
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>).

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- 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>).

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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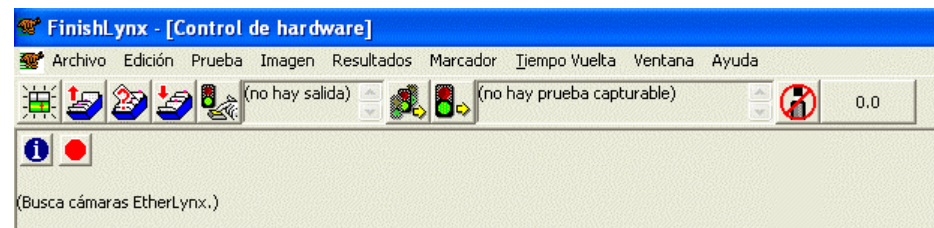
General New Features

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.

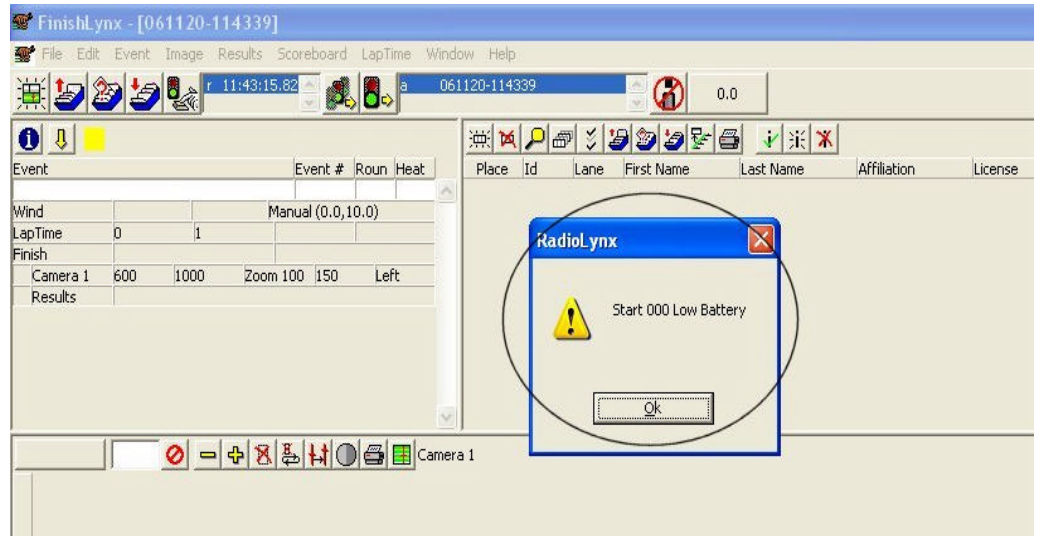
Note that manual capture with automatic override is the same as automatic capture with manual override.

RadioLynx transmitters indicate when low battery

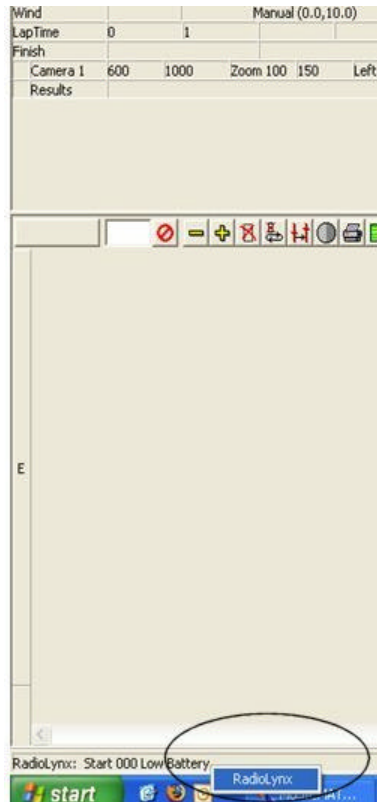
FinishLynx now warns you by displaying a message in the status bar when the RadioLynx transmitters in your competition setup are low. The image here shows the status bar message at the lower left corner of the screen.



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



You can also select **RadiLynx** 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

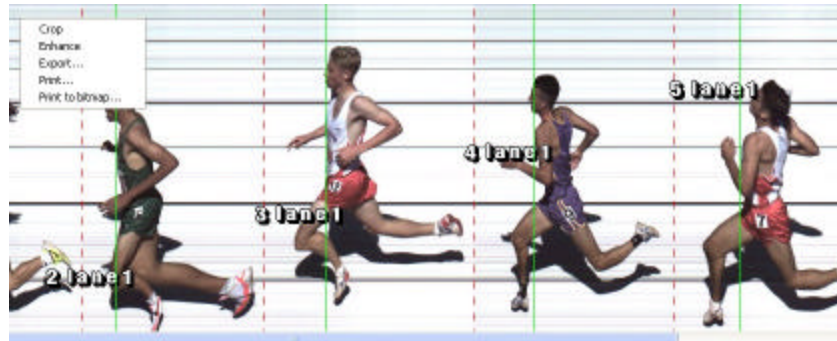
FinishLynx files are now named according to **YYMMDD_HHMMSS**, rather than the previous **Untitled_x** name, allowing files to be stored in a more logical order within a folder.

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.



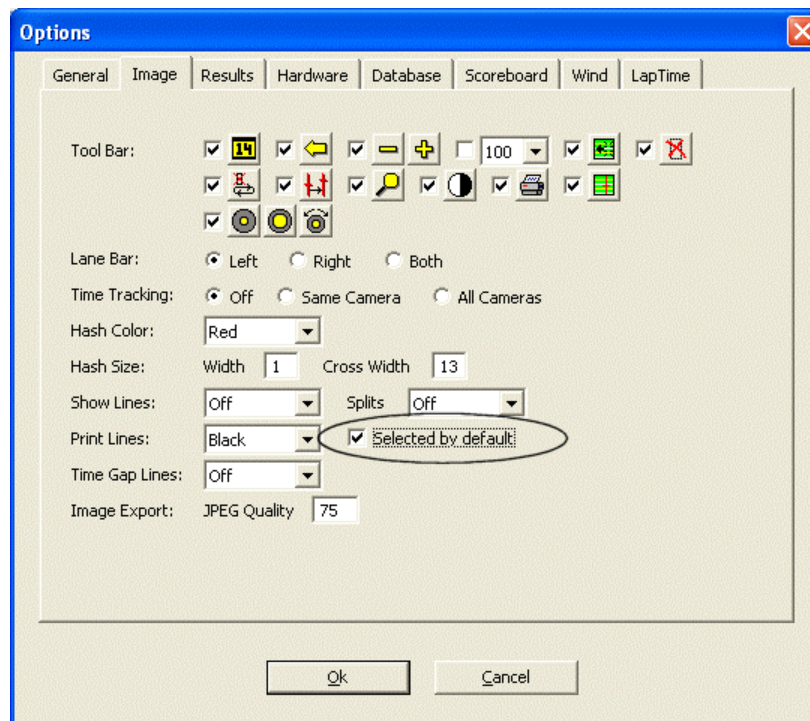
- 3 In the **Offset:** text field, type a value to control how far away horizontally from the object you want the overlay placed. Otherwise, the overlay is centered vertically within the lane. The offset indicates how far away the center, not the edge, of the overlay is from the object.

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.

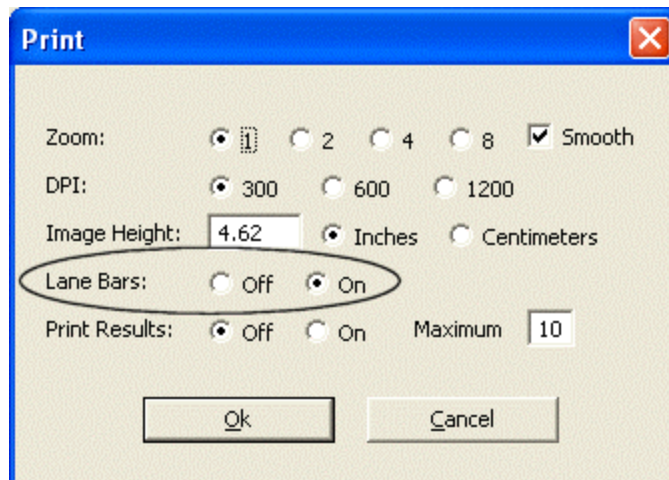


Lane bar printouts supported

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:*

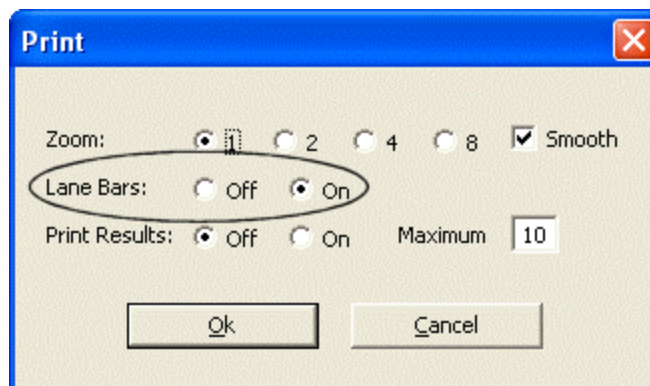
- 1 Click **Image** from the menu bar and then select **Print...** The Print dialog appears.
- 2 Click to select the **Lane Bars: On** radio button.



- 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**.

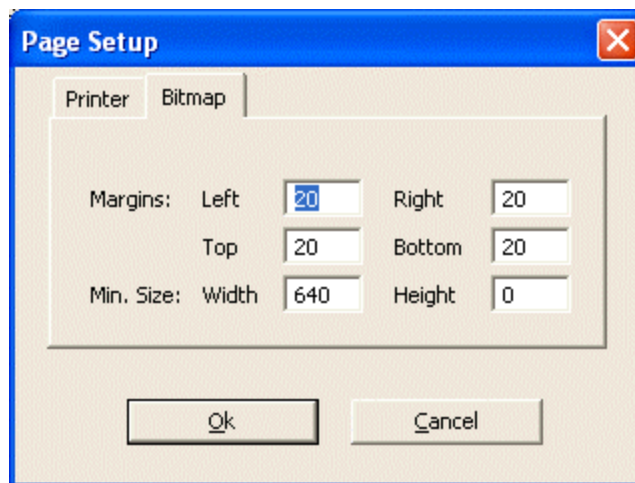
New printing outputs available

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

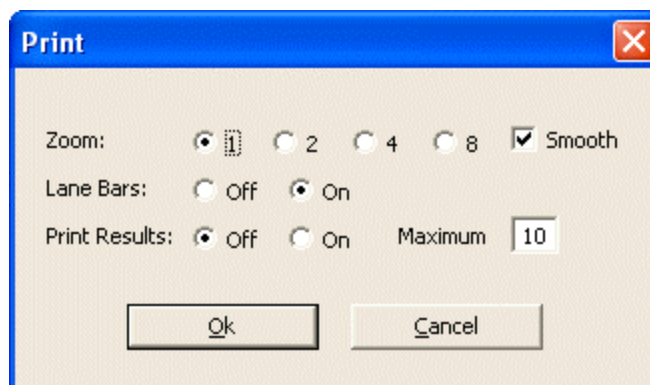
You can also define the margins of a bitmap file with minimum width and height, as specified in pixels. This is particularly helpful if you are putting the FinishLynx image on a web page.

➤ **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.

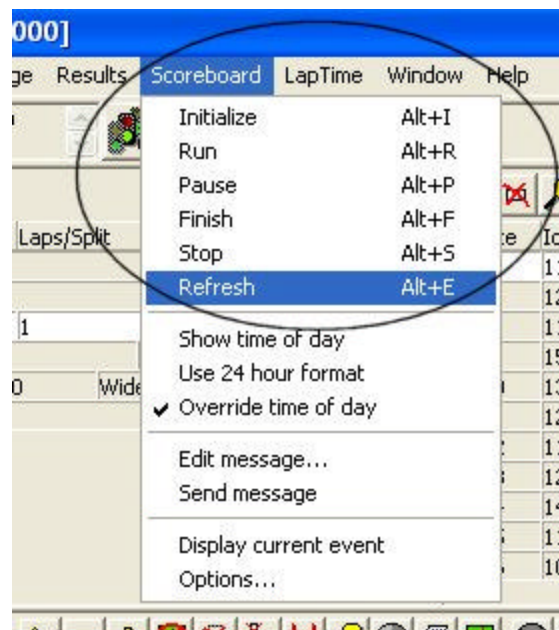
Scoreboard Support Enhancements

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

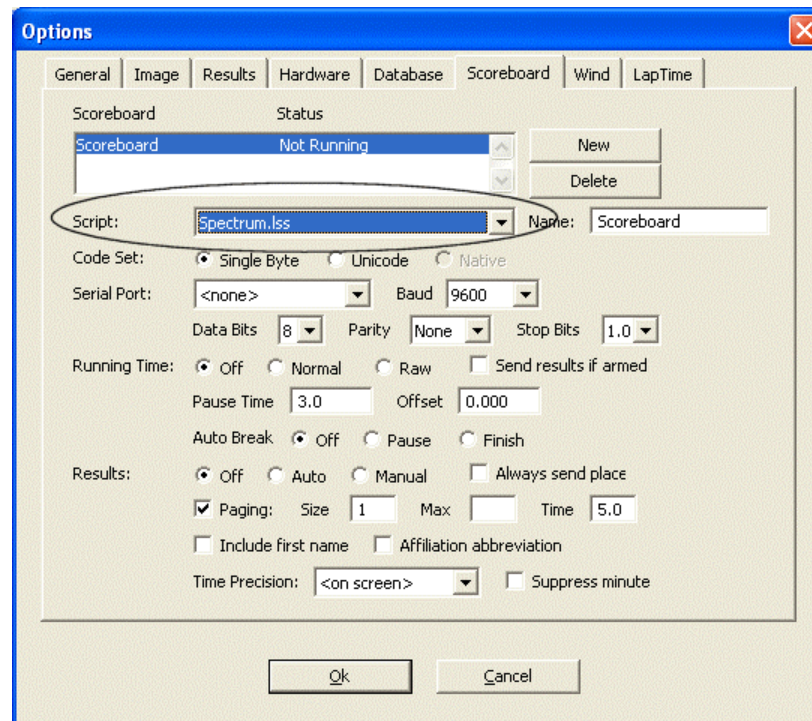
The following scoreboards are now supported by FinishLynx:

- 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.Iss**. 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)."

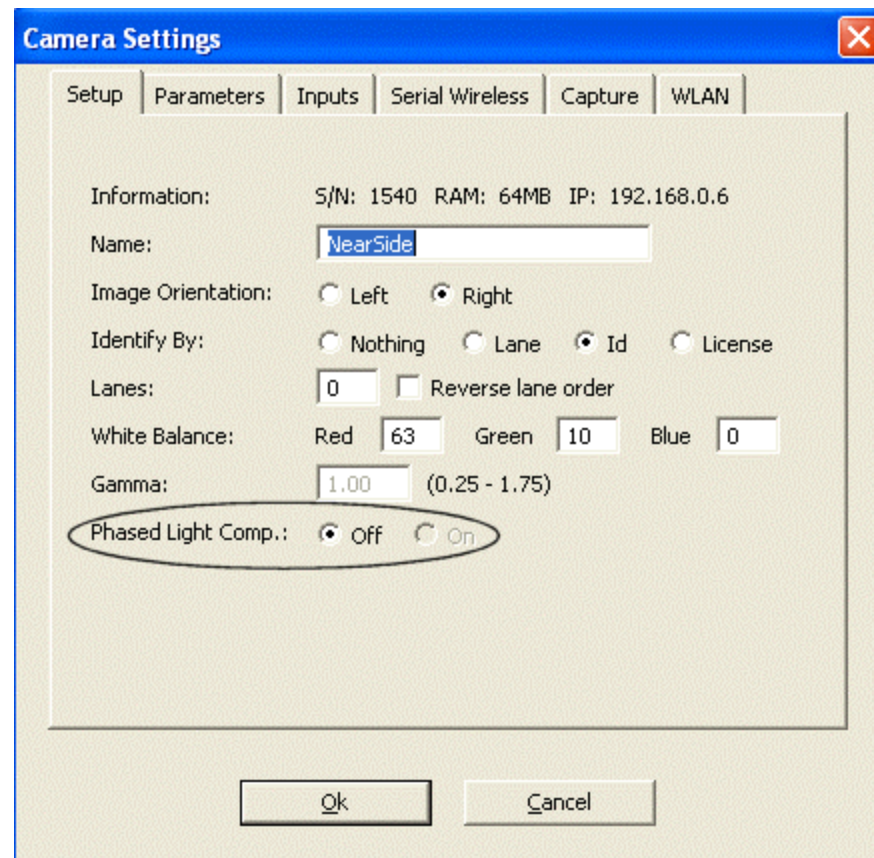
EtherLynx Camera Enhancements

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:*

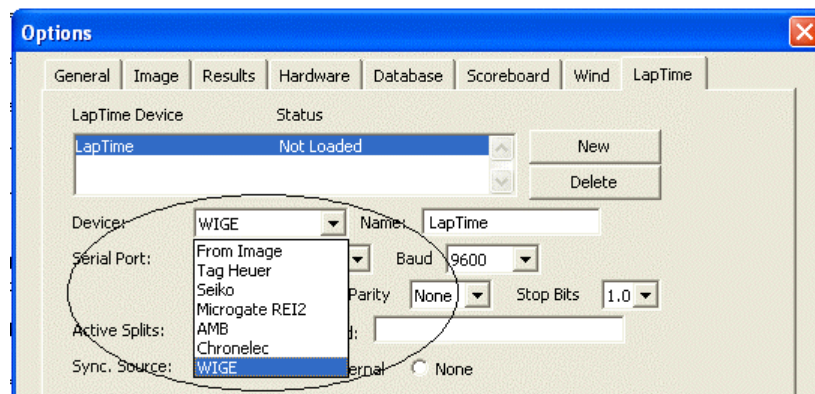
Click **LapTime** from the Menu bar and then select **Resend**. A drop-down list appears allowing you to choose which data is to be resent.

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**.

CHAPTER 2

FinishLynx 5.20 Release Notes

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


In This Chapter

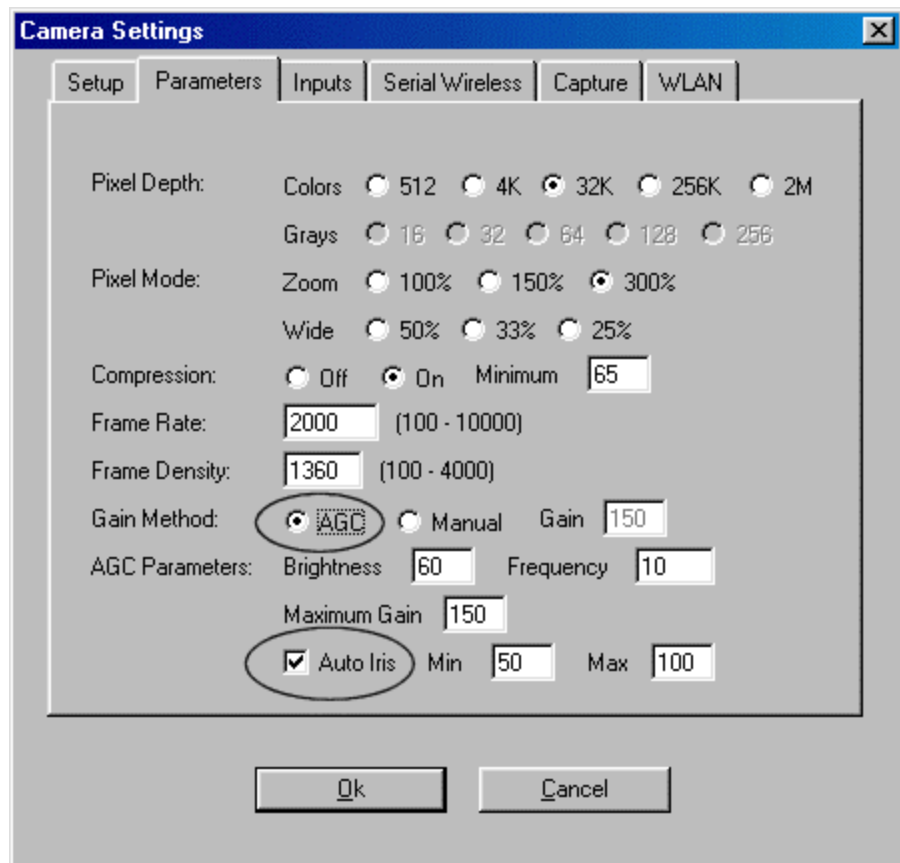
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Auto Iris feature


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.



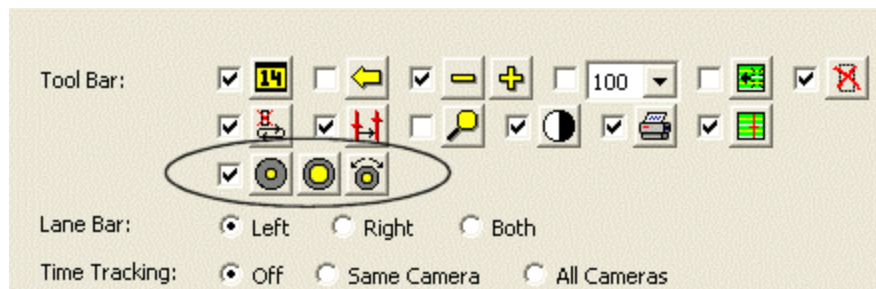
- 5 Note the **Min** and **Max** fields. They indicate indicate how low and high the gain should be allowed to go. If the gain goes out of range, the iris is moved in the appropriate direction until the gain is back within range.



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.

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

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.

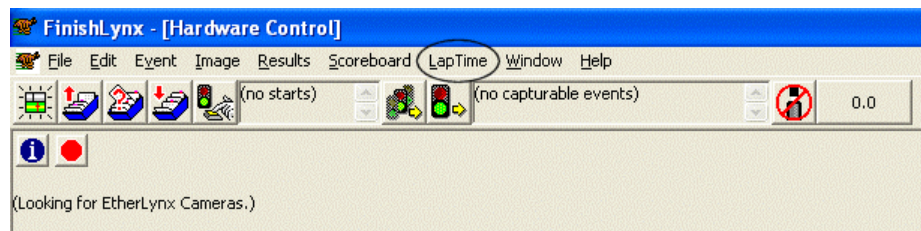
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New top level LapTime menu

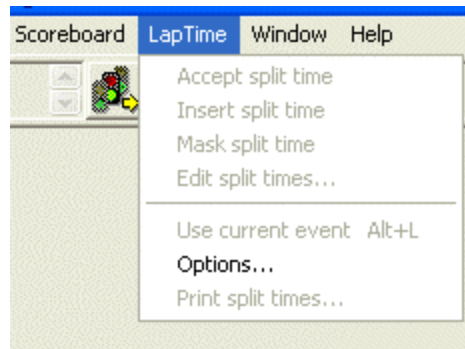
➤ *New LapTime menu*

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



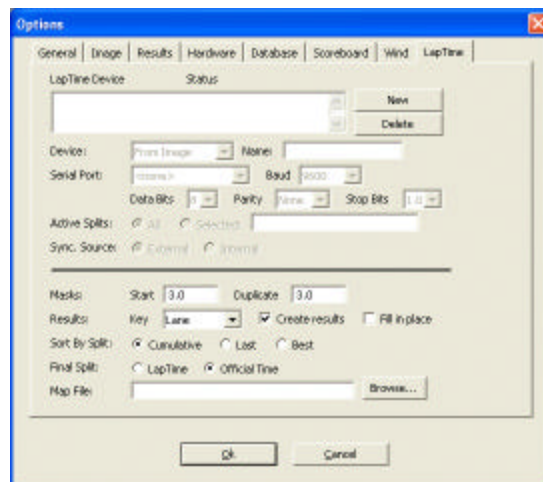
➤ **New LapTime drop-down menu**

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**.

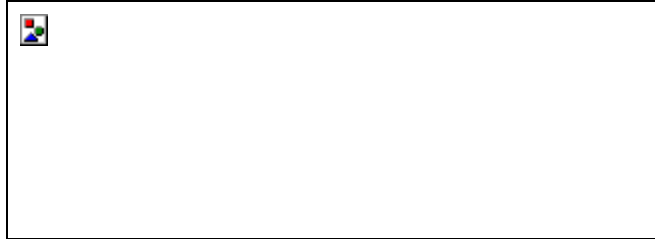


- 3 Click **Ok**. The **Speed** header is displayed in the FinishLynx Results Zone.

➤ *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.



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"

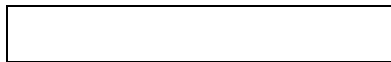
The last selection you made when exporting an image (either JPEG or Targa) now sticks, so that if you always use one format or the other, you will not need to change the setting in the Image Export dialog.

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.



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.lss** for the *Nautronic TimeBoard*, and
- **Imhof.lss** 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.



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

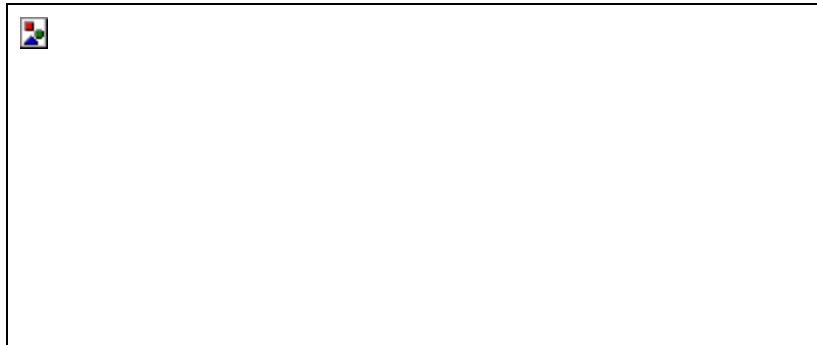
You can now create horizontal paging in the Lynx Scoreboard Script (LSS) files, allowing you to display more than one page of information for each vertical page of results. This option is helpful when sending a great deal of information to a short scoreboard.

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

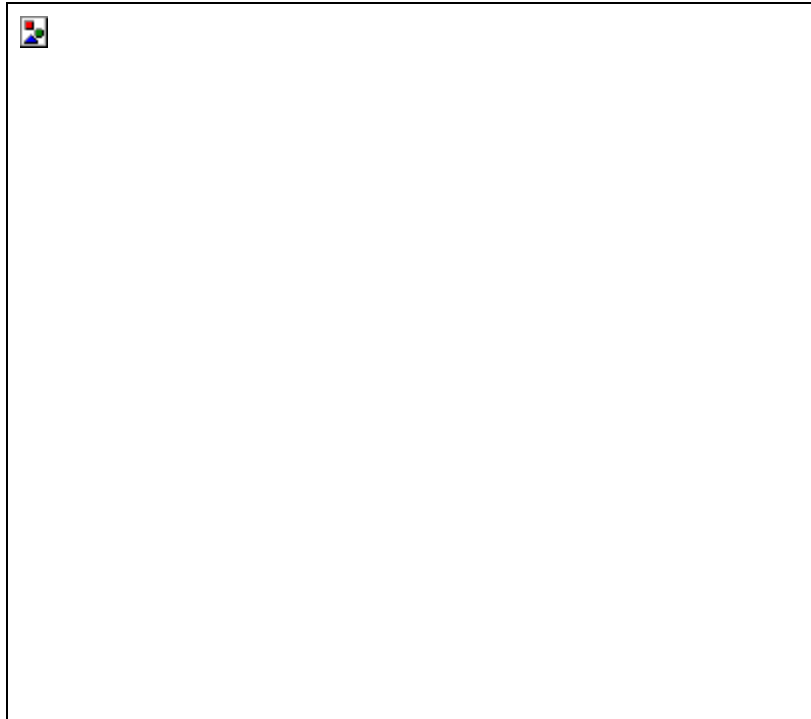
Ability to use multiple LapTime devices

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.



- 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.



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:*

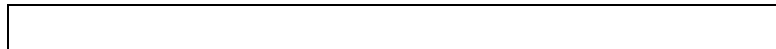
With an event open in FinishLynx, delete the number in the **Total Laps** field in the Information Zone and press **Enter**. The **Laps To Go** field begins to count up instead of down.

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.



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.

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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**.Iss:** 14 new scripts for Micrograph scoreboards allowing greater flexibility in the display of data.
- **Omni1000place.Iss:** for the Daktronics Omni1000 series, which orders results by place instead of by lane.
- **Mondo.Iss:** for the Mondo brand scoreboard displays.
- **Resultv2.Iss:** for ResultTV 2.0, which uses all of the available results fields.
- **Resultv210.Iss:** for use with ResultTV 2.10, which uses all of the available results fields.
- **Resultv220.Iss:** 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.

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

Seiko	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
Spectrum		Spectrum.lss	9600,8,N,1	Untested
Westerstrand	Sportstimer	Westerst.lss	1200,8,N,2	Untested

APPENDIX B

FinishLynx Remote Control Specification

Version 2.0
Revised 5/29/02

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➤ *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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