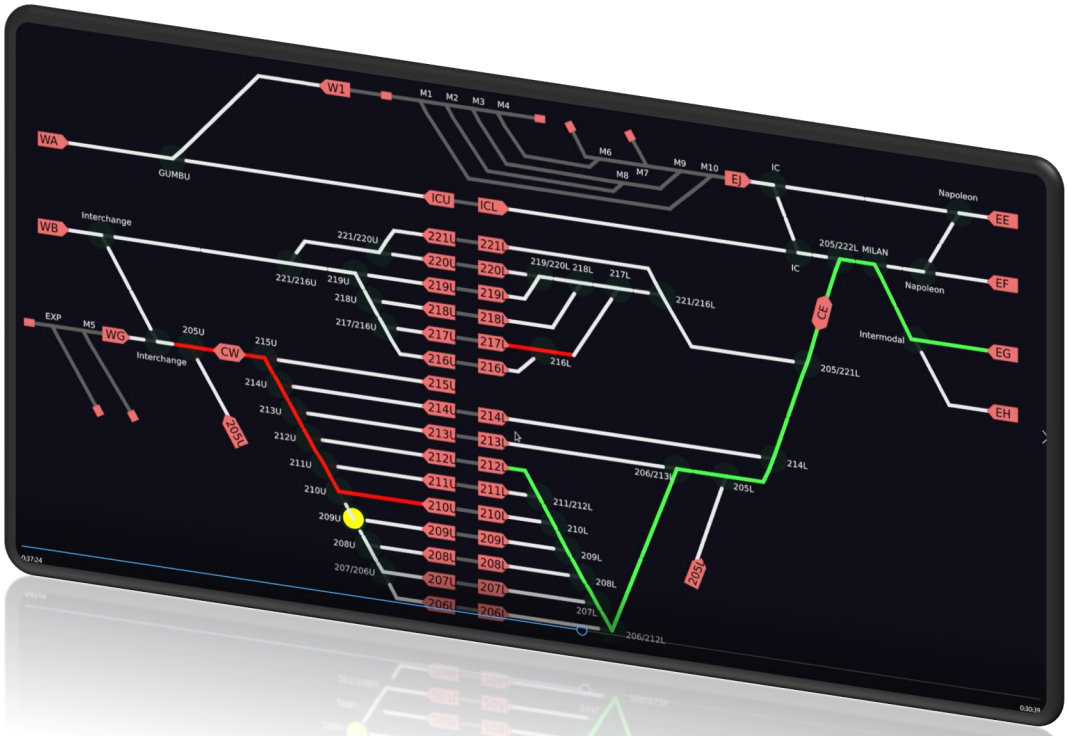
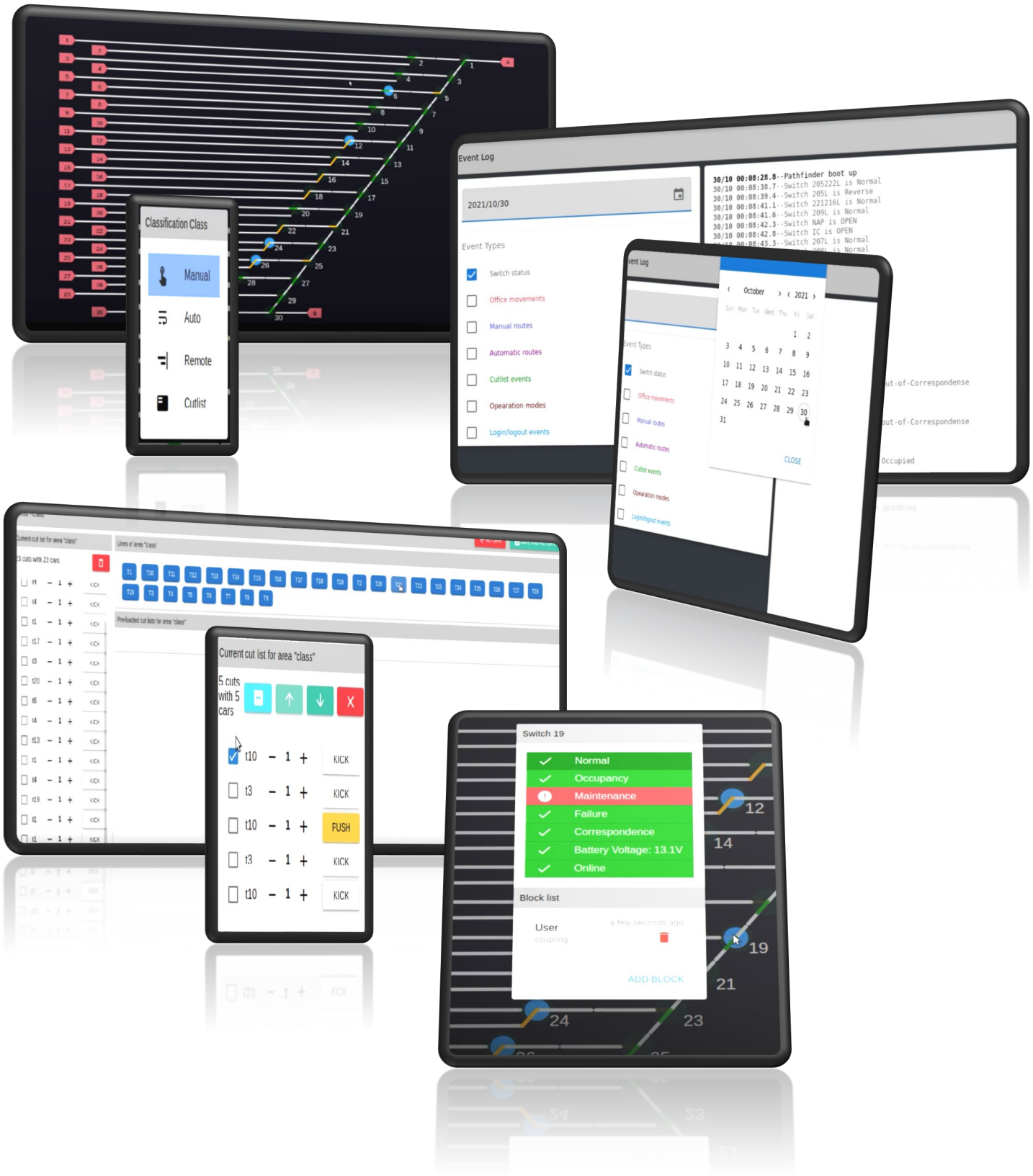
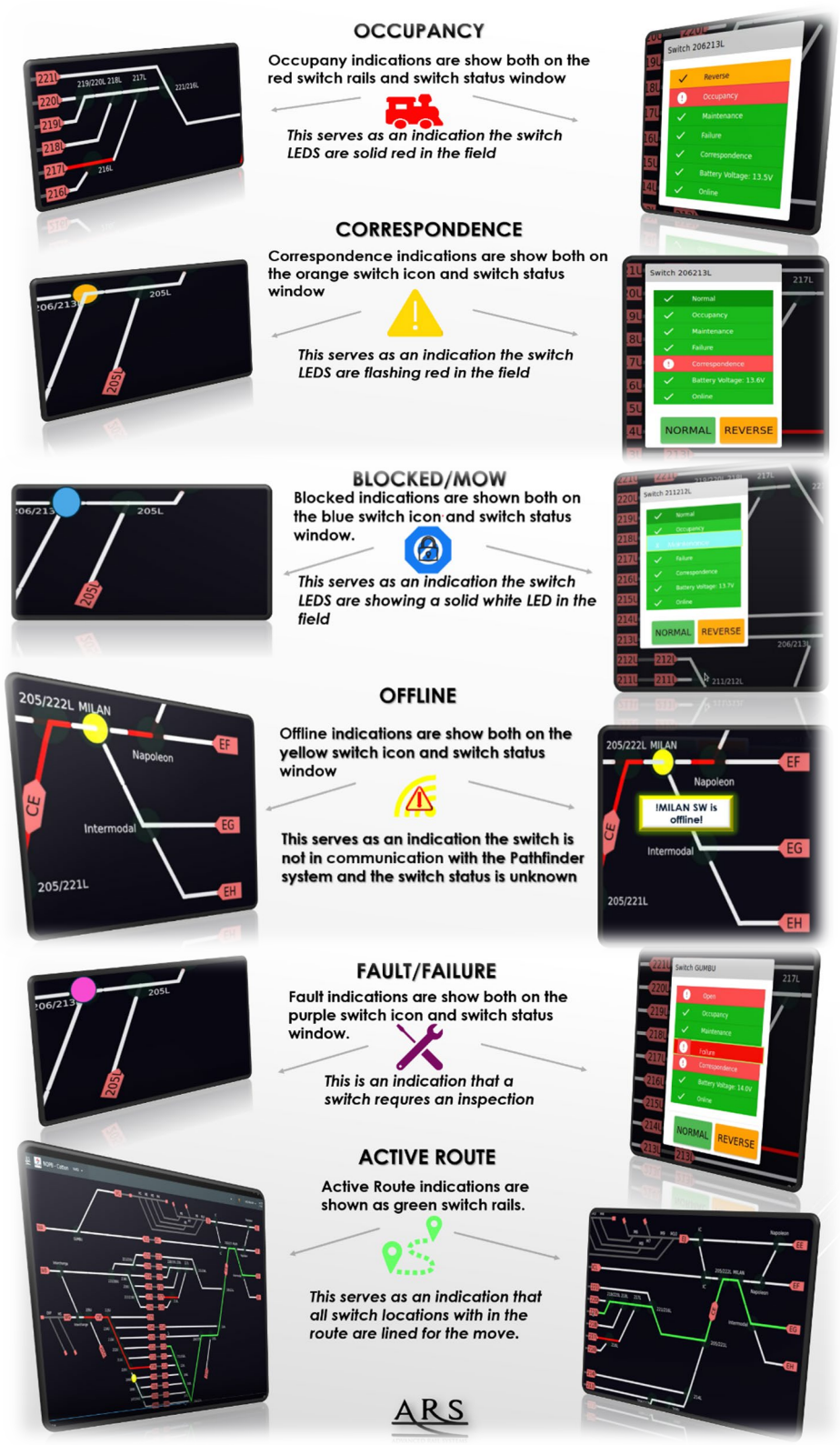
PATHFINDER version 5

Quick Reference Guide




Classification Class
Manual
Auto
Remote
Cutlist
Event Log
2021/10/30
Event Types
Switch status
Office movements
Manual routes
Automatic routes
Cutlist events
Opearation modes
Login/logout events
Current cut list for area "class"
5 cuts with 5 cars
t10 - 1 + KICK
t3 - 1 + KICK
t10 - 1 + PUSH
t3 - 1 + KICK
t10 - 1 + KICK
Switch 19
Normal
Occupancy
Maintenance
Failure
Correspondence
Battery Voltage: 13.1V
Online
Block list
User
ADD BLOCK


OCCUPANCY
Occupany indications are show both on the red switch rails and switch status window
This serves as an indication the switch LEDS are solid red in the field
CORRESPONDENCE
Correspondence indications are show both on the orange switch icon and switch status window
This serves as an indication the switch LEDS are flashing red in the field
BLOCKED/MOW
Blocked indications are shown both on the blue switch icon and switch status window.
This serves as an indication the switch LEDS are showing a solid white LED in the field
OFFLINE
Offline indications are show both on the yellow switch icon and switch status window
This serves as an indication the switch is not in communication with the Pathfinder system and the switch status is unknown
205/222L MILAN
Napoleon
Intermodal
205/221L
EF
EG
EH
CE
IMILAN SW is offline!
FAULT/FAILURE
Fault indications are show both on the purple switch icon and switch status window.
This is an indication that a switch requres an inspection
ACTIVE ROUTE
Active Route indications are shown as green switch rails.
This serves as an indication that all switch locations with in the route are lined for the move.
NORMAL
REVERSE
ARS

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Revisions of this document

Rev	Author	Date	Notes
0	Gustavo Vargas / Michael Minor	11-09-2023	Initial release

1 Table of contents

2 Abbreviations

AIMCAN ..... Armmi Inter-Module CAN-bus
AMP ..... Armmi Management Protocol
ARMMI..... Advanced Railroad Machine-to-Machine Interface
ASP ..... Armmi Secure Protocol
bps .....Bits Per Second
CAN-Bus..... Controller Area Network Bus
DHCP ..... Dynamic Host Configuration Protocol
DNS..... Domain Name System
DTMF.....Dual Tone Multi-Frequency
HTTP.....Hypertext Transfer Protocol
HTTPS.....Secure Hypertext Transfer Protocol
OLED ..... Organic Light Emitting Diode
PLC ..... Programmable Logic Controller
RTU .....Remote Terminal Unit
TCP ..... Transfer Control Protocol
UDP.....Operator Datagram Protocol
USB ..... Universal Serial Bus

3 Glossary

Genisys..... Genisys is a protocol created by Union Switch & Signal. It is used to communicate with SCADA field devices and is commonly used in the rail industry.

Modbus.....An industrial protocol used to control remote devices. The serial variation is called Modbus/RTU and the Ethernet version is Modbus/TCP.

4 Introduction

The Pathfinder Yard interface system provides advanced automation for railway and industrial flat yards. Pathfinder equips the operator to conduct operations Productively, Efficiently, and Safely. This quick reference guide covers the Pathfinder operating Characteristics, user interface, and auxiliary components.

Pathfinder can manage standard NX routing functions, stacked routing/classification functions, complex cut list integration, car tracking/inventory management, and a variety of wayside interfaces for automated switching functions inside the yard. The Pathfinder system has built in logging features for reporting, maintenance, and validation of operation.

The Pathfinder system was designed for seamless integration when controlling yard switch machines from ARS however Pathfinder is also capable of controlling existing yard switches and wayside devices from alternative suppliers and still deliver the same results.

The Pathfinder system focuses on simplicity of installation, operation, and reliability.

5 Installation Overview

A standard Pathfinder installation is comprised of a local server and a private communication network for field connectivity. Network options range from a variety of serial or IP based wired and/or wireless connections.

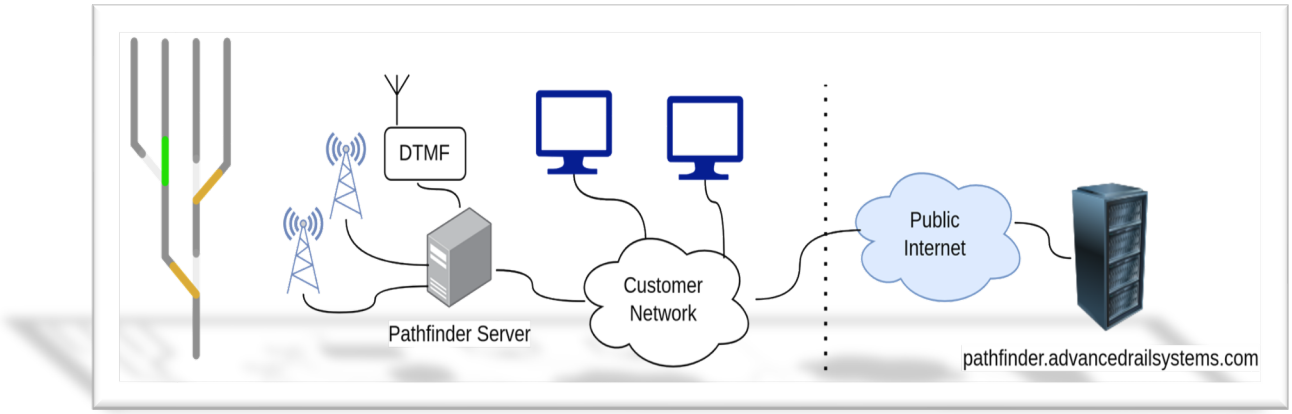


Figure 1: Installation overview

In addition to the private network the Pathfinder Local Server can also tie into the end-user's network and operators may use any standard workstation to interface the system. No special OS or software is required to be installed on the customers workstation(s). The end operator can utilize a standard web browser like Mozilla Firefox or Google Chrome. App based interfaces for tablets and smart phones are also available.

The communication interface is proportional to the physical size, network connections, and operations unique to each yard. The Pathfinder local server and communication equipment is highly compact. The system is small enough to be installed inside a single electronic enclosure or a 3U equipment rack.

The Pathfinder System utilizes IP whitelisting for remote connections. Remote workstation connections must be configured accordingly to be granted access to Pathfinder. Properly configured network architecture allows remote monitoring and remote control from any location, if desired

Optionally, it is recommended that the Pathfinder server is connected to the internet and to reach our pathfinder server (https://pathfinder.advancedrailsystems.com). This provides immediate support/diagnostics from ARS team and also allows an entry point for customer's employs looking to remotely access event logs, tag reader inventory, or any other reporting features specific to the customer's operation.

6 Interface

6.1 Browser interface

Pathfinder, being a web system, allows operators to simply open a compatible web browser and connect to the IP designed to the yard they wish to access. Multiple yard views of a single yard or location may be accessed from a single point.

Following network rules defined by the customer and internal rules declared inside Pathfinder itself, every computer connected to pathfinder will be classified by the following access levels:

- ***control level access*:** allows the operator to move switches, create routes, etc.
- ***planning level access*:** allows the operator to monitor current operations without being capable of controlling remote yard elements as well as manage switching/cut list for classification operations inside that yard.
- ***monitoring level access*:** allows the operator to monitor current operations without being capable of controlling remote yard elements but allows monitoring current operations and access to reports and event logs.
- ***Blocked access:*** this is the default access level and will deny this computer to connect to pathfinder.

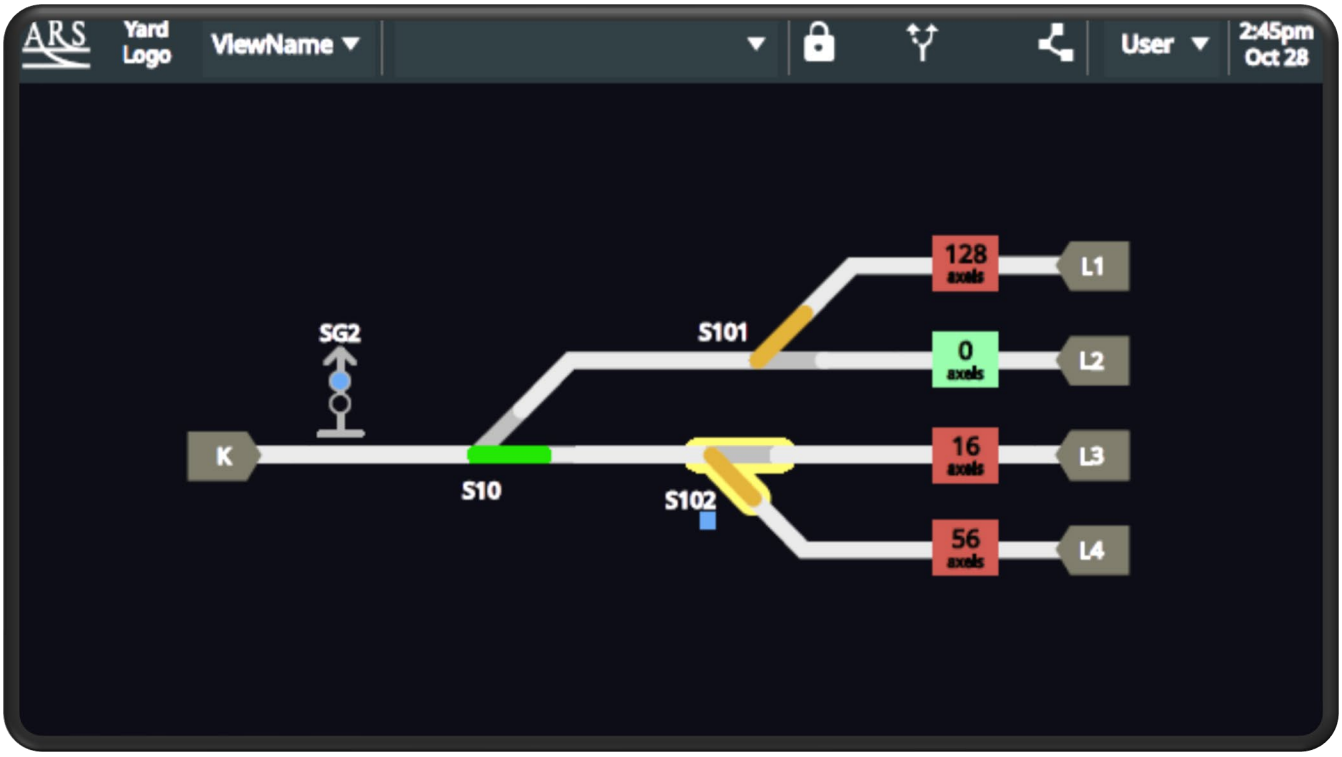
6.2 User Accounts

As another layer of security, Pathfinder also manages operator accounts inside of the system. Even if a remote computer receives *control level* access to the web-based GUI the operator also must login to Pathfinder before issuing any commands or controls. By default only a single use can be logged into pathfinder at one time. When setting up operator accounts in Pathfinder the administrator may select or restrict the following operator authorities:

- Individual switch control
- NX routing
- Switch/cut-list management
- Stacked Routing (classification operation)
- Switch or track blocking
- Diagnostics, reporting, and data logging
- Create/manage operator accounts

6.3 Login

For an approved operator connect to Pathfinder from the browser interface they must enter the designated IP address for yard location they wish to interface. Once directed to the site the operator will see the yard map display like the example below.

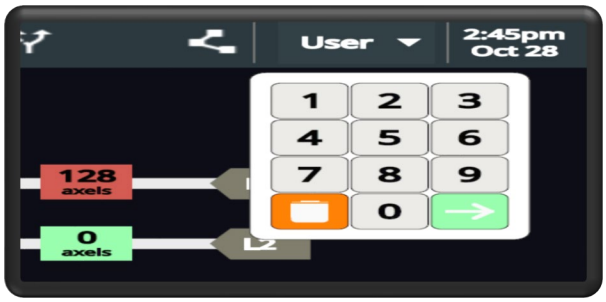


The top header toolbar is always present; however, note in some cases the control buttons or the option to log-in may be disabled in accordance with current access/permission level.

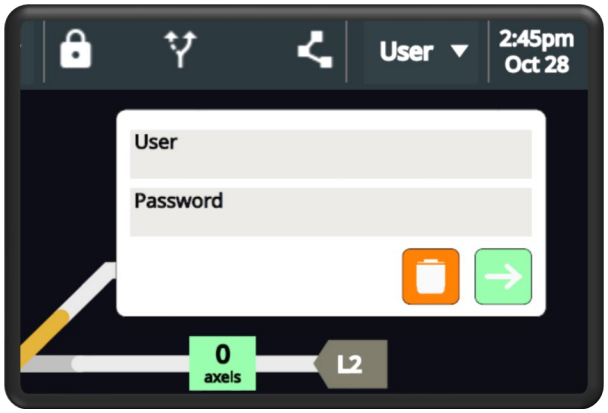
To be able to access the Pathfinder features and controls the operator must first login into the system by operator drop-down menu in the top right of the header toolbar.

Pathfinder manages operator logins by the following default methods:

- ***Operator pin code*:** each operator has a single user pin code (at least 5 number digits). The Pin code method is recommended for touchscreen interfaces. Pin codes are set by the administrator at the time the operator account is created. Once a pin code is assigned to an user account it can only be modified or removed by an administrator. Duplicate pin codes are not permitted for pathfinder operator accounts.



- ***User/Password*:** each operator has a standard username and password used during login. The user/password method requires the operator's workstation to be equipped with a keyboard.



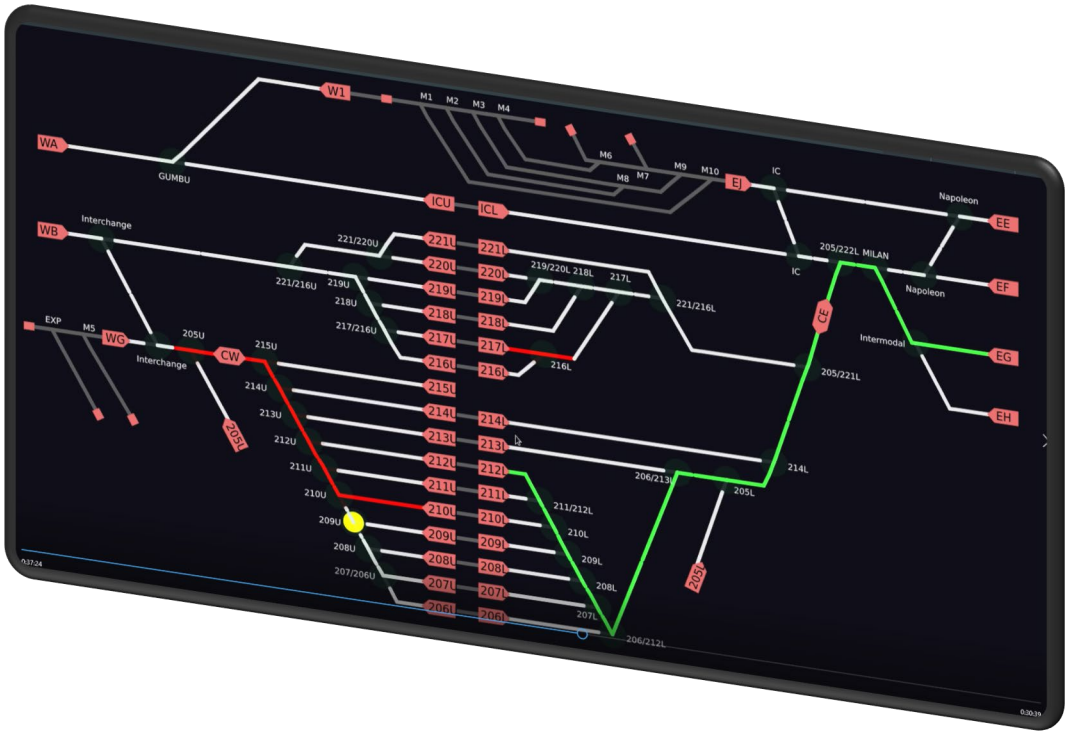
By default, the Pathfinder system will automatically log out the operator after a predetermined period of inactivity. The operator may also manually log out using the user dropdown menu in the toolbar.

Each operator, regardless of the login method, will have his own permissions list (as defined during its creation), and Pathfinder will only allow the applicable ones. Example: An operator with no permission to move individual switches will not see the control icons in the switch status pop up menu when clicking over switches.

The Pathfinder system will record requested commands issued under the responsibility of the designated operator logged in at the time.

6.4 Yard Views

Yard track layouts vary in size from small to large. Pathfinder's SVG graphics and multiple yard views allow the operator to select a view suited for their desired operations. All elements and icons on the yard view screen are customizable by size, color, and location.



Pathfinder allows for a map to be presented in multiple views, for example: *Full view, West, East, North, South, Receive, and Departure etc.*

Operators can use the drop-down menu in the top left corner of the header tool bar to choose the view more relevant to their task. Regardless of the selected view pathfinder is still managing the entire yard system in background.

6.5 Controls

6.5.1 Header tool bar controls

The number and function of the header tool bar icons are dependent of the yard operation and will be defined in the site-specific documentation for each yard using Pathfinder. The default header tool bar icons are described below.

The lock icon provides indication and management of locked routes

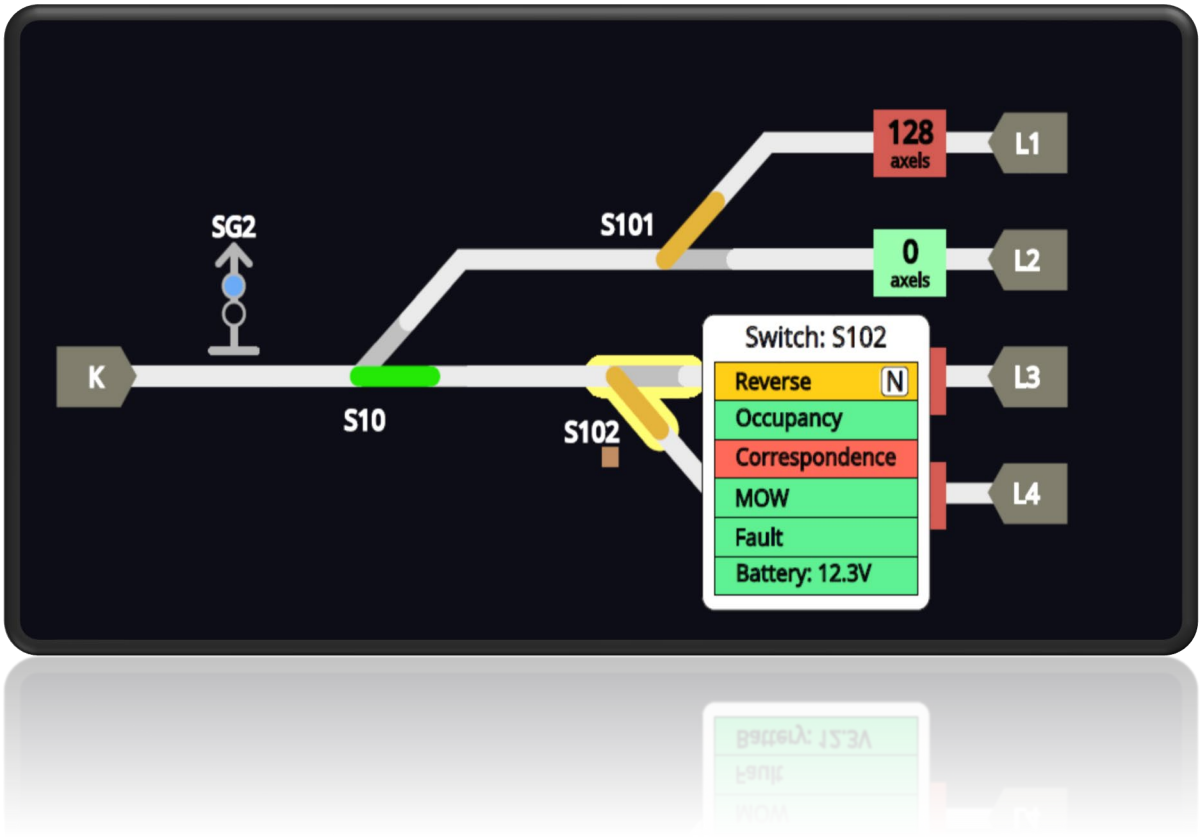
The path icon provides indication of current and pending routes and also allows the operator manually cancel routes.

The zone icon provides indication of virtual zone status and allows the operator to manage the virtual zones if needed.

Header tool bar controls are further explained in the upcoming virtual zone and routing sections.

6.6 Yard Map

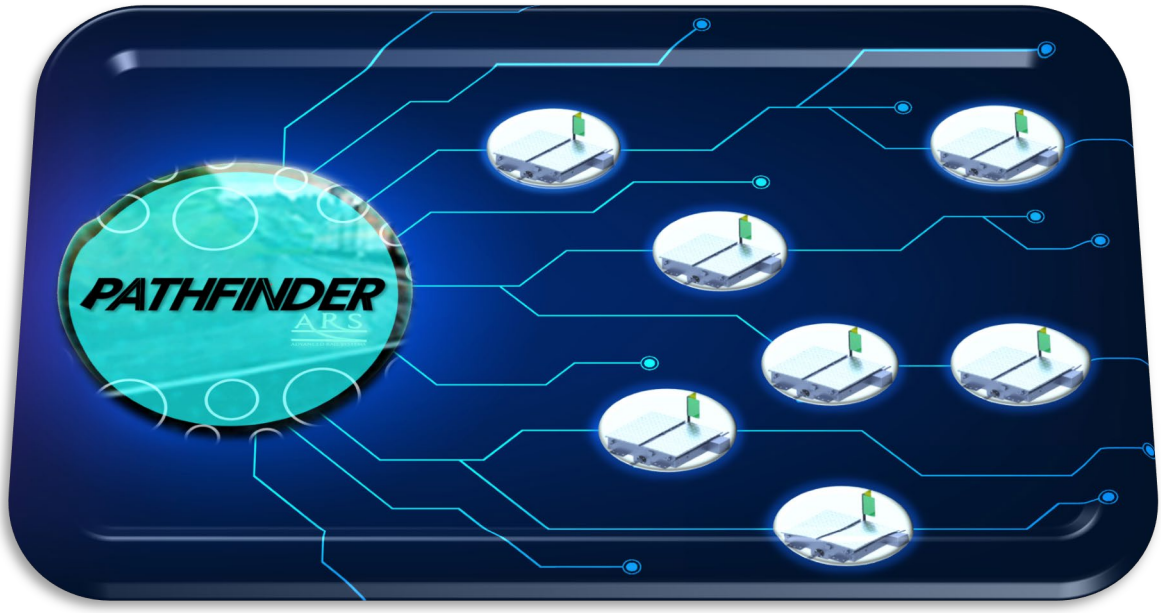
Every controllable element on the yard map can be clicked on to present a popup window with relevant status and controls for that element.



Controls, however, are only displayed if both the current remote computer and current logged in operator have been granted permission to execute such operation.

By default, the pathfinder browser interface will be launched in full screen/kiosk mode. Toggle from full screen view to standard view by pressing F11 on the operator keyboard.

7 Remotes



By default, the Pathfinder system is designed to retain a constant connection with its remote field devices.

Any state change in the remote field device will be indicated on the map and also recorded to the event log by Pathfinder.

Pathfinder can communicate with remote field devices using varying protocols. Pathfinder protocol interface is flexible and can use custom protocols, as specified by end user, to communicate with site-specific elements in the yard.

Pathfinder's default protocol interface are listed below:

- Genisys Serial/UDP
- Modbus RTU/TCP
- ASP- ARMMI secure protocol

Every remote device on a single channel/com line must use the same protocol. However, Pathfinder can be configured as a hybrid system with multiple channels/com lines with independent protocol on each. For example, Pathfinder can control a legacy area of the yard using the existing device/protocol as well as a new portion of the yard with a newly installed device with a different alternate protocol. A hybrid Pathfinder system is capable of seamlessly and transparently controlling a variety of switches with unique protocols, channels, or communication mediums.

7.1 Switches

For Pathfinder, the most common remote device to be controlled is a power switch. Pathfinder will monitor and indicate the following field switch conditions to the operator:

In addition to the field condition indications Pathfinder also provides indications of the following alarm states:

Icons next to switch name appear when a remote switch is in a state of alarm.

***blue*:** switch with remote block (MOW)

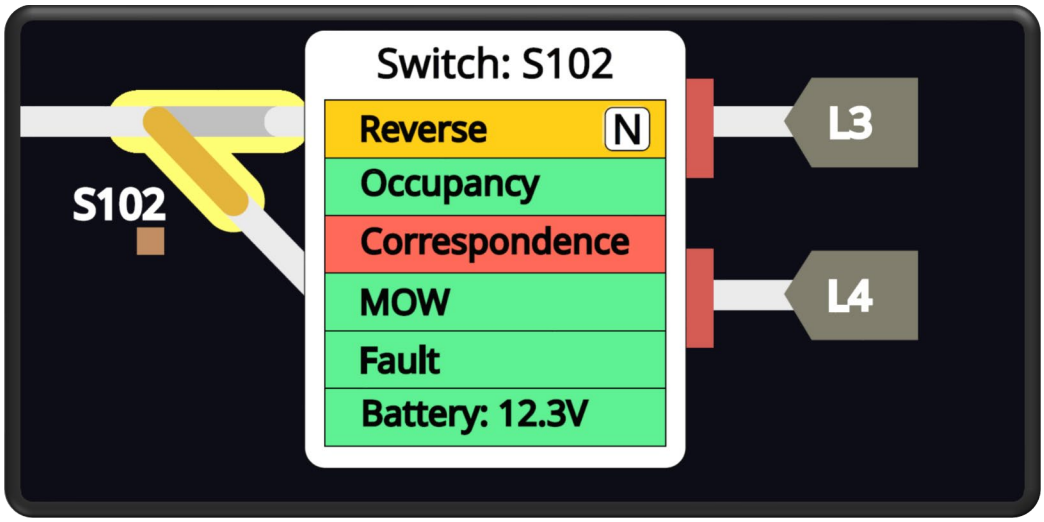
***brown*:** out-of-correspondence/no position

***pink*:** fault

***red*:** offline (Pathfinder not communicating with the remote switch)

Note when an offline alarm is present the remote processor is not responding to Pathfinder. In this situation Pathfinder has no communication with the remote switch to provide indication status. The yellow alarm background will be the only indication on the map as any other data (positions, occupancy, blocks), are unknown in this situation.

Detailed information for each switch location is available by clicking over a switch element to open its popup window previously mentioned. Individual control of a particular switch is also accessed by clicking over a switch to open its popup window.



In custom Pathfinder applications the switch popup menu may have additional controls available. For example, extra indicator LEDs or audible alarms prior to actual switch movement.

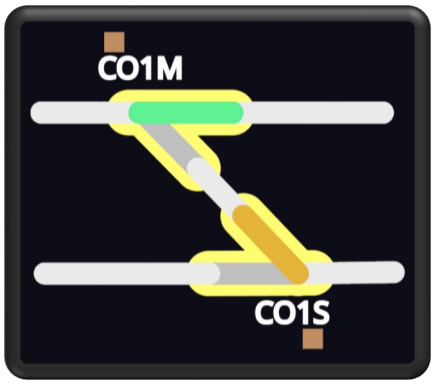
Apart from the default statuses listed above Pathfinder is fully customizable to allow for extra information/indications collected by installed device at the remote switch location. For example. Access gates, non-public yard crossings, security alarms, AEI scanners and other wayside devices.

7.1.1 Crossovers

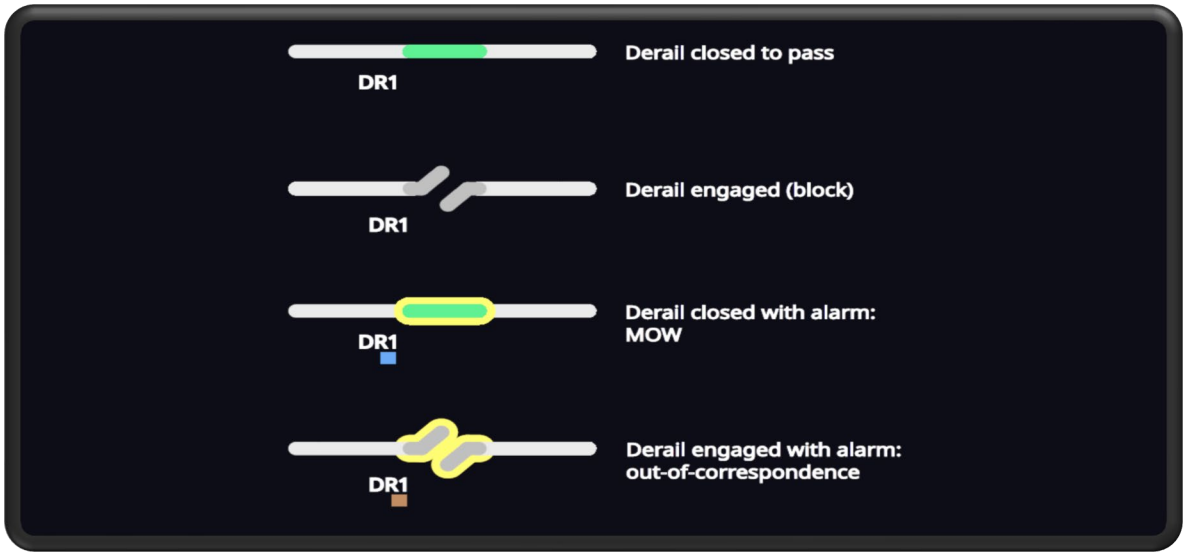
In Pathfinder crossover switch locations provide alarms, indications and receive controls in similar fashion to the yard switch locations previously mentioned with the following exceptions:

- The Operator may click on any of the two switches to issue commands and both will move together.
- Both switch locations must move together and indicate redundant normal position or redundant reverse position to ensure both machines are in the same position
- Occupancies are indicated on an individual switch basis.

If either end of the remote crossover location is in an alarm state, Pathfinder will indicate alarms on both switch machines on the crossover element on the yard map.



7.2 Derails



Remote derail locations on Pathfinder also provide alarms, indications and receive controls in similar fashion to the yard switch locations previously mentioned with the following exceptions:

All alarms and controls are the same with 3 exceptions:

- The track symbol varies from a standard switch location
- *normal* position/command is referred to as *un-applied*/*pass* position on a derail application.
- *reverse* position/command is referred to as *applied*/*blocked* position on a derail application.

The new names (pass/block) are used in all interface, diagnostic and log data in a derail application.

An additional operator username and password (or pin code) is required from the operator before controlling the derail to any position.

7.3 LED-Indicators

Pathfinder includes functionality to monitor and control wayside remote LED indicators. LED indicator control can be set manually by the operator or can be automatically lit based on feedback status of field conditions. Multiple LED symbol elements inside of Pathfinder allow for customizable configuration for uni-directional, bi-directional, and routing indicators on the yard map.

Remote LED indicators in Pathfinder include the following indications, controls, and alarms:

- LED on/off indications Automatic/Manual control status
- LED light out indication (pink alarm state) If a LED indicator on the yard map shows a black cross on top of the LED element it has an LED light out alarm. The Armmi processor is not detecting its power consumption or there is an issue with the control wiring to the wayside LED indicator.
- Online/offline indication (red alarm state) if a LED indicator is offline and state status is unknown. A blank symbol is displayed along with yellow alarm border round LED indicator on map.
- Manual on/off LED indicator control. To control a remote LED indicator the operator must click over its symbol on the map and its popup window will allow operator to toggle the LED indicator (on/off) manually.

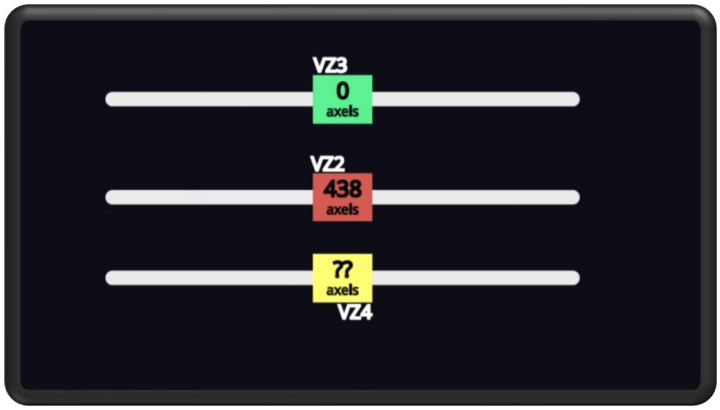
If any remote LED is in automatic operation, this will be indicated on the yard map by a black **A** on top of the LED element and operator control will be disabled.

7.4 Virtual Zones

Pathfinder can create virtual zones in between switches utilizing wheel sensors/counting for occupancy.

In above example both switch SW1 and SW2 are using wheel counting for occupancy system, the distance between the 2 switch locations is greater that the span of a standard rail car, However the long rail connecting SW1 to SW2 does not have dedicated occupancy detection hardware and cars parked on the track or car in transit between both switches would not be indicated on yard map.

With the virtual zone system Pathfinder can create a counting zone between facing point sensor 3 of SW1 and facing point sensor 2 of SW2 and with this information the number of axles (or cars) will be displayed over the track line. The routing systems takes this information in consideration while creating routes and will not create routes over lines with virtual occupancies.

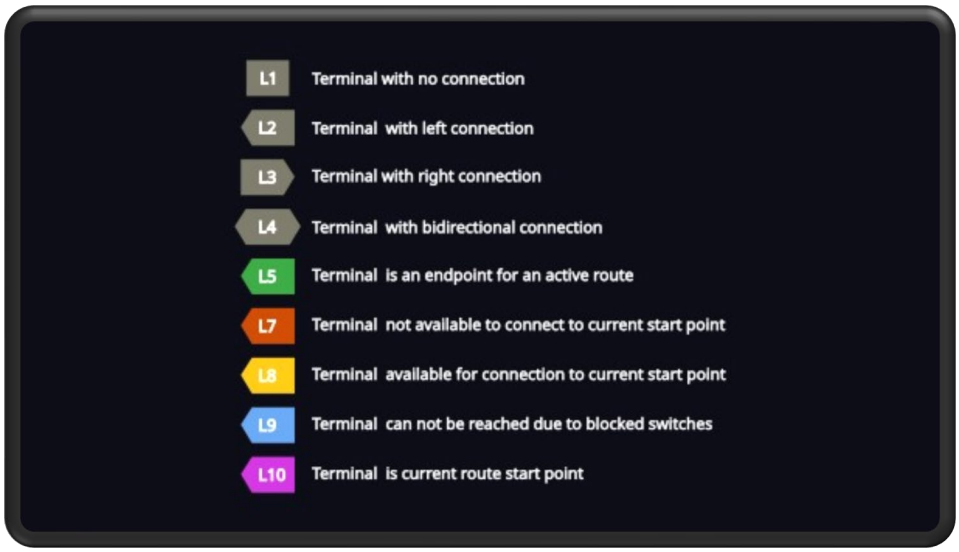


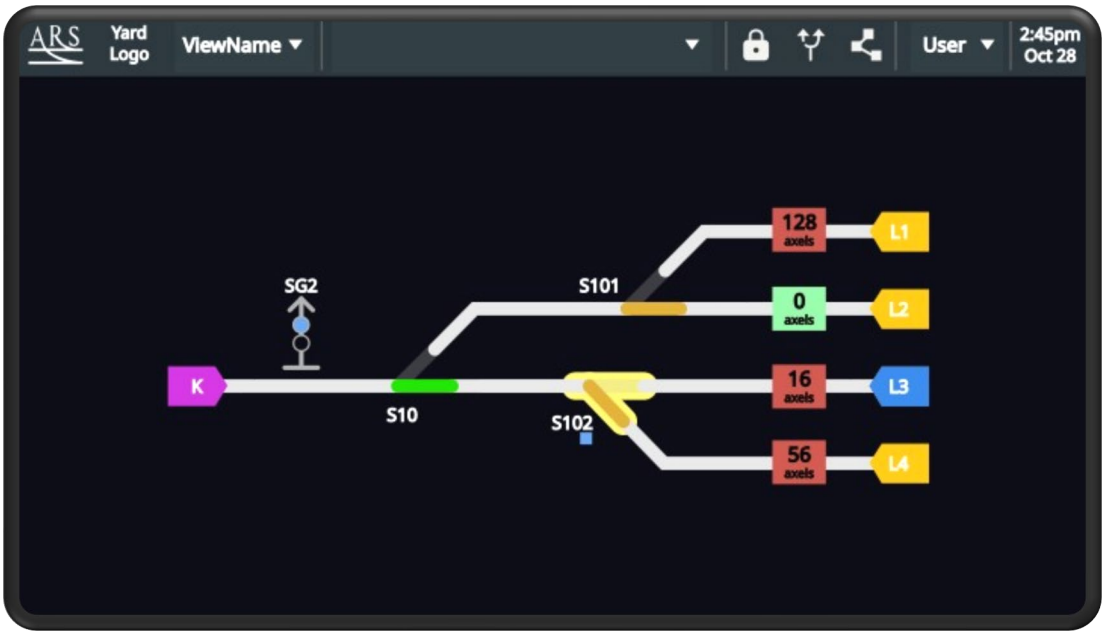
Pathfinder includes a fail-safe operation for virtual zone operation. Since communication with both ends of the virtual zone is essential for reliable counting, if either switch locations goes offline then the virtual count is marked as unknown, and the routing system starts to consider this line as occupied. Once communication is restored the number of axles can be manually modified/corrected by the pathfinder operator. This is also an essential feature for maintenance scenarios. As an example, if a switch is turned off for maintenance, the field personnel are not required to remove cars from the zone to ensure a clear track before restoring the zone, unlike non virtual wheel counting zones. The Pathfinder operator simply enters the known number of axles/cars inside the virtual zone and re-initializes the virtual zone on the pathfinder map.

8 Routes

Pathfinder uses terminals as start and end point for routes. Terminals can be selected via the yard map by clicking on route element or virtually selected via DTMF codes assigned to that terminal.

Terminals can be uni-directional or bi-directional





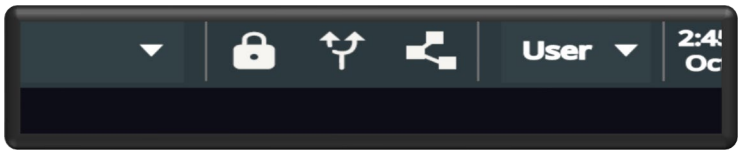
To create a manual route, the Pathfinder operator selects the desired entry terminal, Pathfinder will then identify the exit terminals currently available. In the image above terminal **K** was the entry terminal selected. Notice terminal **L3** is not available as an exit terminal since the switch **S102** is locked at reverse position. To select a desired exit terminal the operator can click on any of the available yellow exit terminals. To cancel the exit terminal selection process, the operator can click on the purple entry terminal or Pathfinder will automatically cancel the terminal selection process if a desired exit terminal is not selected within 10 seconds.

Once the Pathfinder operator selects the desired exit terminal, Pathfinder will request the remote switches to line for the route. Once the remote switches are lined for the desired route that route will be indicated on the map and the track will turn green

The green line seen above is only shown when the route lock function is active. The padlock in header toolbar will indicate locked whether creating a route from the yard map, or if the route was created with a DTMF code.

When a route is locked every remote switch that is part of the route will ignore new commands from Pathfinder to move until its route is unlocked after the detection zone for each remote switch is occupied and then unoccupied. This ensures a confirmed route will not be overridden by Pathfinder until used.

Note, the remote field switches are not field locked and can still be moved locally by a local pushbutton command or manual handpump. In the event of this happening the locked route will be released by Pathfinder and Pathfinder will provide feedback that the route failed on the yard map as well as broadcast an audio message over the radio network.

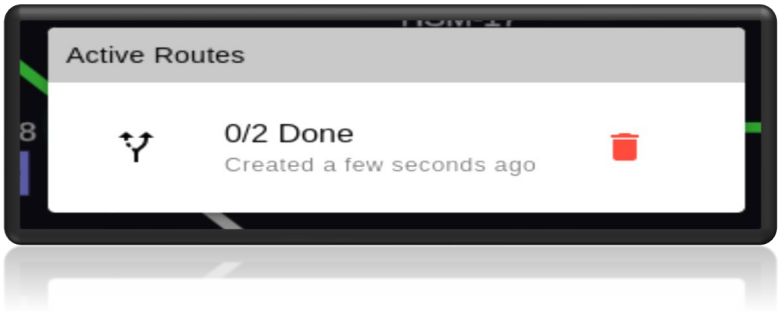


If the Pathfinder operator wishes to unlock all confirmed routes on the yard map they can do so by clicking on the padlock icon in the header toolbar. The remote switched will remain in the current position and a new route can be created.

By default, in complex yards with multiple routes between entry and exit terminals, Pathfinder will dynamically determine the best route based on current field conditions, number of remote switches inside the route, and the number of remote switches that need to be moved to create the route. Route priorities can be set up for entry and exit terminals if dynamic routing is not desired.

Multiple routes can be active at the same time as long they do not conflict each other.

The  icon right to the padlock allow operator to see and cancel active routes.

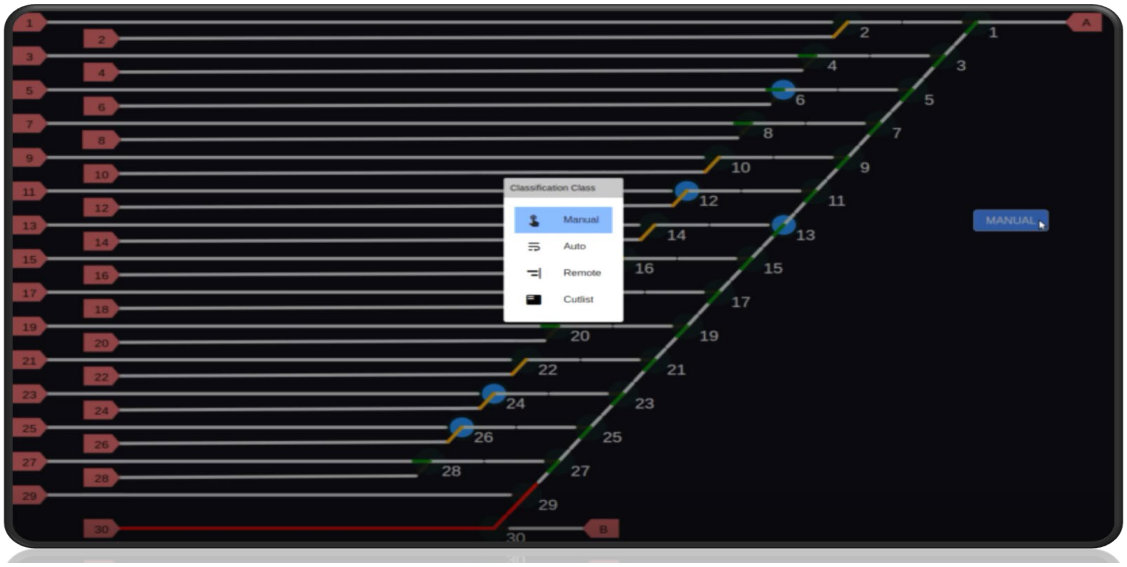


The example above shows that a single route was just created, this route consists of 2 remote switch locations and 0/2 switches in that route have been released. The Pathfinder operator can delete an individual route by clicking the trash icon in the pop-up window. Once the operator cancels the route all switches within that route are available for use.

Note, in the case of a remote derail located inside a particular route, derails are not unapplied by Pathfinder for the routing function. If a route is required to pass through a remote derail location that is in blocked/applied position, then the route will not be confirmed. The Pathfinder operator must first un apply the remote derail prior to requesting the route to gain route confirmation.

9 Classification

Pathfinder includes stacked routing functionality for yard classification operations. Multiple classification areas inside the yard may be present in larger yards. Typically, in classification areas of the yard Pathfinder has a pre-determined entry terminal assigned to the lead remote switch in the classification area. This is typically referred to as the king switch of the classification lead.

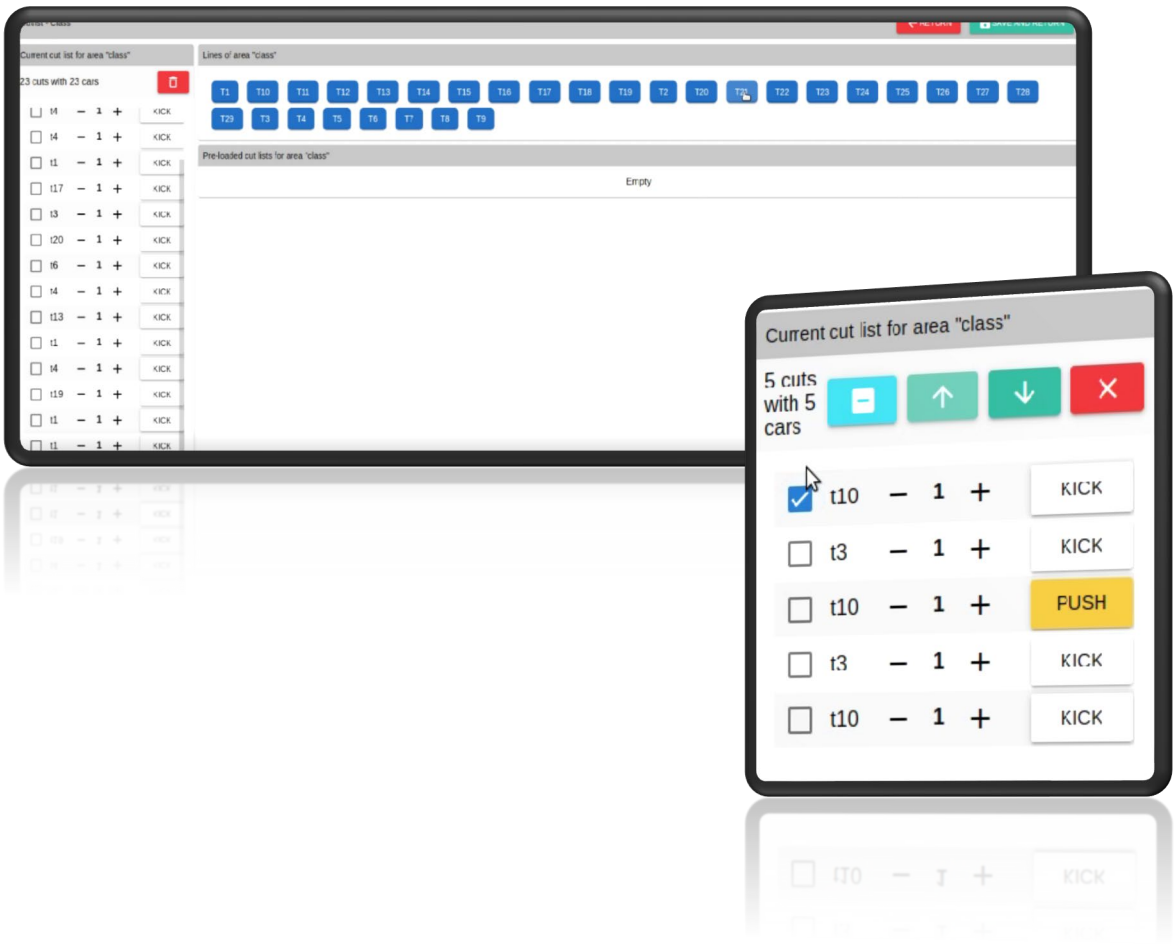


Classification operation starts by loading or entering a switching/cut-list based on the required planned train moves. The cut-list editor interface allows the operator to transfer their switch list to the HMI Pathfinder System. Cut-list can be manually entered or selected from a pre populated list provided by the customer' car inventory system. Completed cut-list or edits made to cut-list in Pathfinder can be transmitted back to the customers yard inventory system or reporting dashboards.

The cut-list menu allows the operator to build and edit the switching list by selecting from a list of available tracks and sorting those entries as needed. Once populated the cut-list may be appended, modified, relocated, or cleared by the icons above the populated cut-list. Individual or multiple items can be deleted based on operator selection. Shove/Push moves can be designated at the time of cut-list entry. All cuts designated to be shove/push will force Pathfinder into remote route advance mode to ensure remote switch locations do not line against the train while it is making its shove move into the classification track. Once edits are made the operator can return to the main screen clicking the save and return icon. If the operator wishes not to keep the changes made the operator can click the return icon and the system will not store the updates.

Once the cut-list is loaded into Pathfinder the operator may execute the list in Automatic advance or remote advance mode.

- *Automatic advance mode*: Pathfinder will create a route for the next target line and wait for the current route to be released. As soon as Pathfinder can create a route for the next line it will and then the operator is ready for the next cut. This mode is recommended when cars are being kicked from the front of the lead into the bowl tracks. This mode is not recommended when shove to couple or push moves are being made into yard tracks.
- *Remote advance mode*: Pathfinder will create the first route and wait for an *Advance* command before advancing through the cut-list. The operator initiates the remote advance feature when desired, following each cut.

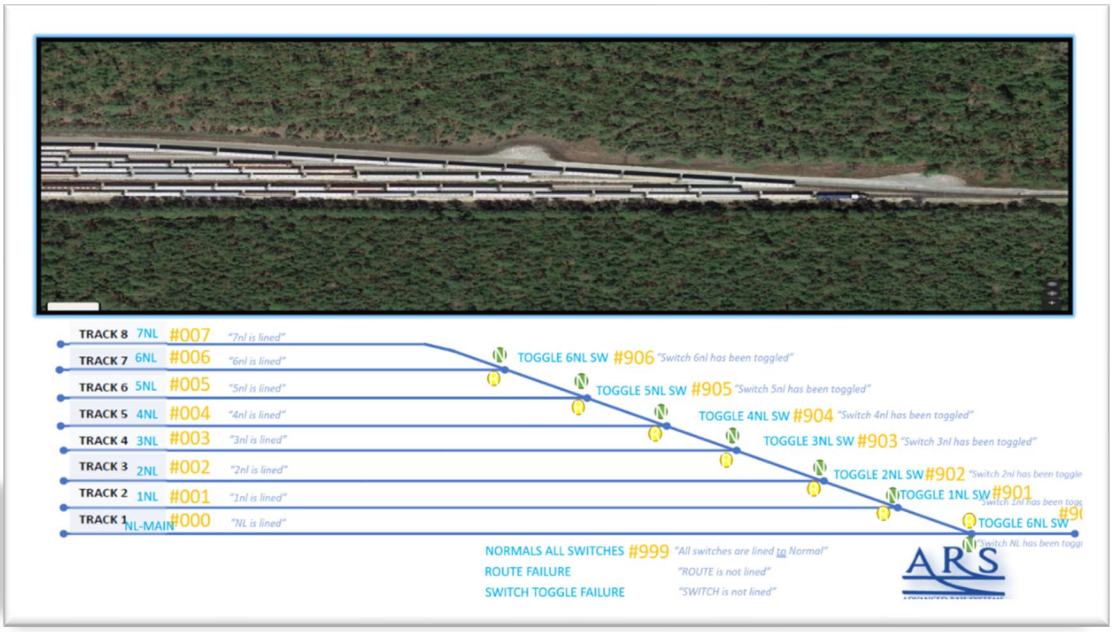


10 DTMF and Audio Feedback

Pathfinder can be configured to include a DTMF interface and audio message feedback over the end users VHF/UHF radio network. Switch control, routing, classification, and customizable functions are available to the end operator. Multiple radio channels or DTMF interfaces may be used on a single Pathfinder System for larger yard control systems with more that one crew working at once.

Pathfinder requires that DTMF codes must be at least 4 digits long. Codes can be auto generated by pathfinder or defined by the customer. Pathfinder allows for all 16 digits: 0 to 9, A to D, # and * to be used in the DTMF tone sequence. The interval between keys of the same code is important and, if operator adds a long space in between digits is very likely Pathfinder will be ignoring the code.

Default configuration allows for up to 1 second in between digits but this can be adjusted.

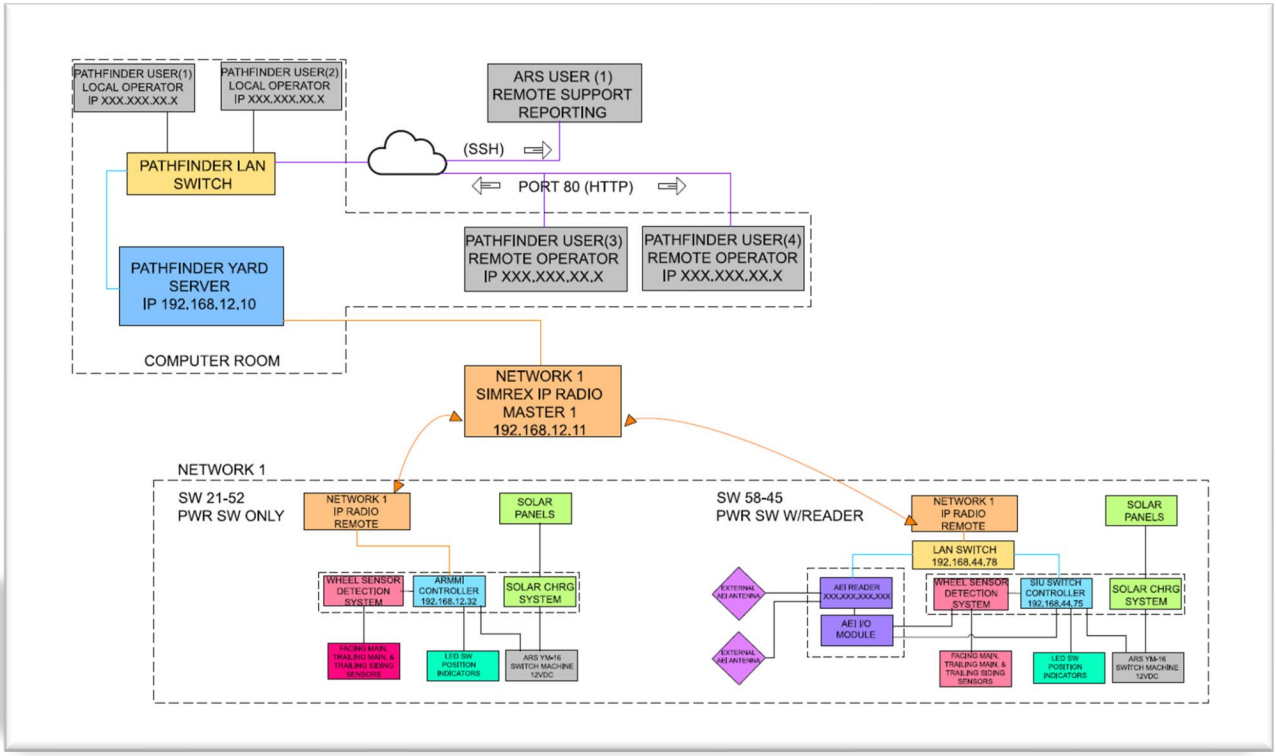


Following a valid DTMF input Pathfinder will respond with audible feedback (success/failure) within 3 seconds. If the operator does not receive a response within that time frame, then the commands can be repeated/retried. Any valid command will always reply (even to inform it has failed). Silence is an indication Pathfinder got an invalid/unknown command and it is safe to try it again.

Default Pathfinder DTMF commands and audible responses:

- Individual switch control. Normal, Reverse, and Toggle
- Individual switch status Query
- Dynamic route request
- Direct route request
- Route cancellation
- Route confirmation
- Kick or shove move status
- Classification functions, Pause, Resume, remote route advance.
- Query a cut-list status
- Query a virtual-zone status
- Execute batch routing or switching commands.

11 Management Tools for Support and Maintenance

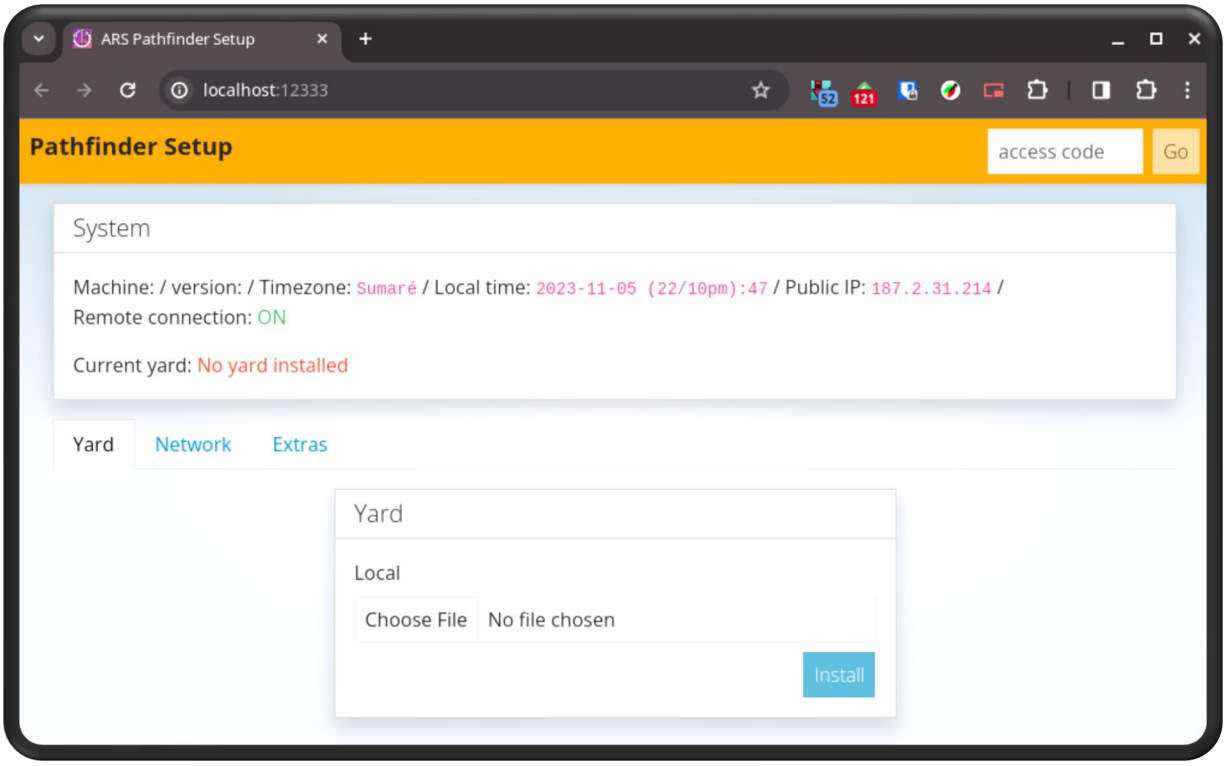


The Pathfinder Server also provides the following additional web pages that can be accessed for Support and Maintenance.

- http://IP/setup – to access the **setup** page
- http://IP/state – to access the **status** page
- http://IP/log – to access the **event log** page

11.1 Setup Page Browser Interface

The Pathfinder server includes the setup page that provides a browser interface access to the network configuration and Pathfinder yard map configuration.



If a new server needs to be set up or if a backup server needs to be installed follow the steps listed below. New or backup Pathfinder servers are provided with default blank Pathfinder configuration. Site specific yard maps and yard details can be uploaded through the Setup Browser interface page from a USB memory stick or downloaded from the Pathfinder website. Customer Credentials or OTP authentication is required to retrieve site specific files from the Pathfinder website. If some cases the procedure mentioned below may be password protected by the local administrator.

New server or backup server activation process:

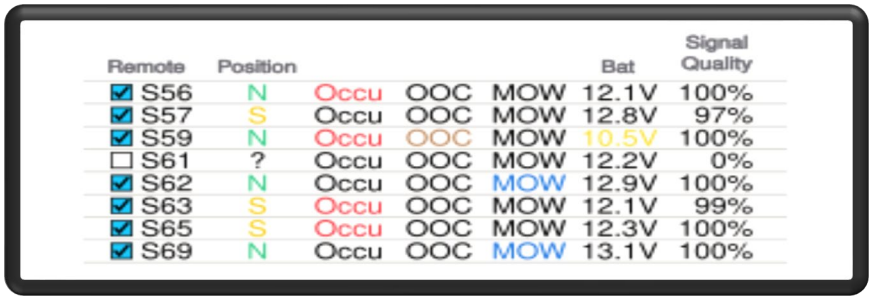
1. Power on server and connect a PC or laptop to it using a standard ethernet cable.
2. On the PC of laptop open a browser and navigate to http://192.168.31.88/setup (this is its default IP from ARS)
3. Open the *yard* tab and upload the yard map from the USB memory stick or downloaded file.

4. Open the *network* tab and set the default IP to correct IP address for site and local network.
5. Enter the local IP for the Pathfinder Yard map and ensure that Pathfinder is working as intended

11.2 System Status Brower Interface

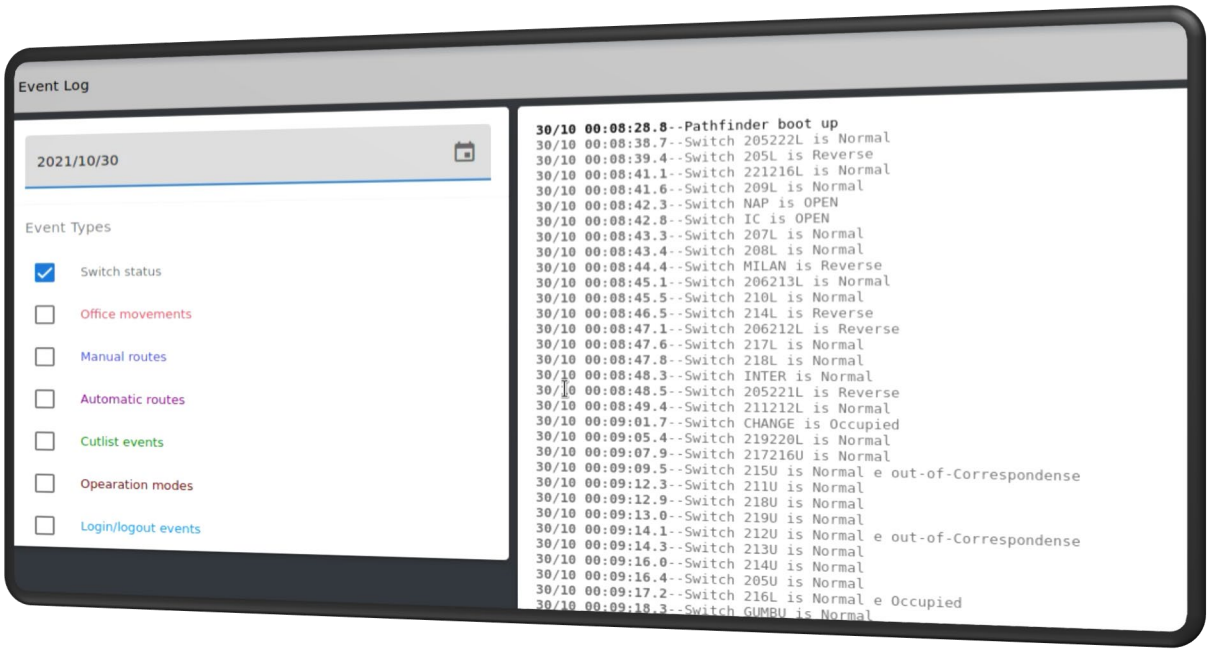
A heads-up display of all remote switches or devices is displayed with their current field status and indications. This can be used for troubleshooting and diagnostics.

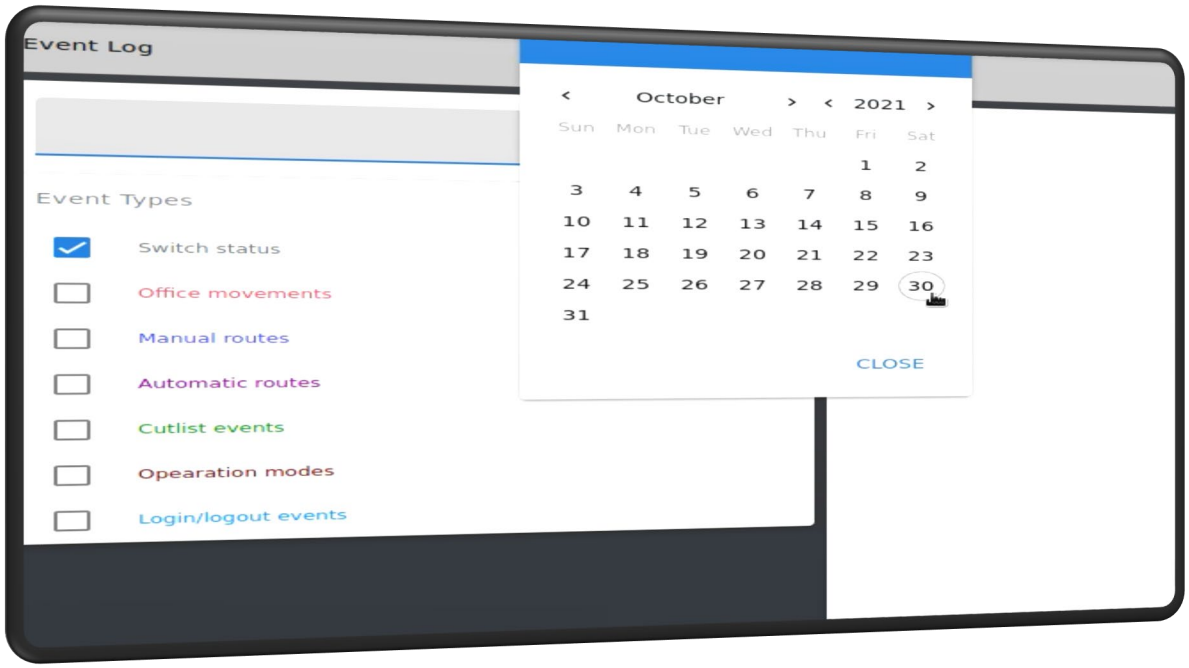
Remote connections can be toggled on or off for maintenance and troubleshooting. This is useful when remote connections will be kept offline for some time during installation or maintenance. In event of a disabling a remote device, Pathfinder recognizes the disabled remote switch as uncontrolled/dark territory. Routing through or over this switch will not be allowed by Pathfinder while the remote switch is disabled. Once maintenance is complete, the operator can re-enable the remote switch location and resume Pathfinder operations as normal.



11.3 Data Logging Browser Interface

Pathfinder is logging during every state change or command sent to Pathfinder. Pathfinder also manages operator logins, logouts, and operator actions while signed in. Log data can be filtered by event type, date and time. Log files can also be exported to table format for more extensive filtering and review. Local server log retrieval provides an Excel file with events for the 24 hours of the selected day. Event log data can also be downloaded from the Pathfinder website. This *option only works if Pathfinder server has access to public internet.* There is no expiration date on event history.


Event Log
2021/10/30
Event Types
Switch status
Office movements
Manual routes
Automatic routes
Cutlist events
Opearation modes
Login/logout events
30/10 00:08:28.8--Pathfinder boot up
30/10 00:08:38.7--Switch 205222L is Normal
30/10 00:08:39.4--Switch 205L is Reverse
30/10 00:08:41.1--Switch 221216L is Normal
30/10 00:08:41.6--Switch 209L is Normal
30/10 00:08:42.3--Switch NAP is OPEN
30/10 00:08:42.8--Switch IC is OPEN
30/10 00:08:43.3--Switch 207L is Normal
30/10 00:08:43.4--Switch 208L is Normal
30/10 00:08:44.4--Switch MILAN is Reverse
30/10 00:08:45.1--Switch 206213L is Normal
30/10 00:08:45.5--Switch 210L is Normal
30/10 00:08:46.5--Switch 214L is Reverse
30/10 00:08:47.1--Switch 206212L is Reverse
30/10 00:08:47.6--Switch 217L is Normal
30/10 00:08:47.8--Switch 218L is Normal
30/10 00:08:48.3--Switch INTER is Normal
30/10 00:08:48.5--Switch 205221L is Reverse
30/10 00:08:49.4--Switch 211212L is Normal
30/10 00:09:01.7--Switch CHANGE is Occupied
30/10 00:09:05.4--Switch 219220L is Normal
30/10 00:09:07.9--Switch 217216U is Normal
30/10 00:09:09.5--Switch 215U is Normal e out-of-Correspondense
30/10 00:09:12.3--Switch 211U is Normal
30/10 00:09:12.9--Switch 218U is Normal
30/10 00:09:13.0--Switch 219U is Normal
30/10 00:09:14.1--Switch 212U is Normal e out-of-Correspondense
30/10 00:09:14.3--Switch 213U is Normal
30/10 00:09:16.0--Switch 214U is Normal
30/10 00:09:16.4--Switch 205U is Normal
30/10 00:09:17.2--Switch 216L is Normal e Occupied


Event Log
Event Types
Switch status
Office movements
Manual routes
Automatic routes
Cutlist events
Opearation modes
Login/logout events
October
2021
Sun Mon Tue Wed Thu Fri Sat
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
CLOSE

-0-