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SVI2AP_SVI3 DTM Release Notes

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1 SVI2AP_SVI3 DTM 3.40 release notes

1.1 SVI3/SVI2AP DTM 3.40 New Features

➤ New features and Improvement

- Added SVI3 MMR (FW 1.2.3) supports with backward compatible with Legacy SVI3 products
- Improved sequencer related tasks to support ValvXpert with capability of auto digital upgrade/downgrade and mode handling.
- Added sequencer tasks -- SmartRecovery Ramp Test and Loading OVD Data
- Improved sequencer process to enhance error exception handling and tasks cancellation.
- Pressure related test and configuration data are now stored in both engineering unit and raw count format. This solved result inconsistent issue caused by unit conversion.

➤ The MnDataAnalysisModule

- Updated algorithm for Ramp Test with calculating Hysteresis, Deadband and Linearity separately.

➤ Offline Diagnostics

- Ramp Test including SmartRecovery Ramp Test (SVI3 Only) is always performed with Linear characterization. DTM will reset characterization to its original setting after test is completed.
- Ramp Test result now reports Hysteresis, Deadband, and Linearity with Max, Average, and Min values. Positioner Report and Sequencer report were updated too.
- Fixed an issue that diagnostic test cannot execute while Reset fault exists.

➤ OVD Health

- The Stick Slip Ratio and Tight Shutoff Count were removed from OVD KPI, which apply to Valve Health, Historical Trending, Reports.
- Label of RMS Error was renamed to Error, Offset Above Limit was changed to Offset

➤ Calibration Table Update:

- Removed Calibration Table updater if version of SVI3 firmware is 1.2.3
- Updating PID slot for double acting was removed.

➤ Other Issues Fixes & Improvement

- Fixed an issue that Uploading/Downloading All procedure could not handle Position Sensor configuration correctly
- Fixed an issue that loading devdata caused ValVue to crash.
- Fixed an issue that device ID of existing DTM instance may become default or 0 when error occurs during Open Connected Device.

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- Fixed GDI+ issue on status and fault mask page.

2 SVI2AP_SVI3 DTM 3.30 release notes

2.1 SVI3/SVI2AP DTM 3.30 New Features

➤ SVI3 DTM and SVI2AP DTM are now built separated

SVI2AP and SVI3DTM are no longer share the same ProgramID (*APAdvanceDTM.DTMCore.1*). The SVI2AP DTM keeps the same ProgramID as DTM v3.20.2, while SVI3DTM has assigned a new ProgramID (*SVI3DTM.DTMCore.1*). Existing SVI3 DTM (V3.20.2 or older) instance will be upgraded to new ProgramID when ValVue4 is launched.

➤ New features of SVI3 DTM V3.30

- Support SVI3 double acting (FW 1.2.2) with backward compatible with Legacy SVI3 products
- New offline diagnostics user interfaces with separated tabs to perform a test, showing graph result, and numeric result and logs.
- Added a Detailed Extended Signature Graph to show trending of position, pressure, as well as friction vs position curve. The scale of Time-Axis is calculated based on new extended signature data buffer layout.
 - For SVI3 firmware 1.2.1 or earlier, the scale of Time-Axis is estimated based on the execution time of each direction and the number of data points in the data buffer.
- Automatic updating double acting PID slots (9-15) when SVI3 is upgraded from FW121 or earlier version.

➤ The MnDataAnalysisModule

- The new friction algorithm was design and implemented to support Friction vs Position curve display in Detailed Signature Result.
- Overshoot of Step Test is now reported as absolution overshoot in default. User can switch back to get overshoot% result via changing MnDataAnalysisModule configurable settings.

2.2 Issue fixes and improvements

➤ DTM Connectivity

- Enhanced DTM disconnect return behavior for improving reliability.
- For remote connection via VPN network, resolved an issue that DTM could not terminate DTM connection when VPN connect got lost.
- Improved error handling for command failures and device ID mismatches.

➤ Offline Diagnostics

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- Fixed an issue that Ramp Test results could not be exported into csv file.
- Fixed an issue that SmartRecovery Ramp data was not extracted from diagnostics buffer correctly.
- In rare cases, DTM could not detect the correct Extended Signature running status, preventing Extended Signature testing from being rerun. This issue was fixed.

➤ OVD Health

- For SVI3 DA actuator w/o spring, DTM applies the same rule as offline diagnostics to adjust OVD spring range display/report as N/A
- Fixed an issue that actual data was not displayed correctly for the Position vs. Pressure graph on the Valve Health page.

➤ User Interfaces

- Fixed tooltip rendering issues related to position error band and characterization.
- Addressed inconsistencies in audit trail logging and improved traceability.
- Corrected spelling and UI display errors in the raw measurement interface.
- Renamed "Actuator Pressure1" to "Actuator Pressure" on the Device Variable page for SVI3 devices.
- Improved Positioner Report with adding detailed signature graph.

➤ Calibration Table Update:

- Updated [AI SP] Operation Limits to Calibration Table per CES-494 Rev J. The NVM Cal Rev variable are not set to 2 after updating process.

➤ Other Issues Fixes & Improvement

- Fixed an issue that Uploading/Downloading All procedure did not handle Position Sensor configuration correctly
- Fixed an issue that loading history devdata caused ValVue to crash.
- Pressure related test and configuration data are now store in both engineering unit and raw count format. This solved result inconsistent issue caused by unit conversion.

2.3 Known Issues in this release

- With Honeywell FDM/PKS, SVI3 DTM may become disconnected if running auto tuning procedure takes long time ([DE176322](#)). This issue relates to Honeywell Control System and SVI3 firmware. SVI3 tuning process increases HART Configuration Change Count by multiple and the behavior causes PKS to block HART Communication.

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- SVI3 DA DTM -> Advanced Controls (Boost Scale Factor, Offset Scale Factor and Rate Limit)
-> No error message pops up while downloading invalid values

3 SVI2AP_SVI3 DTM 3.20.2 release notes

3.1 New features

- Write Protect – DTM now displays SVI3/SVI2AP write protect jumper status.
 - When DTM connects device, it checks write protect jumper and displays it status.
 - If write protect jumper status has been changed after DTM is connected, the status can be refreshed manually.
 - If any attempt to write a command to device when SVI write protect jumper is enabled, user will get prompt Write Protected warning.
- Double Acting Support:
 - Actuator Pressure2 and Differential Pressure were added to DTM UIs (Dashboard and Raw Measurement) when SVI3 positioner is configured as double acting.
 - Pressure Sensor P1 and P2 reading are labeled as Actuator Pressure1 and Actuator Pressure2, and the difference of P1 and P2 (P1-P2) is labeled as Differential Pressure.

3.2 Improvements and Bug fixes

- Cloning
 - Fixed issues of parameters mismatch after device is cloned (#91722, #91723, #91724, #91744, #91871)
 - Fixed issue that parameters in cloning files were not written into device after cloning (#91728)
 - Fixed issue of reporting command failure during cloning process (#91735, #91816, #91746)
 - Fixed issues in cloning file handling: When cloning device from STD to ADV, the smart recovery tuning parameter were reset to default. (#91729, #91726)
 - Fixed an issue that Friction Above HH limit of Valve Health Limits was not uploaded at last step of cloning (#91736)
- Update Calibration Table
 - Update DTM to optimize messages to user when SVI3 calibration table has been updated and user try to do it manually again. (#92766)
 - The option board Cal_Rev is always set to 1 no matter option board is present or not.
- Improvement on DTM UI

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- Improved DTM UI usability to make UI accept reasonable input and reject invalid (special) characters (#93361 - #93364, #93976, #93985)
- Force SmartRecovery tuning parameters to have consistent behaviors with position control tuning parameters.
- Corrected issues related to tooltip display.
- Fixed an issue that upload all did not load AO Fail Config Option from device (#92149)
- Fixed an issue that "Reference Temperature" in Tuning tab and SmartRecovery Tuning tab were not able to input negative number.
- Fixed an issue that the Find Stop position curve is opposite to the actual position, when positioner is configured as ATC. (#91267)
- Fixed an issue of digital switch position Upper/Lower Limit setting. (#91676)
- Fixed an issue that device mode on DTM bar might be inactive after change mode on offline diagnostics pages (#91963)
- DTM pop up message "Device is busy", then DTM hangs up when loading baseline data from standard device. This issue has been resolved (#93072)
- The download button is disabled when DTM UI has found invalid input (#93559).
- Fixed an issue of incorrect behavior on AO retransmit Low and High settings. (#93964)
- Added tuning parameter validation to meet $P+PA_{adj} > 10$ (#93971)
- When device is STD diagnostics level, the Dashboard hides position and SmartRecovery mode display.
- Fixed an issue of performing Open Stop Adj caused DTM/VV3 to crash when the language setting is Japanese. (#91506)

➤ Fault Status

- Separated SVI3 rev1 fault matrix from SVI3 SmartRecovery, and hide SmartRecovery related faults when connected SVI3 is rev1 (#91095)
- Fixed issues of fault name discrepancies between DTM fault status and ValVue3 status monitoring (#91611, #91725, #91970)

➤ Offline Diagnostics

- Standard Signature, Extended Signature and Step Test are no longer allowed when device is SmartRecovery Active
- Optimized test procedure to prompt message to user if test procedure cannot be started (i.e. setting step time of Step Test to 1)
- Fixed an issue that DTM failed to exit extended signature test if test failed at step #2 (extended diag. error is triggered) (#91266).
- Fixed an issue that user can switch DTM pages when signature test is running (#92256)
- Fixed an issue that running Step Test could not started after running standard signature in Standard Level of SVI3 (#93256)
- Fixed an issue that "Cancel" diagnostics may failed, which causes the "Start" button to be enabled while device is still busy. (#93368)

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- It is difficult to cancel a testing process. DTM does not response Cancel command every time when button is clicked. The issue was resolved (#91327).
- Trending:
- Trending performance became slower when it was trending for multiple days. Clicking Refresh will release system resource and improve performance.
 - Changing Manual Setpoint in trending in setup mode is prohibited when a procedure is running. (#92249)
- Reports
- Improved positioner report to include SR ramp test result (#92163, #93528)
 - Fixed an issue of missing units (%) of SP Cycle /Cycle Amplitude (#92157)
 - Fixed issue of faults name mismatch issue (#91082, #91094)
 - Existing SmartRecovery related Faults
 - Fixed a report issue that all tests results display the same timestamp in valve report.
 - When SVI is downgraded from Advance Diagnostics to Standard Level, the existing SmartRecovery Ramp test results, SmartRecovery related faults will be hidden in report (#91155, #91168 and #91178)
- Data Management
- Improved DTM Data management download behavior (#93379)
 - SmartRecovery related parameters are now hidden in DTM database management (#91151)
- OVD:
- Updated OVD KPI Historical trending to always show valid time that has OVD KPI stored. (#93992)
 - When device is running in SmartRecovery mode, the operation of OVD KPI synchronization with device is disabled (on Valve health and Historical trend) (#92247)

3.3 Known Issues

- An OVD alert may not be triggered immediately even if KPI reading exceeds its limit setting. OVD alert may be some delay in alerting.
- When SmartRecovery feature is enabled, a wrong positioner sensor configuration will cause SVI3 to enter SmartRecovery mode. User must correct the sensor configuration and then clear all faults to make SVI3 get out of SmartRecovery mode.
- Some fault attributes defined in SVI3 fault matrix may not match their behavior implemented in firmware (#91179).
- A firmware issue that causes running Ramp test to report completed with error if the start position is set as -4 or -5 (#92266, #93374).
- Due to firmware is no longer trigger a diagnostics error when cancelling a procedure from LCD, a multiple-step (extended) diagnostics test performed by DTM may not be terminated by pressing LCD button (#91177).

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- SVI3 may report RAM CHECKSUM ERROR when running auto tune with turning off air supply (#92887)
- SVI devices can be reboot and continuous diagnostics data can be reset even if write protect jumper is enabled. (#93969 and #93970)
- In FDM environment, trending in SVI2AP autotune does not refresh (#93378).
- Clicking Download PID button does not handle HART command exceptions. If there is HART command error, the tuning log may show tuning parameters are downloaded successfully but their actual values are rolled back. (#94070)
- Some DTM UI labels may not displayed as expected when running within PRM DTMWorks. (#94162)

4 SVI2AP_SVI3 DTM 3.20.1 release notes

- Added parameter index into FDT dataset to resolve dataset compatibility issue caused by device parameter name auto sorted issue.
- Added feature of upgrading SVI3 Calibration Table after firmware is upgrade from Rev1 to Rev 2. The upgrading process will be executed automatically when DTM is connected. Manual update entry is provided (via Additional Functions).
- Improved Autotune procedure to add retry in case of Autotune command is unable to start tuning process.
- Stop Limits warning range was redefined when positioner is RSP or PV Analog
- With PRM/DTM Works environment, the drop-down list button in Preference settings page is too small to be selected. The issue was fixed. (Bug#90686)
- Downloading parameters from Calibration Tabs under Control Page has different behavior from other Tabs. The behavior allowed user to switch tabs during downloading process, which may cause DTM to throw an exception. The issue was fixed. (Bug #90767)
- Fixed an issue that step test result in DTM is not consistent with DTM report. (Bug #90685)
- The size of standard signature result graph in DTM report was reduced to half. The issue was fixed (Bug# 90684)
- Fixed issue that step test log cannot display user comments (Bug#90388)
- Fixed an issue that DTM generates redundant comments after DTM upgrade
- Fixed an issue that Find Stop trending displays incorrect scale after changing Open Stop Adjustment
- Tight shutoff now has different range validations for SVI2AP, SVI3 Rev 1 and Rev 2 devices

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- Improved DTM to keep the same Position Limit constrain as firmware does. Added Full Open Above constrain
- Improved DTM report to always show setpoints curve for Step test result. (Bug# 90608)
- Improved DTM report to always show up and down direction with different color for offline diagnostic tests in DTM report. (Bug# 90607)
- Before connecting to the SVI3 device. The Current VHI values of DTM VHI was always loaded from Week/Day/Hour. This issue was fixed (Bug# 90783)
- Fixed issue: View Diagnostics data display unexpected number of graphs if the number of selected test type exceed 4.
- Added “Clear” method to remove the existing graphics from View Diagnostics window.
- Fixed issue that DTM associated diagnostic data cannot be viewed after ValVue upgrading from V3.60.3
- Enhanced device type identification information handling for FDT2.0 Communication DTM
- To improved Find&Stop trending performance, the regular trending dialog (if opened) will stop refreshing when DTM is performing Find&Stop.
- Fixed issue: SVI3 REV01 failed to run offline diagnostic tests when ValVue3 monitor is running.
- Fixe issue: The timestamp of devData file is updated if DTM is just opened but does nothing (Bug# 90893)
- Fixed issue: Changing connected device tag in DTM causes device tree to display tag in “Old Tag (New Tag) ” format (Bug# 90894)
- Fixed issue: Import and Add New Device causes ValVue3 to list duplicated test records (Bug# 90895)
- Fixed issue: View Diagnostics will crash in negative index when loading in some tests (Bug# 90887)
- Fixed issue: Some Ramp test result (Error_Up/Down) in Positioner Report was enlarged by 1000 times (Bug# 90890)

5 SVI2AP_SVI3 DTM 3.20 release notes

3.1 Improvement and Issue Fixes -- DTM User Interface

- User was allowed to select ComboBox on Digital Switches and LCD page in Manual and Normal mode. This issue has been fixed.
- Supply pressure and Pilot pressure were added into Raw Measurement.

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- Added firmware checksum and version display at DTM identification area.
- When position sensor is configured as RPS or AI_PV, the maximum/minimum Find and Stop limits (and trending too) are redefined to (500, 24500) or (800, 5200). This will resolve an issue of warning information logged during Find & Stops
- Trending:
 - Added new parameter of Bias to trend. It is unchecked in default.
 - Fixed a bug that causes storing/loading trend data to fail.
- Fixed offline configuration issue with adding UIs to configure missing parameters (for both SVI2AP and SVI3)
- Step Test: Support saving/loading profile for custom step test
- The UIs of Online Parameter now allow user to change configuration when device is disconnected. This will enables user to export device configuration through Data Management into a template file (devData), then download configuration to different device through importing the template file.
- DTM Reports
 - Always perform Upload All Parameters prior to start generating DTM report. This resolves an issue of DTM report that some parameters were not synchronized with device.
 - New parameters were added into DTM report.

3.2 Improvement and Issue Fixes -- Data Management

- Fixed an issue of Data Management. The issue was that observe user could not perform import/export even Security setting allows (for both SVI2AP and SVI3).
- Fixed an issue that not all parameters were updated on DTM UIs when configuration was imported from data management.
- When size of OVD data became large, newly uploaded KPI result, either from device or imported from data management, was unable to show on UI and historical trending. This OVD KPI displaying issue was fixed.
- The default device data to be loaded in DTM is changed. DTM now uses DP1 file generated from a golden device by SmartAssistant.
- Fixed an issue that the pressure unit was not updated when downloading configuration loaded from devData file.

3.3 Other Improvements and Issue Fixes

- Updated the Digital Upgrade module to fix an issue that was caused by windows login account name with space included.
- Add Userconfig.ini file to manage Auto tune error code.
- Clone Devices: Fixed issue that a few of parameters became default after cloning.
- Fixed an issue in characterization setting (Advanced Control) . The curve data for CamFlex was incorrectly set to EQ50%.
- Optimized polling thread to address performance issue with HART multiplexer connection (apply to all HART networks)
 - Polling thread is suspended if DTM UI is not opened

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- Polling thread is running in lower priority if a new command to be sent concurrently.
- The timeout of running Autotune is set to 30 minutes. DTM will cancel autotune process when timeout limit is reached.
- Fixed an issue that writing reverse position retransmit fails but DTM not giving warning message promptly.
- Fixed an issue that missing or unregistered Plot control causes DTM/host application to crash.
- Fixed an issue that changing device mode always popped up “Can’t change mode” when device is in failsafe even if failsafe condition is cleared.

6 SVI2AP_SVI3 DTM Known Issues

- With P&F HART Mux connection, canceling diagnostic procedure may fail. User needs to wait until device completes diagnostic procedure.
- After pressure unit is changed, restore a previously saved trending file (.tre) will have pressure unit/value mismatch issue. Similar issue will occur if changing pressure unit while running Trend
- When DTM is running within Honeywell FDM frame, some of the message boxes may be suppressed by FDM, for example, dialog from changing position sensor configuration, running digital upgrade procedure etc.
- Long tag in the report will be overlap when more than 27 characters input
- When running Ramp Test from 55%-95% with Quick Open characterization, the test result is always reported with error, but result is expected.

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