



# FingerWorks 6

**Telestration Software**

Version 6.7

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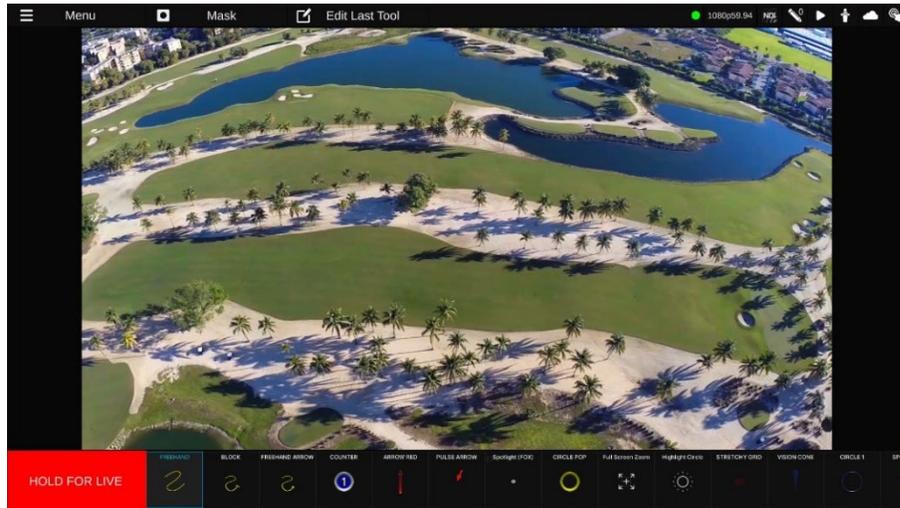
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## 2 Getting Started



FingerWorks 6.6 features drag and drop features, field tracking, player tracking, auto masking. Contact us for a demo version of our software. Once downloaded, double click the installer, and follow the prompts.

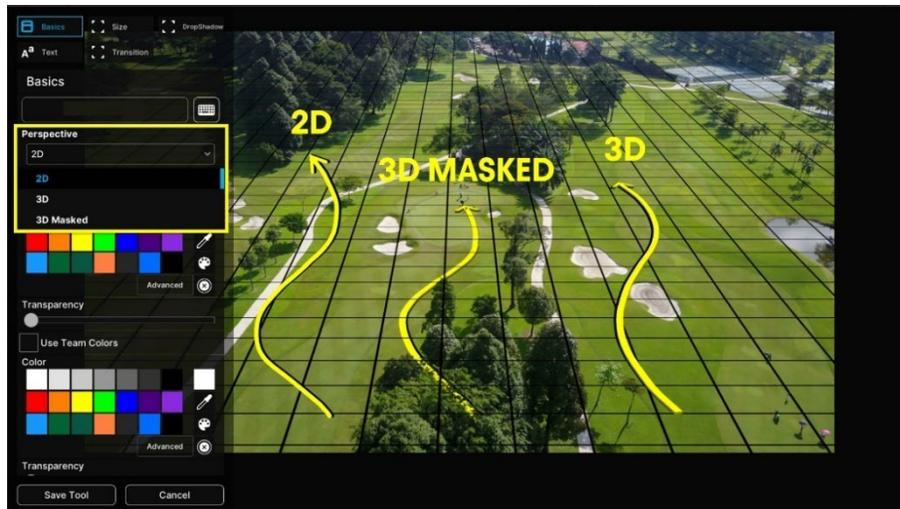
Connect your video source and launch with the desktop shortcut. You will be prompted to start a watermarked trial version or to enter your purchased serial code. Enter your serial code or hit start trial.

Press Menu and Video IO. From this menu you will be able to select a support video IO platform such as Bluefish444, Blackmagic or NDI. Depending on the version you purchased. This will enable your video input source. Once the correct setting is selected, quit FingerWorks and relaunch and then you will see your video input. See [Video I/O](#) on how to connect different inputs.

If you are using media clips, then go to Menu and Media then press the Open Media Folder button and place your video clips into this folder that opens on your desktop. Once your media is imported, it will be ready to play using the play bar that you can enable with the play button on the top right. See [Media](#) on how to import media clips and play them.

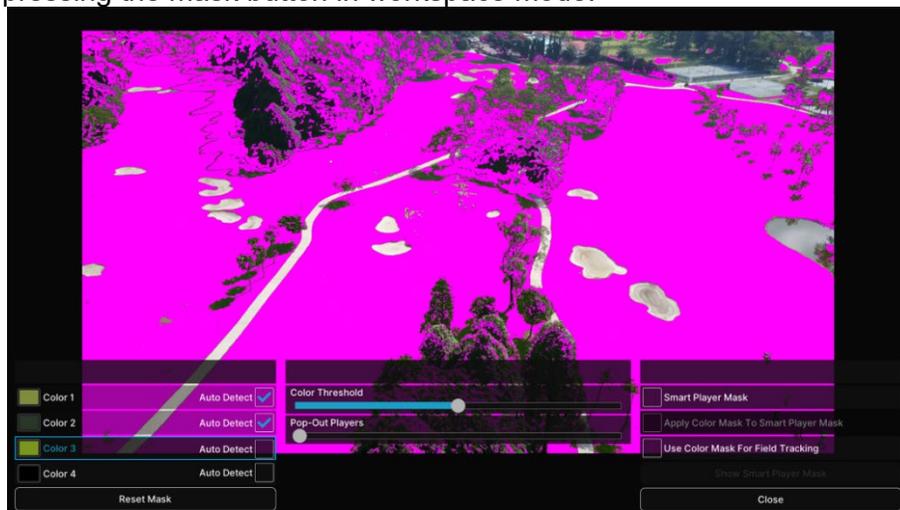
Customize your toolset by loading a previously created toolset from the toolsets menu or create a new one. These files are compatible with toolsets created in FingerWorks 5 or later. See [Toolsets](#) on how to load and create toolsets.

Click any of the tools on your toolbar and draw them on the screen. The tools can be placed on screen in 2D mode. Use the grid and place over players in 3D mode. Or use the mask and grid to draw them under players in 3D masked. This manual offers definitions for all the options available in FingerWorks.



See [Editing Tools](#) for more information

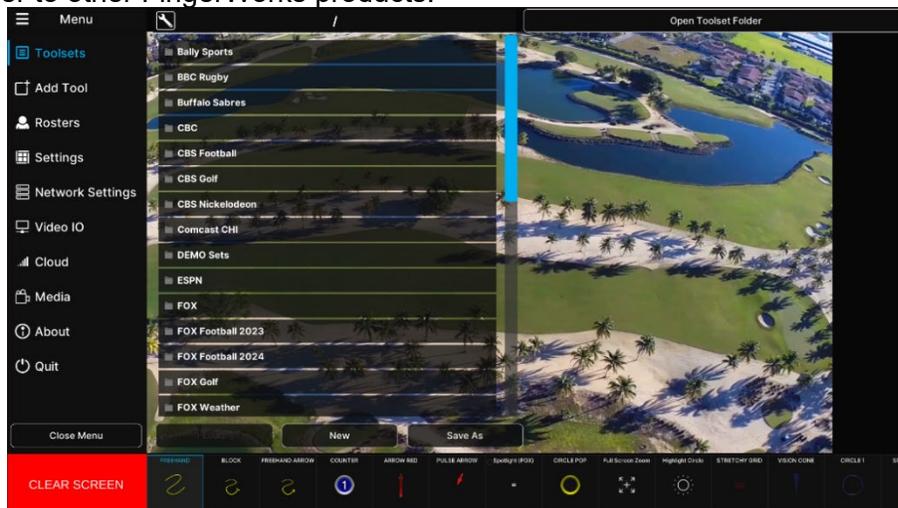
After you have added tools to your toolbar they can be edited. To edit a tool, double click the tool on your toolbar or draw it on the screen and press edit last tool. This will bring up the configuration panel that you can change color, size, perspective and more. If you set the tool into 3D Masked then it will use the mask to cut out the tool. The mask can be edited by pressing the mask button in workspace mode.



See [Mask](#) for more information

## 3 Toolsets

Toolsets are tools and rosters that are saved as a custom toolbar under a unique name. You can add, remove, and edit tools that are added to your toolbar. Toolsets can be copied over to other FingerWorks products.



### 3.1 Toolset Name

Toolsets are saved under a unique name and are seen at the top of the Toolset menu.

### 3.2 Toolset List

The list of default toolsets is in the FingerWorks6\_Data\StreamingAssets\Settings\Toolsets folder. Any new toolset that is created or saved is in AppData\LocalLow\FingerWorks\FingerWorks6\User\default\Toolsets or click the Open Toolset Folder to show the folder on your desktop. Hold and drag to scroll up and down.

#### 3.21 Navigating Toolset List

- Defines a folder and you can click through to open the folder.
- Defines a toolset that you can select then Load.
-  Click to go back a folder.

#### 3.22 Load

Loads an existing toolset from the Toolset List.

- Select a toolset from the Toolset List.
- Once highlighted the Load button will become available.
- Click the Load button to select the toolset.

#### 3.23 New

Creates a new toolset that has no tools on the toolbar.

- Click on New to create a new toolset and it will open the new menu.
- Select which folder you would like to save the new toolset in.
- Enter the file name and click save.
- It will then show that the toolset has been saved and the toolset name will be updated.

#### 3.24 Save As

Saves the current toolset under a new name.

- Click on Save As to save your toolset under a new name.
- Select which folder you would like to save your toolset in.
- Enter the file name and click save.
- It will then show that the toolset has been saved under a new name.

### 3.25 Open Toolset folder

- Opens the desktop folder of the toolsets that are saved or modified.

## 4 Add Tool

A list of all the tools that are available in FingerWorks that you can add to your toolbar. Hold and drag on the categories to move the list up and down. Hold and drag on a tool to add it to your toolbar. Or select a tool and click Add To Toolbar.



### 4.1 Always Edit Tool

Toggles whether to always edit the tool after adding a tool to the toolbar.

- On – When pressing Add to Toolbar, it navigates you to the edit tool menu.
- Off – When pressing Add to Toolbar, it does not navigate to the edit tool menu.

### 4.2 Always Return To Menu

Toggles whether you return to the menu after adding a tool to the toolbar.

- On – Returns you to the menu after adding or editing a tool.
- Off – Does not return you to the menu after adding or editing a tool.

### 4.3 Clone Tool

Clones an existing tool on your toolbar and creates an exact copy.

- Select a tool on your toolbar that you want to clone.
- Click the Clone button and your new tool will be cloned.

### 4.4 Add To Toolbar

Select a tool from the tool list and click Add To Toolbar to add it to your toolbar and toolset.

### 4.5 Categories

Categories of the tools are located on the right side.

- Select a category to jump to that section of the add tools menu.

## 4.6 Removing Tools

To remove a tool, press and hold on the tool you want to remove. Then drag it to the center of the window where it shows a trash can and delete tool.

## 4.7 Moving Tools

To move a tool, press and hold on the tool then drag it to the position or toolbar. A wrench icon will appear for the location that you are moving it to.

# 5 Rosters

Add rosters to your left and right toolbars by selecting which sport, teams and players. Rosters of multiple sports can be updated with the data management buttons when you are connected to the internet.



## 5.1 Network Sport List

Select which network tool to use from the scrollable list. Once selected the home and away teams will fill up and download buttons will become available if the roster allows it.

## 5.2 Away Home List

Select which teams for home and away from the scrollable list.

## 5.3 Download Rosters

Download the selected sports roster from the internet. This is updated every day with the latest rosters.

## 5.4 Revert Rosters

Reverts to the previous roster that you had before downloading new rosters.

## 5.5 Download Headshots

If headshots are available by the selected network tool you can download them. If a client is connected it will be transferred to that system. If it is greyed out then that roster does not use headshots or those headshots are not available.

- Headshots are located in C:\Program Files\FingerWorks 6\Common\Override\Config\AutoRosters\\*sport\*\Headshots

## 5.6 Download Logos

If logos are available by the selected network tool you can download them. If a client is connected it will be transferred to that system. If it is greyed out then that roster does not have updated logos or they are not available.

- Logos are located in C:\Program Files\FingerWorks 6.7  
715.24148\Common\Override\Config\AutoRosters\\*sport\*\Logos

## 5.7 Team Colors

Team colors that are seen in the rosters menu beside the team are stored in a csv file as hexcode have to be manually edited.

To change the color of the primary or secondary color, quit FingerWorks and go to C:\Program Files\FingerWorks 6\Common\Override\Config\AutoRosters\RostersAndColorDataCSVs. Find the ColorSwatches\*sport\*.csv file then open it to edit. Replace the hexcode color with the hexcode that you want (ex. #FFFFFF). Save the file then start FingerWorks.

If a client is connected the ColorSwatch should automatically be sent to the client. If it is not, go to Menu > Network Settings > Send Override to update the client.

## 5.8 Add Players to Roster

To edit a team roster by adding a player or a new team.

- Quit FingerWorks
- Browse to C:\Program Files\FingerWorks 6\Common\Override\Config\AutoRosters\RostersAndColorDataCSVs
- Find the sport that you are using in your roster. For instance Auto Roster (CBS NFL) uses NFL.csv. Open the file and add your player using the same naming conventions. Save and run FingerWorks.
- Add your player in the Menu > Rosters > Add Players menu. If you have a client connected, then Menu > Network Settings > Send Override for the client to get your changes.

## 5.9 Add Roster Players or Team Colors

To update team colors or rosters while FingerWorks is running.

- Quit FingerWorks
- Goto C:\Users\FingerWorks\AppData\LocalLow\FingerWorks\FingerWorks 6\User\default\.
- Edit GlobalOptions.json
  - "fileWatchCSV": true,
  - "cricketPositionWatch": true,
- Save and close
- Run FingerWorks
- C:\Program Files\FingerWorks 6\Common\Override\Config\AutoRosters\RostersAndColorDataCSVs
- Edit your sport or color csv file using notepad. Do not use Excel as it won't save the changes. Save and the rosters or colors will update.

- If the client was not connected when you were editing the files then you have to go to Menu > Network Settings > Send Override for the client to receive the changes.

### 5.10 Calibrate Team Colors (Available with tracking plugin)

Automatically selects players based on the colors of the teams selected. This can be refined by selecting players on each team using the Calibrate Home/Away Players button.

- See [Auto Team Color](#) on how to enable this option for player tracking tools.



#### 5.101 Calibrate Team Colors Menu

- Teams that are shown are the teams that were chosen in the rosters menu.
- To refine the player selection, press Calibrate Home/Away players then click the player on the player to have them as home or away.
- Calibrate Non-Players is used for referees or crowds that are to be excluded from the teams.
- Reset button auto selects players based on the tracking plugin.
- Close once you have finished to go back to the menu.

#### 5.102 Reset Roster Tools

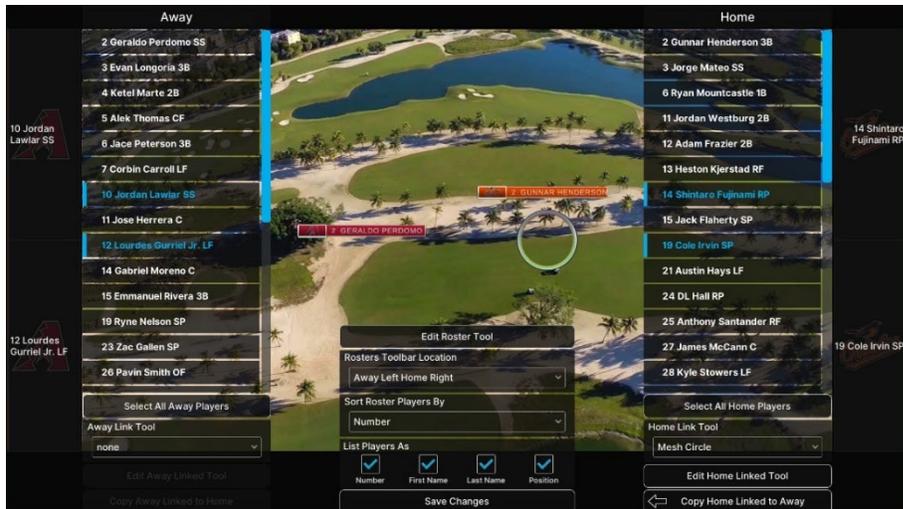
- Resets the roster tool to the default settings. Removes any changes that were made to the linked tool or editing roster.

#### 5.103 Roster Toolbar Filter

- Enables a button at the top of the user interface when you close the menu. This button filters the players you have added by All, DefenseOffense and OffenseDefense. Mainly used for football to switch between defensive and offensive lines.

### 5.11 Add Players Roster Menu

Add Players button navigates you to the add players menu. Once here you can select which players for home and away, link tools and edit the roster. Click on any player to add them to your toolbar. A preview of what the tool will update with each player that is selected.



### 5.111 Select All Away/Home Players / Unselect All Away/Home Players

- Select all the players in the roster and add them to your toolbar.
- Unselect all the players button becomes available after all players have been selected.

### 5.112 Edit Roster Tool

- Edit the roster tool to change the size of the roster for home and away.
- See Editing Tools for more information on the options in the edit menu.

### 5.113 Rosters Toolbar Location

- Away Left Home Right – sorts away on left side, home on right side.
- All Left – moves all rosters to left side.
- All Right – moves all rosters to right side.

### 5.114 Sort Players By

- Numbers – sorts the home and away selected players by number.
- First Name – sorts the home and away selected players by first name.
- Last Name – sorts the home and away selected players by last name.
- No Sorting – no sorting for teams, and the user can move players around on the toolbar.

### 5.115 List Players As

- Numbers – shows or hides the number of the players added on toolbar.
- First Name – shows or hides the first name of the players added on toolbar.
- Last Name – shows or hides the last name of the players added on toolbar.
- Position – shows or hides the position of the players added on toolbar.

### 5.116 Link Tools

- Choose a tool to link to your roster by using the dropdown menu.
- These tools are the same tools used in the add tools menu. The tracking tools are defined by 'PT' at the end which stands for Player Tracking.
- Roster PT – Makes the roster track with no added visual
- Stamp PT – Select your own animation and use it to track a player

### 5.117 Edit Away/Home Linked Tool

- Edit the size, color, transparency, transition of the rosters tool or the linked tool.

- When editing a tool, a custom category Linked Tool Anchor is used to anchor the roster in a position and use the arrow to point to a player. This is primarily used with the arrow linked tools.
- For more editing linked tool see [Editing Tools](#)

#### **5.118 Copy Home Linked to Away/Home**

- Copy the linked tool and the configuration settings to the other roster.

#### **5.119 Save Changes**

- Saves the rosters that you have selected and any edits that you have made.

## **6 Settings**

Customizable user settings for the user interface, toolbars, tools, tracking, presentation mode, global video options, WebView.

### **6.1 Broadcaster Selection**

Select which broadcaster from the dropdown menu. This will limit your tool and roster selection to that specific broadcaster. This is already set if you are a broadcaster.

### **6.2 Tool Settings**

Global tool behavior and tool interaction with other tools.

#### **6.21 Erase Mode**

To add the erase tool, go to Menu > Add Tool > FingerWorks Tools > Erase Tool. This tool allows you to erase one tool at a time that has been drawn.

- Auto Erase Last – erase tool clears the last tool placed on screen.
- Touch To Erase – when erase tool is on, you to tap a tool to erase it.

#### **6.22 Global Clear Speed**

How long it takes for all tools to fade out when clearing screen. This affects all tools if it is not set to 100%.

- To turn this off on specific tools and use the tools setting. Edit the Tool > Transition > Ignore Global Clear Speed

#### **6.23 Highlight Clears Drawing**

When a highlight is placed on the screen, all previous drawings are cleared.

#### **6.24 Show Notifications**

Turn on/off pop-up notifications that appear in bottom right corner.

#### **6.25 Hold for Live Button**

When using media clips to play/pause the Clear Screen button turns into the Hold for Live Button. This will disable the Hold for Live option and will only display Clear Screen when playing clips.

#### **6.26 Change Grid**

Change the angle of the 3d grid that the tools are being placed on by using the arrow buttons.

- Reset Grid – Resets the grid to the original position.
- Save Grid – Save the grid position.

### **6.3 Toolbar Settings**

Toolbar settings change opacity, color, interaction.

### **6.31 Toolbar Default**

Set which toolbar to move all your tools to.

- Bottom – Moves all the tools to the bottom toolbar.
- Left – Moves all the tools to the left toolbar.
- Right – Moves all the tools to the left toolbar.

### **6.32 Toolbar Opacity**

Changes the toolbar opacity of all toolbars.

### **6.33 Select First Tool After Timeout**

After an amount of time determined by the slider bar, the first tool will be selected.

### **6.34 Select First Tool After Clear**

Select the first tool in your toolbar after pressing clear or erase.

### **6.35 Button to Hide Menu**

Displays a button on the top left of the screen that will hide all menus and toolbars. Click in the same place to enable all menus and toolbars.

### **6.36 Use Monochrome Icons**

Change all tools images on your toolbar to white.

### **6.37 Use Double Stacked Bottom Toolbar**

The bottom toolbar is divided into two rows.

## **6.4 Computer Vision Settings**

Tracking options for output, clearing and tracking options.

**\*\*Not recommended to change these settings, they are only available with the tracking plugin installed.**

### **6.41 Tracking Tools Output**

If you are using BlueFish444 or Blackmagic for output, it determines if the tracking tools will be on both Key/Fill and Composite or only Composite.

- Both KF And Composite – Tracking tools and Regular Tools are both seen on Key/Fill and Composite.
- Composite Only, Regular Tools KF Only – Tracking tools are only on Composite, Regular Tools are only on Key/Fill.

### **6.42 Detect Camera Cut For Regular Tools**

If the camera cuts away to a different shot or the color histogram changes drastically, then Regular Tools are cleared.

### **6.43 Ignore Camera Flashes**

Flashes from cameras that reflect on court surfaces causes tools to clear. This will ignore the flash and keep the tool laid down. Primarily used for basketball and reflective court surfaces.

### **6.44 Player Tracking Objects**

People or cars are objects that can be tracked.

- People – tracking a person or bipedal object.
- Cars – tracking a car or truck.

### **6.45 Camera Motion Compensation**

Detect camera movement on fields and tracks. If tracking a stationary object in frame such as a runner or a car then turn this off. Primarily used for track runners that are always in frame.

#### **6.46 Player Collision Clear**

Clear the tools if it detects a player collision. This higher the slider, the more likely that the tool will clear if two players intersect each other.

### **6.5 Global Video Settings**

Options to change the video settings of imported videos, full screen video and window mode. For imported videos in the Media folder that are directly used by FingerWorks to control.

#### **6.51 Global Video Auto Play**

- Always Auto Play – When a clip is selected the video will automatically play
- Always Stop On First Frame – When a clip is selected the video will stop on first frame

#### **6.52 Global Video Loop**

- Global Default -
- Always Loop – The video will always loop once reaching the end of the video
- Always Play Once – The video will only play once and will stop at the last frame

#### **6.53 Clear drawings on play**

- When playing clips, it clears the drawings when you press the play button on the clip bar

#### **6.54 Cursor Visible**

Determines if the cursor is visible or not. This is useful for touchscreens if you want to hide the cursor.

#### **6.55 Use Full Screen Video**

If set to on, the video is set to the full width and height. If it is off the video is inside the user interface toolbars.

#### **6.56 Full Screen Mode**

Sets FingerWorks window to minimize or maximize

#### **6.57 Advanced Video Settings**

Enables more NDI options for stream scale and duplicating frame

- NDI Stream Scale – the NDI video output scale
- NDI Duplicate Frame – Output/Skip – the type of frame rate of NDI output

#### **6.58 Use HAP Video Import**

Enables conversion of media clips to HAP format so it is frame accurate

- When HAP is on, clips that are moved into the media folder are imported and converted into HAP format into the Common/Imported folder
- If HAP import is turned off, for frame accuracy, clips must be ProRes (mxf or mov), DV (PAL, mov), or HAP. If they are not then seeking, frame stepping or changing speeds will not work.

### **6.6 Webview Settings**

Webview is used to display websites that can be interacted with in FingerWorks using the interact tool.

#### **6.61 Enable Workspace Webview**

- Enables webview to be used in FingerWorks. To display Webview, close the menu and click the webview icon  in the top right corner

## 6.62 Transparent Background

- If you are using tagboard with a transparent background, then this should be checked.

## 6.63 URL Update

- Enter the URL into the box, then click the Update URL button to update webview to your webpage.
- For tagboard, enter the url of the tagboard and when you close the menu, the webview icon will turn into the tagboard icon.

# 7 Network Settings

Setting the network mode when using server and client. Users can also Pull or Push Tools, Rosters.



## 7.1 Network Mode

- None – network mode is disabled
- Server – This FingerWorks will become the server
  - No Clients – There are no clients connected to the server
  - Clients # - FingerWorks has found this amount of clients
- Client – This FingerWorks will become the client.
  - Connecting – FingerWorks is trying to find the server to connect to
  - Connected – FingerWorks has successfully found the server

## 7.2 NDI Connections From Incoming Clients

If a client is connected to the server, it shows what key that it is connected to.

- Clean Program – For all video feeds
- Client Feed – For Client and Webview connections
- External Key – For drawings with external key
- Internal Key – For drawings and video

## 7.3 Client Only – IP Auto Connect

Clients will always try and connect to the server. If there are multiple servers then IP Auto Connect is used to connect to the server specific IP.

- Enter the IP of the server and press the connect button.

## 7.4 Ross Socket Listener

Enables Ross Socket Listener to send clear commands to the server.

- Port – the port that Ross Socket Listener is using
- Clear Command – the command used for clearing tools

## 7.5 Client / Server File Transfer Commands

Commands used to send tools, files, rosters from server to client, or client to server

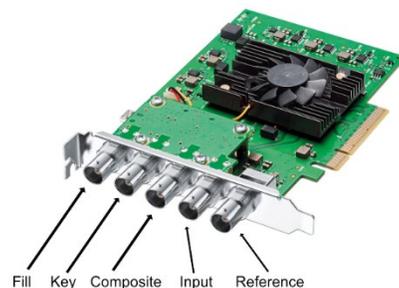
- Send Current Tools – Send your current toolbar over the network
- Pull Current Tools – Pull the toolbar from the server or client
- Pull Settings – Pull the Save Files folder from the server or client
- Pull Override – Pull the Override folder from the server
- Abort File Transfer – Abort any of the above file transfer commands
- Send Override – Sends the Common/Override folder to the client. Do this if you make any manual changes such as adding logos, headshots, editing color swatches on the server

# 8 Video I/O

## 8.1 Blackmagic

Requires Blackmagic 14.4 Drivers.

Output automatically matches input on frame rate and format.



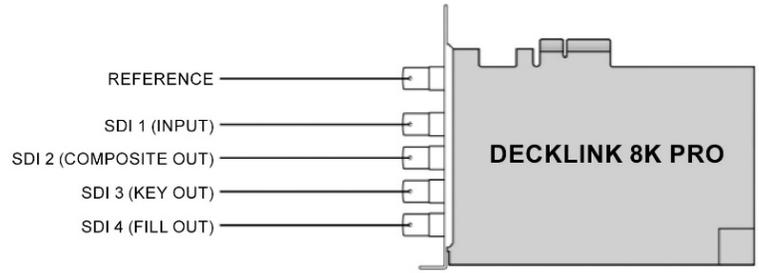
### 8.11 External Keying Mode

- Straight – Fill Color Always Saturated – multiplies the tool color into the alpha.
- Premultiplied – Fill Color Fades to Black – multiplies the tool color with black.

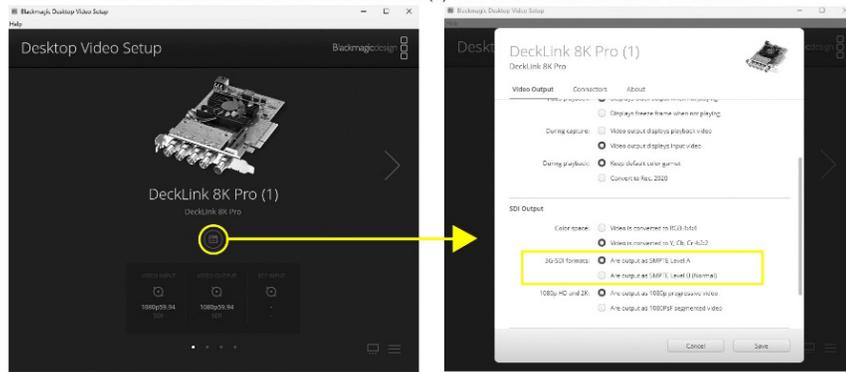
### 8.12 HDR Mode

- For HDR Mode, turn on the HDR Mode checkbox then quit FingerWorks.
- You must have Blackmagic 14.4 drivers
- Open your Blackmagic Desktop Video Setup
- Set your sub-device for 1 and 2, 3G-SDI Format to use Level A
- The sub-device 1 controls the input and composite
- The sub-device 2 controls the key and fill
- Launch FingerWorks and check your outputs

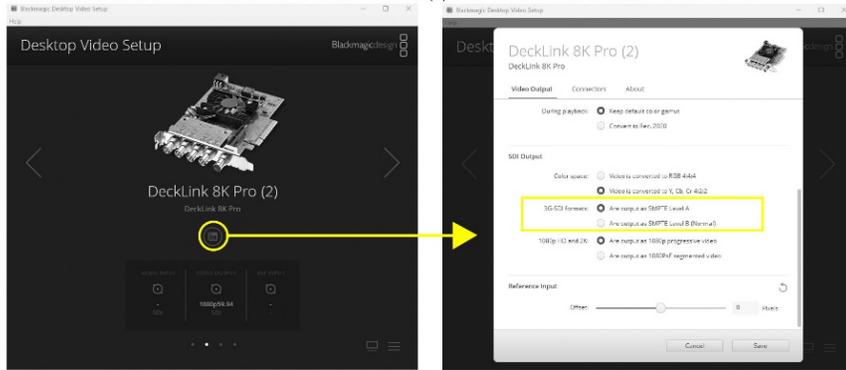
Sub-device index	2 sub-devices profile (bmdProfileTwoSubDevicesFullDuplex)
1	SDI 1 (INPUT) SDI 2 (COMPOSITE OUT)
2	SDI 3 (KEY) SDI 4 (FILL)
3	—
4	—



ON THE DECKLINK CARD SUB-DEVICE (1) SET THE 3G-SDI FORMAT TO LEVEL A



ON THE DECKLINK CARD SUB-DEVICE (2) SET THE 3G-SDI FORMAT TO LEVEL A

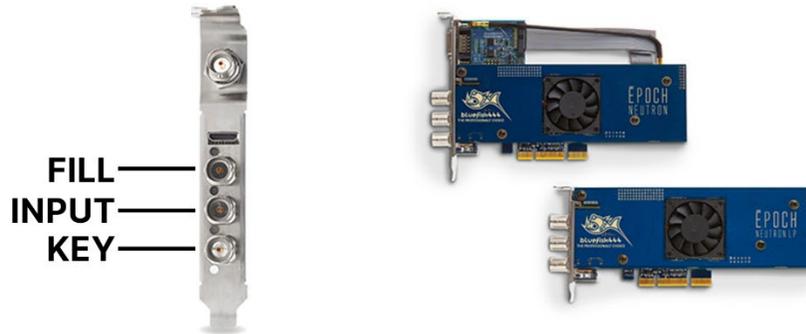


## 8.2 Bluefish

Requires Bluefish Driver Installer 6.6.0.20

Output automatically matches input on frame rate and format.

### 8.21 Bluefish Cards EB3007B & EB3007F



#### 8.21a Output Mode

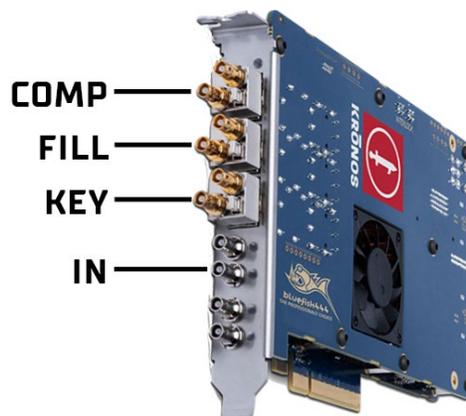
- External - sends key and fill as two signals.
- Internal - sends a composite signal of key and fill to fill connector.
- None
- Software - composite key and fill on the GPU.

#### 8.21b GenlockSource

See BlueFish application notes on GenLock for more information.

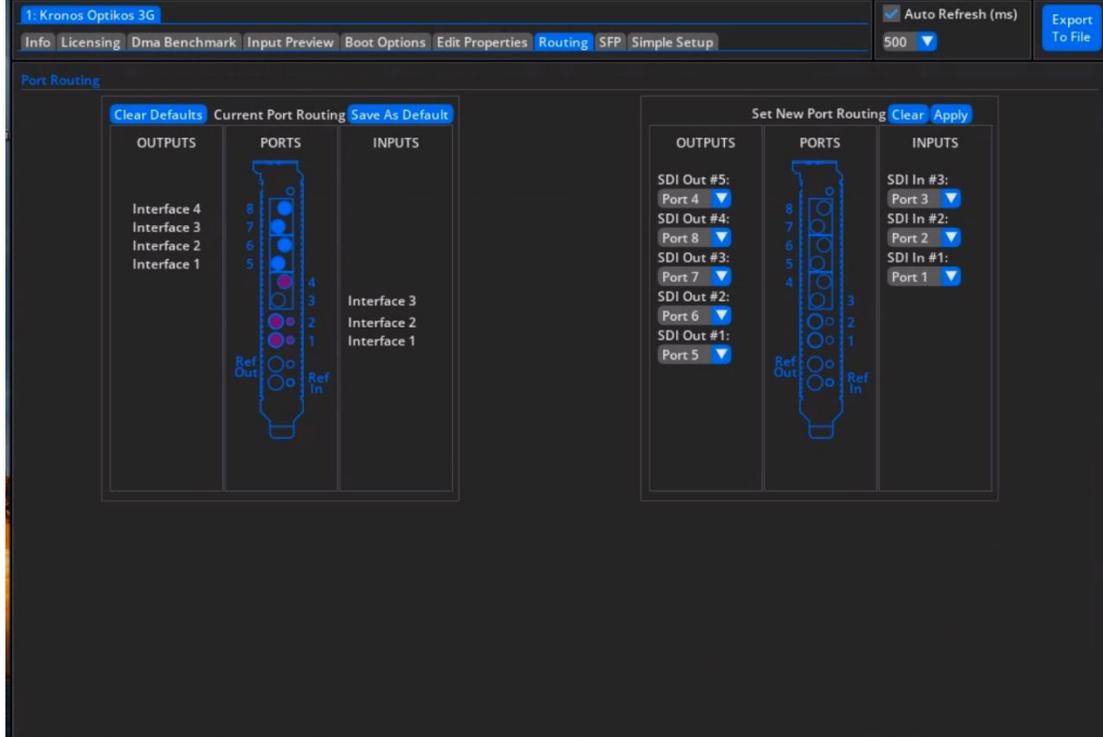
- No Change.
- Free Run – free running, not locked. Does not lock to a reference signal, but let's the card's output run at its own frequency.
- LockToInput – the default, locks the card to the input.
- UseGenlockBNC - BNC connector on shield (only via breakout cable on Horizon/Create cards).

### 8.22 Bluefish Kronos Optikos

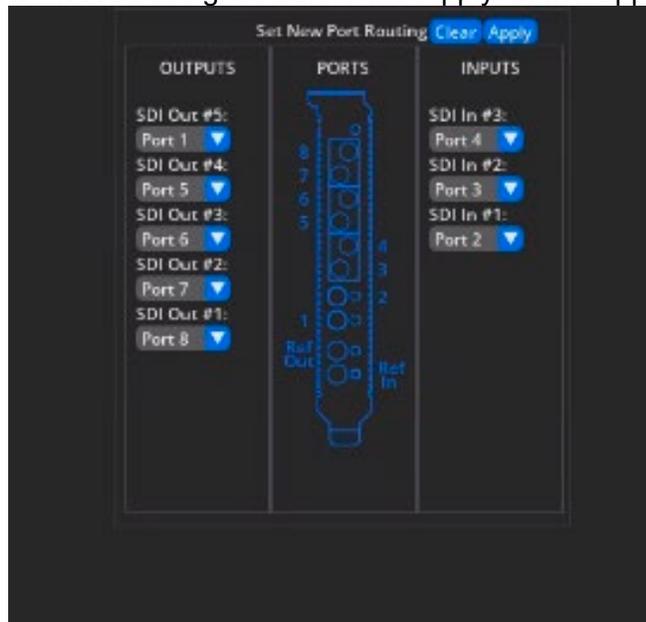


## 8.22a BlueToolBox Settings

To edit the ports on the card, open the BlueToolBox and go to the routing tab.

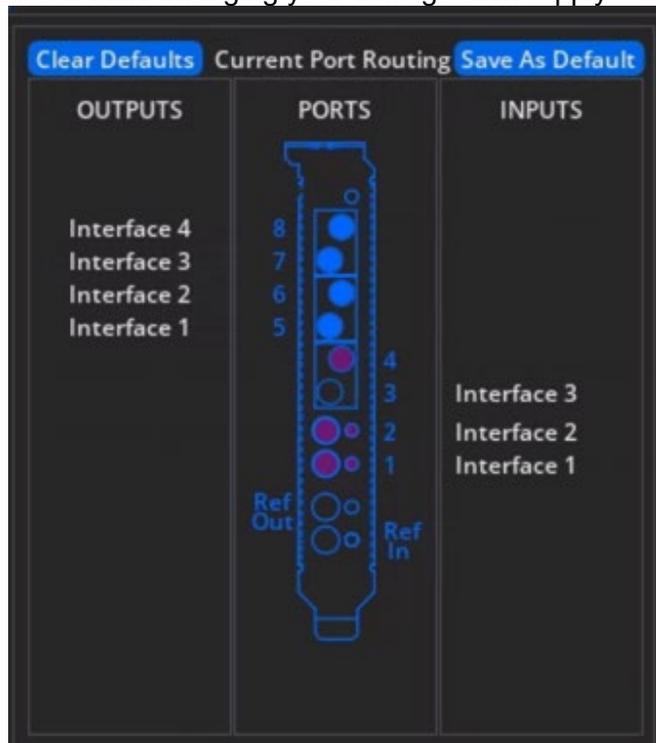


- The ports are listed on the left from 1-8. The right side can re-assign the input and output to the ports in the dropdown menu.
- All 8 ports must be assigned before the 'Apply' button appears



- Here you can change the BNC's function on the individual BNC ports
- \*Note: Some SFP's can only do one way function (example interface 3, which in the image is indicated by the numbers 7 & 8) Can only do one BNC IN or one BNC OUT
- All 8 ports must be assigned before the "Apply" button appears.

- Once you are done changing your settings click “Apply”



- The left side will show you where the BNC are now set on your card

## 8.3 NDI

### 8.31 NDI Video Input

The user can view other NDI sources from this input. The user should see the computer name and source name.

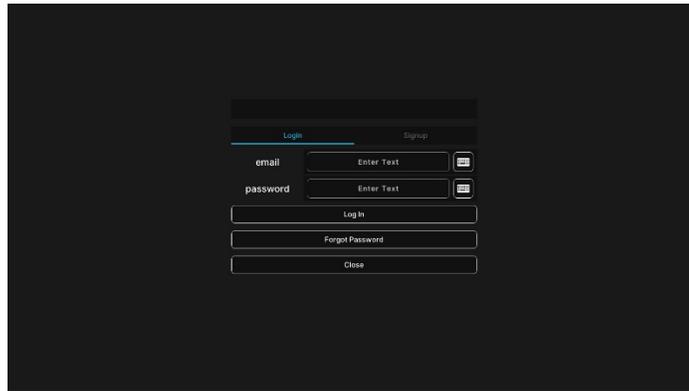
- Computer Name – the name of the NDI computer
- Source Name – the name of the NDI source
  - Clean – default for Video Fill, Key
  - External – Only Drawings
  - Internal – Drawings and Video

## 8.4 USB

### 8.41 USB Video Input

Input your USB into your computer. Select it in the list to load the video on the USB input. Can be used for cameras and other USB inputs.

## 9 Cloud



### 9.1 Configure FingerWorks Cloud

Signup to the FingerWorks cloud to save your toolsets. Once you create an account and login your toolsets will be saved.

- Enter your email
- Enter your password
- Confirm your password
- Goto your email to verify FingerWorks Cloud
- Login to FingerWorks Cloud
- Forgot Password – If you have forgotten your password, enter your email and press the forgot password button.

### 9.2 Configure FingerWorks Cloud

Login and out or Signup to your FingerWorks Cloud account.

#### 9.21 Signup to Cloud

- Enter your email
- Enter a password
- Confirm the password
- Press Sign Up
- You will receive a email confirming your email address
- Login with your email and password

#### 9.22 Login to Cloud

- Enter your email
- Enter your password
- You are now logged in

#### 9.23 Sign Out of Cloud

- Goto Cloud in the menu
- Press Sign Out
- Or
- Open the Menu
- Quit Fingerworks
- Press Sign Out of Cloud

#### 9.24 Forgot Password

- Goto Cloud in the menu
- Goto Login

- Enter your email
- Press Forgot Password
- Goto your email and follow the link
- Enter your new password
- You can now login with your new password

## 10 Media



Accesses all the video files in the FingerWorks/Media folder and imports them for use in presentation mode. This import method is used to be frame specific when importing or exporting video.

Menu > Settings > Global Video Settings > Use HAP Video Import = ON must be on for the clips to be frame specific. If you turn this off then your clips must be ProRes (mxr or mov), DV (PAL, mov).

Video size supports ratio of 16 width and 8 height. If the video is not those ratios it won't be imported.

### 10.1 Importing Media

To import your own media, press the Open Media Folder button and copy your clips into this folder. Once the clips are placed they will be imported as a HAP file so they are frame accurate.

### 10.2 Queue

The Queue shows media that is in line to be converted. The larger the file, the longer it will take to be converted.

### 10.3 Completed

Completed shows the files that have finished converting that can now be used

### 10.4 Open Media Folder

Opens the FingerWorks/Media folder where media can be placed and imported

### 10.5 Delete Media

Select the media that has been imported, and press Delete Media button to remove that media from the media folder.

## **11 About / Licensing**

Displays information about your license type, system information and to register your product.

### **11.1 Force License Check**

Check to see how many days are left on your license or what kind of license you are running.

### **11.2 Register License/Deactivate License**

Displays the license registration window to register your product

#### **11.21 Register Product**

Copy your license key and paste it into the Enter Text Here. Then click Register and it will verify if your key is authorized. If it is confirmed it will then show how many days are left on the product.

#### **11.22 Start Trial**

To skip the registration process and start a trial product with a watermark. Press the Start Trial button.

### **11.3 Copy System Info to Clipboard**

Copies the system information to your clipboard.

### **11.4 Copy License Key to Clipboard**

Copy your license key to your clipboard.

### **11.5 Force License Check**

Check to see how many days are left on your license or what kind of license you are running.

### **11.6 Send Debug Logs**

Sends logs to the developer.

## **12 Presentation**

Presentation mode allows you to control videos and place tools from the client. To enter presentation mode, use the large Enter Presentation Mode Button. Or enable the Presentation Mode Top Bar Button, close the menu and press the presentation icon in the top right.



## 12.1 Presentation Mode Settings

### 12.11a Enter Presentation Mode

- Enter presentation mode

### 12.11b Use Full Screen Video

- If set to on, the video it is set to the full width and height. If it is off, the video is inside the user interface toolbars.

### 12.11c Duplicate Toolbar

- Creates a second toolbar that is a clone of the first one with the same tools.

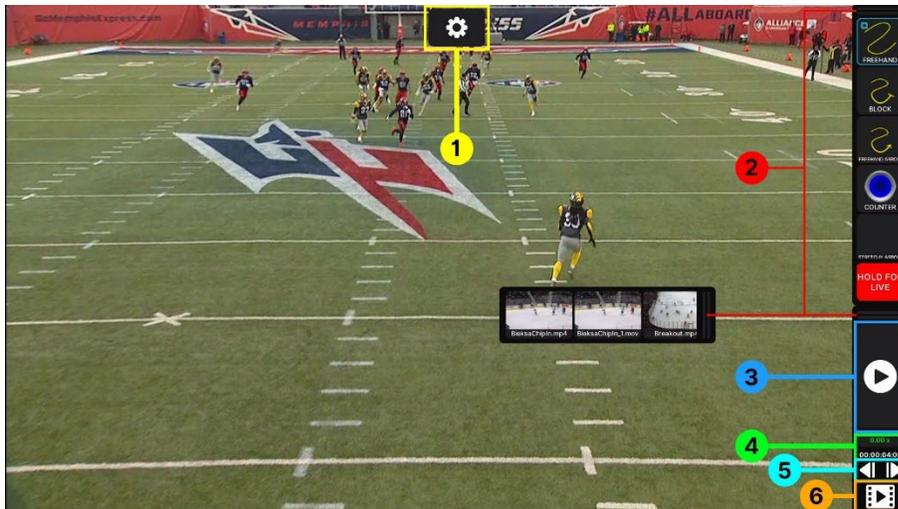
### 12.11d Presentation Mode Top Bar Button

- Enables the enter presentation mode button in the top right corner



## 12.2 How to Use Presentation Mode

Presentation mode will enable the options button, tool bar and the play mode bar.



## 12.21 Presentation Mode Options

Opens the Presentation Mode Options panel to exit presentation mode, display or hide bars.

### 12.21a Move, Resize, Horizontal or Vertical Mode

Moving, resizing or changing from horizontal or vertical mode is all done with the drag handles.

#### 12.21b Move

To move the panels around, click and drag the handle to the new position.

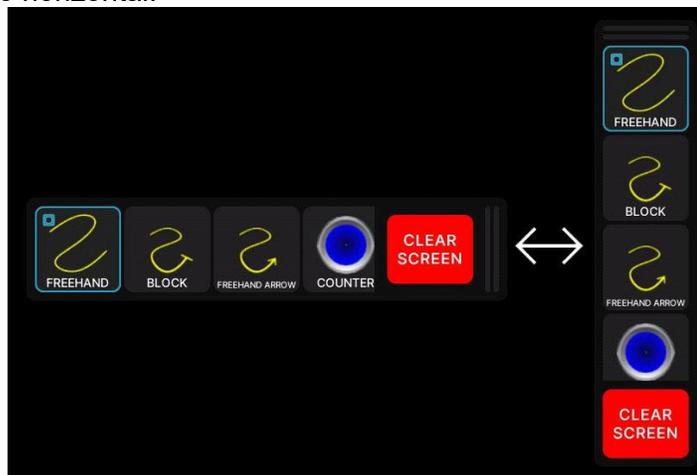
#### 12.21c Resize

Click and hold on the handle until a dotted line is seen around the panel. You can then size the bar by dragging up and down if it is vertical; or left and right if it is horizontal.



### 12.21d Horizontal or Vertical Mode

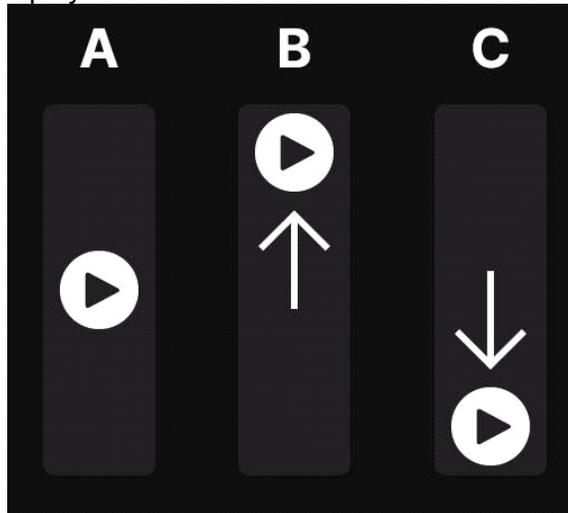
Double click on the handle to change the orientation from horizontal to vertical or vertical to horizontal.



### 12.21e Play Pause Button

The play pause button is used to play, pause, fast forward and rewind

- Click the play button to play and pause.
- Drag the play button up to slomo forward or fast forward.
- Drag the play button down to slow rewind to fast forward.



### 12.21f Time Stamp and Speed

This top number shows the time of the clip. The bottom number displays the speed that the clip is playing at. Click the clip speed to play at half, quarter or full speed.

### 12.22 Forward Frame / Back Frame

The left icon is to go back to a frame. The right icon is the go forward a frame.

- Click and hold the back frame button to go to the start of the clip.
- Click and hold the forward frame button to go to the end of the clip.

### 12.23 Clip Bar

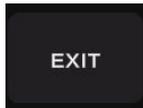
This button opens the clip bar to change clips. Click again to hide the clip bar.

- Click a clip to start to play.
- Drag left or right to access clips if you have more than five.



## 12.24 Presentation Mode Options

Presentation mode options allow you to hide or show any of the bars.



1. Exit Presentation Mode - This icon exits out of presentation mode.



2. Options Button - Displays or hides the options button. The options button will always be in this location, click the location again to show your settings.



3. Toolbar - Displays or hides the toolbar.



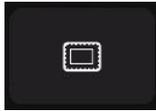
4. Clips Bar - Displays or hides the clips bar.



5. Play Bar - Displays or hides the play bar.



6. User Interface Settings – Change the size of the presentation mode user interface. Change the values of the presentation mode user interface.



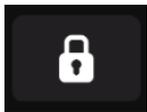
7. Overlay Configuration - Displays the overlay configuration.



8. Duplicate Toolbar – Displays a second toolbar.



9. Scroll Bar – Video scroll bar to scrub video and play/pause.



10. Lock Toolbars – Lock the presentation mode toolbars.



11. Quit FingerWorks – Quit FingerWorks and relaunch to get back into presentation mode.

### **12.25 Overlay Configuration**

Adds an image onto the screen that is on top of all drawings and videos. This image can be positioned, resized, and have its opacity changed.

### **12.26 Adding Overlay**

To add an overlay into FingerWorks place your jpg, png or tga into the FingerWorks 6/Media folder.

In FingerWorks presentation mode, click the Overlay button to open the menu and click the plus icon to start to add your images.

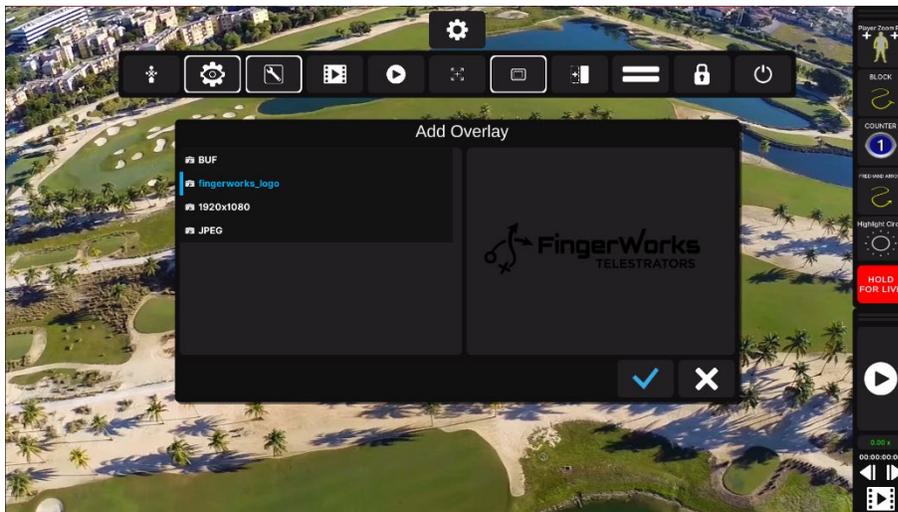


Figure 1 Once the menu is open you can select any of your images and click the checkmark



Figure 2 You can drag the image to any position. Or click and hold to resize the image. The slider also allows you to change the transparency.

## 12.27 Presentation Mode Interface Settings

When going into presentation mode these settings are for the transparency, delays and whether to use full screen video. (See 12 Play Bar for more information)

### 12.27a Clip View Mode

How the thumbnails of the clips are displayed in presentation mode

- Image Only – Display only the image thumbnail in the clip bar in presentation mode.
- Text Only - Display only the text in the clip bar in presentation mode.
- Image And Text - Display the text and image thumbnail in the clip bar in presentation mode.

### 12.27b User Interface Scale

Change the size of the presentation mode user interface.

### 12.27c Play Bar Idle Opacity

How long the presentation bars are idle before fading out.

### 12.27d Play Bar In Use Opacity

When the presentation bars are being interacted with determines the opacity.

### 12.27e Play Bar Idle Delay

The delay from when the presentation bars are being interacted with to when the bars are idle before setting the idle opacity.

### 12.27f Play Bar Timeout Delay

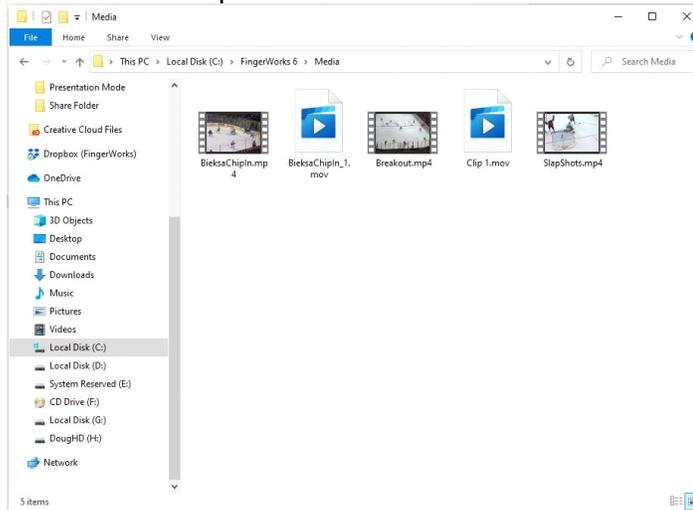
The fade rate of opacity when going from interacted to idle.

## 12.28 Duplicate Toolbar

Creates a second toolbar that is a clone of the first one with the same tools on it.

## 12.29 Importing Clips

To import a clip, copy your clips into the Media folder. Once placed in the folder, open FingerWorks and it will start to process the media.



## 12.210 Media Menu

This menu shows the files that are being imported and what has completed. Once completed they will be able to play in the presentation mode.



## 13 Play Bar

The Play Bar is utilized for playing videos in your FingerWorks/Media folder. The clips will be processed in the Media menu ([see 10 Media](#)) then ready to play in the clip's menu. Opacity of the Play Bar can be changed in the User Settings > Presentation Mode Settings ([see 12.1 Presentation Mode Settings](#)).

### 13.1 Enable the Play Bar

Enable the Play Bar by pressing the Play icon in the top right corner

#### 13.1.1 Select Clips

- Press the clip button to select a clip of your choice.
- If the clip is greyed out with a loading bar, it is still being processed.
- Click and drag left or right to you have more than five clips

### 13.2 Play Button

The play button is used to play, pause, fast forward and rewind clips

- Click once to play or pause
- Click and drag up to fast forward up to 2x speed
- Click and drag down to rewind up to 2x speed

### 13.3 Forward / Back Single Frames

Press the left button to go back to a single frame

Press the right button to go forward a single frame

### 13.4 Horizontal Mode

Double clicks the top of the play bar to go into horizontal mode

### 13.5 Full/Half/Quarter Play Speed

Click the green numbers below the play button to play at full/half/quarter speeds

## 14 Webview

Webview allows you to navigate a website using the interact tool. To enable webview, click the checkbox for Enable Workspace Webview.

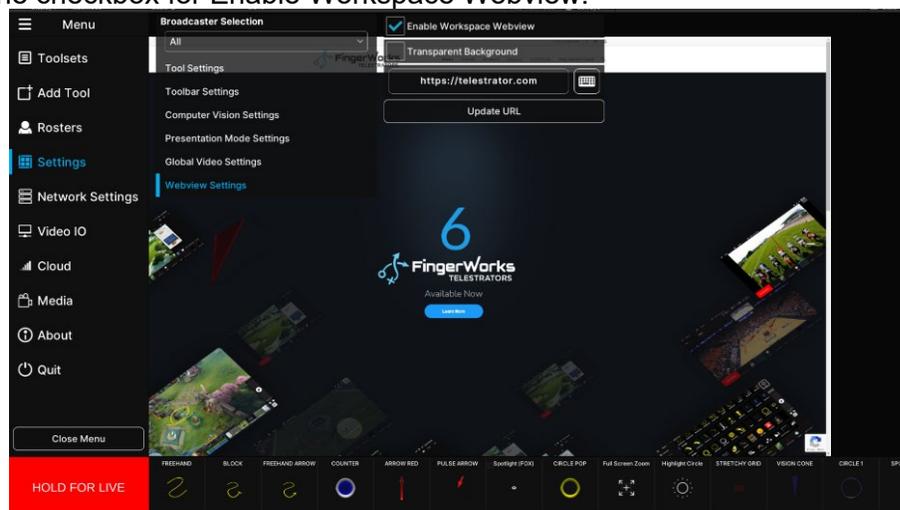


Figure 3 To change the website url, open the menu and go to User Settings/Webview Settings. Then click the Update URL.



Figure 4 Add the Interact Tool to be able to interact with the website while in Presentation Mode.

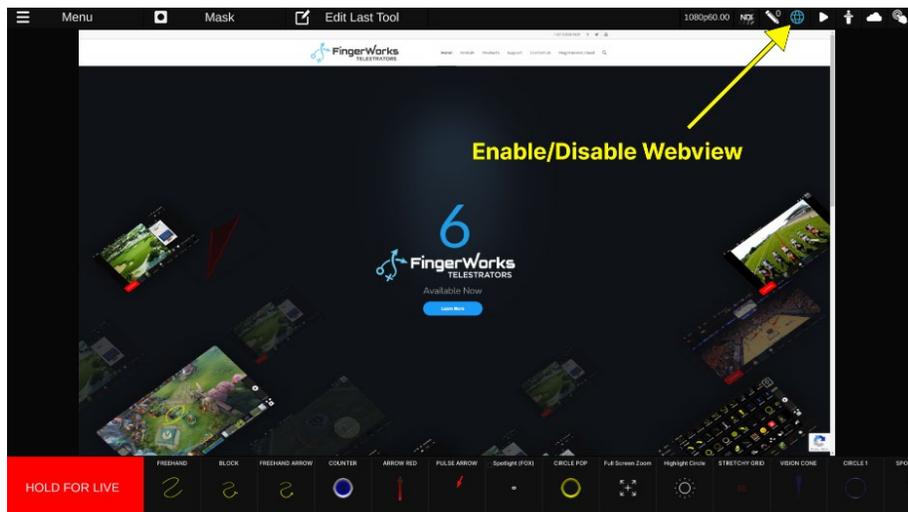


Figure 5 Close the menu and press the Webview Icon in the top right.

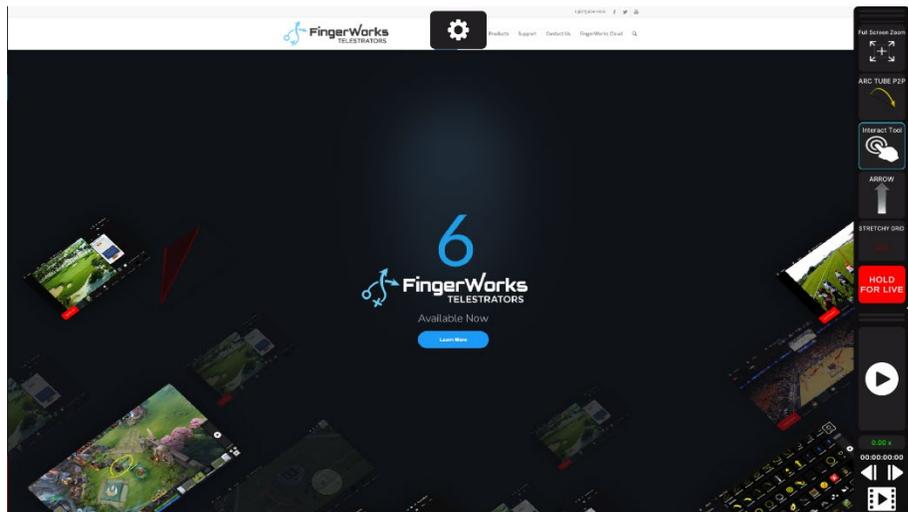


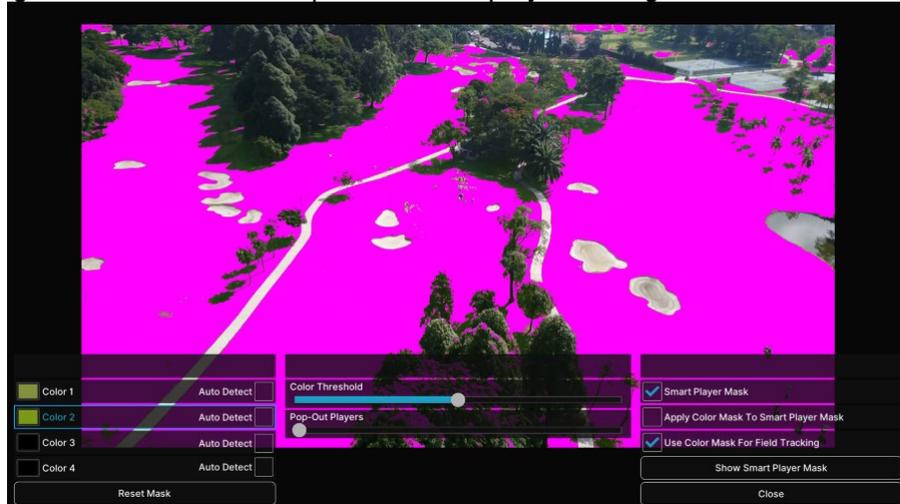
Figure 6 In presentation mode you can now select the interact tool and navigate the website.

## 14.1 Setting Up A Webview Client

Once you have enabled WebView on server or client, the WebView Icon will be available on server and client.

## 15 Mask

Masking allows for tools to be placed under players using the mask.



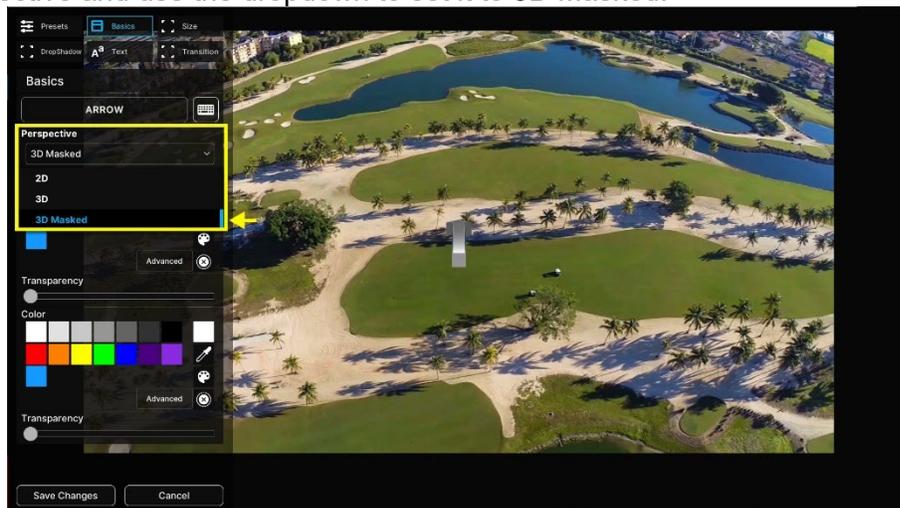
### 15.1 Setting Up a Basic Mask

When first opening the mask menu, you will see a pink color that changes to orange over time. This color shows what will not be masked.

- The autoMode will take the dominant color of your video or image to use as the mask
- If the dominant color is not being used. Press the Reset button and turn on autoMode again for it to select the dominant color

### 15.2 Setting Up Tools To Use The Mask

To make a tool use the mask, double click on the tool to edit it and go to Basics > Perspective and use the dropdown to set it to 3D Masked.



## 15.3 Editing Mask

### 15.31 Multiple Colors

With autoMode the Main Color is selected. To manually select colors, press the Main/Second/Third/Fourth Color button then click on the field. This will add that color to the mask.

### 15.32 Reset

To Reset your mask, press the reset button. This will remove all settings from the mask for you to start over.

### 15.33 Color Threshold

Expands or contracts the multiple colors selected and how much impact they have on the mask.

### 15.34 Pop-Out Players

Finely tunes the mask for the edges of the mask to clean up holes.

## 15.4 Computer Vision Mask Settings

### 15.41 Smart Player Mask

Uses the tracking plugin to mask out people or cars.

### 15.42 Apply Color Mode To Smart Player Mask

Use the Color Mask settings to further refine the player/car tracking mask.

### 15.43 Use Color Mask For Field Tracking

Uses the mask for field tracking instead of the whole frame of the video.

### 15.44 Show Smart Player Mask

Shows the mask that the tracking plugin is using for player/car tracking.

## 16 Editing Tools

To edit a tools detail and save it to your toolbar. Browse the different options by choosing the category at the top of the bar. There are four ways to access editing a tool.

- When you add a tool, turn on Always Edit Tool (*see 2.1 Always Edit Tool*)
- Double clicking a tool to edit it
- Click a tool once, then click Edit Last Tool
- Draw a tool on screen, then click Edit Last Tool

### 16.1 Presets

These are default configurations for the tool for a quick edit. Use them by clicking one and saving changes.

### 16.2 Basics

Color, renaming, and perspective are the main settings in this category

#### 16.21 Renaming Tools

Click to edit the name and enter whatever name you want

#### 16.22 Color

Click on any color to change the color of the tool

##### 16.22a Eye Dropper

Click on the Eye Dropper icon and drag over to select a color on your screen. This will change the color of the tool

### **16.22b Save Color**

Click on the Palette Icon to save your currently selected color

### **16.22c Advanced**

Advanced allows you to pick a specific color by using the sliders or selecting the RGB.

- Enter the RGB values to select a specific color then click the palette icon to save the entry.
- Click on Default to go back and see your saved colors in the third row of colors

### **16.22d Use Team Colors**

Use the team colors that you have selected in the rosters menu. If you have no teams selected then this option will be unavailable.

- Team – Home/Away options are available from this dropdown
- Home/Away Color Choice – Click the primary or secondary color

## **16.23 Transparency**

Change the transparency of the tool you are editing.

Far left is Opaque and far right is transparent.

## **16.24 Perspective**

- On Screen – Set the tool to be on screen
- Over Players – Set the tool to be in 3d using the grid and not using the mask
- Under Players – Set the tool to be in 3d using the grid and to use the mask ([see Mask](#))

## **16.3 Size**

### **16.31 Lock**

Edit the Height, Width and Length at the same time, or unlock to change each individually

- Size – changes Height, Width and Length uniformly
- Height – Changes the height of the tool
- Width – Changes the width of the tool
- Length – Changes the length of the tool

### **16.32 Top Width**

Change the top size of the tool

### **16.33 Bottom Width**

Change the bottom size of the tool

### **16.34 Line Thickness**

For any Line Draw tool, it edits the thickness of the line

### **16.35 Line Style**

Add spaces between the line to create a dash line

### **16.36 Network Interpolation Mode**

Interpolate – smooth out the line drawing over the network

### **16.37 Network Buffer Duration**

The time delay that is used to buffer the line drawing over the network

### **16.38 End Cap**

Changes the end of the line drawing to different shapes

- Filled Triangle – a filled triangle
- Triangle – a triangle with a hole

- T-Shape – a T shape
- Sides Only – sides of a arrow

#### **16.39 Angle**

Changes the left and right angle of the tool

#### **16.310 Perspective**

Changes the up and down angle of the tool

#### **16.311 Rotation**

Changes the rotation of the tool

### **16.4 Text**

Enter your text into the text field then change any of the settings

#### **16.41 Text Size**

Changes the size of the text

#### **16.42 Transparency**

Changes the transparency of the text

#### **16.43 Text Color**

Changes the color of the text (*see 14.22 Color for more information*)

#### **16.44 Anchor**

- Middle – sets the anchor to the middle
- Left – sets the anchor to the left
- Right – sets the anchor to the right
- Top – sets the anchor to the top
- Bottom – sets the anchor to the bottom

#### **16.45 Horizontal Offset**

Move the text to the left or right originating from the anchor point

#### **16.46 Vertical Offset**

Move the text up or down originating from the anchor point

#### **16.47 Offset Is Relative**

Text offset is relative to the tool's direction. Mainly used for directional tools like stretchy arrows to be relative to the direction.

#### **16.48 Rotation Follows Shape**

Text rotation follows the rotation of the tool. Mainly used for 3d tools to face on screen or to follow the rotation of the tool.

#### **16.49 Always Upright**

Always keeps the text upright for rosters

#### **16.410 Alignment**

Change the alignment of the text to one side of the text

- Top Left
- Top Center
- Top Right
- Mid Left
- Mid Center
- Mid Right
- Bottom Left

- Bottom Center
- Bottom Right

#### **16.411 Text Type**

- Custom Text – type any text into the text field
- Auto Number – auto counts starting from one
- Auto Letter – auto counts through the alphabet starting at A

### **16.5 Drop Shadow**

#### **16.51 Enabled**

Turn the drop shadow on and off

#### **16.52 Color**

Change the color of the drop shadow

#### **16.53 Transparency**

Change the transparency of the drop shadow

#### **16.54 Horizontal Offset**

Move the drop shadow to the left or right

#### **16.55 Vertical Offset**

Move the drop shadow to up or down

### **16.6 Transition**

Change the animation, fade in or out when placing the tool or clearing a tool.

#### **16.61 Choose Transition**

Transition occurs when clearing or erasing a tool

#### **16.62 Fade Over Time**

Fade the tool in or out over time

##### **16.62a Fade On Speed**

The time it takes for the tool to fade on

##### **16.62b Fade Out Option**

To erase the tool after a period of time

- None – do not fade out
- Erase After Delay – erase after a period of time set by Delay Before Fade Out (see Delay Before Fade Out)
- Erase After Touch Finished – erase the tool after you release

##### **16.62c Delay Before Fade Out**

The delay before fading out when clearing a tool

##### **16.62d Erase Speed**

The time it takes to fade out when erasing or clearing a tool

#### **16.63 Draw Over Time**

Draw or erase the tool over a period of time from head to tail or tail to head. Used for all line draw tools.

##### **16.63a Auto Erase Option**

To erase the tool after a period of time

- None – do not fade out
- Erase After Delay – erase after a period of time set by Delay Before Fade Out
- Erase After Touch Finished – erase the tool after you release

**16.63b Draw-On Time**

The time it takes for the tool to draw on

**16.63c Erase Delay**

The time it takes for the tool to erase or clear

**16.63d Erase Time**

The time it takes for the tool to erase from tail to head or head to tail

**16.63e Erase Tail to Head**

Change the option to change from tail to head or head to tail

**16.64 Animations****16.64a Frame Rate**

The frame rate of the animation from 0-60

**16.64b Loop Start Frame**

Loop the animation from a specific frame

**16.64c Wrap Mode**

- Stop – play the animation once and stop
- Loop – constantly play the animation from start to end
- Ping Pong – constantly play the animation forward then backward repeatedly

**16.7 Zoom****16.71 Zoom Factor**

The amount of zoom in for the tool

**16.71a Live Zooming**

- On: zoom in while the video is moving
- Off: take a still image of the zoom

**16.71b Zoom In Time**

The time it takes for the tool to scale from zero to the set size

**16.71c Zoom Out Time**

The time it takes for the tool to scale from the set size to zero

**16.72 Fade On Speed**

(see [14.62a Fade On Speed](#))

**16.73 Fade Out Option**

(see [14.62b Fade Out Option](#))

**16.74 Delay Before Fade Out**

(see [14.62c Delay Before Fade Out](#))

**16.75 Erase Speed**

(see [14.62d Erase Speed](#))

**16.8 Tracking (field)****16.81 Mode**

- Stamp To Field – Stamps the tool to the field, allows rotation and zoom.
- Single Point – Places tool at a single point. That point is tracked but does not allow rotation and zoom.

**16.9 Tracking (player)****16.91 Size**

The size of the person/car that the tracking will pick up when selected

- Minimum Size – The minimum size of the person/car that can be selected
- Maximum Size – The maximum size of the person/car that can be selected

### **16.92 Text – Show Player Distance**

Show the distance between two players or two points

- The background color, and text color can be edited by picking the color
- Upright – Move the text upright
- Upright Tilt – Rotate the text to the line angle
- Text Perspective – Place the distance text into 3d or 2d

### **16.93 Player Field Distance Tool**

Click on the player then on the field to show the distance between the player and the point.

#### **16.93a Field Point**

Field Point category changes the size, color and transparency of the point that stays on the field.

### **16.94 Player Stopwatch Tool**

Click on the player then on the field to show the time it takes for the player to move to the point.

#### **16.94a Future/Past Path**

- Future Path shows where the player will run once the tool is placed.
- Past Path shows where the player has come from.

#### **16.94b Future/Past Shadow**

- Future Shadow enables/disables the shadow on the future path.
- Past Shadow enables/disables the shadow on the past path

### **16.95 Player Monochrome Tool**

Highlights the player and shadows the background. Able to select multiple players to be shown.

#### **16.95a Monochrome**

- Change the background or player brightness and contrast.

### **16.96 Player Move Tool**

Select the player then click to move the player or click and drag to the position you want to move the player to.

#### **16.96a Move**

- Show the start or end point circles.
- Add glow or outline to the player.

### **16.97 Player Gap**

Show the gap between multiple players up to five.

#### **16.97a Text – Show Player Distance**

- To show the distance between the players, go to the text category and enable Show Player Distance

### **16.98 Horizontal Anchor**

The horizontal position of the tracking placement to the tool

- Left
- Middle
- Right

### **16.99 Vertical Position**

The vertical position of the tracking placement to the tool

- Top
- Middle
- Bottom

#### **16.910 Horizontal Anchor**

Refines the horizontal position of the tracking placement to the tool

#### **16.911 Vertical Anchor**

Refines the vertical position of the tracking placement to the tool.

#### **16.912 Offset Relative to Size**

Moves the position offset of the tracking placement in relation to the size of the player/car

#### **16.913 Auto Team Color**

Uses the rosters Calibrate Team Colors to auto color the tool depending on the teams selected and calibrated. (See [Calibrate Team Colors](#))

#### **16.914 Trail Tool**

Add a Trail Tool that will be placed on the field as a field tracking tool to your player tracking.

- Edit – edit the trail tool that has been selected in the drop down for more options.

#### **16.915 Highlight Tool**

Add a Highlight Tool or Zoom tool that will highlight/zoom a player/car before placing the tool.

- Edit – edit the highlight/zoom option that will appear before placing the tool

#### **16.916 Highlight Tool 2**

Add a Highlight Tool or Zoom tool that will highlight/zoom a player/car before the first highlight/zoom.

- Edit – edit the highlight/zoom option that will appear before the first highlight/zoom

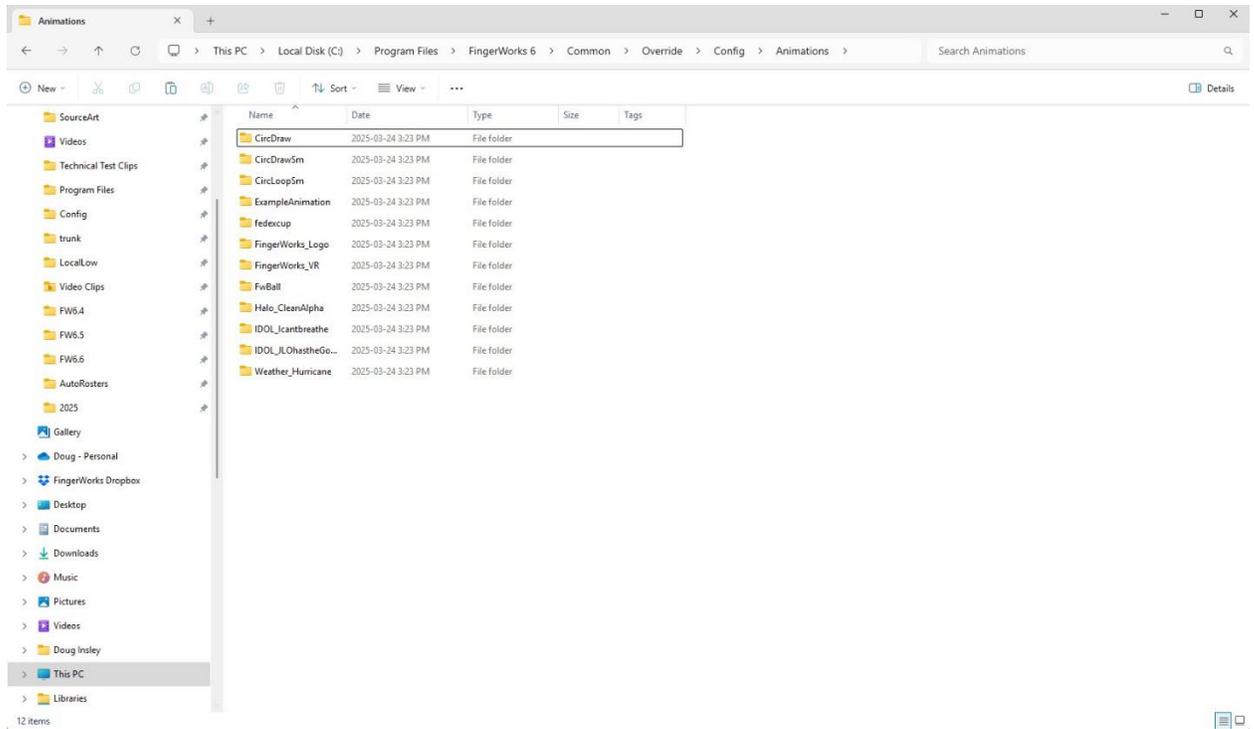
#### **16.917 Highlight Before Fade In**

Display the highlight/zoom before placing the tool. Or turn it off to place tool and highlight/zoom at the same time.

## **17 Importing Animations and Single Images**

For importing animation sequences or single images such as PNG or TGA. Place your animation sequence or image into the Common/Override/Config/Animations folder. The sequence or image must be in its own folder.

If you have a client connected, then you must use the Menu > Network Settings > Send Override button to send the animations to the client. If you do not then the client won't be able to see the animations when placed.



## 17.1 Animation Guidelines

- Animations can be created by members of your team for specific branding purposes. Animations are always 2D, and always pixel-perfect. A static image can also be an animation, it is simply an animation with a single frame.
- The directory structure for Animations must be:  
Common/Override/Config/Animations/FolderName/Filename Number.png
- The individual frames of the animation must be the exact same size. The order of the frames are determined by sorting the filenames, so it is easiest to post-fix the filename with a long number (say 4 digits). Examples of valid filenames:  
Frame0001.png  
00 Logo.png  
Logo Animation 0000.png  
In general, the more digits the better. If you use a single digit, say Frame2.png, then it's possible Frame10.png will come before Frame2.png.  
If you make a mistake, you will receive an error when configuring your animation in FingerWorks.

## 17.2 Loading the Animation or image in FingerWorks

To load an animation sequence in FingerWorks.

2D/3D Animations - Go to Add Tool > FingerWorks Tools and add Animations.

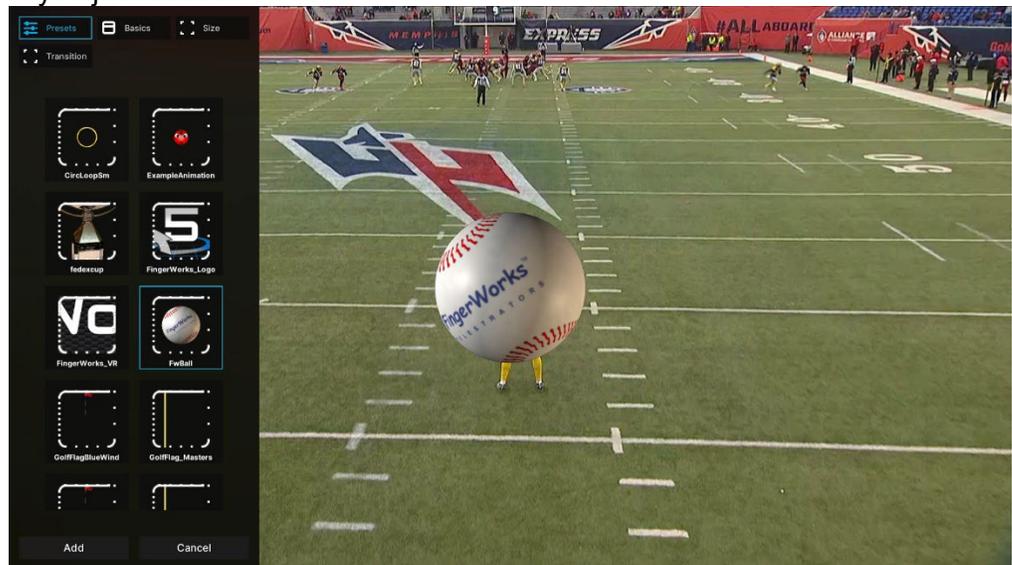
Player Tracking Animations - Go to Add Tool > Player Tracking > Stamp PT

Field Tracking Animations - Go to Add Tool > Field Tracking > Stamp FT



### 17.3 Edit Animations Tool

Edit the animations tool that you just added to the toolbar. Scroll down the list and select the animation that you just added.



### 17.4 Animations Settings

- Change the settings of the animation frame rate, playback and loop frame.
- Frame Rate – Speed of the animation in frames per second
- Loop Start Frame – Which frame to start the loop from
- Wrap Mode
  - Stop – plays the animation sequence once and stops
  - Loop – repeats the animation sequence
  - Ping Pong – plays the animation forward, then backward repeatedly

# 18 Hotkeys

## 18.1 FingerWorks

- G - Show 3D Grid
  - Up Arrow –Camera Pitch Up
  - Down Arrow –Camera Pitch Down
  - W –Camera Up
  - S –Camera Down
  - A –Camera Yaw Left
  - D –Camera Yaw Right
  - Shift + Up Arrow –Camera Zoom In
  - Shift + Down Arrow –Camera Zoom Out
  - Shift + Space Bar –Camera Reset
- E -Erase Tool
- X -Clear Screen
- L -Edit Last Tool
- M -Move Tool
- CTRL-F12 -Toggle Cursor
- Ctrl + L -Go Live
- Ctrl + H –Hide Menu
- Ctrl + D -Display FPS Counter
- 0-9 -Select Tools on Toolbar
- T –Enable Webview
- Y –Disable Webview

## 18.2 Presentation Mode / Play Mode

- Return -Play/Pause
- Backspace -Play/Pause in reverse
- , -Go back one second
- . -Go forward one second
- 0 -Seek Start
- 9 -Seek End
- Right Arrow -Step Forward
- Left Arrow -Step Backward
- H -Shuttle Forward
- J -Shuttle Backward
- P -Reset Shuttle
- [ -Previous Clip
- ] -Next Clip
- Ctrl + K -Toggle Presentation Cog

## 18.3 Tracking

- I -Enable Detect Camera Cut for Regular Tools
- K -Disable Detect Camera Cut for Regular Tools
- V –Tracking to Players
- B –Tracking to Cars
- Ctrl + / -Record Anc Input