

Introduction

Finish Lynx and Omega's Scan-O-Vision are timing systems based around high-speed cameras. Both use a file-based interface for import and export with GMS, and from the GMS user's perspective, are nearly identical.

This document covers defining an event to use Finish Lynx or Scan-O-Vision, exporting data to the timing system, and recovering results back,

Getting Started

The first step is to define the events to be used with these timing systems. For each event which will be used with one of these interfaces, right-click on the event and select "Define this event". On the first page, check the box "Uses external/timing interfaces". Then, on the "External Interfaces" tab, select the appropriate interface, enter an event number, and enter a scoreboard name.

Illustration 1, Event definition

Within a sport, event numbers must be unique – the event number is used to identify the event within the timing system and when reading the result filename. The scoreboard name is usually simply a shortened version of the event's name, and is used on scoreboards (where applicable) and to name the event as it's given to the timing system.

Save this event's definition, and repeat the process for all other events which will use this interface.

Divisioning

Before working with either timing system, entrants to be exported must be divisioned. Unlike most other events in GMS, events which use Finish Lynx or Scan-O-Vision must use *numeric* division identifiers - "M01" is not valid. In addition, divisions should be numerically unique. You should not have divisions "1", "01" and "001", since GMS will consider them separate divisions, but the timing system and its importer will not, which will result in confusion. It's best to use divisions like "01", "02", "47", etc. if you have less than 100 divisions, and "001", "002", "047" if more than 100. This will allow you to sort them alphabetically in GMS, and have them also be in numeric order.

Using scheduling is not required, but is a substantial help. With it enabled, GMS will track the status and start time of each division, and printing schedule reports makes it simpler to coordinate stagers, starters, timing system operators and awards. See the "Scheduling" document for more details.

Interface Basics

Data communication with the timing system is done by use of text files, and there are two steps: exporting the day's data, and recovering results back. Each system uses different types and names of files, but the basic ideas are the same:

1. A day's data (or some other time period) is exported into one or more files, which the timing system then reads in
2. The timing system times races as they run, and creates a data file for each one as it completes.
3. GMS reads in the results file for a race, and if processed correctly, moves the file to the "processed" folder

To start the timing system interface, from within the games, select "Tools", "Timing Interfaces", then either "Finish Lynx interface" or "Omega Scan-O-Vision interface".

Note: only one user at a time should be in each sport's timing system interface. GMS will enforce a single user only when importing or exporting, but will allow it at other times, which may result in GMS not properly remembering the status of each file if one user imports while another user has this interface on-screen.

Exporting

The Finish Lynx and Scan-O-Vision user interfaces are functionally identical, and screenshots here are valid for both systems.

Select the sport to work with – only one sport's events can be used at one time. GMS will show only the sports which have one or more events defined for the selected timing system. Then, enter the data folder where files are exchanged with the timing system. For Finish Lynx, this is Finish Lynx' "Database" folder, where it expects its `lynx.evt` file.

The screenshot shows the "Finish Lynx" interface with a "Settings" section and an "Export" section. The "Settings" section includes a "Sport" dropdown menu set to "Cycling", a "Refresh" button, and a link to "Print event number map for this sport". Below this is a "Data folder" text box containing "C:\temp\SQV" and a folder icon. There are two radio buttons: "Export data" (selected) and "Import results". The "Export" section features three dropdown menus: "Events" set to "all", "Rounds" set to "All", and "Genders" set to "Males and Females". There is a "Refresh" button next to the "Events" dropdown and a checkbox for "Only scheduled divisions" which is currently unchecked. At the bottom right of the interface is a green checkmark icon and the text "Execute".

Illustration 2, Finish Lynx interface

Choose which events in this sport should be exported, the appropriate rounds, and division genders. If scheduling is enabled for this games, you will have the option to export "Only scheduled divisions". Checking this will export only divisions scheduled to start during a given time period:

<input checked="" type="checkbox"/> Only scheduled divisions		
05/27/2005	00:00	Note that all times are given in 24-hour (military) format
through		
05/27/2005	23:59	

Illustration 3, division schedule criteria

(If scheduling is enabled, divisions marked as “Finished” will never be exported, regardless of whether “Only scheduled divisions” is checked.)

Click on [Execute] to have GMS create or edit the files for the timing system. GMS will not replace the existing data files, but instead will add to and/or edit them as appropriate for the divisions and people present. To start again from scratch, remove the `lynx.evt` (Finish Lynx) or `startlist.csv` and `concat.txt` (Omega Scan-O-Vision) files from the data folder.

When the export process is complete, GMS will display a results report with the data that was exported:

```
Finish Lynx: Export Results
Exporting Cycling-500M Time Trial as event #5, Preliminary round, division 1, starting at 10/08/2005
Exporting Cycling-500M Time Trial as event #5, Final round, division 4, starting at 10/08/2005
Exporting Cycling-1K Time Trial as event #4, Final round, division 1, starting at 10/08/2005 12:50
Exporting Cycling-1K Time Trial as event #4, Final round, division 2, starting at 10/08/2005
```

Illustration 4, sample Finish Lynx export results

```
Omega Scan-O-Vision: Export Results
Exporting Cycling-5K Time Trial as event #2, Preliminary round, division 2, starting at 10/09/2005 12:05
Exporting Cycling-5K Time Trial as event #2, Preliminary round, division 3, starting at 10/09/2005 12:10
Exporting Cycling-5K Time Trial as event #2, Preliminary round, division 4, starting at 10/09/2005 12:15
Exporting Cycling-5K Road Race as event #1, Final round, division 01, starting at 10/08/2005 12:00
Exporting Cycling-5K Road Race as event #1, Final round, division 02, starting at 10/08/2005 12:05
Exporting Cycling-5K Road Race as event #1, Final round, division 03, starting at 10/08/2005 12:10
Exporting Cycling-5K Road Race as event #1, Final round, division 04, starting at 10/08/2005 12:15
Exporting Cycling-5K Road Race as event #1, Final round, division 05, starting at 10/08/2005 12:20
Exporting Cycling-5K Road Race as event #1, Final round, division 06, starting at 10/08/2005 12:25
Exporting Cycling-5K Road Race as event #1, Final round, division 07, starting at 10/08/2005 12:30
Exporting Cycling-5K Road Race as event #1, Final round, division 08, starting at 10/08/2005 12:35
Exporting Cycling-5K Road Race as event #1, Final round, division 09, starting at 10/08/2005 12:40
Bib 40 is Asaro, Paul S from Area 03
Bib 46 is Carroll, Ruthe W from Area 03
Bib 47 is Chamberlain, Sara L from Area 03
Bib 48 is Chiarizio, Claudia from Area 03
Bib 50 is DeSalvo, Lauren M from Area 03
```

Illustration 5, sample Scan-O-Vision export results

To help the timing system operator, you may also want to print an event number map. This report shows which event names are associated with what event numbers. Click “Print event number map for this sport”, and GMS will run the report for all events compatible with the current timing system, even if they are not exported.

05/27/2005 12:15:58 AM

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Event Name/Number Map

```
Event Numbers to Events
1 --> Cycling-5K Road Race
2 --> Cycling-5K Time Trial
10 --> Cycling-15K Road Race
```

```
Event Names to Event Numbers
Cycling-15K Road Race --> 10
Cycling-5K Road Race --> 1
Cycling-5K Time Trial --> 2
```

Illustration 6, sample event number map

Importing

Click on “Import results”

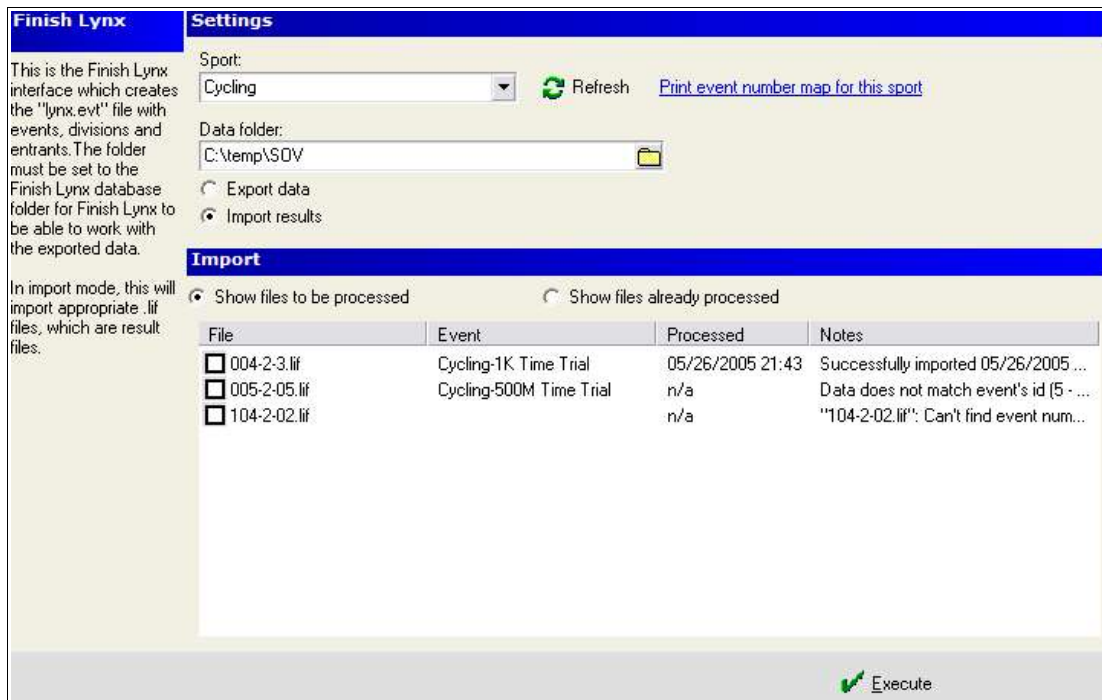


Illustration 7, Finish Lynx import interface

Files which have the appropriate file extension (.lif for Finish Lynx, .CL for Scan-O-Vision) will be shown; if “Show files to be processed” is selected, the contents of the data folder are shown, if “Show files already processed” is selected, the contents of the “processed” subdirectory of the data folder are shown.

To import one or more files, check the box to the left of the files and then click on [Execute]. Files which import successfully will be moved to the “processed” folder, and others will remain on this list. Hold your mouse over a file's name to see any notes associated with it,

Important note: GMS cannot import data into an event if it cannot lock that event. If another user is editing “Cycling-1K Time Trial”, GMS will not be able to bring in the results of this file. Other users can have the event opened in read-only mode for reporting, however.

Note: GMS remembers the processing notes and times for each file when you leave this form, as long as the files remain in their folders.

Files which have been imported are moved to the “processed” folder, and can be seen by clicking on “Show files already processed”. For each file, the event, date/time of import, and notes are shown. You can right-click on any file for more options, including one to print these results, and one to send the file back to the “unprocessed” folder (the data folder) for reprocessing.



Illustration 8, right-click options for files



Illustration 9, sample file results

As each race's results are brought in, GMS reads the import files and matches up the entrants in the divisions by either the bib number (Scan-O-Vision) or GMS ID (Finish Lynx). It then imports the scores and places, marks the division as "Finished – Unofficial" and uses the file's timestamp to mark the division's end time (if scheduling is enabled).

Note: If there are entrants in a division which are not present in the import file, GMS will note this in the log, but will not change those entrants' scores, places or divisions. In no case does GMS change an entrant's name, bib number, or lane based on data coming in from the timing system.

Finish Lynx Setup

Configure Finish Lynx as you normally would for your system (this is not intended as a tutorial on Finish Lynx!). Within Finish Lynx, pull down the *File* menu, and select *Options*. Only a few settings are important to GMS:

Data Source	must be set to “Files”
Code Set	must be set to “Single Byte”
Input Directory	can be any value – but remember this setting, since you’ll need to tell GMS what it is when you import or export data
Output Directory	must be the same as the Input Directory above
Write LIF File	must be “On”
LIF Code Set	must be “Single Byte”

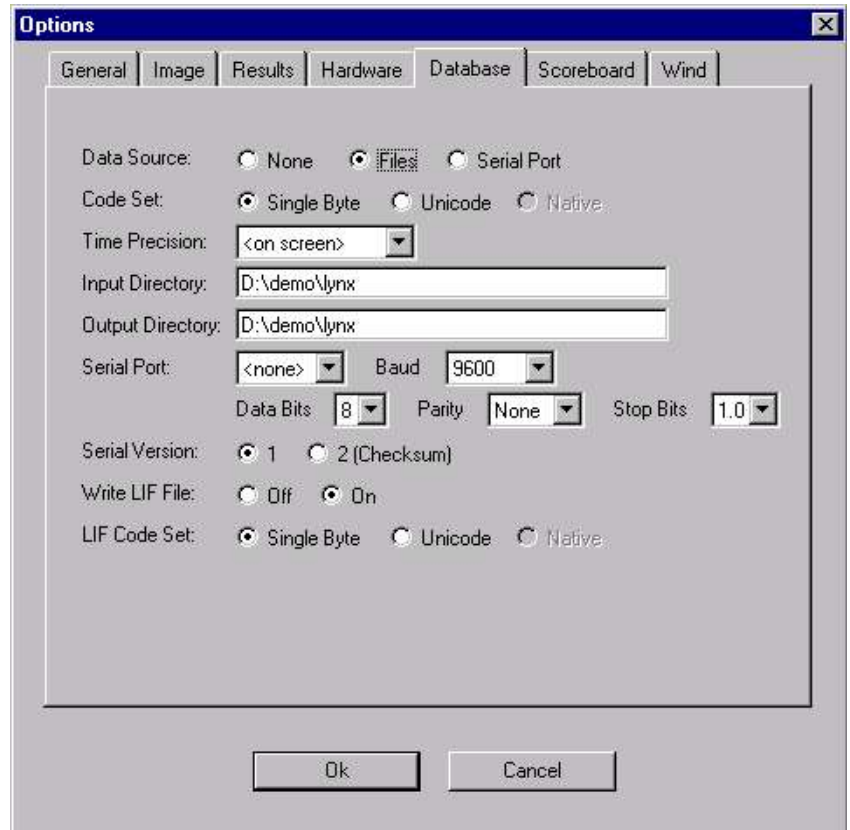


Illustration 10, Finish Lynx setup

Finish Lynx File Layouts

Finish Lynx accepts a single input file, `lynx.evt`, which contains all of the entrants, races, and lane numbers for the scheduled events.

```
4,2,5,Cycling-1K Time Trial
,68SF2GYJ6K8M1E6I,1,Shank,Tyler,Area 13
,60LFQYUG9CK08I7Y,2,Fendt,Andrew,Area 16
,UC0YQUAEFMG9YFRL,3,Thurston,Justine,Area 13
,0020300000067283,4,Keller,William,Area 23
,0020300000053561,5,Hunt,Richard,Area 03
4,2,5,Cycling-1K Time Trial
,68SF2GYJ6K8M1E6I,1,Shank,Tyler,Area 13
,60LFQYUG9CK08I7Y,2,Fendt,Andrew,Area 16
,UC0YQUAEFMG9YFRL,3,Thurston,Justine,Area 13
,0020300000067283,4,Keller,William,Area 23
```

Text 1, sample Finish Lynx data in lynx.evt

In the header for each race,

“4” is the event number for the Cycling 1K Time Trial

“2” is the final round of competition

“5” is division 5

And for each entrant, the long code is the entrant's unique GMS ID, the second number is the lane number, followed by the last name, first name, and delegation name. (If this was a team event, last name would be the team name, first name would be blank, and the delegation would be the delegation for the first member of the relay team.)

Scan-O-Vision File Layouts

Scan-O-Vision takes two files from GMS: `concat.txt`, with the entrants in the combined events, and `startlist.csv`, which is an event schedule and not actually a comma-separated list.

```
BIB;SURNAME;FORENAME;NAT_CODE
40;Asaro;Paul;Area 03;
46;Carroll;Ruthie;Area 03;
47;Chamberlain;Sara;Area 03;
48;Clarizio;Claudia;Area 03;
```

Text 2, sample Scan-O-Vision data in `concat.txt`

```
Event Code;Date;Time;Lane/order;Bib No;First Name; Name;Nation;Length;Title 1;Title
2;Sponsor
02_1_001;09/10/05;12.00;;;;;5000;5K Time;Preliminary 1;Our Sponsor
;;;1;270;Conway;Stephen;Area 13;;;
;;;2;415;Baker;Johanna;Area 17;;;
;;;3;421;Ellsworth;Anne;Area 17;;;
```

Text 3, sample Scan-O-Vision data in `startlist.csv`