

SKF @ptitude Observer v13.2 release summary

Requirements

Software and FW requirements in Observer v.13.2

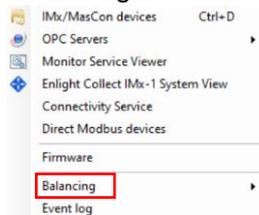
- Recommended IMx-1 GW firmware version – 3.5
- Recommended IMx-1 Sensor firmware version – 3.4
- Recommended IMx firmware version – 7.7

Deprecated functions

- SKF @ptitude Observer Data Pump



- Balancing module: Balance and ICM



Feature obsolescence plan in future releases

- Message Center (needs analysis in process)
- Diagram Box (needs analysis in process)

New Features

Calculated Machine speed

Calculated Machine Speed is a new feature that helps help in performing vibration analysis of both fixed speed and variable speed machines in cases where a physical speed signal (tacho) for speed readings is not available. The Calculated Machine Speed is a post-process algorithm in Observer which could automatically identify running speed harmonics or use external speed inputs (e.g OPC, Modbus) and then use it for assignment speed to dynamic vibration measurements. *Calculated Machine Speed* uses data stored in dynamic database measurements (FFT spectrum) from SKF online systems (e.g. IMx S/8/16 or IMx1) or external sources of speed readings as an input for speed extraction and association of speed with the asset's dynamic vibration measurements. This function should be applied mainly for machines with small speed deviations during the measurement data set to avoid smearing of reference input signals.

There are two main modes for Calculated Machine Speed function (fig.1), the main difference is which measurement is used for post-processing:

1. Calculated speed from Spectrum

Mode using dynamic measurements (FFT data type) from reference vibration point for speed extraction. The user can apply as reference any of the following point types:

- IMx/Mascon16 dynamic based measurement points
- IMx1 dynamic measurement points

2. External speed input

This type of post-processing will consume non-vibration points in an @plitude Observer measurement, which can automatically be assigned as Associated speed measurements. The user can apply as reference any of these point types:

- OPC point
- IMx Derived point
- Software Derived point
- IMx Trend Process point (e.g Modbus)
- IMx Speed point
- Direct Modbus

Note: Since this function is not a part of DAD's FW functions some functionalities where simultaneous speed measuring or resampling is needed will not be available. There is no speed trend data available as an output from this feature.

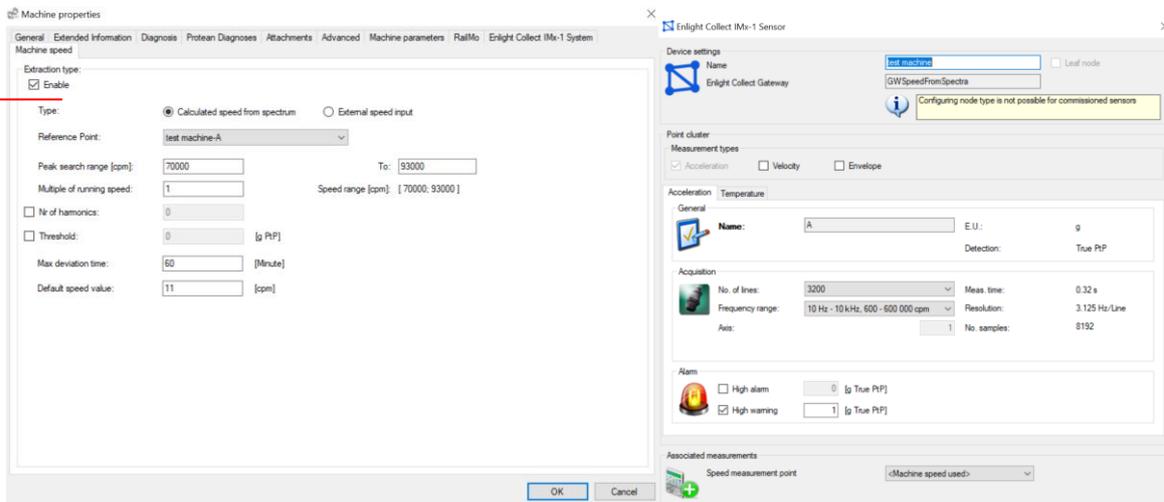


Figure 1 Machine Speed settings

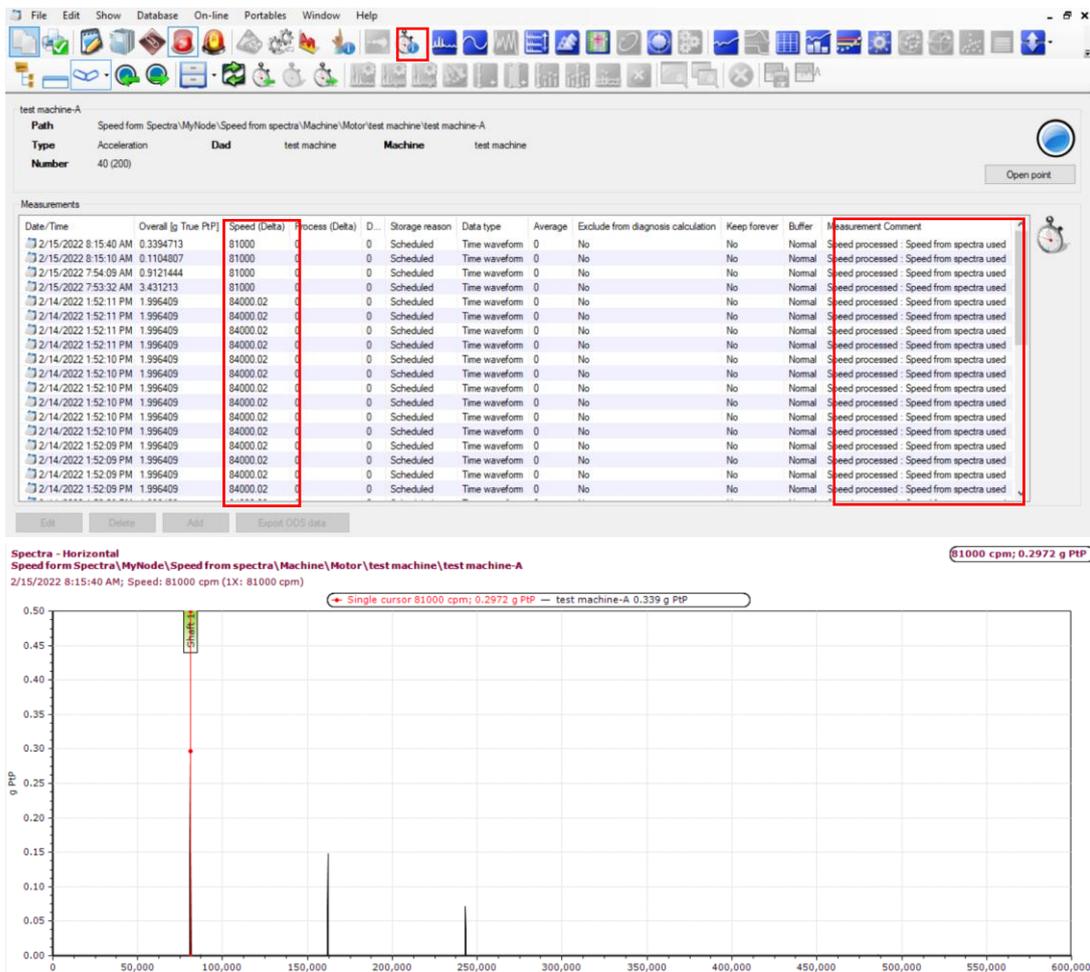


Figure 2 Calculated Machine Speed post-processing results

This is MVP feature so we will appreciate your feedback and recommendations for its further improvements on <https://skftechnicalsupport.zendesk.com/>

SKF @ptitude Observer Data Bridge

The easy-to-use SKF @ptitude Observer Data Bridge software provides a secure way for transferring Route based data collections from Microlog Analyser to @ptitude Observer in the cloud and other way around. The transferred data can then be analysed in a @ptitude Observer cloud/on-premises environment.

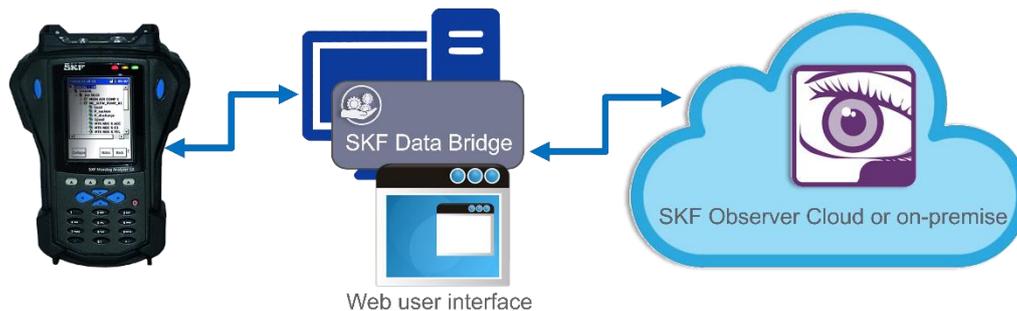


Figure 3 SKF @ptitude Observer Data Bridge architecture example

SKF @ptitude Observer Data Bridge will be a part of SKF @ptitude Observer suite and included to the standard installation package.

In this release some Microlog features will not be supported:

- Order tracking Microlog points
- Coded Notes
- Non-route collections

The screenshot shows the 'Status' tab of the SKF @ptitude Observer Data Bridge. The top navigation bar includes 'SKF @ptitude Observer Data Bridge', 'Status', and 'Microlog', along with a 'Connected to [Backend]' indicator. The main content area is divided into three sections:

- Microlog interface:** Displays system information such as 'Microlog API Driver: 0.9.29.0', 'Internal clock', 'Firmware', 'Hardware', 'Free RAM', 'Serial no:', and 'Active memory:'. An 'initiate communication' button is present.
- Settings:** Contains two options: 'Microlog fast fetch' (unchecked) and 'Microlog logging' (checked).
- Route management:** Features 'Download route' and 'Upload data' buttons. Below is a section titled 'Download routes to Microlog' with the text 'All published routes from Observer and downloaded to Microlog.' It contains a table with the following data:

Route name	Revision	Measurement points	Last changed	Status	On device	Select all
Route1	3	4 points	2022-03-11 14:56:53	Connect microlog	<input type="checkbox"/>	<input type="checkbox"/>

 A 'Download route' button is located at the bottom right of this section.

Figure 4 SKF @ptitude Observer Data Bridge – Status tab

For more information about the installation process and technical details about the application, refer to the SKF Data Bridge User Manual.

This is MVP feature so we will appreciate your feedback and recommendations for its further improvements on <https://skftechnicalsupport.zendesk.com/>

Keyboard Shortcuts

In this release, we add shortcuts to speed up the navigation in Observer:

Generic:

- Ctrl + W open the property window for a selected node
- Ctrl + W while alarm list is open and an alarm is selected will show the properties of the associated measurement point
- Ctrl + D opens the On-line device window

Tools in plots:

- Alt + R while the spectra plot is open, will show the Fault Frequency window
- Alt + X opens diagram X while in spectra plot
- Alt + 1 adds a single cursor
- Alt + 2 adds a band cursor
- Alt + 3 adds a harmonic cursor
- Alt + 4 adds a sideband cursor
- Ctrl + Alt + X Clears all cursors

Open plots:

- Ctrl + 1 opens Trend plot
- Ctrl + 2 opens Spectra
- Ctrl + 3 opens Time waveform
- Ctrl + 4 opens Trend + Spectra
- Ctrl + 5 opens Trend + Spectra + Time waveform
- Ctrl + 6 opens Diagnosis plot
- Ctrl + 7 opens Protean diagnosis plot

DHCP option 12 enabling for IMx unit network configuration

In this release, we add an attribute for DHCP option 12 in IMx unit configuration, which can be created via **Observer On-Line Device Configurator (OLDC)**. This attribute requires for cases their network has a specific naming schema which affects the IP-address assignment, and IMx DHCP Request should send its DNS name for successful connection of Observer backend.

The DHCP Client Option12 feature specifies the hostname of the client. While acquiring an IP address for an interface from the Dynamic Host Configuration Protocol (DHCP) server, if the client device receives the DHCP Hostname option inside the response, the hostname from that option is set. DHCP is used by DHCP clients to obtain configuration information for operation in an IP network.

The screenshot shows the 'Create IMx/MasCon16 Config' window with the following settings:

- Device settings:**
 - Device type: IMx
 - Network interface: Ethernet
 - Setup: Client-Server
 - HW switches configure: (Not used, must be zero)
 - Device number: 1
- Device network settings:**
 - Obtain an IP address automatically (DHCP)
 - Use the following IP Settings
 - IP Address: [][] . [][] . [][] . [][] [+1]
 - Subnet mask: [][] . [][] . [][] . [][]
 - Gateway: [][] . [][] . [][] . [][]
 - DNS: [][] . [][] . [][] . [][]
 - DHCP client hostname []
- Server settings:**
 - @ptitude Observer Monitor Server
 - IP Address or name: 10.0.0.1 Port: 1000
 - Use failover alias
 - IP Address or name: [] Port: 1000

Figure 5 DHCP Client hostname settings

Note: IMx firmware version 7.7 or higher is needed for this feature.

Multiple point update wizard – adding more attributes for F1-F4, Overall of IMx Dynamic points.

In v13.2 we've added more attributes of IMx-8 dynamic measurement points, which are possible to change globally in the database via the Multiple point update wizard (MPUW).

As an extra, now it is possible to change:

- Type (for Overall and F1-F4)
- Alarm/Warning threshold levels (for Overall and F1-F4)
- Save(delta) (for Overall and F1-F4)
- Start/Stop limits for frequency band (for Overall)
- Enable alarms (for Overall and F1-F4)
- Adaptive Alarming (for Overall)
- Frequency/Multiple (for F1-F4)
- Search Range (for F1-F4)

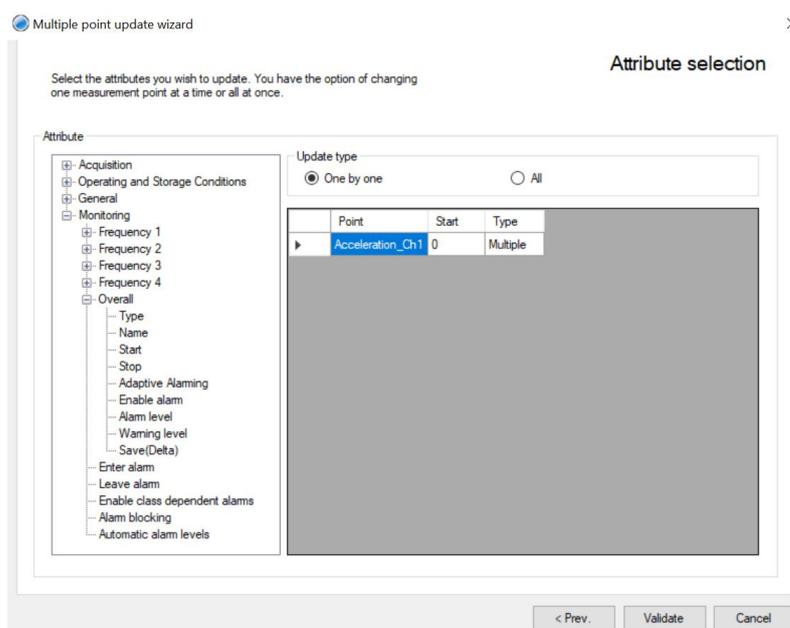


Figure 6 MPUW-IMx Dynamic Overall parameters

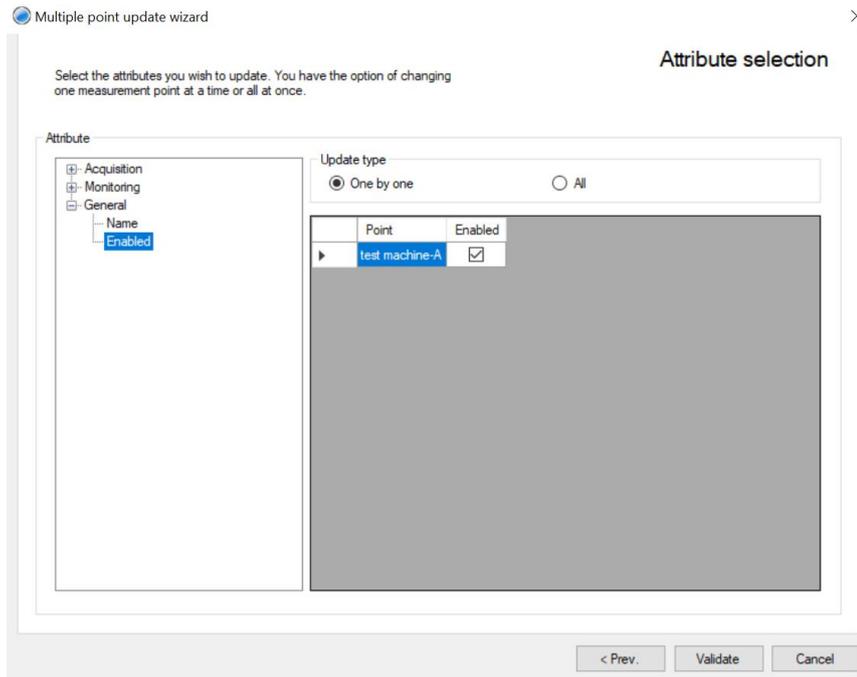


Figure 7 MPUW-IMx Dynamic F1-F4 parameters

Note: To avoid misconfiguration, extra step (validation) has been added before applying new settings.

IMx-1 vibration measurement type selection

Every IMx-1 collects three vibration measurements: acceleration, ISO velocity, and acceleration enveloping (gE3). From @ptitude Observer Version 13.2, it is now possible to select the desired measurements to be sent from the sensor, in line with the PDM practices of the plant. For example, only collect ISO velocity and gE3, and not wide-band acceleration. The non-transmission of unwanted time-waveforms improves battery life.

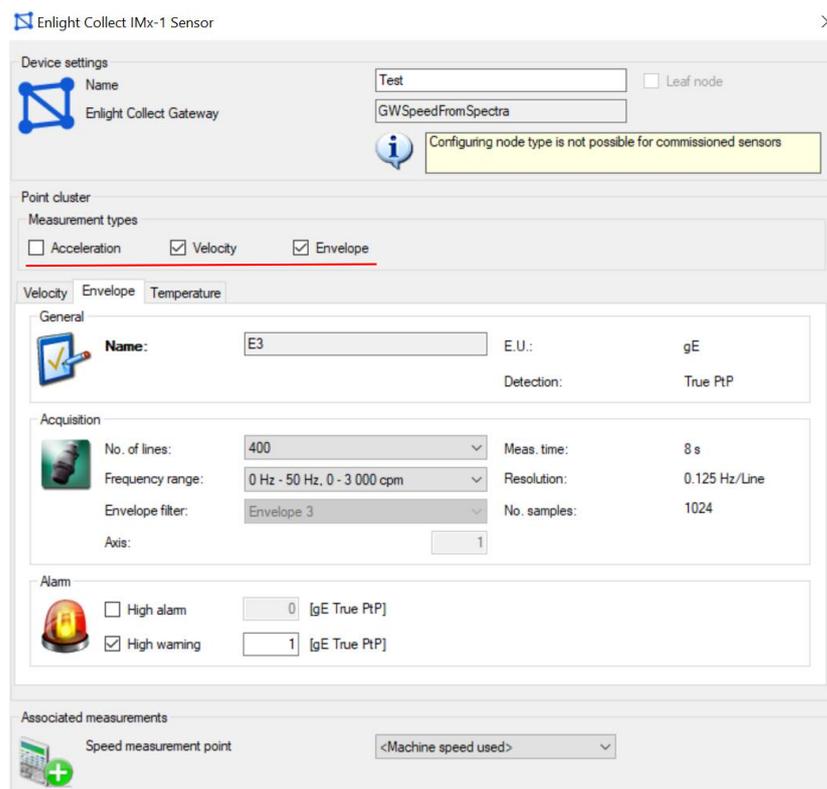


Figure 8 IMx-1 Vibration measurement component selection

Note: Disabling IMx-1 measurement components used as a reference in the Machine Speed feature or Amplitude Gating feature is not allowed.

At the same, time MPUW supports IMx-1 Measurement types enabling globally for database.

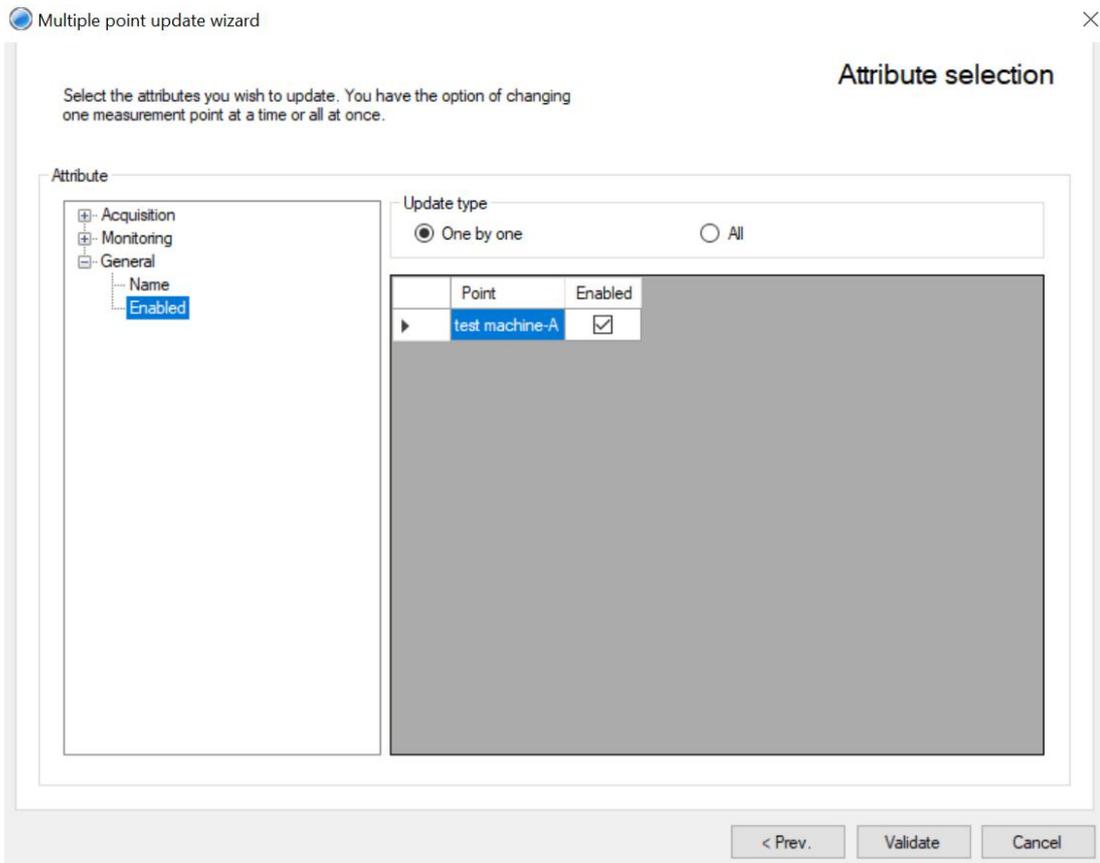


Figure 9 MPUW - IMx-1 measurement component enabling attribute

Phoenix API: New endpoint IMx-1 Sensor information table

As a part of continues expansion of Phoenix API, new endpoint GET/ has been added.

This API returns information about IMx-1 sensors in database. This feature can be used for sharing data with 3rd party systems to get their IMx-1 system overview.

Name	Hardware ID	Location	Self diagnostics status	Synchronized	Connection	Firmware version	Sensor Mode	Battery (%)	Last seen
test machine	2E-36-03-51-4C-40	Speed form Spectra\MyNode\Speed from spectra\Machine\Motor\test machine\	OK	In progress	OK	3.3	Mesh	66	2/15/2022 8:14:01 AM
Test	5D-57-1F-49-14-1F	Speed form Spectra\MyNode\Speed from spectra\Machine\Fan\Test\	OK	In progress	OK	3.4	Mesh	4	2/15/2022 8:19:01 AM

Figure 10 IMx-1 Sensor information table

NextGen Show/Hide | List Operations | Expand Operations

GET /v1/nextgensensor Get all IMx-1 devices

Implementation Notes
Returns list of all IMx-1

Response Class (Status 200)
OK

Model | Example Value

Inline Model [
DadNextGenSensor
]

DadNextGenSensor {
IDDad (integer, optional): The identifier for the data acquisition device.,
SensorIdentifier (string, optional): Hardware identifier reported by the sensor.,
IDSmartGateway (integer, optional): Virtual identifier for the IMx-1 Gateway.,
IDNode (integer, optional): Virtual identifier for the hierarchy node in Observer.,
Name (string, optional): Name of the data acquisition device.,
SensorNodeType (integer, optional): SensorNodeType, Unknown = -1, Mesh = 0, Relay = 1, Leaf = 2, Root = 3,
SensorHealthStatus (integer, optional): Bit mask representing the current health status of the sensor.,
FWVersion (string, optional): Current firmware version.,
HWVersion (string, optional): Physical hardware version.,
Commissioned (integer, optional): Commissioned, 0 = False, 1 = True.,
BatteryLevel (integer, optional): Battery level in percentage.,
Created (string, optional): Date when the virtual data acquisition device was created.,
SensorDeviceType (integer, optional): Sensor device type, 0 = regular IMx-1 sensor.,
CommissionNote (string, optional): Note set on commission.,
Temperature (number, optional): Latest reported temperature.,
StatusTriggerSource (integer, optional): The trigger source type of the latest measurement.,
Location (string, optional): Virtual location of the sensor.,
StatusLastUpdated (string, optional): Date time when the last update was received.,
SetConfigurationTimeout (integer, optional): How many hours before configuration times out.,
StatusChangeDate (string, optional): Date time when the last status change occurred.,
CRCLastSentConfiguration (integer, optional): CRC of the latest configuration sent to the sensor.,
ClearedDate (string, optional): Date time of when the HWID was last cleared on the virtual sensor.,
ConnectionState (integer, optional): Connection state, Unknown = 0, Ok = 1, Temporarily unreachable = 2, Unreachable = 3,
GatingAcc (number, optional): Acceleration threshold measurement must surpass to be stored in [g PIP],
MinFWVersion (string, optional): Minimum firmware version required to operate the related active features.,
MinHWVersion (string, optional): Minimum hardware version required to operate the related active features.
}

Response Content Type:

Response Messages

HTTP Status Code	Reason	Response Model	Headers
204	The request was successfully completed but no content found.		
400	The request was invalid	Model Example Value <pre>{ "message": "string", "messageDetail": "string" }</pre>	
401	The request did not include an authentication token or the authentication token has expired	Model Example Value <pre>{ "message": "string" }</pre>	

Figure 11 Swagger documentation

Track Monitoring

To be able to set a fixed scale for the amplitude and to enable free zoom for the chainage axes.

RailMo related graphs did not have an option to set the scale before and auto scale would be applied which was creating problems while comparing graphs for different chainages. Hence, we have now included the ability to set a fixed scale for the amplitude and enabled free zoom for the chainage axes for all RailMo related graphs.

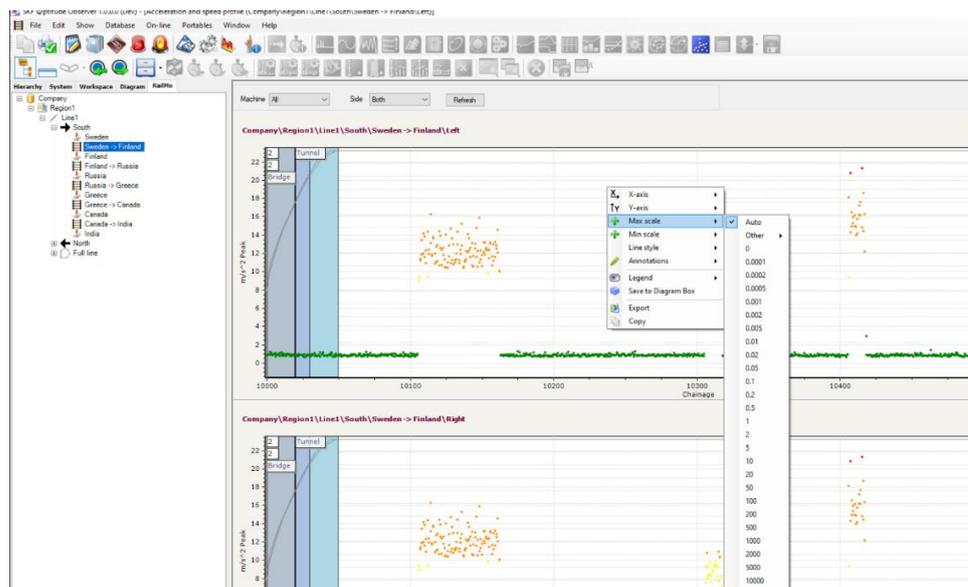


Figure 12 Scale menu for graphs

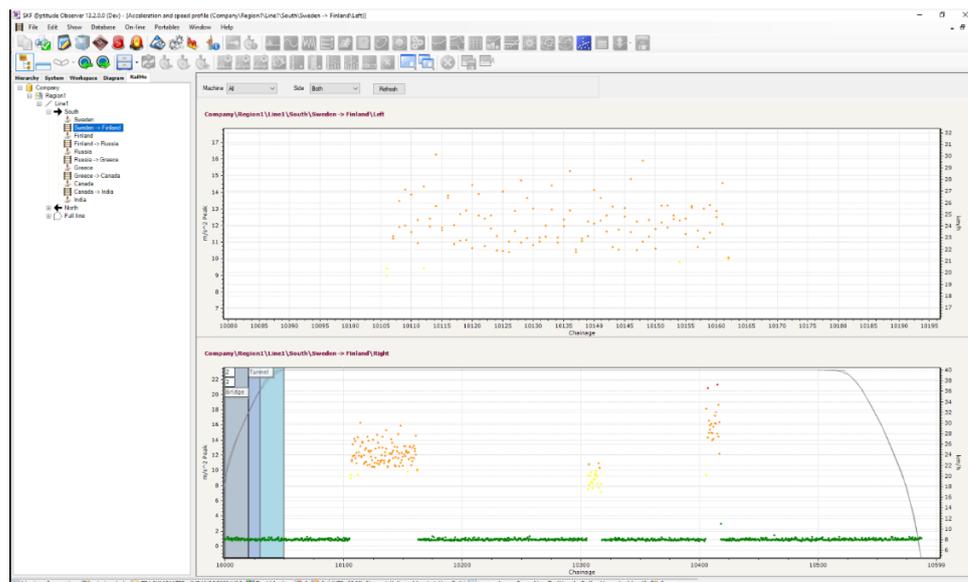


Figure 13 Free zoom for graphs

Upon pressing the number of the report in the diagram it should be possible to directly jump to the damage report details.

To make it easier for the users to analyze the data better, this feature has been added. If there is any event in the particular track chainage in the graph, the user can just click on the number of the event and the damage report of this event will open. This minimizes the effort of the analyst to navigate to the events and then search for the particular event from the list and open it up for analysis.



The screenshot shows a 'Report' dialog box with the following fields:

- Machine: Direction of travel 1 Station1 -> 123
- Date/Time: 11/12/2021 10:43:46 AM
- Status: In progress
- Report number: 2 Modified: 11/12/2021 10:45:04 AM
- Description: 123
- Created by: admin_admin
- Approver: admin_admin
- Confirmation: Confirmed: Not confirmed
- Correction: Corrected: Not Set
- Severity: 0
- Action: (empty)
- Fault: (empty)
- Comment: (empty)
- Date: not set

Below the fields is an 'Assessments' table:

Component	Classification	Assessment	Feedback topic
<Not selected>	5		[None]

Buttons at the bottom include 'Add', 'Edit', 'Delete', 'Create document', 'OK', and 'Cancel'.

Figure 14 Event number and damage report

To be able to see the number of recordings in the alarm overview for quick checks if the line configuration works well or not.

When the user clicks on the Line summary table from the top menu, they can see the station of departure, station of arrival, number of open events and vibration amplitude. There is a feature that is added now where the user will be able to see the number of recordings in the alarm overview for quick checks if the line configuration works well or not.

This feature can be enabled by checking the check box **“Display number of recordings in the alarm overview”** from the Options > RailMo tab below the Map key.

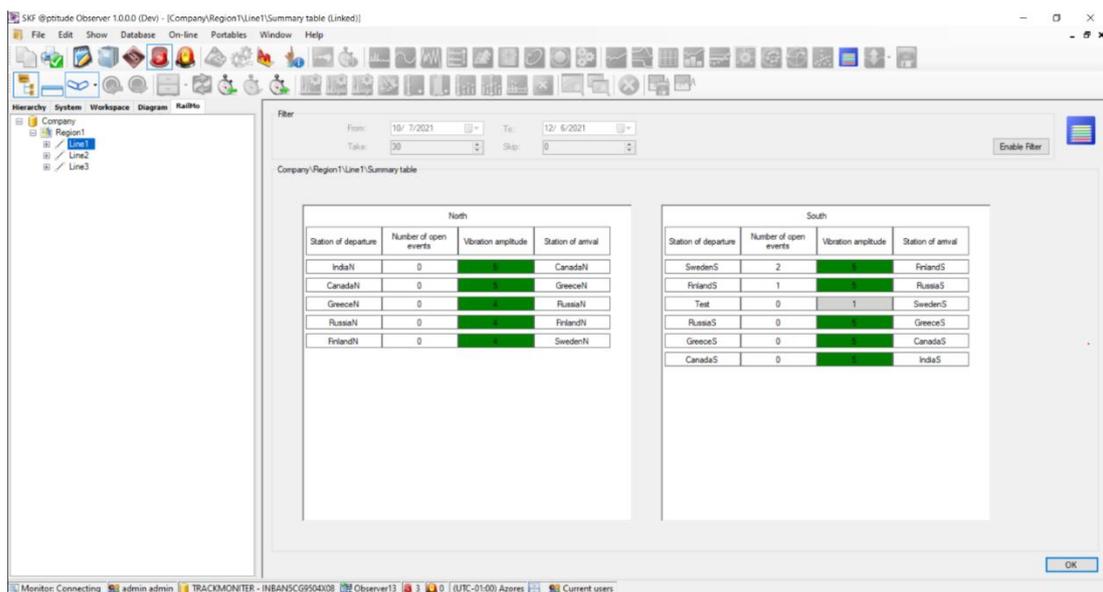
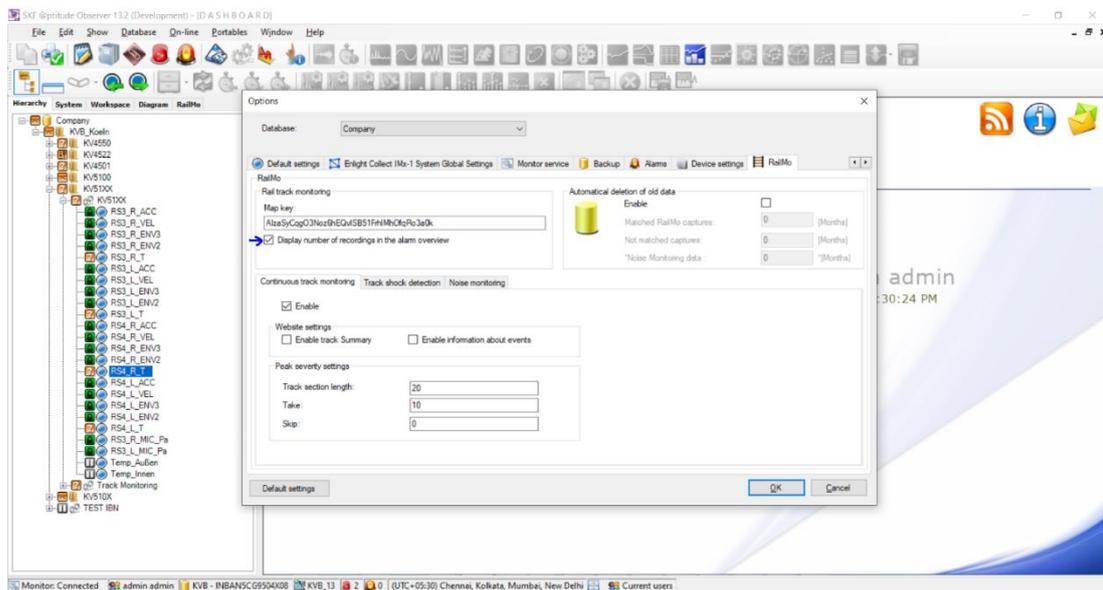


Figure 15 Display number of recordings

Delete station to work for last station.

In the previous build, throwing exception when deleting a station was fixed, but still, the user couldn't delete the last station. In this release, the user will be able to delete the last station as well.

Conditions to delete the station from the railmo tab in observer:

1. Deleting the station is possible only for the last station of the Direction travel 1 or direction travel 2.
2. User don't have permission to delete the first and middle of the station from the direction 1 and direction2.
3. Before deleting the last station, the user need to update the route by removing the last station from route.

Pop up message if the user tries to delete the first station:

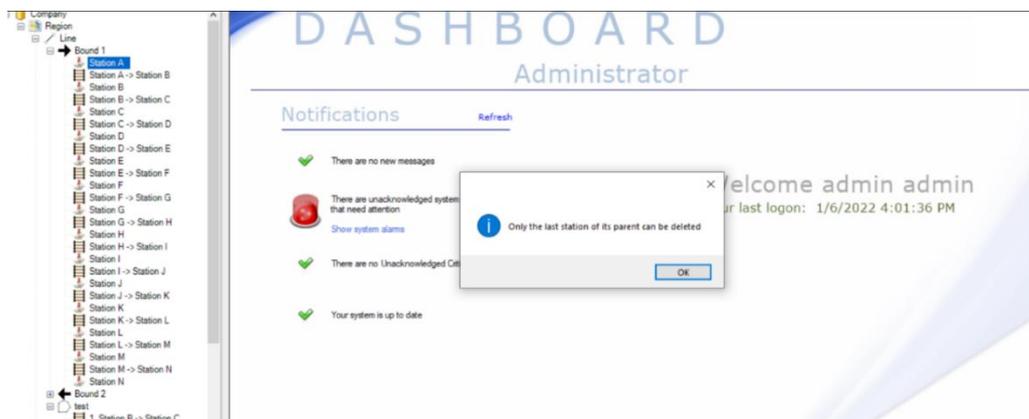


Figure 16 Delete station pop up

If the user selects the last station to delete:

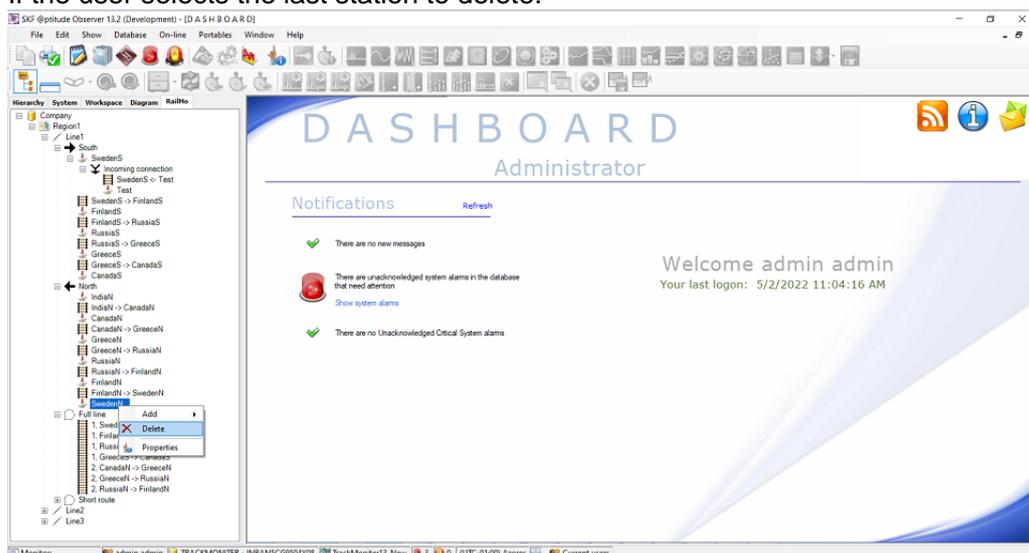


Figure 17 Last station selection

The user gets a popup that they should change the route configuration before deleting the station.

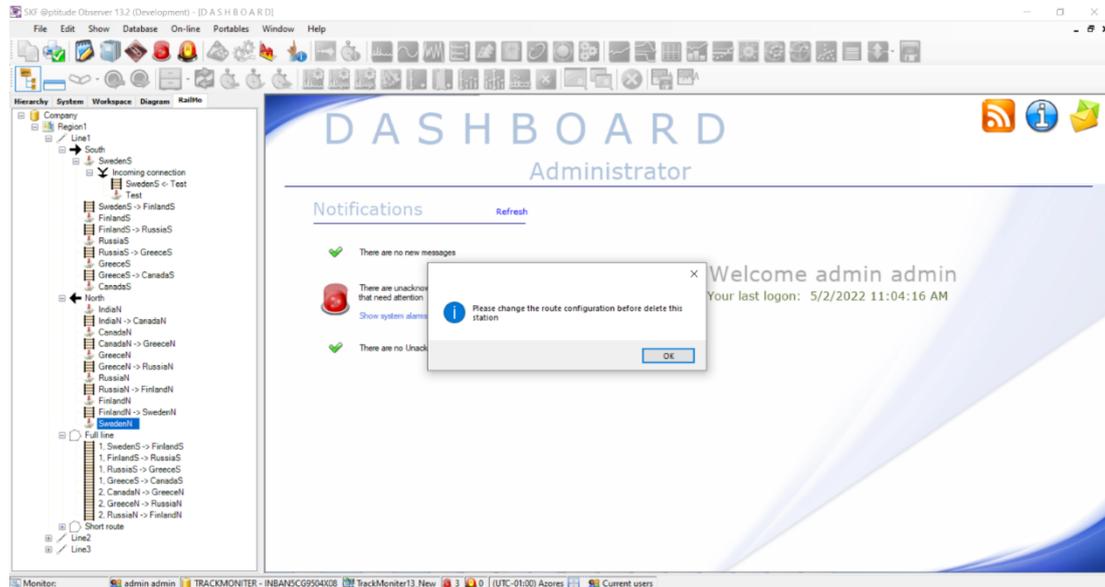


Figure 18 Change configuration pop up

Right-click on the Train route and select Properties. Edit the last station in the configuration to enable the deletion of a station.

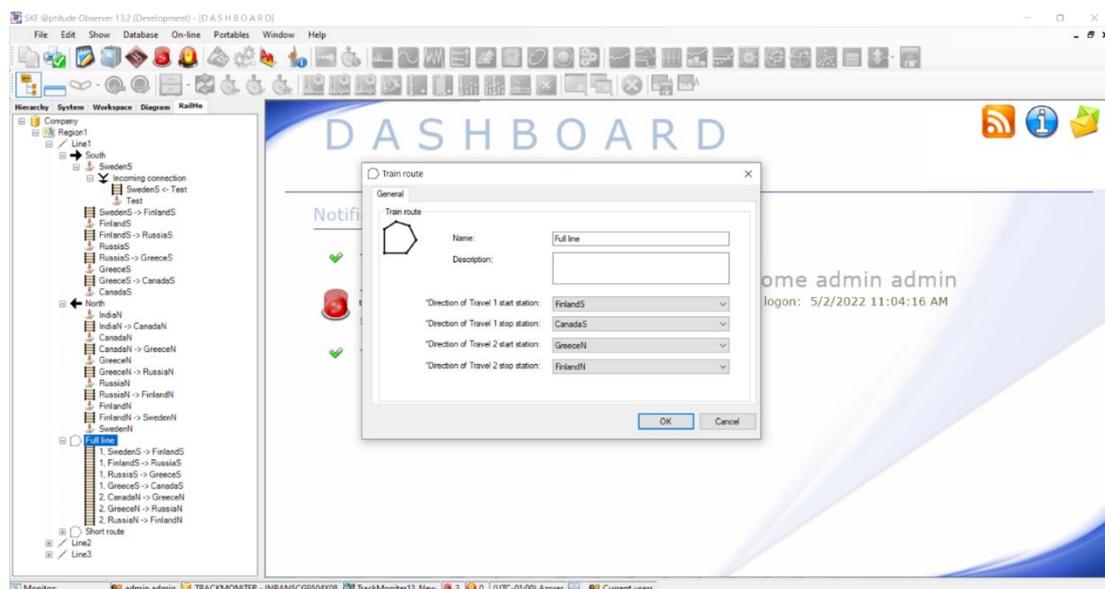


Figure 19 Train route pop up

Now the user can delete the station.

Automatic deletion of data for Noise monitoring.

As for Mainline and Metro applications automatical deletion was implemented, the same is now available for Noise monitoring application as well. The users can enable the automatical deletion of noise monitoring data from the Options popup as shown below in the picture.

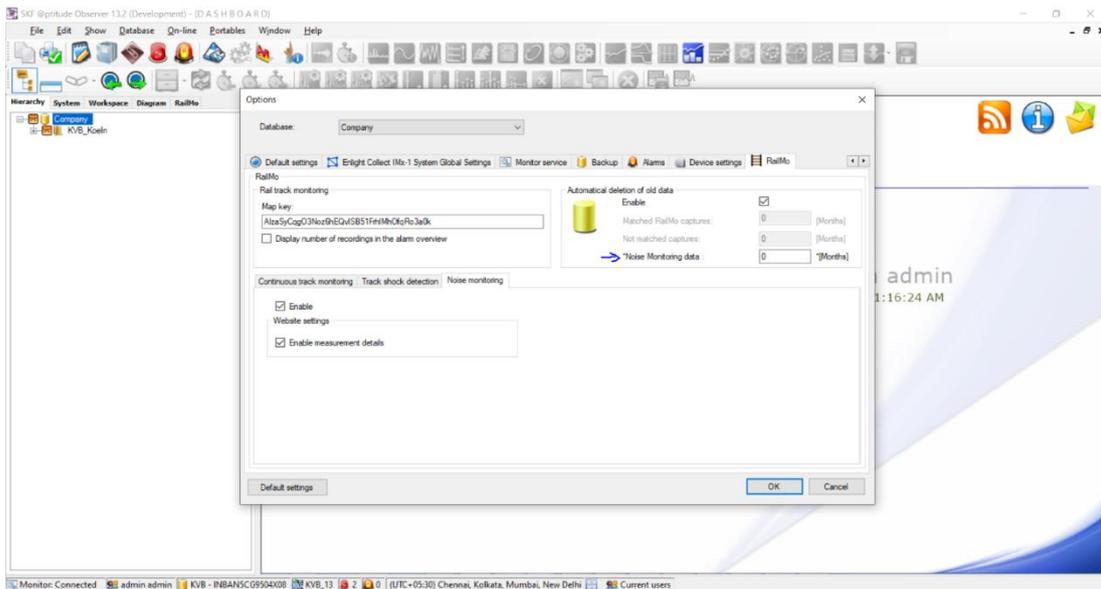


Figure 20 Automatic deletion – Options view

The users can enter how many months they would like to keep data in the database and the data prior to that date will be deleted from the database. For example, if user enters 6 in the text box, then only 6 months of data will prevail and rest of the data prior to 6 months will be deleted from the database. This feature can mainly be used to keep in control the database size for the customers.

Note: By default, this feature is disabled, and the value is set to 0.

Controlling the radius for the measurement points in Heatmap.

In the web client for Noise monitoring, a new feature is added using which the radius of the measurement points can be controlled. As per this implementation, the users will be able to change the radius or size of measurement points for a clearer and better data analysis.

The size of the radius can vary from 5-30. By default, it is set to 10. As the user changes the size, it will be dynamically reflecting on the UI.

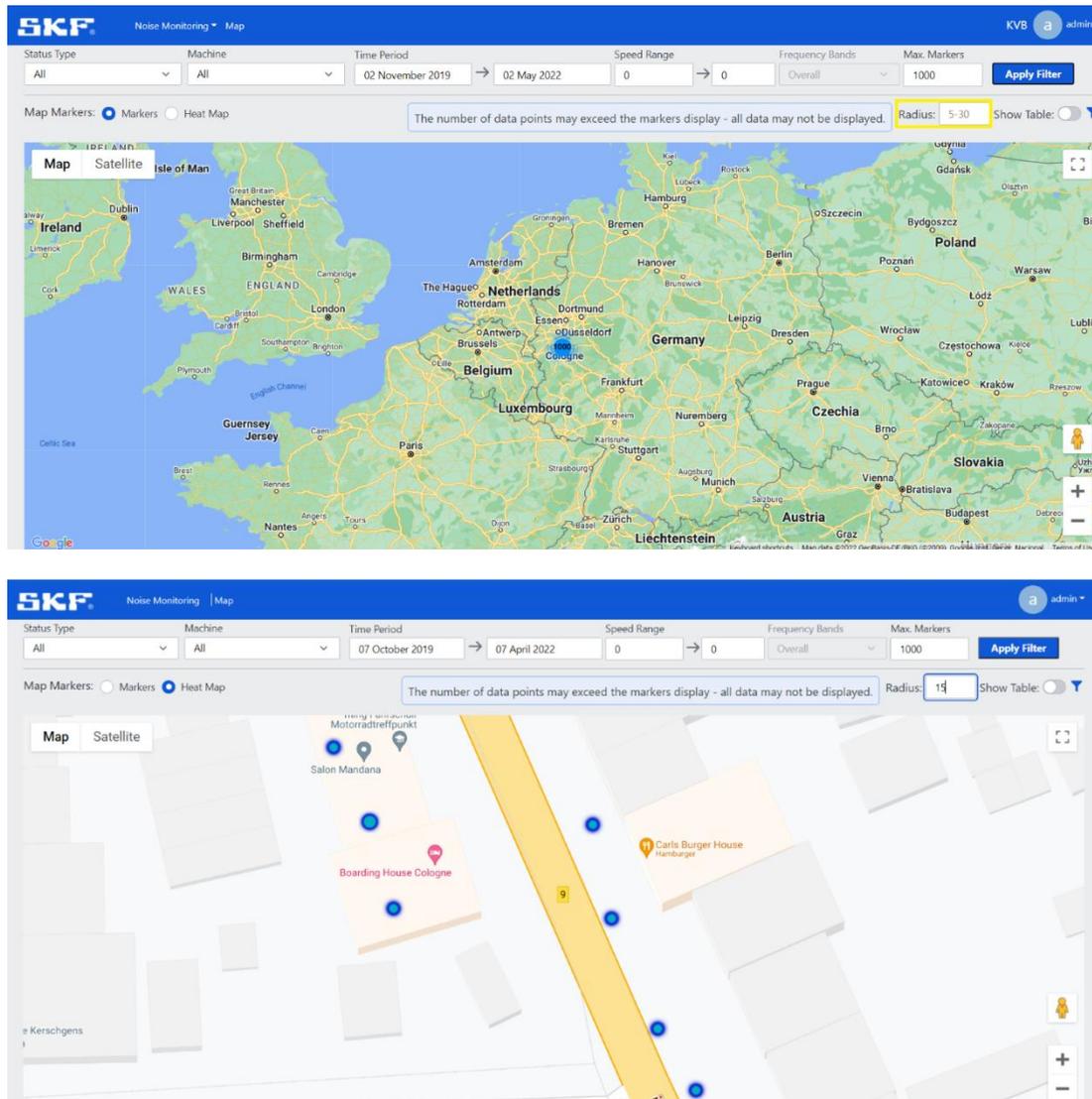


Figure 21 Noise Monitoring – Radius option

Linking of all 3 web applications with the auto deletion feature in Observer.

The automatical deletion of data feature is now tightly linked with the applications being enabled from the Observer.

For example, if Mainline or Metro application is enabled, only then on checking of **Automatical deletion of old data** checkbox, the **Matched RailMo captures** and **Not matched RailMo captures** textboxes will be enabled, else they will be disabled as shown in the picture below:

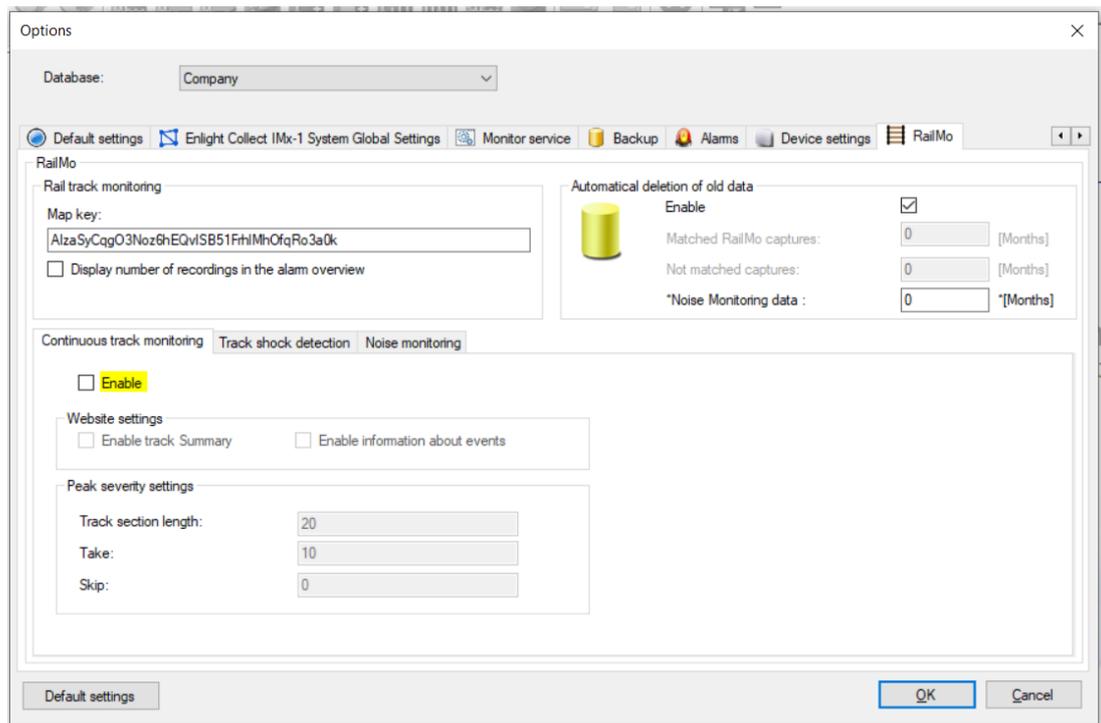
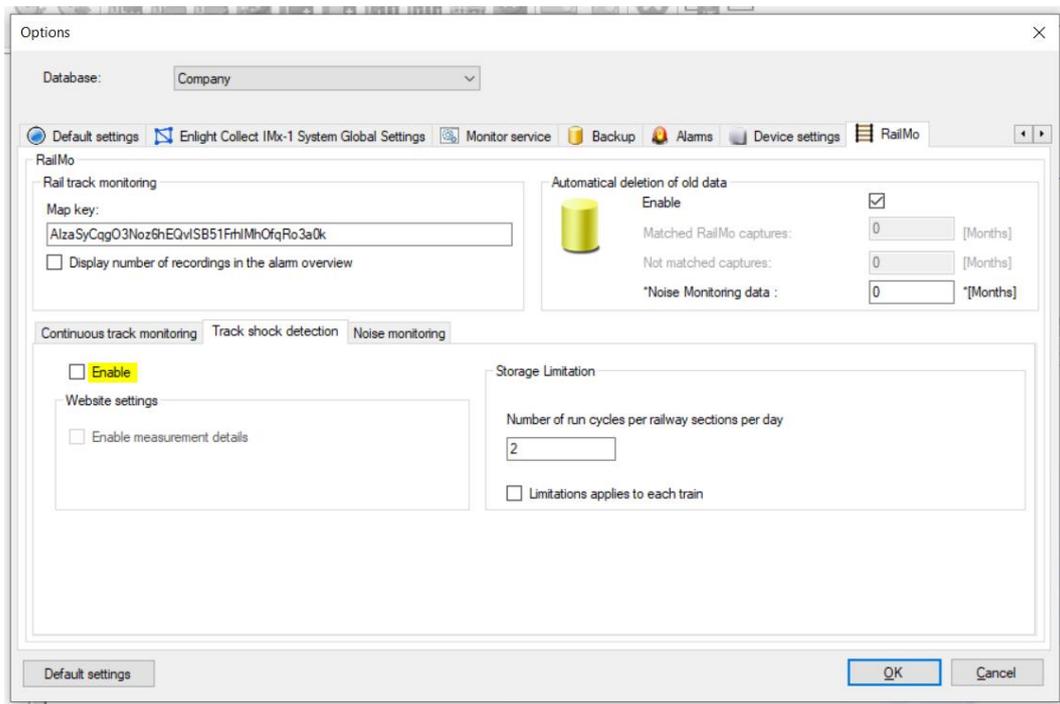


Figure 22 Automatical deletion – Options view



As it is seen, in the automatic deletion section, the Matched and Unmatched RailMo captures textboxes are disabled.

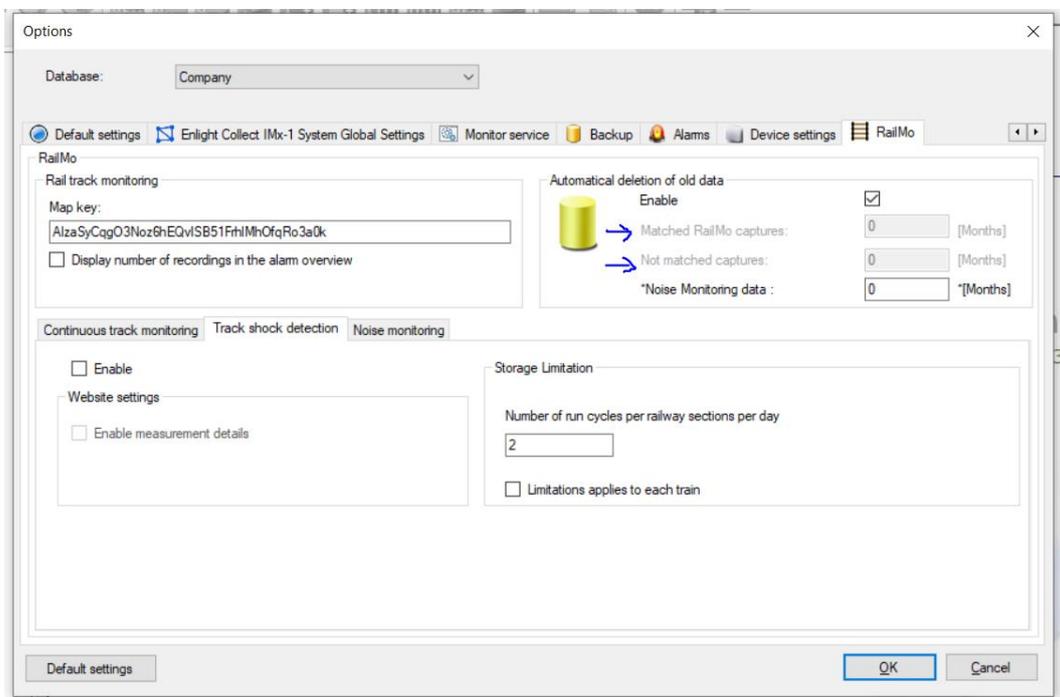


Figure 23 Options view – Matched and Not matched captures disabled

The same applies to Noise monitoring application as well. Combinations of the applications enabled and automatic deletion feature.

Continuous track monitoring	Track shock detection	Automatic deletion of matched and not matched captures
True	True	True
True	False	True
False	True	True
False	False	False

Noise Monitoring	Automatic deletion Noise monitoring
True	True
False	False

Dual speed signal for determination of the direction of the train.

In this feature, we have implemented to find the direction of the train using digital and analogue (Modbus) channels and a single speed sensor.

1. A single speed sensor with a digital input where the digital input is 0 or 1 for the train direction.
2. A single speed sensor with a Modbus input where the IMx acts as a client. The IMx will read a value from the control system of the train.

Note: The name of the point should be “**Travel Direction**” for this feature to work.

The configurations required for digital channel are as below:

Configurations: Should contain 1 speed sensor and 1 speed channel and point type should be Digital.

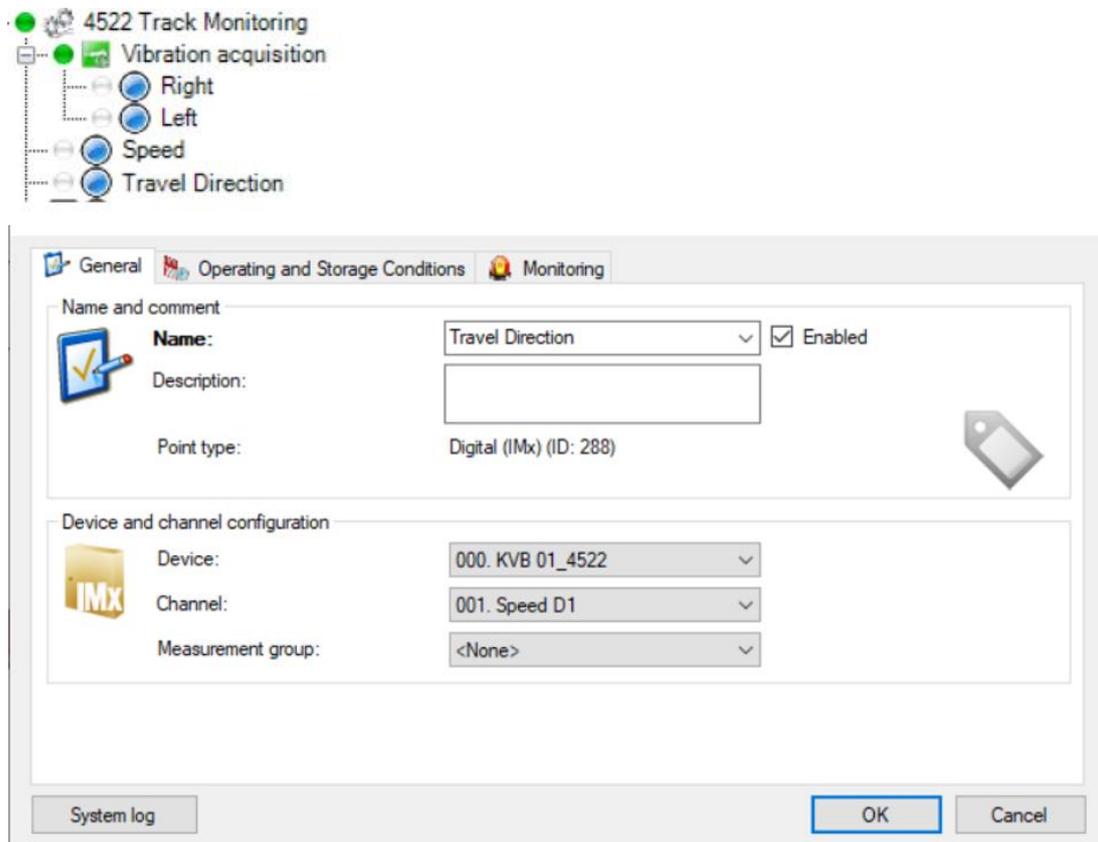


Figure 24 General view – Name box

The configurations required for analogue channel are as below:

Configurations: Should contain 1 speed sensor and 1 Modbus channel (Example: 109. Direction in the picture below) and for Modbus channel value should be 0(backward) or 1(forward) and point type should be Process.

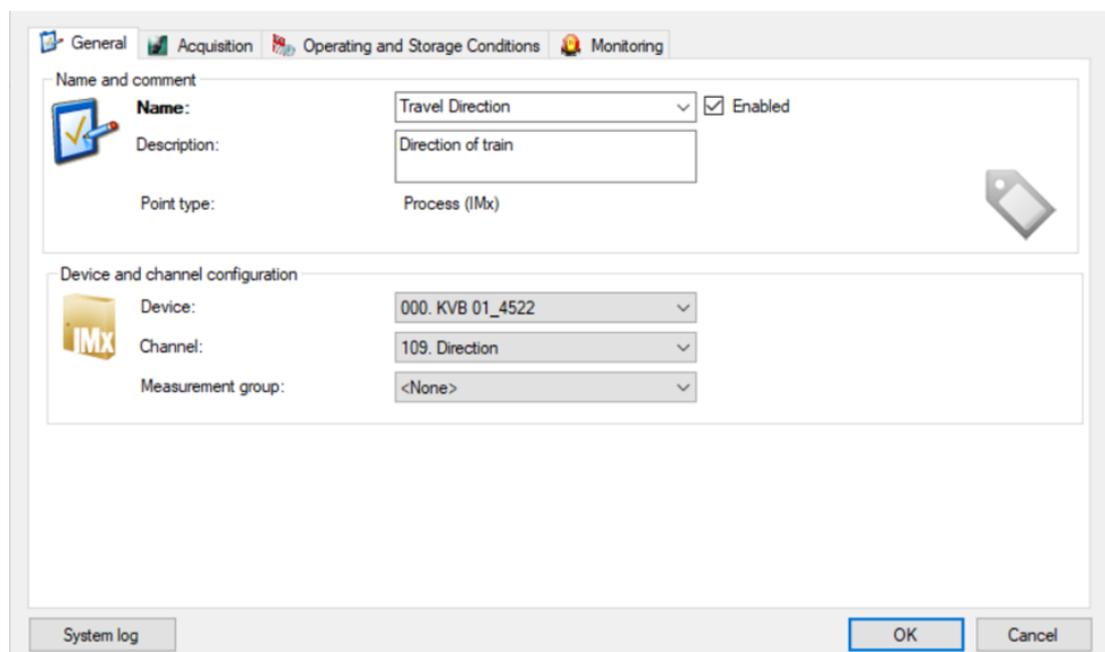
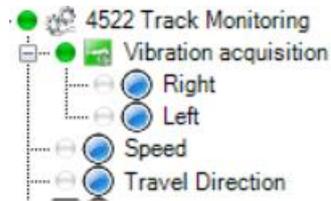


Figure 25 General view – Channel

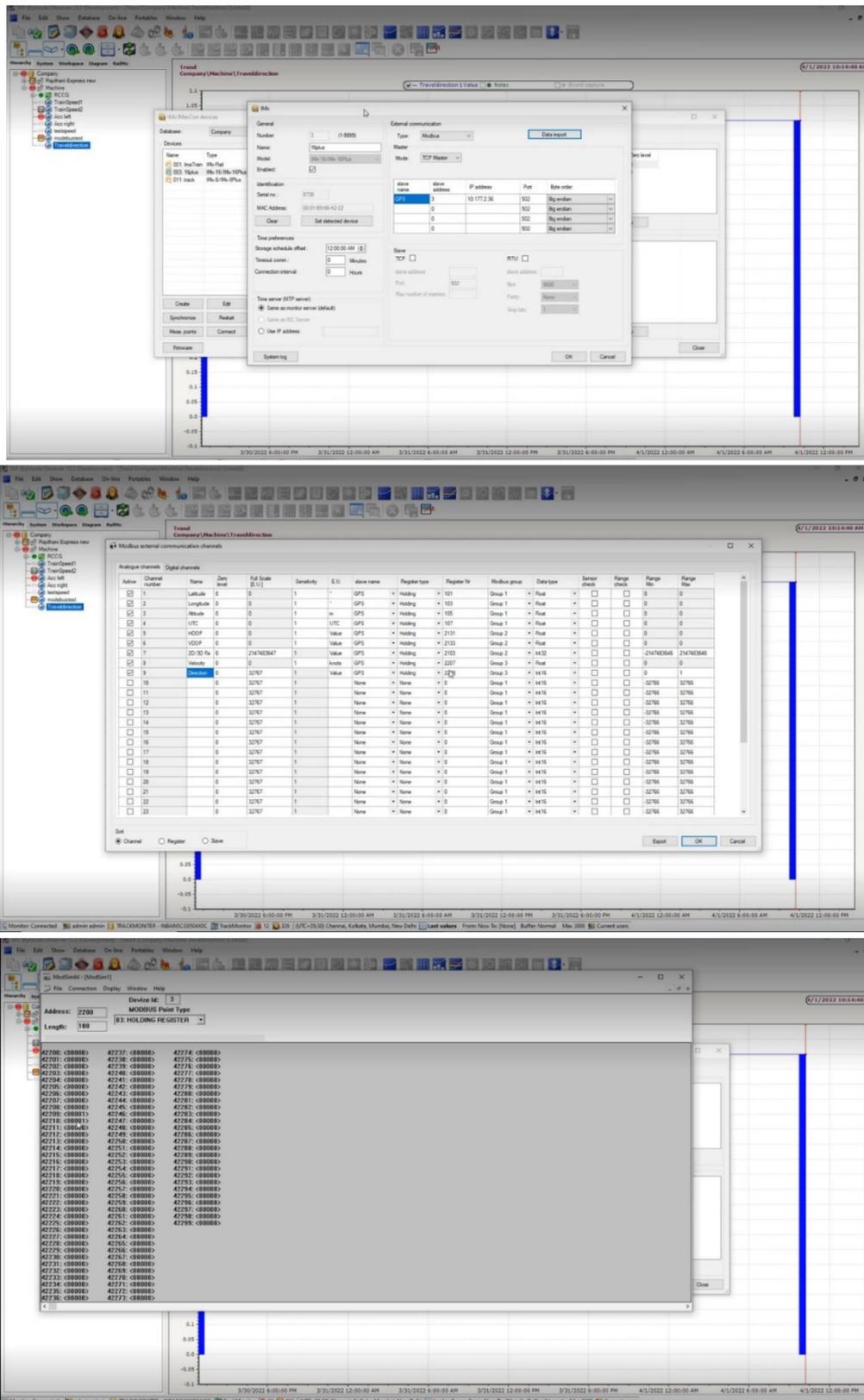


Figure 26 Modbus configuration steps overview

Enhancements

Enabling Mobile connectivity using external antenna for IMx-1 gateway

In previous release we enable possibility to utilize internal cellular modem for IMx-1 Gateway connectivity. In this release we decrease a minimum HW requirements for that option, so now GW with minimum HW rev.7 can use internal LTE modem with external antenna for communication.

IMx-1 Amplitude gating enchantment

Amplitude gating is a feature that enables data to be screened out and not transmitted when a machine is below a specified amplitude threshold (and so assumed to be at rest). In SKF @plitude Observer v13.1.1 this feature only removed unwanted time-waveforms, saving battery life, but overall levels from machines not running still populated the trends, producing a “saw-tooth” profile. This has been corrected in SKF @plitude Observer v13.2, so it is now possible to clear the trend of “null values”.

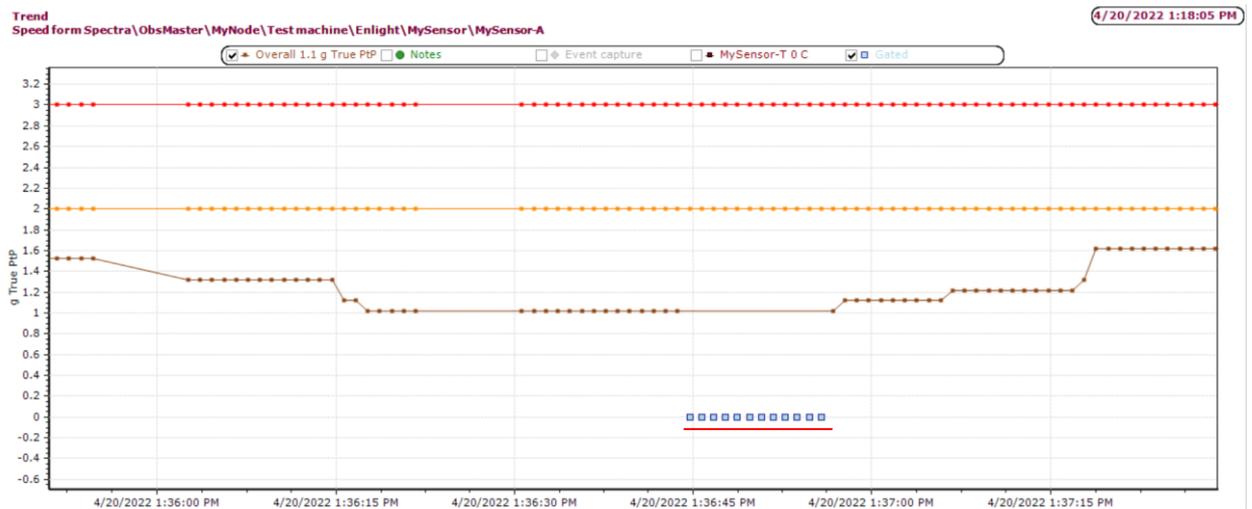


Figure 27 IMx-1 gated measurements in trend plot

Phoenix API: get/dynamicMeasurements new parameters DetectionType, WindowType

Two new parameters have been added to get/dynamicMeasurements endpoint:

- EUTypeSpectrum
- EUSpectrum

These two parameters should be used for Spectrum data type when it is requested, to avoid data mismatches, when measurement point in Observer store only TWF.

GET /v1/points/{pointId}/dynamicMeasurements Gets all measurement and data in ascending order (oldest first)

Implementation Notes
Get all Measurements in a batch

Response Class (Status 200)
OK

Model | Example Value

Inline Model [
DSMeasurement
]

DSMeasurement {

PointID (integer, optional): Database ID of the owning measurement point,
Speed (number, optional): Parametric speed in RPM,
SpeedBegin (number, optional): Speed at start of sample,
SpeedEnd (number, optional): Speed at end of sample,
SpeedMin (number, optional): Minimum speed during sample,
SpeedMax (number, optional): Maximum speed during sample,
SpeedUnits (string, optional): Will always be RPM or translated equivalent,
Process (number, optional): Parametric process reading,
ProcessMin (number, optional): Smallest proces reading during sample,
ProcessMax (number, optional): Largest proces reading during sample,
ProcessUnits (string, optional): Units for process measurement,
Digital (number, optional): Parametric digital reading,
NumberOfChannels (integer, optional): Internal node (point) type,
SampleRate (number, optional): Sampling rate,
Samples (integer, optional): Number of samples (TWF) or lines (spectrum),
EUType (integer, optional): Internal point engineering units, see EUType,
EU (string, optional): Readable engineering units for point,
EUTypeSpectrum (integer, optional): Internal point engineering units for Spectrum, see EUType,
EUSpectrum (string, optional): Readable engineering units for point Spectrum,
DetectionType (integer, optional): Internal detection type.

Value	Description
0	None
1	Peak
2	Peak-to-Peak
3	RMS

DetectionName (string, optional): Readable detection name (aka scaling),
WindowType (integer, optional): FFT Window filter used

Value	Description
0	Hanning
1	Uniform
2	FlatTop

WindowName (string, optional): Readable FFT Window filter name,
StartFrequency (number, optional): Spectrum start frequency,
EndFrequency (number, optional): Spectrum end frequency,
Averages (integer, optional): Number of averages used,
AveragesType (integer, optional): Type of averaging used

Value	Description
0	Frequency domain averaging
1	Synchronous time averaging

Figure 28 Swagger documentation 1

```

StorageReason (integer, optional): Reason for measurement storage
Value  Description
-----
0      Time based
1      Alarm
2      Delta
3      Runup
4      User
5      Capture
,
MeasurementComment (string, optional): Measurement comment.
IncludeMeasurements (integer, optional): Bit-field of values identifying which measurements that is included
Value  Description
-----
0      Time domain amplitudes (default)
2      Frequency spectrum amplitudes
4      Phase spectrum amplitudes
8      Trigger pulses
,
Content (integer, optional): Format of the measurements (CSV, UFF, etc.)
Value  Description
-----
0      Array of values
1      Universal File Format, Type 58
,
Measurements (Array[CM.Phoenix.Model.DataService.ChannelMeasurement], optional): Channel/direction measurement values in type,
UFF (Array[CM.Phoenix.Model.DataService.ChannelMeasurement], optional): Channel/direction measurement values in UFF format (UFF embedded in type
ChannelMeasurement),
IDMeasurement (integer, optional): Database ID of the measurement,
ReadingTimeUTC (string, optional): Measurement time UTC
}
CM.Phoenix.Model.DataService.ChannelMeasurement {
MeasurementType (integer, optional):
Value  Description
-----
0      Frequency spectrum amplitude values
1      Frequency spectrum phase values
2      Time domain waveform amplitudes values
3      Trigger pulses
= ['0', '1', '2', '3'],
Direction (integer, optional):
Value  Description
-----
0      Horizontal
1      Vertical
2      Axial
,
Values (Array[number], optional): Amplitude values,
UFF (string, optional): UFF String
}
Response Content Type application/json; v=1.0

```

Figure 29 Swagger documentation 2

Phoenix API: v1/points/{pointId:int}/diagnosesMeasurements performance improvements

Optimisation of v1/points/{pointId:int}/diagnosesMeasurements have been done, so it consumes less CPU/RAM.

AD login support for Phoenix REST API and MQTT Services

In this release both Phoenix REST API and MQTT Services are support the AD login, so users don't need to create a duplicates with local Observer credentials for such services (e.g for login to Swagger or SKF Enlight Collect Manager)

Translation enchantments for several languages and small UI fixes

Fixed issue with Observer taking excessively long to load diagnosis plot for vibration points

Performance issue fixed when opening the machine diagnosis plot on a machine with many diagnoses.

Now when selecting a point and opening the diagnosis plot, only diagnoses related to that point are shown. With difference to previous versions when all diagnoses on the parent machine were shown.

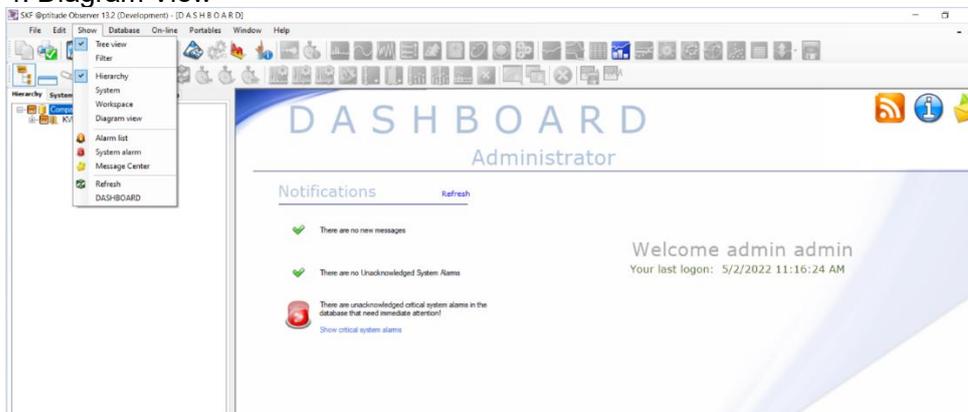
Track Monitoring

RailMo selection needs to be added as menu item in "Show" tab if user opts for railmo application.

RailMo tab access option should be enabled in show menu item if a user uses the RailMo license, else show menu items should show the remaining tab option.

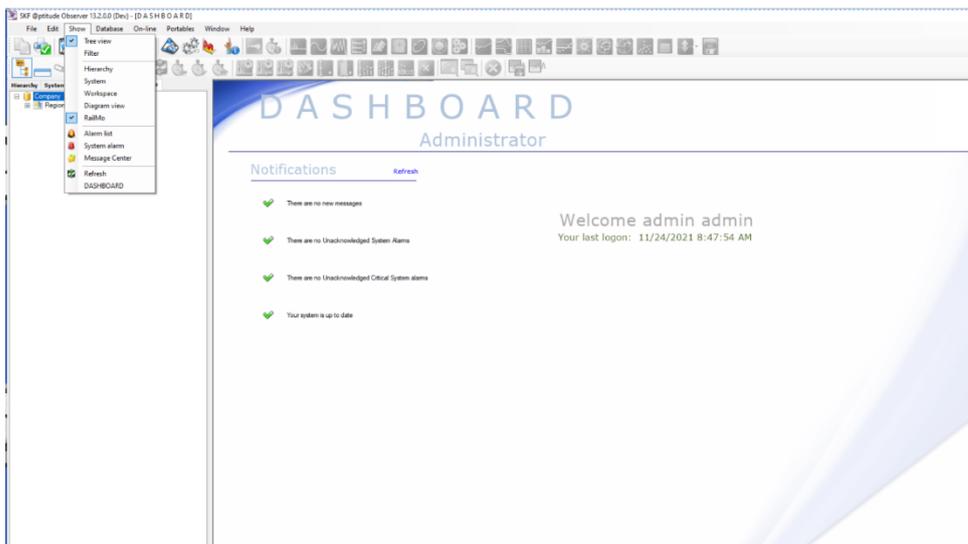
Without railmo license key, Show menu items:

- 1: Hierarchy
- 2: System
- 3: Workspace
- 4: Diagram View



With railmo license key, Show menu items:

- 1: Hierarchy
- 2: System
- 3: Workspace
- 4: Diagram View
- 5: Railmo



Changes in the Landing page UI and redirect user directly to web application if there is single application

The Landing page in the web client has been changed for a better look. The users can select one of these cards to navigate to the required application.

Note: If there is only one application, then the users will be redirected directly to the web application skipping the landing page.

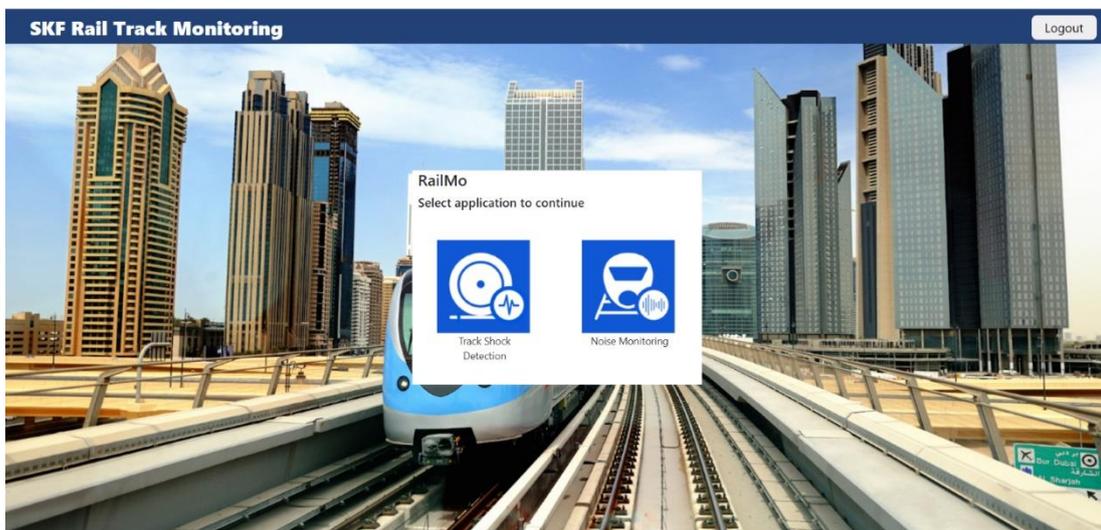
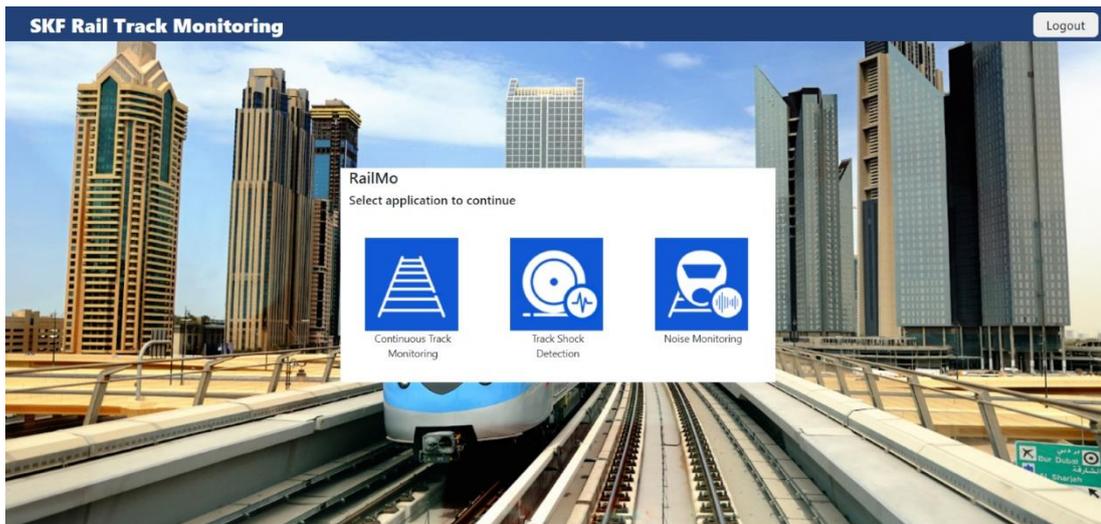


Figure 30 Web application

Option to switch between applications in web client.

In the web applications, if there are two or more applications enabled, then now the users need not logout and re-login and select the required application, they can instead switch from one application to another from within the web application.

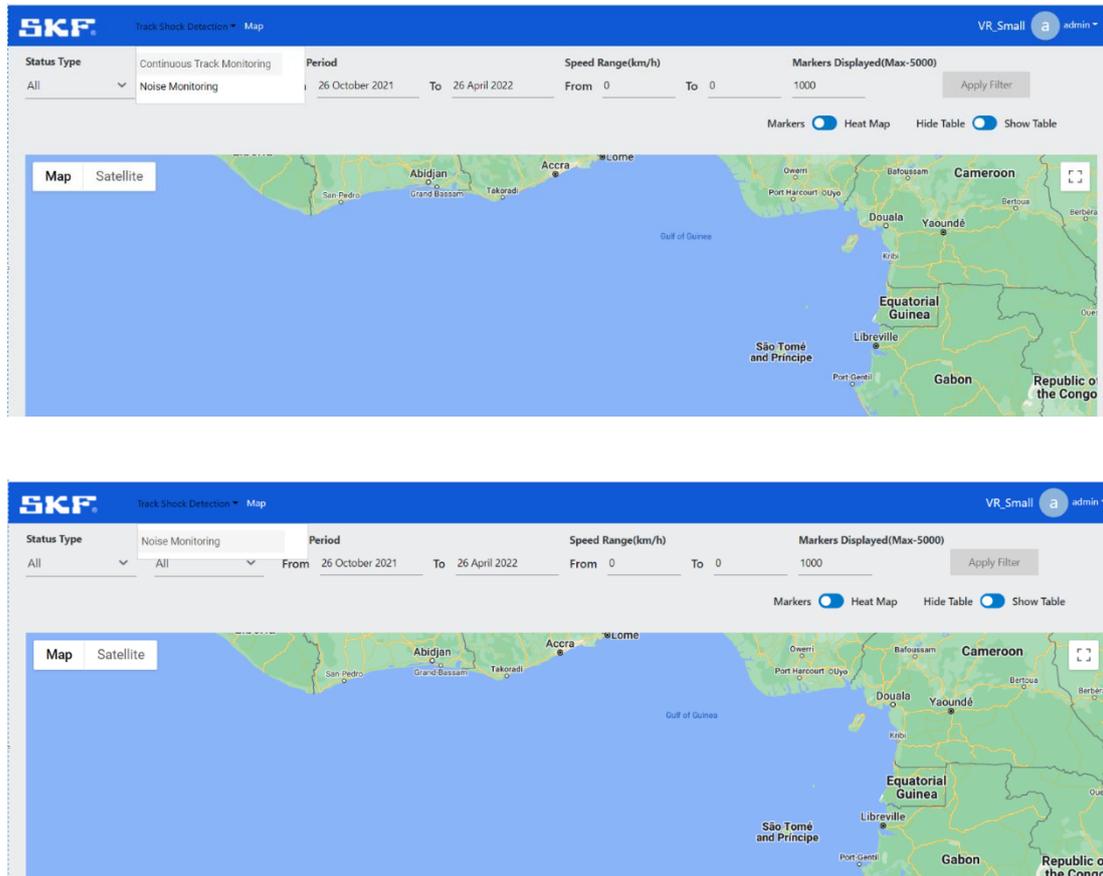


Figure 31 Switch between applications dropdown

Add DB Name and Observer version in web client.

Additional information regarding the Database name and Observer versions are added in the web client to help the customers and users.

Database name is added on the top right corner.

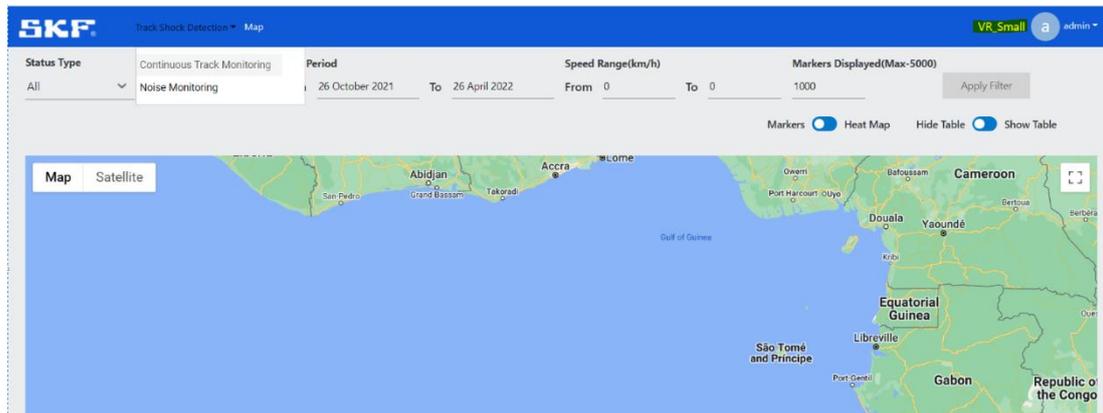


Figure 32 Database name information

Observer version is added in the dropdown once you click on the username on the top right corner:

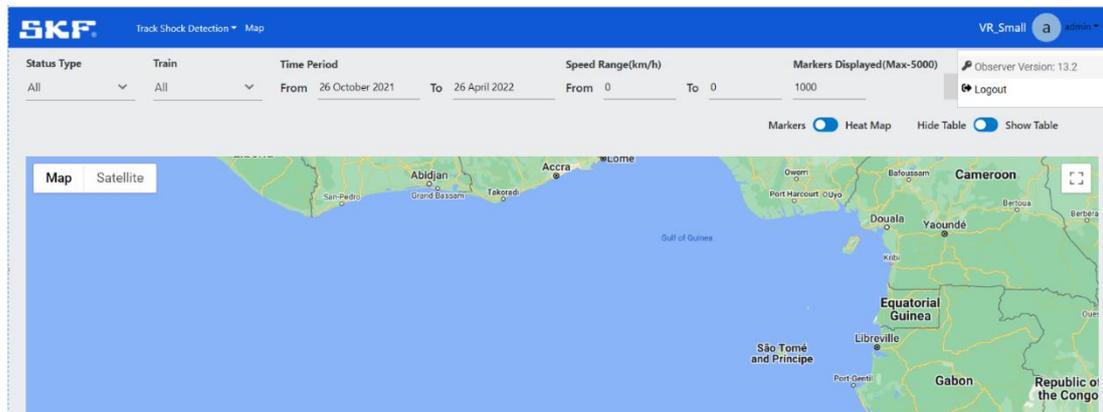


Figure 33 Observer version information

UI Web client - When user switches to heat map, the contrast of the colors compared to map should be high in Noise monitoring application

Initially when user switched to heat map, the measurement points were very light, and it was difficult for users to analyze the data effectively. Hence, with this enhancement the measurement points are made clearer and easy to view with contrast colors of Google maps.

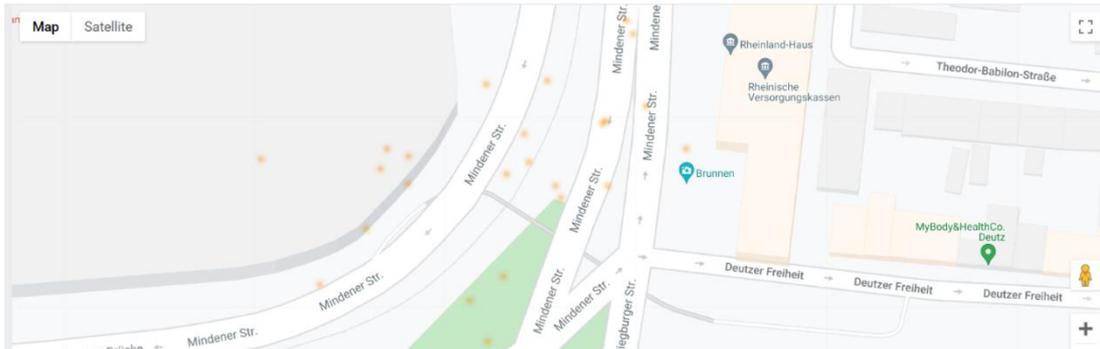


Figure 34 Color contrast before

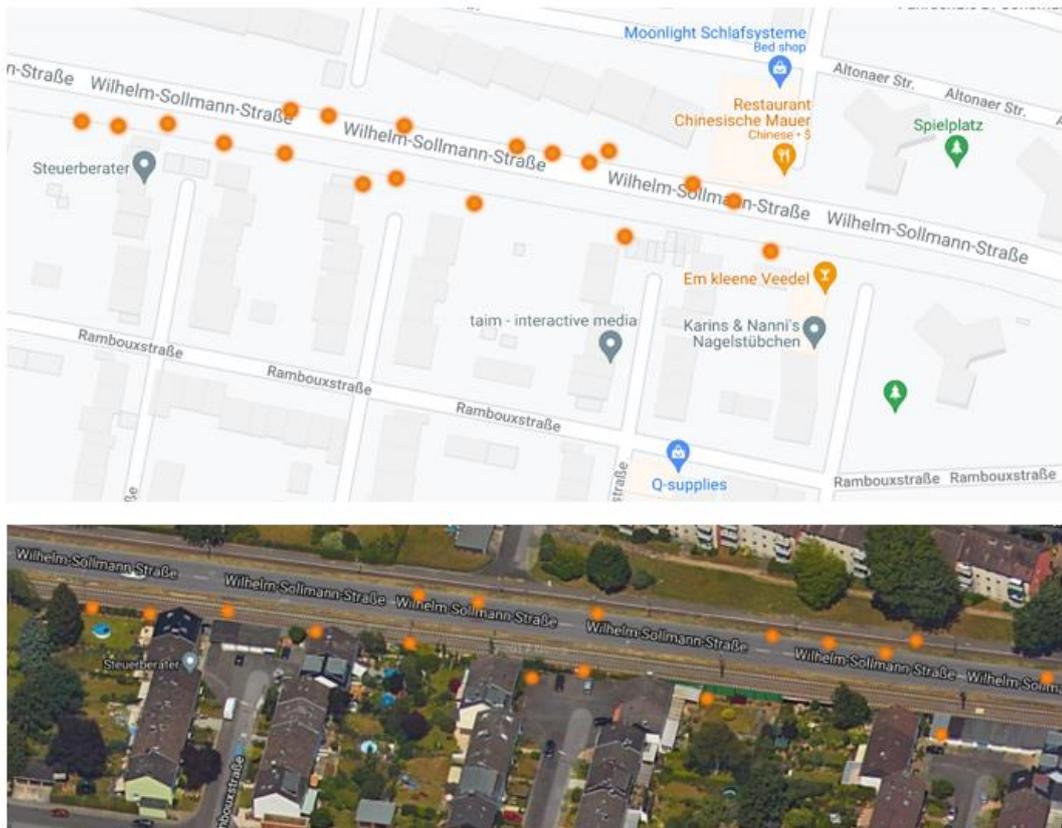


Figure 35 Color contrast now

Add Noise monitoring related details in the measurement details Popup.

When the users hover over any measurement point on the web client, additional information is provided in a popup regarding the selected point. This information contains the following:

1. Measurement date
2. Noise amplitude
3. Speed
4. Latitude
5. Longitude

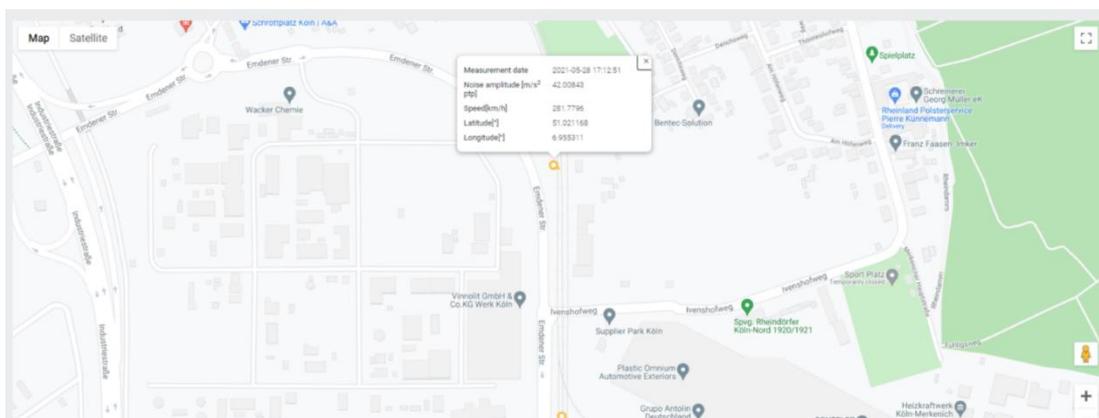


Figure 36 Measurement details pop up

Resolved bugs

* Not all bugs are listed here, full list you can find in change log on [skf.com](https://www.skf.com)

VSTS#257797 Low performance of Alarm list

Resolved issue which cause the slow opening alarm list when there are more than 5000 alarms within.

VSTS#171630 Harmonic cursor stuck when moving left of the first fault frequency

Fixed an issue that caused harmonic cursors to get stuck in 0x when jumping between fault frequencies before it has to be removed and recreated to get control back.

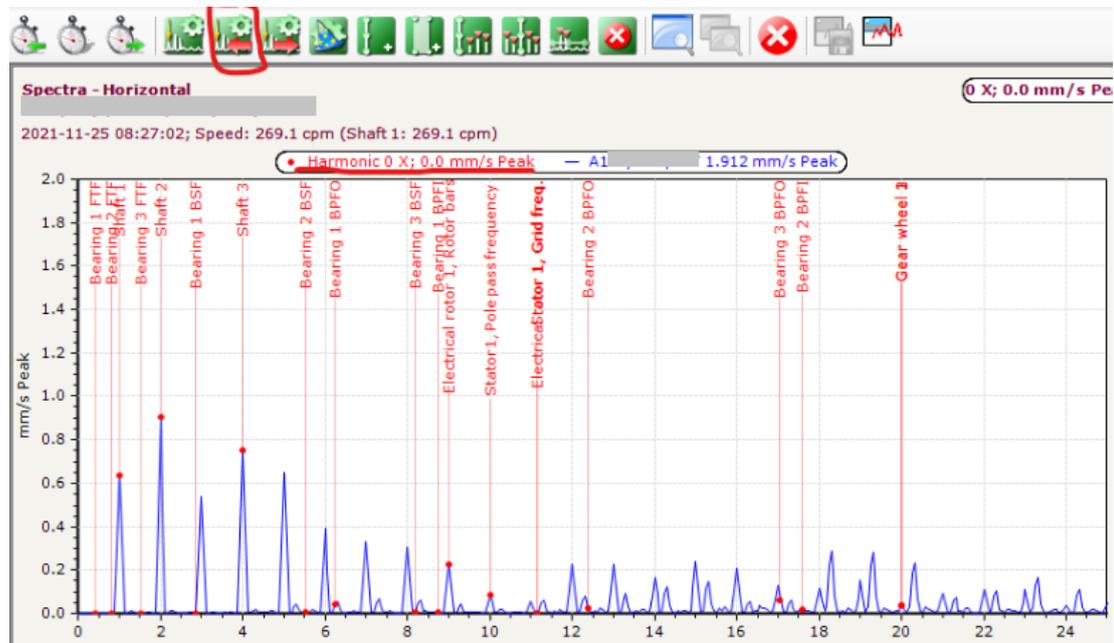


Figure 37 Harmonic cursor

VSTS# 254897 Harmonic cursor stuck when moving left of the first fault frequency

Resolved issue with disabling some tools in the toolbar when several windows are opened in auto-link mode.

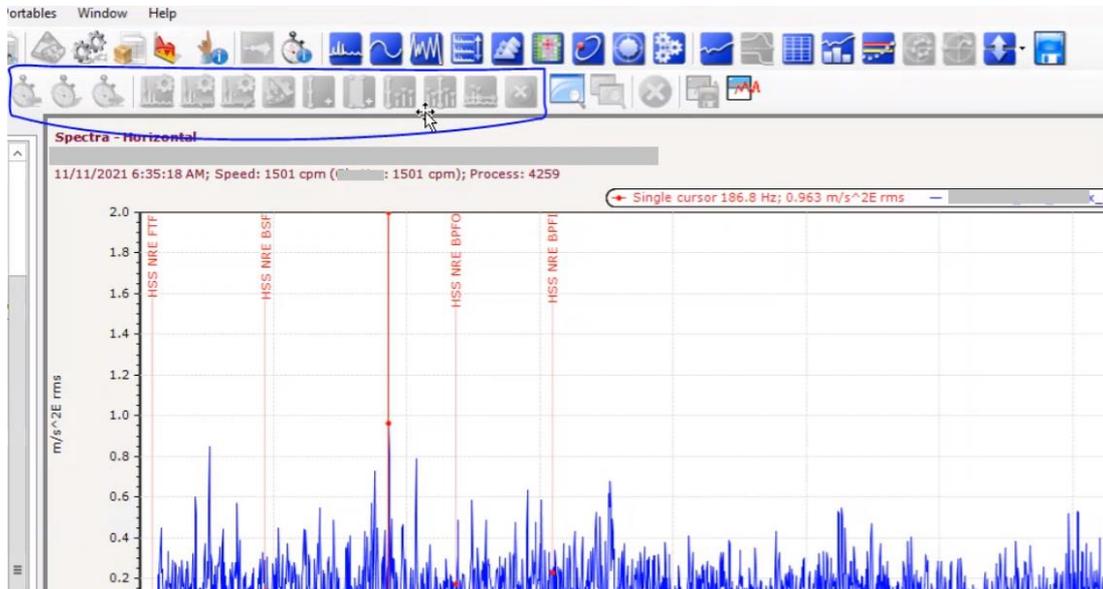


Figure 38 Issue with disabled tools in tools bar for active plots

VSTS# 254888 Negative speed values in Topology plot

Resolved an issue that points using order shaft analysis could show a negative speed in the topology plot. Now speed will keep absolute values in these plots.

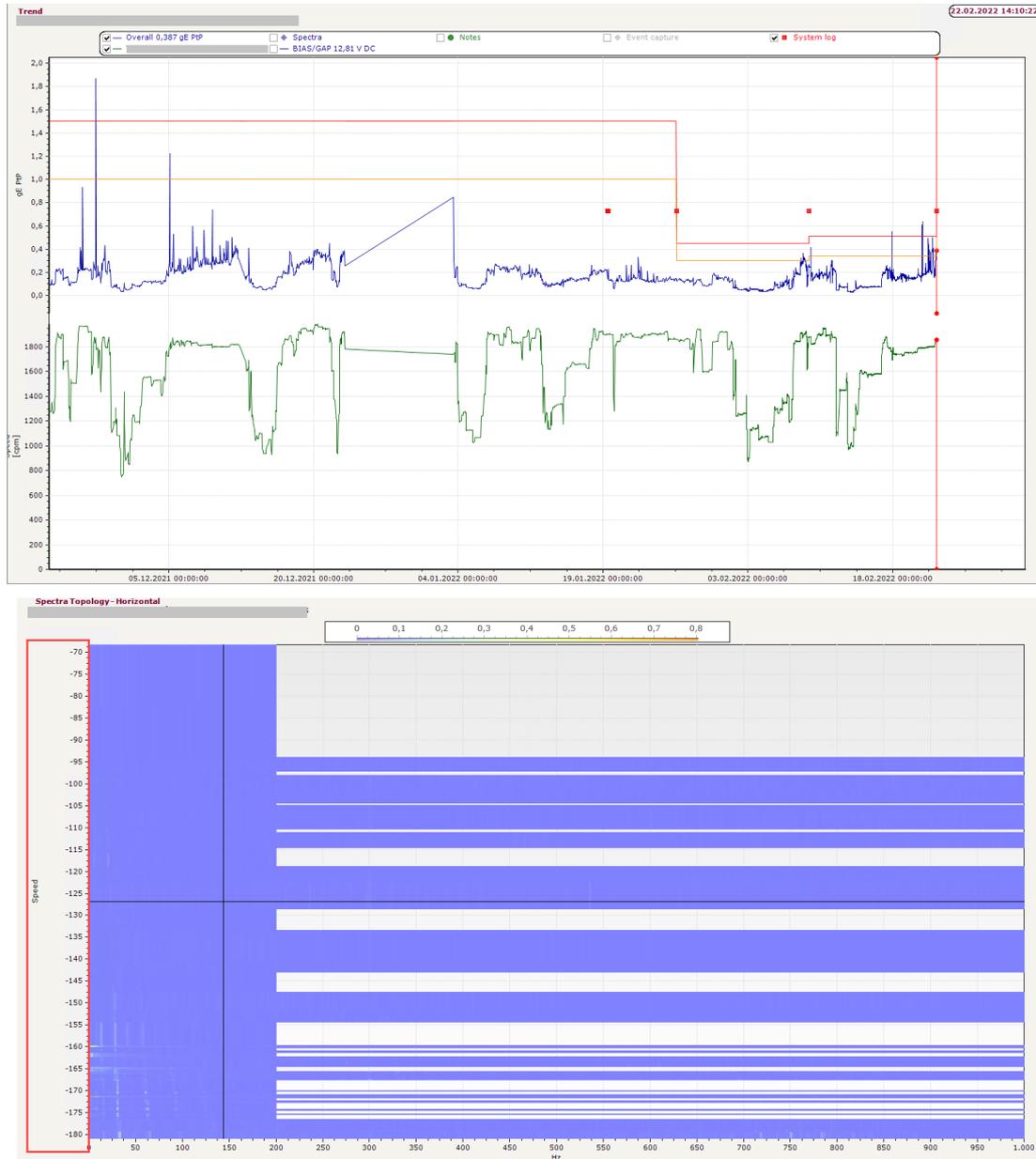


Figure 39 Issue with negative speed values in Topology plot

VSTS# 254854 Machine properties - Missing Tag icon

Resolved the issue of missing Tag icon in Machine Properties window.

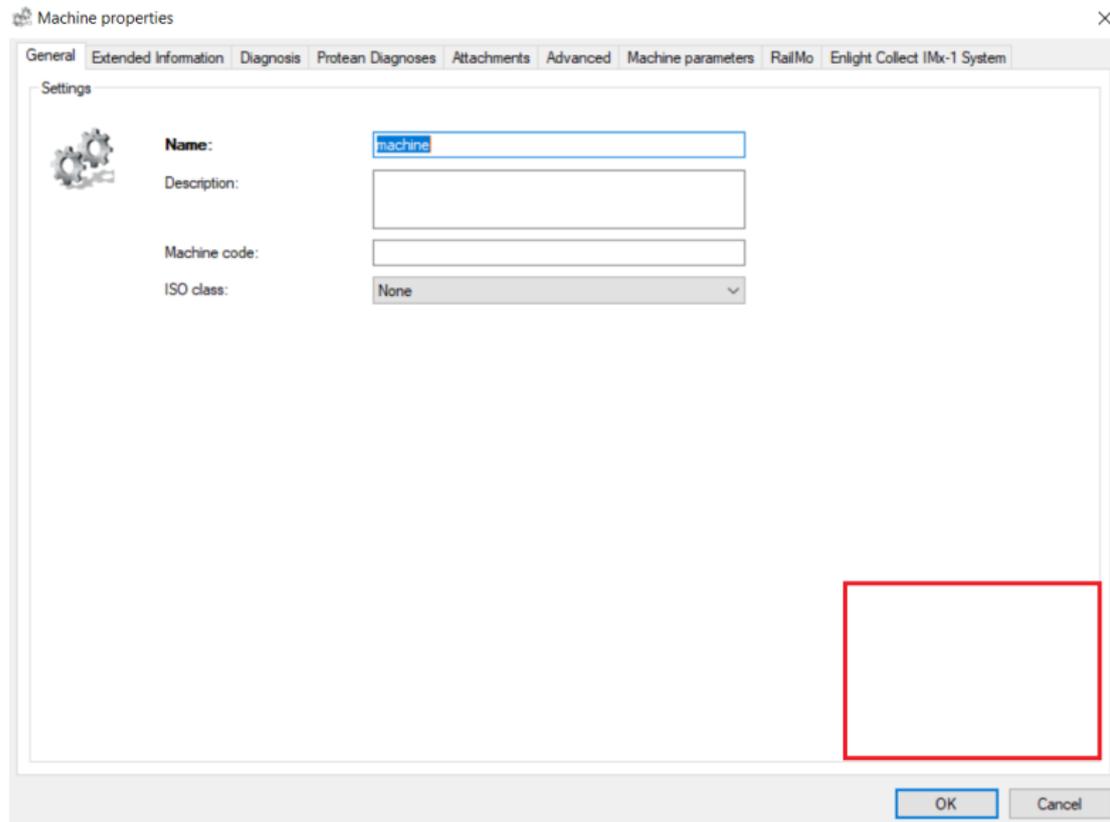


Figure 40 Missed Tag icon in Machine properties

VSTS# 254328 Multiple Point Update Wizard - Speed points can lead to crash

Fixed a crash in Multiple Point Update Wizard when configuring an IMx speed point with the operating condition type "Own values".

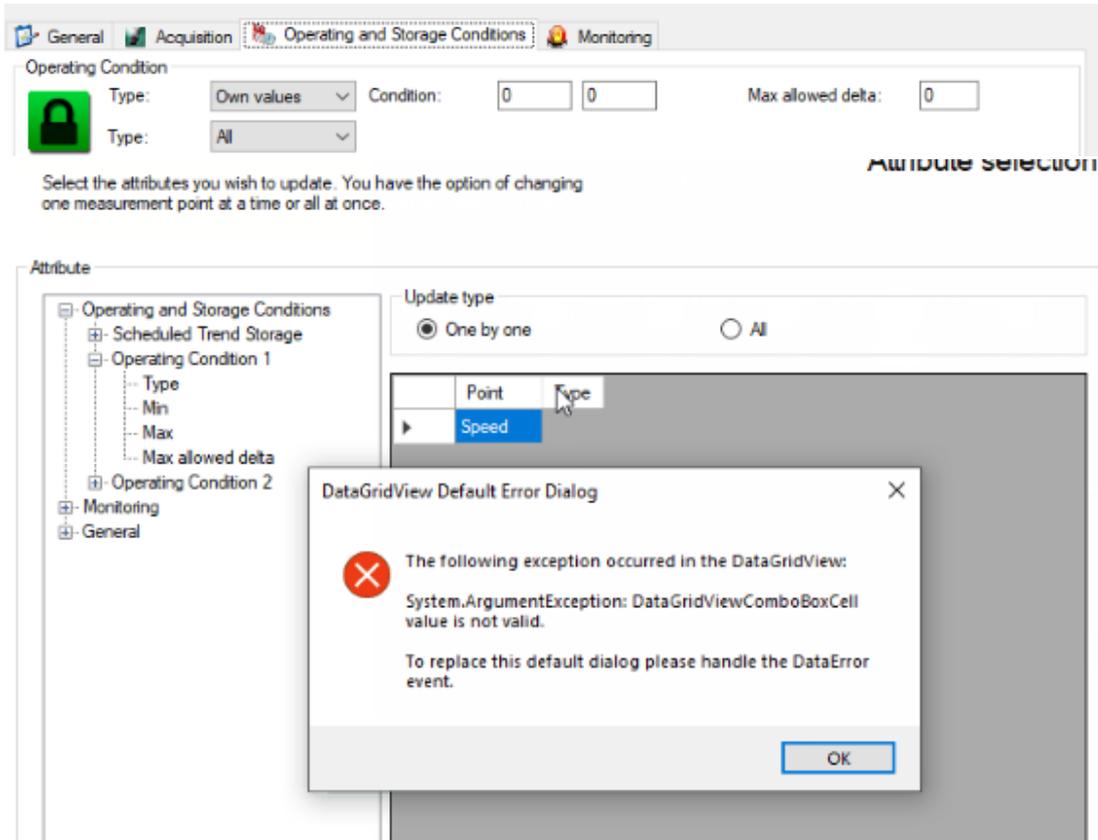


Figure 41 MPUW error dialog

VSTS# 254328 Unable to commission Wi-Fi connected IMx-1 gateways in Switzerland

Fixed an IMx-1 issue which caused certain country codes to be incorrect in Wi-Fi configuration, so mobile app SKF Enlight Collect Manager unable to commission Gateway. Now all countries code should be correctly sent to IMx-1 Gateway.

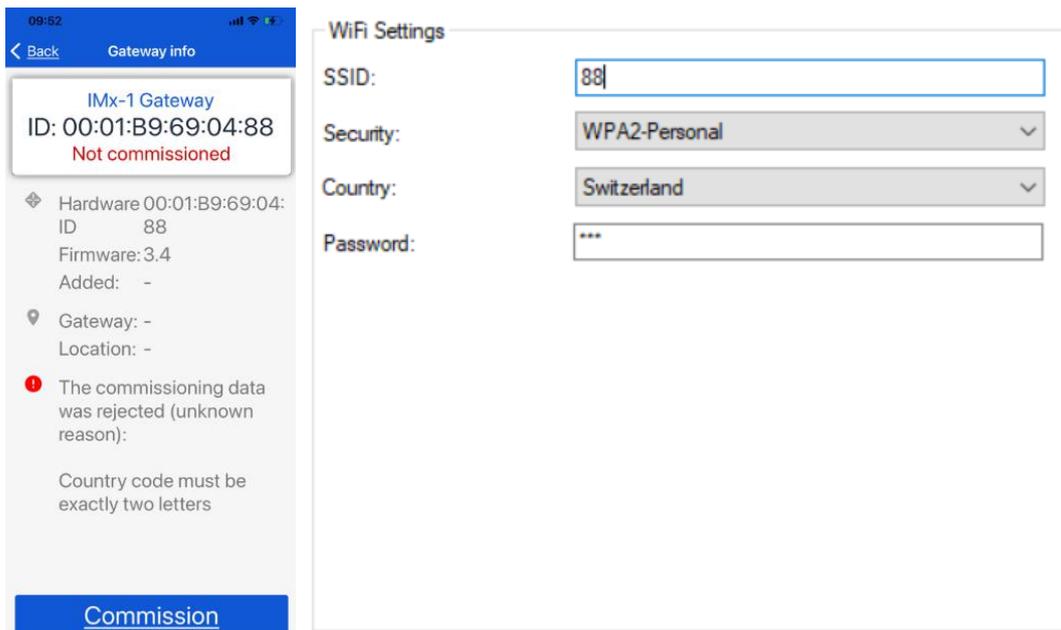


Figure 42 Problem with commissioning GW in case if Switzerland set in Wi-Fi settings

VSTS# 198770 Unable to move nodes in the hierarchy

Fixed an issue that prevented users from re-arranging nodes in the hierarchy.

Pop-up window asks the user if he wants to move the selected element.

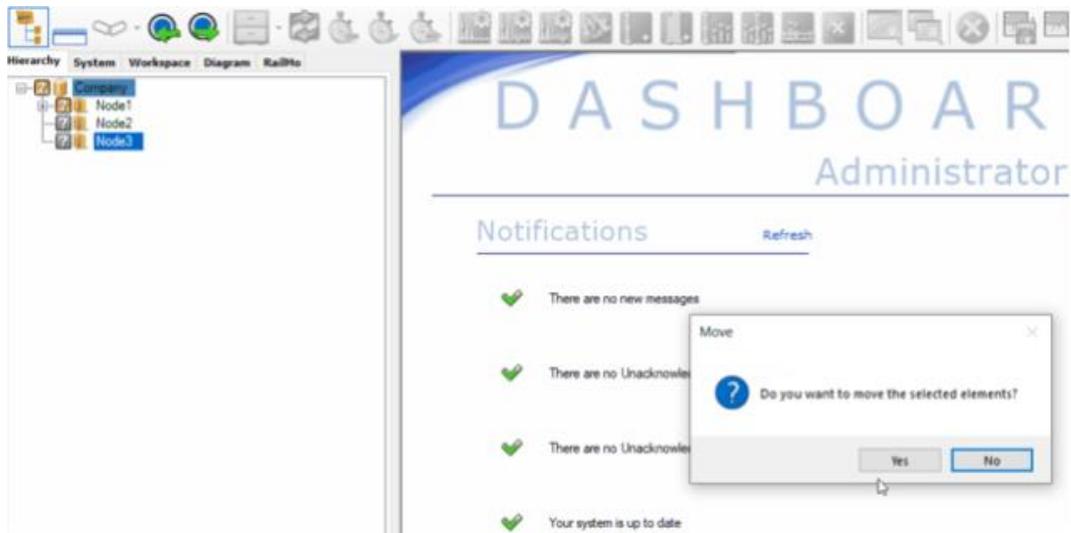
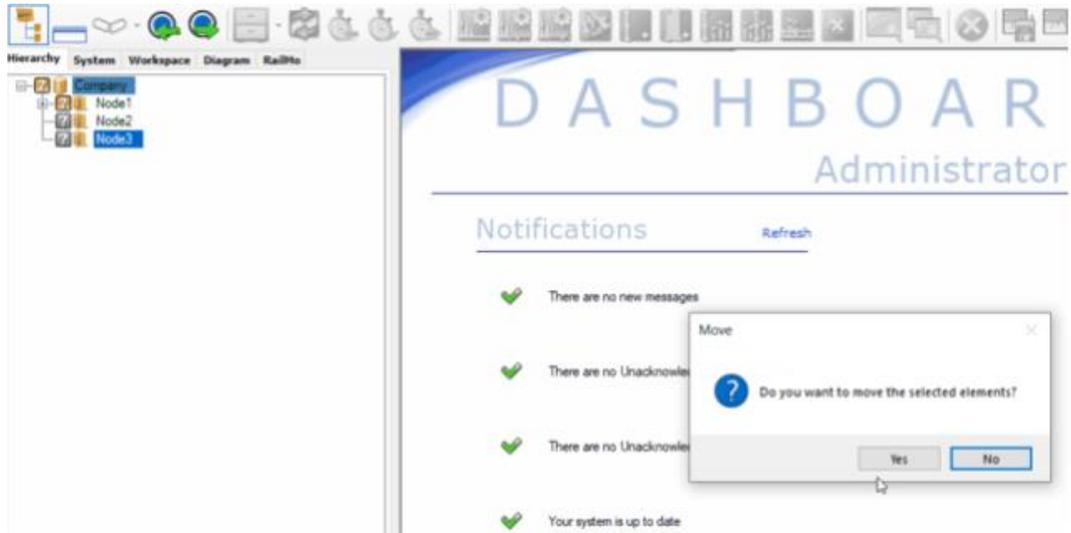


Figure 43 Issue with re-arranging Nodes in Hierarchy

VSTS# 179411 Observer falsely identifies SQL 2019 Express with a limit of 4GB

Observer falsely identified SQL 2019 Express with a limit of 4GB instead of 10GB causing data storage to stop. Database maximum size limit is now set correctly for newer versions of Microsoft SQL Express.

System alarm					
Filter: Not acknowledged		Interval: Last week			
Critical system alarms					
Date/Time	Title	Count	Description	Last occurred	Acknowledge date
18/01/2022 10:26:44	Database size	2314	Size will reach maximum at approx. 1/17/2022 10:26:44 AM (UTC) (Limit : 4000 Meg).	19/01/2022 08:32:46	
19/01/2022 08:32:36	Database full	1	Data storage stopped because database almost full	19/01/2022 08:32:36	

Figure 44 Observer falsely identifies SQL 2019 Express with a limit of 4GB instead of 10GB

VSTS# 175809 Exception when deleting Orbit plot band cursor

Fixed an issue that allowed users to delete the band cursor in Orbital plot which caused an exception. Now the user will not be able to remove active cursor in this plot.

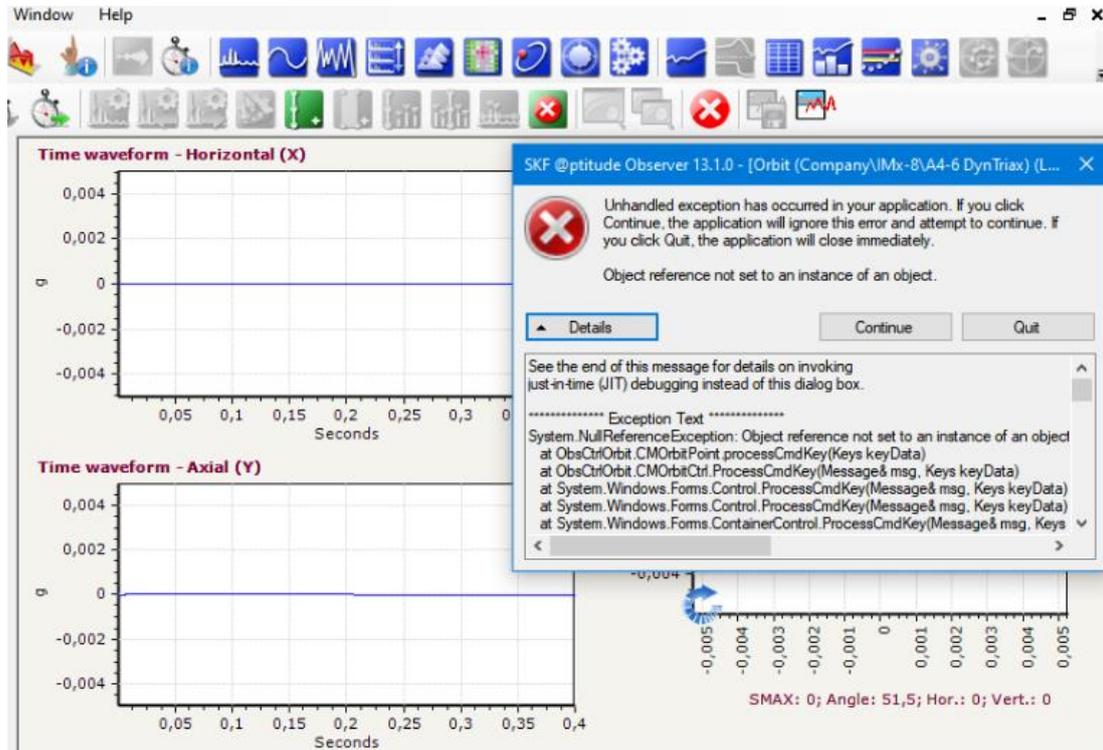
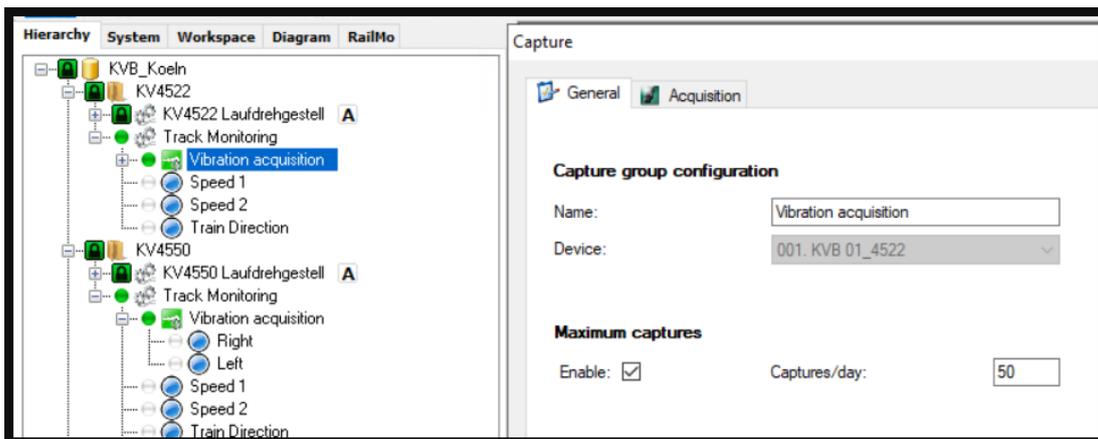


Figure 45 Exception when deleting Orbit plot band cursor

Track Monitoring

VSTS #111297 - RailMo / Track monitoring does not follow captures per day limit on even capture group.

If the users enabled the maximum captures/day feature and entered a value, the system was not able to truncate the captures after that number. This bug has been fixed, and now, if event capture is more than the configured captured, then the application is showing the status as "Truncated" and visible in the application.



The screenshot shows a table titled 'Captures' with the following columns: Date/Time, Keep..., Name, Storage reason, Length [s], Status, Comment, and Track section. The table contains 25 rows of data, all with a 'Status' of 'Truncated'. The 'Date/Time' column shows entries from 12/1/2021 4:50:41 PM to 12/1/2021 4:15:30 PM. The 'Length [s]' column consistently shows '0.6'.

Date/Time	Keep ...	Name	Storage reason	Length [s]	Status	Comment	Track section
12/1/2021 4:50:41 PM	No		Run cycle	0.6	In progress (0.10 %)		
12/1/2021 4:49:49 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:48:58 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:48:14 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:46:32 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:44:36 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:43:20 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:42:03 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:40:36 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:38:58 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:37:35 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:36:44 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:35:53 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:35:08 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:33:26 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:31:30 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:30:14 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:28:58 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:27:31 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:25:52 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:24:30 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:23:39 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:22:48 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:22:03 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:20:21 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:18:25 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:17:09 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:15:53 PM	No		Run cycle	0.6	Truncated		
12/1/2021 4:14:30 PM	No		Run cycle	0.6	Truncated		

Figure 46 Status "Truncated"

VSTS #176063 - In the dropdown lists, we should disable user inputs and only allow selection from pre-defined list

In the Observer, while using the dropdown menu, the users were able to enter any data from their end. This has been fixed. In the dropdown lists, user inputs are disabled and only selections from pre-defined lists are allowed.

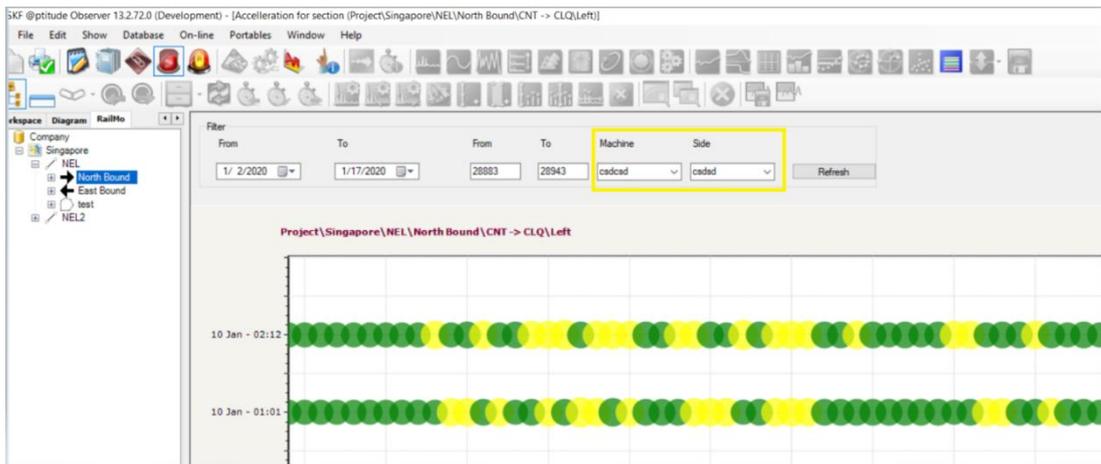


Figure 47 Dropdown list - before

All the dropdowns are now disabled for user input and only selection from pre-defined list is possible.

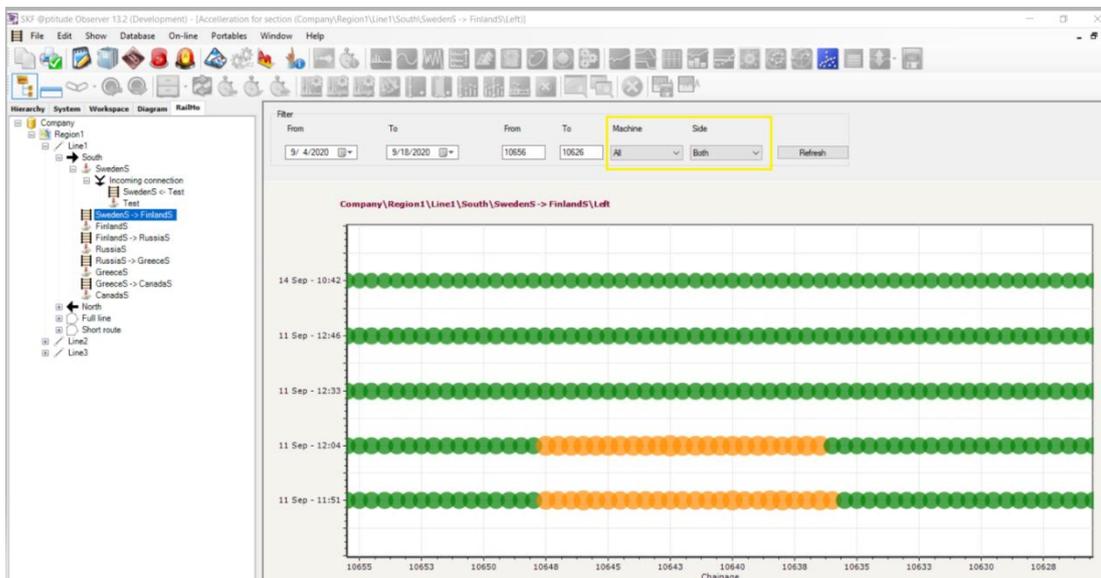


Figure 48 Dropdown list – now

VSTS #176467 - Unable to update the direction of travel 1/2 start station.

If a user was trying to update the direction of travel of 1 or 2 start station, no action was carried out if a user clicked on the OK button. There was no information provided to the user and the Train route popup would just close.

But if the user changes the direction travel of 1 or 2 **start and stop** station then the application is accepting the changes.

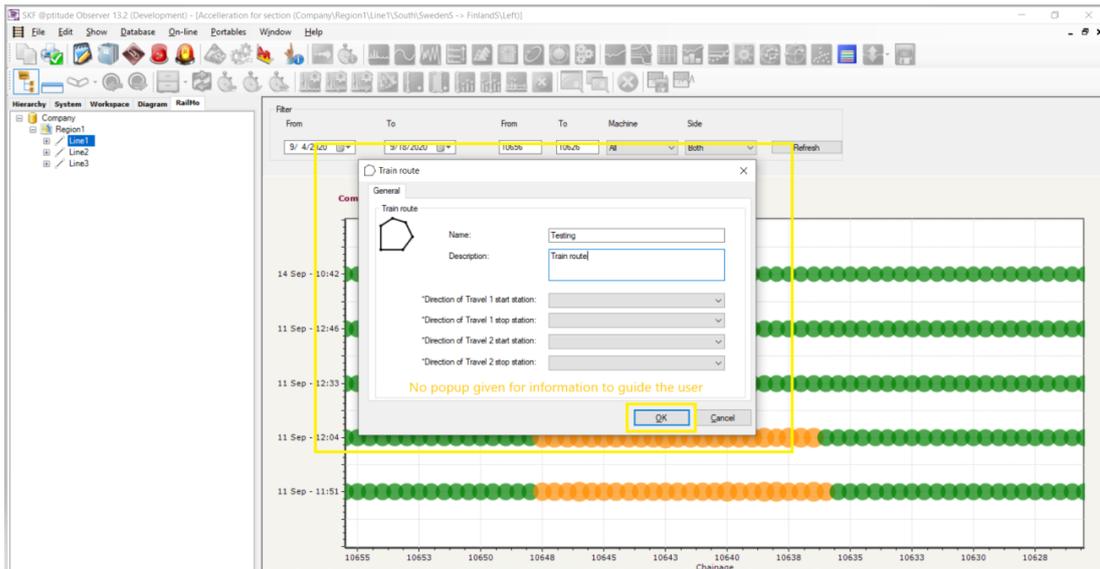


Figure 49 Update direction of travel

As a fix to this bug, a popup is displayed to the users with the instruction that the start station cannot be empty.

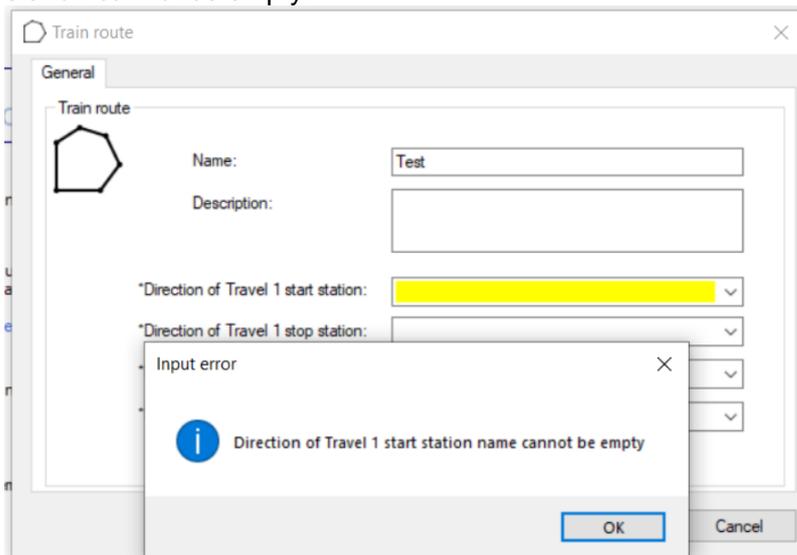


Figure 50 Update direction pop up

And if start station is provided and stop station is not provided, then instruction for the same to the user comes up.

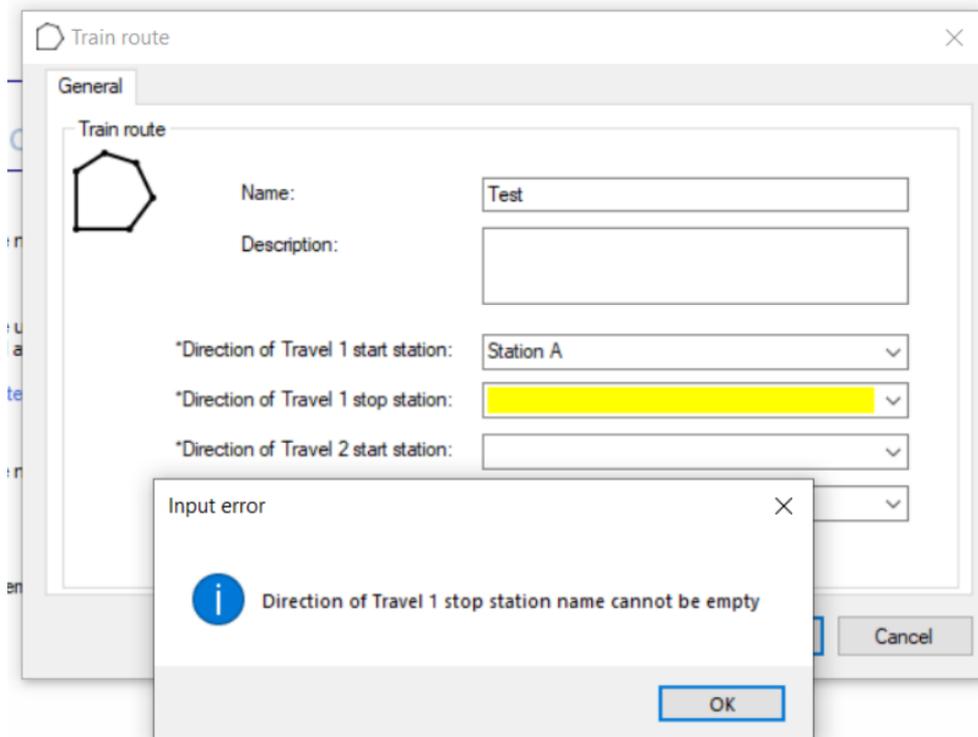


Figure 51 Input error pop up

The same implementation is for **Direction of Travel 2 start and stop** station.

VSTS #158779 - Continuous Track Monitoring Bound sections not visualized correctly

There was a bug that lines and bounds on Google Map is not rendered clearly if there are incoming and outgoing connections in the train routes.

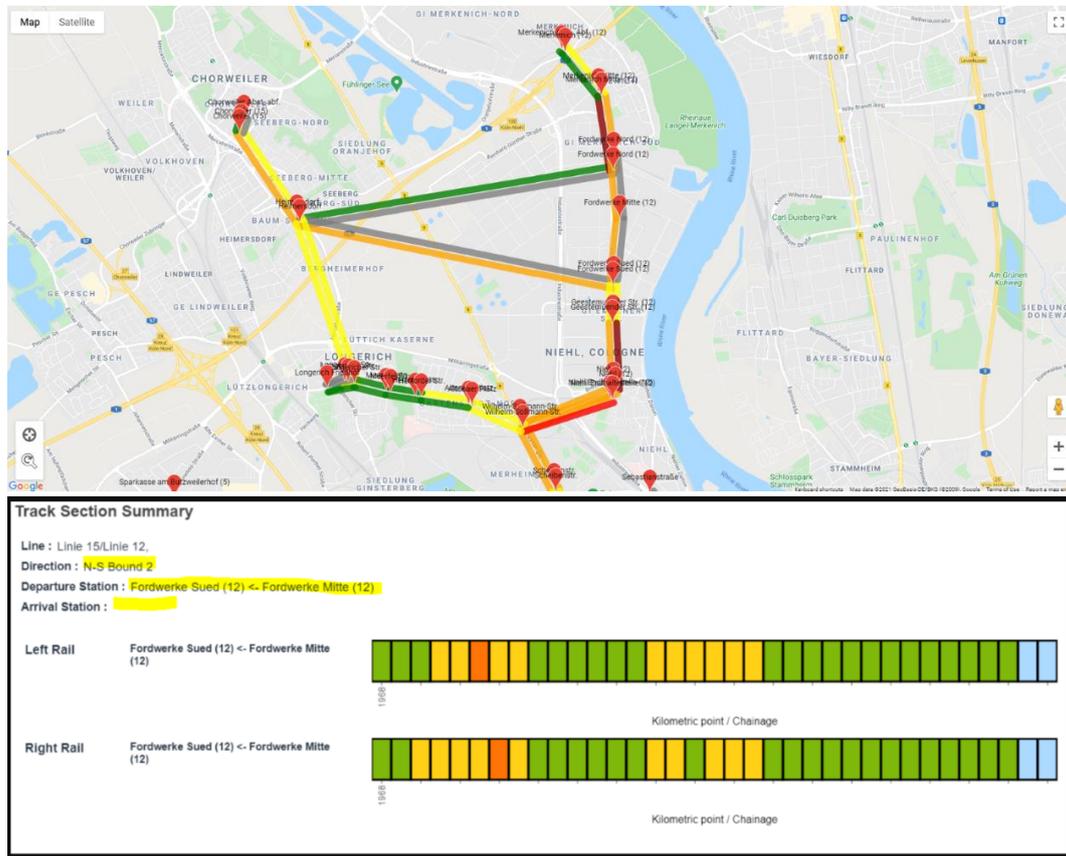


Figure 52 Track section summary - before

This bug is fixed in this release and the arrival stations, and the train routes are rendered properly in the Google maps now.



Figure 53 Track section summary - now

VSTS #256253 - High Pass filter is unset when saving Run Cycle settings.

In Observer 13.1.0 with an event capture, if the measurement points were configured with the “high pass” filter enabled and going back to the capture group, if the user asked for properties – and pressed the OK button (without changing anything) results in clearing the High Pass filter.

This bug has also been fixed in this release. High Pass filter selection remains intact when saving Run Cycle settings and capture groups (event capture and scheduled capture).

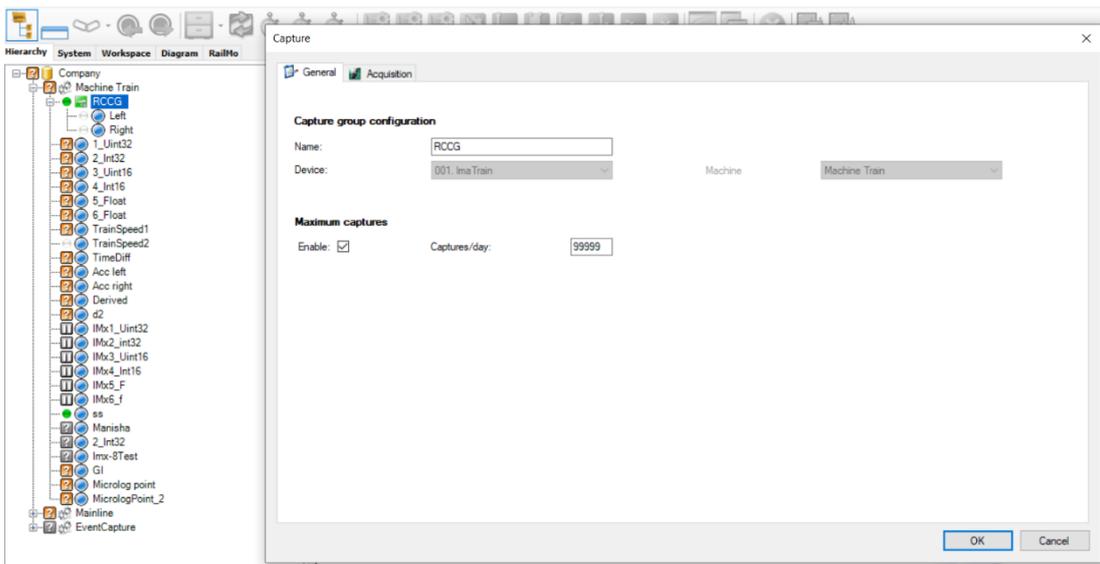
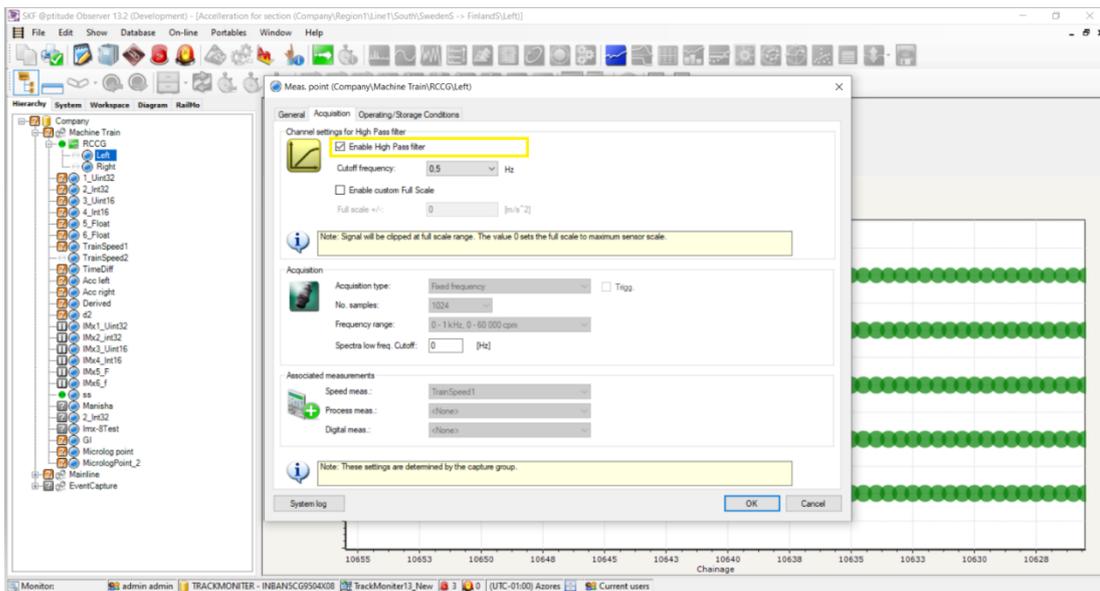


Figure 54 High Pass selection

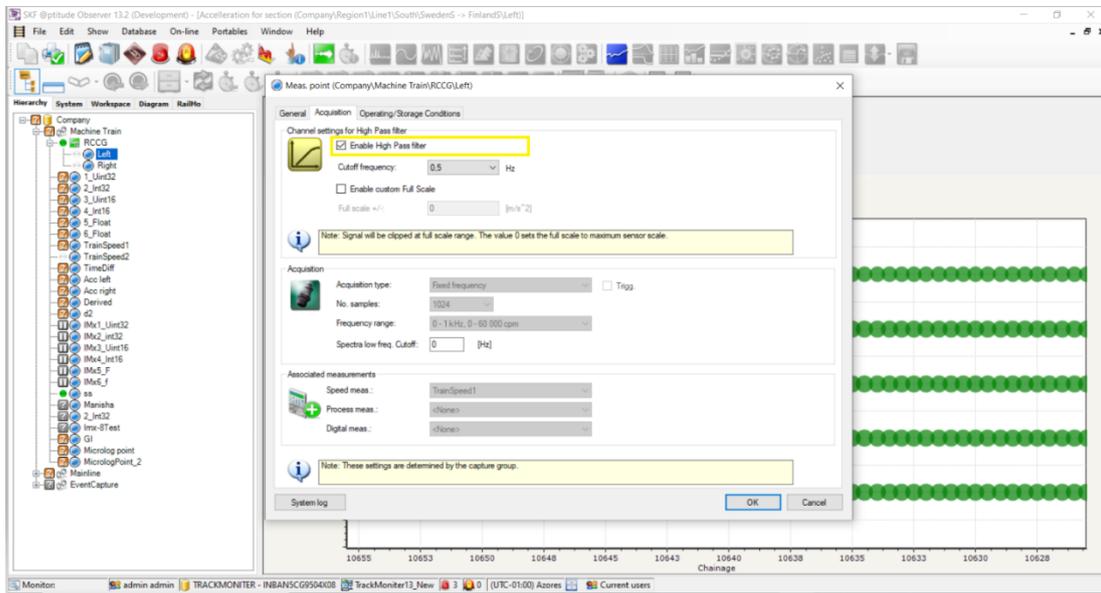


Figure 55 High Pass filter selection remains