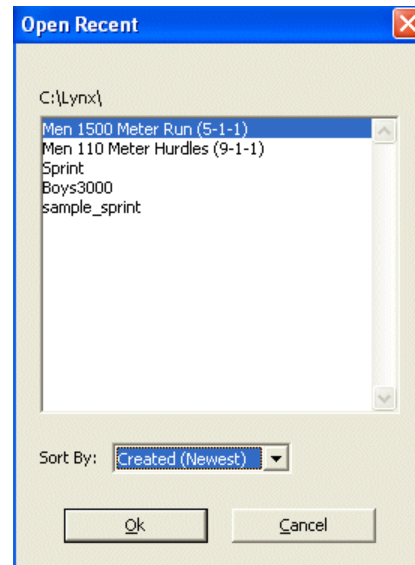
### *To access the Set sub-menu:*

Click **Image** from the menu bar and then select **Set**. The Set sub-menu appears.

## New Open recent feature

Click **File** from the Menu bar and then click to select **Open recent...**. A dialog opens that lists the events in the current directory, and allows you to sort by:

- » name [**Name (A to Z)** or **Name (Z to A)**]
- » creation time [**Created (Oldest)** or **Created (Newest)**], or
- » modification time [**Changed (Oldest)** or **Changed (Newest)**].



**Note:** The current directory is the last directory that an event was either opened in, using **File | Open**, or saved in, using **File | Save As**.



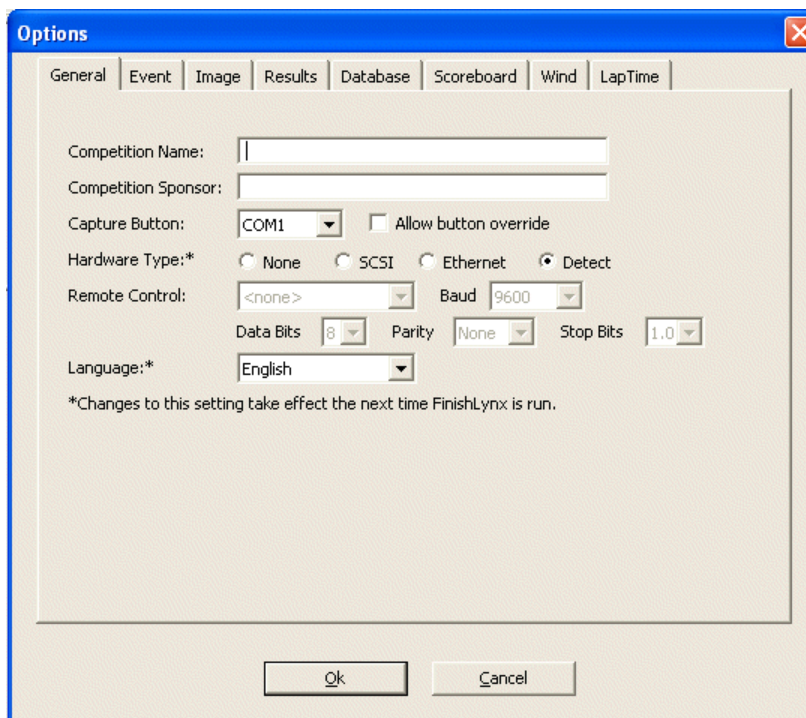
## Delta time field uses cumulative split time

The Delta time field now uses the cumulative split time, until at least one result has an official time.

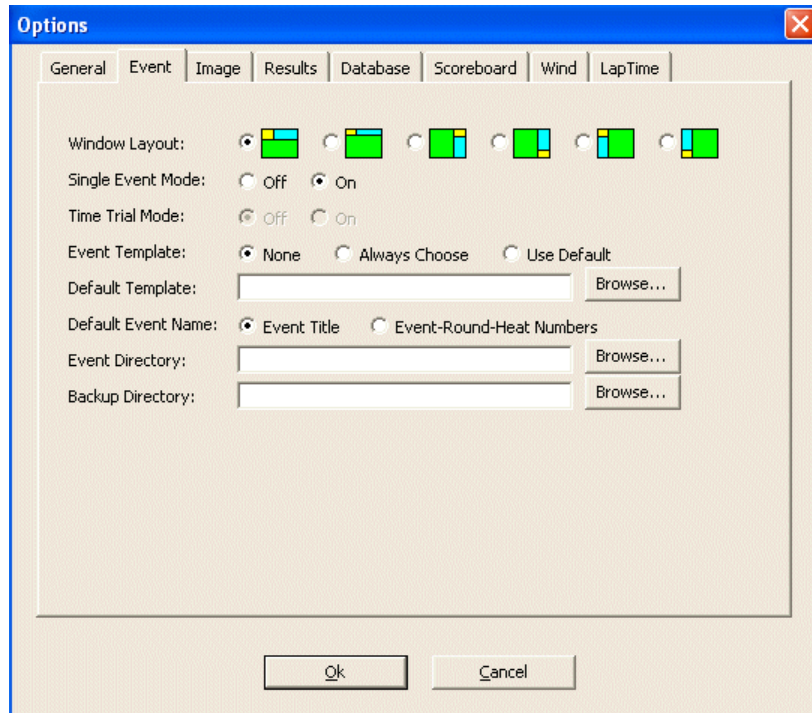
## Options dialog has changed

The **File | Options...** dialog has changed as follows:

- The **Hardware** tab has been eliminated. The options that were available on the Hardware tab have been moved to the **General** tab.



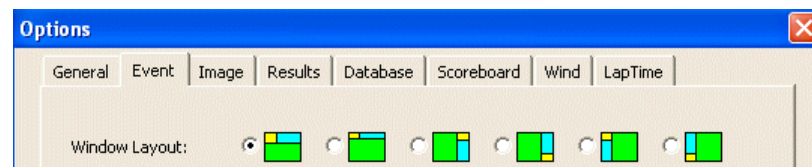
- A new **Event** tab contains all of the settings on the General tab that are event-related.



## New Event tab setting

Access the **Options...** dialog and then click the new **Event** tab.

You can now control the arrangement of the event window. The default choice is the standard FinishLynx layout, and there are five alternate choices.



**Note:** If you change any of the layouts through the hidden settings dialog, the layout is checked for errors, and the icon for that layout is updated. The layout icons do not normally contain any red color, but if a layout has errors in it, then the icon contains red in those portions of the screen that were rejected or left unused by the layout parser.



---

## Photo Eye Enhancements

### Second photo eye input supported

FinishLynx now supports the second photo eye input on the EtherLynx 5L100, 5L200, and 5L300 (EtherLynx Professional) cameras. This allows you to use any combination of both external photo eyes, and the internal photo eye.

#### **Notes:**

- » The photo eye masking feature in the Scoreboard menu also gives separate access to each of these photo eyes.
- » Photo eye capture still uses the original photo eye input, which is now called the External A photo eye.

---

**Important:** Accessing this port requires a new C-Box. Contact Lynx for more information.


---

### New photo eye capture method

There is a new photo eye capture method, allowing you to simply select all of the capture methods that you want active, including:

- » Manual
- » Timed
- » Automatic, and/or
- » Photo Eye.

#### ***To activate the Manual and Automatic Capture methods:***

- 1) Click . The **Camera Settings** dialog appears.
- 2) Click the **Capture** tab.
- 3) Click to check **Manual** and **Automatic**.

---

**Note:** Unchecking all options and then clicking Ok defaults FinishLynx to Manual capture.

---

#### ***To activate the Timed capture method:***

- 1) Click . The **Camera Settings** dialog appears.

- 2) Click to uncheck all options to activate the Timed capture selection, and then click to check Timed capture.

---

**Note:** If you check Manual capture when Timed capture is checked, then Timed capture becomes unchecked and deactivates. Manual and Timed capture are mutually exclusive.

---

### ***About the new Photo Eye capture method:***

The new Photo Eye capture can be combined with Automatic and/or Manual captures, if you want. When the photo eye beam is broken, capture starts the Leader frames before the current frame. When the beam ceases to be broken, capture stops the Trailer frames after the current frame.

---

**Note:** When the photo eye triggers capture to start, capture remains on for at least the Photo Eye Debounce period before the photo eye signal is checked to see if capture should stop. If you are getting too long of a capture period for the size of your object, then it could be that the debounce is too long. You should not set the debounce any shorter than it takes for the photo eye signal to stop ringing.

---

## **Photo eye capture allowed without ACM Plug-in**

Photo eye capture is now allowed without the ACM Plug-in installed.

## **Ability to set photo eye as gun signal**

Now, selecting **Internal** for the Gun Sensor uses the virtual photo eye as your gun signal.

When set to Internal, the values set in the photo eye area are used for threshold, top, bottom, size, and mask. The photo eye offset is not used; however, the gun sensor offset, if set, is used.

If you have Gun Sensor set to Internal, then all applicable fields, even those in the photo eye area, are enabled, even if you disable all photo eye sources.

---

## Scoreboard Enhancements

### New scripts

The previous four Nevco scripts are replaced with two new ones:

- » **Nevco\_123.lss** and
- » **Nevco\_860.lss**.

Also, a new Daktronics script, **Powertime.lss**, has been added.

#### *To select a new scoreboard script:*

- 1) Click **Scoreboard | Options...** from the Menu bar. The **Scoreboard | Options** dialog appears.
- 2) Click the **New** button to activate the Scoreboard settings.
- 3) From the **Script:** drop-down list, click to select a scoreboard script. FinishLynx automatically populates the settings for that dialog.
- 4) Click **Ok**.

### Fixed width font option available

By default, the Scoreboard Message dialog now has a checkbox that is selected so that text is displayed in a fixed width font.

If you want to send a scoreboard message in a language that is not part of a fixed width font, such as Japanese, Korean, Chinese, Arabic, or Russian, click to uncheck that option.

#### *To access the Scoreboard Message dialog:*

Click **Scoreboard** from the Menu bar, and then select **Edit message...** The **Scoreboard Message** dialog appears. The **Use Fixed Width Font** checkbox is at the lower left corner of the dialog.

## TimeNoDelay now set per scoreboard

**TimeNoDelay** is now set per-scoreboard rather than globally.

Instead of setting \Scoreboards\TimeNoDelay, you now need to set \Scoreboards\n\TimeNoDelay, where n is the scoreboard number, for each scoreboard that you do not want to use the default value of 1.

## TimeArmed and TimePaused features supported

Scoreboard scripts now support two new sections, **TimeArmed** and **TimePaused**.

TimeArmed reverts to TimeRunning if not present, and TimePaused reverts to TimeStopped if not present.

These new sections allow greater flexibility in choosing what to send when, and are particularly helpful when triggering objects to appear in ResultV.

### ***Example of application of new scoreboard script sections:***

If you want to trigger a logo to appear when the race is over, but not when displaying intermediate times, you can use separate TimePaused and TimeStopped sections. Each section sends the same data, but only the TimeStopped section includes the command to trigger the ResultV object to appear.

## Stop on-screen time option available

There is a new option in the Scoreboard drop-down list, **Stop on-screen time**, that, if selected, causes the on-screen running time to stop when the scoreboard is in either Paused or Finished mode.

### ***To access Stop on-screen time:***

- 1) Click **Scoreboard** from the Menu bar.
- 2) Click to select **Stop on-screen time**.



---

## Wind Gauge Enhancements

### New script added

ERATON\_wind.lss is included, which works with any of the FinishLynx supported wind gauges.

#### *To configure FinishLynx's wind gauge settings:*

- 1) Click **File** from the Menu bar and then select **Options....** The Options dialog appears.
- 2) Click the **Wind** tab to display the Wind dialog.
- 3) Click **Wind Module:\*** and then select the wind gauge from the drop-down list. FinishLynx is automatically populated with the settings for the wind gauge that you selected from the list. Click **Ok** and then restart FinishLynx.

### Manually entered wind readings appear in LIF file

Manually entered wind readings are now indicated in the LIF file by "(Manual)" appearing after the wind value, in the same field.

This string is found in \Strings\Database\LIF\WindManual. You can disable this feature by setting the value to an empty string.

### Seiko Timing PC wind gauge improvements

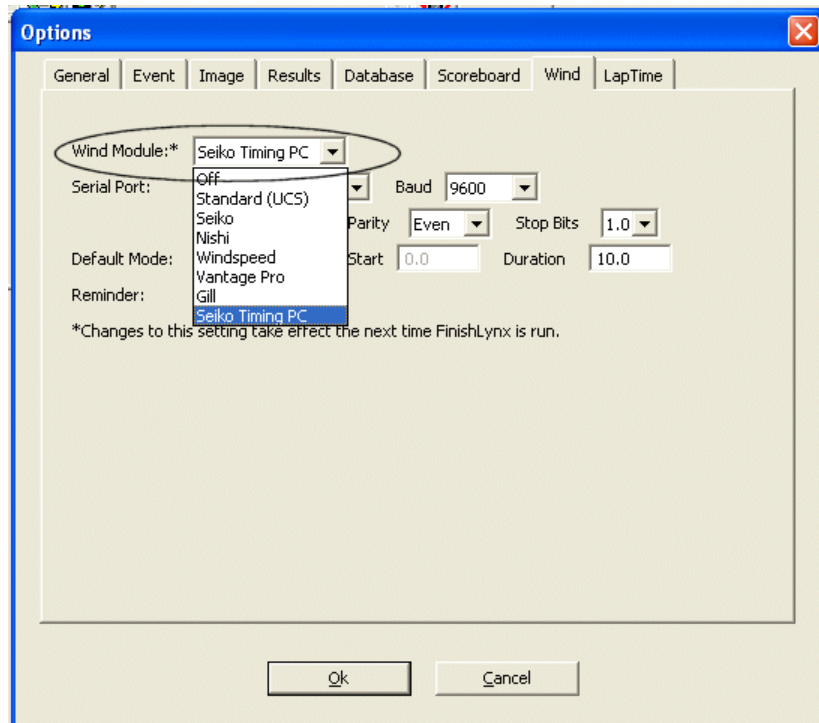
The **Seiko Timing PC** wind gauge works with the **Seiko data simulator**.

Additionally, the Seiko Timing PC wind gauge reads the reaction time data that is part of the data stream. When the reaction time data is received, it is inserted into the current event.

#### *To configure FinishLynx's wind gauge settings:*

- 1) Click **File** from the Menu bar and then select **Options....** The Options dialog appears.

- 2) Click the **Wind** tab to display the Wind dialog.
- 3) Click **Wind Module:\*** and then select the wind gauge from the drop-down list. FinishLynx is automatically populated with the settings for the wind gauge that you selected from the list.



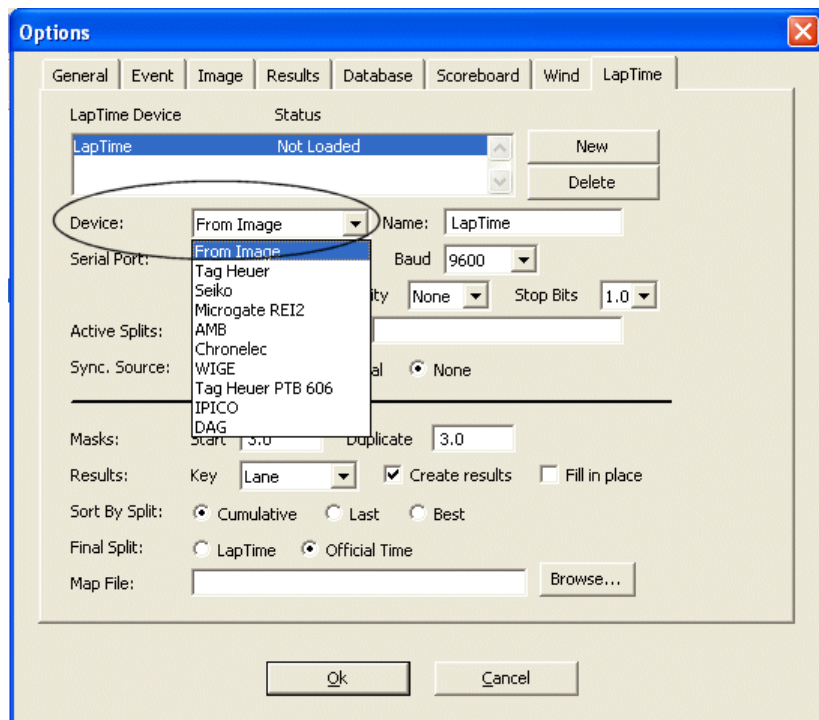
- 4) Click **Ok** and then restart FinishLynx.

# LapTime Enhancements

## New LapTime devices supported

### Selecting a LapTime device

- 1) Click **File** from the Menu bar and then select **Options....** The Options dialog appears.
- 2) Click the **LapTime** tab. The LapTime dialog appears.
- 3) Click the **New** button to activate a LapTime device.
- 4) Click **Device:** to display a drop-down list with available LapTime devices.



- 5) Click to select a device from the list. FinishLynx is automatically populated with the LapTime device's correct settings.
- 6) Click **Ok** to return to the FinishLynx main screen.

### **IPICO LapTime device**

A new LapTime device, **IPICO**, is supported.

There is a hidden setting, `\LapTime\IPICO\Suffix`, that defines which kind of IPICO event FinishLynx uses.

The default is **LS**, for Last Seen.

It can also be **FS**, for First Seen.

---

**Note:** Be sure to capitalize these letters, because they must match exactly what comes from the LapTimer. As an option, you can make this field empty and use the "raw" values that come on port 10000. You should connect to the device on port 10200, the "first seen/last seen" port. FinishLynx sets this as the default field when you select IPICO.

---

### **Tag Heuer PTB 606 LapTime device**

Support for the **Tag Heuer PTB 606 LapTimer** has been added.

There are now separate options for the Tag Heuer PTB 605 and for the Tag Heuer PTB 606.

---

**Note:** The Tag Heuer PTB 606 is only supported with **Internal Sync**. When you select the 606, the other sync options are disabled.

---

### **DAG LapTime device**

A new LapTime device, **DAG**, is supported.

## New hidden settings for AMB LapTime devices

There are two new hidden settings for AMB LapTime devices:

- » **\LapTime\AMB\IdField**, and
- » **\LapTime\AMB\IdStrip**.

The **IdField** value specifies which field in the record should be used by FinishLynx to identify the tag. The default is 3, which is the "internal" ID that has always been used. This can be changed to 8 to use the "external" ID printed on the outside of tags.

The **IdStrip** value is a string of characters that are removed from the ID string. This defaults to an empty string, as the "internal" ID has no characters that should be stripped.

**Note:** When using the "external" ID, we suggest that you strip the single quote characters that surround the ID and the dash that is part of the ID. To do this, just type "'-", without the double quotes, in the IdStrip field.

## Ability for final split to go into results time field

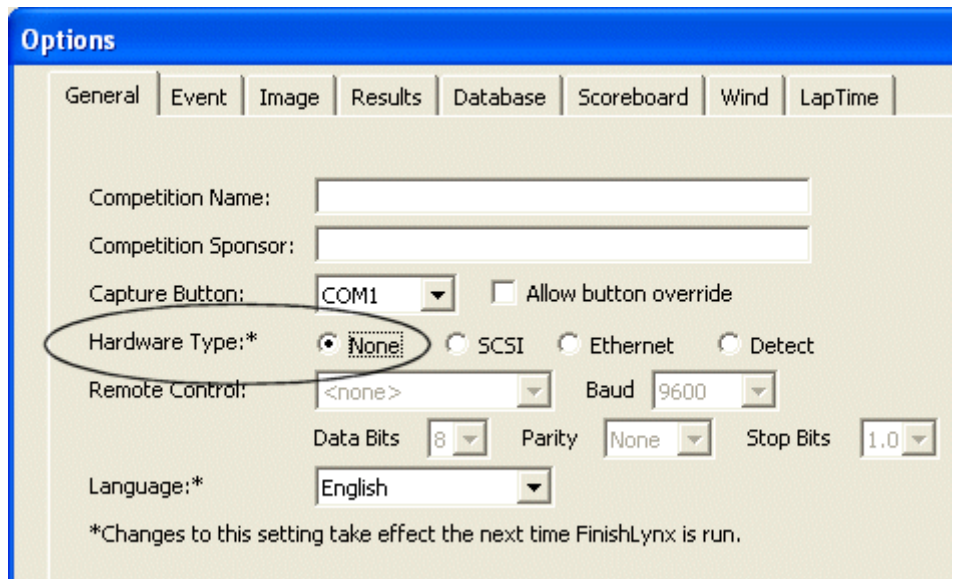
You can now set the hidden setting **\LapTime\FillInTime** to a value of 2 to have the final split time always go into the results time field, even when using an EtherLynx camera.

A value of 1, still the default, does this only when **Hardware Type** is set to **None**. A value of 0 never does it.

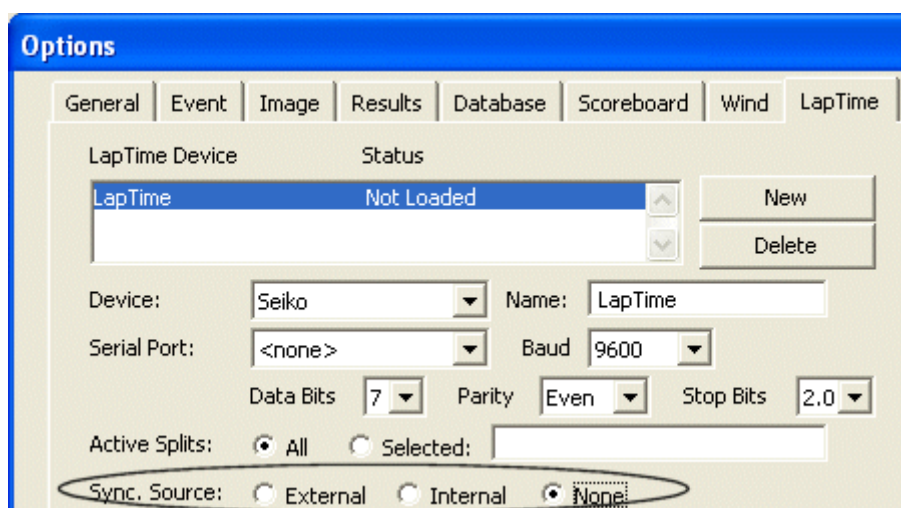
## Ability to use manual start with any LapTime device

You can now use manual start with any LapTime device. To configure any LapTime device to use a manual start:

- 1) Click **File** from the Menu bar and then select **Options...**. The Options dialog appears, with the **General** tab dialog displayed by default.
- 2) From **Hardware Type:\***, click to select the **None** radio button.



- 3) Click the **LapTime** tab. The LapTime dialog appears.
- 4) From **Sync. Source:**, click to select the **None** radio button.



- 5) Click **Ok** to return to the FinishLynx main screen.

# EtherLynx Camera Additions and Enhancements

## Introducing the new EtherLynx Fusion camera

FinishLynx supports the new **EtherLynx Fusion** camera, **5L400**.

## Rate and density fields show max value

The rate and density fields in the *Hardware Control Window* now show the maximum allowed value.

This is mainly for the benefit of the new **EtherLynx Fusion 5L400 camera**, since the max rate and density are interdependent.

## Full sensor resolution now supported

The full sensor resolution is now supported in the EtherLynx Professional 5L300 zoom modes.

- » Rather than 2000 in Zoom 150, you can use **2038** pixels.
- » Rather than 4000 in Zoom 300, you can use **4078** pixels.

## Frame Offset Option available in EtherLynx Professional

A new Hardware Option, **5LFO**, or **Frame Offset Option**, is available for optional purchase to use with the EtherLynx Professional 5L300 camera.

5LFO allows the active area of the sensor to be arbitrarily chosen, rather than always centered. You can specify this offset in the camera dialog using the new **Frame Offset** setting, just below the **Frame Density** setting.

For an EtherLynx Professional 5L300 camera with 5LFO installed, select **Custom** and type in any valid value. When Custom is selected, a range appears showing the legal values.

An alternate way of setting the offset and density is by taking a picture, selecting the vertical portion of the image that you want to capture, and then selecting the new **Image | Set | Capture area** function.

It is not legal to change the offset and density of a camera in an event after capture has occurred. Therefore, the changes are made to the Hardware Control Window camera object and the current event is closed. If the event was not saved, you are warned to that effect. The event is closed automatically, because if you enable capture again for that event, the new offset and density settings are suppressed, with the old ones still present in the event.

---

**Note:** For any camera except the EtherLynx Professional 5L300, when this option is installed, you can only choose **Center**, which has always been available.

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# FinishLynx Release Notes





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FinishLynx 6.00 Release Notes

November 27, 2006

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# Introduction

This document contains release notes describing new features available in:

- *FinishLynx 6.00* (see "FinishLynx 6.00 Release Notes")
- *FinishLynx 5.20* (see "FinishLynx 5.20 Release Notes")
- *FinishLynx 5.13* (see "FinishLynx 5.13 Release Notes")
- *FinishLynx 5.12* (see "FinishLynx 5.12 Release Notes")
- *FinishLynx 5.1* (see "FinishLynx 5.1 Release Notes"), and
- *FinishLynx 5.0* (see "FinishLynx 5.0 Release Notes").

---

## Obtaining Lynx products and information

There are three ways to obtain Lynx products and information:

- Go to the *Lynx website* (<http://www.finishlynx.com/>) and click the **Products** link
- Call (978) 556-9780 and ask to speak with someone in sales, or
- Send an email to our *sales department* (<mailto:sales@finishlynx.com>).

---

## Obtaining technical support

There are three ways to obtain technical support for Lynx products:

- Go to the *Lynx website* (<http://www.finishlynx.com/>) and click the **Support** link
- Call (978) 556-9780 and ask to speak with someone in tech support, or
- Send an email to the *technical support department* (<mailto:support@finishlynx.com>).



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## CHAPTER 1

# FinishLynx 6.00 Release Notes

This chapter describes new features available in Finishlynx 6.00, since the release of FinishLynx 5.20.

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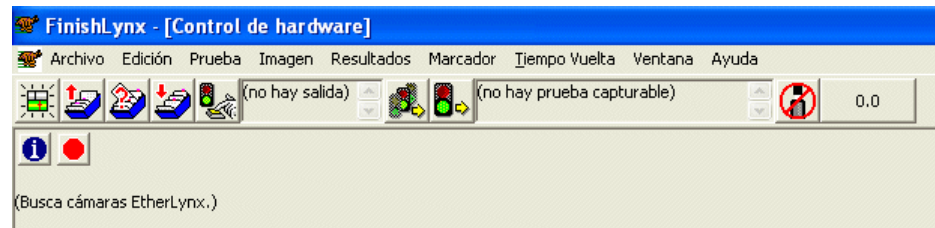
## General New Features

### Spanish language file

FinishLynx has a new, improved Spanish language file that, when chosen, displays the FinishLynx user interface in Spanish.

➤ **To change FinishLynx to display in another language:**

- 1 Click **File** from the Menu bar and then select **Options...** The **Options** dialog appears.
- 2 From the **Language:\*** drop-down list near the bottom of the dialog, click to select a new language from the list.
- 3 Click **Ok**.
- 4 Exit and then re-start FinishLynx. FinishLynx displays in the language you selected.



### Ability to create a start from an image

FinishLynx now provides you with the ability to create a start from an existing image.

➤ **To do this:**

- 1 Click on the image to place a hairline on it and to display the time.
- 2 Click **Image** from the Menu bar and then select **Image start**.
  - If the current event is *capturable*, then the start is placed in the main list of starts and can be used like any other start. This includes the ability to place it into a different event.
  - If the current event is *not capturable*, then the start is placed only into the current event.



## Source of start indicator

The list of starts now indicates the source of each start, as follows:

- **m** for manual,
- **i** for image,
- **r** for RadioLynx,
- **l** for LapTime, and
- (blank) for a start that comes from a directly connected sensor.

## Ability to disarm an armed event

You can now disarm an armed event.

➤ **To do this:**

Click **Event** from the Menu bar and then select **Disarm**. The previously armed event becomes disarmed.

## Automatic override of manual and timed capture

---

**Note:** This feature is applicable to horse racing.

---

You can now choose to have automatic override of manual and timed capture modes. Automatic override of timed capture will only function if you have first used **button override** (see "Allow button override feature") to change from timed to manual capture.

As part of this change, Leader and Trailer now apply to all forms of capture, not just automatic capture.

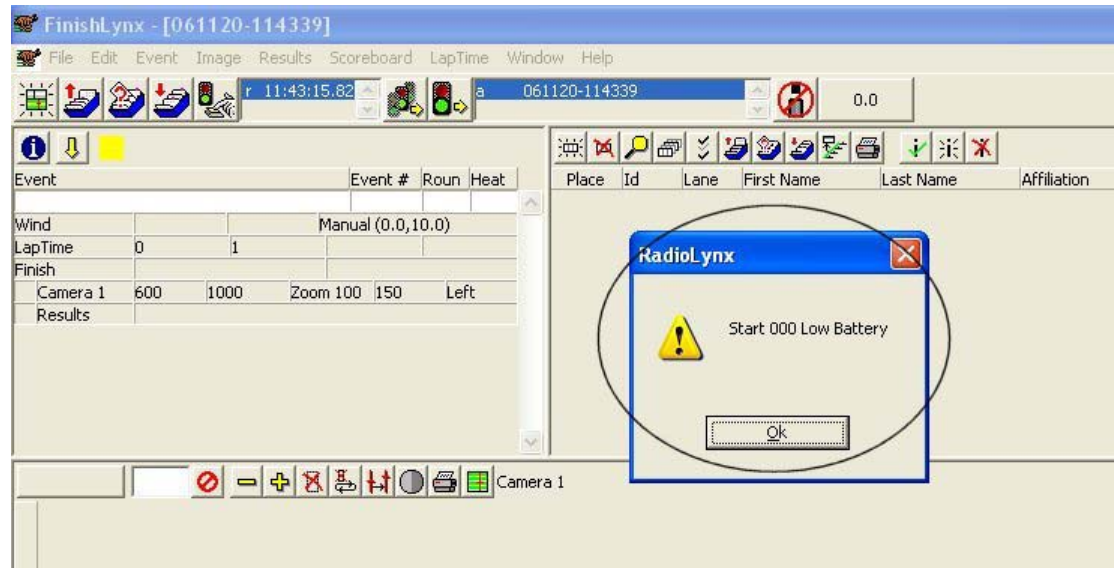
Note that manual capture with automatic override is the same as automatic capture with manual override.

## RadioLynx transmitters indicate when low battery

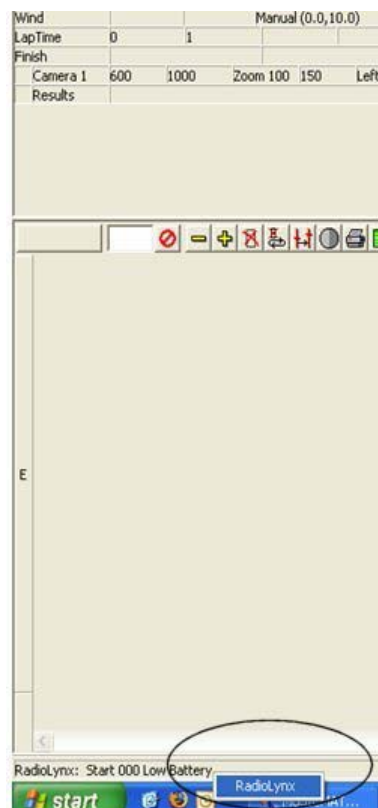
FinishLynx now warns you by displaying a message in the status bar when the RadioLynx transmitters in your competition setup are low. The image here shows the status bar message at the lower left corner of the screen.



A warning is also displayed *when an event is armed* if a device has a low battery.



You can also select **RadioLynx** from the right-click status bar pop-up menu to see the last status message displayed.



## Ability to select which photo eyes are active

You can now select which photo eyes are active through a sub-menu in the Scoreboard menu drop-down list.

---

**Note:** Each time FinishLynx is run, all photo eyes begin as *active*.

---

➤ ***To access the photo eye sub-menu:***

- 1** Click **Scoreboard** from the Menu bar and then click to select **Photo eyes**.
- 2** Click to select which photo eyes in the list you want to deactivate.



---

# Internal FinishLynx Improvements

## LIF file enhancements

An event's start time now appears in the header of the LIF file, allowing you to determine what time a race was run or for use as a helpful reference point.

## New hidden setting controls PPL file fields

A new hidden setting has been added that controls which fields are filled in from the PPL file when you enter a new Id in the results area.

This means that now when you change an Id number in the results, all of the fields are updated with the changed name.

### ➤ *To access FinishLynx's "hidden" settings:*

**Warning!** Accessing FinishLynx's hidden settings is recommended for advanced users only.

- 1 With FinishLynx open, hold down the **CTRL** and **Shift** keys on your computer simultaneously while you click **File** from the Menu bar and select **Options...** The Other Settings dialog appears.
- 2 Navigate to the **\Event\Results\ldLookup** setting. Then, enter one of the following values, depending on how you want FinishLynx to function:
  - **0** - do not fill in any fields
  - **1** - fill in only empty fields, and
  - **2** (the default) - fill in all fields.
- 3 Then, click **Ok** to save the settings.

### **Notes:**

- The above instructions describe what happens when you hit **Enter** when the field is active.
- If you **Tab** out of the field, no fields are filled in.
- If you would like to have tabbing fill in fields, take the number above that specifies the behavior you want, multiply by 4, and add it to the behavior you want for **Enter**. For example, if you want tabbing and enter to fill in all fields, take 2 (for Enter) and add 2\*4 (for Tab) to get 10. Then, set the **ldLookup** value to 10.

## New file naming format

FinishLynx files are now named according to **YYMMDD\_HHMMSS**, rather than the previous **Untitled\_x** name, allowing files to be stored in a more logical order within a folder.

---

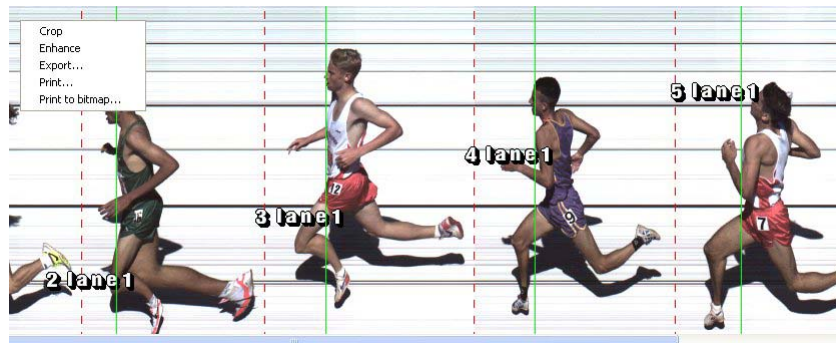
**Note:** If the **YYMMDD-HHMMSS** name is already present, then FinishLynx reverts to searching for the first available **Untitled\_x** name.

---

# Printing Image Improvements

## Image overlay enhancements

There is a new image overlay function that allows you to place text overlays in each evaluated lane next to the object in that lane. Below is an example of a FinishLynx image using this new text overlay.



➤ **To use the new image overlay function:**

- 1 Click **Image** from the Menu bar and select **Overlay** from the drop-down list. Then, select **Text...**. The Text Overlay dialog appears.
- 2 In the **Text:** field, type **%s** to insert the corresponding lane number. You can add any text you want before or after the **%s** to customize it. **Lane %s** produces **Lane 1**, **Lane 2**, and so forth.



- 3 In the **Offset:** text field, type a value to control how far away horizontally from the object you want the overlay placed. Otherwise, the overlay is centered vertically within the lane. The offset indicates how far away the center, not the edge, of the overlay is from the object.

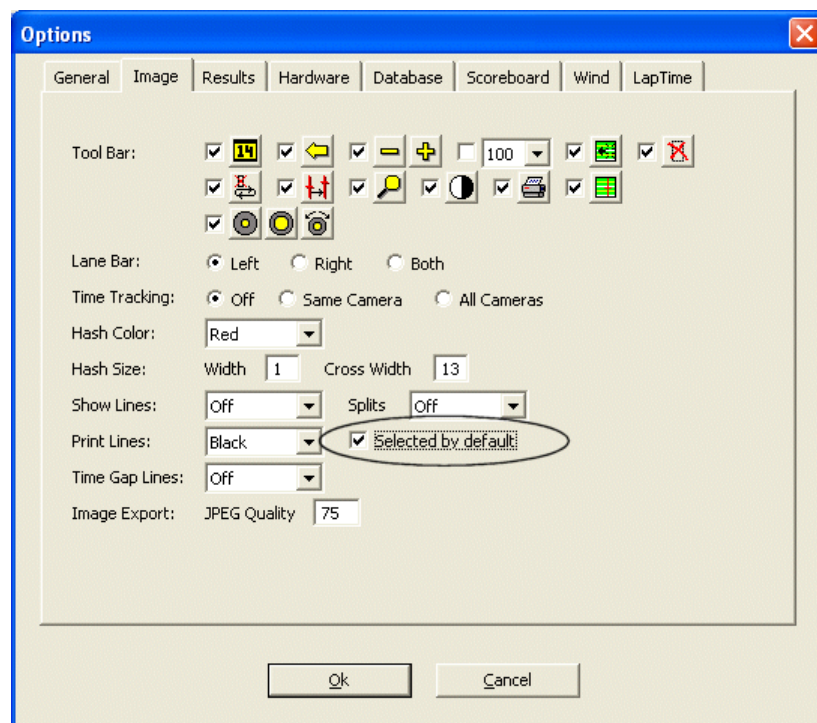


## Hairlines printed by default

You can now configure FinishLynx so that the hairlines on the image are printed by default.

➤ **To do this:**

- 1 Click **Image** from the menu bar and then select **Options...**. The Image | Options dialog appears.
- 2 Click to check the **Selected by default** box next to **Print Lines:**. Now, when you print a FinishLynx image, hairlines are automatically printed.

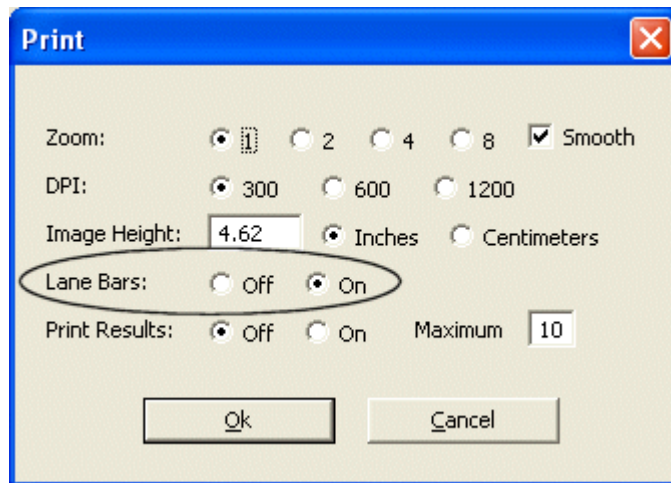


## Lane bar printouts supported

You can now print lane bars on a paper FinishLynx image printout and a bitmap FinishLynx image.

➤ **To print lane bars on a FinishLynx image paper printout:**

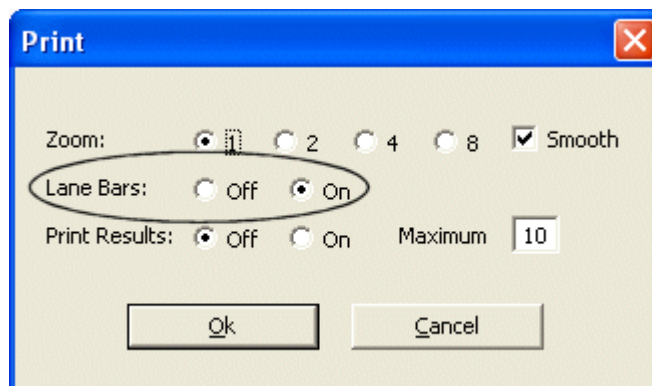
- 1 Click **Image** from the menu bar and then select **Print...** The Print dialog appears.
- 2 Click to select the **Lane Bars: On** radio button.



- 3 Click **Ok**.

➤ **To print lane bars on a FinishLynx image bitmap:**

- 1 Click **Image** from the menu bar and select **Print to bitmap...** The Print dialog appears.
- 2 Click to select the **Lane Bars: On** radio button.



- 3 Click **Ok**.

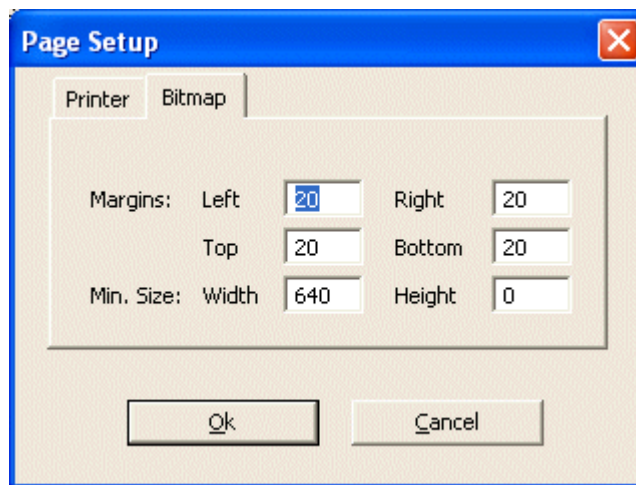
## New printing outputs available

Now, instead of just sending a FinishLynx image to a printer, you can output a FinishLynx image to a bitmap.

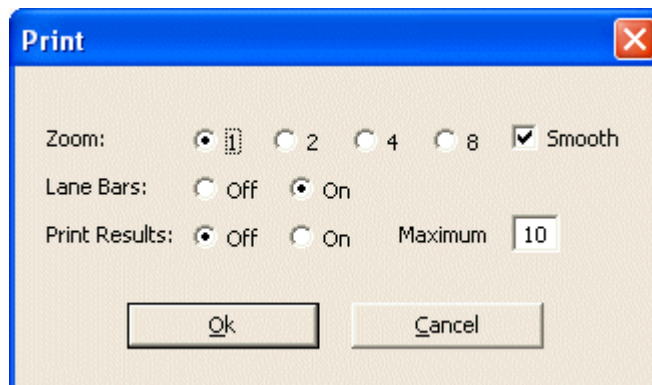
You can also define the margins of a bitmap file with minimum width and height, as specified in pixels. This is particularly helpful if you are putting the FinishLynx image on a web page.

➤ **To print the FinishLynx image to a bitmap:**

- 1 Click **Image** from the menu bar and select **Page setup....** The Page Setup dialog appears.
- 2 Click the **Bitmap** tab.



- 3 Type values into the **Margins:**, **Width** and **Height** fields, and then click **Ok**.
- 4 Click **Image** from the menu bar and select **Print to bitmap....** The Print dialog appears.



- 5 Configure the Print dialog the way you want your bitmap to appear. Choosing a **Zoom** value higher than 1 makes the image larger and the resulting bitmap larger. Higher zoom levels make a very large bitmap.
- 6 Click **Ok**. The Save As dialog appears.
- 7 Select **JPEG File** or **Targa File** from the **Save as type:** drop-down list and then click **Save**. The FinishLynx image gets saved as a JPEG or Targa file.



---

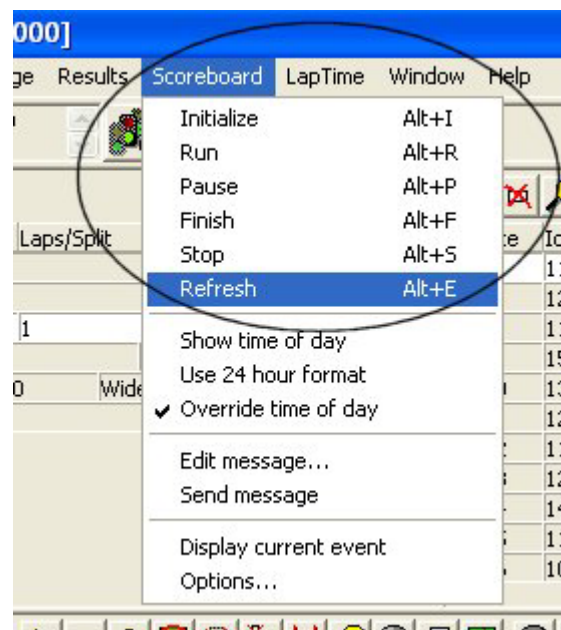
# Scoreboard Support Enhancements

## Improved scoreboard refresh

Now when you refresh the scoreboard, the paging is reset to the top of the results.

➤ ***To refresh the scoreboard:***

From the main menu, click **Scoreboard** and then click **Refresh** from the drop-down list.



## New scoreboard scripts

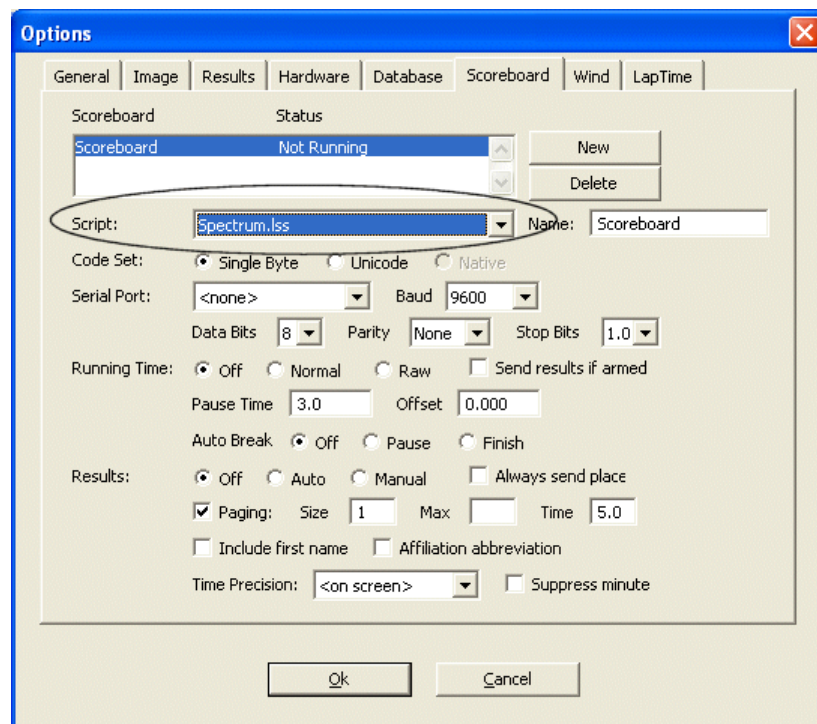
The following scoreboards are now supported by FinishLynx:

- Spectrum
- Nevco brand (four new scripts), and
- Electro brand (four new scripts).

Additionally, new Gill (GillWind.lss) and Daktronics (DakMDPWind.lss) scoreboards are also supported by new FinishLynx scripts.

### ➤ To select a scoreboard script:

- 1 Click **Scoreboard** from the Menu bar and select **Options....** The Scoreboard | Options dialog appears.
- 2 From the **Script:** drop-down list, select the script that matches your scoreboard. FinishLynx automatically populates the remainder of your scoreboard settings. You can refer to the **Scoreboard Settings** (see "Scoreboard Settings Table") table for more information.



## Display to thousandths possible

There is a new variable code (\03) in the **Time** section of the scoreboard script that gives you thousandth precision in the running time.

This is documented in the sample scoreboard script **Example2.lss**. Use this new variable code in **;;TimeStopped** if you want the stopped running time to display to the thousandth.





---

## Wind Gauge Support Enhancements

### Reading overlap

The wind gauge module now allows new readings to begin before the previous reading has ended, as long as your wind gauge supports that functionality.

### Manually entered reading indicators

A manually entered wind reading is now indicated on the screen by a red font and on printouts with "**(Manual)**."




---

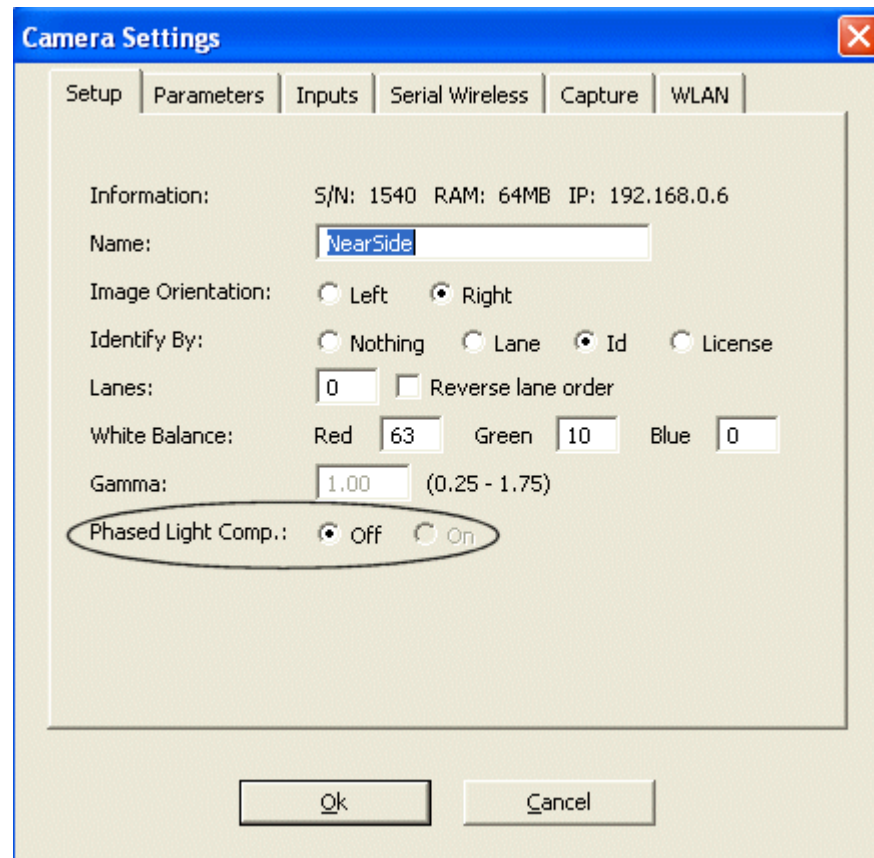
# EtherLynx Camera Enhancements

## Phased Light Compensation available

Phased Light Compensation, or PLC, has been implemented for the EtherLynx Professional (5L300) cameras. PLC reduces or eliminates the vertical dark bars in the image caused by artificial light.

➤ **To enable the PLC setting:**

- 1 Click . The Camera Settings dialog appears.
- 2 Click to select the **Phased Light Comp.: On** radio button.



## Ordered results by non-timing EtherLynx cameras

Non-timing EtherLynx cameras can now produce ordered results from the image. Results with non-timing cameras are based strictly on order of finish.

---

## Plug-in Enhancements

### New Time Trial Plug-in (LPTT)

The new **Time Trial Plug-in**, referred to as **LPTT**, allows you to create events as time trials, meaning that they will contain more than one start.

---

**Note:** The Time Trial Plug-in must be *purchased separately* (see "Obtaining Lynx products and information").

---

#### Enabling Time Trial Mode

To turn Time Trial Mode on in FinishLynx:

- 1 Click **File** from the Menu bar and then select **Options....** The Options dialog appears.
- 2 Click the **General** tab.
- 3 Next to **Time Trial Mode:**, click to select the **On** radio button.
- 4 Click **Ok**. The Time Trial Mode is now enabled.

#### Deleting a start in a time trial event

Follow these steps to delete a start in a time trial event:

- 1 Click to select the start that you want to delete.
- 2 Click **Event** from the Menu bar and then select **Delete object**. The start is deleted from the event.

---

**Note:** If you arm a time trial event when it is currently not armed, it becomes armed and no starts can be deleted. If you arm a time trial event when it is already armed (i.e., you re-arm the event), then the most recently added start is deleted and the event remains armed.

---

## Using the "Set current start" feature

In Time Trial Mode, you can set the current start for the purposes of on-screen running time, scoreboard running time, and LapTime event generation.

### ➤ *To set the current start:*

Click **Event** from the main Menu and then select **Set current start**.

---

**Note:** If a photo eye break causes the scoreboard running time to pause or stop, then the current start is automatically advanced to the next start (indicated by the yellow mark). The running time (on screen and on the scoreboard when it resumes) will be based on this new current start.

---

## Using Time Trial Plug-in with LapTime Plug-in

When the Time Trial Plug-in is installed along with the LapTime Plug-in, you have an additional LapTime Type option called **From Photo Eye**. This feature means that when a photo eye break is processed by the scoreboard, causing the running time to pause or stop, then a LapTime event is generated with the Id of the current start and the time of the break.

When using this feature, you will set the **Sync. Source** to **None**. This means that the break time is stored in time of day, and the associated start is subtracted as appropriate. This allows the start to be changed later and have the change reflected in the LapTime data.

### ➤ *To enable the From Photo Eye feature:*

Follow these configuration steps to enable the **From Photo Eye** feature.

- 1 Click **LapTime** from the Menu bar and then select **Options....** The LapTime | Options dialog appears.
- 2 Click the **Key** drop-down list near the bottom of the dialog and select **Id**.
- 3 Next to the **Sync. Source:** radio button, click to select **None**.
- 4 Click **Ok**.

## Using the Time Trial Plug-in with templates

If a time trial event is used as a template, then the new event is also a time trial event, even if Time Trial Mode is currently off in the Options dialog.

## Notes about Time Trial Mode

Time trial events have an additional line in the Information Zone labelled **Time Trial**. This line lists the number of starts in the event. Start lines in a time trial event are indented, and the indent region is yellow, to mark the current start.

Start lines in a time trial event include an Id field used to match the start to a result object.

Time trial events remain armed, even when a start is added. A time trial event must be manually disarmed with the ***new disarm function*** see "Ability to disarm an armed event" when all starts have been received.

When a start is received, its Id value is automatically filled in with the currently selected result's Id value, and the next result line is selected. If there are no results (no start list), then the Id value in the start is left blank. You can directly edit the start's Id value at any time.

The times in image areas are always displayed in time of day.

The times in the results area are based on an individual result object's associated start time (as matched by Id value). If no start matches by Id, then the first start is used. This behavior can still be overridden by the results filters. When a filter matches a result, it first looks for a start matching by Id value and, if not found, will use the start selected by that filter.

## New LapTime resend function

There is a LapTime resend function that works only for AMB decoders. It resends all stored passings for a specific decoder.

### ➤ **To enable the LapTime resend function:**

Click **LapTime** from the Menu bar and then select **Resend**. A drop-down list appears allowing you to choose which data is to be resent.

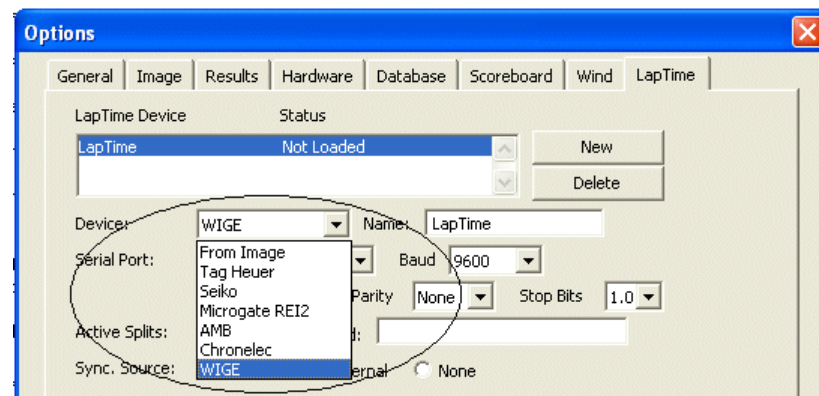


## New LapTime devices supported

Support has been added for the Chronolec and WIGE LapTime devices.

➤ **To select a LapTime device:**

- 1 Click **LapTime** from the Menu bar and then select **Options...**. The LapTime | Options dialog appears.
- 2 Click **New** to enable the LapTime device function.
- 3 Click the **Device:** drop-down list and then click to select the LapTimer device you are using. FinishLynx automatically populates the remainder of the settings for the device you selected.



## Built-in Multiple Region Enhancement

Multiple Region Enhancement, or MRE, is now included with FinishLynx rather than being available as a separately purchased plug-in.

➤ **About MRE:**

In some lighting conditions, the finish line may contain well-lit and significantly darker areas, for example, when a shadow falls across a portion of the finish line.

With the MRE feature, you can define specific areas of the field of view for electronic enhancement, allowing you to pull viable image from the darker areas. Like the standard enhancement feature, the enhancement can easily be undone, even after the image is saved.

## RadioLynx replaces Serial Wireless

In FinishLynx 6.0, the term **RadioLynx** replaces the term Serial Wireless.

The new RadioLynx Plug-in is referred to as the **LPRL Plug-in**. It replaces the old Serial Wireless, or LPSW Plug-in. The functionality of the new RadioLynx Plug-in is the same as the old Serial Wireless Plug-in. However, if you are using the old LPSW Plug-in, then in FinishLynx 6.0, all previous references to Serial Wireless are replaced with **RadioLynx**.



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## CHAPTER 2

# FinishLynx 5.20 Release Notes

This chapter describes new features available in Finishlynx 5.20, since the release of FinishLynx 5.13.

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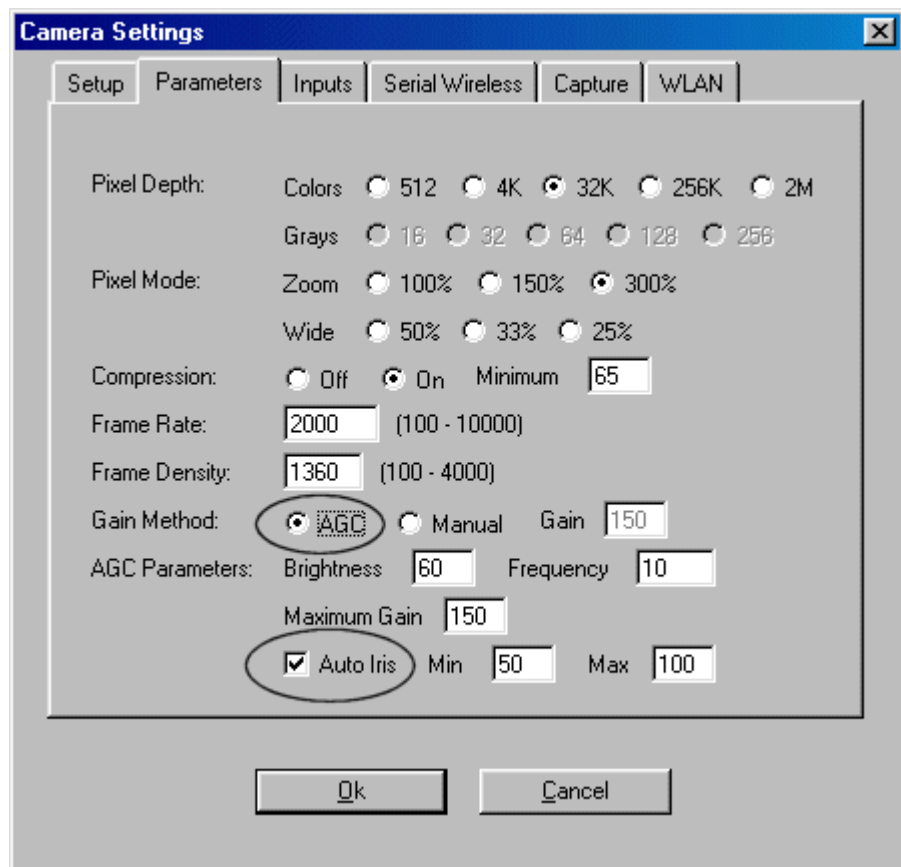


## Auto Iris feature


**Note:** The Auto Iris feature requires that a remote control lens be used with the EtherLynx Camera.

➤ **To enable the Auto Iris feature:**

- 1 Click  to access the **Camera Settings** dialog.
- 2 Click the **Parameters** tab.
- 3 For **Gain Method**, click the **AGC** radio button.
- 4 Click to check the **Auto Iris** box.



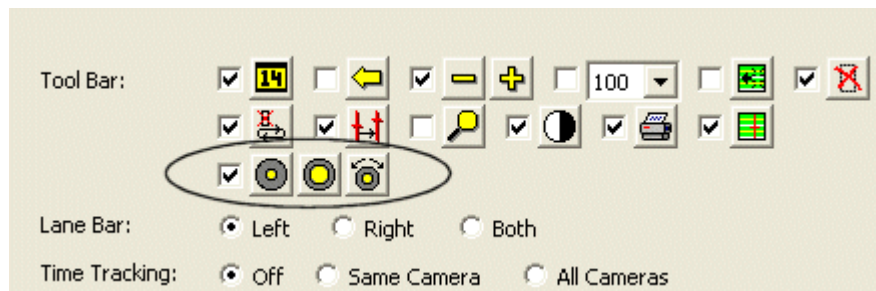
- 5 Note the **Min** and **Max** fields. They indicate how low and high the gain should be allowed to go. If the gain goes out of range, the iris is moved in the appropriate direction until the gain is back within range.



If several attempts make no progress toward the range, then Auto Iris is disabled until either the gain falls within range on its own, or you manually re-enable it by clicking , the Auto Iris button.

➤ **To display the Auto Iris button:**

You can display the Auto Iris button in both the Hardware Control and the event windows by following these steps:

- 1 Click **File** from the Menu bar and select **Options....** The **Options** dialog appears.
- 2 Click the **Image** tab.
- 3 Click the check box next to the **Auto Iris** icons, and then click **Ok**.



The icons appear above the Image Zone in the event screen and on the right side of the Hardware Control screen.  indicates that Auto Iris is *enabled*;  indicates it is *disabled*.

---


## Keep Selection crop option

The **Keep selection** option available in the **Image** menu allows you to retain the portion of the FinishLynx image that you draw a box around. The rest of image is cropped.

➤ **Instructions:**

- 1** With a FinishLynx image open, right-click and drag a box around a selection of the image you want saved.
- 2** Click **Image** from the Menu bar. A drop-down list appears.
- 3** Click **Keep selection**. The portion of image you drew a box around remains on the screen. Other areas of image are cropped and disappear from view.

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**Reminder:** You can restore cropped areas *either* by clicking **Image | Uncrop** or by clicking  and then **Ok**.

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## New scoreboard scripts

FinishLynx has new scoreboard scripts added, supporting:

- the Daktronics V1500 MII display (select **Dak2.lss**)
- a new Electro board (select **Electro2.lss**), and
- three new Gill boards (select **Gill\_2x1.lss**, **Gill\_2x2.lss**, and **Gill\_3x1.lss**).



## CHAPTER 3

# FinishLynx 5.13 Release Notes

FinishLynx 5.13 includes new features for use with the LapTime Plug-in.

**Note:** For more information on new LapTime features since the release of FinishLynx 5.0, refer to *LapTime (LT) Plug-in Enhancements* (see "LapTime (LT) Plug-in Enhancements") in this document.

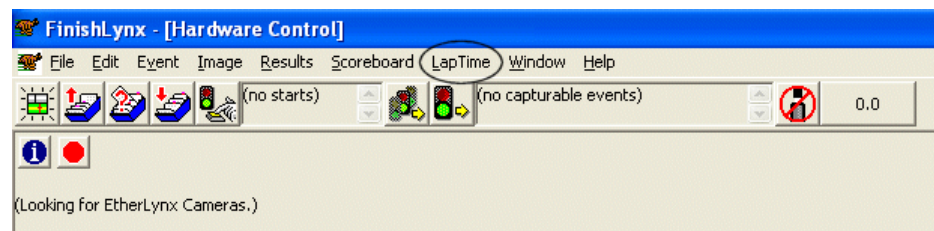
## In This Chapter

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Ability to show the speed from the last split or best split ..	50

## New top level LapTime menu

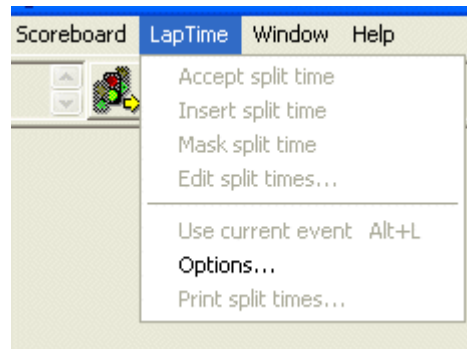
### ➤ *New LapTime menu*

Now when you run FinishLynx with the LapTime Plug-in installed, there is a new **LapTime** selection available in the FinishLynx main menu.



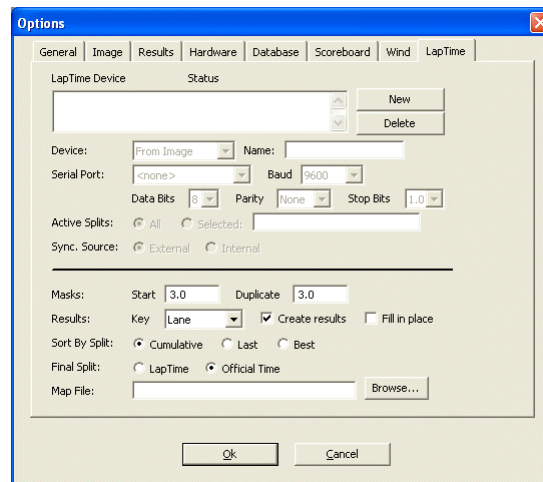
### ➤ **New LapTime drop-down menu**

Click **LapTime** from the FinishLynx main menu. A drop-down menu appears allowing you to make selections previously available from the Event and Results menus.



**Note:** Refer to *Ability to manage multiple open events with the LapTime Plug-in* (see "Ability to manage multiple open events with the LapTime Plug-in") to learn more about the new **Use current event** selection.

Clicking **LapTime** from the FinishLynx main menu and selecting **Options...** makes the **LapTime | Options** dialog appear.



---

## Ability to manage multiple open events with the LapTime Plug-in

You can now specify which event is in the ready mode to receive lap times from an external device, such as the Microgate REI2. This is particularly useful for *rowing* and *canoe/kayak* events where multiple races may be on the water at the same time. With events open for each race currently under way, you can specify which race receives the next lap time data.

➤ **To use this feature:**

- 1 Click **Window** from the FinishLynx main menu. A drop-down list appears.
- 2 Click to select the event you want to set into ready mode to receive the next lap time.
- 3 Click **LapTime** from the FinishLynx main menu. A drop-down menu appears.
- 4 Click to select **Use current event**. When you make this selection, the status letter **l** (lower case L) appears in the Event List, indicating which event is currently waiting to receive a lap time.



**Note:** Simultaneously pressing the **Alt** and **L** keys accelerates the **Use current event** feature.

---

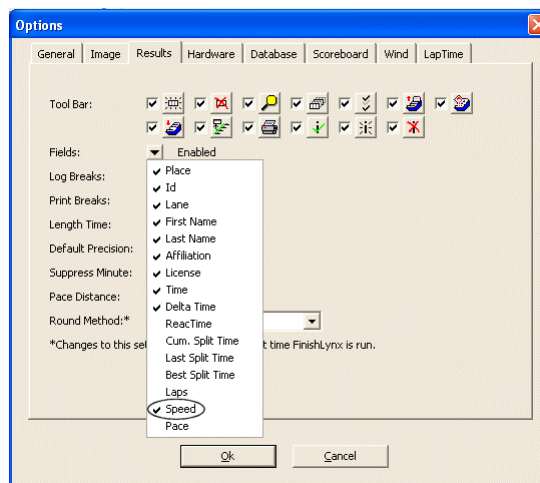
## Ability to show the speed from the last split or best split

In addition to displaying the average speed in the FinishLynx Results Zone, you can also show the speed from the last split or the best split.

### ➤ *Enable the Speed field header*

To show the average split, last split, or best split speed, first make sure the **Speed** field header appears in the **FinishLynx Results Zone**.

- 1 Click **Results** from the FinishLynx main menu and select **Options...**. The **Options** dialog appears.
- 2 From the **Field:** drop-down list, click to put a check next to **Speed**.



- 3 Click **Ok**. The Speed header is displayed in the FinishLynx Results Zone.

➤ **Make the speed selection**

Now you can select which speed type you want displayed:

- 1 Click the **Speed** field header. A drop-down list appears.
- 2 Click to select either **Average**, **Last**, or **Best**. The value under the Speed header changes to reflect the selection you just made.

Time	Delta Time	Last Split	Speed
1:31.085	1:31.085		Average 41.24
1:31.232	0.147		✓ Last 40.77
1:31.343	0.111		Best 40.35
1:31.401	0.058	10.483	0 38.16
1:49.522	18.121	10.921	0 36.63





## CHAPTER 4

# FinishLynx 5.12 Release Notes

Since the release of FinishLynx 5.1, FinishLynx 5.12 now has an improved image transfer protocol which optimizes the quality and reliability of images sent over a wireless connection. This is especially important when your network connection between the FinishLynx computer and the EtherLynx Professional Camera is marginal.



## CHAPTER 5

# FinishLynx 5.1 Release Notes

This section describes the new features now available in FinishLynx 5.1 since the release of FinishLynx 5.0.

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## General Features

### Ability to add up to 100 custom status codes

In addition to the currently available options for status (Disqualified, Did Not Finish, etc.), you can now customize up to 100 additional status codes, for example, **Injured**, **Delayed**, **Lapped**, etc.

➤ ***Customize your own status codes by following these steps to edit the LNG file:***

- 1 Hold down the **CTRL** and **SHIFT** keys while exiting FinishLynx.
- 2 Navigate to the **C:\Lynx** directory and open the file called **en\_US.lng** (for English) in a text editor such as **Microsoft Notepad**.
- 3 Scroll to the following directory in the file: **Strings\Event\Results\Status**.
- 4 Type:

```
Strings\Event\Results\Status\1:String=Injured
```

- 5 Then, scroll to the following directory in the file:  
**Strings\Event\Results\Codes\**
- 6 Type:

```
Strings\Event\Results\Codes\1:String=INJ
```

- 7 Save your changes and then close the LNG file.
- 8 Start FinishLynx. The next time you attach a status to a finisher's result, you can select the custom status code you just entered.

Note that every time you add a new status code to the LNG file, you must increment the number of the string by one. For example, the next status code you add to the new string in the LNG file shown here would be 2.

## Ability to change camera iris, focus, and zoom settings while event is capturing

When using a remote control lens, you can now change the **Iris**, **Focus**, and **Zoom** settings in the hardware control window while an event is open and capturing. This is useful for events where you must capture for a long time without being able to turn off capture.

You can place iris control buttons on the **Image** toolbar to conveniently adjust the iris during a race.

➤ **To add iris control buttons to the Image toolbar:**

- 1 Click **Image | Options....**
- 2 Check the box next to .
- 3 Click **Ok**. When you create a new event, the iris control buttons appear on the Image toolbar.

## Ability to prefix LIF file and image export file names

You can now prefix the LIF file name and image export file name.

➤ **To select a prefix for a LIF file:**

- 1 Click **File | Options....**. The **Options** dialog appears.
- 2 Click the **Database** tab.
- 3 Check the **Date** (YYYY-MM-DD format) and/or the **Text** box and then type in the text field next to it. If you choose both, the static text comes first. Each item (date, static text, and root filename) are separated by a space. If you try to enter characters in the static text that are not allowed in a file name, they are changed to spaces.

## Targa image export pixel depth increased

Now, when you export a FinishLynx image in the Targa (\*.tga) format, the size defaults to 24 bits per pixel, up from previous FinishLynx versions which defaulted to 15 bits per pixel. You will notice this improvement when exporting images taken with the new EtherLynx Professional 5L300 Camera.

## Image export format now "sticks"


The last selection you made when exporting an image (either JPEG or Targa) now sticks, so that if you always use one format or the other, you will not need to change the setting in the Image Export dialog.

## Ability to set quality of FinishLynx image JPEGs

You can now set the quality of FinishLynx images exported in the JPEG (\*.jpg) format.

➤ **To do this:**

- 1 Click **Image** from the Menu bar and select **Options...**
- 2 At the bottom of the screen, there is an **Image Export: JPEG Quality** text field with a default value of 75. You can type a new value in this field from 0-100. A higher number creates a better quality and larger image file.

A screenshot of a software interface showing a label 'Image Export:' followed by 'JPEG Quality' and a text input field containing the number '75'.

## Ability to toggle capture

You can now toggle capture on and off either by selecting **Event** from the Menu bar and clicking **Toggle capture** or using the keystroke shortcut of **Alt | T**.

This is helpful if you use the ACM Plug-in to capture, because you do not need to use the mouse to activate image capture.





# Scoreboard Enhancements

## New scoreboard scripts

New scoreboard scripts have been added to FinishLynx, including:

- **Nautronic.Iss** for the *Nautronic TimeBoard*, and
- **Imhof.Iss** for the *Imhof Scoreboard*.

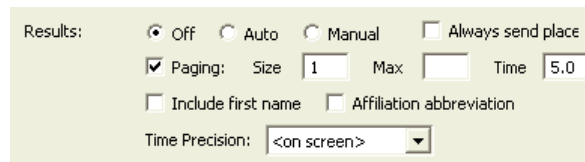
## New Max scoreboard display feature

There is a new scoreboard results paging setting called **Max**. Type a number in this field to limit the number of results sent to the scoreboard. This is useful for events with many competitors, when you want to display only the top finishers.

For example, if you have a race of 200 people and a scoreboard with 10 lines (page size of 10) and you enter 20 for Max, then you will only see alternating pages with places 1-10 and 11-20 on them. You will not see places 21-200.

### ➤ To enter a Max scoreboard setting:

- 1 Click **File | Options....** The **Options** dialog appears.
- 2 Click the **Scoreboard** tab.
- 3 Type a value in the **Max** field.



The screenshot shows the 'Options' dialog box with the 'Scoreboard' tab selected. The 'Results' section has radio buttons for 'Off' (selected), 'Auto', and 'Manual', and a checkbox for 'Always send place'. The 'Paging' section has a checked checkbox, and input fields for 'Size' (1), 'Max' (empty), and 'Time' (5.0). There are checkboxes for 'Include first name' and 'Affiliation abbreviation'. The 'Time Precision' dropdown is set to '<on screen>'. The dialog has a light beige background.

## Ability to send start list to the scoreboard when the event is armed

You can now send a start list and results to a scoreboard when running time is armed for that event.

➤ **To enable this:**

- 1 Click **Scoreboard** from the Menu bar and select **Options....** The **Scoreboard | Options** dialog appears.
- 2 In the **Running Time:** settings area of the dialog, check the **Send results if armed** box.

## Ability to modify scoreboard information when sent during different stages of a race

You can now send different information to scoreboards at different times by setting up the Lynx Scoreboard Script (**LSS**) file to show for example:

Section Header	Information sent	When
1. Start List	Lane, ID, Name, Affiliation	Before the start
2. Started	Place, ID, Name, LapTime	During the race
3. Result	Place, ID, Name, Time	Once results are available

**Note:** For more information on modifying an LSS file, contact **Lynx technical support**. (see "Obtaining technical support")

## Horizontal paging now available for smaller scoreboards

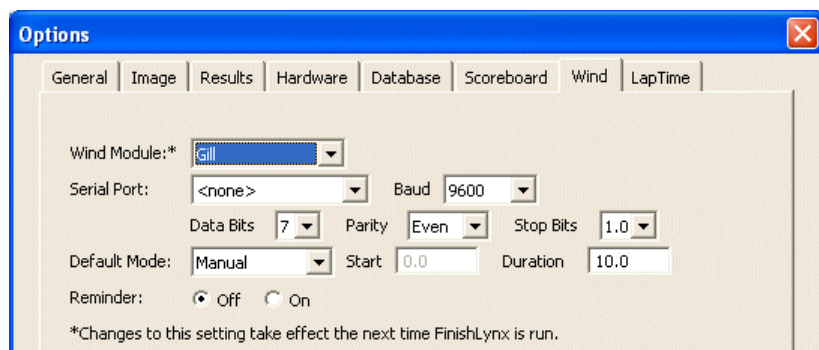
You can now create horizontal paging in the Lynx Scoreboard Script (**LSS**) files, allowing you to display more than one page of information for each vertical page of results. This option is helpful when sending a great deal of information to a short scoreboard.

## Gill wind gauge added as an option

Default settings for the Gill wind gauge are now available for selection.

➤ **To do this:**

- 1 Click **File | Options....** The **Options** dialog appears.
- 2 Click the **Wind** tab.
- 3 From the **Wind Module** drop-down list, select **Gill**. The COM port settings change to match the Gill requirements.



- 4 Restart FinishLynx to save the changes to the settings.



# LapTime Enhancements

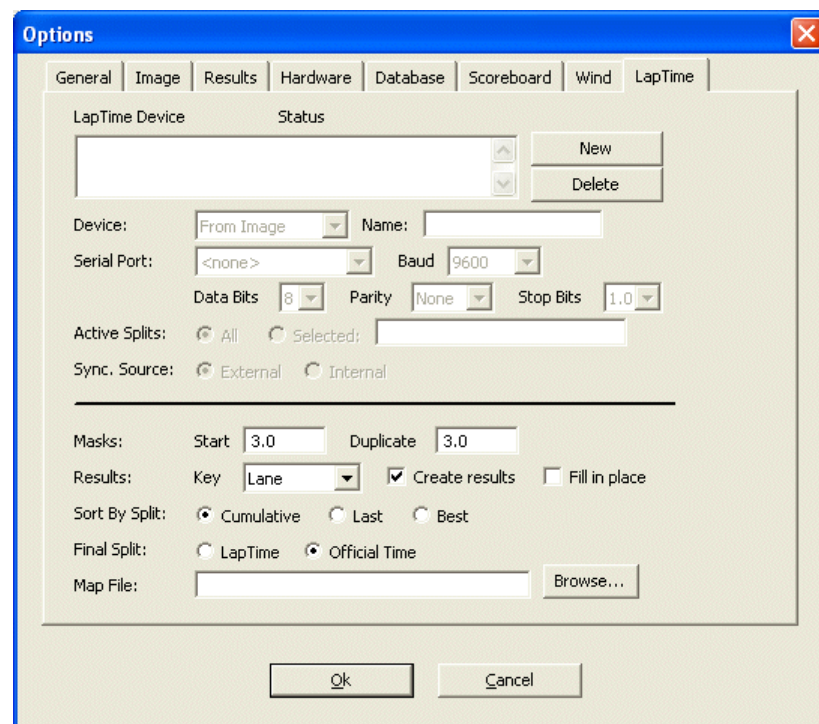
## Ability to use multiple LapTime devices

It is now possible to use multiple LapTime devices at once. This is useful, for example, when you have a LapTime device at several locations on a course, and you want to take splits from each location.

➤ **To access the LapTime screen:**

- 1 Click **File | Options....** The **Options** dialog appears.
- 2 Click the LapTime tab. The configurable LapTime dialog appears.
- 3 Click **New** to set up a LapTime device.

**Note:** Options above the horizontal line are specific to the selected LapTime device. Options below it apply to all properly configured devices.



## New Active Splits setting

Available in the *new LapTime screen* (see "Ability to use multiple LapTime devices") is an Active Splits setting which allows you to choose which splits come from which device.

Device: AMB Name: LapTime  
 Serial Port: COM1 Baud: 9600  
 Data Bits: 8 Parity: None Stop Bits: 2.0  
 Active Splits: ☒ All ☐ Selected:

- If you do not expect competitors in a race to go past LapTime devices in the wrong order, leave Active Splits set to the default, **All**.
- If you need to specify which splits can come from a specific device, you can do this in a variety of ways. First, click the **Selected** radio button and then enter one of the following combinations:
  - List the splits individually in a comma separated list (1,2,3).
  - Specify bounded ranges (4-99) or unbounded ranges (4-).
  - Specify unbounded arithmetic series (1,3,...) or bounded arithmetic series (1,3,...15). The arithmetic series can also go down instead of up (15,13,... or 15,13,...7).
  - To specify which splits are *not* allowed, rather than which splits are allowed, begin the entire string with a carat (^).
  - To invert the meaning of a single field, begin the field with a tilde (~).

The table below provides examples of the ways you can specify splits.

If you want to...	Type this in the Selected field....
Accept splits 1 through 5	1,2,3,4,5 <i>or</i> 1-5 <i>or</i> 1,2,...5
Accept splits 11 and higher	11- <i>or</i> ^1-10
Accept all odd splits	1,3,... <i>or</i> ^2,4,...
Accept all odd splits to 15	1,3,...15
Accept all <i>except</i> odd splits to 15	^1,3,...15

## Ability to select Sync. Source for AMB decoders

You can now select the **Sync. Source** for automatic starts when using AMB decoders for your LapTime devices.

- **External** requires an external sensor to be attached to the AMB device.

- **Internal** causes FinishLynx to manually reset the AMB device when FinishLynx receives a start from a camera.

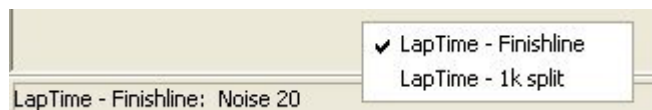
**Warning:** Selecting **Internal** significantly decreases the precision of the AMB timing.

## Ability to select which status to view when using multiple AMB LapTime devices

When using multiple AMB LapTime devices, you can now select which one you want to view in the status bar to monitor the Noise, Strength, and Hits level.

### ➤ To do this:

- 1 Right-click the status bar. A pop-up menu appears with all of the AMB LapTimers listed and the current one is checked.
- 2 Select the one you want to view.





## New duplicate mask feature

There is now a duplicate mask feature available for events where a LapTime device is used. The duplicate mask time specifies how far apart LapTime events must be (in time) for the later event to be kept. If the later event is within "duplicate mask" time of an earlier event, then it will be dropped.

This setting allows multiple AMB decoders to work at a single point for redundancy without getting multiple events for each competitor that crosses.

### ➤ *To access the duplicate mask setting:*

Change the duplicate mask time by selecting **File | Options...** and then clicking the **LapTime** tab. Type a new value in **Duplicate** field.

The screenshot shows the 'Options' dialog box with the 'LapTime' tab selected. The 'Masks' section has 'Start' and 'Duplicate' fields, both set to '3.0'. The 'Results' section has a 'Key' dropdown menu set to 'Lane', a checked 'Create results' checkbox, and an unchecked 'Fill in place' checkbox. The 'Sort By Split' section has three radio buttons: 'Cumulative' (selected), 'Last', and 'Best'. The 'Final Split' section has two radio buttons: 'LapTime' (selected) and 'Official Time'. The 'Map File' section has a text box and a 'Browse...' button.

## Ability to choose LapTime result key

You can now select a LapTime result key other than the default **Lane** setting.

### ➤ *To do this:*

- 1 Click **File** from the Menu bar and select **Options...**. The **Options** dialog appears.
- 2 Click the **LapTime** tab.
- 3 There is a **Results: Key** drop-down list toward the bottom of the LapTime dialog. Click to select a new setting, such as Last Name, First Name, Affiliation, ID, or License.

## Ability for LapTime to count up

You can now enable LapTime to count up rather than down. This is extremely useful in events where the number of laps is undetermined; for example, in a 24 hour race where the goal is to complete as many laps as possible.

➤ **To set LapTime to count up:**

With an event open in FinishLynx, delete the number in the **Total Laps** field in the Information Zone and press **Enter**. The **Laps To Go** field begins to count up instead of down.

## Ability to display Place field based on current lap time results

The Place field can now be populated with a value based on the current lap time results, allowing you to send lap times and current place to a scoreboard.

➤ **To do this:**

- 1 Click **File | Options...** from the Menu bar. The **Options** dialog appears.
- 2 Click the LapTime tab.
- 3 Click the **Create results** and **Fill in place** checkboxes toward the bottom of the dialog.



Results:      Key    Lane    ☒ Create results    ☒ Fill in place



## CHAPTER 6

# FinishLynx 5.0 Release Notes

This section describes the new features now available in FinishLynx 5.0 since the release of version 4.0.

### In This Chapter

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# General Features

All of the features described here are available in FinishLynx 5.0.

## Image enhancements

### Support of larger image files

Now, if you are running FinishLynx on a Microsoft Windows XP, NT, or 2000 Operating System, you can capture images larger than 2 GB.

**Warning!** If you are running FinishLynx on a Microsoft Windows ME, 98, or 95 Operating System, you will lose image once you reach a 2 GB limit.

### New overlay options

Several new overlay options have been added to FinishLynx, including:

- the ability to use repeating graphic overlays
- the ability to configure overlays
- graphic overlays now included in exported images, and
- the ability to export and print transparent overlays.

In addition, new, improved overlays have been added to the installer for you to use.

### Fonts for text overlays

You can add new text overlays to an image by following these steps:

- 1 Click an area on the image where you want the overlay placed.
- 2 Click **Image** from the menu bar and select **Overlay**.
- 3 Select one of the following options from the menu:
  - **Text:** is blank at first, but remembers the last text you entered.
  - **Closest time:** fills in the time of the closest competitor in the image.
  - **Event name:** fills in the name of the event. It is displayed at the top and centered when in full screen mode (CTRL-F).
- 4 A dialog appears from which you can select the font, size, and face color, as well as the exact text to display.
- 5 Click **Ok**.

---

**Note:** If you placed an overlay near the edge of an image, it may appear truncated until you press **CTRL-F** to go into full screen mode.

---

### Repeating graphic overlays

Graphic overlays can be repeated across the entire screen as well as on image printouts. Whether or not an overlay repeats is determined by its file extension.

- An image ending in .TGx (for example, **FinishLy.tg6**) displays once.
- An image ending in .RGx (for example, **FinishLy.rg6**) repeats.

#### ➤ **To modify an existing overlay so that it repeats across the screen:**

- 1 Open the directory where you store your FinishLynx installation files, for example, **C:\Lynx**.
- 2 Find the .TGx overlay file you want to modify. For example, **FinishLy.tg6**.
- 3 Rename the file with a new extension, .RGx. For example, rename the FinishLy.tg6 file **FinishLy.rg6**.
- 4 Run FinishLynx and open an image.
- 5 Click anywhere on the image where you want the repeating overlay to appear.
- 6 Click **Image** from the menu bar and select **Overlay**.
- 7 From the **Overlay** drop-down list, select the image name whose file extension you just modified. The overlay appears, repeating across the image.

#### ➤ **To remove the overlay:**

Click **Image | Remove overlays**.

### Overlays included in the installer

Overlays included for you to use when you install FinishLynx now have a new, improved look. To find the overlays, go to your **C:\Lynx** directory, or wherever you stored your FinishLynx files during installation.

## Full screen image mode

If you are sending a FinishLynx image to television or a videoboard, we recommend you first display the image in full screen mode.

➤ ***To display an image in full screen mode:***

Press the **CTRL** and **F** keys simultaneously. Use the arrow keys to move the image around on the screen.

➤ ***To exit full screen image mode:***

Click the mouse or press any key.

## Exporting a FinishLynx image

When you export a FinishLynx image, JPEG (.jpg) is the default file format. You can also select the Targa (\*.tga) format if you prefer.

➤ ***To export a FinishLynx image, follow these steps:***

- 1 With an image open in FinishLynx, right-click and drag the mouse to draw a square around the selection of image you want to export. For example, you may want to draw a square around two competitors involved in a close finish, or the winner of an event.
- 2 Release the mouse button. A drop-down menu appears on the screen.
- 3 Select **Export....** The **Save As** dialog appears.
- 4 Navigate to the directory where you want to save the image and then click **Save**. The JPEG image is exported to the directory you specified.

## Automatic scroll of captured image

The image window in FinishLynx scrolls automatically so that the currently captured image is always visible.

This feature is intended for use in *motor sports*, where the FinishLynx image is being continuously captured without an operator actively interfacing with FinishLynx.

➤ ***To enable this feature***

- 1 Open an event.
- 2 Click **Image** from the Menu bar and select **Scroll new image**. A check mark appears next to this option in the list, meaning this feature is now enabled.



### ➤ To disable this feature

With an event open, click **Image** from the Menu bar and select **Scroll new image** to clear the check mark next to this option in the list. The feature is now disabled.

## Mode options

Wide and zoom modes have new values in the Camera Settings dialog. The new values are shown here.

New Mode Options		Former Mode Options
Wide	50%	Average 2
Wide	33%	Average 3
Wide	25%	Average 4
Zoom	100%	Average 1
Zoom	*150%	n/a
Zoom	*300%	n/a

\*Available in the *EtherLynx Professional camera* (see "Digital zoom").

## Toggle orientation

In the **Hardware Control** screen, you can click the text in the **Orientation** column to toggle the orientation of the FinishLynx image from left to right, or vice versa.


## EtherLynx camera image buffer displayed

The state of the EtherLynx camera's image buffer is displayed in the status bar. Here's how to read it:

- The buffer state appears in yellow, while the progress of a command (for example, saving an image), appears in green.
- Current buffer usage appears on the left side of the status bar, and maximum buffer usage appears on the right side of the status bar.
- When no event is capturing, the status bar displays the buffer status of whichever image you hover the mouse over.
- When an event is capturing, the status bar displays the buffer status of whichever image you hover the mouse over, as long as the image is currently enabled for capture.
- If you do not hover the mouse over an image, whether or not it is enabled for capture, then the buffer status of the first camera in the last leg to have capture enabled is displayed.

## New tools


### Image orientation button

Click  on the Image Zone tool bar to change the image orientation.

---

**Note:** If you do not see this button on the Image Zone tool bar, follow these steps to display it:

---

- 1 Make sure all FinishLynx images are closed.
- 2 Click **Image | Options...** from the Menu bar. The Options dialog appears.
- 3 In the **Tool Bar:** section of the Options dialog, check the box next to  and then click **Ok**.
- 4 Open an image. The image orientation button appears on the Image Zone tool bar.

### Selectable Results Zone fields

You can now select exactly which fields you want displayed in FinishLynx's Results Zone.

- 1 Run FinishLynx and open a new event.
- 2 Click **Results | Options...** from the Menu bar. The Options dialog appears.
- 3 Click the **Fields:** drop-down arrow. A drop-down list appears showing all of the fields it is possible to display in the Results Zone.
- 4 Click to select as many fields as you want displayed in the FinishLynx Results Zone and then click **Ok** when finished.
- 5 Click **Results | Apply default fields**. The fields you selected are displayed in the Results Zone.

## Ability to save the LIF only

FinishLynx now allows you to save the LIF (Lynx Interface File) only. This is useful when you do not want to save the FinishLynx image, but you want to send the information in the Results Zone to a competition management database, for example, for the purpose of viewing lap times.

➤ ***To save the LIF file only:***

Click **File** from the Menu bar and select **Save LIF**.

## Automatic alignment with the remote positioner



If you are using a remote positioner, you can now use controls from within FinishLynx to automatically align the camera. The automatic alignment controls replace the manual pan and swivel steps of the alignment process.

---

**Note:** Before using the automatic alignment feature, make sure the remote positioner is centered in the plane of the finish line. Also, you must manually adjust the tilt, zoom, focus, and gain.

---

From the **Hardware Control** screen:

- Click  to center the remote positioner automatically, relative to its available range of movements.
- Click  to automatically align the remote positioner with the finish line.

## New features

### Two camera angle demo image

A second sample image, **Sprint.evn**, is available for you to practice FinishLynx evaluation using two camera angles.

➤ ***To access the image and practice with different angles***

- 1 Run FinishLynx.
- 2 Click **File | Open....**

- 3 Double-click **Sprint.evn**. The image opens on your screen. Notice in the FinishLynx Information Zone that there are two cameras listed, Inside Main and Outside Main. Now, practice evaluating the image and entering results.

## Automatic serial port settings

When the LapTime or Wind Gauge module is set or when the Scoreboard script is changed, the serial port parameters default to their specific settings. You can still change the settings, but note that every time the module or script is changed, the settings default to their original values.

## Allow button override feature

### ➤ *What it is:*

If you are using, for example, timed capture with a single split, enabling the Allow Button Override Feature means you can still capture image outside the timed capture settings, as long as a camera is set to timed or manual capture.

---

**Note:** EtherLynx cameras set to ACM remain in ACM.

---

### ➤ *How to use it:*

To enable Allow Button Override, follow these steps:

- 1 Run FinishLynx and click **File | Options....**
- 2 Click the **Hardware** tab.
- 3 Check the **Allow button override** box.
- 4 Click **Ok**.

### ➤ *Notes:*

- This feature can be used with any form of manual capture, whether using a capture button or the keyboard.
- If you are only using one split, we recommend you always have this feature active.
- In one split setups where multiple cameras are using timed capture, this feature allows a manual capture to override a timed capture.
- With multi-split events, you should consider all of the possible event outcomes before deciding to enable this feature.

## Internal photo eye improved

Improvements have been made to the internal photo eye feature that comes from the EtherLynx camera when used with FinishLynx's ACM Plug-in. In many indoor venues where the lighting is poor, the internal photo eye demonstrates improved performance.

### Ability to set active region for internal photo eye

You can now set in FinishLynx where in the vertical pane of image you want the photo eye breaks to come from. This is particularly useful in avoiding a scoreboard to be stopped prematurely by, for example, an official crossing the finish line at the top of the FinishLynx image.

#### ➤ *Setting the internal photo eye's active area*

- 1 Capture some image into FinishLynx.
- 2 Right-click and hold while drawing a box around the vertical region that you want active.
- 3 Click **Image | Set Photoeye Active Area**. A beam break can occur in the area you just activated. However, activity above and below the active area does not trigger a beam break.

### Photo eye balance renamed "Set Photoeye Threshold"

Photoeye balance has been renamed and is now called, **Set Photoeye Threshold**.

A slider bar has been added to the **Camera Settings | Inputs** dialog that allows you to make adjustments.


## Automatic capture and auto-crop improved

Automatic capture and auto-crop have been improved for better results when used in poor lighting conditions. Both features are now controlled by setting the Object Threshold and adjusting the leader and trailer found in the **Camera Settings | Capture** dialog and are set individually for each EtherLynx camera. The original auto-crop slider bar has been removed from the **Image | Options**.

#### ➤ *To set the Object Threshold:*

- 1 Capture some image of an object in FinishLynx.
- 2 Right-click and hold while drawing a box around the object you want to use to set the threshold. Include some amount of image before and after the object.
- 3 Click **Image | Set Object Threshold**. The box resizes to the region of the image which FinishLynx considers is the object.

---

**Note:** The Object Threshold can be adjusted by clicking  to get to the **Camera Settings** dialog and then clicking the **Capture** tab. Use the slider or type in the preferred number in the box. For a detailed explanation of these values, refer to the ACM Plug-in section of the FinishLynx manual.

---

## Scoreboard scripts added

New scoreboard scripts have been added to FinishLynx, including:

- **uGraph\*\*.lss:** 14 new scripts for Micrograph scoreboards allowing greater flexibility in the display of data.
- **Omni1000place.lss:** for the Daktronics Omni1000 series, which orders results by place instead of by lane.
- **Mondo.lss:** for the Mondo brand scoreboard displays.
- **Resultv2.lss:** for ResultTV 2.0, which uses all of the available results fields.
- **Resultv210.lss:** for use with ResultTV 2.10, which uses all of the available results fields.
- **Resultv220.lss:** for use with ResultTV 2.20, which uses all of the available results fields.

## Scoreboard refresh accelerator

You can refresh the scoreboard by pressing the **Alt** and **E** keys simultaneously.

## Support for the Davis Pro Vantage Weather Station

FinishLynx now works with the Davis Pro Vantage Weather Station wind gauge, used with water sports such as rowing, canoeing and kayaking.

### ➤ *To configure FinishLynx to use the Davis Pro:*

- 1 Click **File | Options** from the Menu bar.
- 2 Click the **Wind** tab.
- 3 From the **Wind Module:**\* drop-down list, select **Vantage Pro**.
- 4 Click **Ok**.
- 5 Restart FinishLynx.

➤ **Wind reading available:**

If a wind reading is taken by the Davis Pro Vantage Weather Station wind gauge, the wind direction is displayed in the **Wind Units** field in FinishLynx.

Wind direction also appears in:

- the LIF file,
- the scoreboard output, and
- printouts.

## Wind gauge settings reminder

You now have the option to be reminded to change the wind gauge settings when you open a 100m, 110m, or 200m event.

By default, the reminder is disabled. To turn the reminder on:

- 1 Click **File** from the Menu bar and select **Options**. The Options dialog appears.
- 2 Click the **Wind** tab.
- 3 Select **On** in the **Reminder:** line at the bottom of the dialog.
- 4 Click **Ok**. The wind gauge settings reminder is enabled.

## Two computer access

Two computers can now access the same FinishLynx file at once, allowing one operator to capture image on one **capture** computer while the other operator evaluates the results on another **evaluate** computer.

The computer being used to evaluate the image is able to do the following:

- create and modify results
- add LapTime times
- add a wind reading
- crop the image, and
- merge changes into a file later.

➤ **To use FinishLynx with a two-computer capture and evaluate system:**

- 1 Create an event on the capture computer and save it. The evaluate computer cannot open the event until it has been saved once.
- 2 Wait for the start signal. This causes an "autosave" which saves the start time in the event (EVN) file, meaning you do not need to save the event again.
- 3 Now, the evaluate computer can open the event and see the start time.

- 4 Shortly after image is captured on the capture computer, it appears on the evaluate computer. The evaluate computer checks the image files every five seconds to see if image has been added or removed.
- 5 At this time, the evaluate computer can read the images.

---

**Important:** Only one of the computers should be used to crop image. If the evaluate computer detects that image has been cropped by the capture computer, then any cropping done on the evaluate computer is lost.

---





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## Plug-in Enhancements

You can purchase FinishLynx Plug-ins to add features to the standard FinishLynx software. These features are designed to meet the needs of specific sports and situations.

### LapTime (LT) Plug-in Enhancements

#### Support for new LapTime devices

The following LapTime devices are now supported by FinishLynx. You must have the LT Plug-in installed with FinishLynx (sold separately).

- Seiko CT-1000 (and compatible Seiko timers)
- Microgate REI2, and
- AMB.

➤ ***To select the Seiko, Microgate, or AMB LapTime module from FinishLynx:***

- 1 Click **File | Options...** from the Menu bar. The Options dialog appears.
- 2 Click the **LapTime** tab.
- 3 From the **LapTime Module:\*** drop-down list, select **Seiko, Microgate REI2, or AMB**.
- 4 Continue configuring the LapTime settings and then click **Ok**.
- 5 Restart FinishLynx. FinishLynx is now set up to work with the LapTime device you just selected.

#### Support of LapTime devices without cameras

You can now use FinishLynx with a LapTime device when no camera is connected.

---

**Note:** Only the AMB LapTime device currently supports this feature.

---

- 1 Click **File** from the Menu bar and select **Options**. The Options dialog appears.
- 2 Click the **Hardware** tab.
- 3 In the **Hardware Type:\*** line, select the **None** radio button.
- 4 Click the **LapTime** tab.
- 5 Select and configure the LapTime device in use.

## 6 Exit and restart FinishLynx.

### Key field specification allowed

You can now specify which field the LapTime key refers to. For help with this, please contact *Lynx technical support* (see "Obtaining technical support").

### Mapping file

The LT Plug-in now allows you to use a mapping file to identify event competitors in the FinishLynx Results Zone while using the LT Plug-in with the AMB LapTime device. You can use the mapping file to associate a particular transponder with a particular lane, or you can map multiple transponders to a single lane.

#### ➤ **Create a mapping file**

The file, **LapTimeMap.txt**, is now included with the FinishLynx installer. You can find the file wherever you stored the FinishLynx files when you installed the application. For example, it might be found in the **C:\Lynx** directory. After finding the **LapTimeMap.txt** file, open it and follow its instructions to create your own mapping file.

#### ➤ **Associate your mapping file with the LT Plug-in**

After you have created a mapping file, follow these steps to associate it with the LT Plug-in.

- 1** Run FinishLynx and click **File | Options....**
- 2** Click the **LapTime** tab.
- 3** Click the **Browse** button near the **Map File:** text field at the bottom of the dialog.
- 4** Navigate to the directory where you saved the mapped file you created earlier and then click **Ok**.

### AMB status displayed

AMB LapTime device status is now displayed on the main status bar. The latest noise value is displayed as well as statistics for the most recent passing event.

## Start mask feature

A LapTime start mask feature has been created to help avoid picking up bogus hits before the signal to start the race. Set by default to 3.0 seconds, all LapTime events before the start and until the mask value after the start are ignored.

### ➤ *To change the start mask value:*

- 1 Run FinishLynx and click **File | Options...**
- 2 Click the **LapTime** tab.
- 3 Click anywhere in the **Start Mask:** field and change the value to any non-negative value.
- 4 Click **Ok**.

## Splits memory display

You can now display whether a split was too fast, too slow, or manually created. In addition, you can display whether a split that was too fast or too slow was accepted by the FinishLynx operator.

---

**Note:** Manually created splits are accepted by default.

---

You can view the condition of each split by clicking **Results** from the Menu bar and selecting **Edit split times...** to make the **Edit Splits** dialog appear. Each split condition is defined in the dialog like this:

Split Code	Description
f	too fast
s	too slow
m	manually created
a	accepted

You can also display this data in the splits printout, by clicking **Results | Print split times...**

## Multiple Splits Interface (MSI) Plug-in Enhancements

Enhancements have been made to the MSI Plug-in, which is most often used in horse and greyhound racing.

## Splits appear in the LIF file

Split times from the MSI Plug-in now appear in the LIF file.

## Multiple splits capture

The MSI Plug-in has been enhanced so that you can now set EtherLynx cameras independently for taking timed capture, automatic capture, and manual capture splits. Active times of more than one split captured from different cameras can overlap, allowing multiple splits to be captured at the same time.

---

**Note:** If overlapping splits have any cameras in common, FinishLynx prioritizes the capture of the later split over the earlier split.

---

## Introducing the Network COM Port (NCP) Plug-in

With the NCP Plug-in, you can send data to multiple serial devices from a single FinishLynx computer.

### Product summary

The FinishLynx NCP (Network COM Port) Plug-in (sold separately) allows you to use a single FinishLynx computer to communicate with multiple serial devices directly through TCP sockets instead of serial ports. With the help of SerialLynx™, you can put serial devices such as scoreboards, wind gauges, and lap timers on a wired or wireless Ethernet network and then use the NCP Plug-in to enable FinishLynx to communicate with those devices.

---

**Note:** For instructions on how to use the NCP Plug-in, please consult the documentation that comes with the product.

---

### UDP support

FinishLynx's NCP Plug-in allows you to send scoreboard data via UDP. To enable this protocol on your Lynx network, make sure the NCP Plug-in is installed and then follow these directions:

- 1 Run FinishLynx, click **Scoreboard** from the Menu bar and choose **Options**. The Options dialog appears.
- 2 Click **New** and choose a scoreboard script from the **Script:** drop-down list.
- 3 From the **Serial Port:** drop-down list, select **Network (UDP)**. The port and IP address fields appear.

- 4 Enter the port and IP address data for the computer/s you want to send scoreboard data to.  
**Note:** If you want to send data in global broadcast packets so every device on the network receives the data, leave the IP address field blank.
- 5 Click **OK** and then restart FinishLynx. FinishLynx is now ready to send data to the scoreboard over the Ethernet network.

## Introducing the Lynx Remote Control (LRC) Plug-in

### ➤ *Introduction*

The new LRC Plug-in allows you to remotely control several FinishLynx functions by issuing commands through a serial port or TCP socket connection. The LRC Plug-in allows you to remotely control the following functions:

- printing results
- printing images, and
- exporting images.

### ➤ *Use with the NCP Plug-in*

FinishLynx can be controlled remotely over TCP/IP using the NCP Plug-in (sold separately) and sending commands via Telnet to the TCP port the FinishLynx computer is set to listen on. Please see the *appendix* (see "FinishLynx Remote Control Specification") for more information on available commands.



---

## Introducing the EtherLynx Professional Camera

FinishLynx 5.0 supports Lynx's new camera, the EtherLynx Professional. The EtherLynx Professional camera can be used with high-speed sports such as car, motorcycle, and power boat racing, and to take higher resolution images of other sports.

The EtherLynx Professional camera can be used with EtherLynx 2000 cameras.

### More frames per second

The EtherLynx Professional camera comes standard with the ability to capture 2000 frames per second. The EtherLynx Professional camera is upgradable to 5000 and 10000 frames per second.

### New pixel depth settings

The EtherLynx Professional camera allows you to select a wide variety of pixel depths ranging from:

- 16, 32, 64, 128, and 256 grays, and
- 512, 4K, 32K, 256K and 2M colors.

Increasing the pixel depth increases the size and quality of the FinishLynx image, as long as your computer monitor is able to match the same number of colors.



## Hardware gamma

The EtherLynx Professional camera enables you to adjust the image gamma before it is sent to the computer. This feature is different from the software gamma adjustments still available in the **Image | Adjustments** dialog.

Hardware gamma offers many advantages. For example, the gamma adjustments can be applied to all 2M available colors instead of the 4K or 32K colors enabled by your computer's video card. As a result, the quality of the gamma adjustments is significantly higher.

Hardware gamma proves most valuable in situations where the color of the object is similar in color to the background. For example, when capturing horses on a dirt track, the hardware gamma (while adjusting the contrast and brightness in unison) can increase the color difference between the two and make it easier to see the nose of the horse.

**Warning:** Because the hardware gamma is applied to the image while it is captured by the EtherLynx camera, it cannot be undone.

When setting the gamma range, note the following:


- Values less than one increase the differences between similar dark pixels in the image, which appears to give the darker areas greater contrast and brightness.
- Values greater than one have the opposite effect.

---

**Note:** The hardware gamma is not intended to compensate for low lighting conditions.

---

➤ **To set the hardware gamma:**

- 1 Click  in the upper left corner of the screen. The **Camera Settings** dialog appears.
- 2 Click in the **Gamma:** text box and type a new value, between 0.25 and 1.75.
- 3 Click **Ok**. Now, the image you capture is affected by the gamma value you set.

## Digital zoom

The EtherLynx Professional camera comes with an option to purchase separately zoom modes of 150% and 300%.

Zoom Mode	Function	Density
150%	Makes the FinishLynx image 1.5 times bigger in height.	2000
300%	Makes the FinishLynx image 3 times bigger in height.	4000

## Digital zoom advantages

The EtherLynx Professional camera's digital zoom option allows you to:

- take very high density FinishLynx images,
- use smaller, less expensive lenses, and
- enables a wider variety of camera locations with a single lens.

### ➤ ***Taking high density FinishLynx images***

When used with an F-mount lens, the digital zoom option available for the EtherLynx Professional camera enables a higher density than any other EtherLynx camera. This higher density, combined with the higher frame rates of the EtherLynx Professional camera, enables higher resolution images to be taken even in sports where objects are not moving at particularly high speeds. Higher resolution images help you:

- evaluate an extremely close race, and
- print extremely high quality images.

### ➤ ***Using smaller lenses***

Digital zoom also allows you to use smaller, less expensive lenses. For example, if you are currently using a 300mm f5.6 lens in Ave 1, you can set the Mode to Zoom 300% to achieve the same field of view with a 100mm f2.8 lens. The 100mm lens is considerably less expensive than the 300mm lens and offers four times the amount of light.

When light is plentiful, digital zoom can be used to get more resolution for a given field of view. In situations where light is scarce, it can be used to get more light for less lens money.

### ➤ ***Covering more camera locations with a single lens***

Because the digital zoom range of the EtherLynx Professional camera is 12x (as opposed to 4x in the EtherLynx 2000 models), you can cover a wide range of camera locations with a single lens.

## Status lights

The EtherLynx Professional camera's status lights on the rear panel of the camera include a **Boot** and **Error** LED. They are read as follows:

### ➤ ***Boot LED***

This color...	indicates this...
solid red	the camera is starting. This process takes about 20 seconds.

slow amber blink	waiting for communication with FinishLynx.
fast amber blink	the camera is loading into FinishLynx.
slow green blink	the hardware is being initialized.
solid green	the camera is loaded.

### ➤ **Error LED**

If the light is **off**, there is no error. If the light is **on**, an error has occurred.

## Serial port on rear panel

The rear panel of the EtherLynx Professional camera has a 9-pin serial port that can be used to connect a RadioLynx receiver, scoreboard, wind gauge, or other serial device.

## Wireless option available


The EtherLynx Professional camera has a wireless option available (sold separately) that enables it to connect to an 802.11g wireless network using an Access Point or in ad hoc mode.

---

**Note:** We strongly recommend that you use an Access Point with an amplified antenna connected via Ethernet cables to the FinishLynx network. The amplified antenna is available for purchase from *Lynx System Developers, Inc* (see "Obtaining Lynx products and information").

---

### ➤ **Configuring the EtherLynx Professional camera for a wireless network**

- 1 Run FinishLynx.
- 2 Turn on the EtherLynx Professional camera in wired mode, using the Ethernet cables provided.
- 3 From the **Hardware Control** window, click . The **Camera Settings** dialog appears.
- 4 Click the **WLAN** tab.
- 5 Make the following settings:
  - **Mode:** select the Access Point or Ad Hoc radio button.
  - **SSID:** this value *must* match the access point or the other nodes on your ad hoc network. Make sure this value is different from any other wireless network SSID's nearby.

- **Channel:** select a setting from the drop-down list *only* if you are using the EtherLynx Professional camera on an ad hoc network. Make sure the channel setting is at least six apart from any other ad hoc networks nearby so that it does not overlap. Skip this setting if you are using an access point.

**6** Click **Ok**.

**7** Disconnect the Ethernet cable connecting the EtherLynx Professional camera and the FinishLynx computer.

**8** Restart the EtherLynx Professional camera. When the camera restarts, it is accessible over the wireless network.

➤ **Wireless tips**

Before using the EtherLynx Professional camera in wireless mode, do the following:

- If there are other, wired EtherLynx cameras on your FinishLynx network, turn them on before turning on the EtherLynx Professional camera you plan to use in wireless mode.
- Make sure all other devices on the wireless network have Power Saving Protocol turned OFF.
- Confirm that the SSID configured in the EtherLynx Professional camera is the same as the SSID configured in the Access Point or other ad hoc nodes.
- Make sure no other wireless device can access the wireless network that the EtherLynx Professional camera is on.

## APPENDIX A

## Scoreboard Settings Table

MANUFACTURER	MODEL	SCRIPT	SETTING	TEAM SCORE DISPLAY
Alge	GAZc	Alge.lss	2400,8,N,1	Untested
Daktronics	V6400/ 6000		9600,8,N,1	Untested
	Omnisport	Dak.lss	9600,7,E,2	Untested
	Allsport	Allsport.lss	12800,8,N,2	Yes
Chronomix	CC2000	Chrono.lss	9600,8,N,1	No
Colorado Time	CT4009	Colorado.lss	9600,8,E,1	Untested
Fairtron	n/a	Fairtron.lss	9600,8,N,1	Untested
Electro Numerics	RaceClocks	Electro.lss	9600,8,N,1	Untested
		Electro-flip.lss	1200,8,E,1	Untested
		Electro-led.lss	9600,8,N,1	Untested
		Electro2.lss	9600,8,Mark,2	Untested
IDS	ECMX		9600,8,N,1	Untested
Lynx	LynxTV	LynxTV.lss	9600,8,N,1	Untested
	ResultTV	ResultTV220.lss	9600,8,N,1	Yes
Microgate	Mtab16	Microtab 16- 9.lss	1200,8,N,1	Yes
	Mtab16	Microtab 16- 18.lss	1200,8,N,1	Yes
	µGraph	uGraph.lss	9600,8,N,1	Yes
Nevco		Nevco1.lss	38400,8,N,1	Untested
		Nevco2.lss	38400,8,N,1	Untested
		Nevco123.lss	57600,8,N,1	Untested
		Nevco860.lss	57600,8,N,1	Untested
Omega	UNT4	Omega-9.lss	9600,7,E,1	Untested

<b>Seiko</b>	RT-100	RT-100.lss	9600,8,N,1	Untested
	ST206/ ST306	ST206.lss	9600,7,E,2	Untested
	Lynx Display Board		9600,8,N,1	Untested
<b>Spectrum</b>		Spectrum.lss	9600,8,N,1	Untested
<b>Westerstrand</b>	Sportstimer	Westerst.lss	1200,8,N,2	Untested

## APPENDIX B

# FinishLynx Remote Control Specification

Version 2.0

Revised 5/29/02

Written by Kirk Sigel

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Haverhill, MA 01835

## ➤ **Purpose**

This specification is for remotely controlling FinishLynx by issuing commands through a serial port or TCP socket connection.

## ➤ **Overview**

An application that wishes to direct certain behavior or request certain actions within FinishLynx can do so by connecting to a predetermined serial port or TCP port that FinishLynx listens on. Once connected, an application can send data packets that specify an action FinishLynx is to perform. FinishLynx will send a successful reply to these data packets when the action is complete or will send an error reply if there is a problem.

## ➤ **Data Format Description**

A "request packet" is a data packet sent to FinishLynx. A "reply packet" is a data packet sent FROM FinishLynx in response to a "request packet". Request packets and reply packets consist of one or more name/value pairs separated by semicolons and optionally quoted. The name and value in a name/value pair are separated by an equal sign. A packet is terminated by a carriage return and line feed. All characters in a packet are human readable ASCII with the exception of the carriage return and line feed.

If a carriage return and line feed are sent without any other characters sent since the last request packet then the last request packet is executed again.

Note that all characters sent to FinishLynx are echoed back. Anything you send to FinishLynx will be sent back to you before the reply is sent. The reason that the protocol is human readable and that all characters are echoed back is so that the interface can be tested "by hand" using a simple serial port communications program or a simple Telnet program.

If you set FinishLynx to listen on a certain TCP port, for instance, you can then Telnet to that port and enter commands from the keyboard and watch FinishLynx execute the commands. This allows you to experiment with how the protocol works before modifying any of your own software. Note that FinishLynx does not provide any line editing functions, meaning that, for instance, you cannot use the backspace key to correct errors in a hand typed request packet.



**➤ Data Format Specification**

<Request Packet>	:= <Command Pair>[<Option Pair>]*<Newline>
<Repeat Packet>	:= <Newline>
<Reply Packet>	:= <Reply Pair>[<Option Pair>]*<Newline>
<Command Pair>	:= Command=<Command Value>;
<Command Value>	:= varies
<Reply Pair>	:= Reply=<Reply Value>;
<Reply Value>	:= Ok Error Unknown
<Option Pair>	:= <Option Name>=<Option Value>;
<Option Name>	:= varies
<Option Value>	:= varies
<Newline>	:= <0x0d><0x0a>

---

**Note:** Any part of the specification contained in brackets and followed by an asterisk can be present zero or more times. If a plus sign follows the brackets instead of an asterisk then that part of the specification must be present one or more times.

---

**➤ Results Commands****ResultsPrint**

Request Packet: Command=ResultsPrint;<Newline>

Reply Packet: Reply=Ok;<Newline>

*Example:*

Send: Command=ResultsPrint;<Newline>

Recv: Reply=Ok;<Newline>

The results are printed.

**➤ Image Commands**

The coordinate system used for images has its origin in the upper left corner of the window, with horizontal coordinates increasing towards the right and vertical coordinates increasing towards the bottom. The first pixel (in the upper left) has coordinate (0,0) and the last pixel (in the lower right) has coordinate (<image width>-1,<image height>-1).

Coordinates can be specified in three different ways:

- 1** If the coordinate is immediately followed by an "a" (for absolute) then the value is used directly. If the value is a negative number then it is taken from the end of the legal coordinate range rather than from the beginning. For example, a coordinate of -1a for a value that has a legal range of 0..99 will translate to a coordinate value of 99. A coordinate of -5a for a value that has a legal range of 0..500 will translate to a coordinate value of 496.
- 2** If the coordinate is immediately followed by a percent sign then the value used is the specified percentage of the maximum legal value. For example, a coordinate of 25% for a value that has a legal range of 0..200 will translate to a coordinate value of 50.
- 3** If the coordinate is immediately followed by an "r" (for relative) then the value is added to the current value for that coordinate. For example, if the cross hash is currently at coordinate 50 and a value of 20r is specified then the new cross hash position will be 70.

**ImageGetInfo**

Request Packet: Command=ImageGetInfo;[<Option Pair>]\*<Newline>

Request Packet Options:

Window=<window number>;

<window number> specifies which camera window to request information from, numbering starts at 1. If this option is omitted then the first window's information is returned.

Reply Packet: Reply=Ok;[<Option Pair>]\*<Newline>

Reply Packet Options (each appears once):

Orientation=<orientation>;

<orientation> can be either "Left" or "Right".

Zoom=<zoom>;

<zoom> is the current zoom level followed by a percent sign.

ImageSize=<width>,<height>;

<width> and <height> are the current width and height of the image given the current zoom level.

Origin=<x>,<y>;

<x> and <y> specify the coordinates of the upper left pixel visible in the window.

WindowSize=<width>,<height>;

<width> and <height> are the width and height of the window.

Hash=<x>,<y>;

<x> and <y> specify the coordinates of the hash line and cross hash.

Time=<time>;

<time> specifies the time at the hash line.

*Example:*

Send: Command=ImageGetInfo;Window=2;<Newline>

Recv: Reply=Ok;Orientation=Left;Zoom=100%;ImageSize=1116,1000;Origin=0,105;

WindowSize=440,354;Hash=84,518;Time=14:25:29.9060;

The current information for window 2 is returned. (Note that a newline was inserted before the "WindowSize" option for readability. This newline is not present in the actual reply packet.)

## ImageDraw

Request Packet: Command=ImageDraw;[<Option Pair>]\*<Newline>

Request Packet Options:

Window=<window number>;

<window number> specifies which camera window to control, numbering starts at 1. If this option is omitted then the first window is controlled. If <window number> is 0 then all windows are controlled.

Zoom=<zoom>;

<zoom> specifies what zoom level to display the image in. <zoom> can be "Enlarge" or "Reduce", which are equivalent to selecting the "+" and "-" buttons on the image toolbar. <zoom> can also be a number followed by a percent sign to directly specify a desired zoom level.

HashTime=[<time>][,<y>];

<time> specifies where to place the hash line. <y> specifies where to place the cross hash.

HashMove=[<x>][,<y>];

<x> specifies where to place the hash line. <y> specifies where to place the cross hash.

Scroll=[<x>][,<y>];

<x> specifies where to scroll horizontally. <y> specifies where to scroll vertically.

Center=<n>;

If <n> is 1 the hash line will be centered in the window. If <n> is 0 or if the option is omitted the hash line will not be centered.

Reply Packet: Reply=Ok;<Newline>

### Examples:

Send: Command=ImageDraw;Zoom=100%;HashTime=1:23.45,50%;Center=1;<Newline> Recv:  
Reply=Ok<Newline>

The zoom level is set to 100%, the hash line is moved to the frame closest to time 1:23.45, the cross hash is placed halfway down the image, and the image is centered on the hash line.

Send: Command=ImageDraw;HashMove=-1r;<Newline>

Recv: Reply=Ok;<Newline>

The hash line is moved one frame to the left.

Send: Command=ImageDraw;Zoom=Enlarge;Center=1;<Newline>

Recv: Reply=Ok;<Newline>

The zoom level is increased and the image is centered on the existing hash line location.

Send: Command=ImageDraw;HashMove=-1a,0a;<Newline>

Recv: Reply=Ok;<Newline>

The hash line is moved to the last frame of the image. The cross hash is moved to the top of the image.

### **ImageExport and ImagePrint**

Request Packet: Command=ImageExport;[<Option Pair>]\*<Newline>

Request Packet: Command=ImagePrint;[<Option Pair>]\*<Newline>

Request Packet Options:

Window=<window number>;

<window number> specifies which camera window to export or print, numbering starts at 1. If this option is omitted then the first window is exported or printed.

File=<filename>;

<filename> specifies the name of the file for ImageExport. If this option is omitted then the event's standard name will be used. If <filename> does not have an extension or has an unknown extension then the extension will be set to ".jpg" and a JPEG file will be written. If the extension is ".tga" then a TARGA file will be written. If the file already exists it will be overwritten.

This option is ignored for the ImagePrint command.

Time=[<time>][,<y>];

<time> and <y> specify which part of the image to export or print. If <time> and/or <y> are omitted then the current hash line value is used. If this option is omitted completely then the currently visible image is exported or printed.

Area=[<left>][,<top>][,<right>][,<bottom>]]];

<left>, <top>, <right>, and <bottom> specify which part of the image to export or print. If the "Time" option is specified then <left> and <top> default to -200r and <right> and <bottom> default to 200r. If the "Time" option is not specified then all four values default to 0r.

Reply Packet: Reply=Ok;<Newline>

*Examples:*

Send: Command=ImageExport;File=image;<Newline>

Recv: Reply=Ok;<Newline>

The currently visible image is written to the file "image.jpg".

Send: Command=ImagePrint;Time=;<Newline>

Recv: Reply=Ok;<Newline>

The region of image starting 200 pixels left and above the current hash position and extending 200 pixels right and below the current hash position is printed.

Send: Command=ImageExport;Area=50r,50r,-50r,-50r;<Newline>

Recv: Reply=Ok;<Newline>

The currently visible image (minus a 50 pixel band around the perimeter) is exported to a file whose name is the same name as the event but with the extension ".jpg".



# Glossary of Terms

## C

### **competition LAN**

Local area network containing various competition management products communicating over wired or wireless TCP/IP. Examples of Lynx products on a competition management LAN include FinishLynx, NetExchange Server, an AirLynx gateway, ClerkLynx, and FieldLynx.

## L

### **LapTime**

Also known as the LT Plug-in, enables FinishLynx to generate lap times using evaluated times taken from the FinishLynx image.

### **LIF**

A Lynx data file containing results generated by FinishLynx.

### **LSS**

Stands for Lynx Scoreboard Script.

## P

### **PPL**

A Lynx data file containing a list of athletes.





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