WebPal 2.0 – WebPal Viewer

User Guide
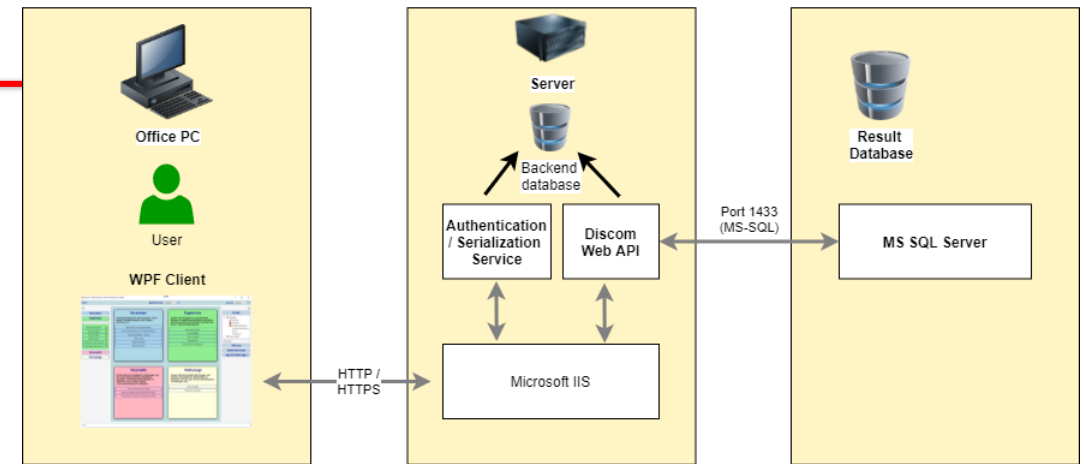
Version 2.3 (2022-10-24)

Table of contents

I. Introduction

- An overview of WebPal's infrastructure and the single components in it is required in order to understand the WebPal Viewer.

- The WebPal Viewer replaces the Internet Explorer/Silverlight in the new WebPal infrastructure.


Component	Name	Function
Backend database (SQL Server)	DiscomWebApiBackend	• Storage of user requests • Storage of the FactoryModel (formerly AcwProject.xml) • Definition of the PermissionModel in tables
Authentication- and serialization service	Discom.Up.Custodian	• Serialization of user requests into the backend database • Provision of an optional authentication service
Data service	Discom.Up.WebApi	• Core service: Responsible for the data extraction from the result databases and the archives
Client application	WebPal Viewer	• Application on client PCs: Responsible for defining the data request and visualization of the data
Result database	DiscomData_ProdDb	• Main database: Responsible for storing meta data, single values and indexing of the archives

II. Installation requirements

- The new client application "WebPal Viewer" is based on .Net Framework 4.7.2

    $\Rightarrow$ Support for Windows 7 SP1 and later

    $\Rightarrow$ For Windows 7 systems without automatic update, the Framework .NET 4.7.2 might be installed using the Offline Installer: https://support.microsoft.com/en-us/topic/microsoft-net-framework-4-7-2-offline-installer-for-windows-05a72734-2127-a15d-50cf-daf56d5faec2

- The new client application "WebPal Viewer" is only available as a 64-bit application

- No admin rights on the client PC are required in order to install the "WebPal Viewer"!

III. Installation via Installer

- Start the installer WebPal_Viewer_Installer__Rev_xxxxx.exe
- The installer creates a folder *Discom* in the …\AppData\Local-directory of the currently logged in user (and within this folder the following sub folders):
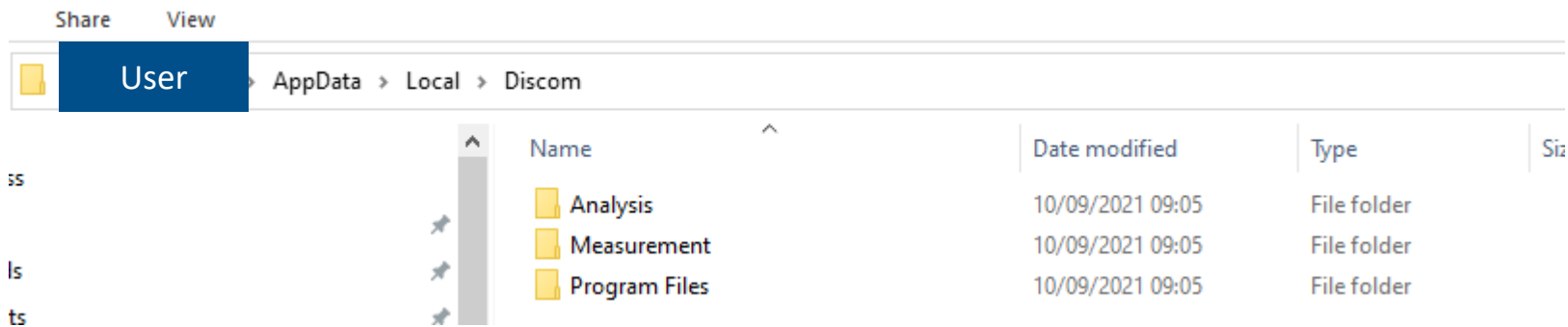

- The configuration files are in the folder …\Analysis\WebPalViewer and the program files in the folder …\Program Files\WebPalViewer
- Start the app either from the created start menu link or the link within the folder *…\Analysis\WebPalViewer*

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IV. Initial configuration

After app start the following configuration menu is displayed

⇒ Select the option "Client-server app", if the WebPal Viewer receives its data from a central web service.

⇒ Select the option "Client-server app", if the WebPal Viewer is installed on a PC which has direct access to the result database(s).

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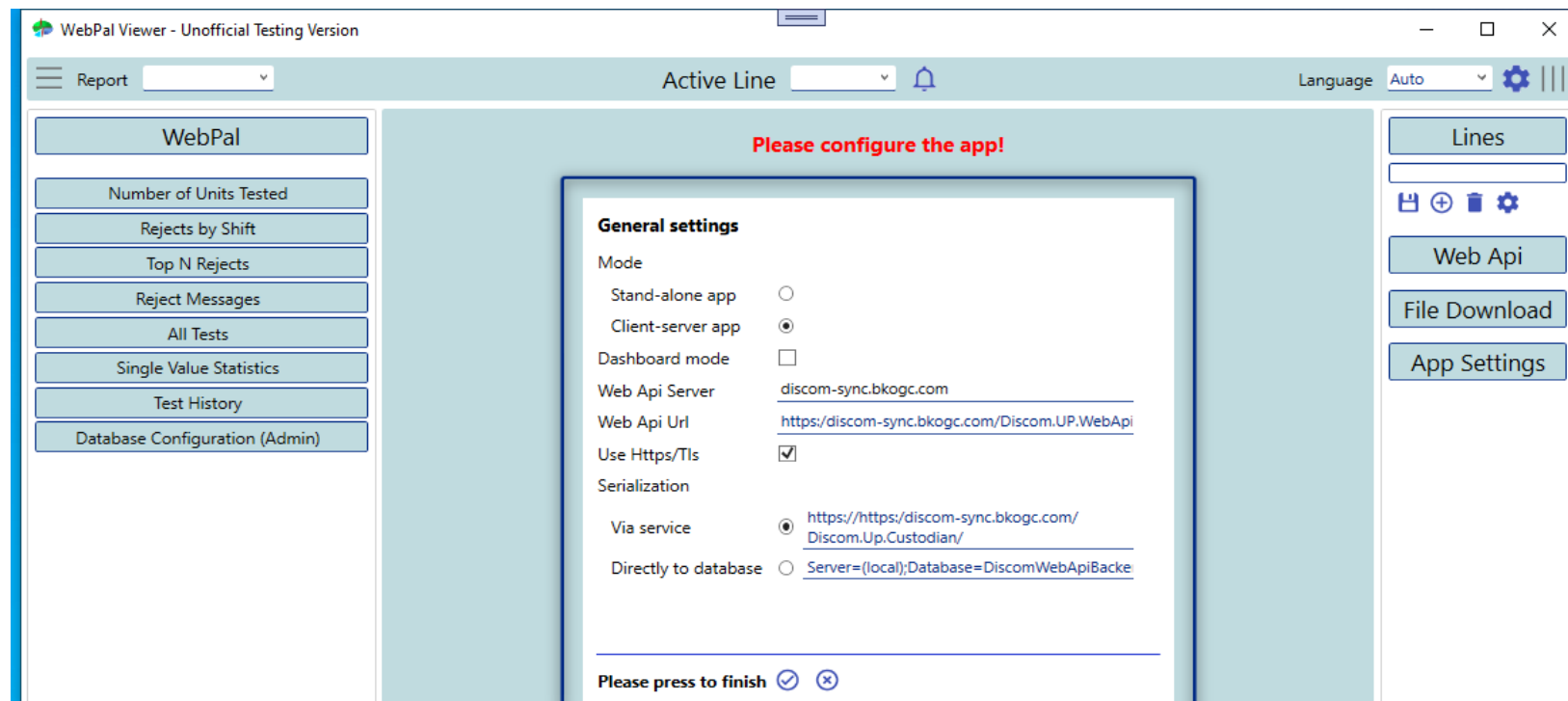
IV. Initial configuration – client-server app

⇒ Please replace the name of "Web Api Server" with the name of the server where the new web services are installed.

⇒ If the new web services are **<u>not</u>** configured for https communication, then remove the check mark from the check box "Use Https/Tls".

⇒ Finish the configuration with a click on the "Check" button.
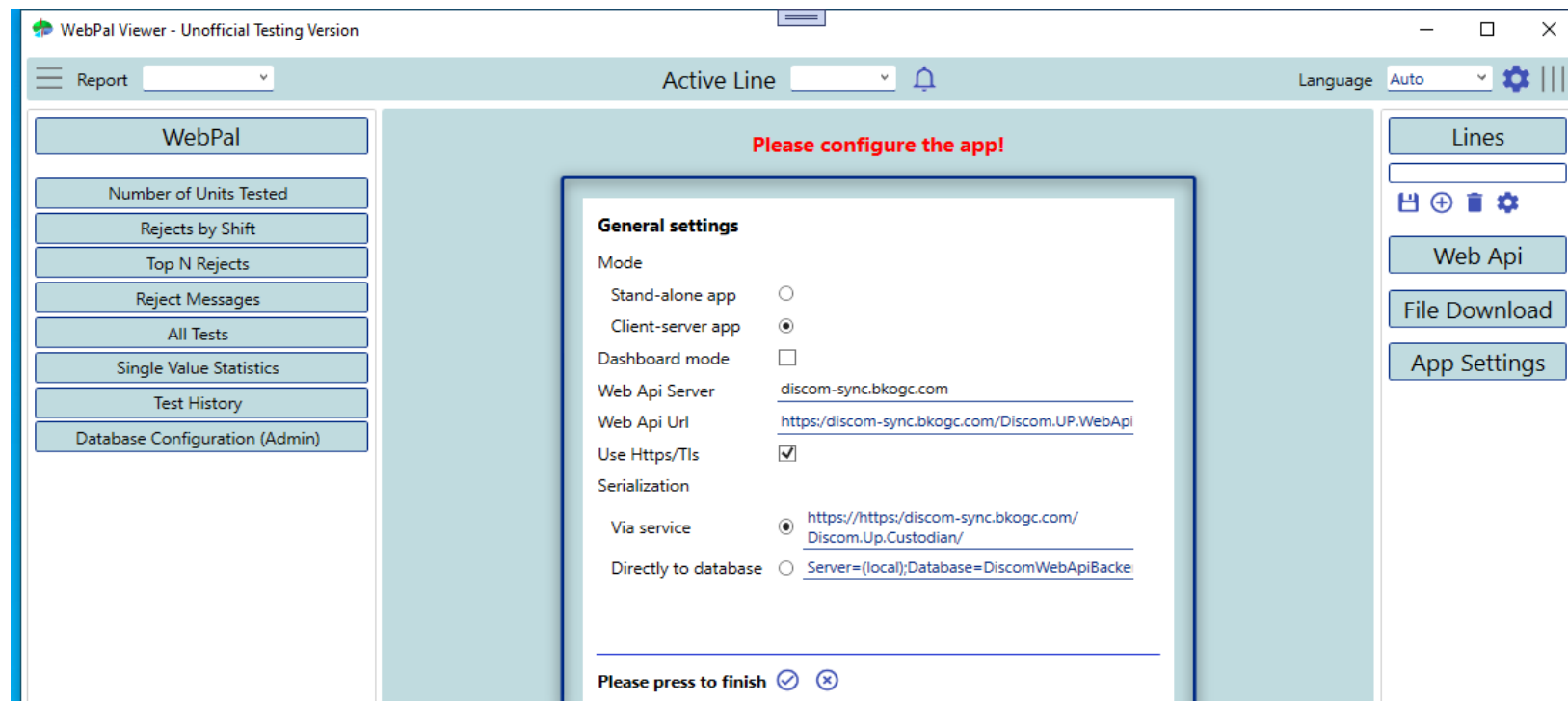
IV. Initial configuration – client-server app

⇒ Unless the web services are configured correctly and available, the available lines will be displayed (see picture).
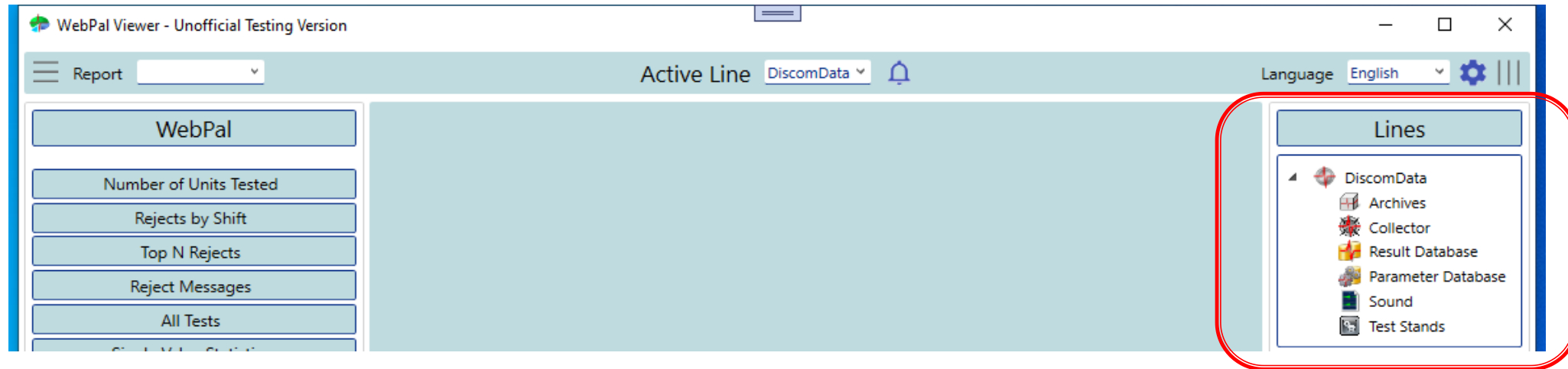
IV. Initial configuration – stand-alone app

⇒ Enter the name of the line with direct database access incl. the connection details.

⇒ Test the database connection with a click on "Connction test".

⇒ If the database could be connected, finish the configuration with a click on the "Check" button.
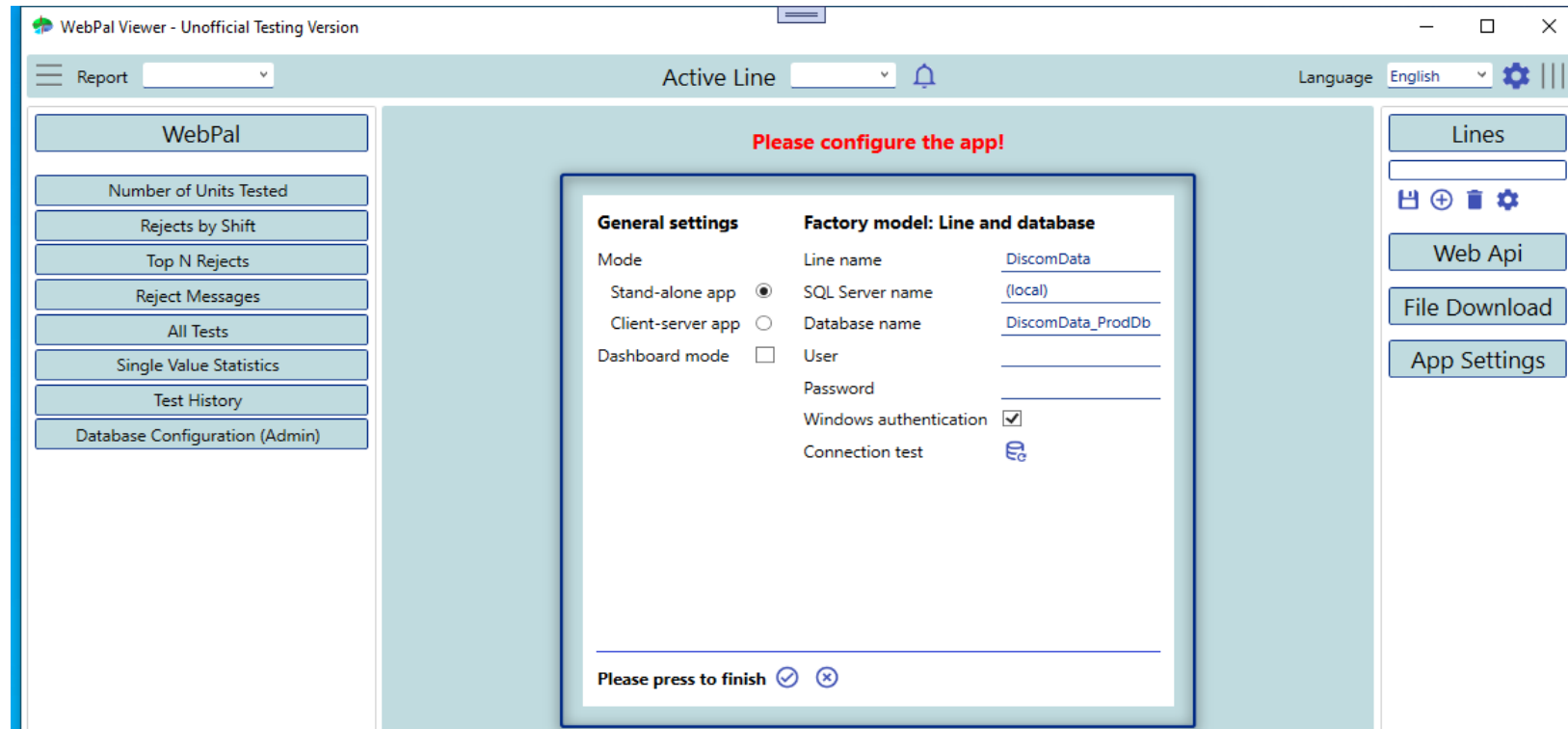
V. Basic design and navigation

The interface of the WebPal Viewer consists of 4 areas:

- The action menu (red frame)

- The report menu (blue frame)

- The display area (green frame)

- The settings area (yellow frame)

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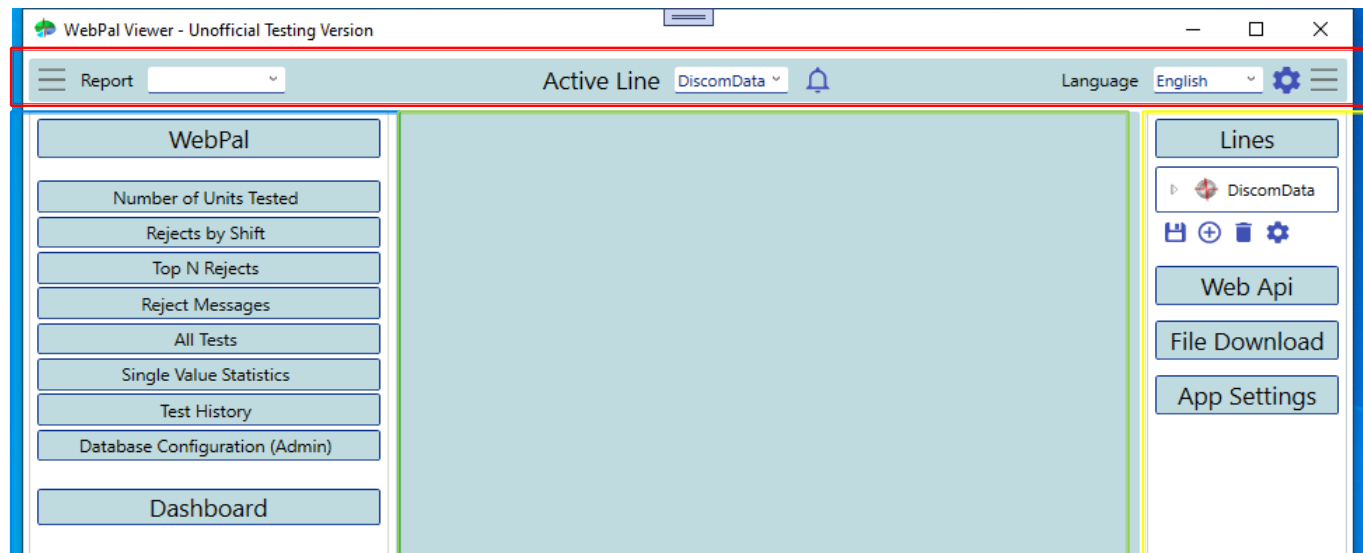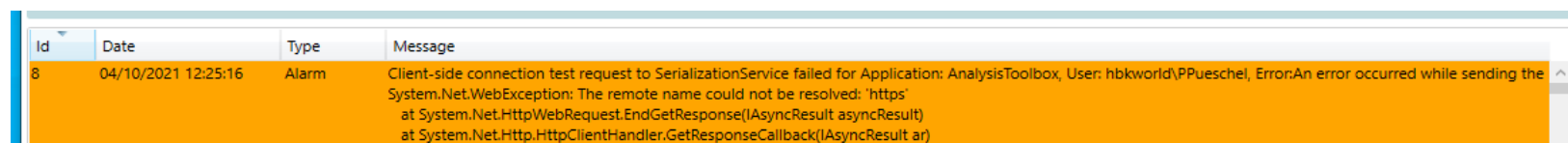
V. Basic design and navigation

The action menu has the following controls:

- Buttons to expand/collapse the report area and the settings area (red frame).
- A selection of WebPal reports (blue frame)
- The selection of the active line (green frame)
- The message bell (orange frame)
- The language selection (purple frame)
- The settings selection (light blue frame)
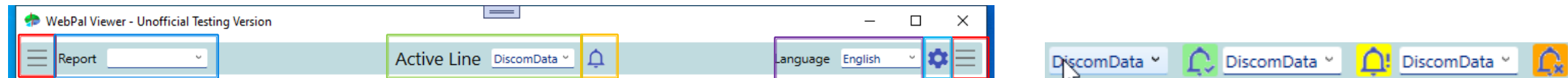
- The message bell informs by background and appearance what kind of messages have been triggered. Clicking the bell opens the message log at the bottom of the app.

V. Basic design and navigation

- The settings selection informs about the present version and has settings that can be used to enlarge or reduce the content of the app (fonts, controls, etc.).
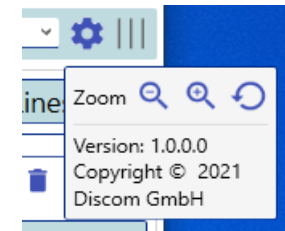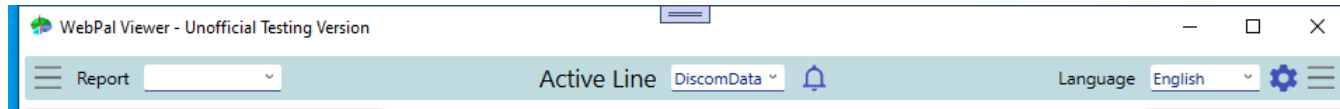
- The WebPal reports are called up either by selection via the action menu or the report area. Important: For a report to be called up, an active line must be selected.
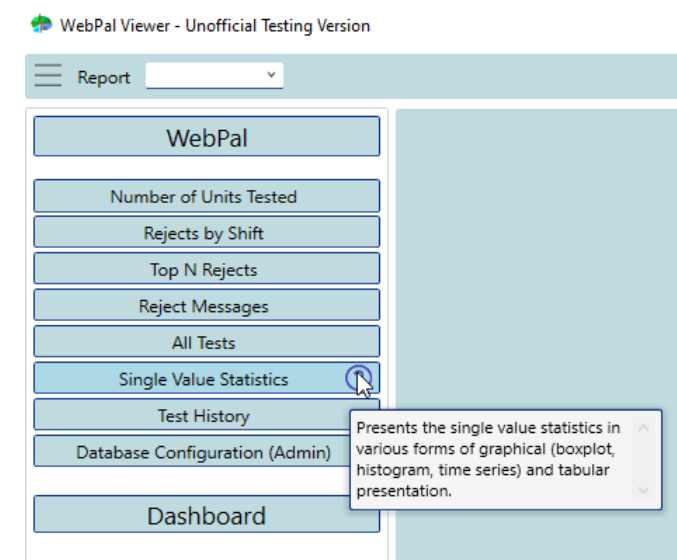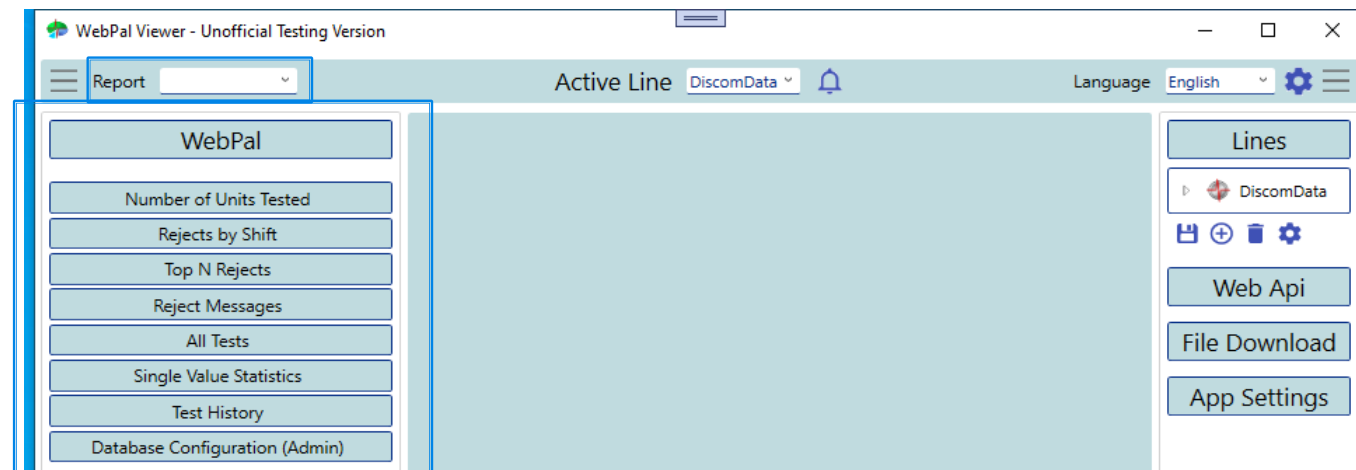
V.   Basic design and navigation

- In the report area, there is also the "Dashboard" area. Here you can set the automatic calling of a selected report in a defined interval.

- The lower limit for the interval is set to 2 minutes. The last saved (query) settings of the selected report are always called up.
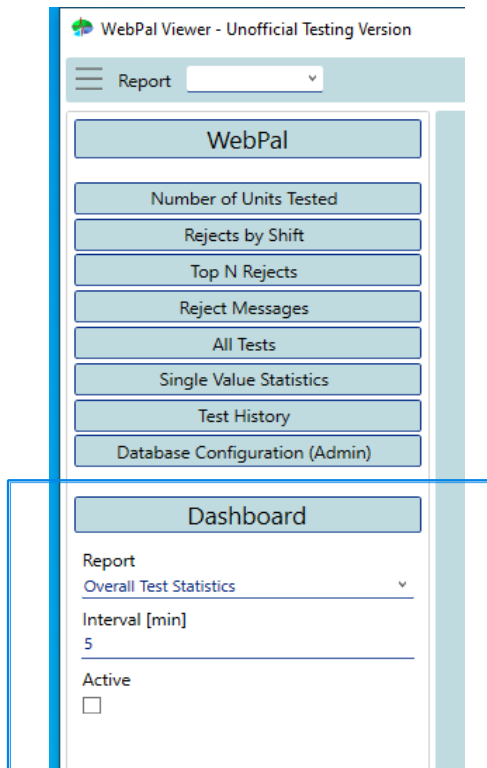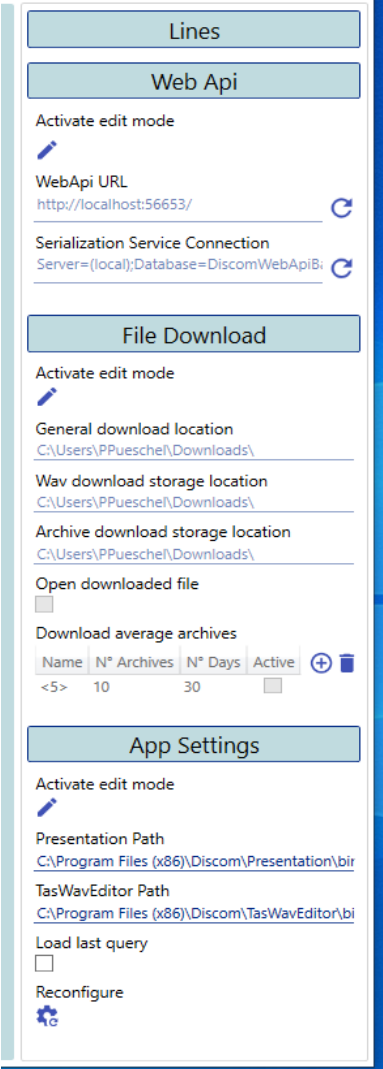
- **Important**: It should be noted that the regular call of certain reports (error reports, single number statistics) in short intervals can lead to increased load on the web services and the associated database servers, depending on the query settings (e.g. time period).

V.   Basic design and navigation

In the settings area there are the following areas:

- Lines: Description of available lines including all elements (archives, collector, results database, wav, test benches, etc.). Functions for editing the lines as well as uploading a report logo to the backend database.

- WebApi: URL of the new web services (WebApi and serialization service) with connection test option

- File Download: Settings for file download locations (general, archives, wav files), opening downloaded files, and additional downloading of mean archives

- App settings: Settings for the paths to the "Presentation" and "TasWavEditor" programs, loading the last query when calling up the report and calling up the configuration view again.

V. Basic design and navigation

- In the settings area for the lines there is the line overview incl. the buttons for saving, adding a line, removing a line, further settings

- Further settings: Here a client report logo can be uploaded to the backend database, an existing ACWProject.xml (config file of the old WebPal) can be converted to the line model, as well as the editing mode for the lines can be unlocked with a password (in the mode "Client-Server-App" the editing of the lines is disabled by default).

- If an element is selected in the line view, the respective properties of the element appear in the area below the line view (see red frame).

- The properties mainly refer to the access to the resources "Results database", "Archives", "Wav files" (storage locations, access data, etc.).
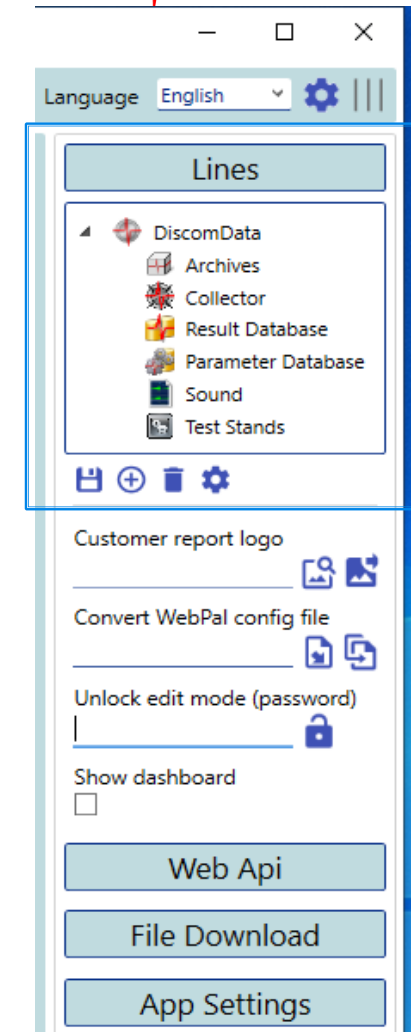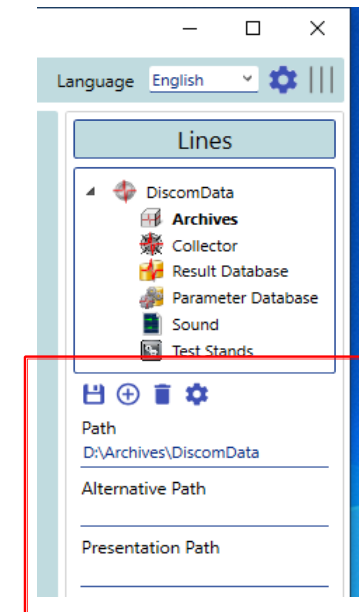
V. Basic design and navigation

- In the properties area of the result database, in addition to the usual connection data (name of the database, name of the SQL Server instance, etc.), there are also two buttons for the connection test to the database and for updating the database.

- The connection test option is available by default. Updating the database, on the other hand, is available only after unlocking it with a password (in the "Other settings" section).

- **Important**: The new WebPal requires a number of new queries and functions stored in the database. The changes are stored in a SQL script, which can be found in the program directory and can be executed either manually in the SQL Server Management Studio or by the respective function in the WebPal Viewer. For databases on servers that have already been shipped with the new WebPal, no update is required.
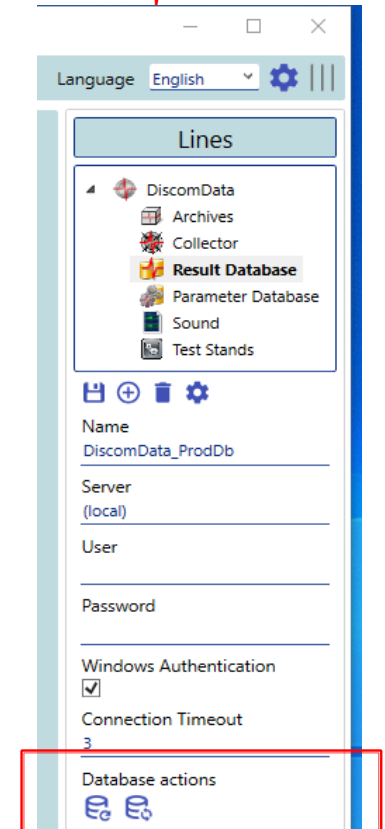
VI. Report query

The display area for the reports is characterized by the following sub-areas:

- Tab area (blue frame): reports can be displayed in parallel tabs or outside the main window.
- Query area (red frame): selections for data query (storage of multiple selections)
- Report display (green frame): display of ReportViewer reports known from WebPal
- Report parameters (yellow frame): Report specific parameters with update

VI. Report query

- Tab area: Reports can be displayed in parallel tabs or outside the main window.

- The report can be docked out by clicking on the red framed symbol in the tab. The report can be docked in again by clicking on the "Close" symbol of the window.

- If a report is called several times, the tabs get consecutive numbers (see picture).

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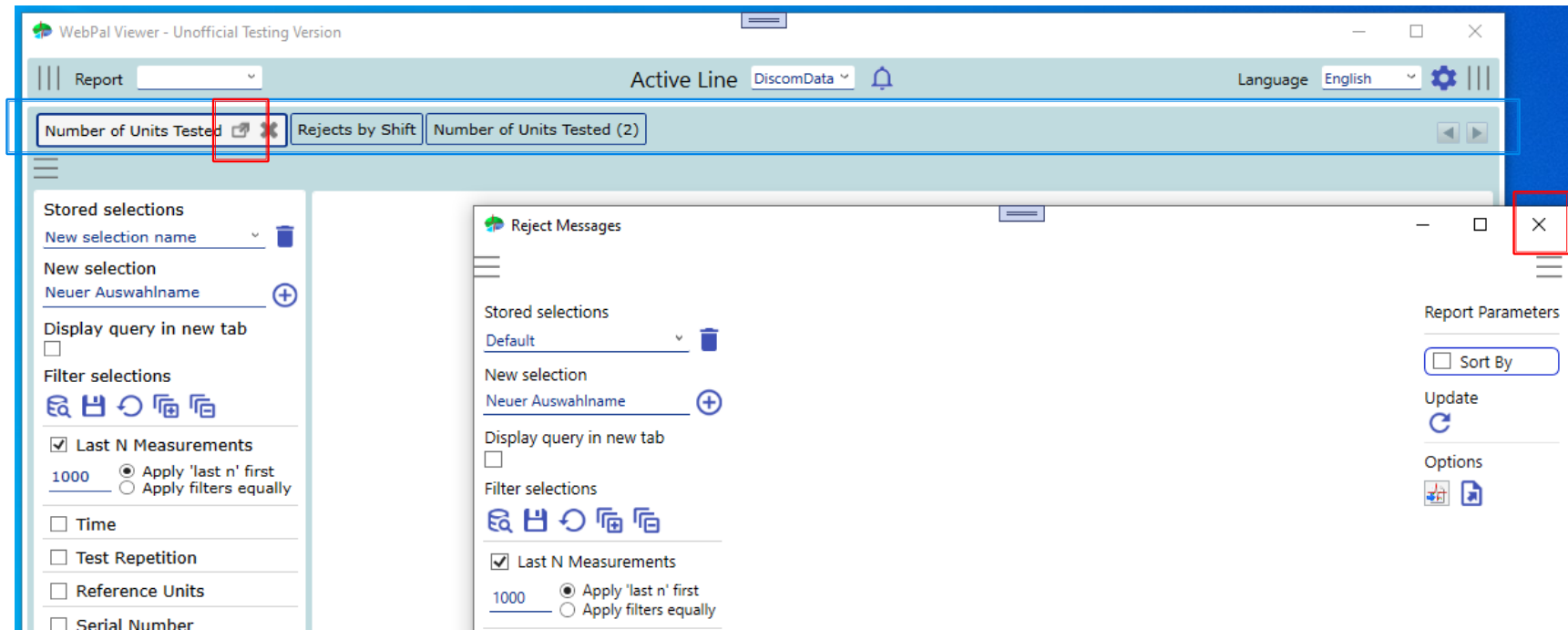
VI. Report query

The query area is the area where the data query for the particular report is specified. An overview of the individual areas:

- Selection area (blue frame): list of saved selections, delete a selection, add a new selection.

- Action area (red frame): Submit query, save selection, reset selection to default values, expand selection boxes, collapse selection boxes

- Filter area (green frame): this is where the filter selections specific to each report are located. This includes time-based filters ("Time", "Last N measurements", "Shift times") and non-time-based filters (e.g. "Type", "Test bench", "Serial number").

- Each filter box contains an info icon in its button which, when clicked, briefly and succinctly indicates how the corresponding filter works.
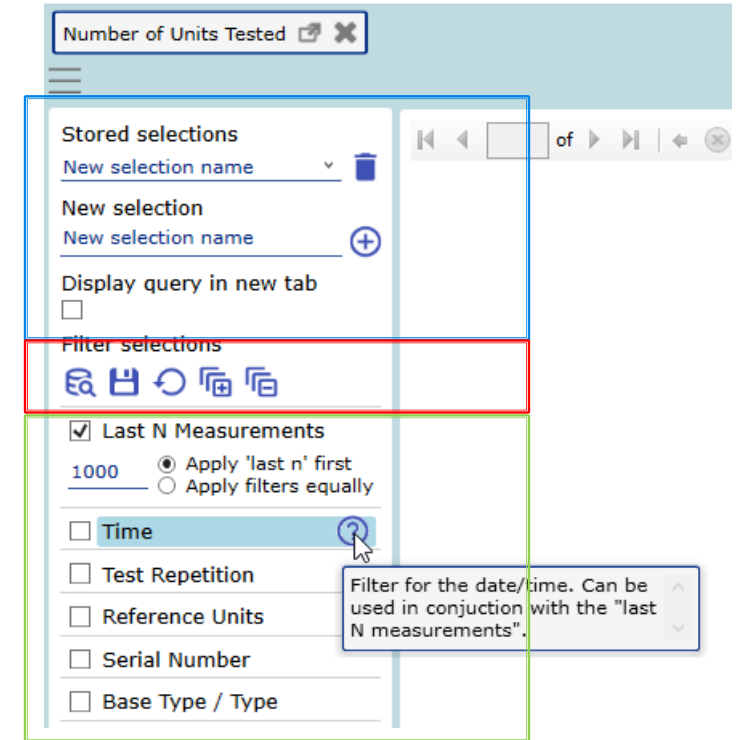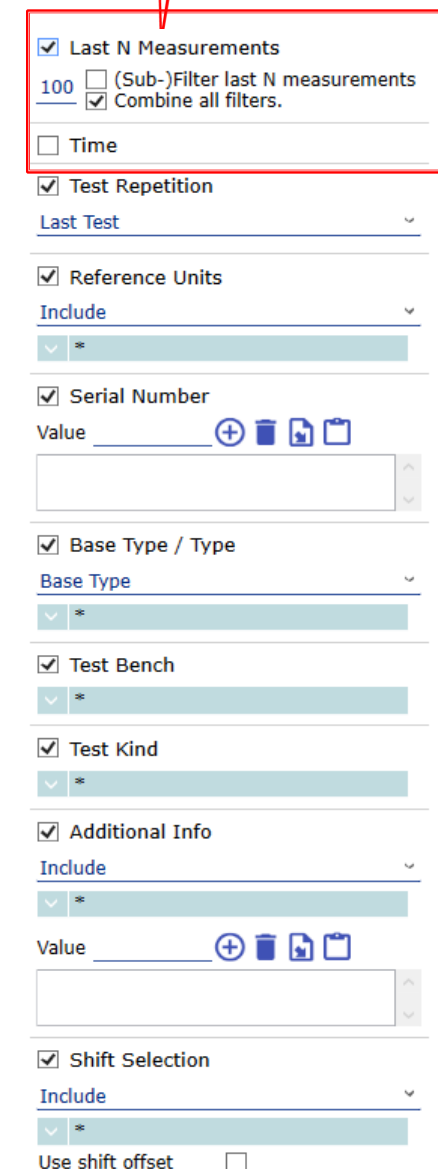
VI. Report query

General: Each filter can be activated/deactivated via the "Check-Box". If a filter is disabled, it will not be included in the query. Each filter can be checked/unchecked via its title button. The filters are always combined with an "AND" link to a query.

The filters at a glance:

- "Last N measurements": Query the last n measurements. If the option "(Sub-)Filter last N measurements" is set, the specified last n measurements are queried first and then all other non-time-based filters are applied to these n measurements. The option "Combine all filters" ensures that the filters are combined, e.g. the last n measurements of test bench 1 and type B. The filter can be combined with the "Time" filter. In this case, the last n measurements before the end date of the "Time" selection are queried.

- "Time": A selection field offers a variety of predefined time periods (e.g. last week, last quarter, etc.). The selection changes the start and end date accordingly. Manual adjustment of the date or time is possible regardless of the selected time period. The filter can be combined with the "Last N measurements" filter.

- "Test repetitions": Since DUTs (unique serial number) are sometimes measured several times, these test repetitions can be filtered. The options are "first test", "last test", "all tests", "current rejects", "direct test".

- "Reference units": User-defined lists of reference units can be created in the results database (by type and by serial number). The filter defines whether these reference units should be included or excluded in the query.

- "Serial number": filter by one or more serial numbers. A list of serial numbers can be imported from a CSV file or from the cache (clipboard). Using the % character, the occurrence of a specific character sequence can be filtered (e.g. a %123 filters all serial numbers ending with 123). If the option 'parse serial for number' is checked, the serial numbers specified will be parsed according to the start and length parameters. With this option, a value range (e.g. 10-20) can be added (using the separator '-').

- "Base type/type": after selecting the base, the combined filter will return the respective list of types/base types in the selection field.

- "Test bench": Filter by test bench.

VI. Report query

- "Test kind": The kind of test can be defined in the TasAlyser (or set by the test bench). This info is stored in the archives or the results database and can be filtered accordingly.

- "Additional info": In the TasAlyser, any additional info can be defined (or set by the test bench). These are "key-value" pairs that are associated with a measurement and stored in the archives or the results database. In the filter, first select the keys and then specify a list of values to filter by. The list can be imported from a CSV file or from the cache (clipboard). In addition, it is possible to define whether the list should be excluded or included in the query.

- "Shift selection": Line-specific shift times can be defined in the results database. The filter allows filtering according to these shift times. In addition, the option "Shift times offset" can be used (if a shift runs over the day change, e.g. from 22:00 of the previous day to 06:00 of today, the offset corresponds to the number of hours from the previous day to midnight). This offset is then applied to the current time selection (i.e. start and end dates are shifted accordingly by this offset). Only meaningful for the "Today", "Yesterday", "Day" time options.

VI. Report visualization

- The report display in WebPal Viewer is analogous to the old WebPal based on Microsoft's ReportViewer.

- The functionality (export and printing of the report, zoom, etc.) and layout have therefore remained the same.

- The main difference is that the reports are now generated client-side by the WebPal Viewer. This relieves the web server and has the advantage that the reports can be updated - without a new data request to the server (e.g. changed axis scaling).

- The "Update" button is located for selected reports in the "Report parameters" area (see page).
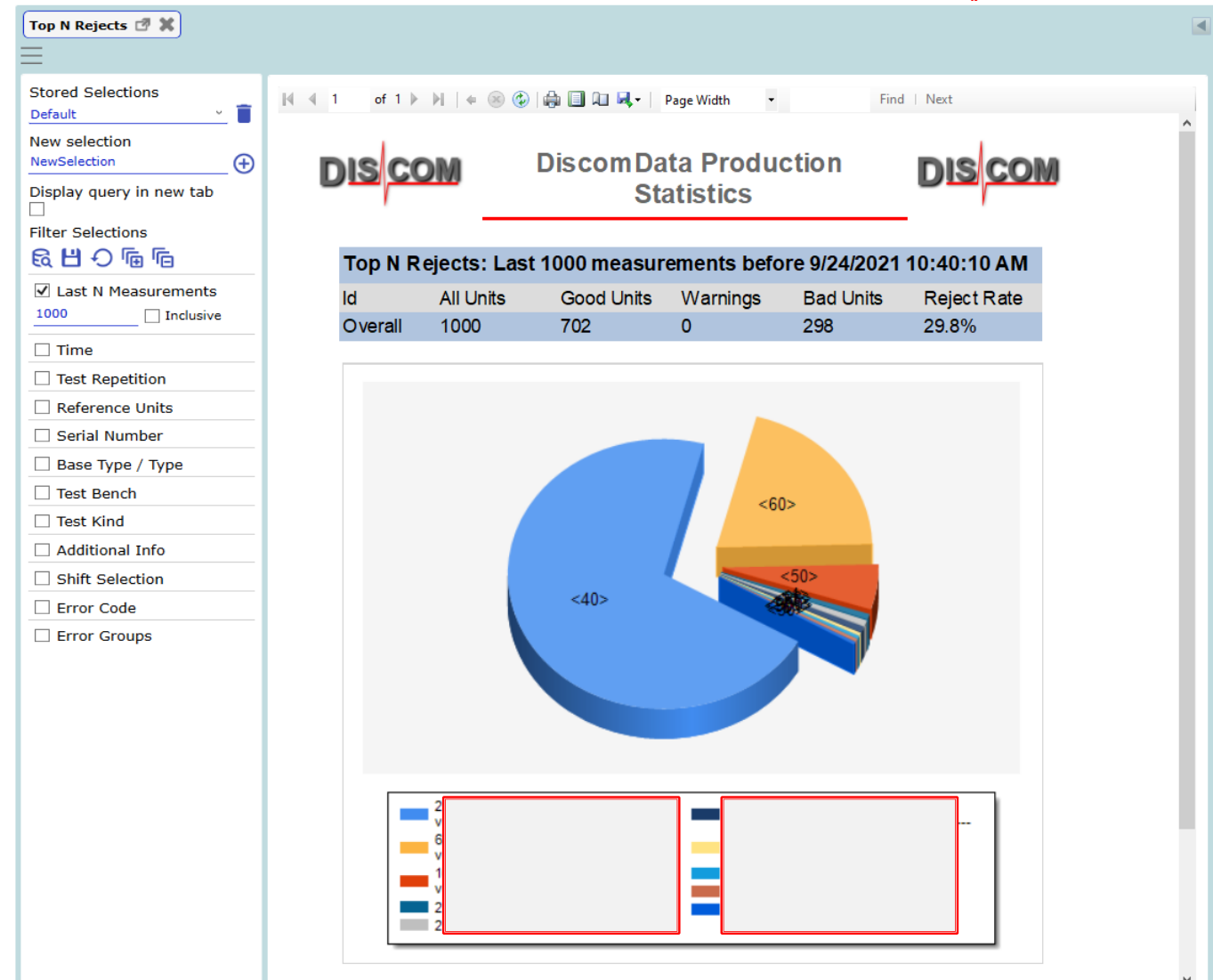
- The report contains an overview of the OK/NOK numbers or the NOK rate. The text of the NOK rate (see yellow frame) links the "Top N Rejects" report, i.e. a click on the NOK rate evokes the "Top N Rejects" report, - parameterized with the base type/test bench combination of the clicked NOK rate.

VII. Report overview: Rejects by Shift

- The report contains an overview of the NOK numbers or the NOK rate, - broken down by shift time, base type/type and error text. In addition to the general filters, the report allows filtering by error code and error group.

- In addition, the report contains an overview of the overall statistics for the selected time period.
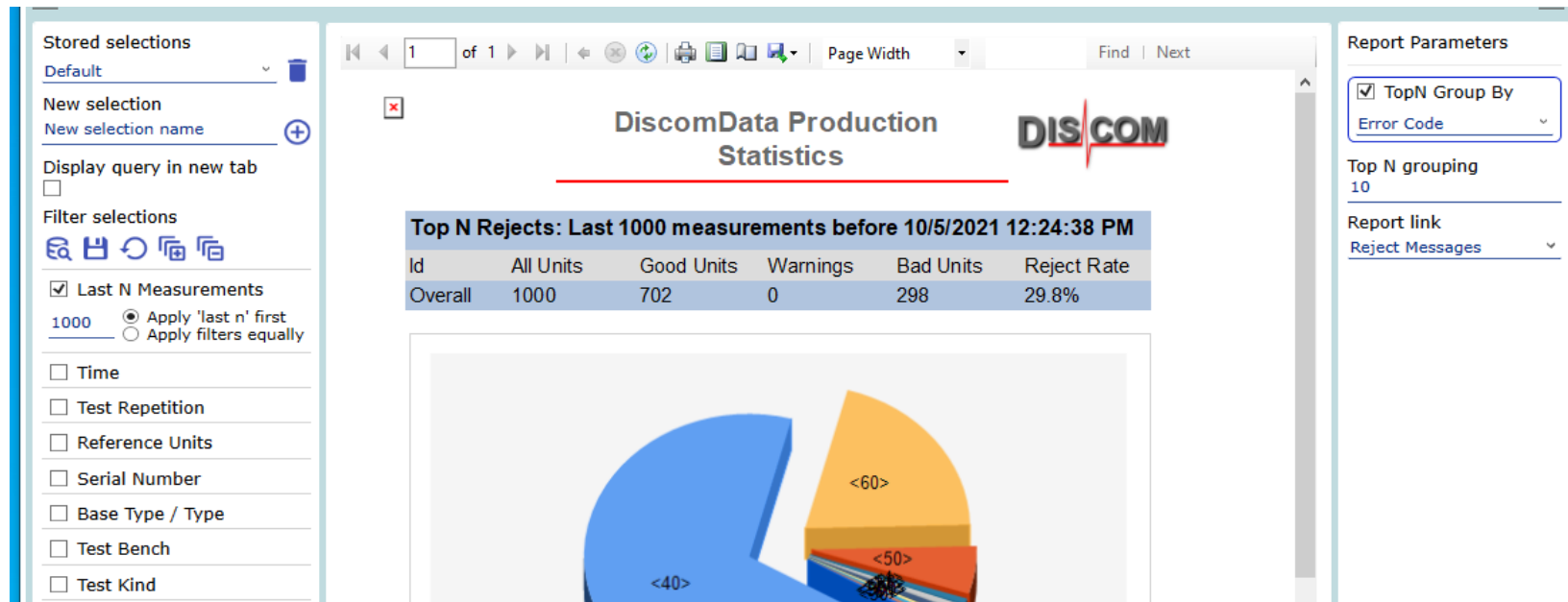
VII. Report overview: Top N Rejects

- The report contains an overview of the distribution of errors, - grouped by error code, base type/type, test bench, etc. By default, the distribution by error code is set. In addition, the "Top N" can be set. In addition to the general filters, the report allows filtering by error code and error group.

- A click on a pie slice links the "Reject Messages" report (error code grouping) or the top N Rejects (grouping by base type/type, test bench, etc.), - parameterized with the error code or the group element of the clicked pie slice (e.g. test stand A).

VII. Report overview: Reject Messages

- The report lists the measurements with errors or warnings including the detailed information of the errors/warnings. In addition to the general filters, the report allows filtering by error code, error sequence and error group.

- The report allows dynamic sorting and exporting as a CSV file or as a config file for the Presentation ("Report parameters" section).

In addition, the report contains a number of links:

- Click on the test bench name: Download of the corresponding archive file.
- Click on the error code: Calling up the single value statistics report (time series) - parameterized with the measured variable of the error.
- Click on the serial number: Calling up the "All tests" report - parameterized with the serial number.
- Click on the "Download Wav file" label: Download of the corresponding Wav file.
- Click on the "Value" field: Calling up the "All measured values" report for all measurements of the serial number.
- Click on the colored field of the measurement repetitions (e.g. 1/1 NOK): Calling up the "All measurement types" report for this measurement.

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VII. Report overview: All Tests

- The report lists all measurements including the detailed information of potential errors/warnings. In addition to the general filters, the report allows filtering by error code, error sequence and error group.

- The report allows dynamic sorting and exporting as a CSV file or as a config file for the Presentation ("Report parameters" section).

- The report lists all measurement results (result, value, limit) for the selected measurement variables. In addition to the general filters, the report allows filtering by instrument, instrument parameter, mode, location, instance (channel and signal).

- The report allows dynamic sorting and exporting as a CSV file (Report parameters section).

VII. Report overview: Single Value Statistics (Boxplot)

- The report presents the distribution of measurement results in the form of a boxplot, - grouped by a specific filter (e.g. test benches).

- The report allows dynamic restriction of the displayed boxes, Y-axis scaling, as well as export as a CSV file ("Report parameters" area).

VII. Report overview: Single Value Statistics (Time series)

- The report presents the time series(es) of the measurement results. Multiple selection is possible (max. 10 curves).

- The report allows dynamic modification of a large number of parameters (see figure), as well as exporting the time series as a CSV file ("Report parameters" area).

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- The report presents the time series(es) of the measurement results. Multiple selection is possible (max. 10 curves).
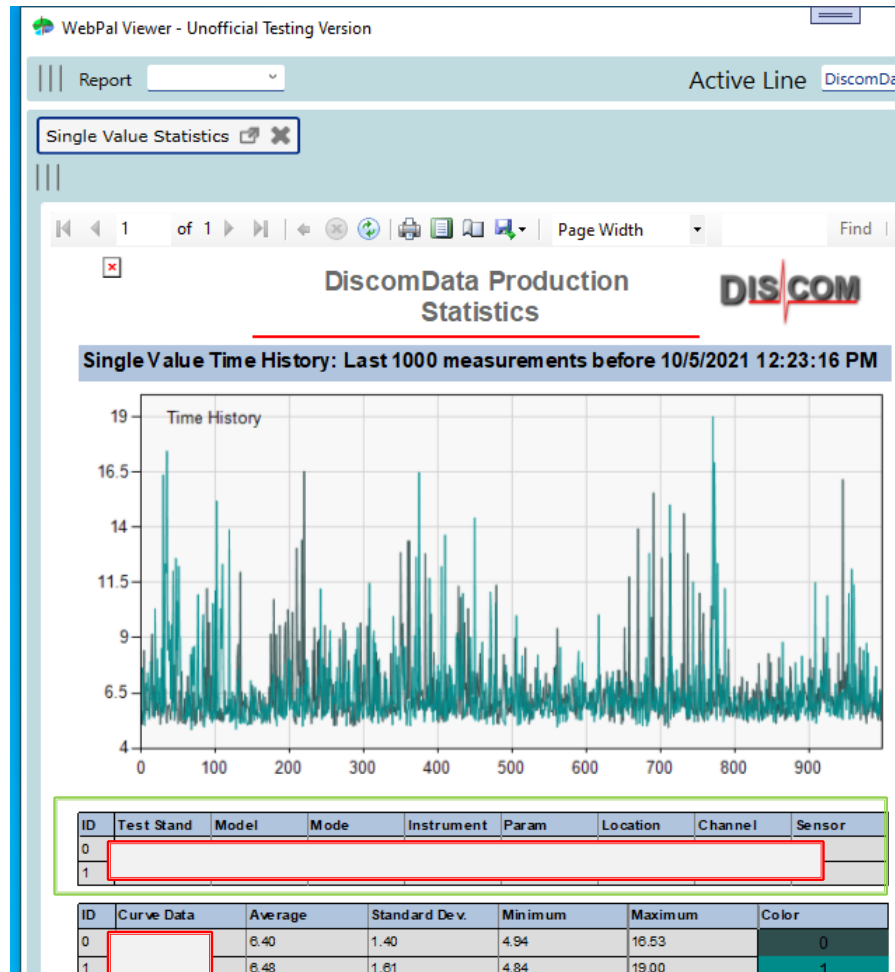
- The display range of the curves differs according to the number of curves.

- The representation of a single curve additionally contains the limit in the diagram, as well as a histogram of the measured values incl. the distribution function.

- The representation of multiple curves contains - for reasons of clarity - no limits, no histogram representation and no further curves (e.g. average values).

- Multiple selections are identified by a unique ID, whose unique selections are displayed in an overview list (see green frame).

- Multiple display is only possible for the x-axis options "Index" and "Time".

- The report presents the time series(es) of the measurement results. Multiple selection is possible (max. 10 curves).

- The "Report parameters" section contains a large number of parameters.

- Most of the parameters are mainly related to the scaling of the axes, the color selection of the curves, as well as the additional display of curves.

- Additional curves are mean value curves and distribution curves for histogram display (distribution function, cumulative distribution function, distribution model).

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VII. Report overview: Test History (Weekly rejects)

- The report contains an overview of the OK/NOK figures or the NOK rate grouped by calendar week. The presentation of the figures can additionally be displayed in table form. The query accesses a database table in which the statistics are grouped by weeks, type, test stand and test repetition type. This table is updated by the SQL Server Agent job "FillWeeklyResultsDetails" at a regular interval. For past periods, the update can be triggered manually (check the "Update weekly statistics" box).
Important: For large time periods this is a time-consuming operation.
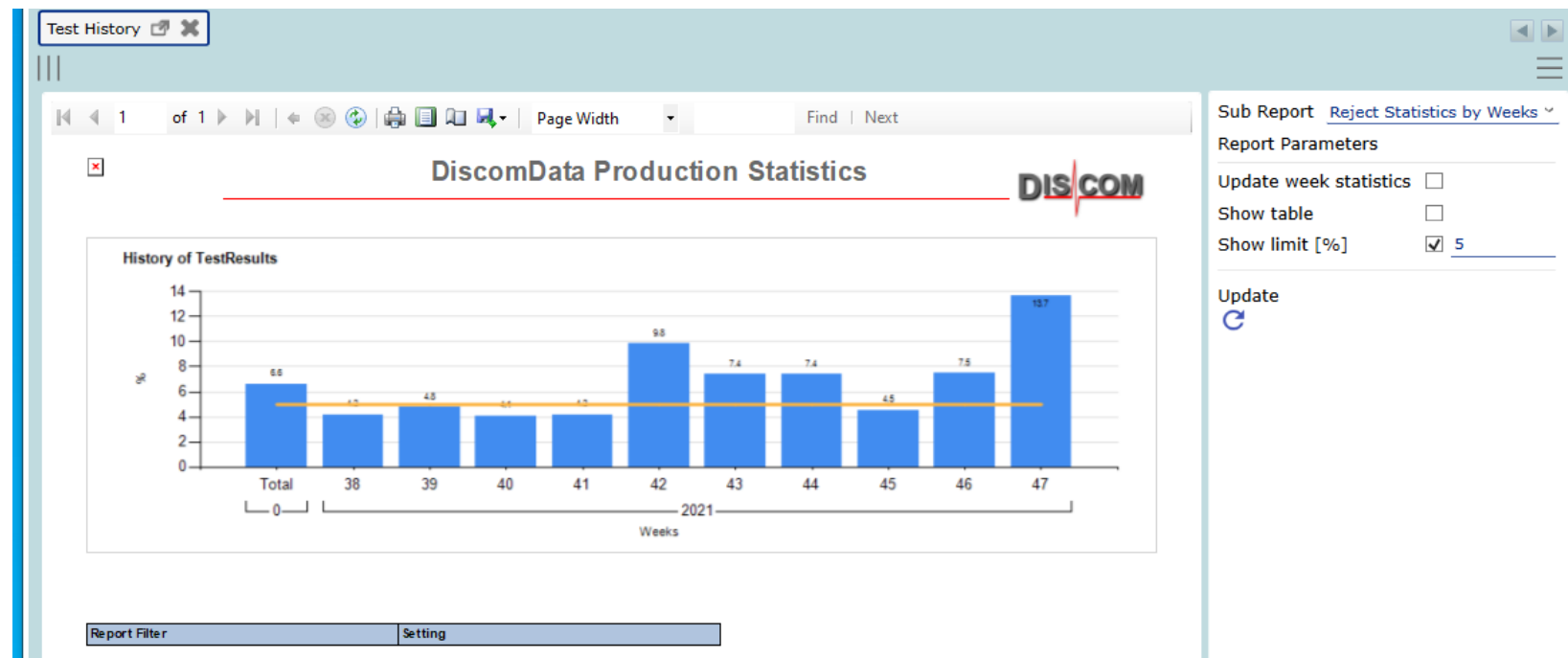
VII. Report overview: Test History (Rejects by classes)

- The report contains an overview of the OK/NOK numbers or the NOK rate grouped by error classes (either based on the top N classes or the user-defined error groups). The presentation of the numbers are additionally presentable in tabular form.

- Grouping is possible on the basis of calendar weeks or of days.
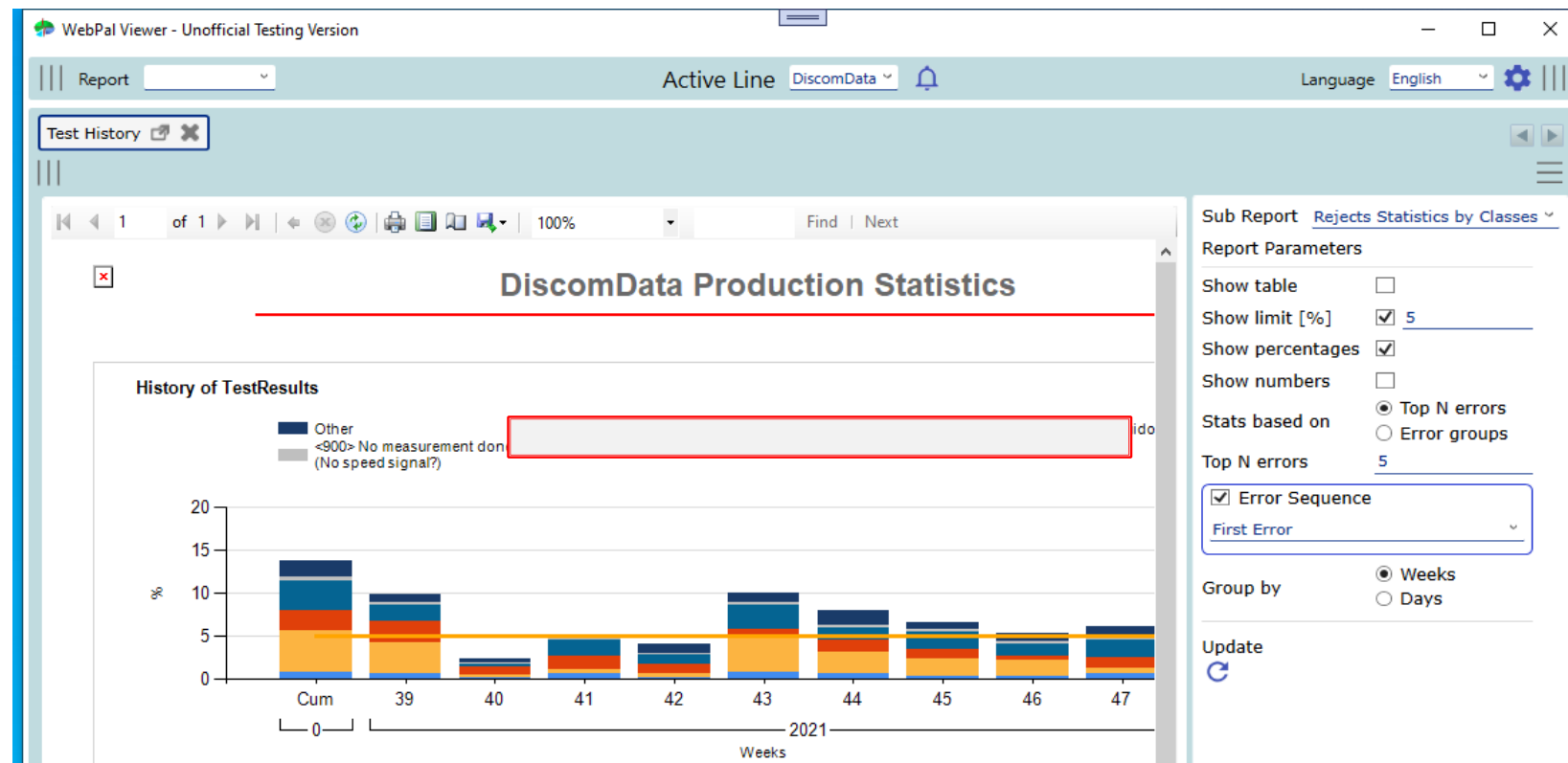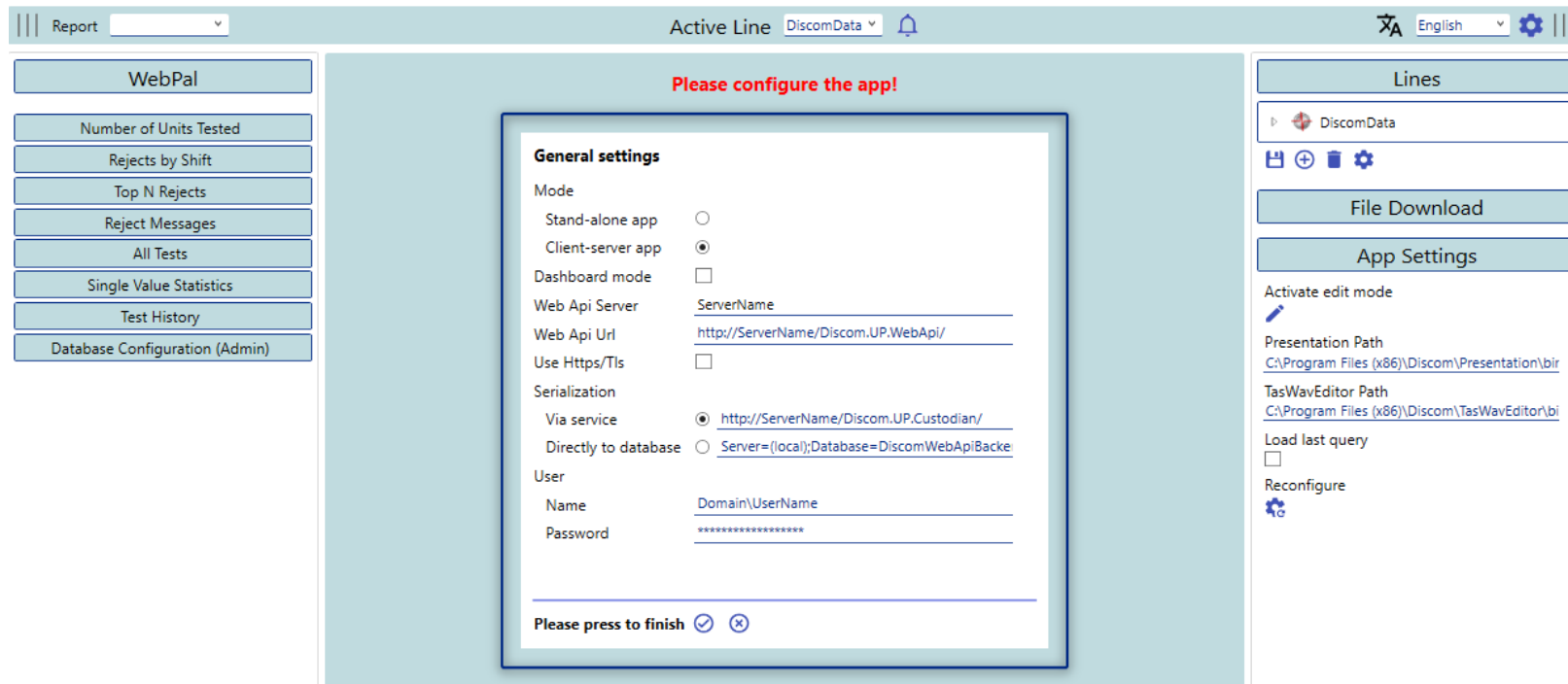
VII. Report overview: Result database admin

- Formerly "WebPalAdmin": Via this "Report" shift times, reference units, error groups can be edited for the selected database.

- Requires the activation of the editing mode in the area of the lines.
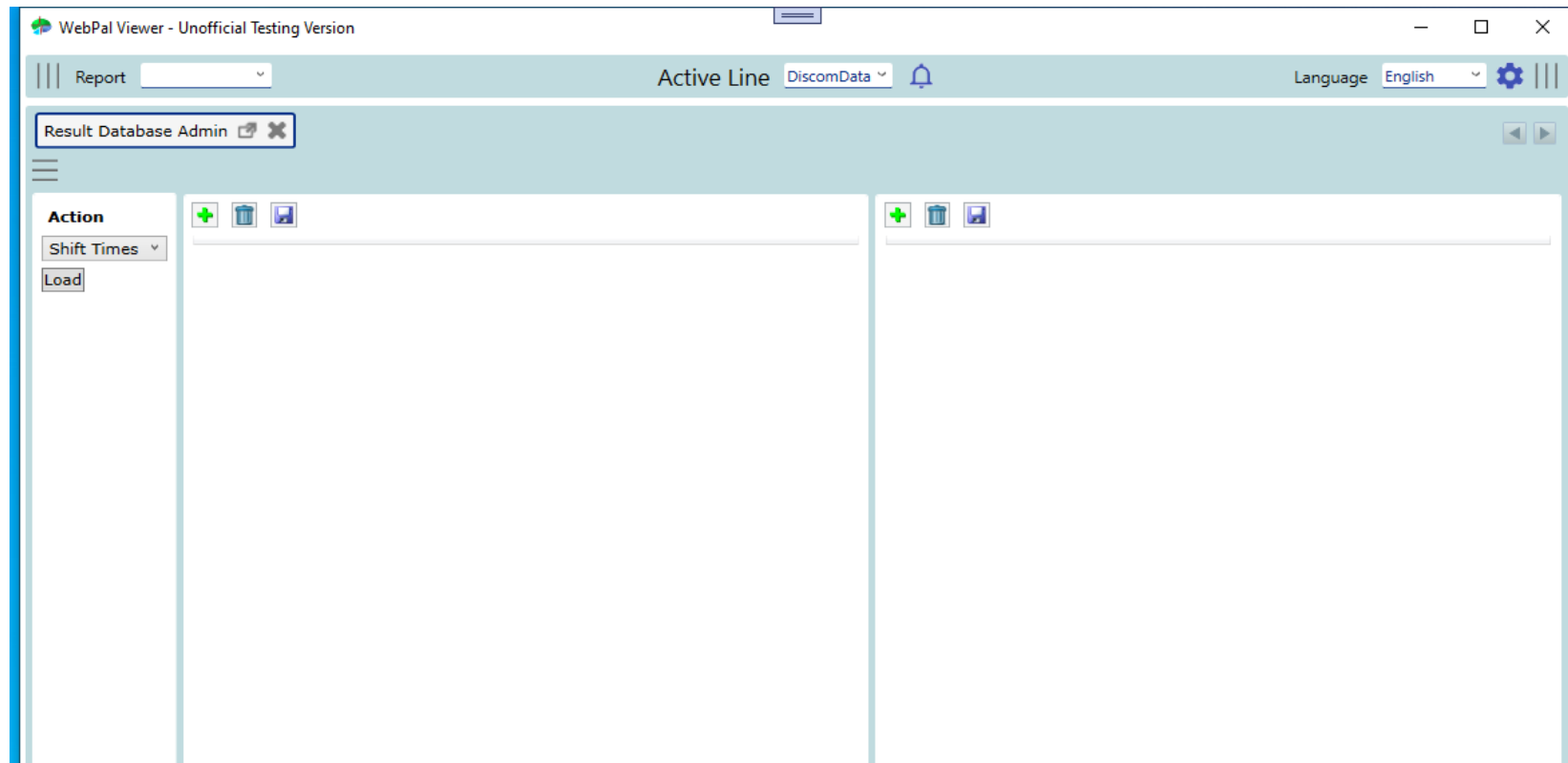
- User credentials can be entered when configuring the viewer. When sending requests to the web services, these will be passed instead of the credentials of the user currently running the viewer.

- Use case: The viewer is installed on a PC which has no access to the domain controller (and therefore cannot be run using a domain user). Background: In case Windows authentication is active, only requests from domain users will be accepted.

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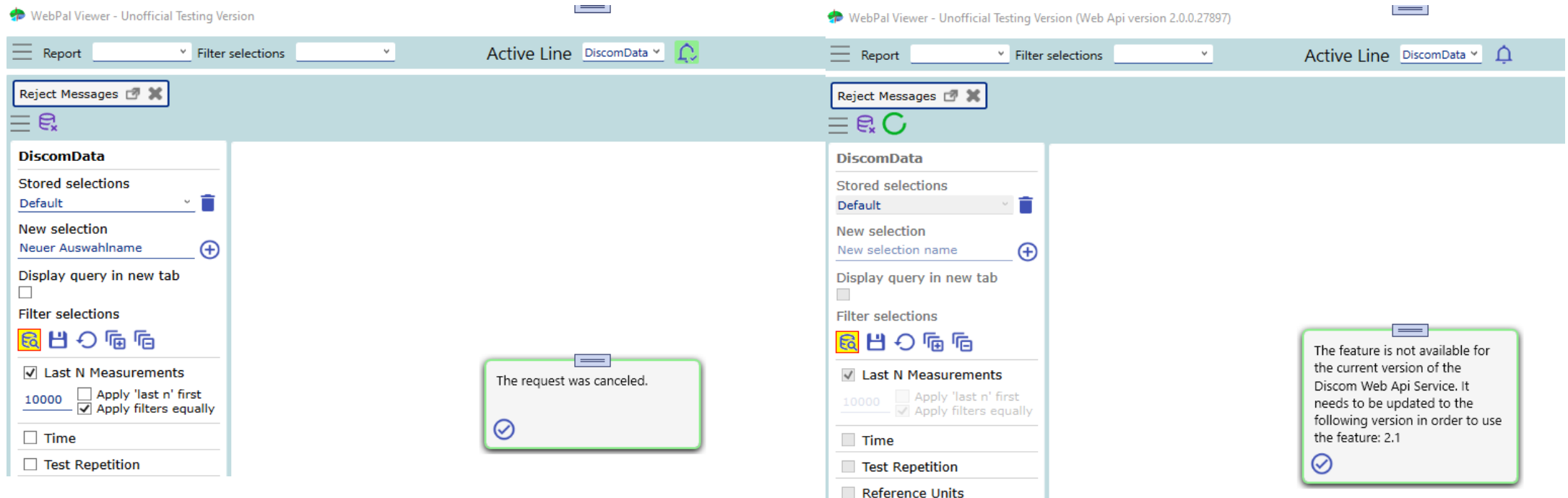
IX. New functions (version 2.1.0)

- The cancellation of data requests (data from the result database as well as the archive and wav file download) is available from version 2.1.0 or higher. This requires an update of the Discom Web Api service to the corresponding version (or higher). In case the Web Api is outdated, an info message will be displayed.

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IX. New functions (version 2.2.0)

- From version 2.2.0 or higher the option to display sensitivity classification labels is available. These labels show in the title bar as well as on every report. The default classification is *internal*.

- These labels can be hidden and or the classification level changed, by adjusting the values for the entries *ShowClassification* and *Classification* in the AppConfig.xml. Starting with version 2.2.9 the visibility can be set in the program.

- Available classification levels are: *Internal, External, Unrestricted.* At program runtime these will be translated depending on the chosen language. In addition, starting with version 2.2.9 free text can by dynamically added (entry *ClassificationAddText*).

IX. New functions (version 2.2.9)

- From version 2.2.9 the option to export/import stored settings (favorites) is available. The favorites selected from the new menu are exported in the json format by clicking on the export button.

- These files can be imported either by clicking the import button and selecting the respective file or by drag & dropping the file onto the area outlined by the red dashes.
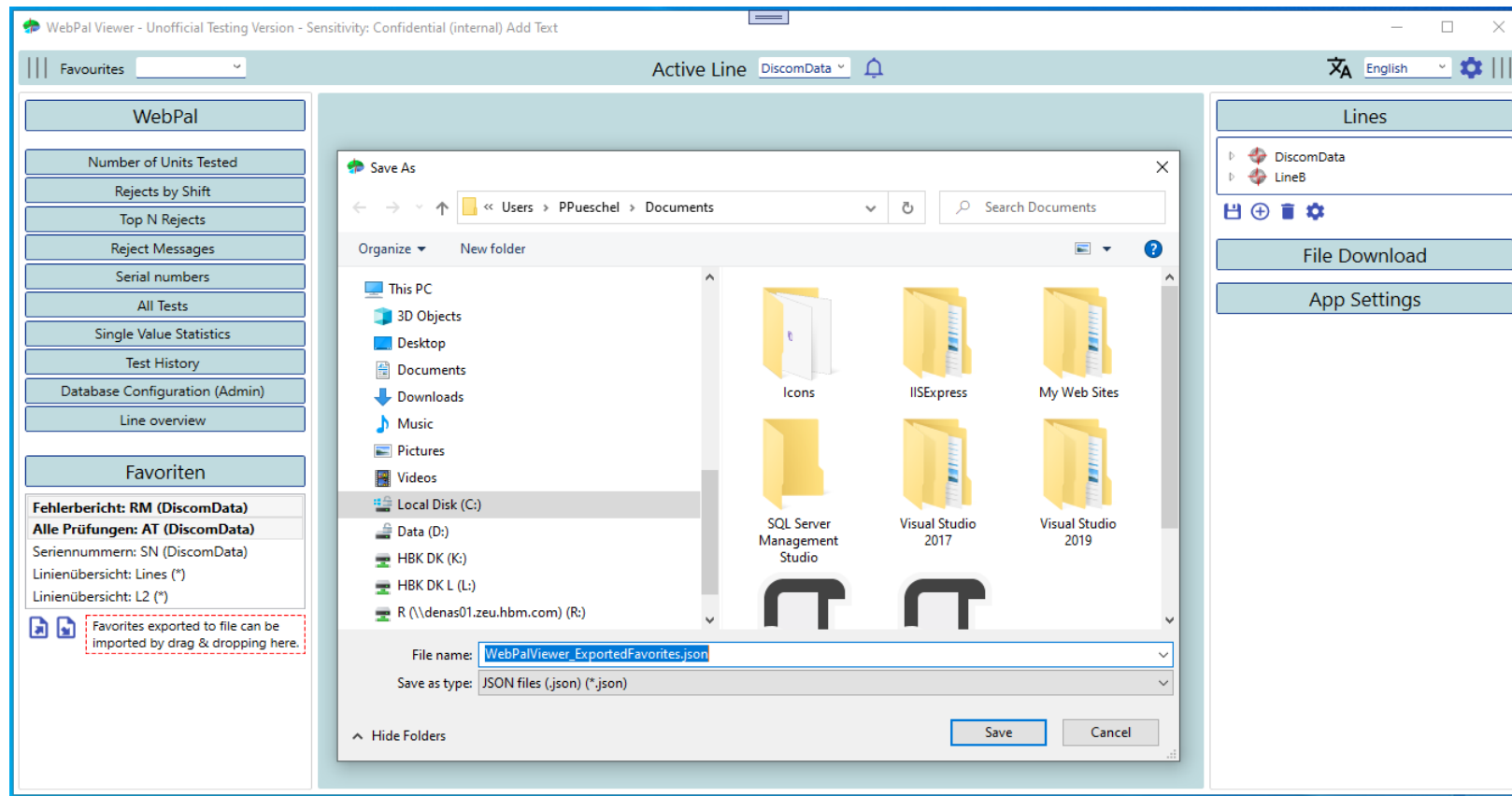
IX. New functions (version 2.2.9)

- When a list of stored selections has been successfully imported, the following pop-up shows where the stored selections can be selected for final import into the program.

- Once an import has been finalized, the imported favorites show in the list of favorites.

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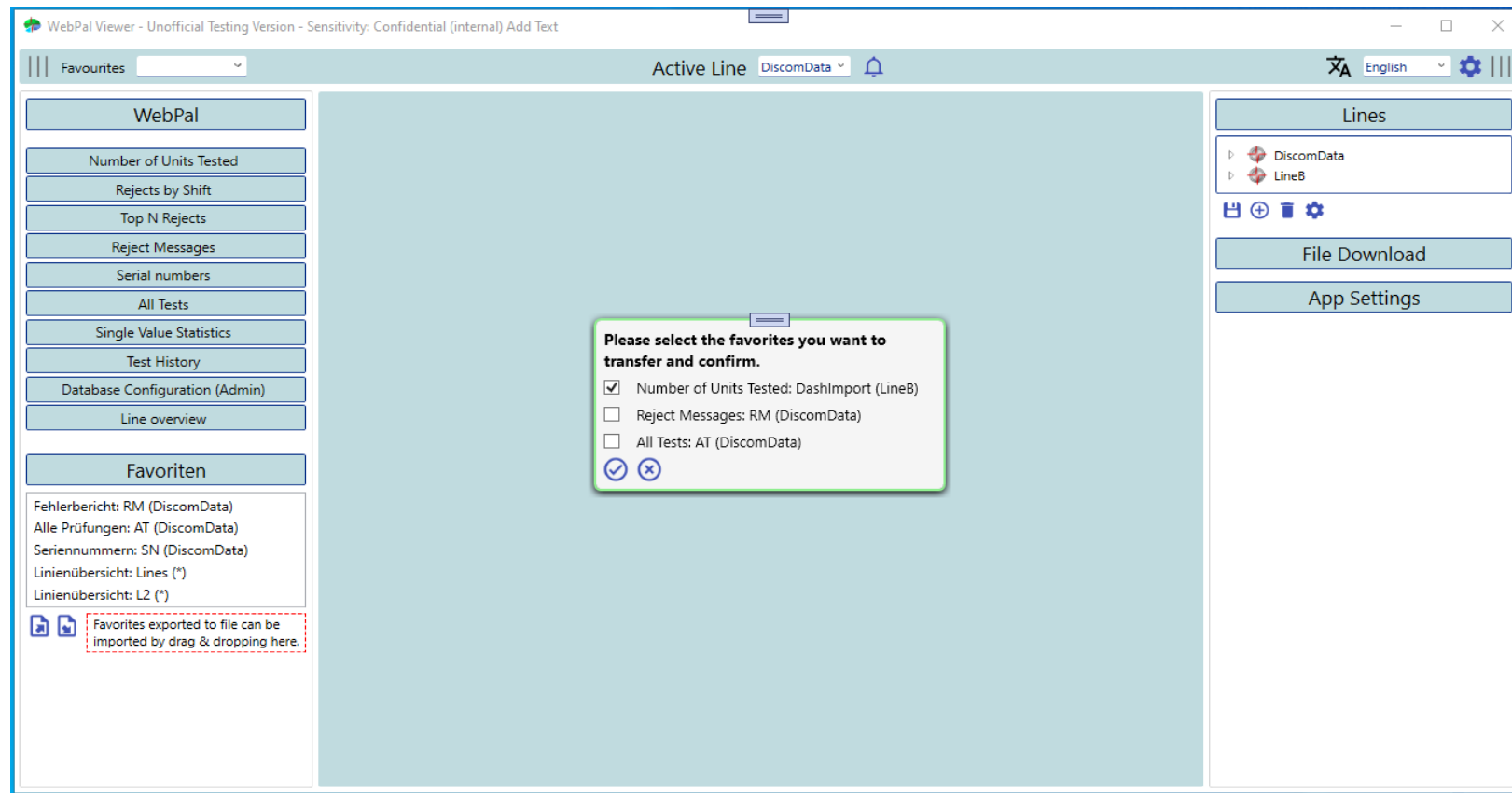
IX. New functions (version 2.2.9)

- From version 2.2.9 the pop-up windows' commands can be triggered by keyboard. The confirm command which triggers the underlying action or confirms the notification can be triggered by hitting the *enter* key. The cancel command can be triggered by hitting the *esc* key.
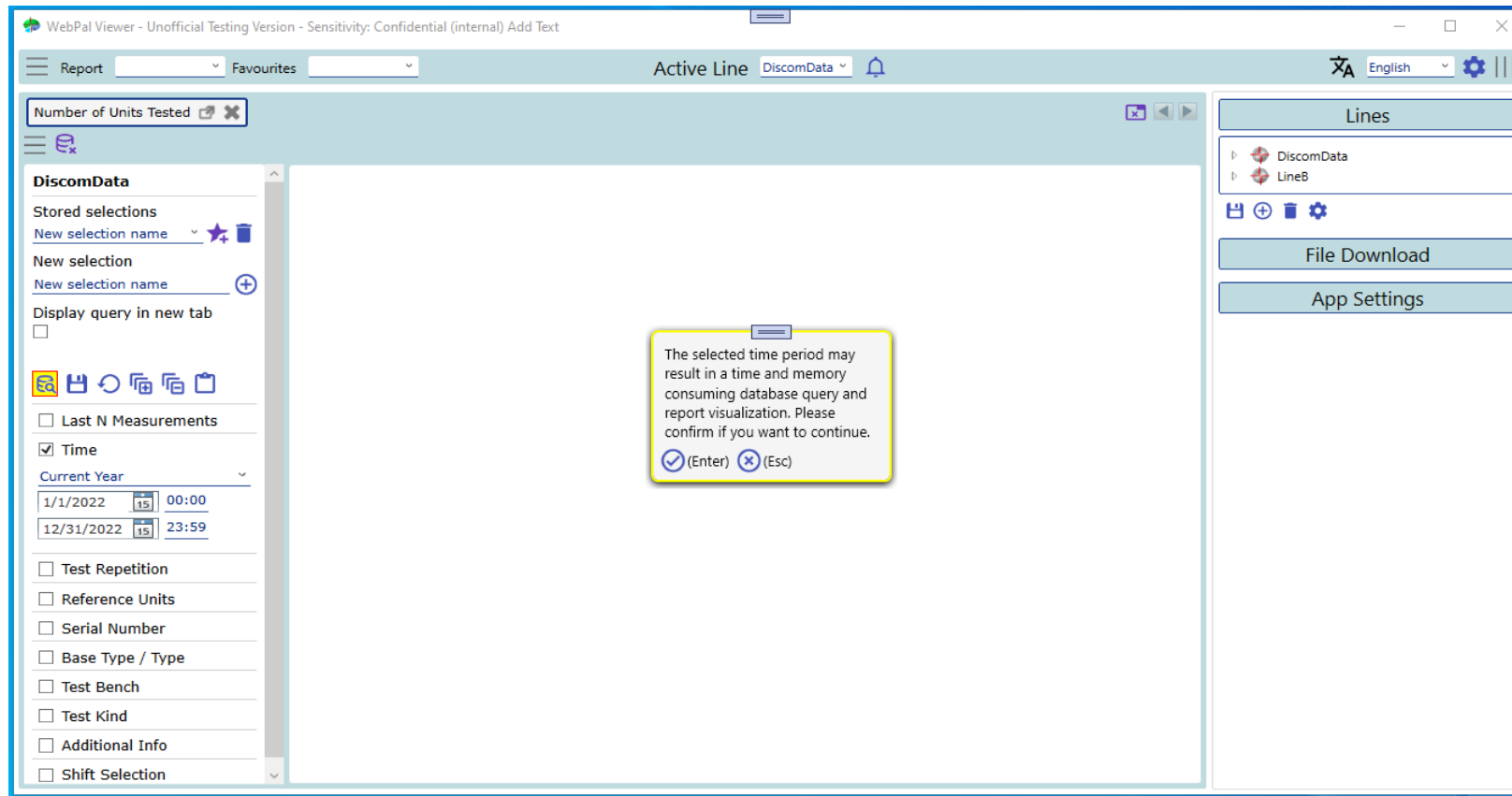
IX.   New functions (version 2.2.9)

- From version 2.2.9 the export of report data to the clipboard is available. The export is formatted as semi-colon separated strings.

- From version 2.2.9 the mechanism to save changes to the current selection (filter + report) has been changed. By default, changes are no longer automatically stored. If changes are to be stored, the save button needs to be clicked.

- If the check box for saving changes automatically is set, any changes to the current selection is stored instantly and explicitly saving is not needed.

IX. New functions (version 2.2.9)

- From version 2.2.9 the mechanism to save the *default* selection (filter + report) has been changed. By default, changes to the default selection will be stored.

- The stored default report selections will be transferred to any callback report (report created by a report link).
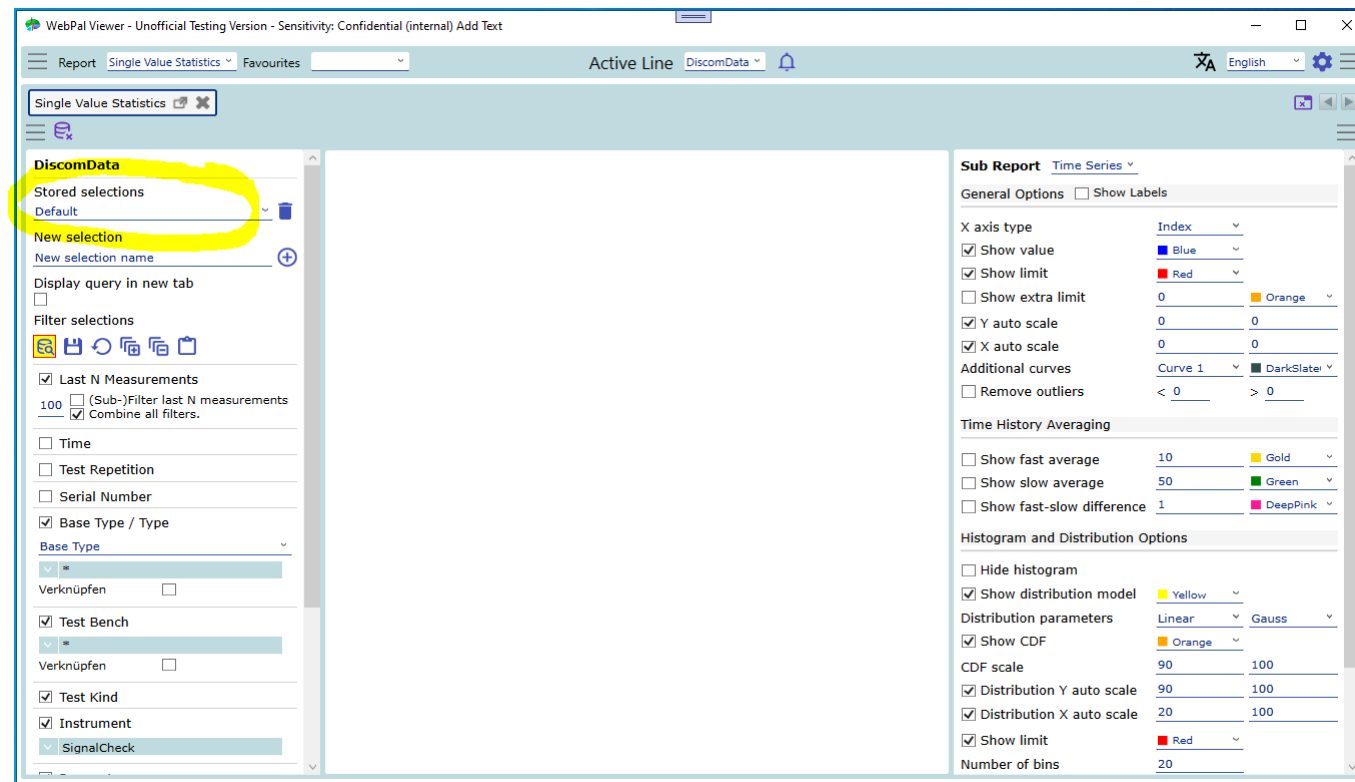
IX. New functions (version 2.2.9)

- From version 2.2.9 the display for the lines overview can be inverted by selecting the option "Lines as columns (test stands as rows)".

IX. New functions (version 2.3.0)

- From version 2.3.0 the lines overview provides the function to display reject statistics for multiple lines (and test benches).

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IX. New functions (version 2.3.0)

- From version 2.3.0 the lines overview provides the function to display result database sizes for multiple lines.

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