



User Manual

LifeMark[®]-100 Recording and Layout Guide

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Section One

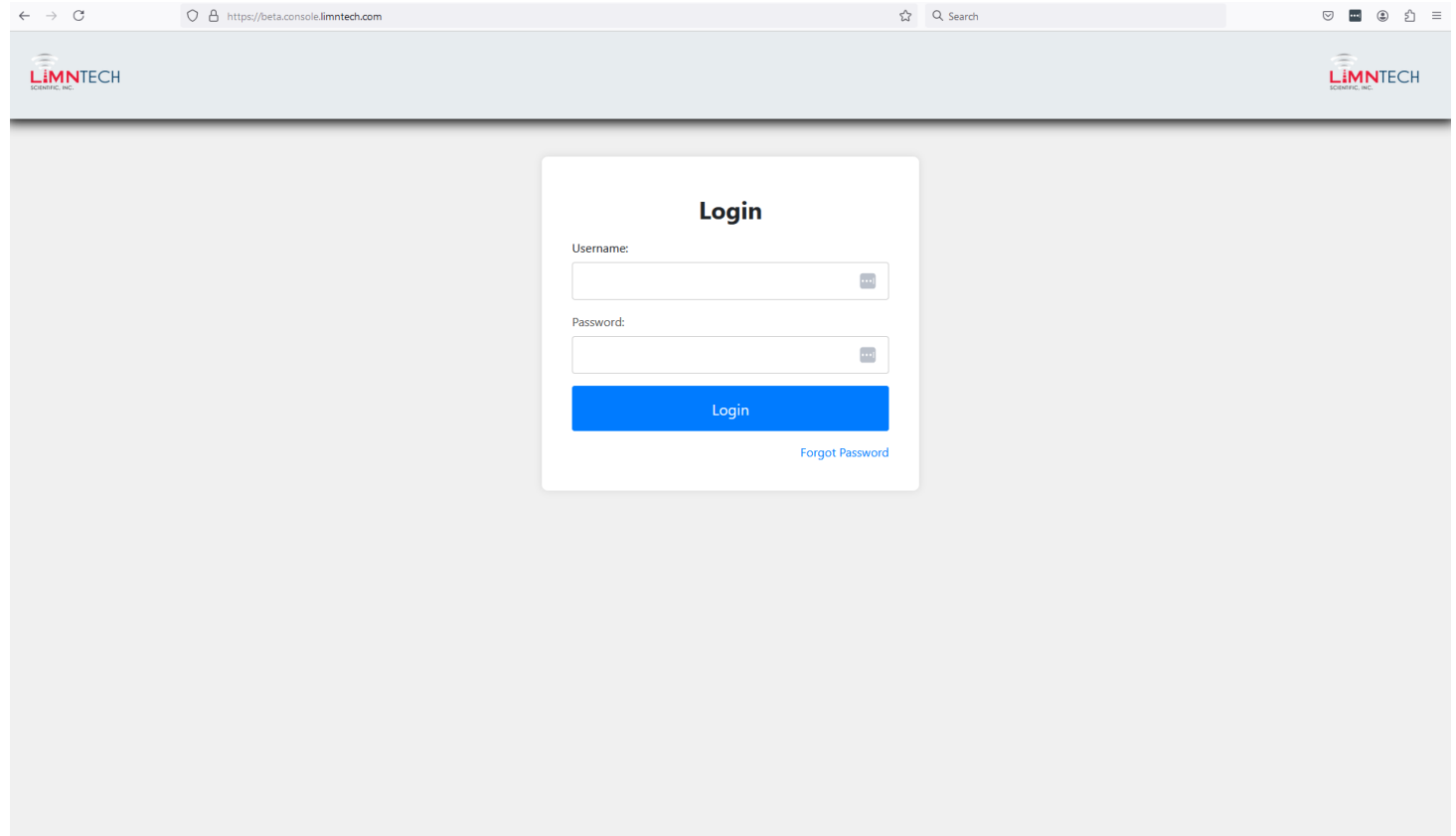
Web Integration – Editing Transitions

Editing P.A.S. Detected Transitions

- While the LimnTech team is constantly improving its line detection algorithms, no AI powered system is perfect. There may be falsely detected transitions during the recording process. Some situations that may cause mistakes are:
 1. Worn Lines
 2. Shadows
 3. Poorly restriped lines
 4. Lines going out of view of the camera
- With this in mind, the LimnTech website allows users to inspect and, if desired, edit the detected P.A.S. transitions before Layout.
- The following section of this document will outline this process.

Navigate To Webpage

- On any browser navigate to the following website:
<https://console.limntech.com>
- If you do not have login credentials for the website, please contact your company's LimnTech web admin to help set up your account.
- If you forgot your password, click the "Forgot Password" link and follow the prompts.



The screenshot shows a web browser window with the address bar displaying <https://beta.console.limntech.com>. The page features the LimnTech logo in the top left and right corners. The main content is a white login form titled "Login" centered on a light gray background. The form contains two input fields: "Username:" and "Password:", each with a toggle icon on the right. Below the fields is a blue "Login" button and a blue link labeled "Forgot Password".

Navigate To Active Path List

- Make sure that the buttons on the banner of your web page are the same as the buttons shown on the banner of the image to the right.
- If "User Access", "Import Paths" and "Export Paths" are missing, your user account has read-only permissions. This will allow only for the viewing of the transitions on the map but does not include the ability to edit the transitions.
- If you see these buttons, your account has "Administrator" permissions. Please click the button "Active Paths" at the top of the webpage to view your active recordings.
- If you suspect you have the wrong account permissions, please contact your company's administrator.

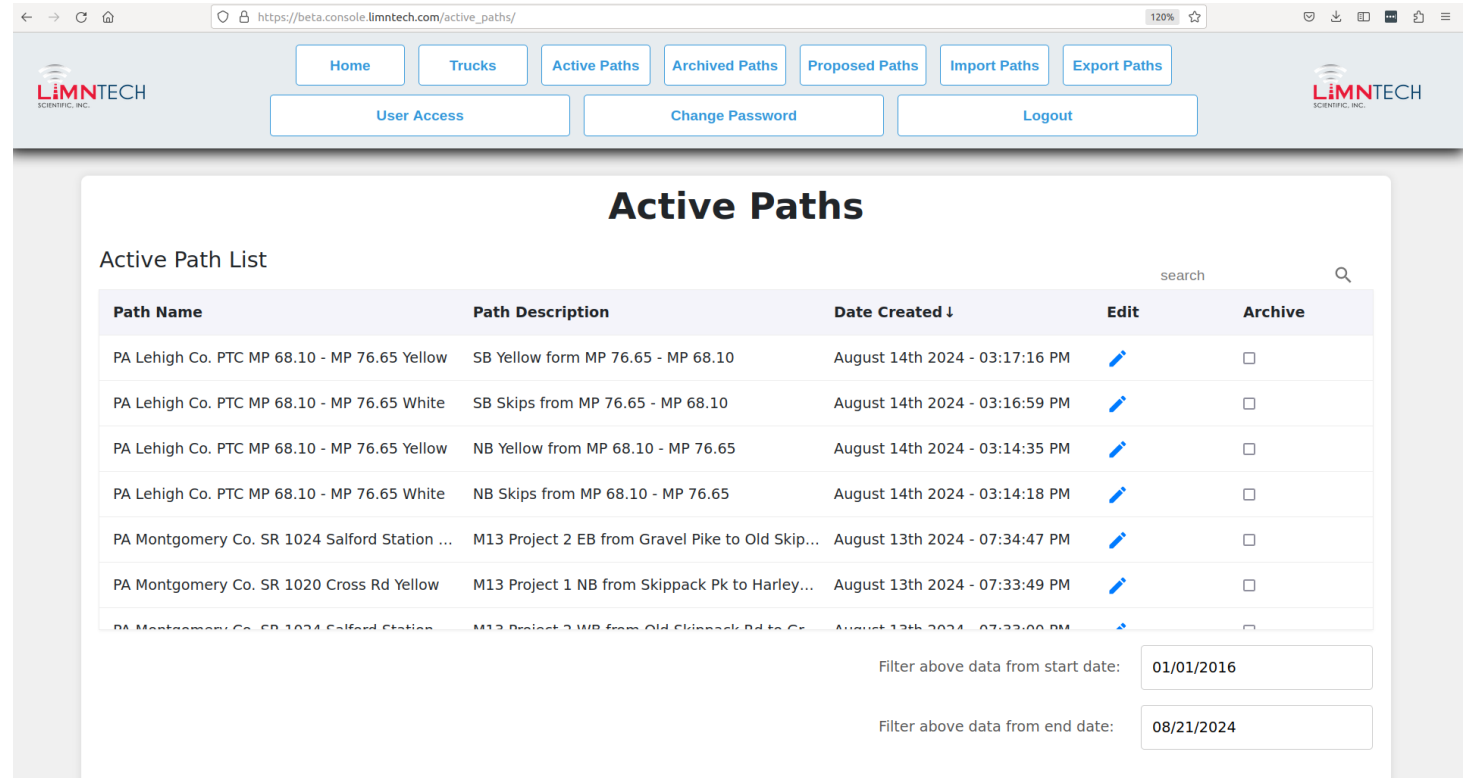
The screenshot shows the web interface for GUIDEMARK, INC. Administration. The browser address bar displays <https://beta.console.limntech.com>. The navigation banner includes buttons for Home, Trucks, Active Paths, Archived Paths, Proposed Paths, Import Paths, and Export Paths. Below these are buttons for User Access, Change Password, and Logout. The main content area is titled "GUIDEMARK, INC. Administration" and features a summary table:

Trucks	7
Active Paths	232
Archived Paths	2028
Proposed Paths	101








Below the table is a "Path Overlay Map" section with radio button options for All Paths (selected), Active Paths, and Archived Paths. At the bottom, there are two filter sections for "Filter For Recording Begin Date" (01/01/2016) and "Filter For Recording End Date" (08/20/2024), each with Save and Reset buttons.

Select The Desired Path

- This webpage shows a list of all "Active" recordings. "Active" recordings can be downloaded by the company's fleet of trucks.
- Selecting the "Edit" icon for a specific path will bring up more detailed information about the selected path. If your user is read-only this button will be called "Info".
- Among the detailed information shown, a user can use the "Edit" page to view and edit the detected P.A.S. transitions.



The screenshot shows the LIMNTECH console interface. The top navigation bar includes buttons for Home, Trucks, Active Paths, Archived Paths, Proposed Paths, Import Paths, and Export Paths. Below this are buttons for User Access, Change Password, and Logout. The main content area is titled "Active Paths" and contains an "Active Path List" table. The table has columns for Path Name, Path Description, Date Created, Edit, and Archive. The table lists several paths, including those for PA Lehigh Co. and PA Montgomery Co. The page also includes a search bar and filter options for start and end dates.

Path Name	Path Description	Date Created ↓	Edit	Archive
PA Lehigh Co. PTC MP 68.10 - MP 76.65 Yellow	SB Yellow form MP 76.65 - MP 68.10	August 14th 2024 - 03:17:16 PM		<input type="checkbox"/>
PA Lehigh Co. PTC MP 68.10 - MP 76.65 White	SB Skips from MP 76.65 - MP 68.10	August 14th 2024 - 03:16:59 PM		<input type="checkbox"/>
PA Lehigh Co. PTC MP 68.10 - MP 76.65 Yellow	NB Yellow from MP 68.10 - MP 76.65	August 14th 2024 - 03:14:35 PM		<input type="checkbox"/>
PA Lehigh Co. PTC MP 68.10 - MP 76.65 White	NB Skips from MP 68.10 - MP 76.65	August 14th 2024 - 03:14:18 PM		<input type="checkbox"/>
PA Montgomery Co. SR 1024 Salford Station ...	M13 Project 2 EB from Gravel Pike to Old Skip...	August 13th 2024 - 07:34:47 PM		<input type="checkbox"/>
PA Montgomery Co. SR 1020 Cross Rd Yellow	M13 Project 1 NB from Skippack Pk to Harley...	August 13th 2024 - 07:33:49 PM		<input type="checkbox"/>
PA Montgomery Co. SR 1024 Salford Station ...	M13 Project 2 WB from Old Skippack Rd to Cr...	August 13th 2024 - 07:33:00 PM		<input type="checkbox"/>

Filter above data from start date:

Filter above data from end date:

Active Path Edit

- This page allows a user to view details about the performed recording. Below are the following actions a user can take from this page:
 1. Edit the path name
 2. Edit the path description
 3. Assign the path to specific trucks in a company's fleet
 4. View the virtual line over a Google Map
 5. View the P.A.S. transitions over a Google Map
 6. Edit / Delete P.A.S. transitions before layout is performed
- **A truck must be synchronized to receive any changes made through the website.**

Path Name: PA Lehigh Co. PTC MP 68.10 - MP 76.65 Yellow

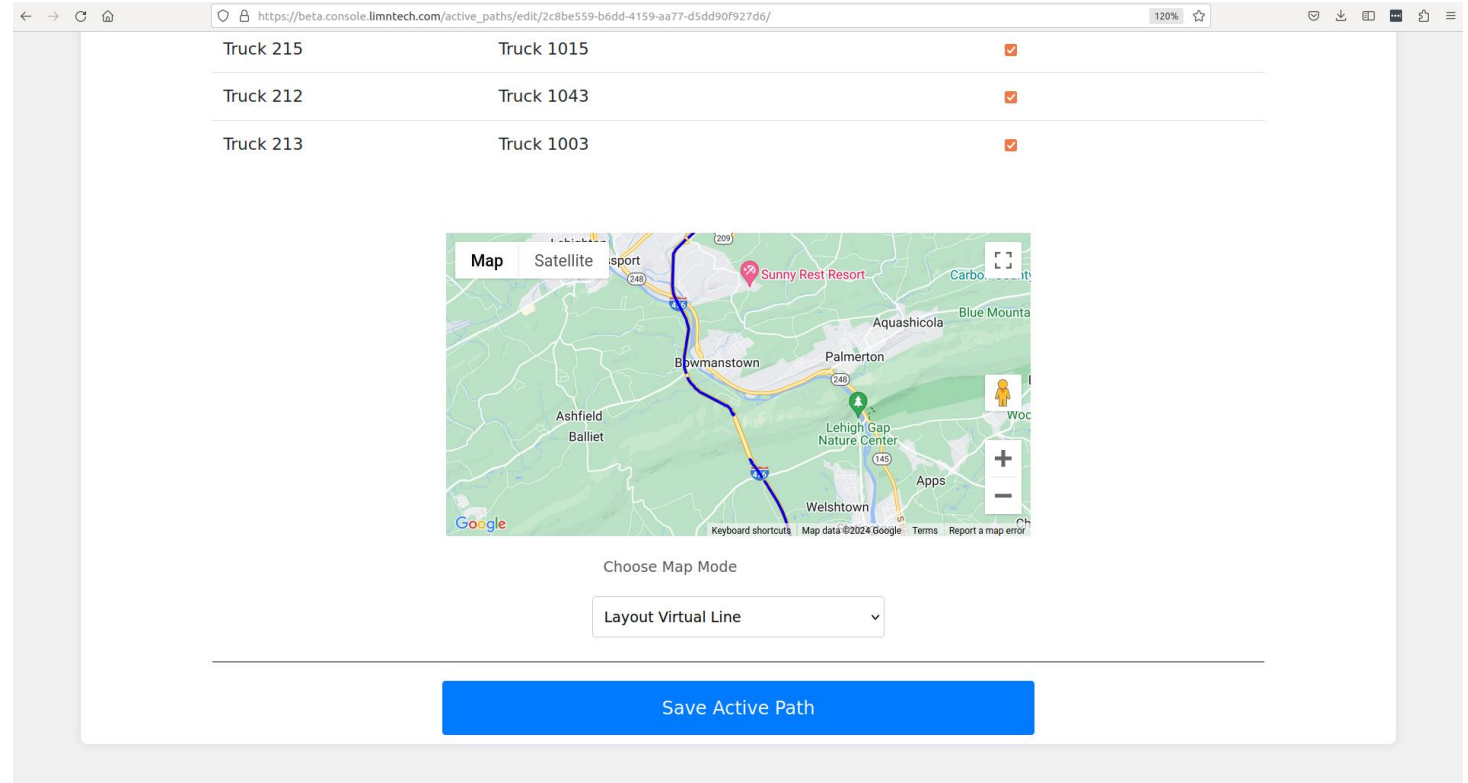
Path Description: SB Yellow form MP 76.65 - MP 68.10

Truck Assignment List

Truck Name	LimnTech Truck Number	Assign Path
Truck 214	Truck 1041	<input checked="" type="checkbox"/>
Truck 209	Truck 1002	<input checked="" type="checkbox"/>
Truck 208	Truck 1042	<input checked="" type="checkbox"/>
Truck 216	Truck 1016	<input checked="" type="checkbox"/>

View The Virtual Line

- Scrolling down to the bottom of the "Edit" page will show the virtual line overlaid on a Google Map.
- If P.A.S. was enabled for the selected recording, a dropdown "Choose Map Mode" will be available as shown in the image to the right.
- This dropdown box will let the user dynamically toggle between viewing the virtual line and the P.A.S. transitions.



View P.A.S. Detected Transitions

- Selecting "Pattern Automation System" on the "Choose Map Mode" dropdown will show the P.A.S. detected transitions on the map.
- The pins on the map represent a detected pattern change. Clicking on one of these pins will show detailed information about the transition. The following slides will give more information on this.
- Previous / Next patterns are with respect to the direction of recording. There will be a pin placed at the location where the recording is started and where the recording is stopped. Clicking on these pins will show the text "Start of Recording" or "End of Recording". This can be used to determine the recording direction if this is forgotten.
- The green line represents where the truck travelled during the Recording. **This is not the Layout virtual line**, since the P.A.S. will work even when there is a red dot during Recording.

The screenshot shows a web interface for viewing detected transitions. At the top, there is a table listing trucks and their corresponding transition IDs, each with a checked status:

Truck 215	Truck 1015	✓
Truck 212	Truck 1043	✓
Truck 213	Truck 1003	✓

Below the table is a map showing a green path with several red pins indicating detected transitions. The map includes labels for locations like Bowmanstown, Palmerton, and Lehigh Gap Nature Center. Below the map, there is a "Choose Map Mode" dropdown menu currently set to "Pattern Automation System". At the bottom, there is a prominent blue "Save Active Path" button.

Transition Detail

- Each pin on the map is clickable and will display the following information
 1. Line color
 2. Pattern Transition (previous pattern and next pattern along the recording direction)
 3. Transition Location (Latitude / Longitude)
 4. Edit Button
 5. Delete Button
- Pressing the button entitled "Edit" will allow the user to change the detected transition to any of the eight P.A.S. supported transition types.
- The button entitled "Delete" will appear for every marker except the markers indicating the start and stop of the recording. Pressing this "Delete" button will remove the transition from the recording.

The screenshot displays a web application interface for managing active paths. At the top, a table lists three trucks: Truck 215, Truck 212, and Truck 213, each associated with a specific truck ID (1015, 1043, 1003) and a checked status. Below the table is a map interface with a 'Map' and 'Satellite' toggle. A popup window is open over a red pin on the map, displaying the following information:

- Color: yellow
- Prev Pattern: Start of Recording
- Next Pattern: Solid Single
- Lat: 40.84949188
- Lon: -75.65671312

Below the map, there is a 'Choose Map Mode' dropdown menu currently set to 'Pattern Automation System'. At the bottom of the interface is a prominent blue button labeled 'Save Active Path'.

Edit Detected Pattern

- When editing a transition, the user will be presented with a dropdown selection of supported P.A.S. transitions.
- When the user is satisfied with their changes, they can press the button named "Apply" in the pop-up window.
- Once every edit is made, the user must press "Save Active Path" at the bottom of the website for all their changes to be saved.
- Once the user pressed "Save Active Path", any vehicle wishing to perform Layout with the changes must synchronize.

Truck 215	Truck 1015	✓
Truck 212	Truck 1043	✓
Truck 213	Truck 1003	✓



Choose Map Mode

Pattern Automation System

Save Active Path

Create New Transition

- Clicking anywhere on the green line will create a new pin on the map
- By default, the previous and next transitions will both correspond to whichever pattern is currently assigned to the line before the user created the transition.
- In the example to the right, the user clicked the green line where "Solid Single" was the current transition.
- The user may now use the "Edit" button to modify this transition.
- Any transitions where the previous pattern and the next pattern are the same will be ignored by the server when "Save Active Path" is pressed.

Truck 215	Truck 1015	<input checked="" type="checkbox"/>
Truck 212	Truck 1043	<input checked="" type="checkbox"/>
Truck 213	Truck 1003	<input checked="" type="checkbox"/>



Choose Map Mode

Pattern Automation System

You have modified the P.A.S. transitions. Pressing the save button will apply these changes which can be downloaded upon your system's next sync.

Save Active Path

Delete Transition

- There may be false positive transitions detected by the P.A.S system.
- If the user wishes to completely remove a detected transition, they may press the button labeled "Delete" that is shown in the pop-up window when clicking on a transition.
- Note: the first and last transitions cannot be deleted since they represent the start and stop of the recording. All other transitions may be deleted.

Truck 215	Truck 1015	<input checked="" type="checkbox"/>
Truck 212	Truck 1043	<input checked="" type="checkbox"/>
Truck 213	Truck 1003	<input checked="" type="checkbox"/>



Choose Map Mode

Pattern Automation System

You have modified the P.A.S. transitions. Pressing the save button will apply these changes which can be downloaded upon your system's next sync.

Save Active Path