

Release Note CODESYS SoftMotion 4.4.0.0

27.08.2018

1 Release Note

CODESYS SoftMotion 4.4.0.0 is a feature and bug-fix release.

1.1 Features

1.1.1 Robotics

- New movement type Path-invariant PTP: PTP movement whose path does not depend on the override and is not left in case of halt or interrupt
- New function block SMC_GroupWait: Support for programmed waiting on the path
- MoveLinear/MoveCircular: Reduction of jerk oscillations by adaptive planning intervals
- MoveLinear/MoveCircular: Improved blending:
 - Optimized creation of blending-splines in case of asymmetric cut distances
 - In case of TransitionMode TMStartVelocity: Considering path geometry and dynamic axis limits at determination of blending points
- Support for MoveLinear-/MoveCircular-movements with cartesian length 0 (or very small) and a change in orientation
- Compatibility options: Enabling the user to deactivate recently released or upcoming improvements/bug-fixes that affect the resulting paths

1.1.2 CNC

- Support for subprograms in G-code, including display of the callstack at interpretation- and interpolation-time
- Support for expressions in G-code, including mathematical and boolean expressions as well as user-defined functions
- Support for local variables in G-Code

About 20 other improvements have been implemented.

1.2 Major bug-fixes

- [SM-1511] CNC: Exception when using the method SetDelimiters of FB SMC_NCTokenizer
- [SM-1519] Editors: Unhandled exception in automatic device import from fieldbus scan
- [SM-1528] CNC: SMC_ToolRadiusCorr: possible error SMC_CNC_INTERNAL_ERROR
- [SM-1538] Basic: Possible access violations during reconfiguration of EtherCAT master
- [SM-1714] Basic/Robotics: Possible endless loop
- [SM-1719] Basic: Unintended movement after quick stop
- *Accident* [SM-1745] Robotics: SMC_GroupConvertPosition: conversions MCS -> ACS and WCS -> PCS not correct if MCS != WCS
- [SM-1746] Robotics: CP: Using incorrect reference position for kinematic transformation
- [SM-1778] Drivers: Parker SBC: Exception on RTE 64-BitCompatibility information

56 minor bugs have been fixed.

2 Compatibility Information

2.1 General

This version is compatible with CODESYS V3.5 SP9 Patch 5 and newer. However we recommend the newest patch level of CODESYS V3.5 SP13.

Using axis groups in simulation-mode requires compiler version 3.5.10.40 or later.

2.2 Issues from version 4.4.0.0

[SM-890] SDO write ends with “forgotten” when multiple SoftMotion instances are used

We introduce a new limit of 64 different bus tasks per project when using SoftMotion axes. If exceeded, the error SMC_MAC_TOO_MANY_TASKS will be returned.

[SM-1507] CNC: Interpolator resets bSingleStep at rising edge

The function block SMC_Interpolator no longer reset its input bSingleStep at a rising edge of bExecute.

[SM-1711] Robotics: Blending: Always cut at most half of the element

Concerning blending between movements, we've introduced a new restriction: We won't cut more than half of the length (resp. duration) of the first movement, as it has always been done with the second movement. The old behavior can be restored using the input CompatibilityOptions of MC_GroupEnable.

[SM-1683] Robotics: CP: Blending: TMStartVelocity: Improve determination of cut points

We've changed the determination of cut points for blending with transition mode TMStartVelocity. The cut distances increase (in other words: they don't get smaller) compared to previous versions which helps us to avoid loss of velocity during blending. The following is now taken into account: The programmed dynamic limits on the path, the kinematic transformation as well as the axis limits, and the angle between two lines (when blending between lines). The old behavior can be restored using the input CompatibilityOptions of MC_GroupEnable.

3 Known Limitations

4 Not released / Not tested

Feature	Description	
Multicore Support	All SoftMotion tasks must run on the same core. See SM-1155 and SM-1005 .	Not released
Device Application Support	The usage of axis groups in child applications is not supported. See SM-847 .	Not released
ETC KEB H6 Dual	Due to problems with the test hardware, the driver could not be tested.	Not tested

5 OEM Information from JIRA

To read up on implemented features and changes you can use your JIRA account. Please find some example filters below.



List of features and changes:

project = "CODESYS SoftMotion" AND fixVersion = 4.4.0.0

List of issues with compatibility information:

project = "CODESYS SoftMotion" AND fixVersion = 4.4.0.0 AND (text ~ COMPATIBILITY_INFORMATION OR text ~ KNOWN_LIMITATIONS)

6 History

Created: Sebastian Hess (Development)
Reviewed: Ramanan Viswanathan (Development)
Released: Georg Seidel (Product Owner)