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USER MANUAL

FOXMAN-UN

WebUI

Use of Map-based Applications

Hitachi Energy

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1 Preface

This document describes a concept of map-based applications in one Web-based system. These applications provide to the user graphical preview of a network and a dedicated set of information with common GUI and interactions. Moreover, the document describes concept of the homepage – a dashboard acting as a starting point to opening applications within the system.

This manual describes components and content of the new applications, basic interactions within them and visual language of the map.

2 Homepage

The homepage dashboard provides a set of application shortcuts with status information. It acts as an entry point for further investigation within the system – it allows opening any application the user has access to. Access to some applications can be disabled based on the user role.

The homepage is built of cards representing individual applications. Depending on the application's status and user access rights, some applications can be unavailable. Their unavailability is represented by graying out the card and additional message stating reason behind the unavailability.

By default, the applications are divided into various groups to facilitate navigation (Figure 1 and Figure 2). The availability of applications for a specific user is subject to coverage by the FOXMAN-UN license and to user permissions defined via role-based access control.

The homepage can be accessed from within any new application by using an application selector in the common header. This interaction is described later in the document.

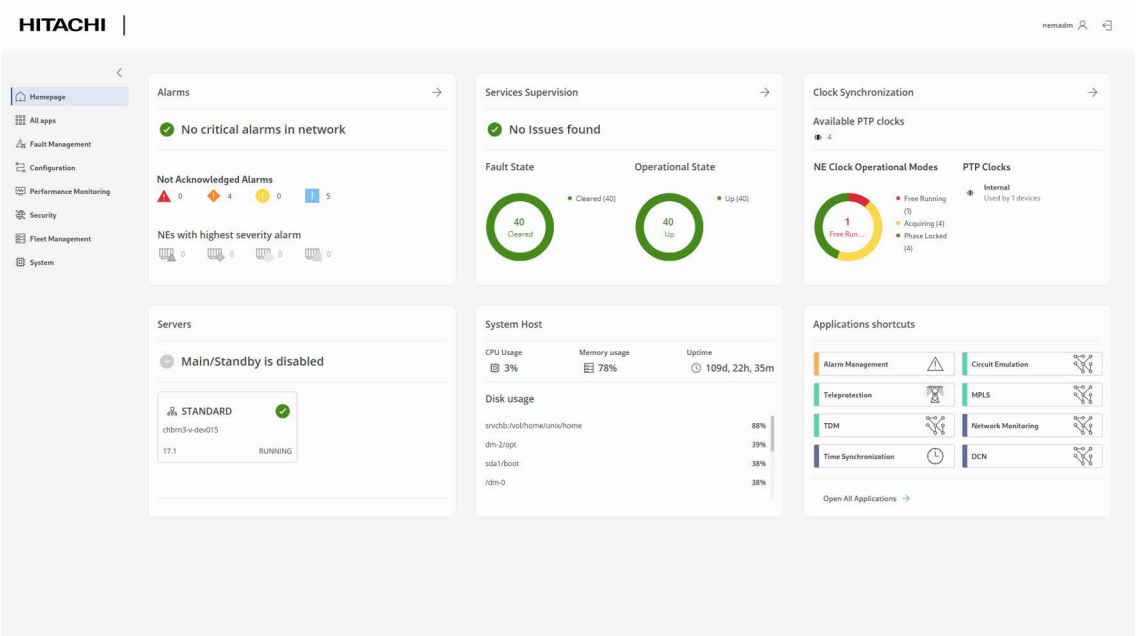

Figure 1: Homepage layout – sample view

Figure 2: Application cards on homepage in unavailable (left) and available (right) states.

2.1 Application Categories

The applications are grouped into seven categories based on their functions.

The term "(legacy application)" in the listing below indicates an application that is not yet integrated into the Web UI. The term "(preview feature")" indicates a new application that will be further developed with upcoming releases.

2.1.1 E2E Services & Applications

This category focuses on the cross-technology services and applications, and on synchronization. The following applications belong to the category:

- Service Supervisor (legacy application),
- Circuit Emulation Manager,

- PTP Sync Map,
- Synchronization Map (legacy application).

2.1.2 Network Services

This category contains applications related to the services configuration, monitoring, and troubleshooting per technology (PSN, TDM). The following applications belong to the category:

- MPLS Map,
- Ethernet Networking Package (legacy application),
- Ethernet Security Manager (legacy application),
- TDM Map (preview feature),
- Networking Package (legacy application),
- Protection Ring (legacy application),
- Spanning Tree (legacy application).

2.1.3 Performance Monitoring

This category contains applications related to monitoring of network, network element, and server performance.

- Network Monitoring,
- Metrics Database,
- PM Client (legacy application).

2.1.4 Network Management

This category contains applications focusing on management of physical devices – configuration of network elements and sections, creation of map topologies used in other applications, management of users and roles, overview on data communication networks. The following applications belong to the category:

- Physical Map,
- DCN (preview feature),
- NEM Network Browser (legacy application),
- NEM Configurator (legacy application),
- Section Management (legacy application).

2.1.5 Fault Management

Fault Management category contains applications dedicated to an alarm management. The following applications belong to the category:

- Alarm Summary (legacy application),
- Alarm List (legacy application),
- Alarm History (legacy application),
- Alarm Customization (legacy application).

2.1.6 Element Management

Element Management category contains applications dedicated to managing network elements' life cycle (embedded software management). The following applications belong to the category:

- Inventory Request,
- Credential Distribution (legacy application),

- Profile & CPS Tasks (legacy application),
- ESW Network Overview (legacy application),
- ESW Distribution Task (legacy application),
- ESW Task Management (legacy application),
- ESW Job Management (legacy application).

2.1.7 System

System category contains applications dedicated to the system configuration and monitoring. The following applications belong to the category:

- Event List (legacy application),
- Remote Executor (legacy application).

3 Map Applications Overview

The map applications provide a redesigned GUI with focus on the visual representation of the configuration on the map to provide quick and easily comprehensible overview of the system. These applications enable users to analyze the configuration and operation of the network from a high-level perspective and if needed, to gradually go down further in detail.

The map applications have a common structure and layout, providing a similar user experience through all of them. It means that independently of the application the layout and basic interactions are the same.

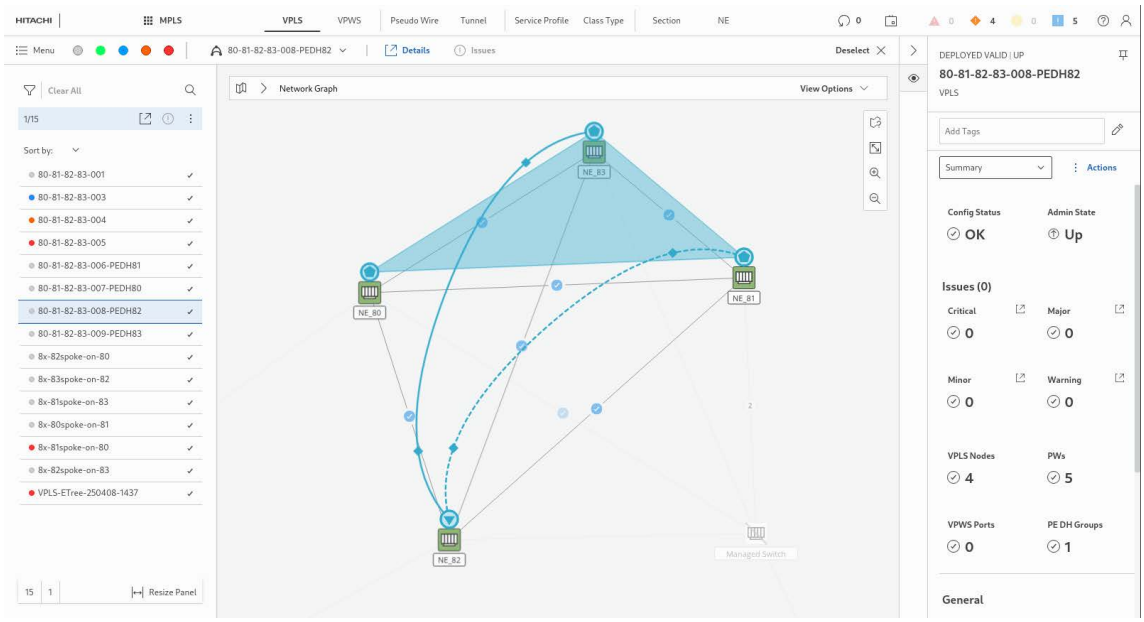

Figure 3: Overall Map Application Layout (MPLS example)

The following applications provide support of the map:

- Alarm Management map – providing observability of all Alarms, sections, and network elements.
- Circuit Emulation map – providing possibility for creation and monitoring of circuit emulation services on network elements with supported circuit emulation units.
- Teleprotection map – providing possibility to creation and monitoring of teleprotection services on network elements with supported teleprotection units.
- MPLS map – providing possibility to manage MPLS services – configuration, monitoring, and troubleshooting on network elements in the ENP domain.
- TDM map – providing the view TDM-based services, circuits, trails, SNCs, sections and NEs. It also provides a command for starting the legacy Networking Package application for service creation.
- Element Management map – providing overview on all network elements and sections and access to the legacy NEM Network Browser and NEM Configurator.
- Network Monitoring with Health Monitor map – providing maps and details views of network health status, monitoring sessions, health metrics, and performance data including graphical presentation.
- Time Synchronization map – providing functionalities to monitor and configure time synchronization of network elements.
- DCN map – providing functions to managing data communication networks, VLANs, OSPF areas, VPLS, tunnels, and related elelments.

The map applications support different types of maps:

- Network graph,
- DCN graph,

- E-Tree graph,
- User maps.

The network graph, DCN graph, and E-Tree graph are automatically generated graphs of network elements, sections, and/or services. Only network elements having sections between them are displayed.

The user maps are manually created maps using the Map Manager application.

3.1 Basic Map Application layout components

The map applications have a common structure and are built around the same components. These components are interdependent, which means that the interaction within one, may affect the content of another. Behavior and dependencies between components are common across the applications, however, they may differ in content and options/actions availability.

These applications are built of 6 main components:

- Common Header – global and shared for all applications in the system, presenting universal information.
- Ribbon – providing context-specific actions and application filters.
- Entity Browser (Left Panel) – presenting a list of entities (e.g., services).
- Main View (Map) – the central part of the application presenting graphical representation of the network or more specific visualizations of entities (e.g., services).
- Details Panel (Right Panel) – presenting high-level summaries related to application or details of selected entities.
- Details navigation bar – providing mechanisms for browsing details of different entities.

3.1.1 Common Header

The header is a global, shared component presenting universal information. It consists of (from left side):

- Global title – company and application name
- Application name and application selector – stating the name of the application currently opened and allowing the user to access condensed homepage panel. The panel allows the user to change the application or get back to the homepage window.
- Navigation within the application – allowing the user to change tabs (content of the view) and go through the application focusing on different aspects or entity types.
- Loading indicator – presenting the user information that the content of the applications is being loaded.
- Task summary – presenting a few ongoing tasks in the system and allowing the user to change the content of view beneath to the task visualization mode. Tasks states description is placed in further chapters of this document.
- Alarm summary – presenting information about all new and not-acknowledged alarms in the network; allowing the user to change the content of view beneath to the alarm visualization mode. Alarm states description is placed in further chapters of this document.
- Help – providing access to the system documentation.

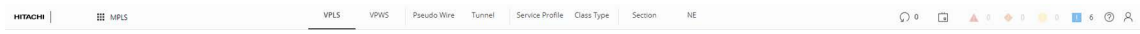

Figure 4: Common Header – elements from left to right: Global Title and brand / Application selector and name in closed state / Navigation tabs / Task Summary / System Events / Alarm Summary (critical, major, minor, warning) / Help / User Preferences.

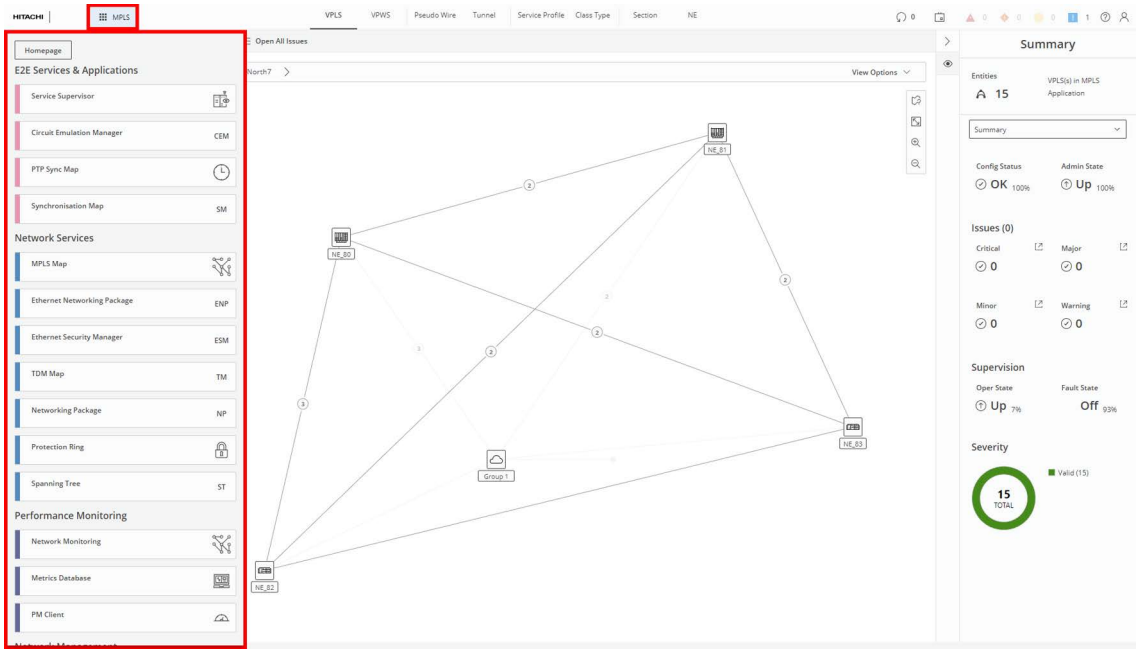

Figure 5: Application selector in opened state (marked red)

3.1.2 Ribbon

Ribbon is a secondary navigation bar providing quick access to the basic actions and interactions with the system.

It is a component that has various states and therefore various options available. The state of the ribbon reflects the state of the entity browser (left panel):

When nothing is selected – ribbon provides a title stating what objects are presented in the entity browser; global filtering actions for filtering out tables in the entity browser; global actions for specific types of object; basic options for view management. The type of the above states depends on the part of the application we are in (tab) and therefore the type of data we see in the entity browser.

When entity or entities are selected – ribbon provides a title stating what objects are selected in the entity browser; actions dedicated to selected entity or entities; basic options for view management.

As mentioned, above ribbon consists of (from left):

Title – name of the tab the user is currently in or the name of the selected entities.

Global filters – allowing to filter the content of the entity browser. Depending on the tab or application the user is in, different filters are available. For service and transport layers in MPLS application class-type filters are available. For the physical layer (Network Elements and Sections) alarm severity filters are available. When the alarm or tasks visualization mode is applied, alarm severity or task state filters are available.

Actions – can be general, can be selected-entity specific. General actions e.g., “create”, allow the user to open a creation wizard for a given entity type. Actions for the selected entity include opening its detail page or opening the creation wizard for editing purposes. In some cases, available actions are not strictly limited to the actions related to the given context – when browsing MPLS Map app, with the Network Elements tab opened, the user still can create a new service.

View Options (View Modes) – quick options in form of toggle buttons that can change the visibility of various element types on the visualization (map); they allow quick change of perspective from which the user is looking on visualized objects.

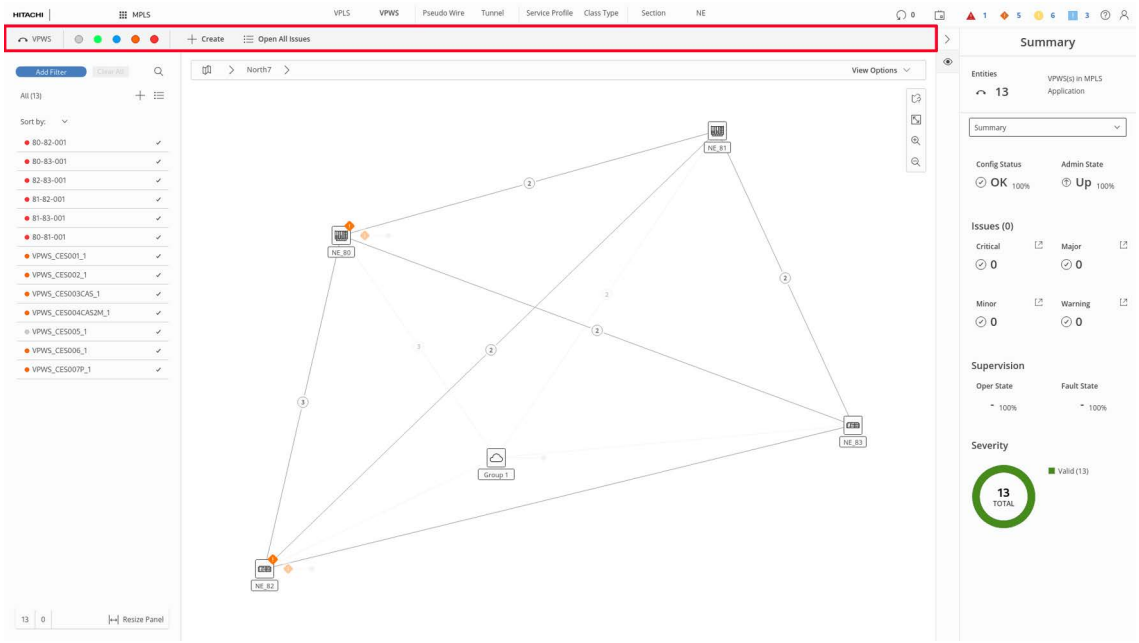

Figure 6: Ribbon in unselected state (marked red)

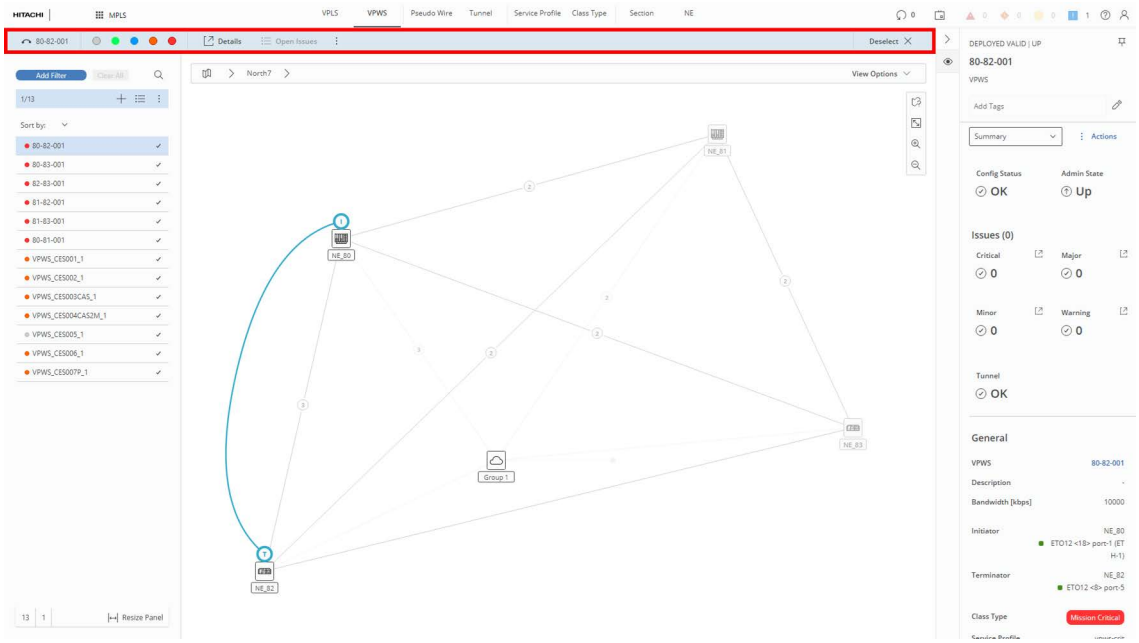

Figure 7: Ribbon when entity is selected (marked red)

3.1.3 Entity Browser (Left Panel)

The entity browser is a component listing different objects from the network. Its content depends on the application and selected tab – it presents entities from a particular entity type. It shows only entities important for a given application.

Through the entity browser, users can select different objects – visualizing them on the map and opening their details in the details panel (Right Panel).

The entity browser has 3 different layouts that can be changed by dragging the edge of the panel.

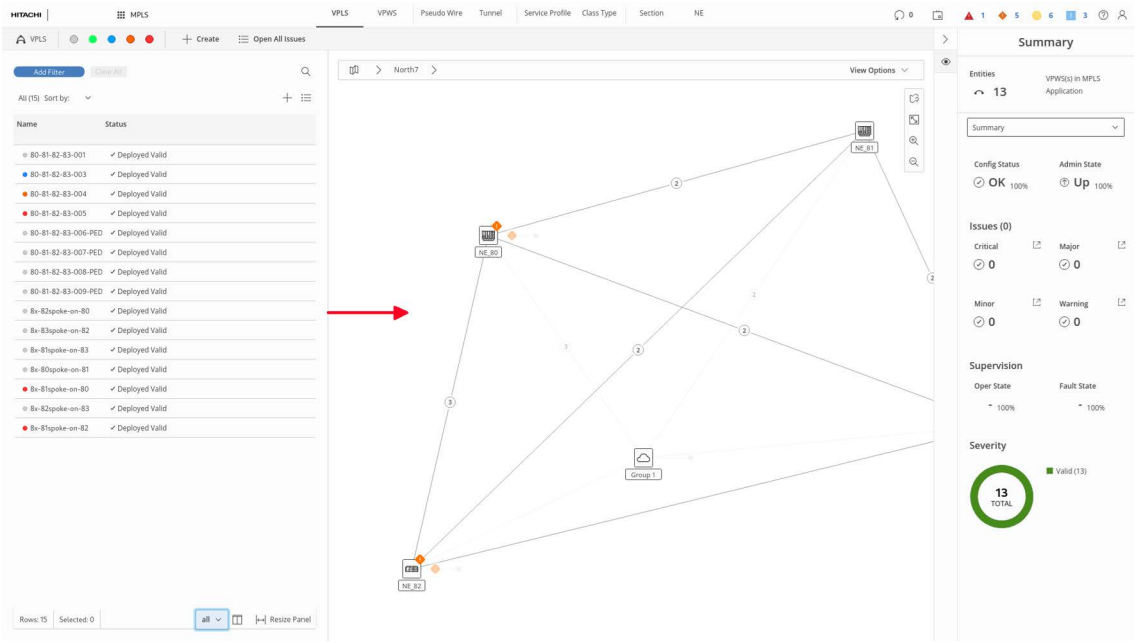

Figure 8: Opening entity mode by dragging action (marked red)

Different layouts include:

- Small – providing the minimum required information in the tables and taking up as little space as possible; this view mode is dedicated mostly for interactions with the map and other elements of layout.
- Medium – providing more detailed information (more columns visible), enabling the user to get a better overview of the configuration but keeping the possibility to interact with the map.
- Big – providing the full set of information; dedicated mostly for analytical use cases when there is a need to see as many details as possible.

The entity browser is composed out of following elements:

- Table Control bar – with filtering options and search for controlling content of the table beneath.
- Table – listing entities of given type in the form of data grid; with action bar and summary bar

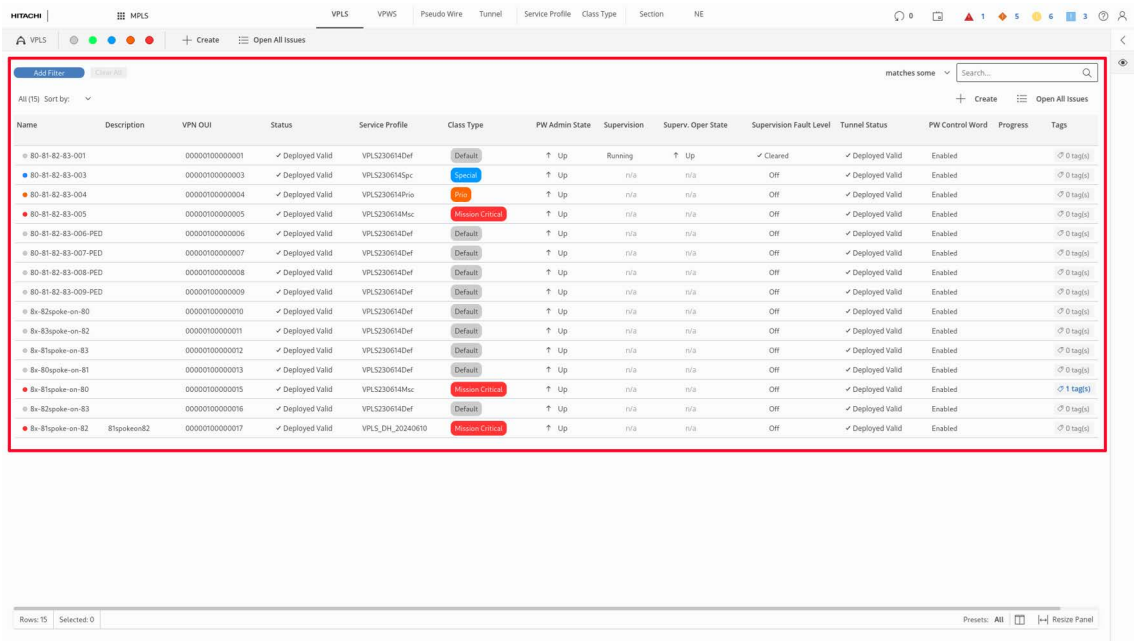

Figure 9: Entity browser in full screen (marked red)

Detailed explanation of the entity browser elements and their behavior:

1 Filtering – the user can add multiple filters that affect the entities list below. To add a filter, the user needs to press the “add filter” button, in the popping panel, define filters’ category and in following view define filtering parameters. The user confirms the applying filters by clicking apply. After applying filter, a badge describing applied filter category and parameters should be visible in the row below. To remove a particular filter, the user can click the “remove” button (displayed in form of an icon). To remove all filters, the user can click “clear all” button presented next to the “add filter” button.

2 Search – the user can search for a particular entity or configuration parameter in the entities list below. Clicking the search icon (in the small panel’s version) or search input, the user can write down phrase that triggers the entities list to be filtered down to present only rows containing searching phrase. Search component has additional options to define if search results should match exactly the whole searched phrase (matches all) or part of it (matches some)

3 Action Bar – the user can perform different operations. The action bar has two states: default (when nothing is selected) and selected (when an entity from the list below is selected). The selected state is indicated by the blue background of the whole action bar and selected state of the checkbox within it. Action bar has different form depending on the size of the panel, but it always contains:
   - A numerical summary of the list (how many entities are there in the list or how many entities are currently selected) with the possibility to select all of them (by checkbox).
   - Sorting dropdown (present in action bar in medium and large Entities Panel view mode) that allows to sort entities below by different category.
   - Actions; when nothing is selected general actions are available (e.g., create new); when entities are selected – actions related to selected entity are available (e.g., edit / delete).

4 Table Header – states the names of the columns in the table. Clicking on the wanted cell enables sorting the table by it. Sorting by table header cells and by sorting dropdown in action bar are interdependent – applying sorting through header cell changes the category in sorting dropdown and vice-versa.

5 Rows and Indicator – every row contains information regarding different entity. Every row can have a small, vertical indicator at its left side. The indicator presents that particular entity can have undesirable operational or configurational state or the alarm. Rows have two states: default, when not is selected, and selected – indicated by blue background when particular entity has been selected.

6 Summary Bar – the element below the entities list where the options on how to manage the table’s display are presented. Summary bar contains:
   - Tables summary – presenting how many entities from the total number of entities in the network are visible now in the table (gives information how many entities meet filtering definition out of total number of entities of given type in the network)
   - Quick “selected” filter – stating the total number of currently selected items in the table and allowing to turn off visibility of the items not selected in the table. Quick “selected” filter button acts as a toggle that can be turned on and off depending on the needs.
   - Table content presets – which allow the user to quickly change the content of the table by turning on and off the visibility of columns. Table content presets allow the user to quickly adapt the information visible in the column to specific use cases (e.g., I want to see only general information about entities; I want to see all parameters regarding entities; I want to see only statistics and utilization of entities). In small view mode of the Entities Panel, table content presets are hidden under settings icons, in medium and large view mode all presets are listed. Table content presets have direct influence on the Table Column Visibility component.
   - Table Column Visibility – allowing the user to turn on/off visibility of any given column.
   - View mode selector – allowing the user to change view mode of the Entities Panel (to small, medium, or large):

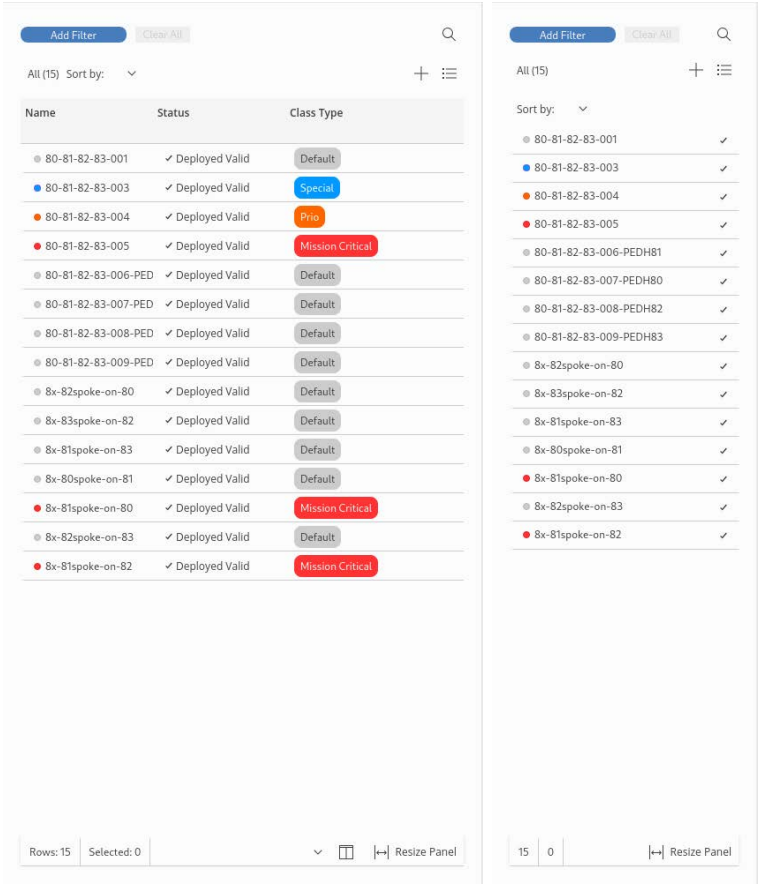

Figure 10: Left: Entity browser in medium size; Right: Entity Browser in small size

3.1.4 Details Panel (Right Panel) + Details Navigation Bar

The role of the details panel is to provide an immediate summary of a group of objects or a single object, with the possibility to conduct a more detailed examination. It allows to check and verify entities from perspective of different use-cases, and it often acts as a supplement to the entities list and visualization.

The details panel has the following roles in the system:

- Providing statistical summary of all entities within given context
- Providing summary of key information describing entities
- Allowing management of detailed visibility of entities on the map
- Acting as an entry point to executing actions.

The details panel functions in combination with details navigation bar and its behavior is strictly connected to the user's interactions with the entity browser or the map.

In general, we have three main details panel types:

- Application Summary
- Single Entity Details
- Multiple Entities Details

The type of details panel visible at given moment depends on the selection or the mode.

The details panel has a default mode – preview. Preview mode dynamically reacts to the users' selections: when the user selects entity or entities from the entity browser or from the map, the details panel changes to present the details of currently the currently selected single entity or multiple entities. When the entities are being unselected, the details panel gets back to its basic form presenting the application summary.

The user has also the possibility to “pin” various details panels. Pinning allows the user to easily access the detail panels later for given entities without a need to traverse through the entity browser.

All pinned elements are represented by tiles with the entity type symbol in the details navigation bar. Users can freely jump between them and the preview mode (indicated by the tile with eye icon) by clicking given tile. When a pinned element is active in the details panel, selection in the entity browser or on the map does not affect it. To get back to the situation when the details panel follows the entity panel or the map, the user needs to select the preview tile in details navigation bar.

The details panel itself is collapsible depending on the needs. To collapse or expand the details panel the user needs to click the collapse / expand button placed at the top of the details navigation bar.

The details panel is composed of following elements:

- Header – acting as a title to the details panel. When entity is selected, apart from the name, key status information and type of entity is presented. Moreover, the “pin” icon, that allows pinning or unpinning of the element, is visible.
- Action Bar – visible only when something is selected – presenting set of actions (in the dropdown button) that can be performed related to the selected entity.
- Body – space where the details are presented. The body can have its own navigation (in form of dropdown menu or tabs), that allows to present details regarding the selected entities from various categories.

Detailed Explanation of different type of Details Panels:

Application Summary – is visible in idle state of Details Panel (when nothing is selected in the entity browser or on the map). In the header, title of the panel is visible. Action bar is unavailable, instead info message is presented. In the body different type of charts are presented. The charts are related to particular tab selected in the app navigation (in the header) and therefore to the content of entities panel. These charts can present distribution of different configurational parameters between entities in the application or summary of their operational statuses.

Single Entity Details – visible when something is selected. The body can have different structure and navigation depending on the selected entity type. Common views (tabs) are:

- Summary, the default view – presenting KPIs and basic details regarding the entity.
- Configuration – presenting extended lists of configuration parameters
- “Related” - having dual function, not only it presents lists of entities that are used by selected entity (e.g. list of all network elements, sections, tunnels and PWs that are building particular Service) or list of entities that are using selected entity (e.g. list of services, pseudowires, tunnels using particular network elements), but it also allows to control visibility of these elements on the map. By interacting with checkboxes, the user can turn on and off visibility of related elements on the map (e.g., turn off visibility of some pseudowires or turn on visibility of some tunnels in selected service). Visibility in “Related” tab in Details Panel is combined with global view options from ribbon. Changing options there affect options here and vice versa.

Multiple Entities Details – visible when multiple entities of similar type are selected. In the header information about number of entities selected is presented; below the list of selected entities is visible. The user has also action to deselect all entities available.

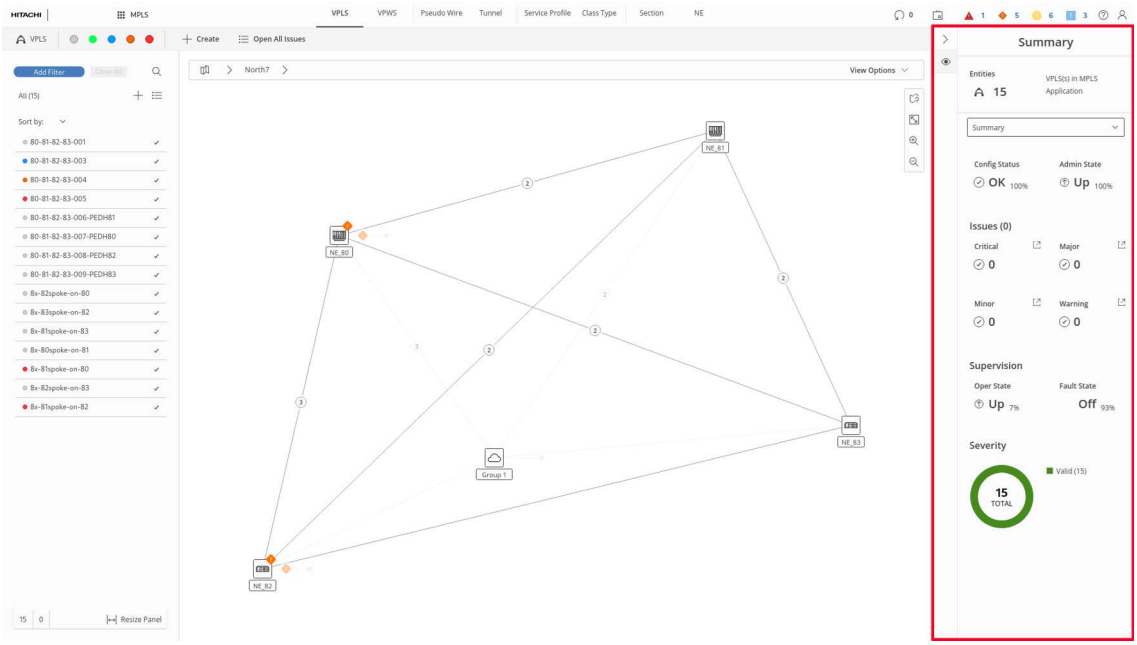

Figure 11: Details Panel placement (marked red)

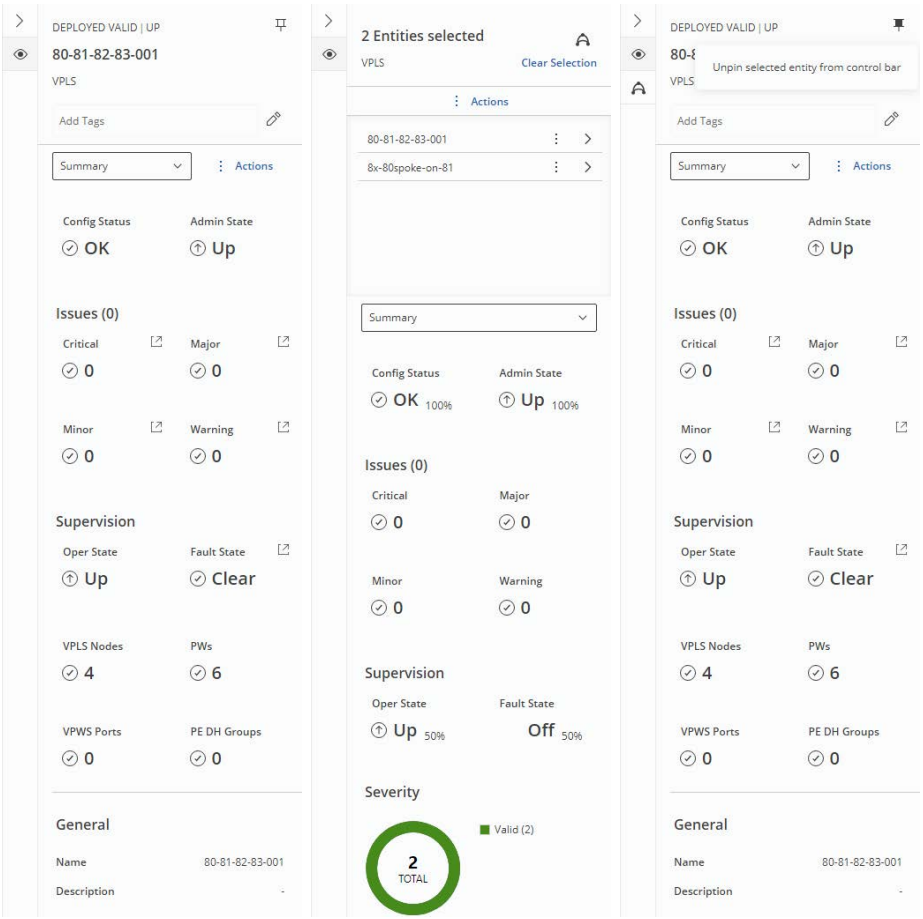

Figure 12: Left: Single VPLS Details Panel; Center: Multiple entities Details Panel; Right: Pinned entity Details Panel (pin state indicated in Details Navigation Bar)

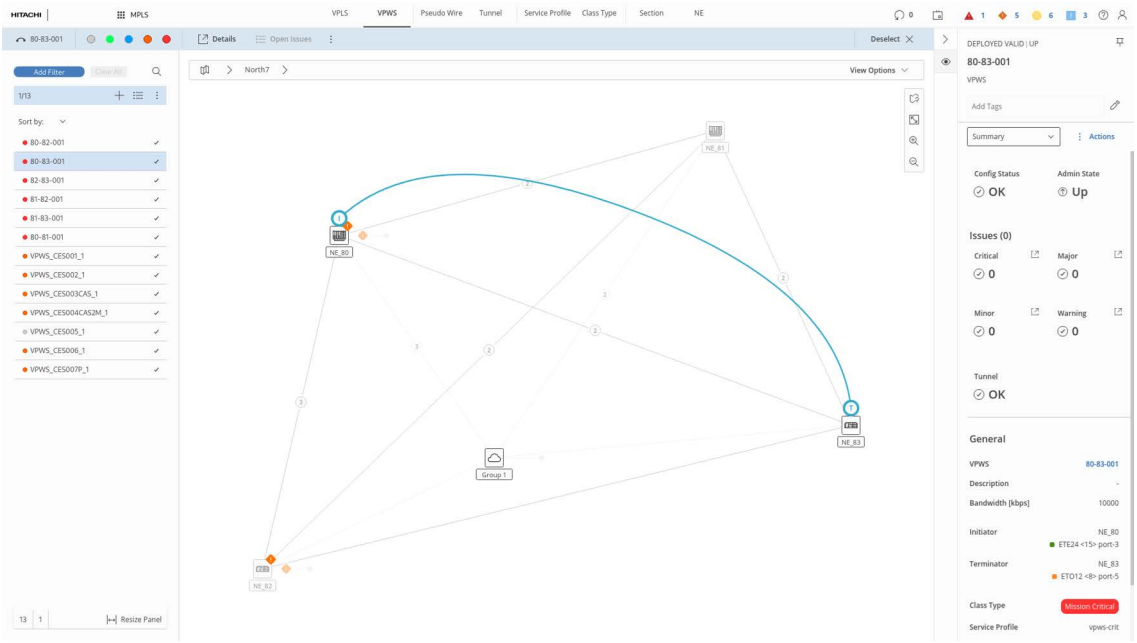

Figure 13: Details Panel in VPWS tab

3.1.5 Main View (Map)

The map component is central part of the applications. It provides a visualization of network and various entities within it. It focuses on providing network-wide context of information and allows to correlate various data (e.g. network configuration data with fault management). Moreover, it enables to compare different configurations against each other and provides a way to analyze potential configuration bottlenecks. By default information on map is reduced to domain-specific language, however it can be extended or even further reduced to cover the users' needs.

There are some elements within the main view:

- Map selector bar – allows to change the map that is presented (map selection is presented in form of breadcrumbs allowing the user to quickly jump between some maps that are in common context), and to zoom to selection which will automatically zoom to show all selected items.
- Toolbar – allowing basic interactions with map (like zoom in/out, fit to content) and opening the legend panel.
- Legend Panel – presenting explanation of visual language of the map.

The main view is strictly combined with the entity browser and the details panel – it allows the user to visualize any object selected from the entity browser. Some objects (network elements and sections) can be additionally selected directly from the map, resulting in providing their details in the details panel.

The main view can be impacted by interactions from multiple components:

- From the entity browser – by selecting entities
- From the ribbon – by modifying view using the global view options
- From the details panel – by turning on/off visibility of related elements in the "Related" tab

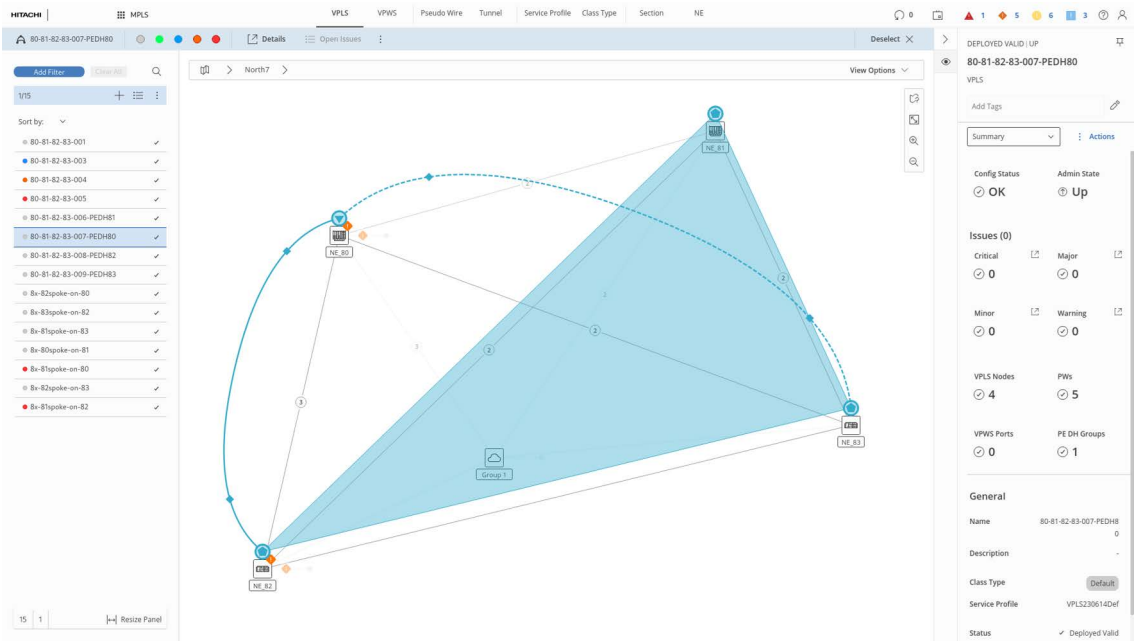

Figure 14: Map with selected service and 3 enabled view options

3.2 Details Page

Details Page is an additional view within the map applications that enables the user to see all configurational and operational details related to the selected entity. Moreover, the details page provides entity-specific visualization and statistics and enables the user to analyze all resources related to the entity.

The details page has a layout different from the basic map application layout, as it represents a different context, which is focused on a single entity and not on the network.

Beside analytics, the user can also perform various actions regarding selected entity from the details page level.

The details pages for all entity types have a common structure and are built around the same components:

- Header – titular component, presenting key information of the selected entity.
- Navigation Panel – enabling to navigate through various contexts and aspects of the selected entity, affecting the type of data presented in the body.
- Body – visualizing detailed content related to the selected entity.

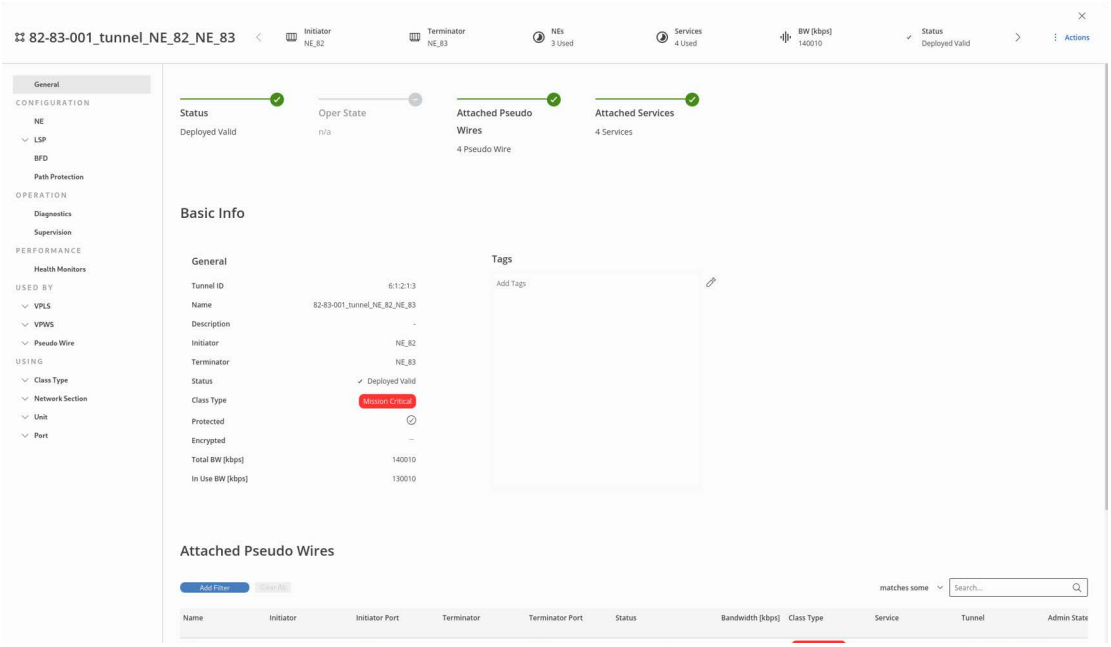

Figure 15: Details page for a selected Tunnel

3.2.1 Header

The header is a sticky component (not affected by page scrolling) that works as highest level overview to the whole details page. Its state is not affected by navigation and it allows the user to always know in what context all the information below are presented.

The header contains:

- Entity summary bar – presenting a name and type of selected entity, some key performance indicators or key operational/configurational parameters, and available actions to perform.
- Breadcrumbs – allowing the user to always understand the structure and source of information presented below in the Body.
- Top bar – with single button allowing the user to close the window

The structure of the entity summary bar is common for all entities however presented KPIs and parameters can differ.

The breadcrumbs, beside presenting what part of the details the user is seeing, also allows to navigate. Breadcrumbs are interdependent of the navigation panel

3.2.2 Navigation Panel

The navigation enables to define what kind of information related to selected entity the user wants to see. Available categories are divided into sections (e.g., Configuration, Operation).

The user can select any category affecting the change of the body's content. Some categories, additionally, are expandable (usually the one that are focused on related entities of particular entity type, e.g., Network Elements or Pseudowires in the context of Service). After expanding – all related objects of selected type are presented. The user can select single one of them and see its details in relation to the parent entity.

Available categories in the Navigation Panel depend on the selected entity's type. Common for all entities is summary – default view presenting overview of the entity.

3.2.3 Body

The body is a space for presenting details of selected entity. Its structure depends on the selected category of information to be presented (from navigation panel). The body is built of various widgets, sometimes divided into sections and subsections. Widgets can contain:

- KPIs
- Lists of parameters
- Tables of related entities
- Graphical Visualizations (like maps and graphs)
- Statistics Visualizations (like charts and diagrams)

Some views also allow the user to perform various, dedicated operations like diagnostics operations. Results of these operations can also be presented within the details page.

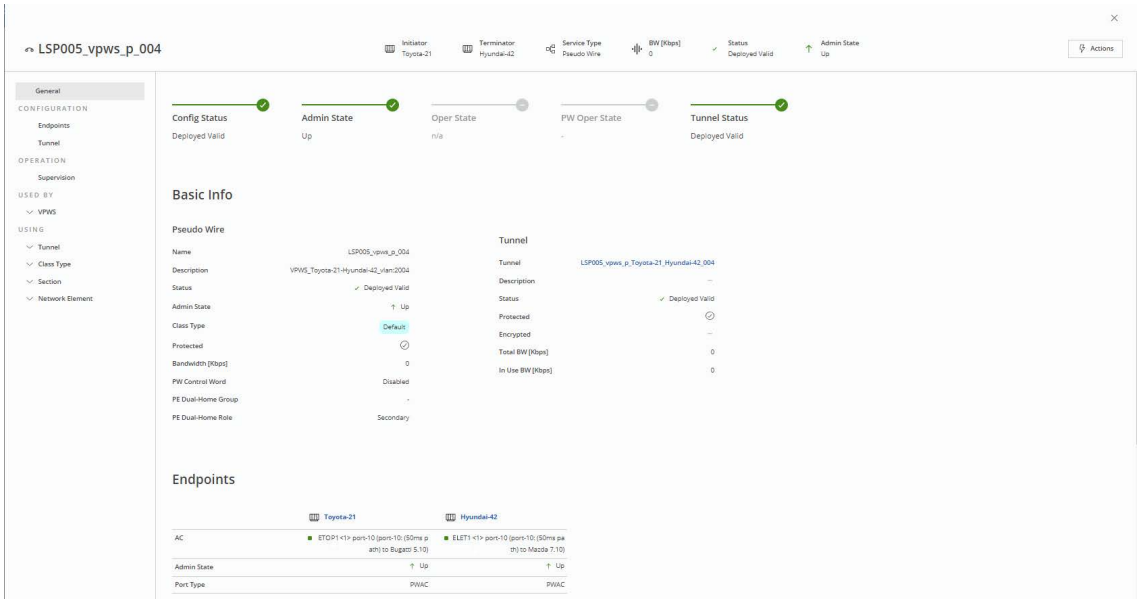

Figure 16: Details Page of a pseudowire

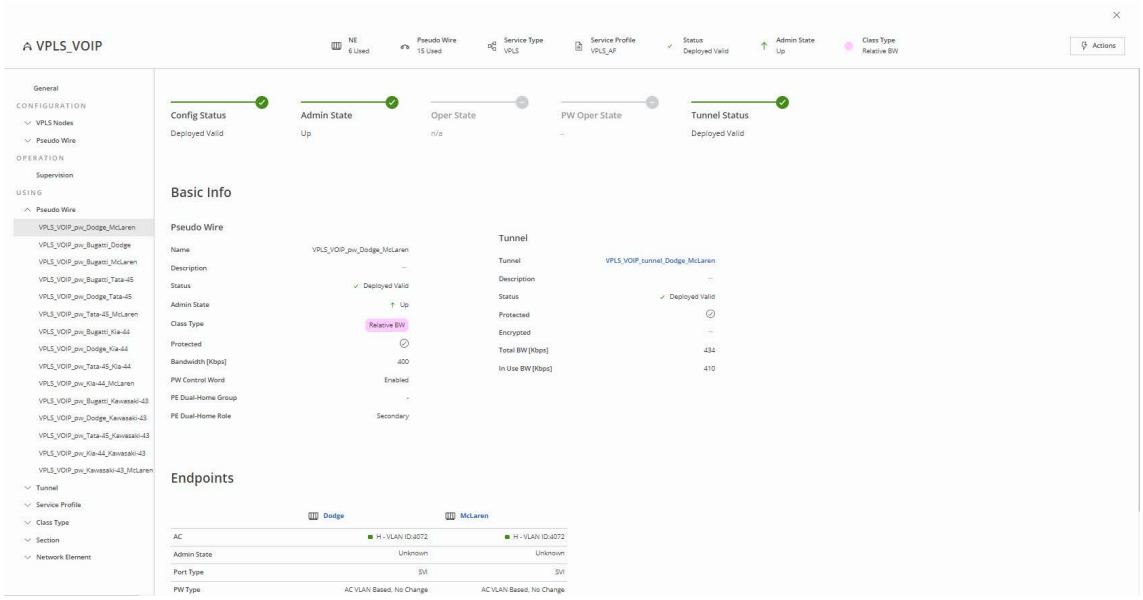

Figure 17: Related entity details (pseudowire details) presented in Details Page of VPLS

3.3 Additional views, modes, and concepts

3.3.1 Tasks, System Events, and Alarms Visualization Modes

Within the map applications there are additional modes that enable the user to visualize additional layer of information in the network context. These modes are:

- Task Mode,
- Log Event Mode (System Events),
- Alarms Mode.

These modes are available contextually in the map applications. The modes enable the user to see lists of tasks, system events or alarms displayed in the entity browser (Left Panel), and if possible, visualize them on the network's map.

The modes can be enabled from the common header by clicking the alarm or the task summary. They act as overlays on the default view and can be toggled on or off on demand. Activation of these modes is represented by blue highlight of the alarm or the task summary component in the common header and special appearance of the ribbon (additional color line at the top of the ribbon + additional alarms or tasks badge). The interactions in these modes are similar to the interactions in the default view – selection in the entity browser (Left Panel) changes state of the ribbon to "selected", visualize (if possible) alarm or task on map, open alarm or task details in the details panel.

Alarms or tasks can be pinned in the details navigation bar in similar manner as any other entity.

To turn off the modes, the user can click "close mode" button in the ribbon or click highlighted alarm or task summary component in common header.

When the alarm or task visualization mode is enabled, the user cannot select a tab from the navigation in the common header.

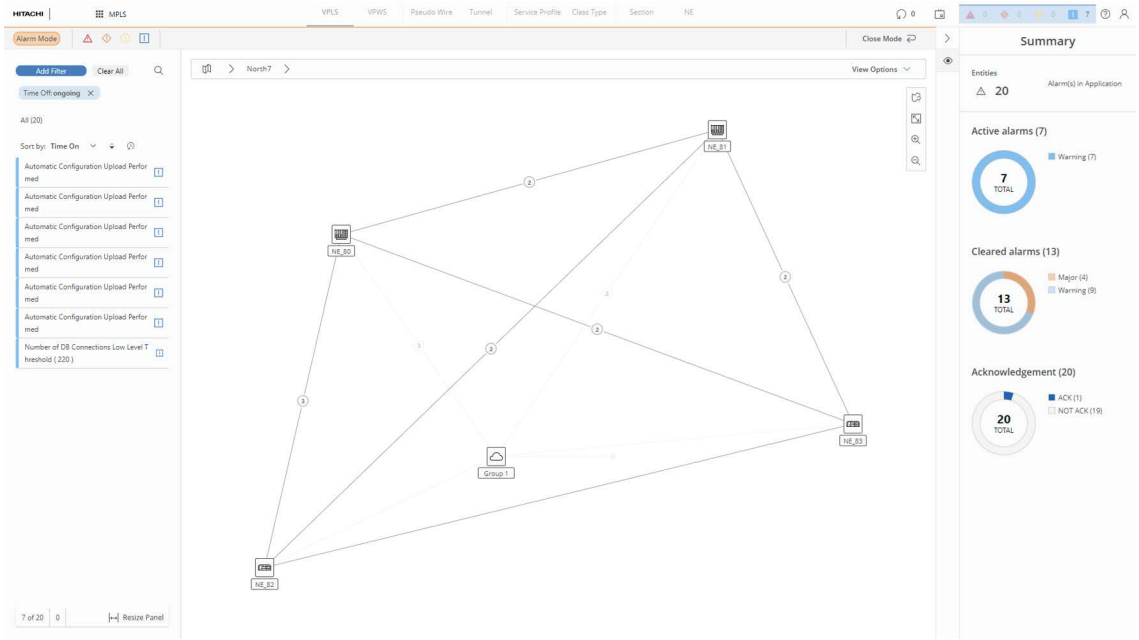

Figure 18: Alarm Mode

3.3.2 Related Entities

Related entities are the entities that are:

- used by particular entity (e.g., shows services using selected network element, section, tunnel)
- using particular entity (e.g., shows network elements, sections for selected service)

The related Entities are presented in the details panel (right panel) and in the details page. Listing them enables the user to traverse the configuration relation top-down (used by) and Bottom-Up (using). In the context of the details panel – the user can control visibility of the related entities on the map through related tab; in the context of the details page – the user can open details of the related entities within details page's area.

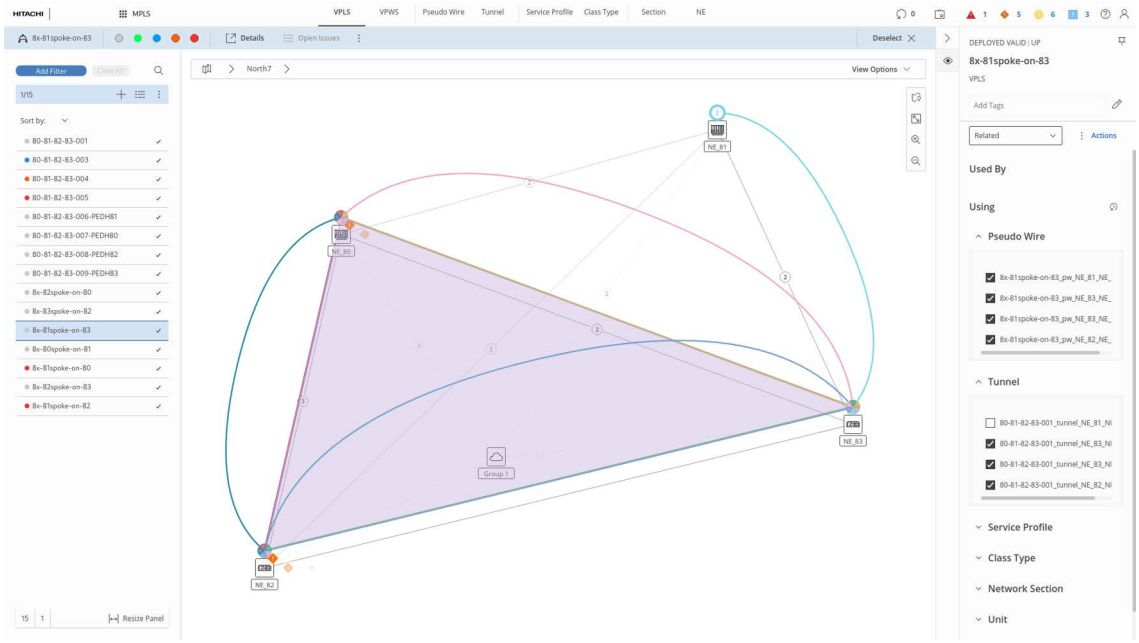

Figure 19: Related Entities View opened in Details Panel – allowing the user to control visibility of related entities

4 Basic Interactions

4.1 Changing Application

The user can change between applications anytime by clicking the application selector in top left corner of the global header. This action opens a panel that is a smaller version of the homepage. From this point the user can open any application.

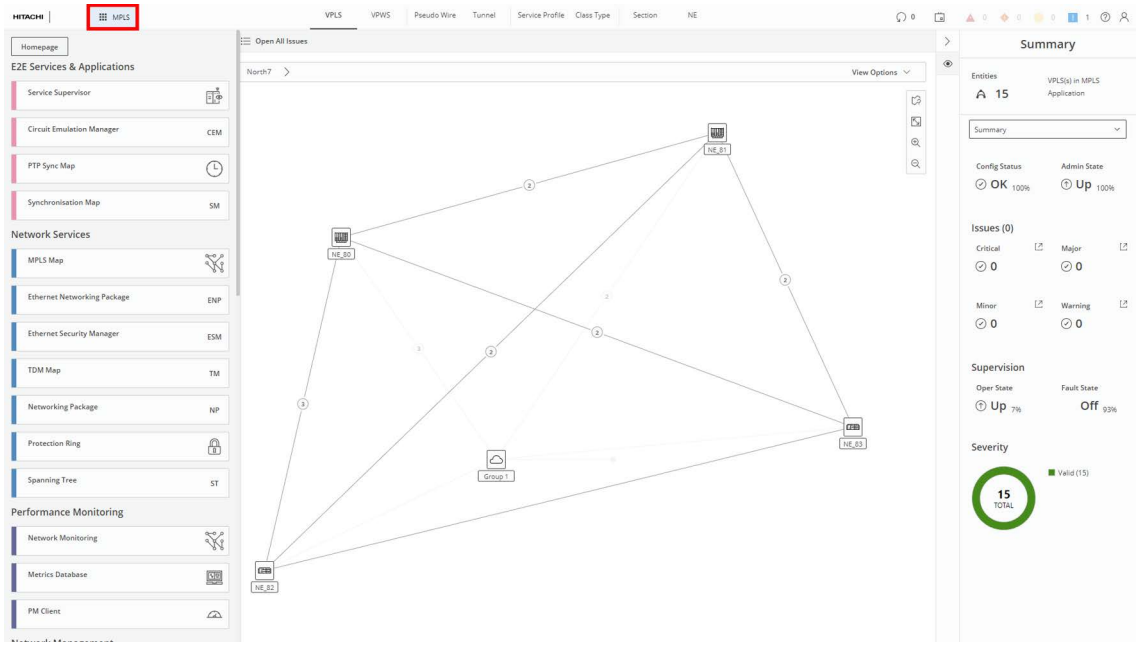

Figure 20: Application Selector in global header (marked red)

4.2 Browsing through tabs

The user can browse tabs (usually browse between different entity types) using navigation in the common header – by clicking particular tab.

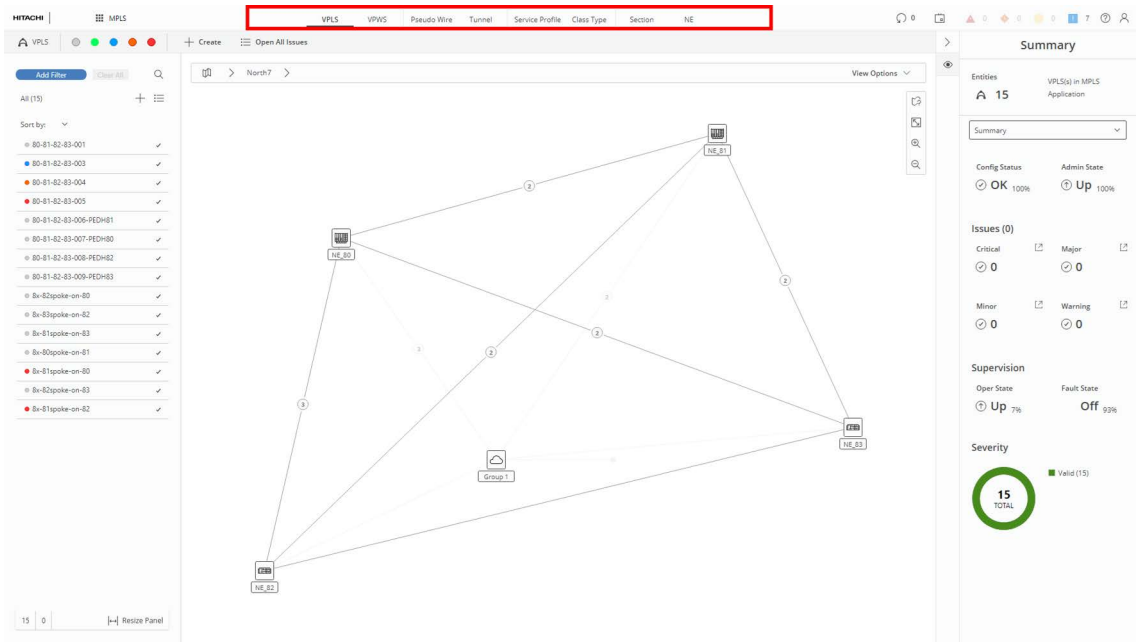

Figure 21: Navigation tabs placement (marked red)

Please note:
Browsing through tabs – change of tabs in common header navigation impacts multiple elements below – Ribbon, Entities Browser content, Details Panel Summary.

4.3 Using global filters

The general global filters allow the user to quickly filter the content of the entity browser. The component works as a set of toggles that can be switched off and on. By default, when nothing is selected, all toggles are turned on, therefore no filters are applied.

To apply filter, the user needs to click in the button representing wanted filter. Application of filter is represented by introducing indicator and different colored background. To turn off the filter, the user needs to click the button once again, highlight then disappears.

Users can also reset all filters to default state by clicking reset button.

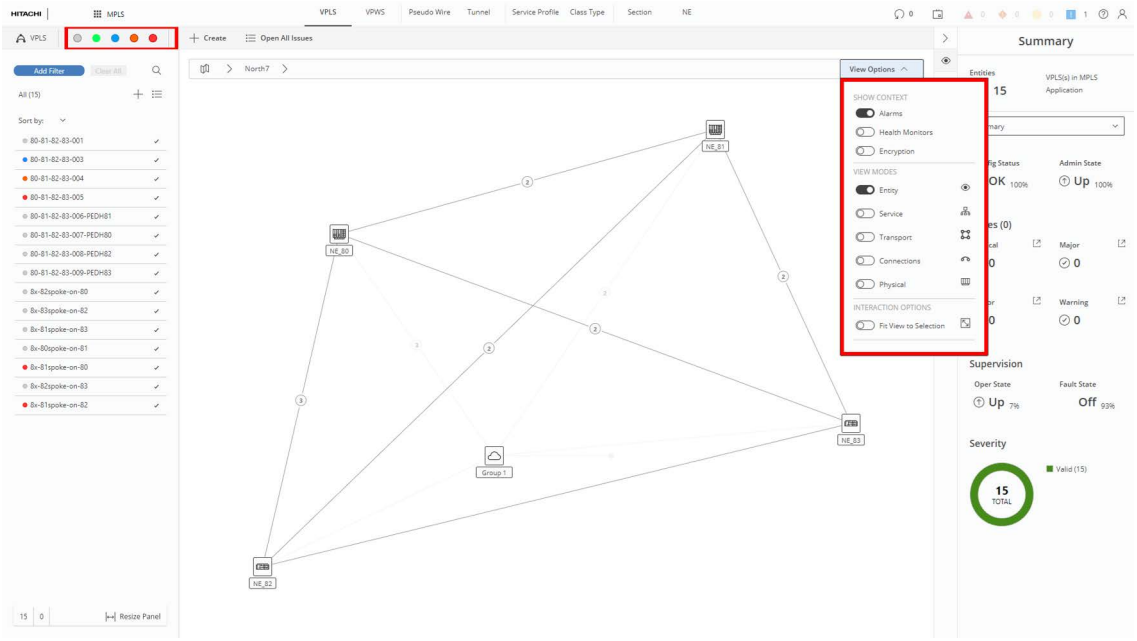

Figure 22: Placement of Class Type and View Options filters in UI (marked red)

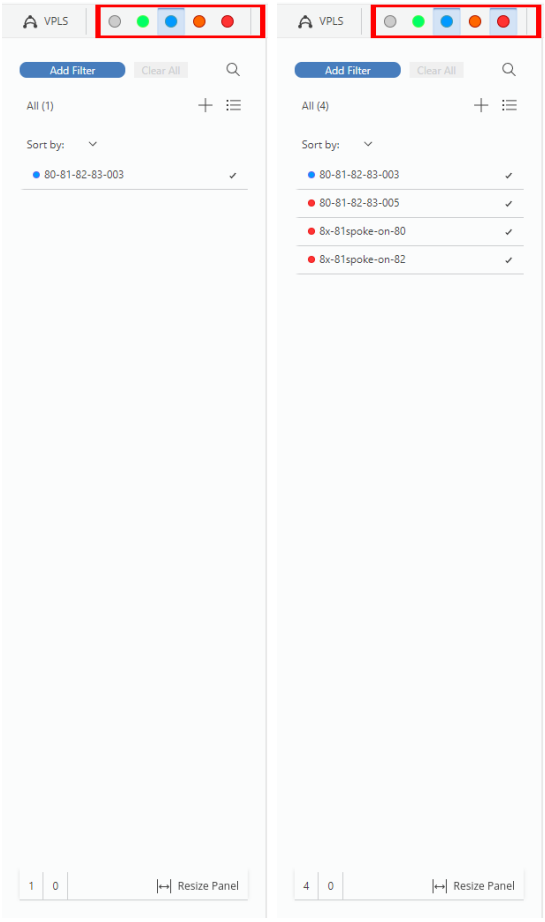

Figure 23: Left: One filter relative bandwidth applied - spotlight view; Right: Two filters applied - spotlight view

Please note:
By default, no filters are applied (Figure 22), appliance of filter is indicated by blue background (Figure 23 left), the user can apply multiple filters (Figure 23 right). In this example, the Classtype Filter is presented.

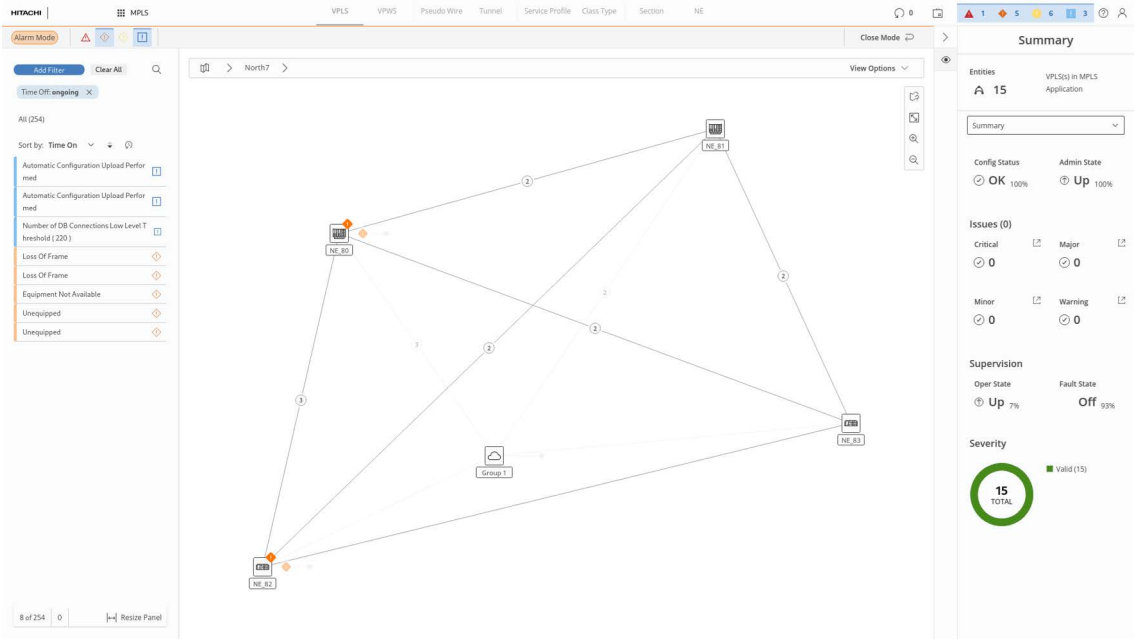

Figure 24: Alarm filters in alarm mode (marked red)

4.4 Managing Entity Browser

The user can manage the entity browser table by options available within the action bar, the summary Bar or by interactions with table headers and row. The user can sort the table using “sort by” dropdown within the action bar or by clicking specific column’s table header.

Sorting can be applied by using “sorting dropdown” or by clicking a column header.

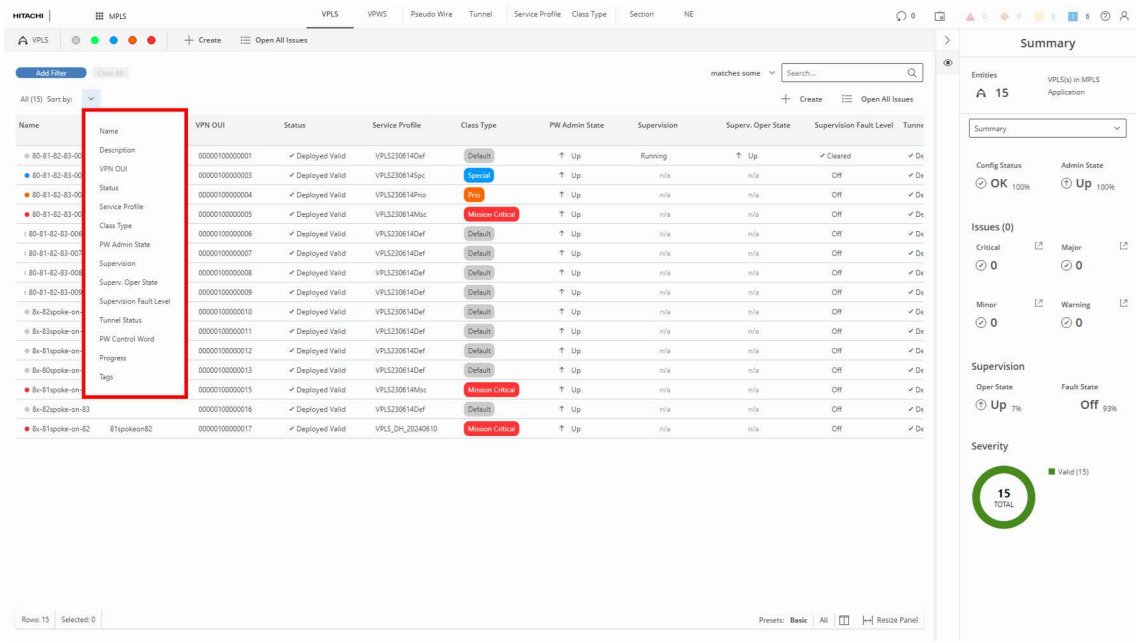

Figure 25: ‘Sort by’ in Entity Browser (marked red)

State of sorting dropdown and column’s header sorting are interdependent – one influence the other. Sorting icon in the right side of header cell indicates for what column sorting is applied

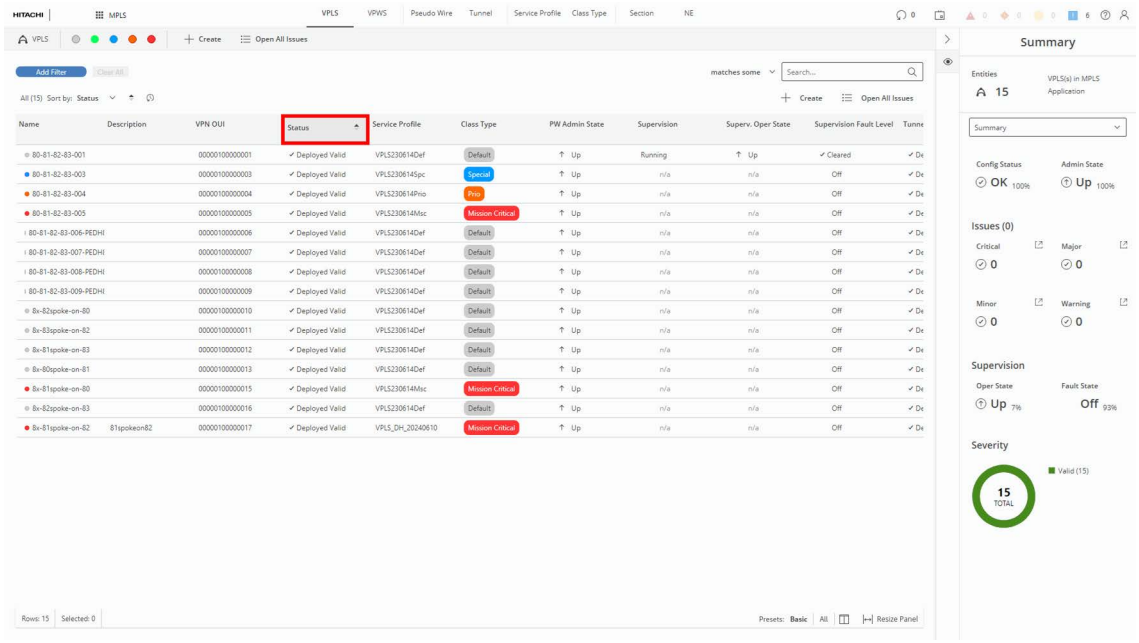

Figure 26: Sorting by selecting a column (marked red)

The user can change the size of the panel by the view mode selector, after clicking on the Resize Panel icon:

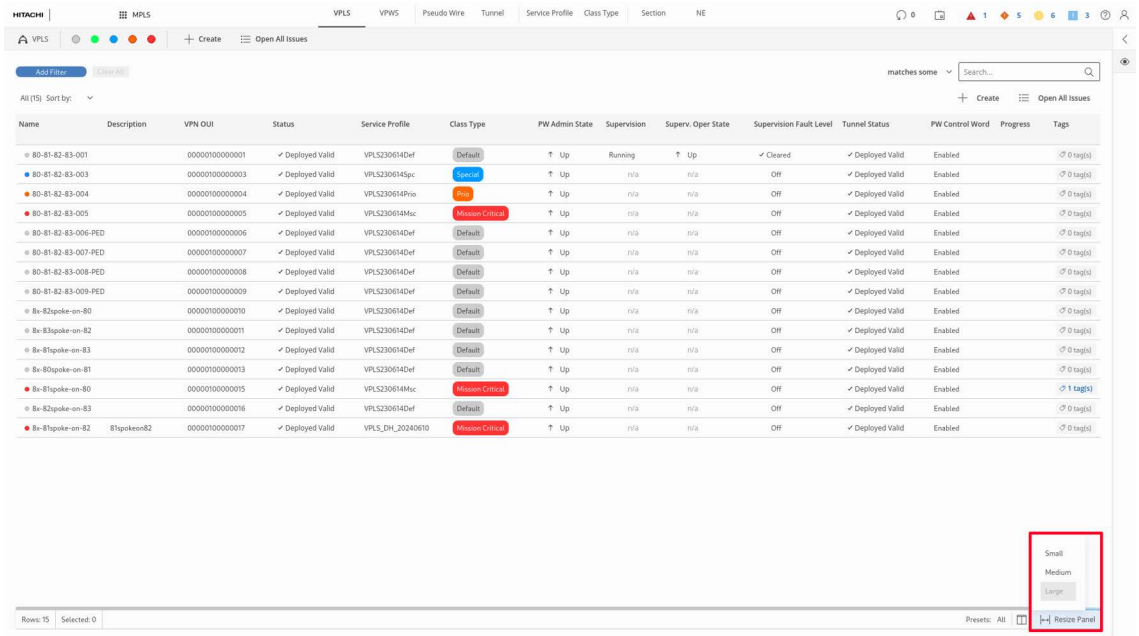

Figure 27: Changing size of Entity Browser (marked red)

The user can manipulate visibility of the columns by using table column visibility or the table content presets. The applied preset is highlighted by bold font. Table Column Visibility panel list can be accessed by clicking the preset icon.

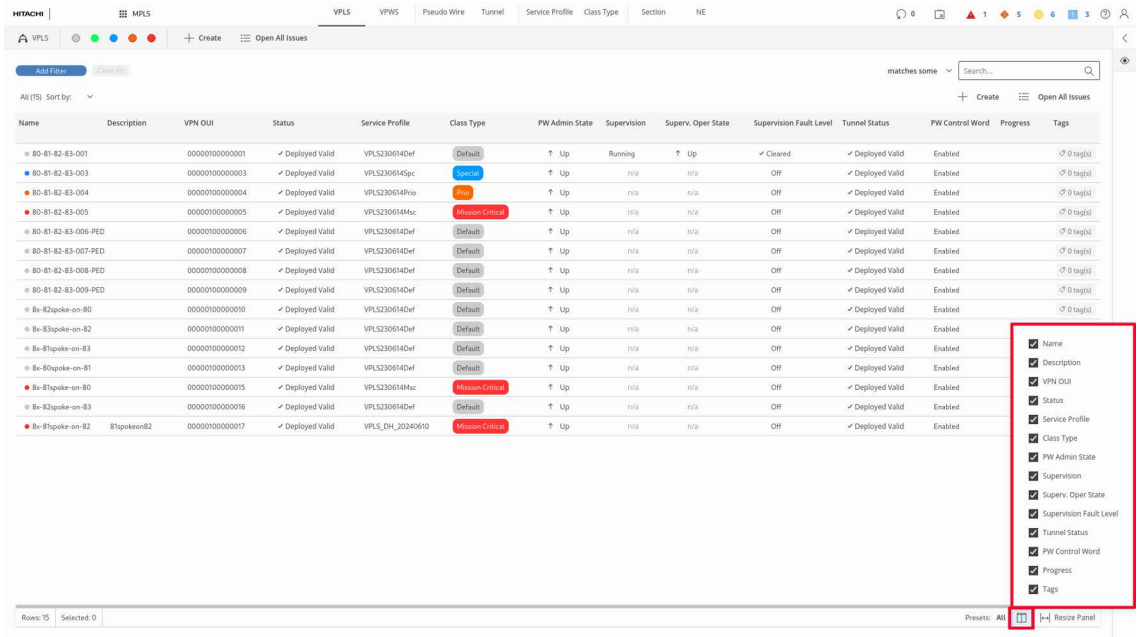

Figure 28: Presets panel in Entity Browser (marked red)

4.5 Selecting entity

To select entity (therefore see its visualization on the map and its details in the details panel) the user needs to click on the row in the entities table. Selection is highlighted by blue background of the row. To deselect entity the user must click “Deselect” in the ribbon or click it once again.

The user can also select multiple entities of the same type. To add another entity to selection, the user needs to click in the next row while holding “CTRL / Strg” key.

The user can also select multiple entities between certain rows. To select all rows between particular two rows, the user needs to select the first one and select the last one with the “Shift” key.

The user can also select physical objects from the map. To do this, the user just needs to select a section or network element representation on the map.

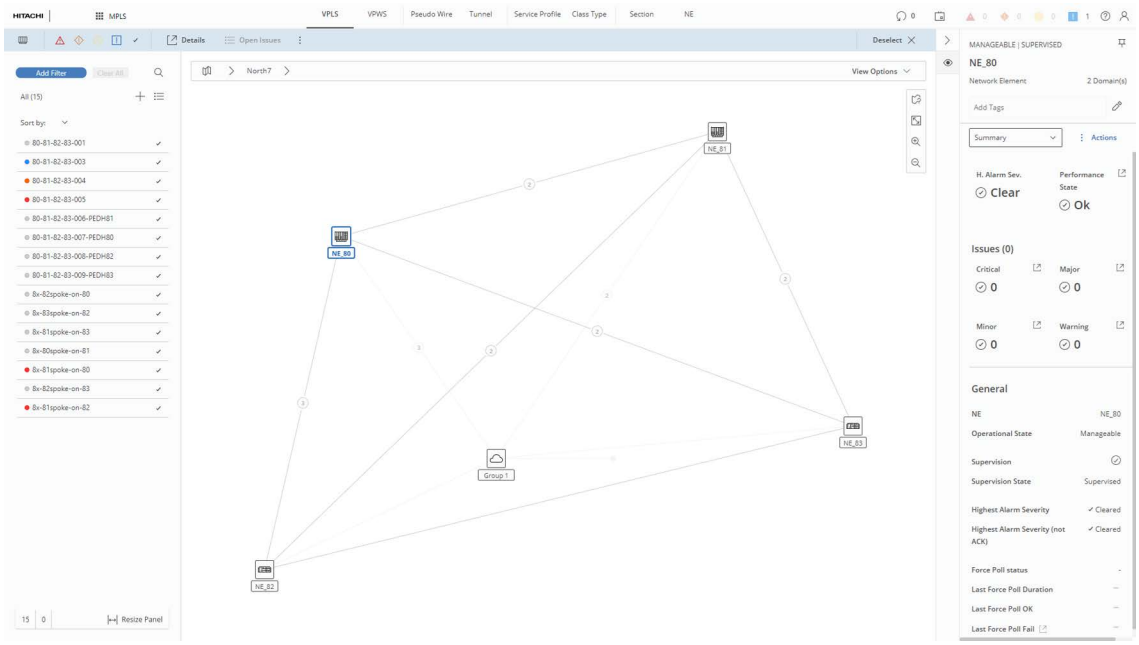

Figure 29: Selecting NE directly from the map

4.6 Performing actions

Actions can be performed from three main places – From the ribbon, from the map (on a selected item), and from the entity browser. Depending on the context various actions are available. By default, when nothing is selected, general actions are available. When something is selected, specific options for selected entity are available.

Moreover, actions are also available in the action bar in the details panel.

The user can also open a list of available actions by opening the context menu in the entity browser – by clicking the right mouse button on the selected row, or, for a selected item, from the three dots menu of the Actions command in the details panel.

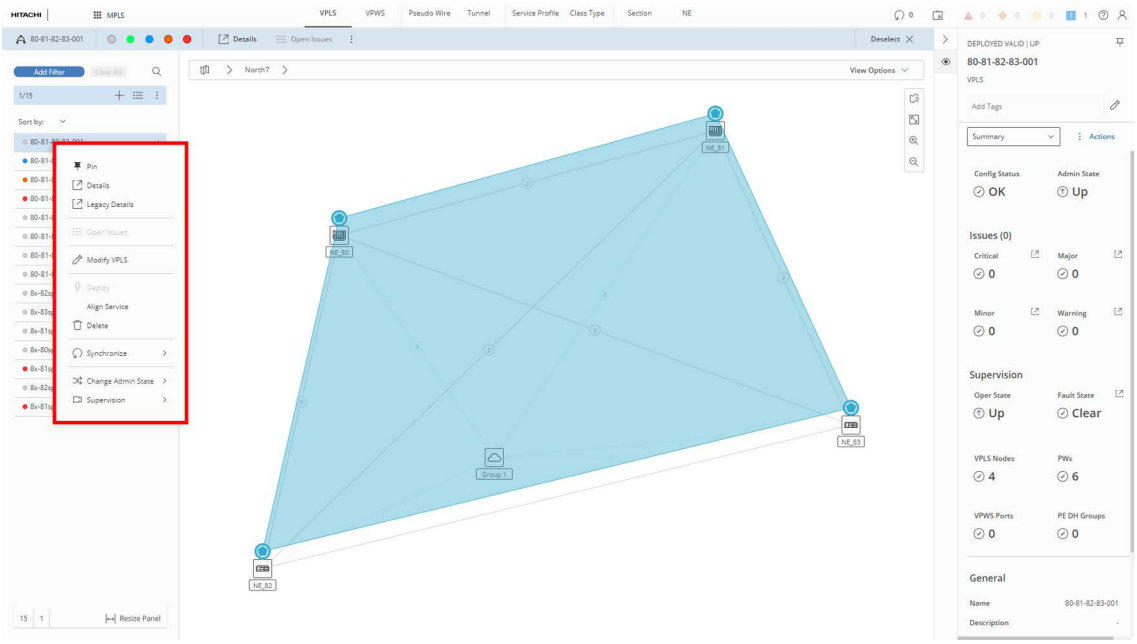

Figure 30: Opening contextual menu in the left entities browser (marked red)

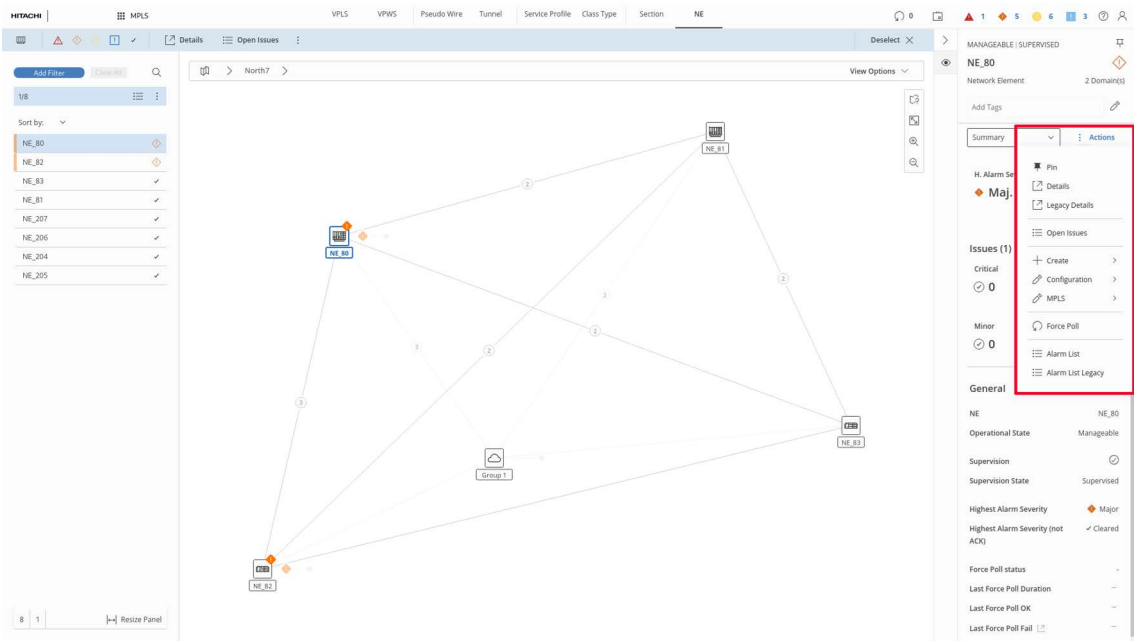

Figure 31: Opening contextual menu in the right panel (marked red)

4.7 Managing Details Panel

The user can see details of any entity in the details panel (Right Panel). To see details there, the user just needs to select any entity on the map or in the entity browser. When nothing is selected the user can see the application's summary.

By default, the user sees the details panel in the preview mode. The preview mode is a mode that follows selection – whatever is being selected, its details are presented in the details panel. The preview mode is indicated by active "Preview" tile in the details navigation bar.

The User can also pin/unpin elements (explained in the below point) to be able to traverse through different entities' details without need to reselecting things from the entity browser or the map. Every pinned element is indicated by its own tile in the details navigation bar. To activate

view of pinned entity in the details panel the user needs to click on available tile in the details navigation bar.

This action is independent of selections in other places of application. Pinned element's details view activation and its details visibility in the details panel is not affecting selection in other places. There is a possibility to have selected one service from the entity browser and seeing details of other service in the details panel. However, when the user wants to see details of generally selected entity – they are always hidden under "preview" tile.

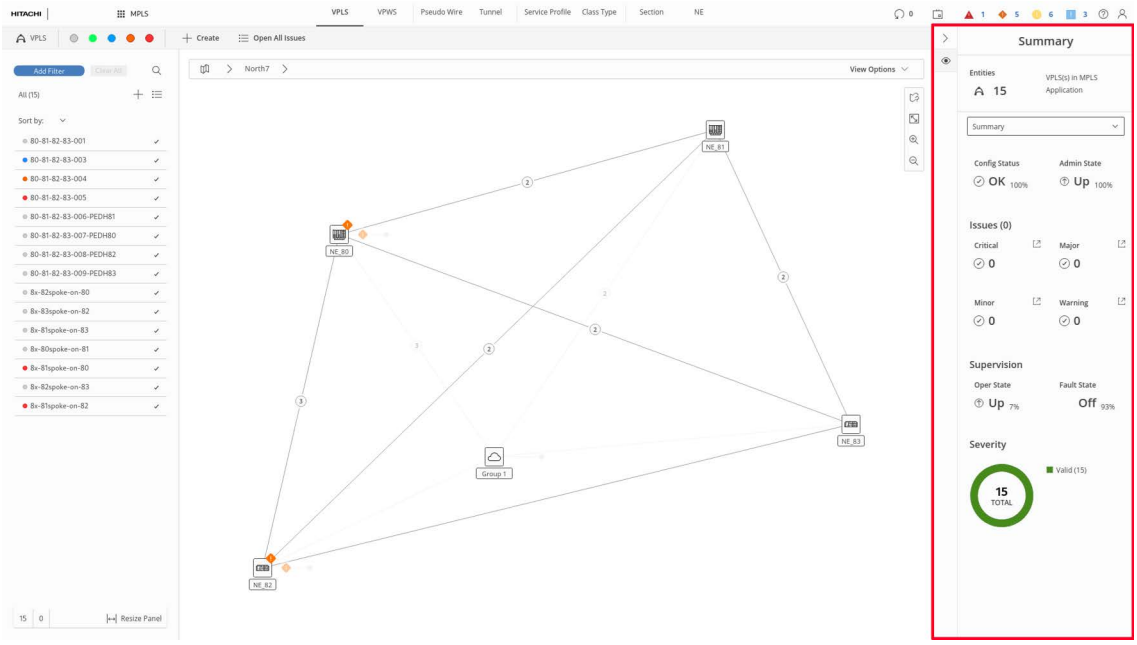

Figure 32: View when nothing is selected (marked red)

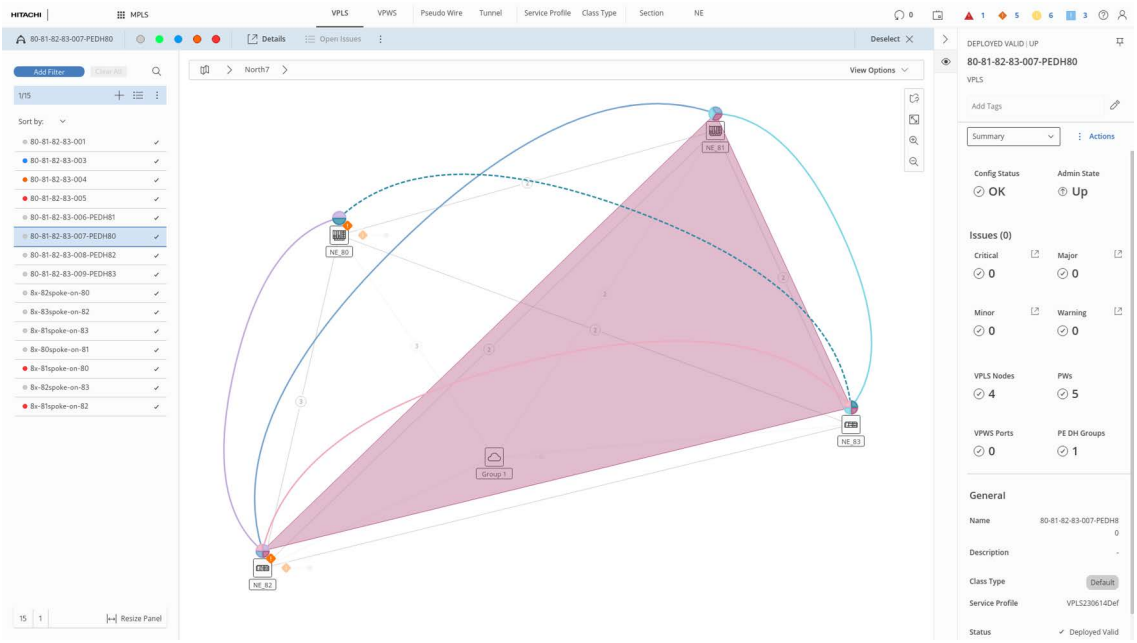

Figure 33: Details Panel with details of selected entity

4.8 Managing Pinned Elements

The User can pin any details panel and get back to it on demand without need to reselect in the entity browser. To pin an element, the user can:

- click "pin" icon in the header of the details panel or

- select “pin” from contextual menu after right mouse button click in the entity browser.

To Unpin Details Panel from Details Navigation Bar, the user can

- click the “Unpin” button in the header of a pinned element’s details panel;
- click close button in the top-right corner of the single tile in the details navigation bar;
- click “unpin” from the context menu after right mouse button click on the particular entity’s row in the entity browser.

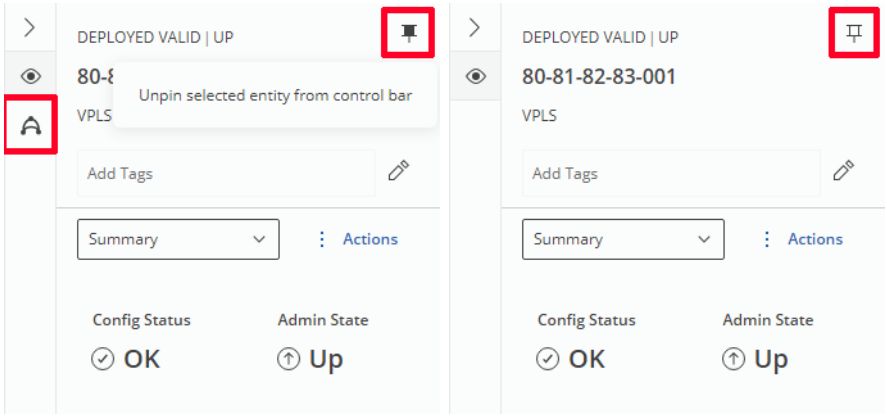

Figure 34: Left: Element is pinned to Navigation Bar, Right: Element is unpinned

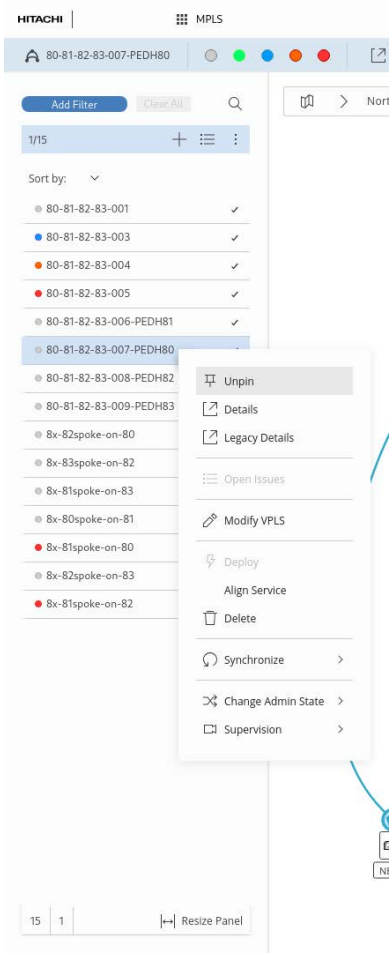

Figure 35: Elements can be also pinned and unpinned from the Entity Browser

4.9 Managing Details Panel content

Within the details panel there can be multiple views in its body. Every view can be dedicated to different aspects or context of given entity. To change these views, the user can use the navigation dropdown on the top of the body in the details panel.

Within every view there might be some collapsible sections that the user can collapse and expand by clicking in the accordion title.

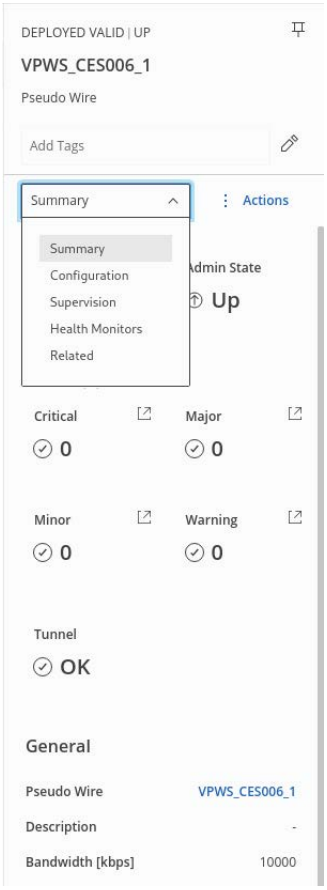

Figure 36: Details Panel can be controlled by Navigation Dropdown

4.10 Managing related entities visibility

The user can manage visibility of the related entities from the details Panel. More information in section 5.3 "MPLS Map" of this document.

4.11 Enabling Task Visualization Mode

To enable the task visualization mode, the user must click the task summary component in the Global Header. Activation of this mode is indicated by highlighting the task summary in the global header with blue background, appearance change of the ribbon (“Task” badge visible) and new content in the entity browser (related to the tasks).

To disable this mode, the user can deselect the task summary component or click “Close Mode” in the ribbon.

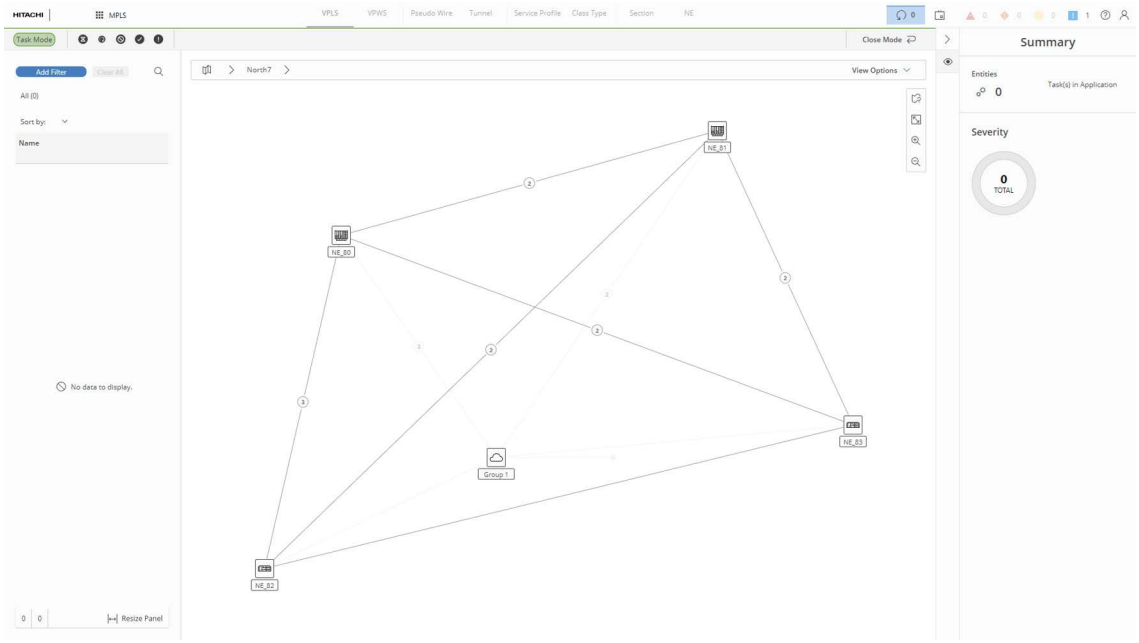

Figure 37: Task mode overview

4.12 Enabling Log Event Mode (System Events)

To enable the log event mode which provides a table listing the system event log, the user must click the System Events component in the global header. The activation of this mode is indicated by highlighting the System Events icon in the global header with blue background, appearance change of the ribbon (“Log Event Mode” badge visible) and new content in the entity browser (related to the system events).

The user can select among the system event views

- Last 24h,
- Last 7 days,
- Last 30 days,

and can sort or filter the table entries, and show or hide columns of the table.

To disable this mode, the user can deselect the System Events component or click “Close Mode” in the ribbon.

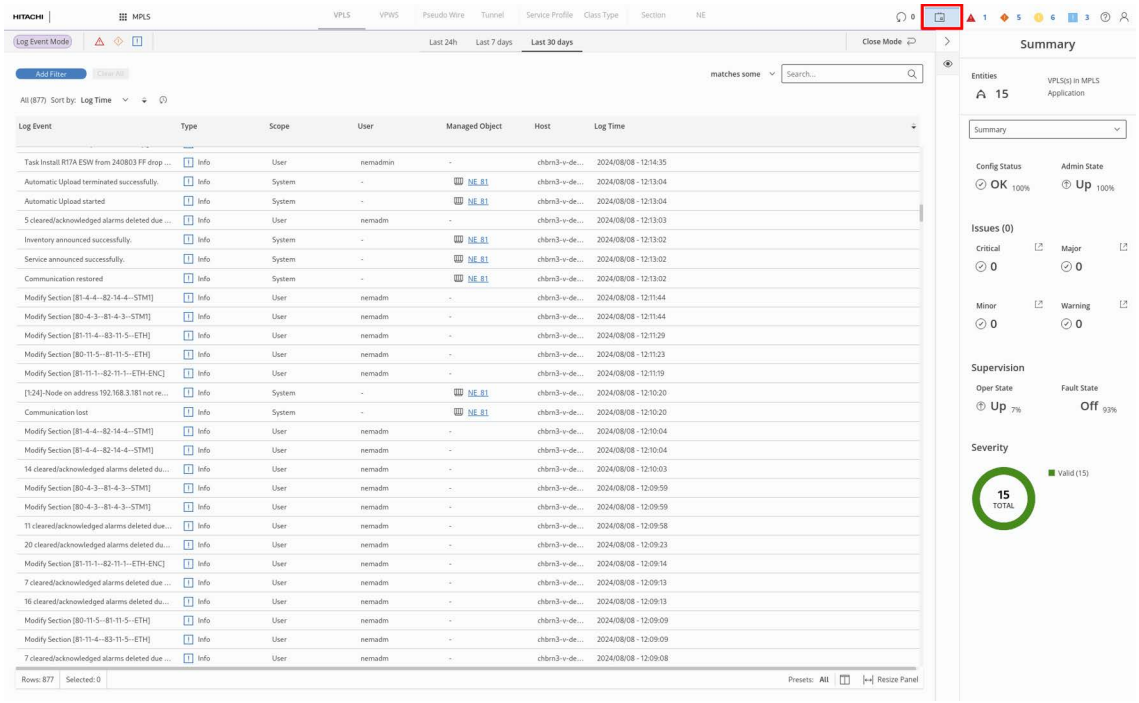

Figure 38: Log Event Mode (system events) overview

4.13 Enabling Alarm Visualization Mode

To enable the alarm visualization mode, the user must click the alarm summary component in the global header. The activation of this mode is indicated by highlighting the alarm summary in the global header with blue background, appearance change of the ribbon (“Alarm” badge visible) and new content in the entity browser (related to the alarms).

To disable this mode, the user can deselect the alarm summary component or click “Close Mode” in the ribbon.

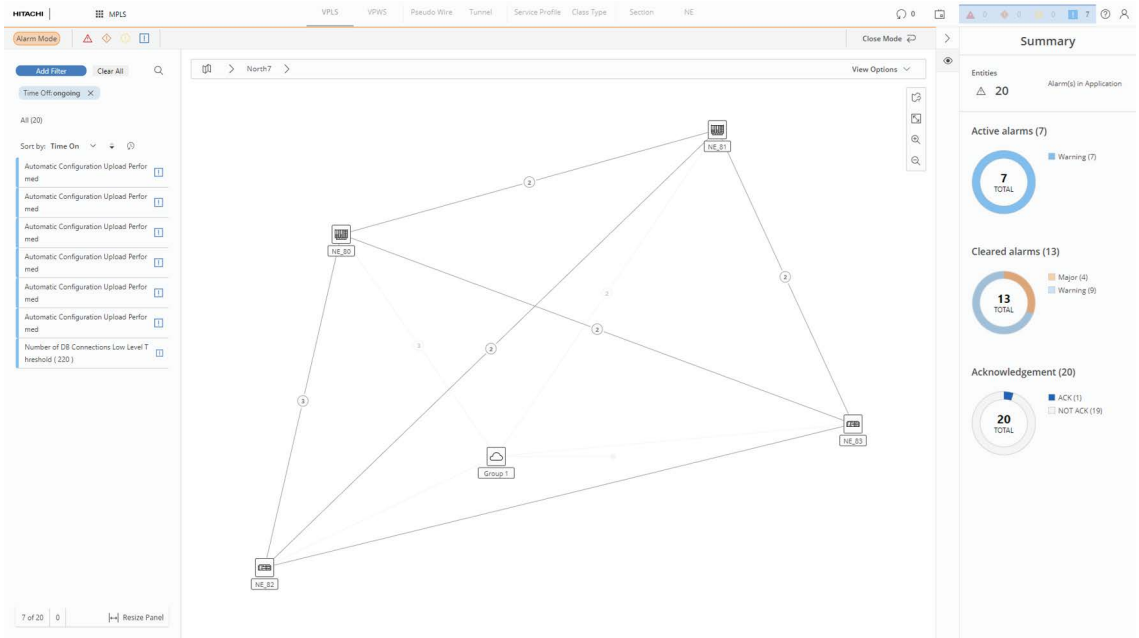

Figure 39: Alarm mode overview

The user can also hover over Alarm Summary and see tooltip with basic details regarding it – presenting distribution of alarms between acknowledged and not acknowledged.

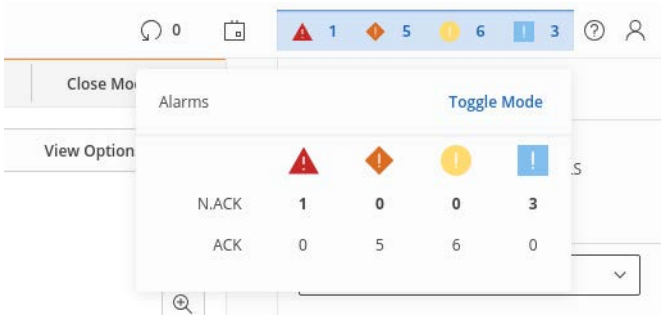

Figure 40: Alarms tooltip

4.14 Opening Details Page

The user can access the entity's details page in multiple ways: by double-clicking particular row in the entity browser; by selecting available action "Open Details" from the ribbon or details panel's action bar or from the contextual menu.

To close the details page, the user must click "Close" icon button in the top-right of the details page's header.

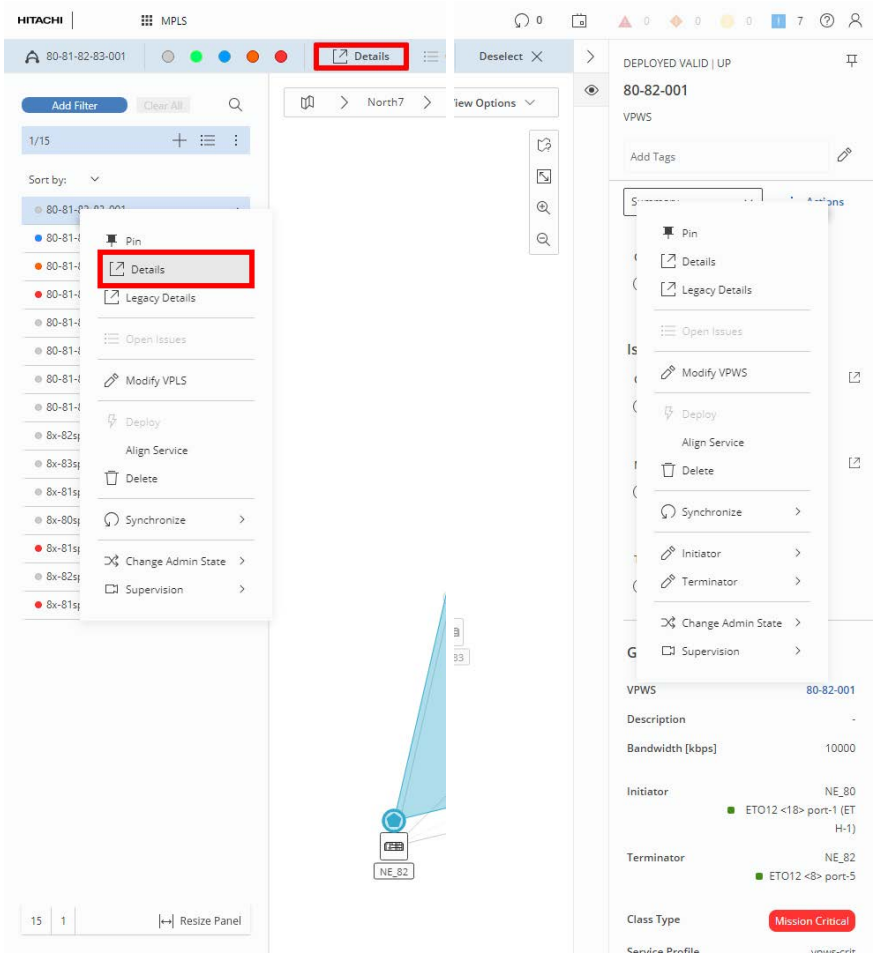

Figure 41: Left: Opening Details Page from entity browser or ribbon; Right: Opening Details Page from right panel

4.15 Help

The user can open the online help pages for some of the applications of the Web UI by clicking on the Help icon in the global header while using the application.

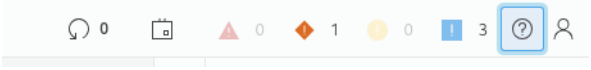

Figure 42: Online Help Icon

4.16 User Preferences

The user can open the online help pages for some of the applications of the Web UI by clicking on the Help icon in the global header while using the application.

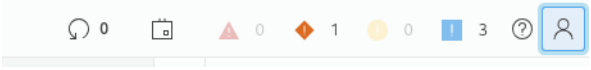

Figure 43: User Preferences Icon

When selecting the user preferences, the user can see the username currently logged in and manage user preferences (theme), manage maps or manage tags.

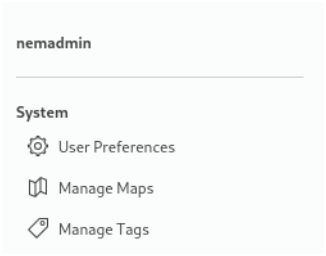

Figure 44: User Preferences options

To close the user preferences view, the user must click on the user preferences icon again or at any other location outside the user preferences view.

5 Maps Visualization

5.1 Managing maps

5.1.1 Creation of maps

The user can create new maps using the map manager. It is called from the User Preferences menu via the “Manage Maps” function (see Figure 44) or from the map icon in the map options bar (see Figure 47).

The map manager lists all existing maps. While editing maps, the map manager provides a map view with all required elements.

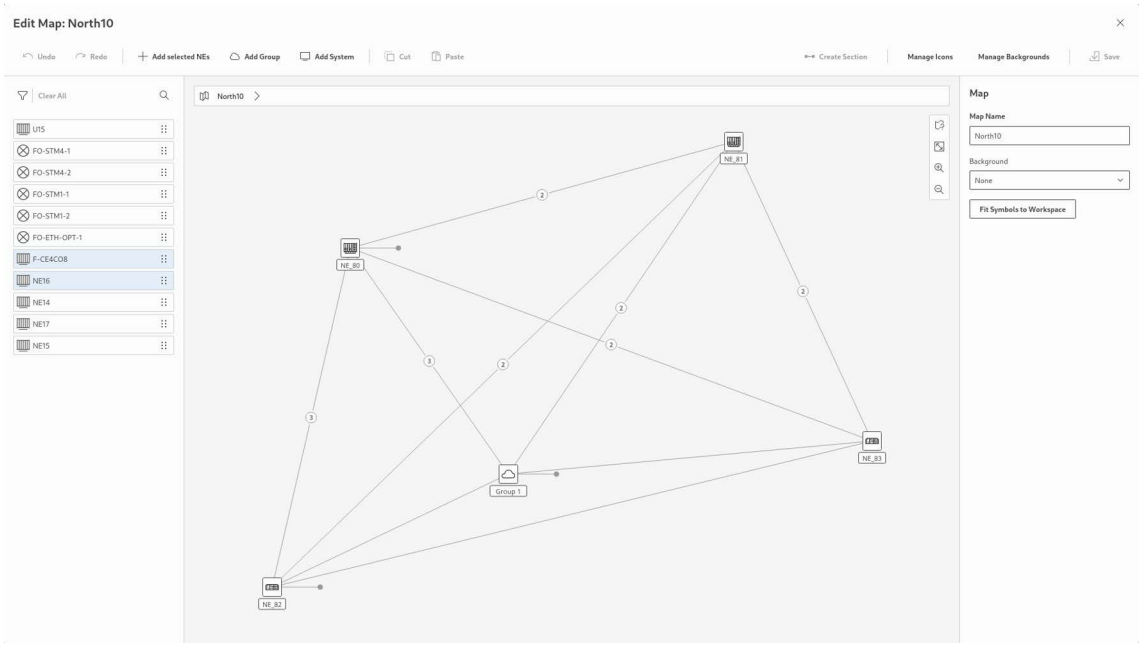

Figure 45: Map manager while editing a map (example)

Depending on assigned roles and permissions, the map manager allows a user to

- create new maps,
- edit a selected map,
- duplicate a map,
- delete maps,
- search and filter for maps and backgrounds in the table of existing maps,
- manage backgrounds,
- manage icons,
- add NEs,
- add groups,
- add systems,
- cut and paste elements,
- create sections,
- undo actions,
- redo actions,
- save changes to maps.

5.2 Default Interactions within map

The user can manage the map view by using:

- Toolbars
- Map Selector Bar

Through the map selector bar, the user can change the map or topology that is visualized. To do that, the user can click the map button or breadcrumbs chevron and select a desired visualization from the dropdown.

On the right-hand side of the map selector bar, the “zoom to selection” can be activated.

Clicking the map button opens the full map menu with all available maps and the “Manage Maps” command for starting the Map Manager.

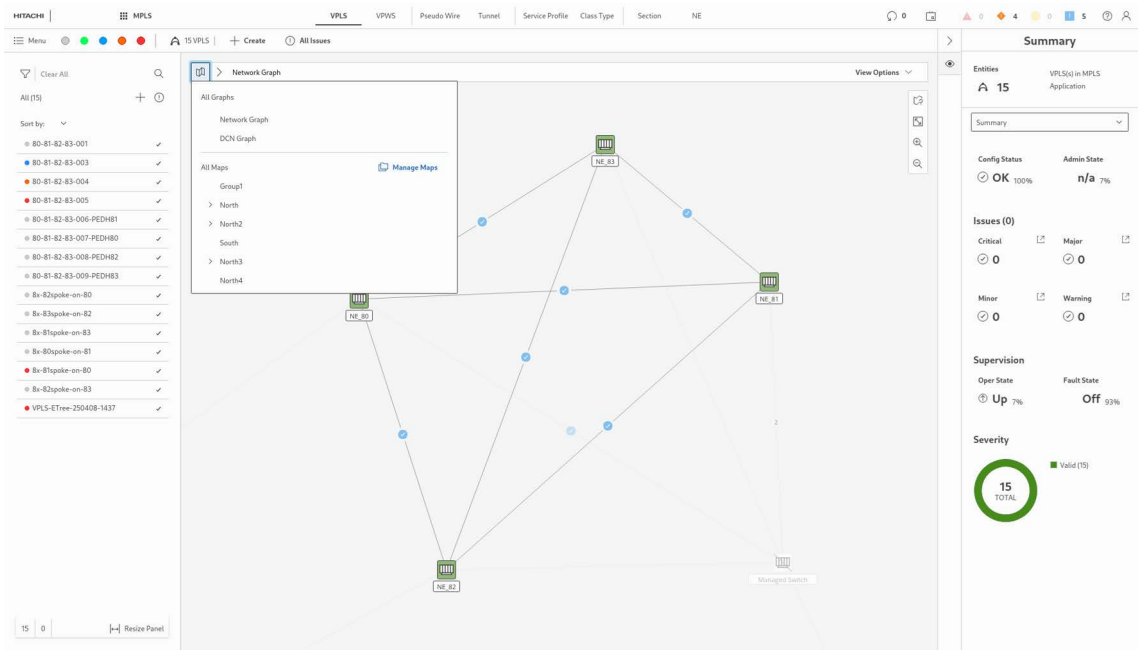

Figure 46: Selecting map or opening “Manage Maps” component

Clicking the breadcrumbs chevron opens the map selection list.

On the right-hand side of the map selector bar, the “zoom to selection” can be activated.

Through the toolbars the user can manipulate the view – zoom in or zoom out, fit the map to the content (i.e., zoom to show all items on the map) and also open the map legend panel.

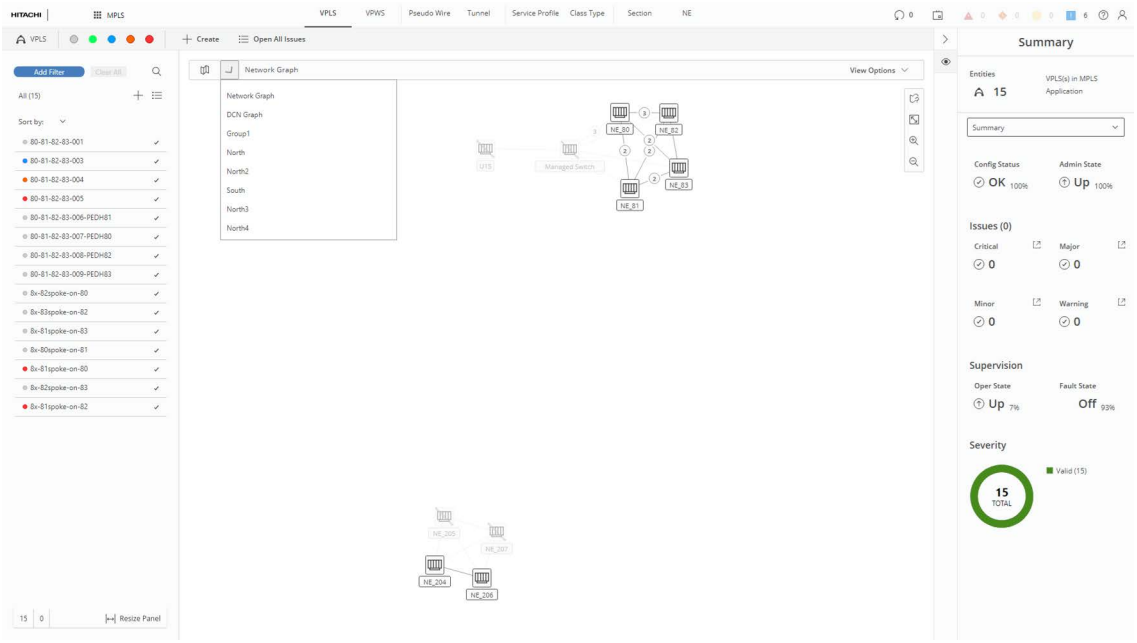

Figure 47: Changing map by using Map Selector component (here in opened state)

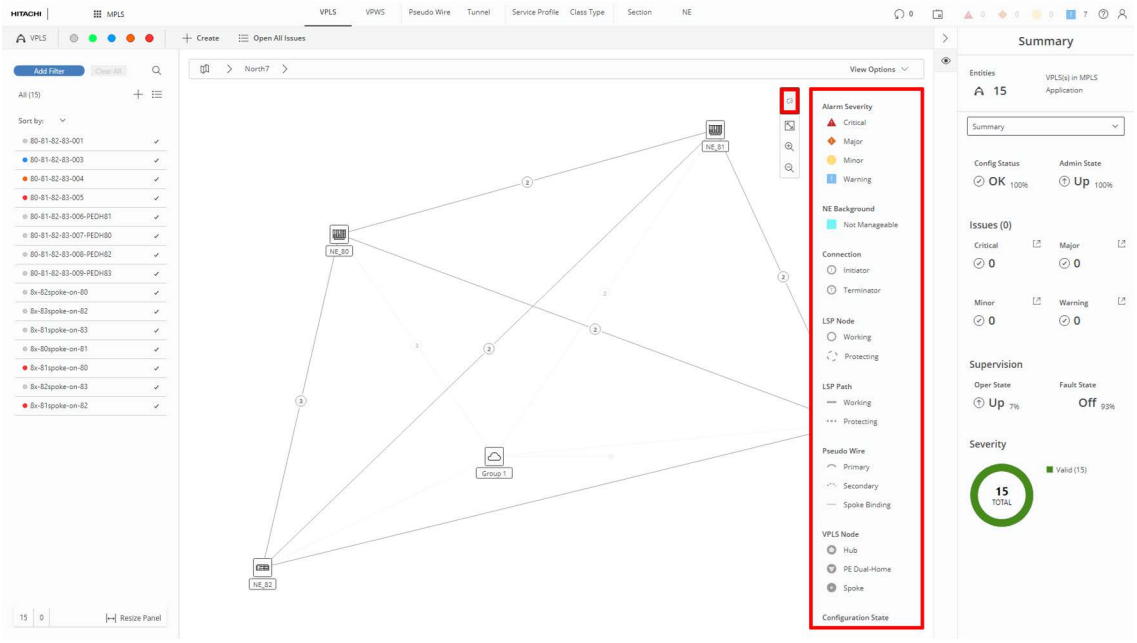

Figure 48: Legend panel in opened state (marked red)

5.3 MPLS Map

5.3.1 Default Visualization

The default view of the map applications presents the network topology: by default only sections and network elements are visible. Moreover, information about alarms or problems on the physical layer can be presented.

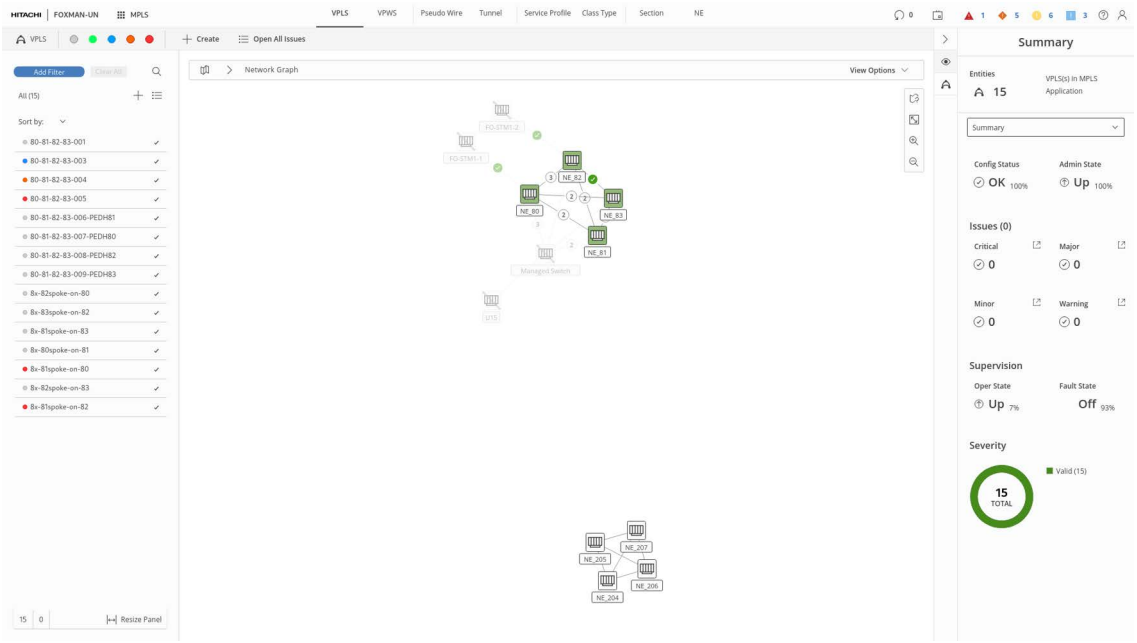

Figure 49: Default visualization

5.3.2 General Visualization Language

There are some high-level concepts regarding visualizing elements that are common for all views and applications. Common concepts include network element's symbol structure. Network element symbol consists (from top to bottom):

- Circular service icon indicating NE role, which appears when the entity is selected.
- Box with network element's symbol and optionally alarm icon and background indicating issue with the network element.
- Name box.

Selected network element is indicated by blue border around every element of its symbol.

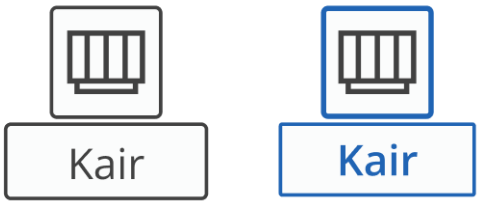

Figure 50: Network element in default and selected state

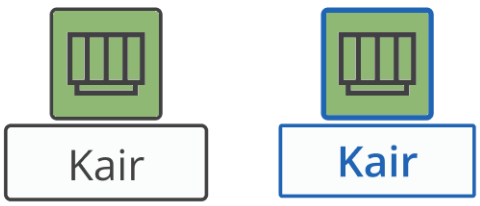

Figure 51: Network element with active health monitoring in default and selected state

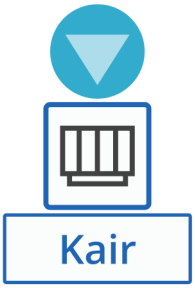

Figure 52: Network element when used in selected service

Other common concept include the way of visualizing primary and secondary connections between entities (or working/protecting LSPs):

- Dashed lines or arches indicate secondary or protecting connections
- Full lines or arches indicate primary or working connections.

Figure 53: Visualization of primary and secondary connections

5.3.3 Visualizing Service and Transport Entities

Selecting services or transport entities add visualization layer on default view. They also impact visualization of the network elements – presenting their role in selected services.

VPLS are visualized presenting the connections between entities. They can be represented in form of arches or areas. Colored areas between network elements indicate full mesh connections. Arches can be visualized with dashed or full lines. Dashed lines indicate secondary connections.

Tunnels are visualized using dashed or full lines. Dashed lines indicate protecting LSPs, full lines indicate working LSPs.

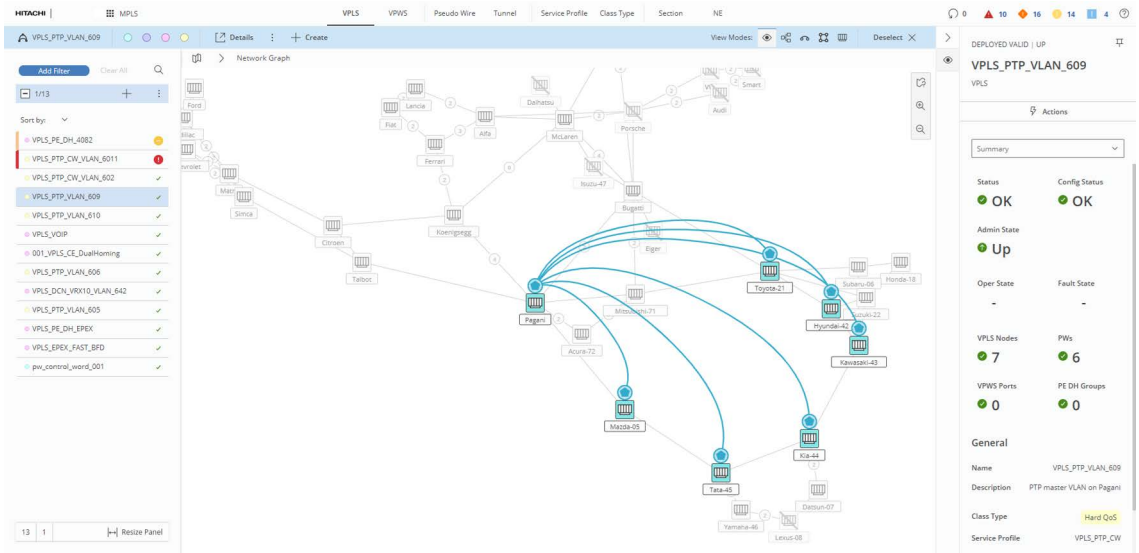

Figure 54: Visualization of VPLS without full mesh connections

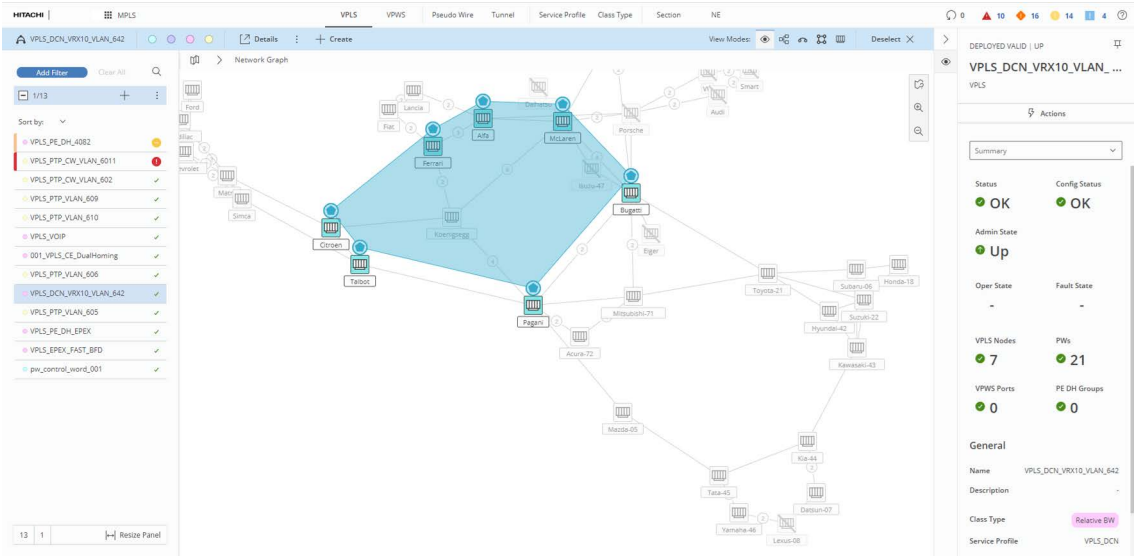

Figure 55: Visualization of VPLS with only full mesh connections

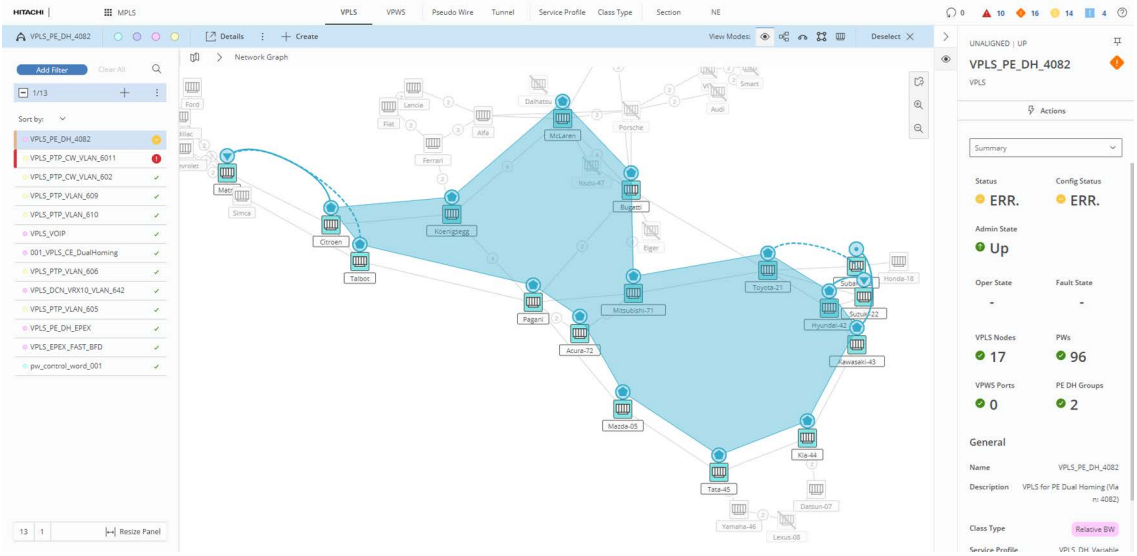

Figure 56: Visualization of VPLS with various types of connections

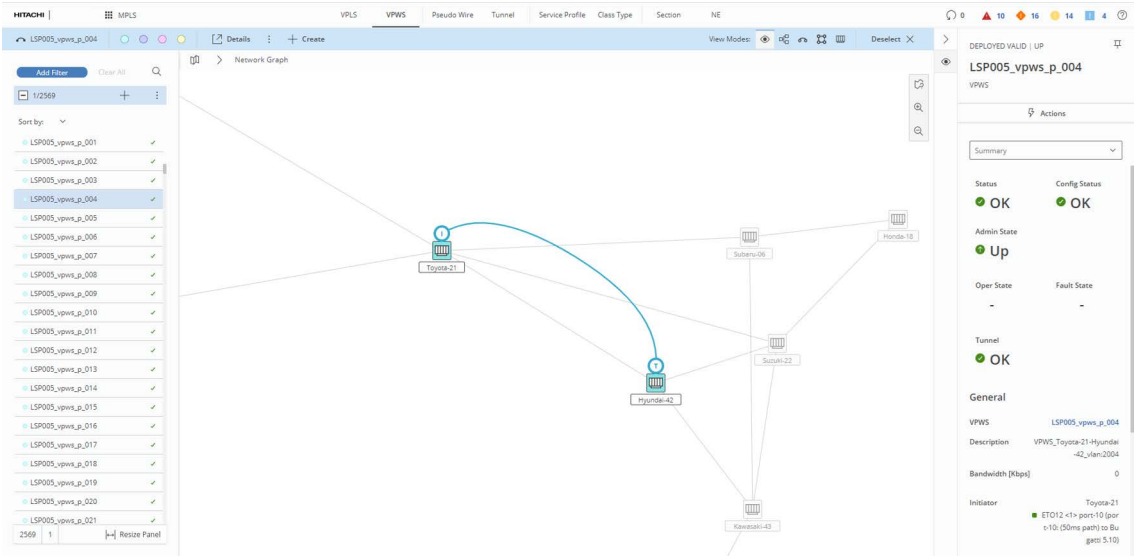

Figure 57: Visualization of single VPWS

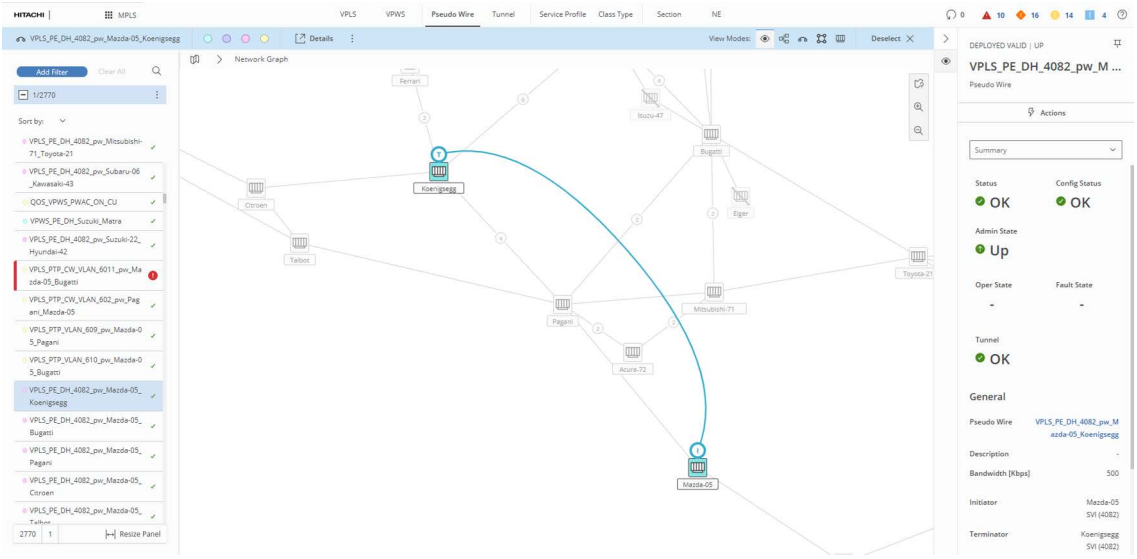

Figure 58: Visualization of single pseudowire

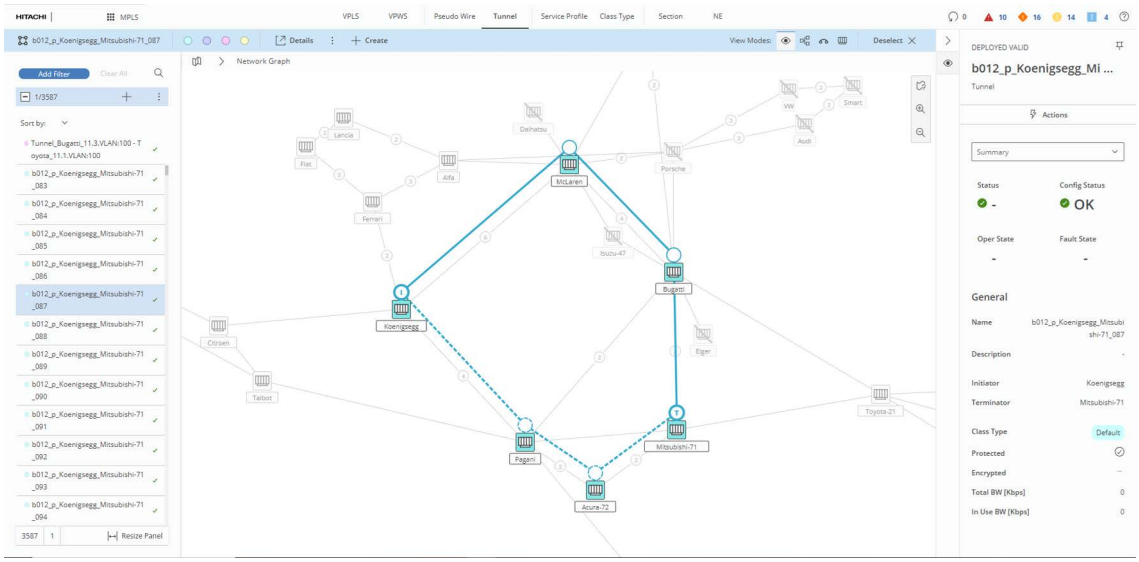

Figure 59: Visualization of single tunnel

5.3.4 Visualizing multiple services and Transport Entities

Multiple services or transport entities can be visualized at the same time. When selecting up to 8 entities – every entity will be visualized with different color. When multiple selected connections or LSPs are going through the same path counter is presented.

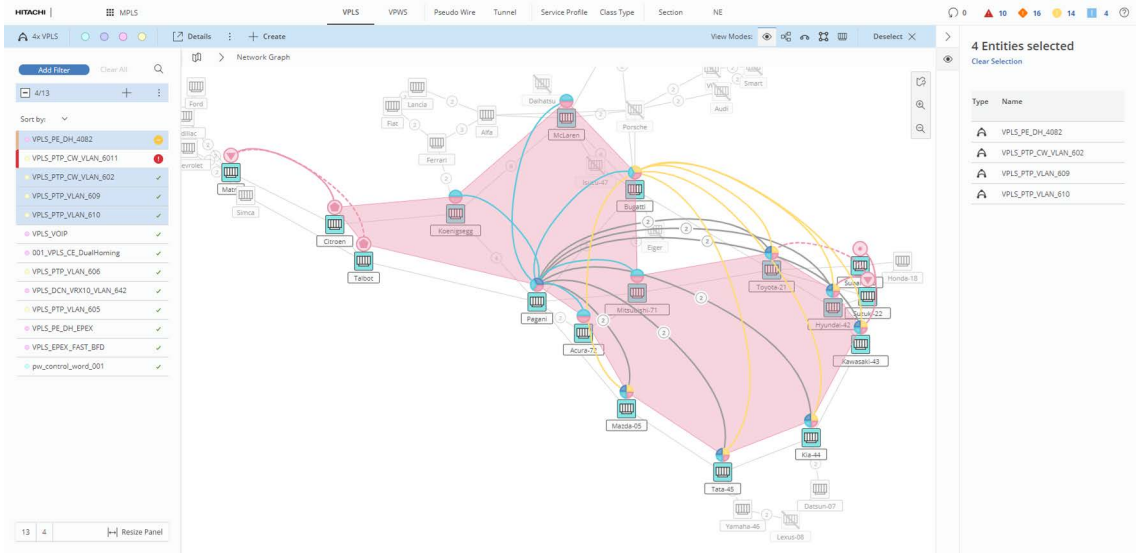

Figure 60: Selected multiple services

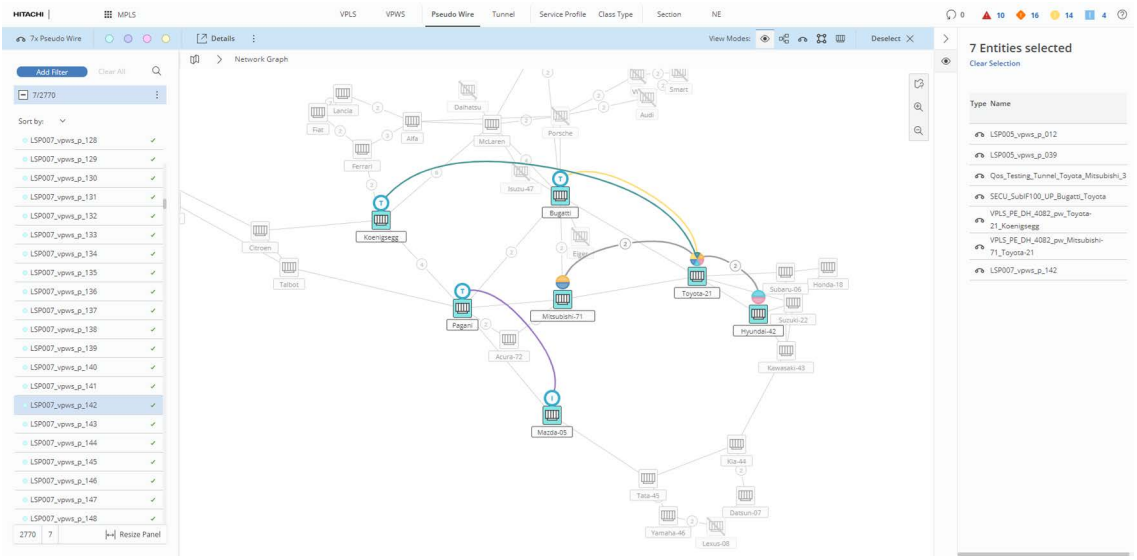

Figure 61: Selected multiple pseudowires

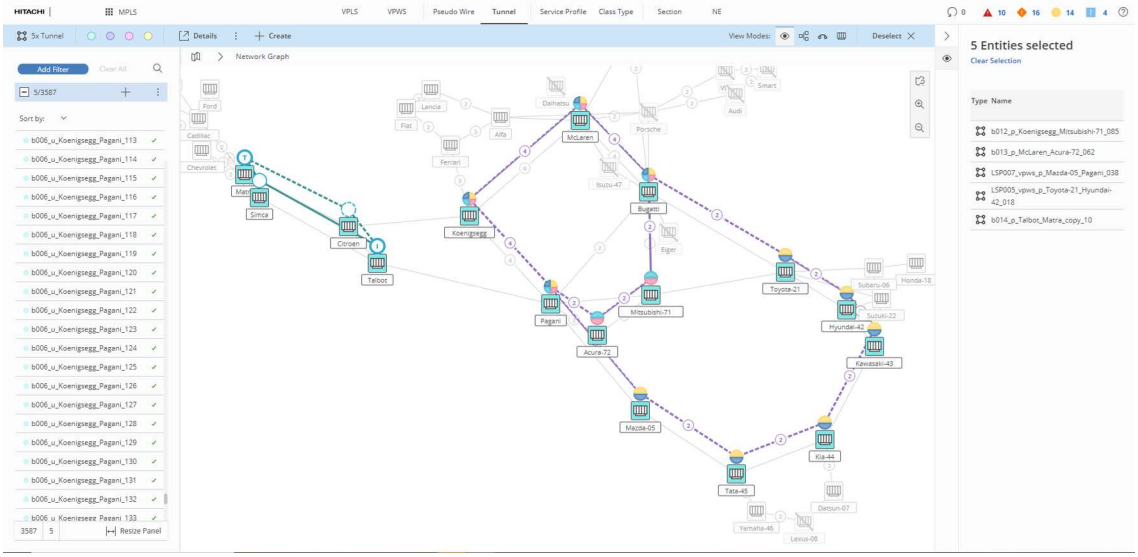

Figure 62: Selected multiple tunnels

5.3.5 Visualizing other entities

As network elements and sections are visible by default, selection of Network Elements or sections is visualized by highlighted states of them on map – indicated by blue colors.

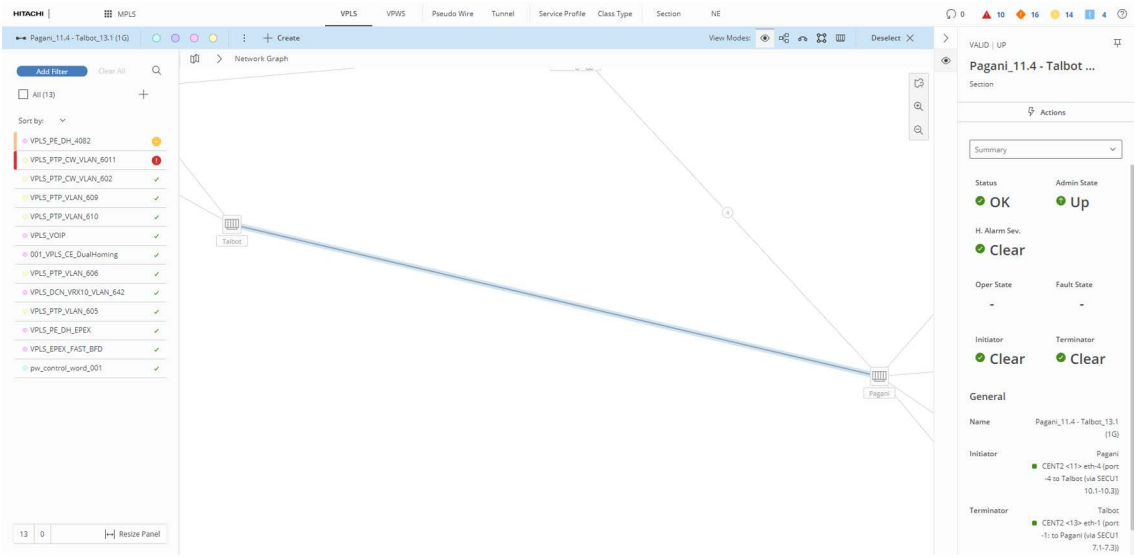

Figure 63: Selected section

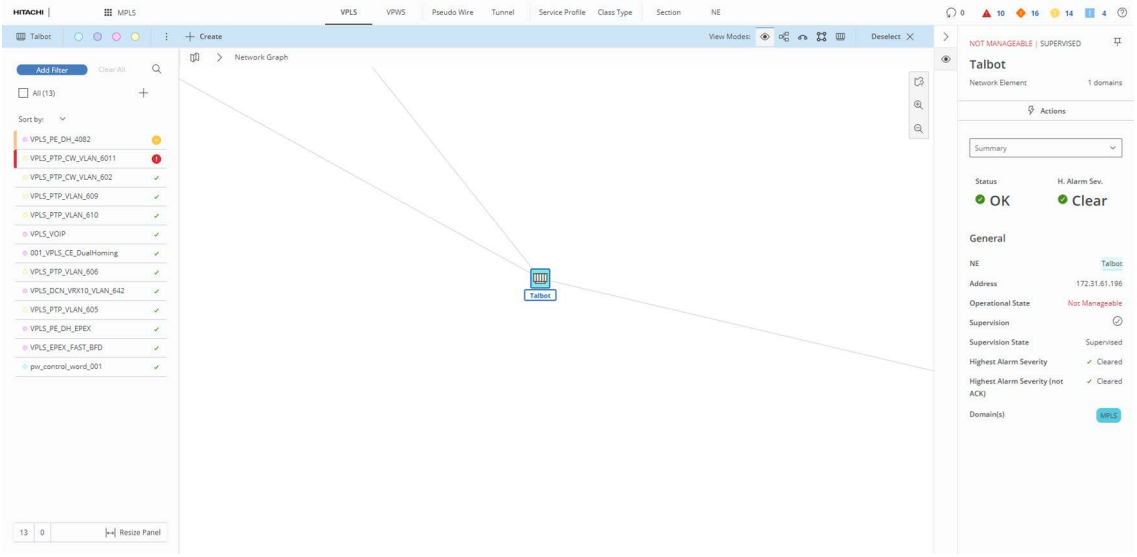

Figure 64: Selected network element

5.3.6 Visualizing related entities

Related Entities can be visualized using the related entities view in the details panel. By using visibility checkbox, the user can visualize single related entity. Additional quick view options are available in the ribbon – to control visibility of whole related entities group.

Available view option (view modes):

- Entity View – to visualize selected entities.
- Service View – to visualize related services for a non-service entities.
- Connections View – to visualize related connections for selected entities.
- Transport View – to visualize related transport elements for selected entities.
- Physical View – to highlight physical elements related to selected entities.

Turning on visibility of related entities puts multiple layers of the information at the same time on the map.

Available quick view options and their meaning is described in the annex.

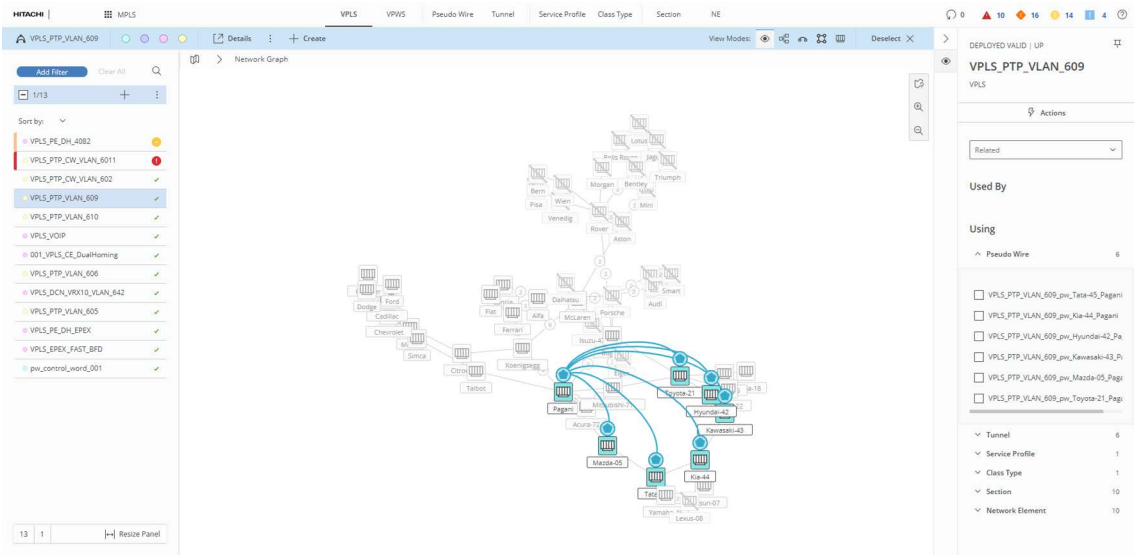

Figure 65: View with related entities visible in the details panel

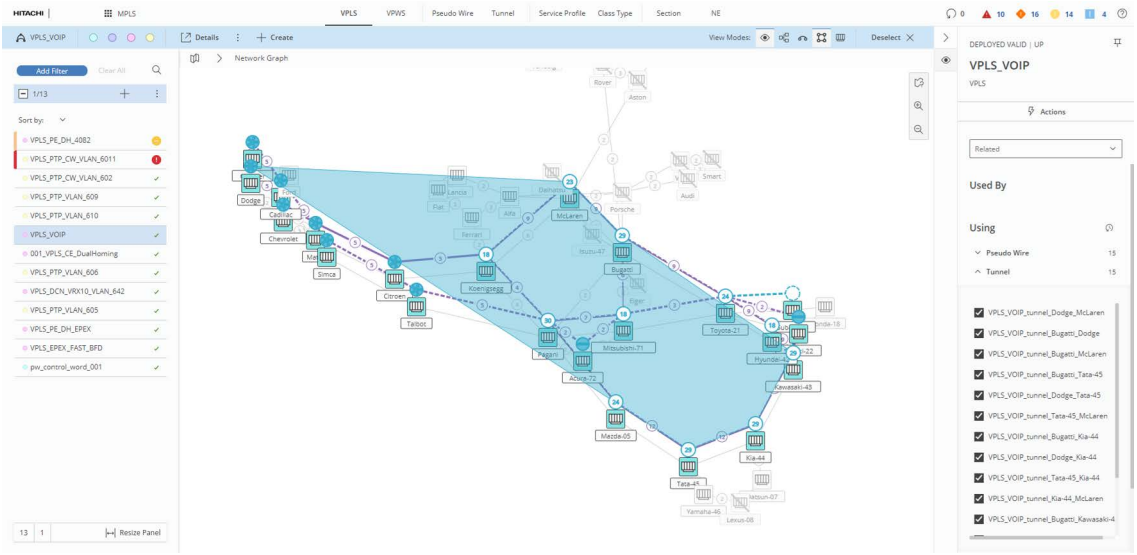

Figure 66: View of selected service with enabled transport view

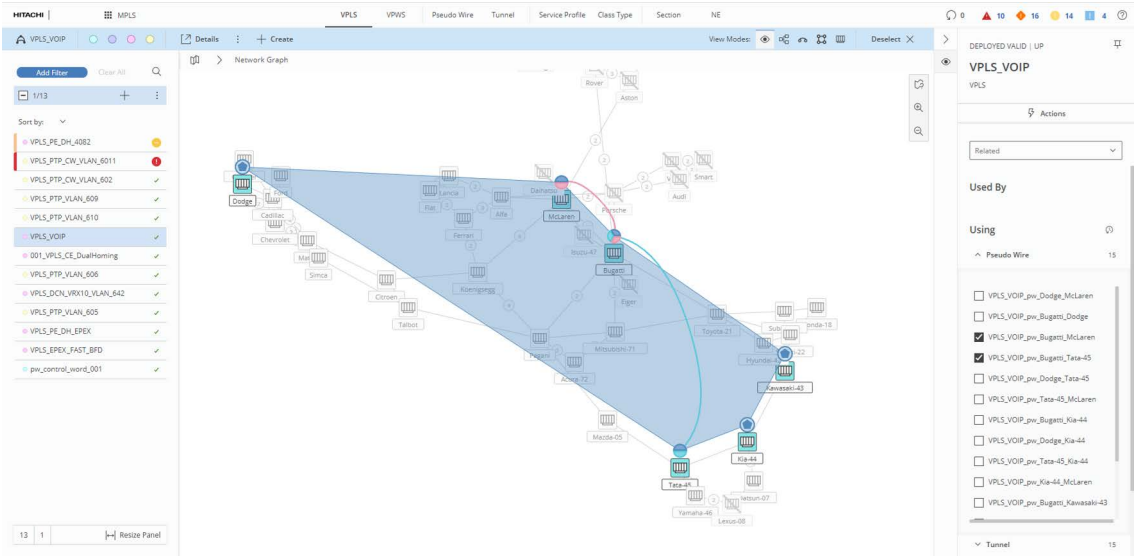

Figure 67: View of selected service with visibility of two connections enabled

5.4 Time Synchronization Map

5.4.1 Visualization of Network Elements and clock synchronization

In the Time Synchronization map application the user can check clock synchronization of all network elements. Parameters of synchronizations are visualized on the map and also presented in the entity browser. In the entity browser there are two parameters in form of icons (in small version of panel) presented – one presenting the clock itself (to what clock the device is synchronized) and second presenting the clock operating mode.

All clocks in the app are assigned with various colors that are consistent through visualizations in the entity browser and on the map (through colored areas).

State when synchronized clock is not the default clock for NE or the NE is not synchronized to any clock is visualized by the area with overlaying red lines.

A synchronization view is available in the details panel for network elements.

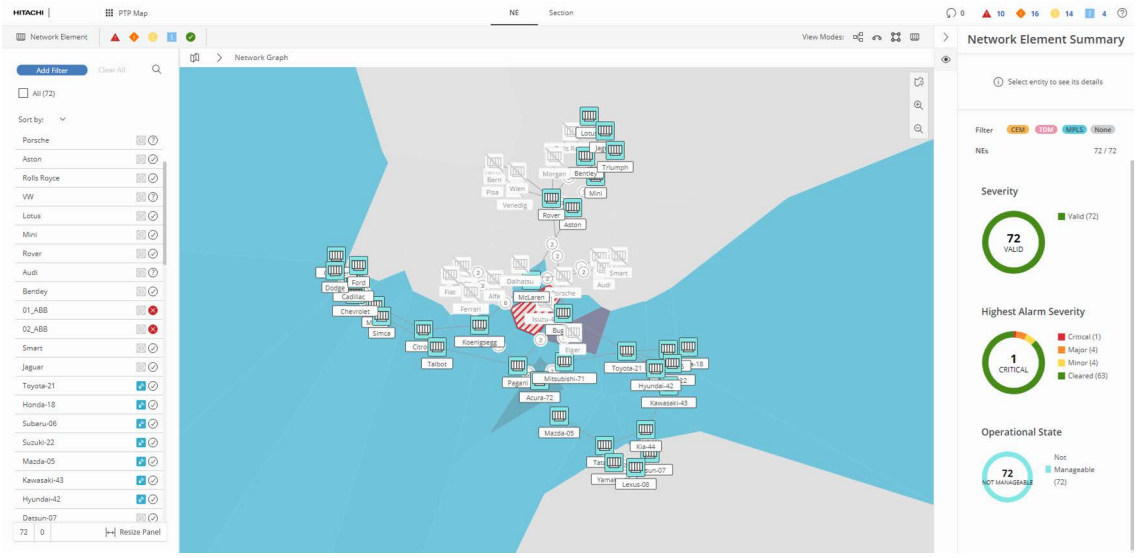

Figure 68: Time Synchronization Map basic view

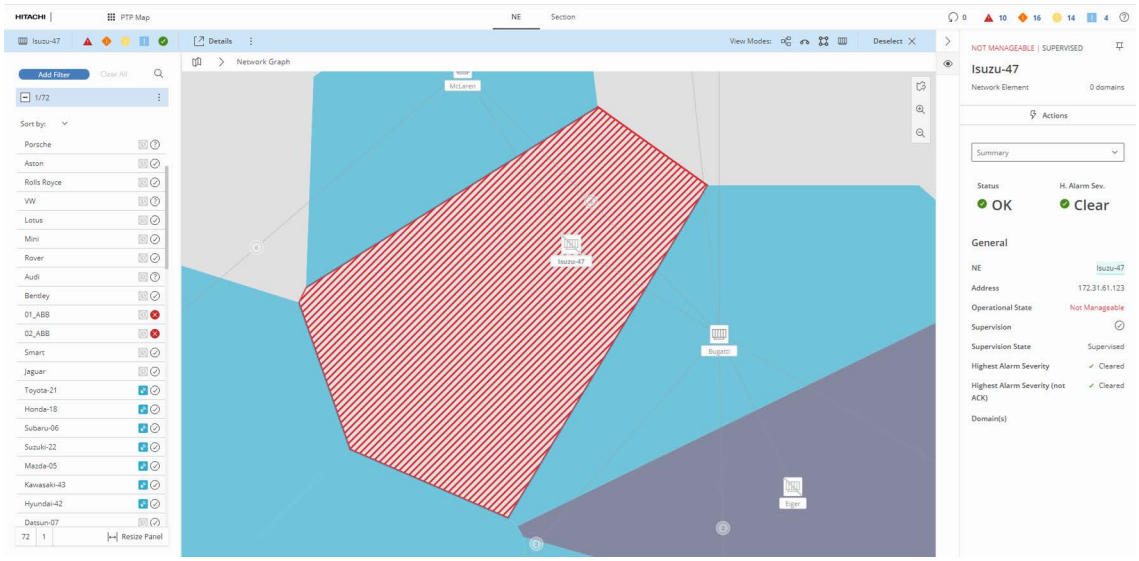

Figure 69: Time Synchronization map – visualization of bad synchronization status

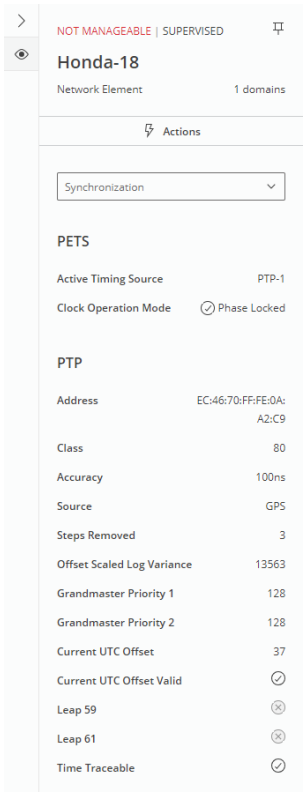

Figure 70: Synchronization view in network element's details panel

6 Annex

6.1 Associated Documents

[1KHW002499] Release Note “FOXMAN-UN”

6.2 Document History

Table 1: Document History

Document ID	FOXMAN-UN Release	Rev	Date	Changes since previous version
1MRC000084	R18	A	Jun 2025	Updated version for system release R18.
1MRC000084	R17A	A	Sep 2024	Updated version for system release R17A.
1MRC000084	R16B	A	July 2023	First version.

Hitachi Energy Ltd
Bruggerstrasse 72
5400 Baden - Switzerland

Phone: please refer to https://www.hitachienergy.com/contact-us/Customer-Connect-Center (Customer Connect Center)
Email: communication.networks@hitachienergy.com

www.hitachienergy.com/communication-networks

Document ID: 1MRC000084 FR18 Rev. A