Welcome to System 1

Version 22.2 [Nov. 2022]

Welcome

Bently Nevada is pleased to present System 1 version 22.2, with new capabilities (Figure 1-1)

Users upgrading to version 22.2 will benefit from the many capability enhancements to effective outcomes, which are summarized below.

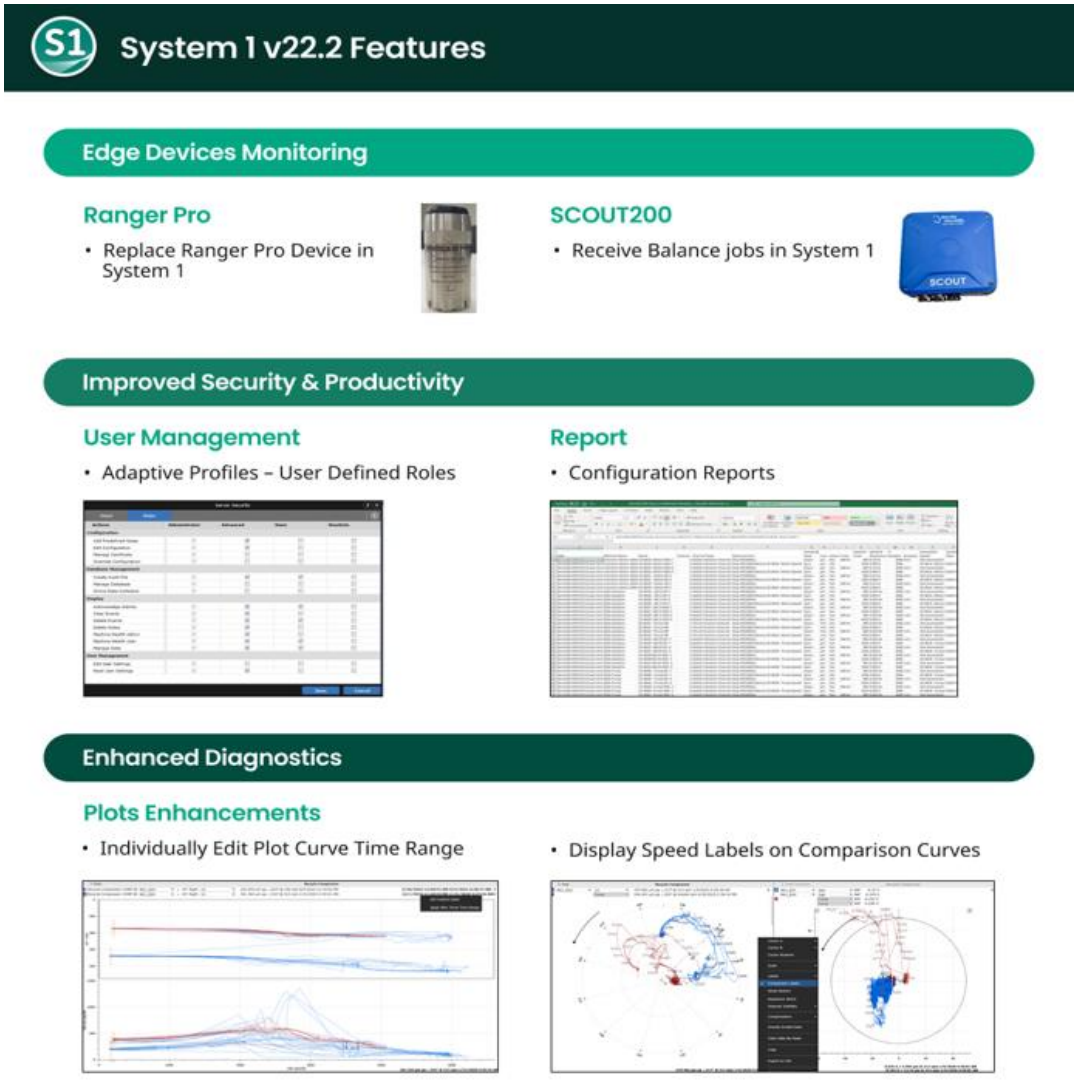


Figure 1-1 System 1 22.2 Features

Bently Nevada remains focused on delivering the world's premier plant-wide machinery management software through bi-annual product releases. For a detailed overview of System 1, please visit the website.

Thank you,

Tarannum Sarang, Product Manager

On behalf of your System 1 Leadership and Development Teams

CONTENTS

1. SYSTEM 1 V22.2 FEATURE OVERVIEW

ALL 22.2 FEATURES ARE ONLY SUPPORTED WITH POSTGRESQL AS THE DATA HISTORIAN.

Table 1: System 1 v22.2 – Edge Devices Monitoring

Edge Devices Monitoring		
Bently Devices		
Ranger Pro - Replace Ranger Pro Device in System 1	Authorized users can now replace existing sensors without interrupting the historical trend data.	3.1
SCOUT 200 – Receive Balance jobs in System 1	System 1 can receive balance jobs from SCOUT200 through the Instrument and Remote mode. The Balance jobs tab displays all the Balance jobs performed on the selected machine in the hierarchy.	3.2

Table 2: System 1 v22.2 – Improved Security and Productivity

Improved Security and Productivity		
User Management		
Adaptive Profiles – User Defined Roles	Add user-defined roles in System 1 using Server Security. User-defined roles are available in addition to the default user roles.	4.1
Report		
Configuration Reports	Generate configuration reports to export measurements and state configuration information for all machines.	4.2

Table 3: System 1 v22.2 - Enhanced Diagnostics

Enhanced Diagnostics		
Plots		
Display Speed Labels on Comparison Curves	System 1 displays the Speed and Date Time labels on Comparison curves for Polar and SCL Plot.	5.1

Individually Edit Plot Curve Time Range	Edit the Time Range of a specific curve from within the Bode, Polar, SCL, and XvsY Plots.	5.2

2. VERSION SUPPORT & OPERATING SYSTEM COMPATIBILITY

System 1 follows a semi-annual release cadence with targeted releases in May and November of each year. Versions are fully supported for a minimum of two years from the published date of availability (Refer System 1 Datasheet).

New Versions of System 1 benefit from:

- Compatibility with the latest Microsoft Client & Server Operating Systems
- Client backwards compatibility to previous versions under support (22.2 Client to 21.1 Server DB)
- Database upgrade from previous versions released within last 3 years (20.1→22.2)
- Security patch and update testing for the latest available version
- Bug fixes included in the latest available version
- Standard technical support with escalation to engineering as required

Versions no longer supported:

- Standard support is provided for common FAQ type questions, but users are encouraged to update software to the latest version to benefit from new features, OS (Operating System) compatibility, and bug fixes.

3. EDGE DEVICES MONITORING

3.1 Ranger Pro Enhancements

3.1.1 Replace Ranger Pro Device in System 1

Ranger Pro Enhancements video located in Bently Nevada Tech Support Training Library
Valid M&S Agreement Required

System 1 22.2 allows users to select Ranger Pro sensors from the database and replace them with different or new Ranger Pro sensors. When the sensors are replaced, the existing configuration mappings and historical data trends are retained. This toolset allows users to decommission existing devices and replace them with new devices in case of any type of sensor failure.

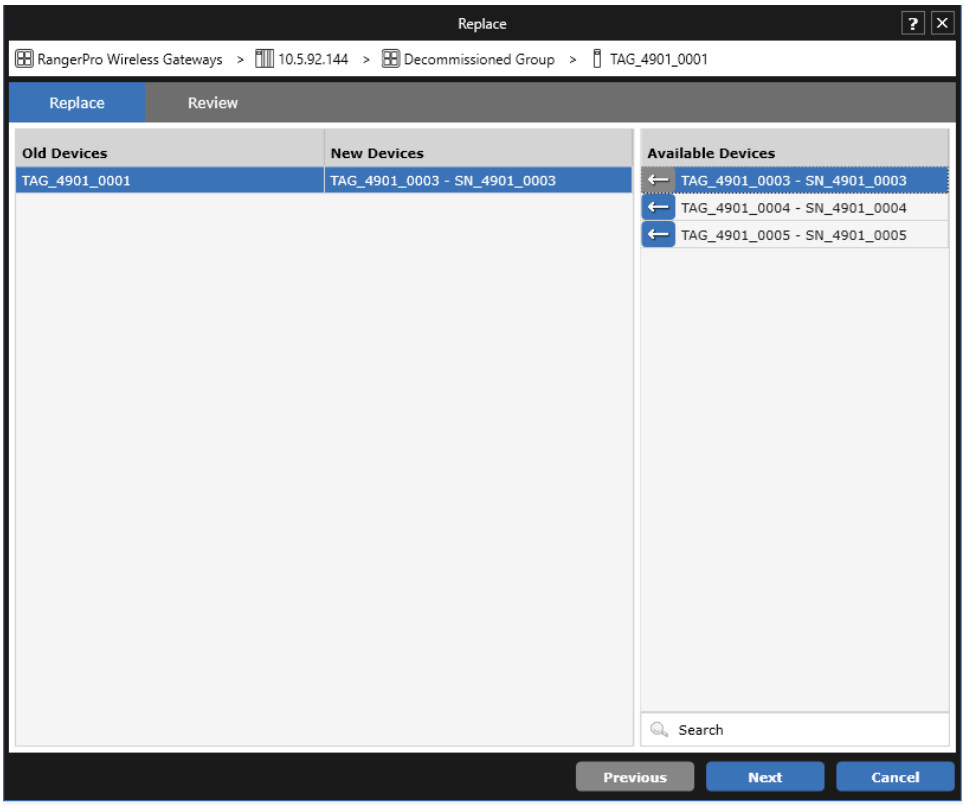


Figure 3-1 : Select a new ranger pro device to replace the existing one to be decommissioned

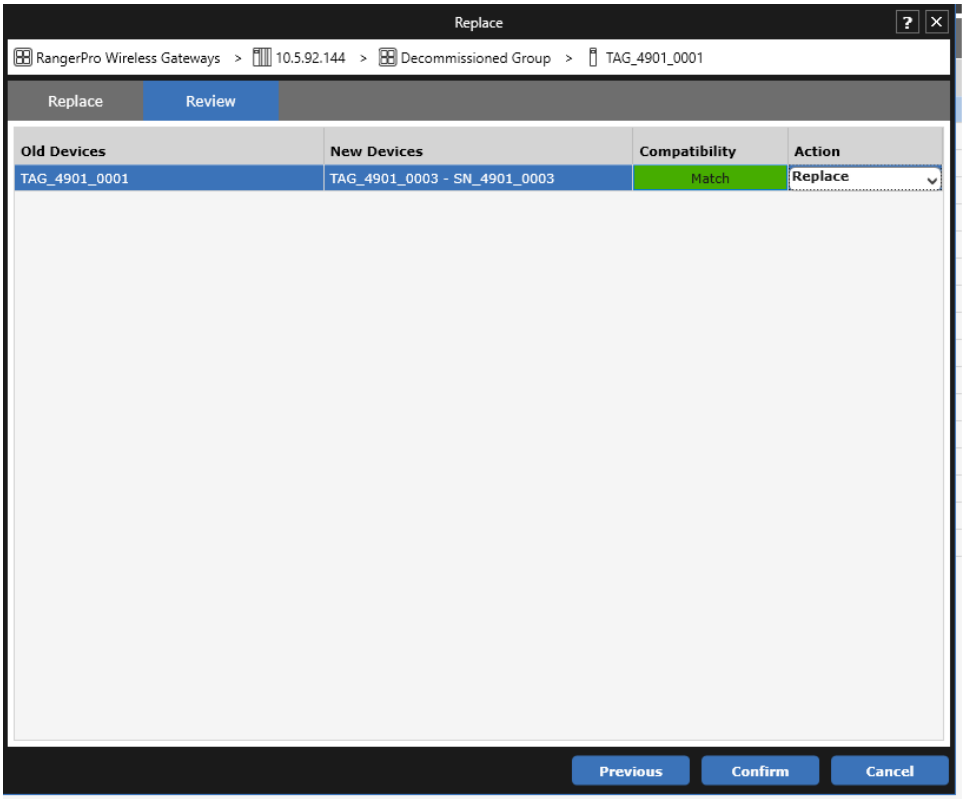


Figure 3-2 : Select the appropriate action to be performed for the ranger pro device and confirm changes

3.2 SCOUT 200

3.2.1 Receive Balance jobs in System 1

SCOUT200 Enhancement video located in Bently Nevada Tech Support Training Library
Valid M&S Agreement Required

System 1 v22.2 can now receive balance jobs from SCOUT200 via both Instrument Mode and Remote Comms (in addition to the existing File mode). The balance job data is received along with vibration data during the normal Receive process. System 1 displays balance jobs in the **Balance Job** tab under the **Case History** tab, for the selected machine.

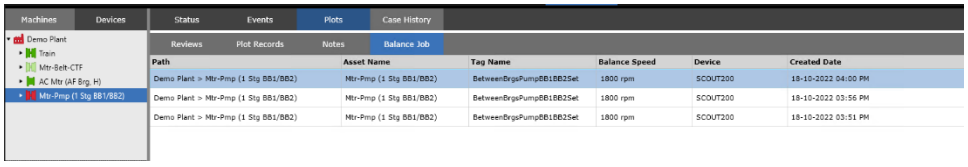


Figure 3-3 : Balance Job data received in System 1

4. IMPROVED SECURITY & PRODUCTIVITY

4.1 User Management

4.1.1 Adaptive Profiles – User Defined Roles

User Management video located in Bently Nevada Tech Support Training Library
Valid M&S Agreement Required

System 1 22.2 allows users to add user-defined roles, in addition to the default roles available. Users with the server administrator privilege can add these roles. To add or edit user roles, launch the Database Manager and select Tools > Server Security. Under the Roles tab, click + to add a user-defined role and assign the required permissions to the role.

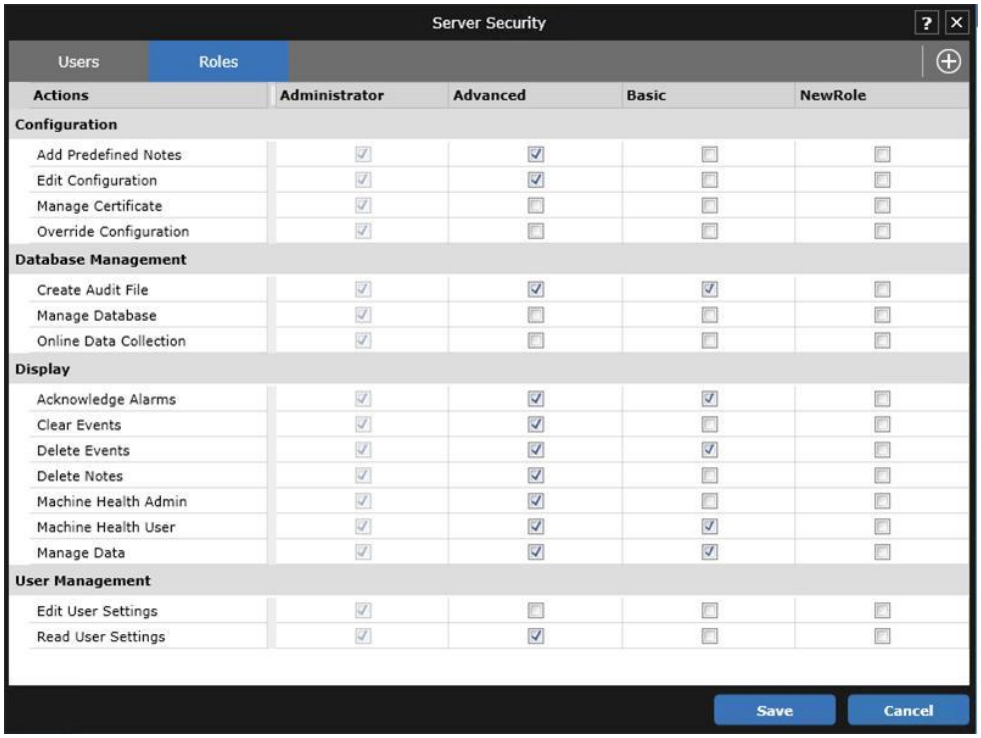


Figure 4-1 : Adding a new custom user role from Server Security

Note: A user cannot rename or delete default user roles (Administrator, Advanced, or Basic).

To add a new user to the role, in the opened databases, select Tools > User Management > Users tab, click + and assign the role while creating the new user. To assign existing users to this role, change the role assignment using the Roles dropdown list on the Users tab.

4.2 Report

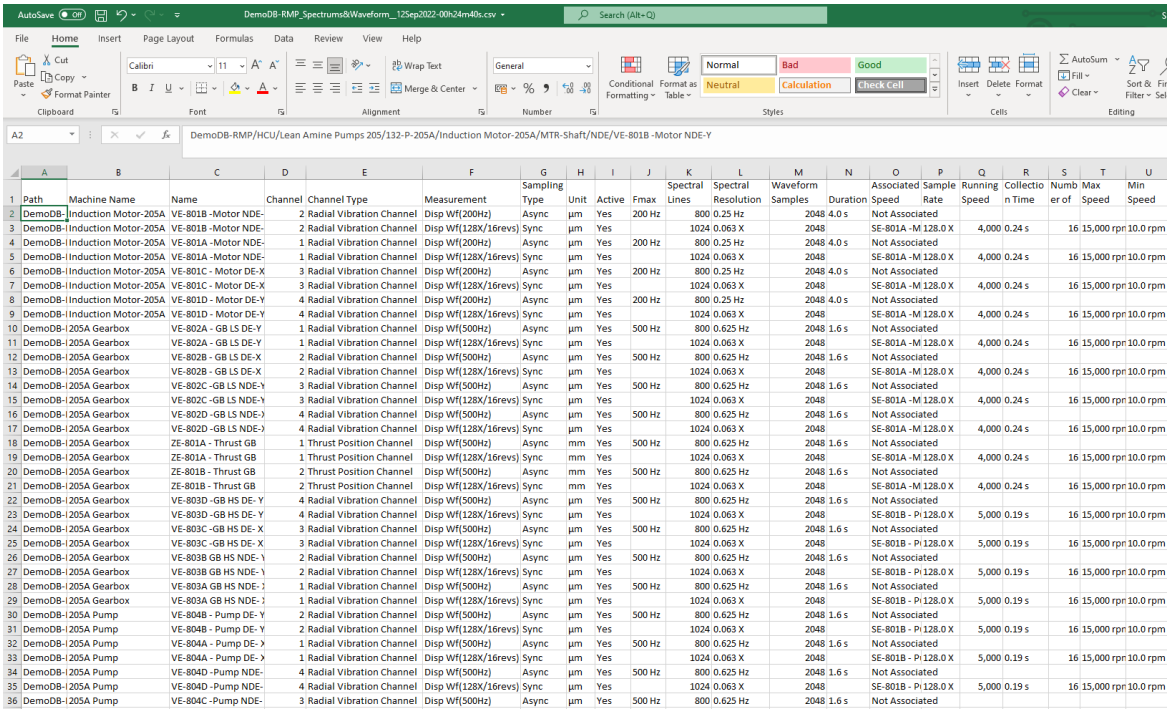
4.2.1 Configuration Reports

Reports video located in Bently Nevada Tech Support Training Library
Valid M&S Agreement Required

System 1 22.2 provides the ability to generate Configuration report, which contains System 1 Configuration information for all machines.

The configuration report button is available in the Configure workspace. When the user clicks the configuration report button, System 1 exports these configurations in CSV format:

- Trended Variables Configuration
- Spectrums & Waveforms Configuration
- Machine State Configuration



Path	Machine Name	Name	Channel	Channel Type	Measurement	Sampling Type	Unit	Active	Fmax	Spectral Lines	Spectral Resolution	Waveform Samples	Duration	Associated Speed	Sample Rate	Running Speed	Collection Time	Number of	Max Speed	Min Speed
DemoDB-	Induction Motor-205A	VE-801B -Motor NDE-	2	Radial Vibration Channel	Disp Wf(200Hz)	Async	µm	Yes	200 Hz	800	0.25 Hz	2048	4.0 s	Not Associated						
DemoDB-	Induction Motor-205A	VE-801B -Motor NDE-	2	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	Induction Motor-205A	VE-801A -Motor NDE-	1	Radial Vibration Channel	Disp Wf(200Hz)	Async	µm	Yes	200 Hz	800	0.25 Hz	2048	4.0 s	Not Associated						
DemoDB-	Induction Motor-205A	VE-801A -Motor NDE-	1	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	Induction Motor-205A	VE-801C - Motor DE-X	3	Radial Vibration Channel	Disp Wf(200Hz)	Async	µm	Yes	200 Hz	800	0.25 Hz	2048	4.0 s	Not Associated						
DemoDB-	Induction Motor-205A	VE-801C - Motor DE-X	3	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	Induction Motor-205A	VE-801D - Motor DE-Y	4	Radial Vibration Channel	Disp Wf(200Hz)	Async	µm	Yes	200 Hz	800	0.25 Hz	2048	4.0 s	Not Associated						
DemoDB-	Induction Motor-205A	VE-801D - Motor DE-Y	4	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	VE-802A - GB LS DE-Y	1	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	VE-802A - GB LS DE-Y	1	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	VE-802B - GB LS DE-X	2	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	VE-802B - GB LS DE-X	2	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	VE-802C -GB LS NDE-Y	3	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	VE-802C -GB LS NDE-Y	3	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	VE-802D -GB LS NDE-)	4	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	VE-802D -GB LS NDE-)	4	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	ZE-801A - Thrust GB	1	Thrust Position Channel	Disp Wf(500Hz)	Async	mm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	ZE-801A - Thrust GB	1	Thrust Position Channel	Disp Wf(128X/16revs)	Sync	mm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	ZE-801B - Thrust GB	2	Thrust Position Channel	Disp Wf(500Hz)	Async	mm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	ZE-801B - Thrust GB	2	Thrust Position Channel	Disp Wf(128X/16revs)	Sync	mm	Yes		1024	0.063 X	2048		SE-801A -M	128.0 X	4,000	0.24 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	VE-803D -GB HS DE- Y	4	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	VE-803D -GB HS DE- Y	4	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801B - P	128.0 X	5,000	0.19 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	VE-803C -GB HS DE- X	3	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	VE-803C -GB HS DE- X	3	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801B - P	128.0 X	5,000	0.19 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	VE-803B GB HS NDE- Y	2	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	VE-803B GB HS NDE- Y	2	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801B - P	128.0 X	5,000	0.19 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Gearbox	VE-803A GB HS NDE-)	1	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Gearbox	VE-803A GB HS NDE-)	1	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801B - P	128.0 X	5,000	0.19 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Pump	VE-804B - Pump DE- Y	2	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Pump	VE-804B - Pump DE- Y	2	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801B - P	128.0 X	5,000	0.19 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Pump	VE-804A - Pump DE-)	1	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Pump	VE-804A - Pump DE-)	1	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801B - P	128.0 X	5,000	0.19 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Pump	VE-804D -Pump NDE-	4	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						
DemoDB-	205A Pump	VE-804D -Pump NDE-	4	Radial Vibration Channel	Disp Wf(128X/16revs)	Sync	µm	Yes		1024	0.063 X	2048		SE-801B - P	128.0 X	5,000	0.19 s	16	15,000 rpm	10.0 rpm
DemoDB-	205A Pump	VE-804C -Pump NDE-	3	Radial Vibration Channel	Disp Wf(500Hz)	Async	µm	Yes	500 Hz	800	0.625 Hz	2048	1.6 s	Not Associated						

Figure 4-2 : Report generated for spectrums and waveforms configuration

5. ENHANCED DIAGNOSTICS

5.1 Plots Enhancements

5.1.1 Display Speed Labels on Comparison Curves

Plots Enhancements video located in Bently Nevada Tech Support Training Library
Valid M&S Agreement Required

System 1 22.2 now displays Speed and Date Time labels on the Polar and SCL plots for the comparison curve, in addition to the primary curve. Before System 1 22.2, Speed and Date Time labels on each sample within the Polar and SCL plots were only displayed for the primary curve.

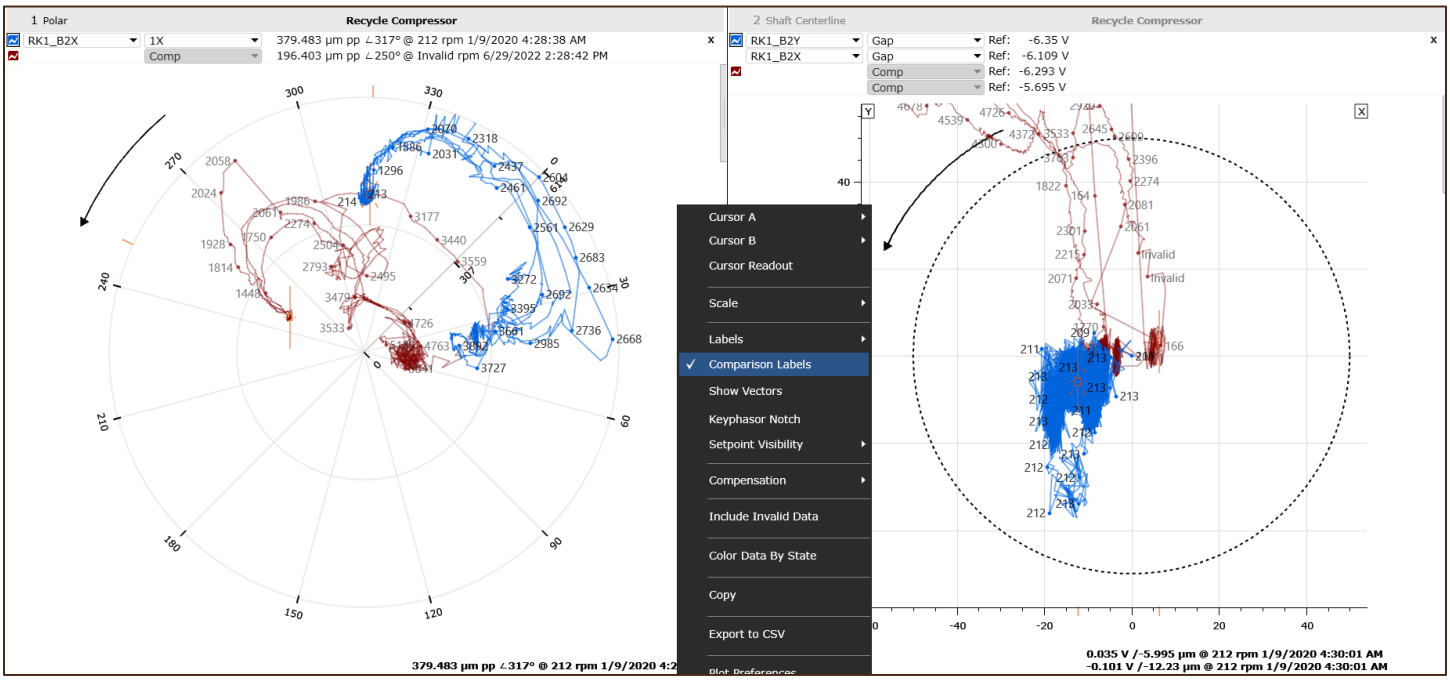


Figure 5-1 Speed Labels displayed on Comparison curve for Polar and SCL Plots

To enable the labels on the Comparison curve, right-click on the plotting area and choose "Comparison Labels". Labels on the Comparison curve are displayed only for the first selected Comparison curve.

5.1.2 Individually Edit Plot Curve Time Range

Plots Enhancements video located in Bently Nevada Tech Support Training Library
Valid M&S Agreement Required

In the previous release, System 1 supported comparison of data from different time ranges in the same plot through Comparison Data Set. In System 1 22.2, users can now compare data from different time ranges, even for curves for which Comparison Data set is not stored, by editing the time range of each individual curve within that Plot. This capability is supported in Bode, Polar, SCL, and XvsY Plots.

To edit the time range for each individual curve, from the Plot header, either click the Time Range field or right-click on the Plot header and choose "Set Custom Span".

To reset the configured Time range back to the mini-Trend Time range, right-click plot header and select "Apply Mini-Trend Time Range".

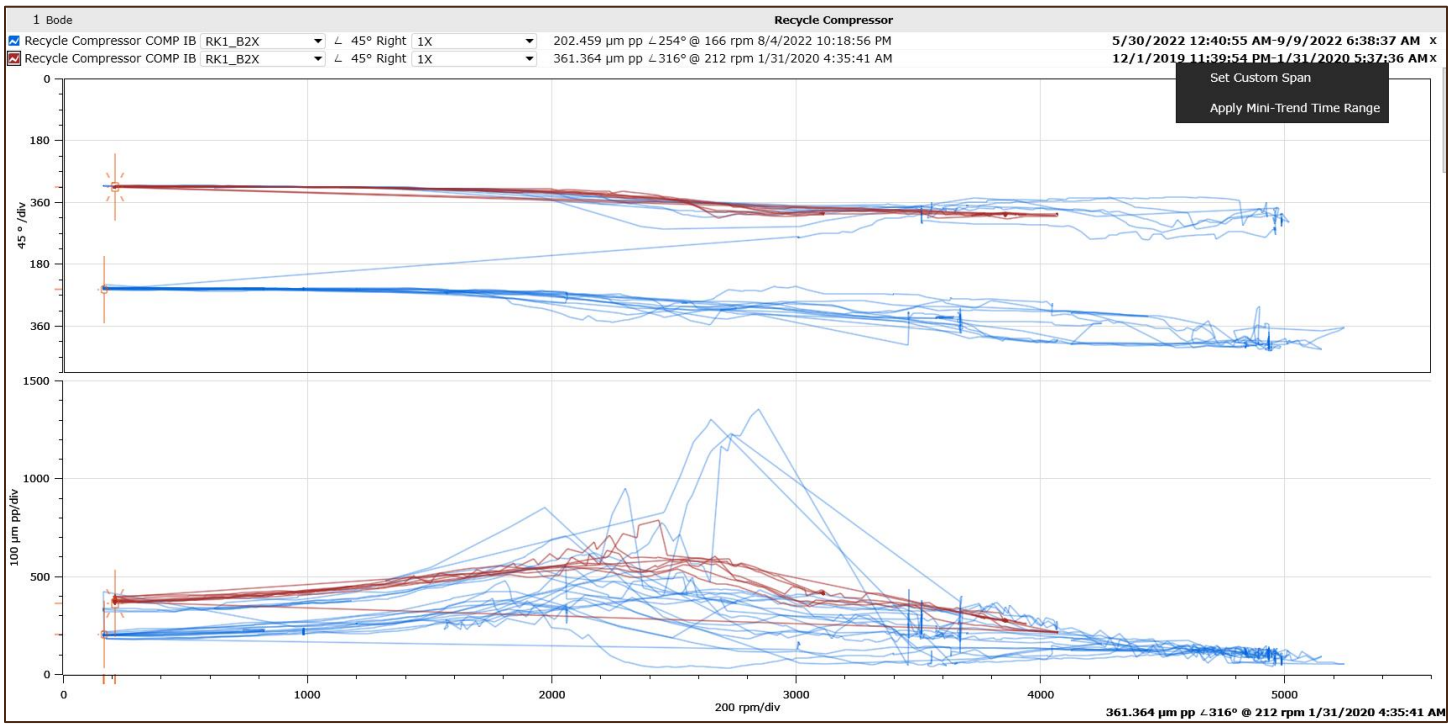


Figure 5-2 Edit Time range from Bode Plot

DECISION SUPPORT IS NOW AVAILABLE TO DOWNLOAD

Valid M&S Agreement Required

Beginning with the System 1 version 22.2, Decision Support Developer is now included with all new orders of System 1. Decision Support and System 1 both remain as separate products. However, they will be delivered through the same download folder in Flexera. Decision Support is now part of the System 1 package, and therefore does not require a separate license for installation. This excludes the Decision Support Analytics (formerly known as InsightPaks) and the DS Analytics library, which also remains as a separate commercial product. For more information on this change, contact your sales manager.

ONLY APPLICABLE WHEN UPGRADING FROM VERSIONS PRIOR TO 22.1

! License Changes !

If you upgrade from System 1 21.2 or prior, the existing licenses are not visible in the Licenses tab because of the Publisher Name change to "Baker Hughes". Therefore, **before you install the latest System 1 version**, return your existing licenses to the Licensing Portal. **After the upgrade**, register the License Server again using your existing activation code and relicense System 1. For more details, refer to the System 1 Licensing User Guide.

! Postgres version upgrade !

System 1 version 22.1 onwards support Postgres 14 as the historian. Databases on Postgres 11 need to be upgraded to Postgres 14.

While upgrading to Postgres 14, it is recommended to create a backup before installing the latest System 1 version.

When you upgrade to PostgreSQL14 on System 1 22.1 or later, rollback installation to earlier System 1 versions is not allowed. Rollback is only possible by restoring VSS/Acronis backup.

To upgrade the historian from Postgres 11 database to Postgres 14, launch the Database Manager tool and click "Upgrade PostgreSQL Database".

! Proficy Obsolescence !

Proficy is no longer supported as historian. Users need to migrate their database from Proficy to Postgres.

Users must migrate Proficy databases to PostgreSQL to upgrade to System 1 22.1 or later.

This is applicable for customers who have an older System 1 version with Proficy databases. This does not impact customers who already have PostgreSQL databases as historians.

For more details, please refer to System 1 Help.

Bently Nevada, System 1, Trendmaster, ADAPT, vbSeries, RangerPro, ADRE, and Orbit Logo are registered trademarks of Bently Nevada, a Baker Hughes business, in the United States and other countries. The Baker Hughes logo is a trademark of Baker Hughes Company. All other product and company names are trademarks of their respective holders. Use of the trademarks does not imply any affiliation with or endorsement by the respective holders.

Baker Hughes provides this information on an “as is” basis for general information purposes. Baker Hughes does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. Baker Hughes hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third-party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. Baker Hughes reserves the right to make changes to specifications and features shown herein, or discontinue the product described at any time without notice or obligation. Contact your Baker Hughes representative for the most current information.

The information contained in this document is the property of Baker Hughes and its affiliates; and is subject to change without prior notice. It is being supplied as a service to our customers and may not be altered or its content repackaged without the express written consent of Baker Hughes. This product or associated products may be covered by one or more patents. See Bently.com/legal.

1631 Bently Parkway South, Minden, Nevada USA 89423

Phone: 1.775.782.3611 (US) or Bently.com/support

Bently.com