Stihl Timbersports Manual

MDH Technologies

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CONTENTS:

CHAPTER

ONE

OVERVIEW

The timing and graphics system consists of multiple components working together.

1.1 Hardware

1.1.1 Timing

Timing computer

On this device the timing is done, e.g. starting a heat, changing the times, printing and uploading results.

Timing device

This device provides accurate timing for impulses from the start box and timing buttons. When an impulse is received by this device, it communicates the exact time to the timing manager software on the timing computer. The timing device is connected to a Moxa nport over a serial connection. The Moxa nport converts this to a network signal. Another Moxa nport is used to send times to the displays.

In this image, A are the Moxa nport servers. B is the interface between the Timy and the displays / buttons. C is the timing device, an Alge Timy3, itself.

Start box

This device is responsible for the starting cadence. It plays an audio file, which triggers an impulse on the *GO*. This impulse is recorded by the timing device to start the time on displays and graphics. The flashlights also trigger. The impulse is triggered by a special high frequency sound in the starting cadence. Therefore, the system will only work if the starting cadence is played using the USB soundcard in the start box. It is not possible no connect an external audio source.

Connections

- To the timing computer via USB
- To the timing device using banana plugs.
- To the flash lights using Amphenol plugs
- To the sound system using XLR / jack plugs

Displays

Are used to display the times to the audience

Timer buttons

Stop the time for a stand to give a first unofficial time.

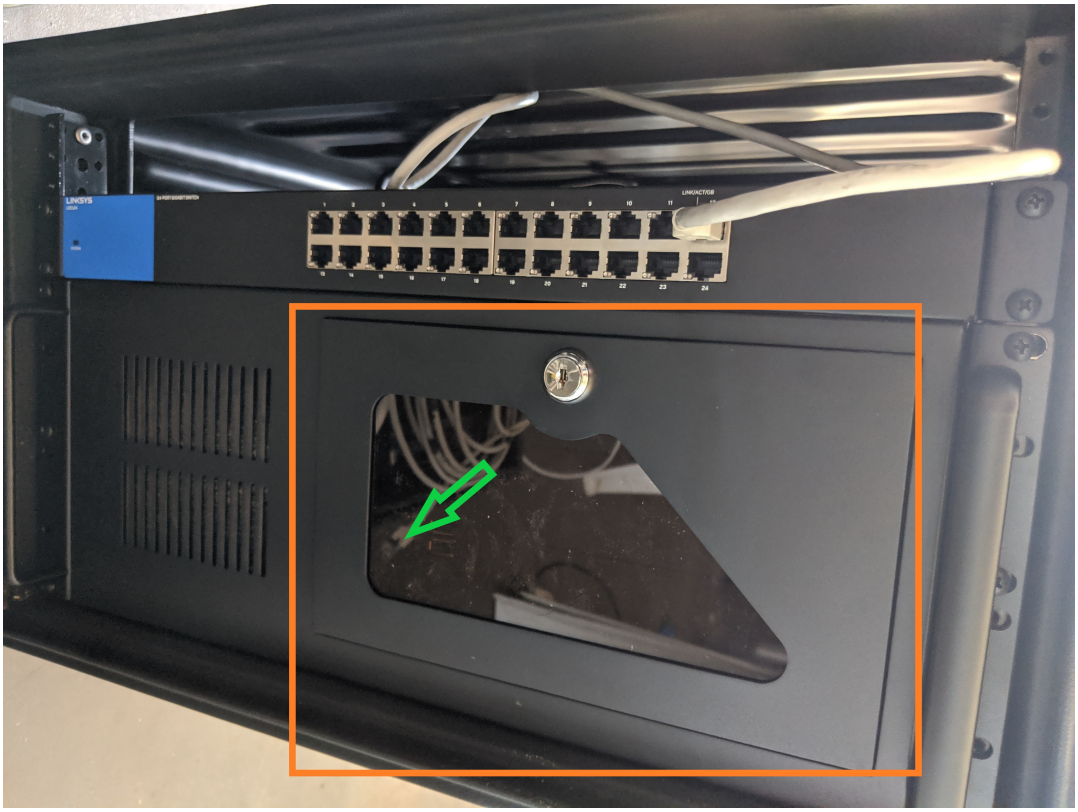
Sound system (supplied by the sound partner)

Complete sound setup, used to broadcast the starting cadence.

1.1.2 Graphics

Graphics server

The graphics server is a high power computer responsible for rendering the graphics. The graphics can be displayed on a standard computer monitor, but for broadcasting the SDI connectors on the Blackmagic PCIe card are used.



The on/off button is located behind the window, near the green arrow.

Video mixer (supplied by the video partner)

The graphics from the graphics server are transmitted to the video mixer, which can overlay the graphics on a video stream.

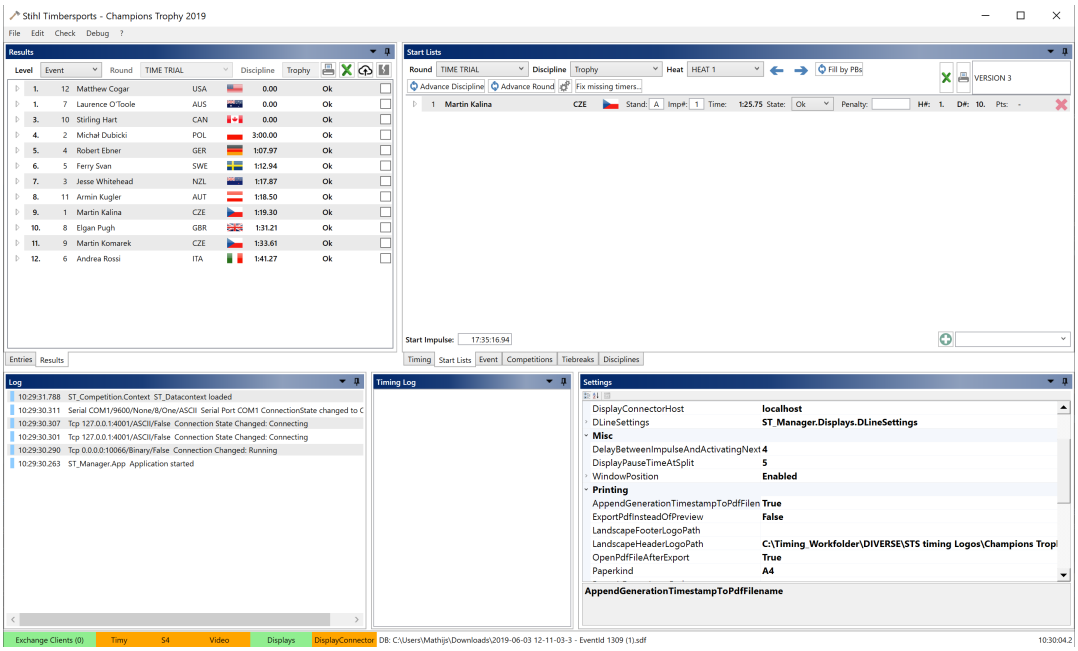
1.2 Software

1.2.1 Timing

The first set of programs is used to provide timing and results.

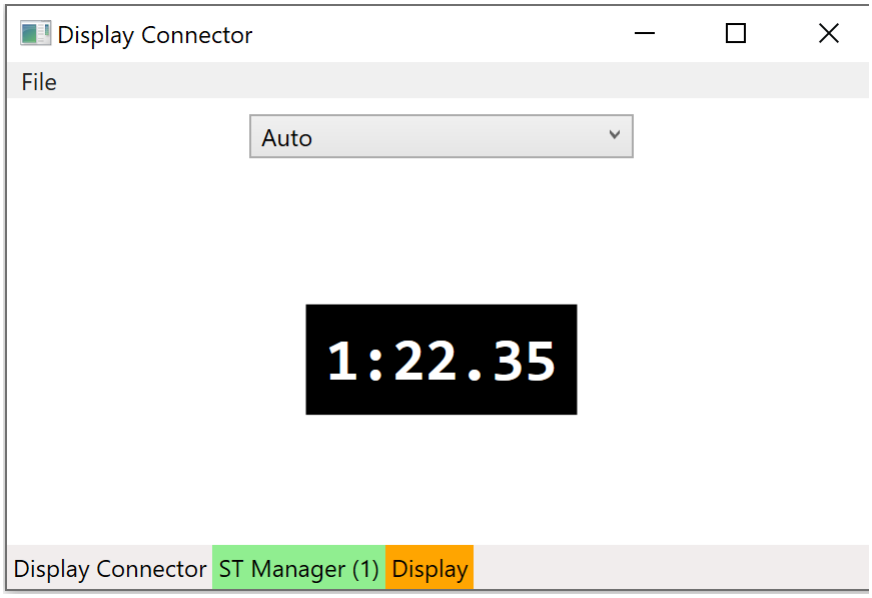
Timing manager

The timing manager is the heart of the timing operation. In this software, the competition structure is created, starting orders are set up, heats are started and the results are compiled.



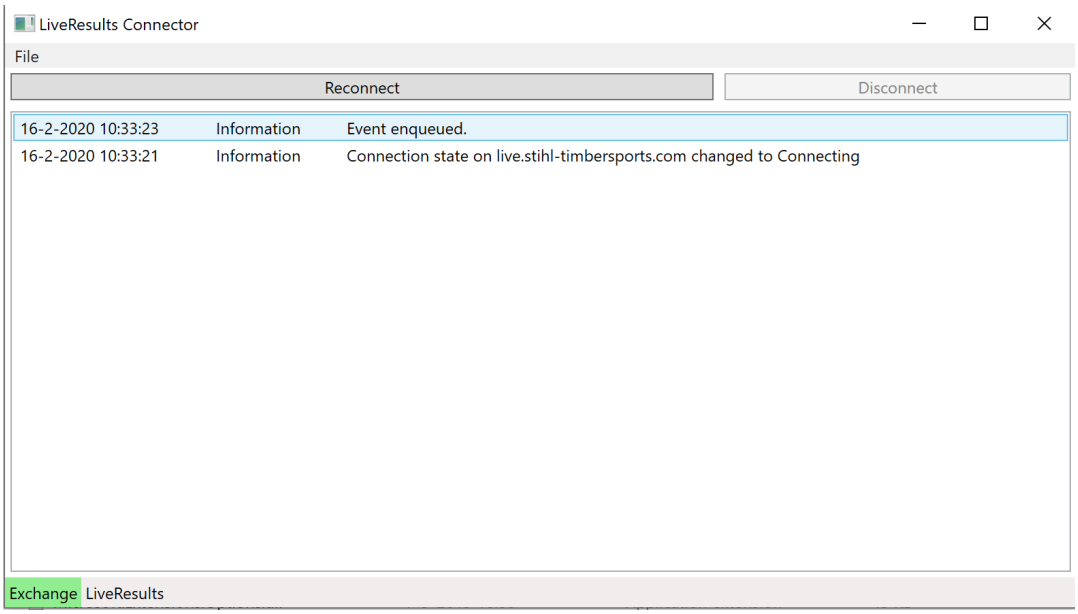
Display connector

The display connector is a separate piece of software connecting the displays to the timing manager. The timing manager sends signals to the display connector when a heat is started or stopped, the display connector converts this into the right signals to show the times on the displays.



Liveresults connector

The liveresults connector is similar to the display connector. It converts signals from the timing manager and sends this to the Stihl Timbersports Liveresults server at https://live.stihl-timbersports.com/.

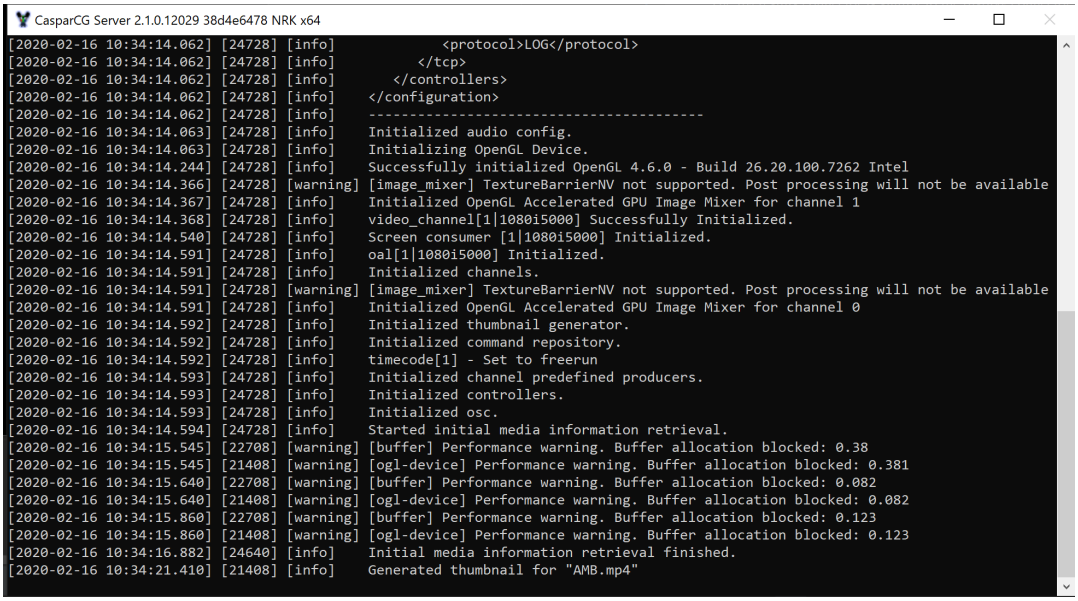


1.2.2 Graphics

The second set of programs plays out graphics to the livestream or LED wall. It communicates with the timing software to retrieve running times and results.

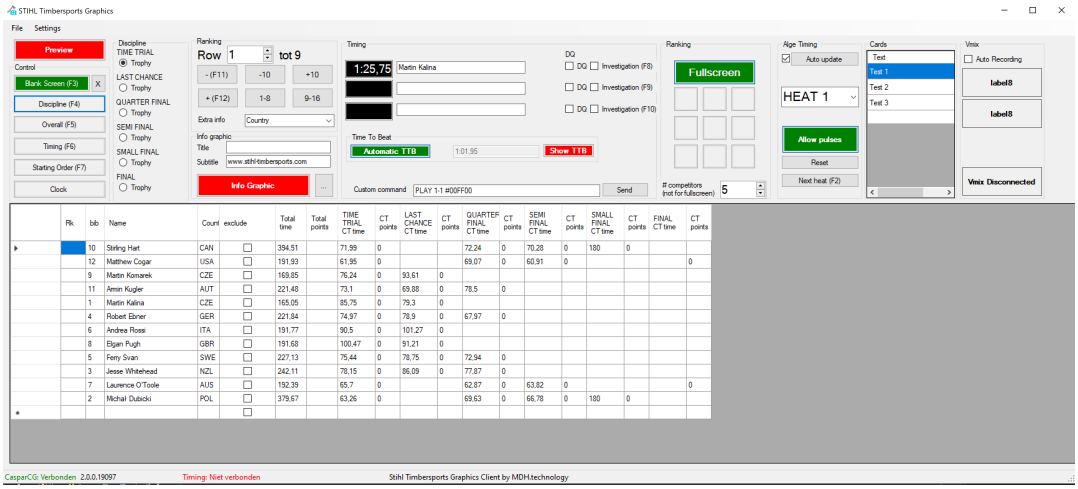
CasparCG Server

CasparCG is a graphics playout server. It retrieves commands from other software and plays the according graphics. These graphics can be played to multiple destinations, for STS competitions the most used output is a decklink card which is capable of transmitting broadcast quality graphics over SDI.



Graphics client

The graphics client send the CasparCG server the commands to display the graphics. It communicates with the timing software and timing device to provide starting orders, timing and results. Because of the communication with the *Timing manager* software, this software has to be run on the same computers. It does not have to run on the same computer as *CasparCG Server*, as they communicate over the network.



1.3 Directory Structure

A standard directory structure is used to store all software components:

```
STS-software
├── casparcg-server                                CasparCG Server
│   ├── casparcg.config                                 The CasparCG configuration␣
↪file
│   └── casparcg.exe                                    The program to run
├── sts-graphics-client                            Graphics client
│   └── STS-graphics-client.exe                         The program to run
├── sts-timing-display-connector                   Display connector
│   └── StihlTimbersportsDisplayConnector.exe           The program to run
├── sts-timing-liveresults-connector               Liveresults connector
│   └── StihlTimbersportsLiveResultsConnector           The program to run
├── sts-timing-manager                             Timing manager
│   └── ST_Manager.exe                                  The program to run
└── images                                         Default images for prints (headers␣
↪/ footers)
```


CHAPTER

TWO

INSTALLATION

2.1 Hardware installation

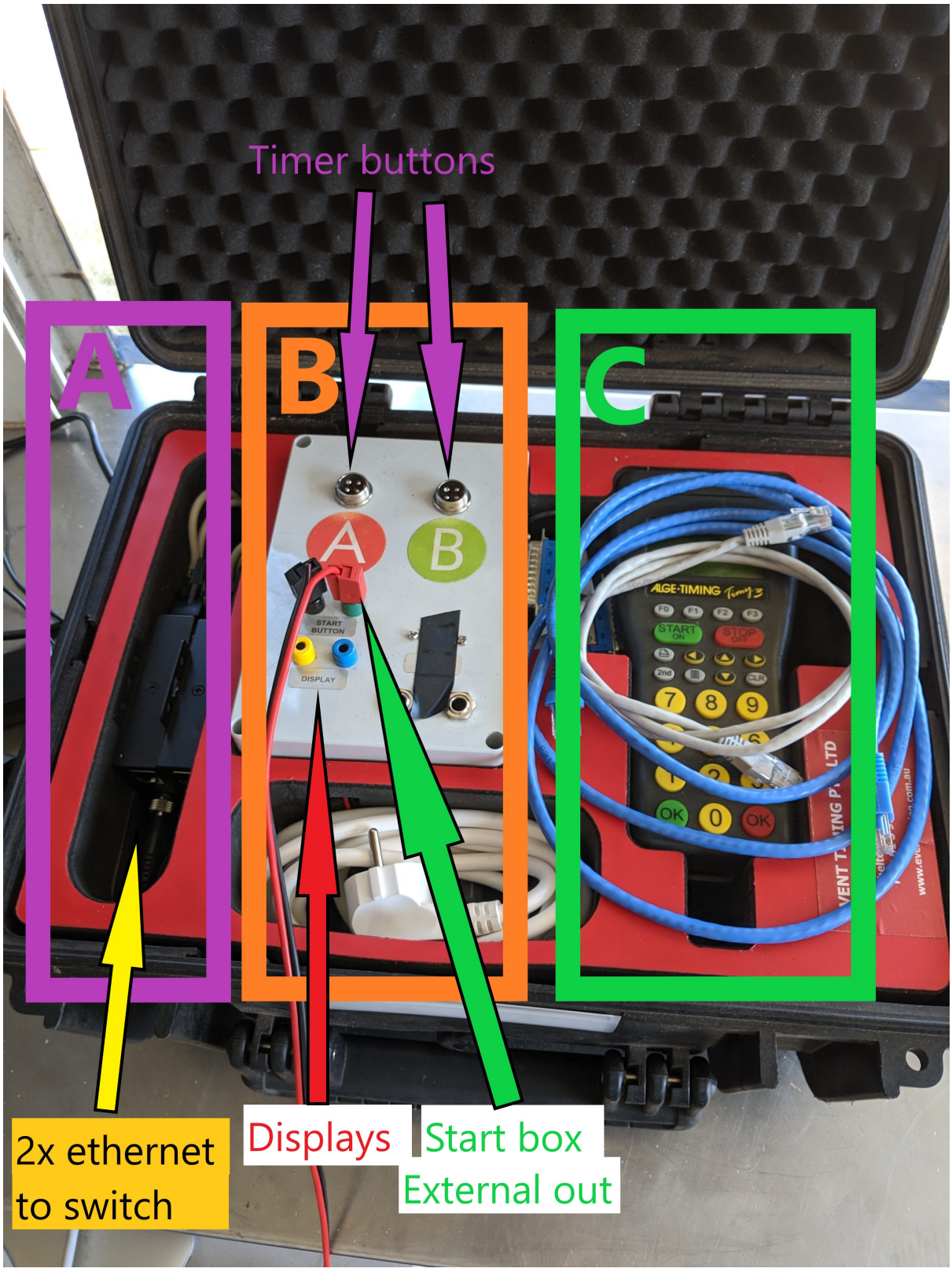
2.1.1 Setting up the computers

The first step is to setup the *Timing computer* and the *Graphics server*. Connect the power supply, keyboard, mouse and displays. Make sure to run Windows Update a week before the competition to get the latest updates.

Connect both the *Timing computer* and the *Graphics server* to the network switch in the graphics flightcase using ethernet cables.

2.1.2 Connecting the timing device

The *Timing device* and the *Displays* are connected to the computers over an ethernet connection. The 2 Moxa Nport network servers are located in the timing box in compartment A, see picture below.



Connect every Moxa Nport using an ethernet cable to the network switch in the graphics flightcase. Of course, the timing box should be connected to mains power using the supplied cable. Make sure the Alge Timy3 device is

powered on.

Displays

Connect the displays using the banana plugs to the *Display* port on the timing box.

Timing buttons

Connect the timing buttons the the GX12-4 connectors labeled A and B.

2.1.3 Connecting the start box

The start box should be connected to the mains power supply first using the provided Neutrik Powercon connector. Then, a USB cable is connected from the *USB TIMING SOFTWARE* port to the computer running the *Timing manager* software.

To prevent the CB radios from interfering with the sound system, the box should be completely wrapped in Aluminium foil. Wrap the foil around a couple of times, making sure the whole surface of the box is covered and the foil overlaps. Place the box close to the timing laptop and as far away from radios as possible. Make sure excess usb cable is contained in the aluminium foil. If the plopping is still present, it might help to connect the USB cable directly to the USB sound card by removing the front panel of the start box.

The *ALGE OUTPUT FLASH LIGHT* ports are connected to the Alge Flash XL devices[1]

Next, the *HEADPHONE OUT* and *START CADENCE* outputs can be connected. These ports output the starting cadence sound generated by the internal sound card. Just one of the connectors has to be connected.

The *EXTERNAL OUT (NO)* port is connected to the *Timing device* and provides an impulse at the right moment in the starting cadence. Use the supplied cable to connect this port to the timing box *Start button* connectors.

2.2 Timing software setup

2.2.1 Connecting to the network

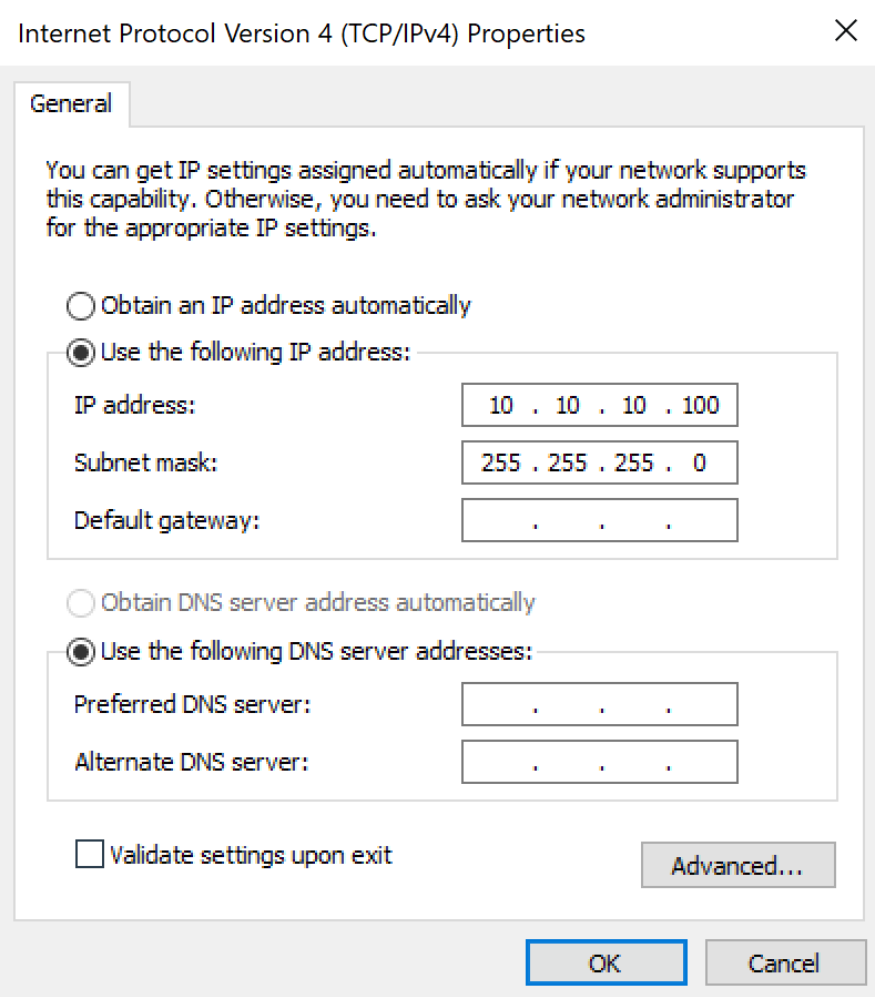
Make sure both the *Timing computer* and the *Graphics server* are connected to the network with the timing devices using ethernet. Both computers should have an IP address in the *10.10.10.XXX* range. They cannot conflict with each other or with the timing devices.

Best practices for IP addresses:

[1] https://alge-timing.com/AlgeTiming_V2/en/accessories/flash.html

Device	Address
Timing computer	10.10.10.100
Timing device 1	10.10.10.101
Timing device 2	10.10.10.102
Displays Moxa Nport	10.10.10.103
Videotiming computer	10.10.10.150
Graphics server	10.10.10.200

Example, the *Timing computer* should look like:



2.2.2 Setting up the timing manager

The software remembers its settings, so only on new *Timing computer* installations these settings should be set.

The settings are also saved in *Documents/Stihl Timbersports/Settings/Settings.xml*. The software window layout (i.e. how the software looks) is stored in *Documents/Stihl Timbersports/Settings/WindowLayout.xml*. It is good practice to backup these files.

To connect to the STIHL Timbersports Datahub, set your credentials in the Settings tab, DataHub section.

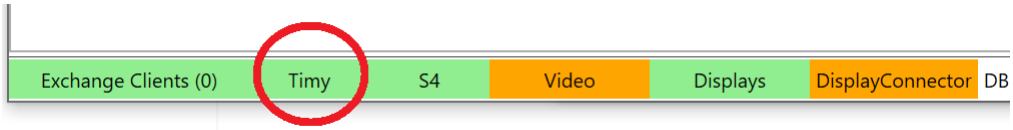
Connecting to the timing device

The settings to connect to the *Timing device* are located in the *Timing manager*. They can be found in the *Settings* tab under *Timing*. The software remembers its settings, so only on new *Timing computer* installations these settings should be set.

To connect to the *Timing device*, follow these steps:

- In the settings tab:
- Expand the *TimingTimySettings* group
- Set the layer to *TcpClient*
- Expand the *TcpClient* group
- Expand the *ServerAddress* group
- Set *Hostname* to the *Timing device* IP address (usually *10.10.10.101*)
- Set *Port* to the *Timing device* IP port (usually *4001*)
- Restart the software.

After setting up the connection to the *Timing device*, the *Timy* field in the status bar should be green like the image below.



Connecting to the start box

The start box contains a external sound card which interfaces with the computer over USB. For the start signal to trigger, Windows should be set up to use this external sound card. This can be done in Windows 10 by opening Settings > System > Sound and setting the output device to **Radial pro** or similar.

The volume should be set to **100%**.

The latest *Starting cadence* audio file can be downloaded from the STIHL Timbersports Datahub. This file should be stored on the computer. Best practice for this is in the folder *Documents/Stihl Timbersports/Start cadence*.

Configure the *Timing manager* to use this file:

- In the settings tab, in the *Timing* section:
- Under *AudioFilePath*, enter the full path to the audio file.

  Note: By clicking *AudioFilePath* a button with three dots appears in the field. Clicking this button opens a file navigator helper.

Standchannel mapping

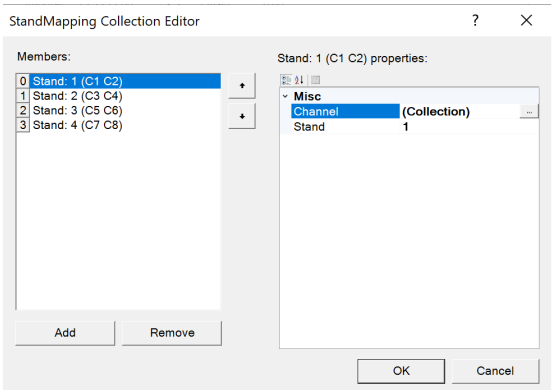
The Standchannel mapping is responsible for mapping impulse ports on the *Timing device* to the right stand. Without this mapping, the software doesn't know which button belongs to which channel.

Setting up the mapping:

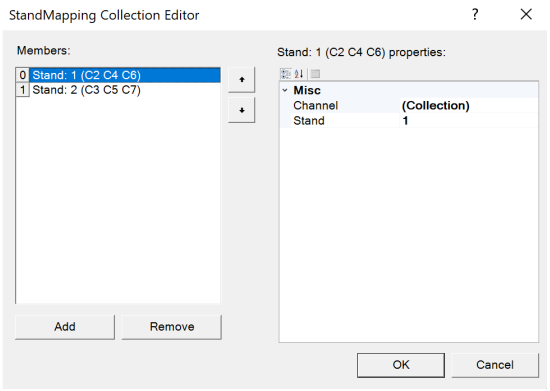
- In the *Timing manager*, go to *Settings* > *StandChannelMappingTimy* and open it.

  Note: There are 2 properties with similar names. Make sure to open the **StandChannelMappingTimy**
- Set the mapping as shown below:

Default (Europe):



Australia:



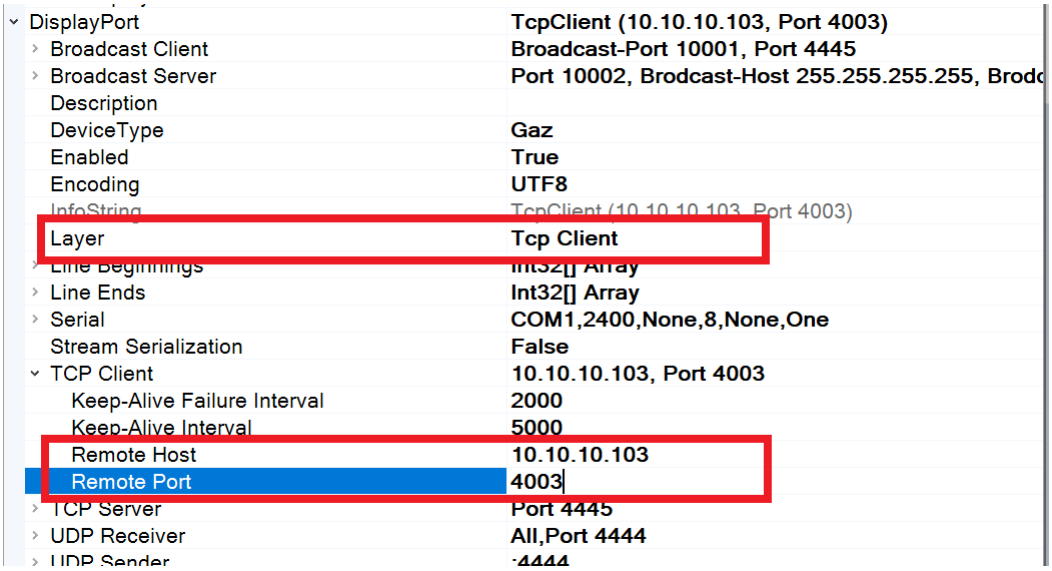
- Set *StartChannelTimy* to *C0*

2.2.3 Connecting to the displays

To connect to the displays, open the Display connector software. The software remembers its settings, so only on new *Timing computer* installations these settings should be set. The settings are also saved in *Documents/StihlTimbersportsDisplayConnector/Settings.xml*, it is good practice to backup these files.

To connect to the displays:

- open *File>Settings*.
- under *Displayport*, set the *layer* property to *TCP Client*
- under *Displayport>*`TCP Client` set the 'Remote host` property to the ip address of the display Moxa Nport. Usually *10.10.10.103*.
- under *Displayport>*`TCP Client` set the 'Remote port` property to the port of the display Moxa Nport. Usually *4003*.



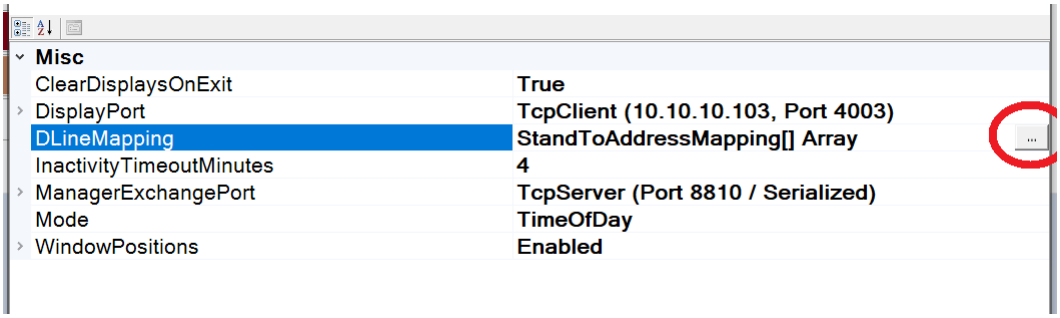
- Restart the Display connector software

After restarting the display connector software, the *Display* status in the bottom toolbar should be green. If it is not, double check the connection to the Moxa Nport over ethernet and the IP address.

Setting up the displays

Each display has its own unique address. We have to map the right stand to the displays. Follow these steps:

- open *File>Settings*.
- Click the *Dlinemapping* property, and then on the button with the 3 dots behind it



- There should be at least as many members in the left list as there are displays. Having more is no problem. If there are not enough members, add them using the button at the bottom.
- For every display, configure the following by selecting a member on the left:
  - DisplayIdentifier: the unique ID programmed into the display.

    For Alge Dline displays (Europe): a letter A, B, C, D, E or F.

    For Vola CA8 displays (Australia): a number 1, 2, 3, 4, 5, 6, 7 or 8.
  - IsTimeToBeat: if True, this display only shows the time to beat. If false, it shows the time of a stand
  - ShowTimeOfDay: if True, this display will show the time of day when this is selected as display mode, otherwise blank
  - Stand: The stand number. This refers to the StandChannel in the timing manager, it is 1, 2, 3 or 4. 1 is most left, 4 is most right. For an A / B stand setup, 1 is stand A, 2 is stand B.
  - Type:

    For Alge Dline displays (Europe): Dline

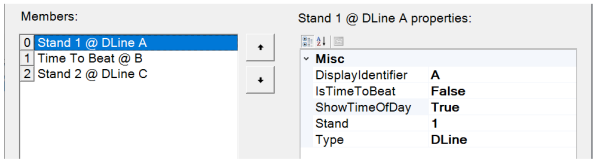
    For Vola CA8 displays (Australia): VolaCA8
- Press ok, close the settings

After closing the settings, the display connector shows the signals send to the displays if they are connected.

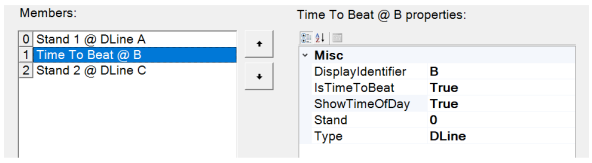
Default settings are:

Europe

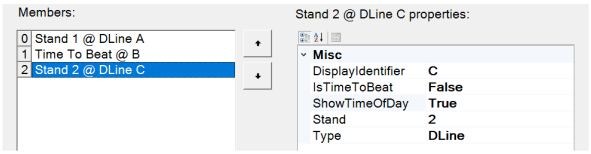
Display 1:



Display 2:

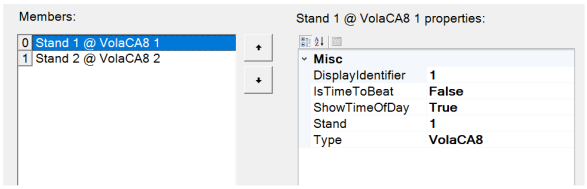


Display 3:

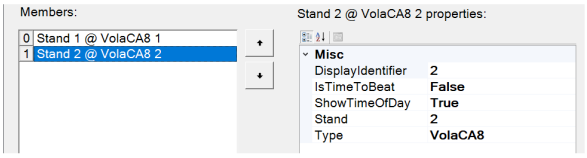


Australia

Display 1:



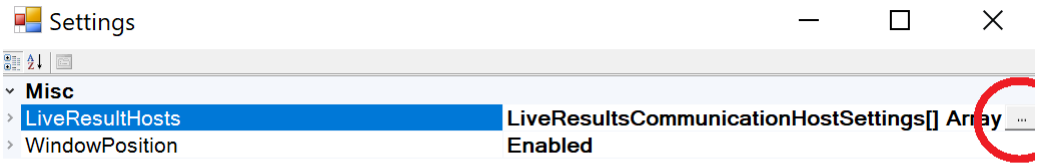
Display 2:



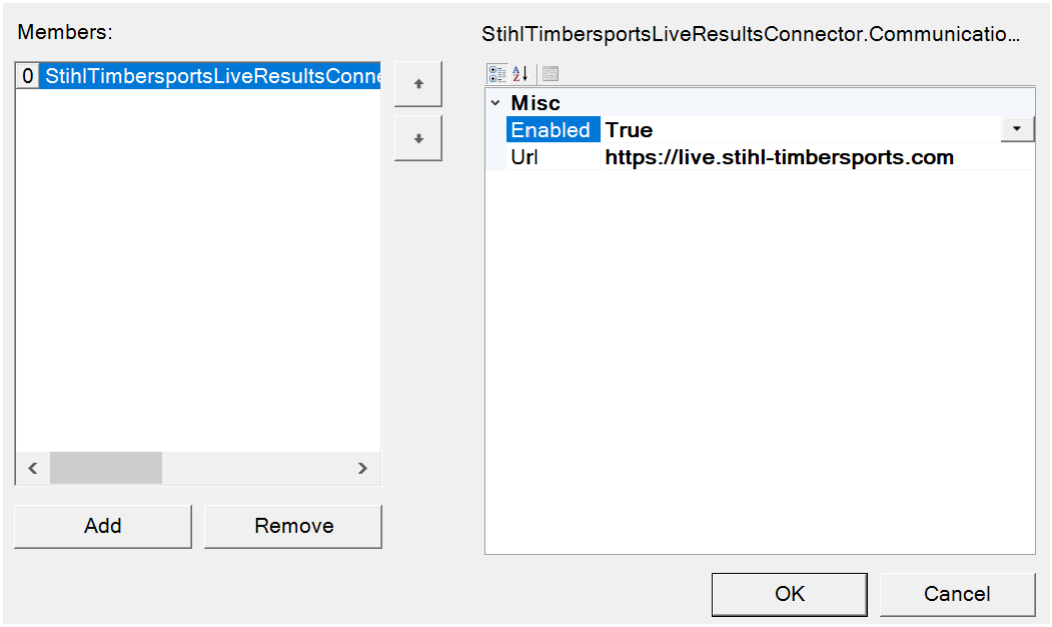
2.2.4 Setting up live results

The liveresults connector has to be configured to connect to the right server. Follow these steps:

- open *File>Settings*.
- Click the *LiveResultsHost* property, and then on the button with the 3 dots behind it



- Make sure there is exactly one member, which has *Enabled = True* and *Url=https://live.stihl-timbersports.com*



- Press ok, close the settings
- Restart the liveresults connector

Note: the liveresults connector only connects when a *Timing manager* instance is running, with an open database which has a non empty *Live event id*.

2.2.5 Printout headers

For printouts (starting orders / results), the header and footer images should be the following:

All National competitions and national championships

Header: Centered Stihl Timbersports logo

Footer: Blank

World Trophy

Header: Centered Stihl Timbersports logo

Footer: Liebherr, Volkswagen (big), Jacques Lemans

World championships

Header: Centered Stihl Timbersports logo

Footer: Volkswagen, Liebherr (big), Jacques Lemans

All time schedules

Header: Centered Stihl Timbersports logo

Footer: Blank

The location of the header and footer files can be set:

- In the *Timing manager* settings tab:
- Go to the printing section
- Set the *LandscapeFooterLogoPath*, *LandscapeHeaderLogoPath*, *PortraitFooterLogoPath*, *PortraitHeaderLogoPath* to the right images.

2.3 Graphics setup

2.3.1 Configuring CasparCG Server

The CasparCG server has many configuration options, which are defined in its configuration file. We do not use many of these parameters and it is discouraged to change anything in this file except for the options mentioned below.

See *Directory Structure* to see where the configuration file is located.

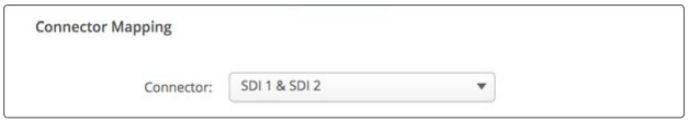
The basic configuration file looks like this:

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <paths>
    <media-path>media/</media-path>
    <log-path>log/</log-path>
    <data-path>data/</data-path>
    <template-path>template/</template-path>
    <thumbnail-path>thumbnail/</thumbnail-path>
    <font-path>font/</font-path>
  </paths>
  <html>
    <enable-gpu>true</enable-gpu>
  </html>
  <lock-clear-phrase>secret</lock-clear-phrase>
  <channels>
    <channel>
      <video-mode>1080i5000</video-mode>
      <channel-layout>stereo</channel-layout>
      <consumers>
        <decklink>
          <device>1</device>
          <latency>low</latency>
          <keyer>external</keyer>
        </decklink>
        <screen>
          <device>1</device>
          <windowed>true</windowed>
        </screen>
        <system-audio></system-audio>
      </consumers>
    </channel>
  </channels>
  <controllers>
    <tcp>
      <port>5250</port>
      <protocol>AMCP</protocol>
    </tcp>
    <tcp>
      <port>3250</port>
      <protocol>LOG</protocol>
    </tcp>
  </controllers>
</configuration>
```

Output format

Most of these settings should not be changed. However, the `consumers` block might be of interest, as this defines the different outputs of the server. In the default configuration, we see 2 consumers: *decklink* and *screen*. The decklink consumer holds the configuration for the Decklink SDI output, which is the output used for the video production. In the basic example, the server is configured to send the video signal to the first decklink device (see the *Blackmagic Desktop Video Setup* software to see which device this is). The keyer is external, meaning a separate fill and key output output are used.

This only works when the output is setup to use 2 connectors, see the image below.



The screen consumer is also setup by default for debugging purposes. However, this should be disables during the

event by removing

```
<screen>
  <device>1</device>
  <windowed>true</windowed>
</screen>
```

from the configuration file and restarting the server, as the screen consumer impacts performance.

Output resolution

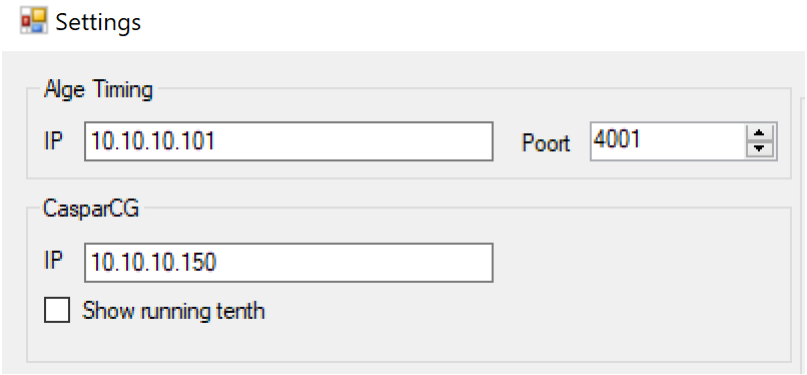
The resolution is also set in the CasparCG config file, see the `video-mode` configuration option. Available configuration options are:

```
PAL
NTSC
576p2500
720p2398
720p2400
720p2500
720p2997
720p3000
720p5000
720p5994
720p6000
1080p2398
1080p2400
1080p2500
1080p2997
1080p3000
1080p5000
1080i5000
1080p5994
1080i5994
1080p6000
1080i6000
```

The video service provider knows which resolution they want to use.

2.3.2 Graphics client setup

The settings in the *Graphics client* are found in the *Menu bar*.

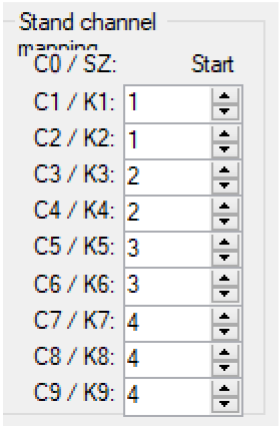


In the *Alge Timing IP* field, enter the IP address of the *Timing device*.

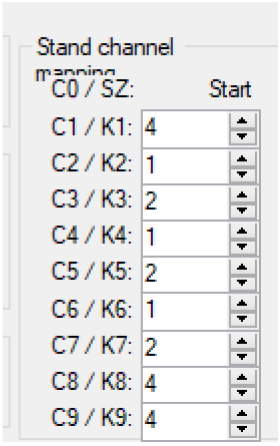
In the *CasparCG IP* field, enter the IP address of the *Graphics server*.

The *Graphics client* also needs to be aware of the Stand channel mapping. Set to the following:

Default (Europe)



Australia:



2.4 Testing the system

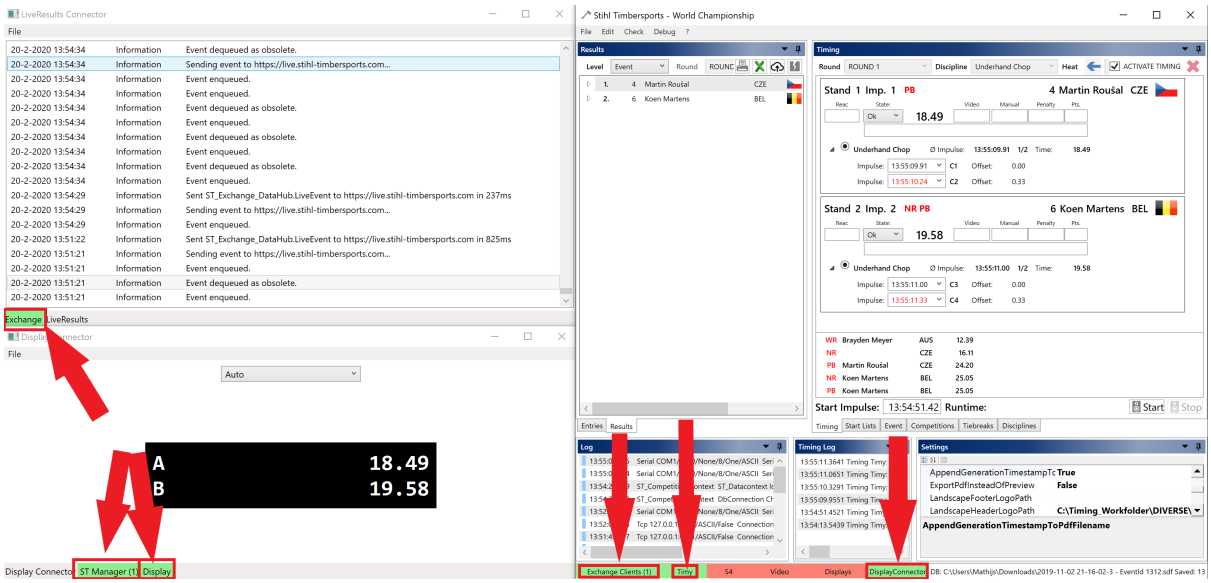
When everything is set up, the connection between various system can be checked. First, start the following programs:

- *Timing manager* (always start this one first)
- *CasparCG Server*
- *Display connector*
- *Liveresults connector*
- *Graphics client*

2.4.1 Testing the timing installation

Checking timing connectivity

Before checking functionality, ensure the connections between the software packages are up. Each program has a status bar at the bottom showing the connection status. Red meaning disconnected, green is connected. Some connections may be disconnected, whereas others are required for the functionality. The image below shows the required connections:



Starting with the *Timing manager*, we have the following required connections:

- Exchange clients: this shows if the internal server is up and running. This internal server is the base of communication with other software. If it is disconnected, this means another instance of the timing manager is already running on this PC. It is not allowed to have more then one instance running in the same network, so also not on the same PC. The number between brackets is the number of clients connected. Should be at least 1.
- Timy: this is the connection to the *Timing device*. Should always be green, otherwise the complete timing system is stops working. If disconnected, first try to reconnect (double click on *Timy* disables the connection, double clicking again reconnects). Otherwise, check connectivity to the *Timing device*.
- DisplayConnector: This shows the connection state to the *Display connector*. If disabled, *Displays* won't be working. If not connected, check if the *Display connector* is running on the local PC.

These connections are optional:

- S4: Connection to an older timing device. NOT NEEDED, should be disabled
- Video: Only required when a STS Videotiming system is used (i.e. not for Coaches Eye).
- Displays: Older display driver. **SHOULD BE DISABLED** as this can interfere with the *Display connector*.

Continuing with the *Liveresults connector*:

- Exchange: this if the connection with the *Timing manager* is operational. This is required to receive timing data. If disconnected: check if the *Timing manager* is running and if *Exchange clients* is green.

To check the connection to the Live results server, check the logs.

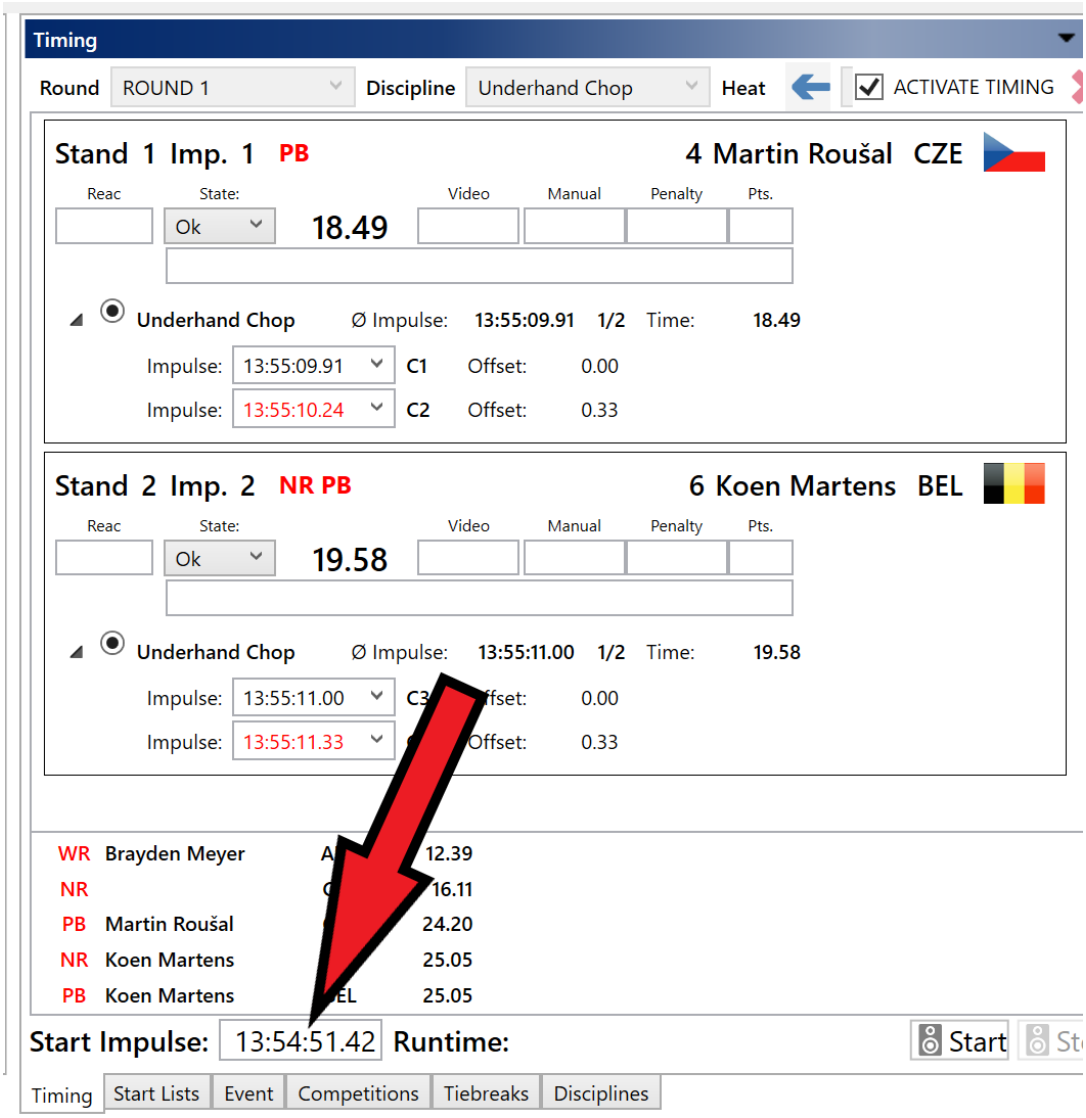
The *Display connector* requires the following:

- ST Manager: Displays the internal server status. Should be green, if red, check if there are multiple instances running. Only one instance of the *Display connector* can be running in the network / on the PC. The number between brackets shows the number of connected *Timing managers*. Should be exactly 1. If 0: the *Timing manager* is not connected, if greater than 1: there are multiple *Timing managers* running which is not allowed.
- Display: indicates the connection status to the Display Moxa Nport. If red, the Displays won't work. First try to reconnect (right click on *Display* -> Connect). Otherwise, check connectivity to the Display Moxa Nport.

Testing timing functionality

Check if the following functionality works:

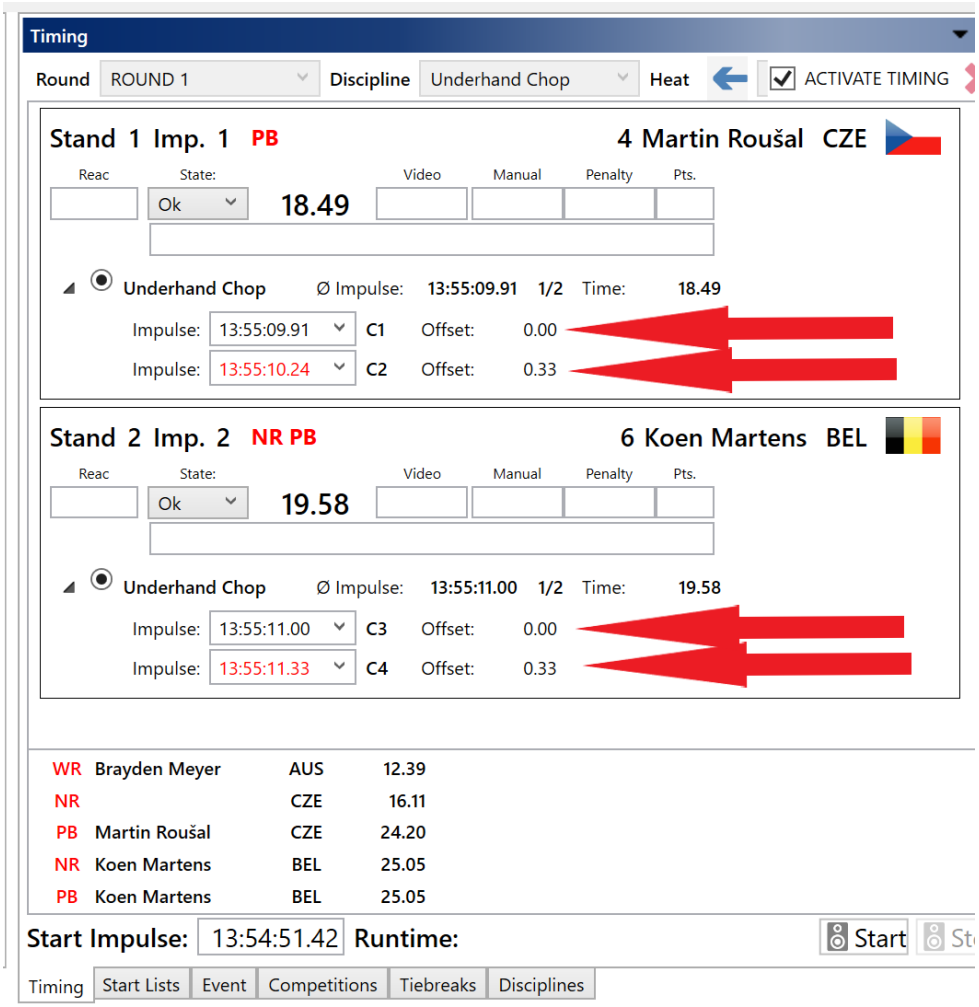
1. Start a heat:
    - The sound should be send over the outputs on the *Start box*. It shouldn't be audible over the laptop speakers. Check the USB connection and if the sound device is set to *Radial pro* if not working.
    - At the *Go*, the *Timing device* should trigger. If enabled in the settings, the *Timing device* will beep at this trigger. On the *Timing device* display, some indication will be visible.
    - In the *Timing manager* software, the *Start impulse* textbox should fill:



If the *Start impulse* field is automatically filled, this means the connections to the *Start box* and *Timing device* are working.

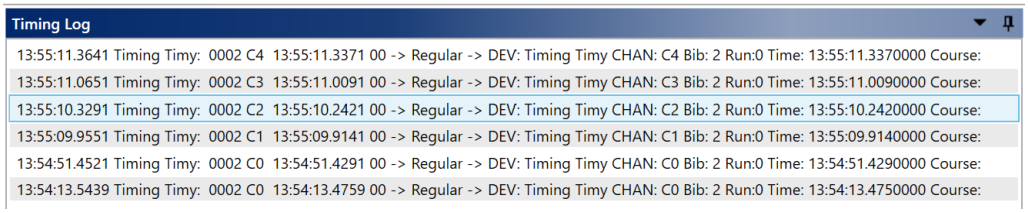
2. Stop a heat:

   - Use the *Timing buttons* to stop the heat. First for stand 1, then stand 2. **Check if each button stops the right stand!**
   - When pressing the buttons, the impulses fill the boxes as shown below:



Debugging impulses

It might happen that the *Timing device* triggers on the impulses, and sends them to the software correctly, but the system isn't working as expected. In that case, the *Timing log* gives extra insight.



In this log, all impulses are recorded. In the example above, we see 6 impulses. The bottom 2 are impulses on channel C0, which is reserved for the start. After this channel identifier, we see the time which is recorded by the timing device.

If timing impulses are recorded, but are not being mapped to the right stand, check the *Stand-channel mapping*.

3. Check displays

   Check if the displays start at the go and stop at the end of the heat. Check if the right display on stage displays the right stand.

   Debugging displays

   If the displays don't work, first check if the *Display connector* receives the right times. The software displays the data being send to the displays in the center of its screen. If the *Display*

connector doesn't receive and display the times, close the *Display connector* and *Timing manager* and restart them.

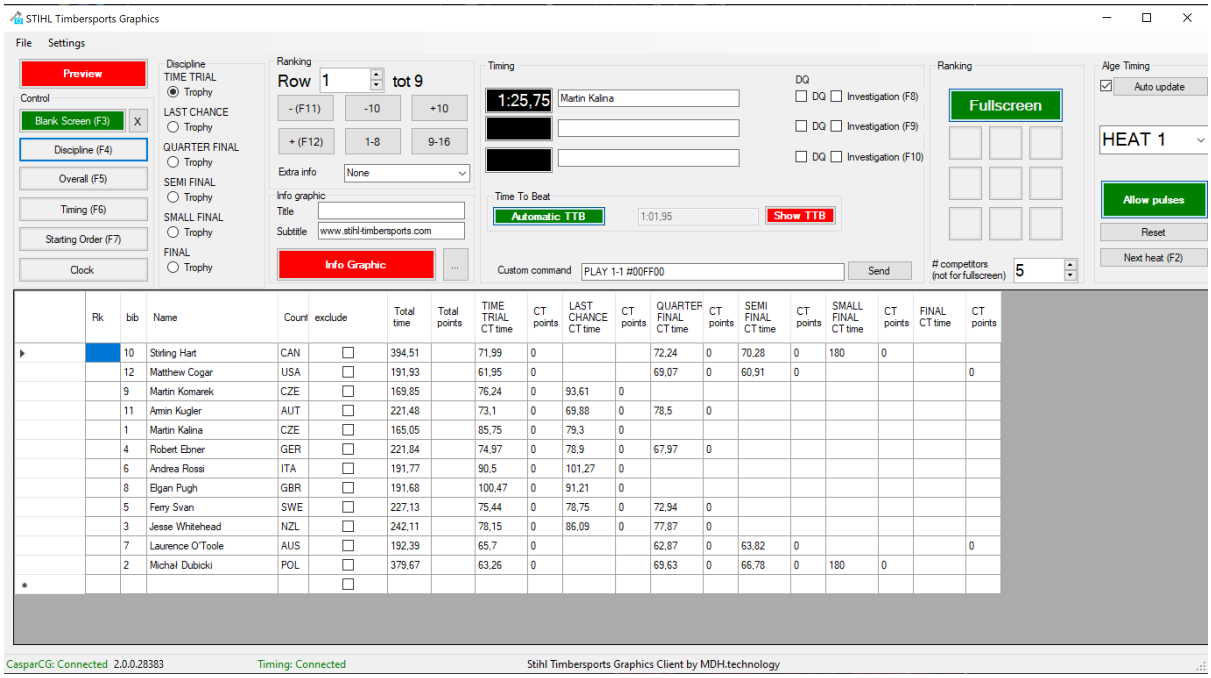
If it does display the right times, but the stands are swapped, use the *Display connector* settings to map the correct display to the right stand. (See *Setting up the displays*)

If the displays do not show anything at all and the *Display* connection in *Display connector* is green, check the connection from the Timing box to the displays. It might help to check cables, and try to switch the banana plugs on the Timing box.

2.4.2 Testing the graphics installation

Checking graphics connectivity

When the *Graphics client* is started, it shows the connection status in the status bar:



The system should connect to the *CasparCG Server* and the *Timing device*.

Testing graphics functionality

To test the *Graphics client*, first open the **same .sdf database file as the** *Timing manager* is using.

- Check the starting orders, results, infographics etc.
- Prepare a timing graphics, select the same heat as in the *Timing manager*
- Start the heat, check if the graphic times are running
- Stop the heat, check if the times / stands match between graphics and manager
- Enter a videotime in *Timing manager* for both stands, press enter
- Check if the graphics update to the video time

CHAPTER

THREE

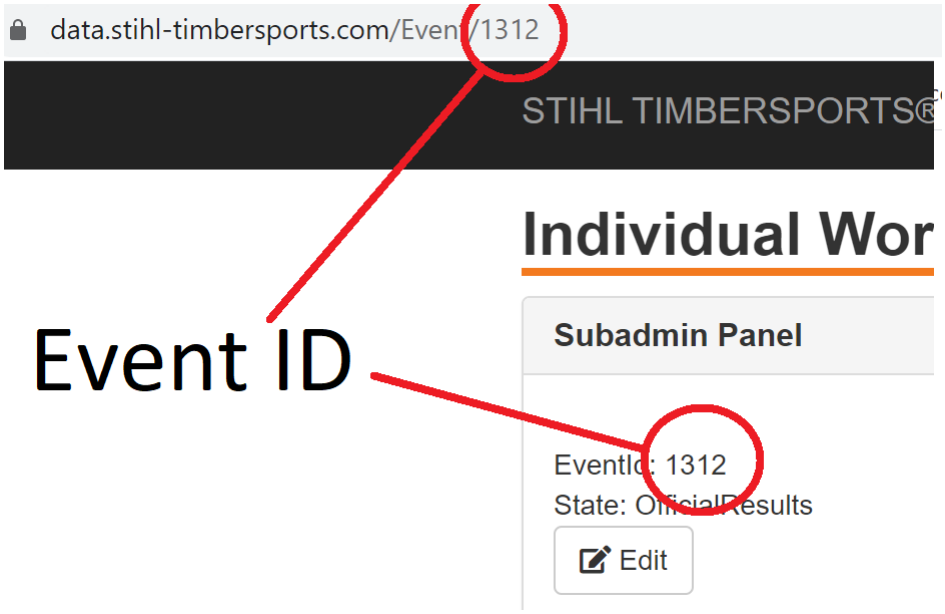
PREPARING THE COMPETITION

3.1 Datahub

On the STIHL Timbersports datahub, create a separate event for every competition. E.g. qualification, rookie cup, women cup, national championship.

Then, add the competitors for every event using the web interface.

Note the Datahub event id, which can be found when logged in on the event page.



3.2 Database

For each competition, a seperate *.sdf* timing database file has to be created. This file holds information about the competitors, competition format and results.

Do not use `File`>`Import database`, or try to reuse an existing database file! This often introduces bugs between software versions in the *Timing manager* which are almost impossible to resolve without in-depth knowledge of the workings of the software.

3.2.1 Create a database file

In the *Timing manager* choose *File*>`New`.

Save the file using the naming scheme as defined in *File naming*.

3.2.2 Setup the event

Open the *Event* tab:

- Enter the name of the competition. This name is used for printouts.
- Set the location, also used for printouts
- Set the level to *National* (default) or *International* (when people from multiple countries participate)
- Set the nation as IOC country code[2] , used for printouts
- Set the competition date
- Set Type as *standard*
- Set format:
  - Champions_Trophy: for trophy formats
  - Team_Relay: for team relay formats
  - Single_Points_Based: for individual competitions:

    In the field that show up after Single_Points_Based, enter:

    * RankPointsReversed: The athlete winning a discipline gets n points, where n is the number of athletes in the discipline. Used for Rookie and Women competitions
    * PointsTable: To use a custom mapping per round for the number of points for each place. Used for a World Championship format.
- #Timer per stand: Set to the number of timers per stand
- DQ Penalty: **Keep default** When an athlete gets a DQ for a discipline, increase his time with this penalty value
- Impulse interval: **Keep default** Show a warning when the timekeepers times deviate more than this value
- Max deviation videotime: **Keep default** Show a warning when the average timekeepers time deviate more than this value from the videotime
- Datahub Event Id: The *Event Id* for this competition on the Datahub, used for downloading competitors and uploading results
- Live Event Id: The ID for this event on the liveresults system. This value is appended to the URL, e.g. http://live.stihl-timbersports.com/VALUE. Set to same id as *Datahub Event Id*

[2] https://en.wikipedia.org/wiki/List_of_IOC_country_codes

3.2.3 Setup disciplines

3.2.4 Setup rounds

3.2.5 Add competitors

3.2.6 Create starting orders

3.2.7 Setup advancements

For the World Championship format and trophies, advancements can be used to setup starting orders for later rounds. Based on the athletes performance in heats, rounds or overall, a starting order can be created.

3.3 Testing

3.3.1 Pre competition checklist

Run the following checklist at the given times:

2 hours before

1. Make sure all required programs are running:
    - Timing manager
    - Display connector
    - Liveresults connector
    - CasparCG Server
    - Graphics client
2. Play a starting order graphics, check the content, check with video technician if both fill and key signal are oke, take out the graphic.
3. Play the timing graphic for the heat to test
4. Make sure the displays are set to “Auto” or “Time” mode
5. Start a heat (the same as in graphics), choose a heat with 2 competitors.
6. Check if the displays are running, check if the graphics times are running
7. Push the timer buttons for stand A, then the timer buttons for stand B. For trophies: push the button 4 times, with minimum 5 seconds interval.
    - Check if the right display stops (left / right side)
    - Check if the right stand is stopped in the timing manager
    - Check if the right time is stopped in graphics, check if the time is equal to the time in the timing manager.
9. Take out the graphics
10. Play the result graphic, check the times
11. Clear the heat results

1 hour before

1. Timekeeper briefing, all timekeepers should be informed of the following:
    1. Explain the purpose of timekeeping. Timekeepers provide an initial estimate of the athletes performance. The video judge will use these initial values to determine the final time using high speed cameras.
    2. There are 1/2/3 athletes on stage. Athletes compete at a given stand. Timekeepers are looking at a single stand. Going from left to right the stands are labeled A, B, C.
    3. All disciplines are started using a starting cadence. The system automatically starts the clocks at the Go. Timekeepers should **NOT** press the button at the start.
    4. Explain disciplines in the competition, and when to stop:
        - Underhand Chop: Press when the block is completely severed. If the athlete chops again, press again.
        - Stock Saw: 2 cookies. Only press after the second cookie, when it starts to fall down, not when it hits the ground. If a third cookie is cut, press again.
        - Standing Block Chop: Press when the block is completely severed and start to fall down, not when it hits the ground. If the athlete chops again, press again.
        - Single Buck: 1 cookie. Press when the cookie starts to fall down. If the athlete saws again, press again when finished.
        - Springboard: Athlete chops 2 pockets for the springboards and continues to chop a block on top. Press when the block is completely severed and start to fall down, not when it hits the ground. If the athlete chops again, press again.
        - Hot saw: 3 cookies. Press when the third cookie is cutand starts to fall down, not when it hits the ground. If a fourth cookie is cut, press again.
        - Trophy / Team: 4 disciplines in a row. Press the button exactly once after each discipline, except for the last discipline:
            - Stock saw: 1 cookie, press when it starts to fall down.
            - Underhand Chop: Press when severed
            - Single Buck: 1 cookie, press when it starts to fall down.
            - Standing Block Chop: Press when the block is completely severed and start to fall down, not when it hits the ground. If the athlete chops again, press again.

            A timekeeper must press after every discipline, as the system only stops after 4 presses!
    5. Be at your position in time. Do not wander off just before or during the competition. Always pay attention to your own stand, even if you think he still needs lots of time.
    6. Make sure the timekeepers have enough to drink and protection from the weather.
    7. Tell the timekeepers where to go in case of an emergency. Timekeepers should not take pictures, post on social media or talk to the audience.

30 minutes before

1. Check if the starting cadence outputs sound and the displays / graphics start
2. Check if the timer button impulses come in
3. Check the starting cadence sound with the judge on stage, adjust if necessary.

After the 30 minutes checklist, changes to the sound and timing system are prohibited. Communicate this clearly to external people (sound technicians etc)!

CHAPTER

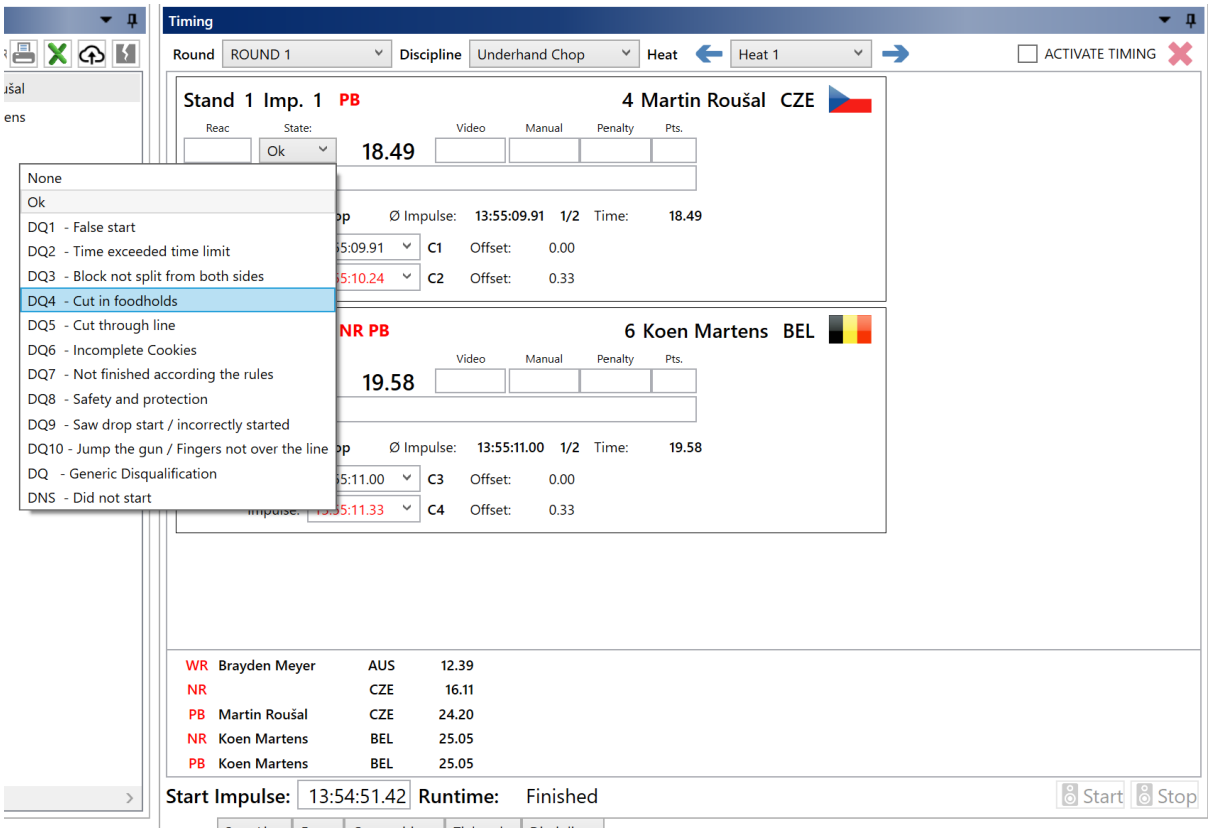
FOUR

COMPETITION

4.1 Timing

4.1.1 Timekeeping

For timekeeping, open the *Timing* tab. Then, select the right round, discipline and heat in the top bar.



Starting a heat

1. Make sure the *Start impulse* field is empty, otherwise the system will not start. If it is not empty, triple check if you want to start this heat. If so, clear the old results by using the red X in the top right corner.
2. Arm the timing system by ticking the *ACTIVATE TIMING* checkbox
3. Press start (bottom right) to start the tape.
4. At go, check if the displays start and *Start impulse* is filled

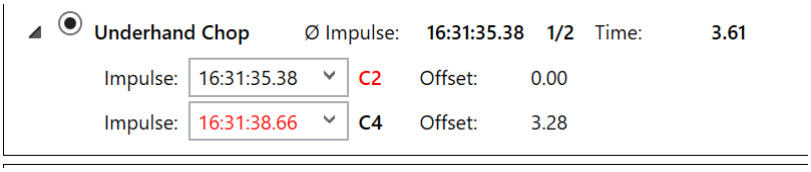
Correcting a time

Scenario 1: one timekeeper pressed by accident in the middle of the heat:

- Click the incorrect *Impulse* field
- Clear the field
- Press enter

Scenario 2: The timekeepers pressed the button after the second cookie, but the athlete cut a third cookie. The timers pressed again.

- The system does not automatically take the last time of a timekeeper
- When a timekeeper presses a second time, the system shows his channel number in red:



In this case, timer C2 pressed 2 times. Timer C4 pressed after C2 with a large difference.

- Go to the timer who pressed multiple times, expand the combobox and select the correct time.

DQ

When an athlete get a DQ, use the *State* combobox to choose the right DQ reason. If the DQ is reversed, set the *State* to OK

Videotime

In the video field, the videotime can be entered. Always press enter after entering the time to save it.

4.1.2 Advancing athletes to next rounds

Make sure the advancements are set up, as explained in *Setup advancements*. Do this before the competition!

1. Go to the *Start lists* tab
2. Select the round to fill in the bar at the top
3. Click *Advance discipline* to only advance the current selected discipline, select *Advance round* to advance for the complete round.

4.1.3 Controlling the displays

The displays can operate in several modes. These are:

- Auto
- Clear
- TimeOfDay
- Time

A mode can be selected in the display connector. Default is *Auto*.

Clear

Clear the displays

TimeOfDay

Shows the current time of day. Time is taken from the computer clock

Time

Display only timing times

Auto

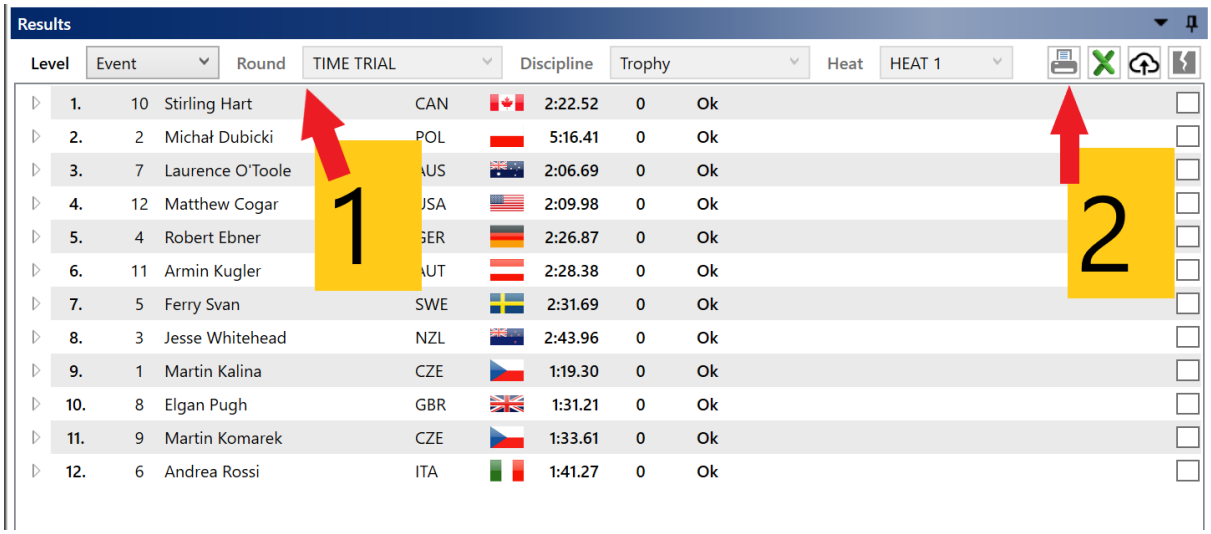
Automatically switch between *Time* and *TimeOfDay*. When the timing is activated, the displays are cleared. They automatically start when the heat starts. After some time they automatically fall back to *TimeOfDay*. The amount of inactive time can be configured in settings under *InactivityTimeoutMinutes*.

4.1.4 Printing results

Printing results can be done in the *Results* tab:

1. First, select which results to print:
    - Level: *Discipline* for a single discipline, *Event* for Overall results
    - Round / Discipline: select the discipline to print

    For a Trophy format: select *discipline / Time trial / Trophy* for the time trail results. Select *Event* for the bracket.
2. Click the printer icon
3. Print the report, do not forget to manually print landscape if required



4.2 Graphics

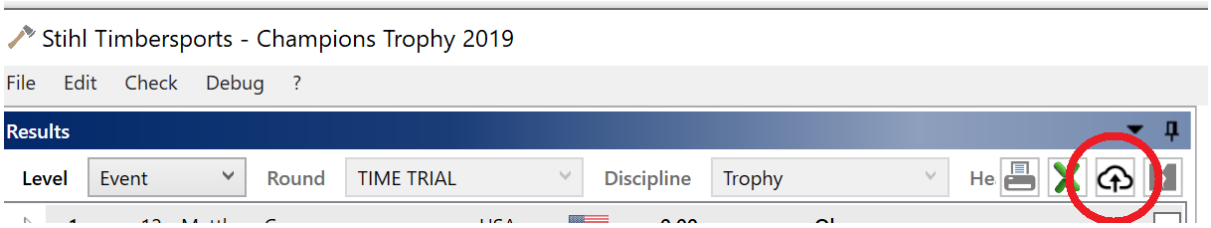
CHAPTER

FIVE

AFTER THE COMPETITION

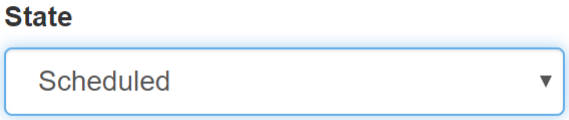
5.1 Datahub

After the competition, the files can be uploaded to the Datahub by pressing the Cloud icon in results.



Pressing this button uploads all results, it does not have to be done per discipline.

Note: When the system returns an error, check if the state of the event on the datahub is set to *Scheduled* or *InProgress*. The system cannot upload results to events with a state of *OfficialResults* or *UnofficialResults*. Also, check if the *Datahub Event Id* matches the *Event id* on the Datahub.



Also upload the timing database *.sdf* file to the datahub, together with the overall results *.pdf*.

5.2 PDF Files

Results for the individual disciplines and the overall results are saved to *.pdf* files. To save a file to pdf, open the print preview for the desired page. Then, in the toolbar, click the .pdf icon. The naming for these files corresponds to the naming as defined in *File naming*.

5.3 File naming

%COUNTRY%_%PLACE%_%YEAR%_%LEVEL%_%COMPETITION%_%DESCRIPTION%.pdf

These filenames contain no spaces.

%COUNTRY% is the host nation IOC country code[3] .

%PLACE% is the host city full name, spaced are substituted by underscores (_).

%YEAR% is the year the competition finishes.

[3] https://en.wikipedia.org/wiki/List_of_IOC_country_codes

%LEVEL% is a value from the following table:

Level	Code
Rookies	R
Intermediate	I
Women	W
Pro	P
Team (Pro)	PT

%COMPETITION% is a value from the following table:

Competition type	Code
Cup	C
Qualification	Q
National Championship	NC
World Championship	WC
Trophy	T
European Trophy	ET
World Trophy	WT
World Trophy Qualifier	WTQ

%Description% is one of the following:

- Database (for the .sdf timing database file)
- Results (for individual overall results, trophy bracket or team bracket)
- Springboard
- Stocksaw
- Standingblock
- Singlebuck
- Underhand
- Hotsaw
- Bestaxeman
- Bestsawman

CHAPTER

SIX

PDF MANUAL

The pdf version of this manual can be downloaded here[4]

[4] http://sts-manual.mdh.technology/stihltimbersportsmanual.pdf