

DATE:

June 7th, 2019

BACKGROUND:

LECM GAP Programmer 1.03-0 is a new release of the Coder / Operating System for Woodward controls

COMPATIBILITY:

To use this version of GAP/Coder, you must use GAP Editor 3.14 or higher.

To use this version of GAP/Coder, you must use SOS 4.15 or higher.

To use this version of GAP/Coder, you must use Control Assistant 4.14 or higher.

To use this version of GAP/Coder, you must use Toolkit 5.6 or higher.

NEW FEATURES:

- Added support for new Low Side Output current feedback changes. The AO_PWM_FLT has the following new fields: CUR_OVERRUN, CUR_SATURATED, APPLY_DC_CORR, AVG_NUM_SMPLS that allow the application to configure the number of samples averaged for the current feedback.
- Added AI_MPU_RAW speed output to AI_MPU_ENG block
- Increased number of SAMPLES allowed to 40 on the AI_MPU_ENG block.

ISSUES:

The following Product Issue Database ("PID") issues and requests were addressed in 1.03-0:

Issue #	Description	Solution
68296	Running_Avg Events	Added a MAX_EVENTS input to set the input buffer size and allowed the EVENTS input to be tunable. If EVENTS is a constant input it sets the size of the input buffer.
68307	Application can save certain inputs to a state that is difficult to recover from	Added special case fields to the DeviceOnlyWrite list. They will not be added to settings files. SERVLINK: LOCK_WRITE field SYS_INFO: UPDATE_EE, LOCK_IO fields
68356	LECM RTC set time in Local time zone	Updates to the RTC clock inputs field will adjust the GMT time stored in the RTC based on the TIME_ZONE setting when the change was made. Before this change, all updates were made to the GMT time and then adjusted by TIME_ZONE on the outputs of the block.

Issue #	Description	Solution
68365	Adjustable RATE Group Slip forgive	Added constant only fields that can be used to set the aggressiveness of the RG slip algorithm to the STATUS_LECM block. A separate field is also available to disable a RG slip from setting IO_LOCK. It instead will just set the RG_SLIP indication on the SYS_INFO and attempt to carry on running the application.
63396	Serial RTU Modbus thread can stall in LECM	Added code to release semaphore if data is flushed due to errors in the status register
69003	New old MATLAB Block	Added legacy style Matlab block: MATLAB_LINK
68993	Linknet HT nodes not initializing	Fixed initialization code to use the correct CAN_NTW_EN
68996	PID_OPTI fix	Fixed issue with PID_OPTI that could occur during automatic tuning.
72668	LWIP can return wrong byte count when queried and the TCP connection is closed	Added an extra check in the lwip function that will return 0 bytes available if the connection is closed.
64830	EVENT_MGR TK Event Component issue with Group Columns	Toolkit event component now differentiates between latched and current faults in the RPTGC and RPTGL columns.
72160	GAP installer change for GAP3 and GAP4 folders	Install template for GAP4
73515	T_3_RM MAXDIFF_X outputs not working	MAXDIFF_x outputs now work correctly.
73538	CO_DVP Update DVP TxPDO's	-UPDATE_TRK (update alm & sd tracking, RxPDO2 & RxPDO4) -UPDATE_RES (update resolver alm & sd values, RxPDO3 & RxPDO5) -UPDATE_PE (update position error settings, RxPDO6, RxPDO7, RxPDO8) These inputs will now disable these messages when set FALSE instead of sending configuration values stored in RAM

UNSUPPORTED BLOCKS AND FUNCTIONALITY:

The following blocks may be available in the Template and GAP Editor, but are not supported for customer use in the LECM 1.03-0 release version of the Coder (compiler):

- [AN_OUT](#)
- [SPI_RD](#)
- [SPI_WR](#)
- [RT_CAN_NTW](#)
- FBUS functionality is not supported in LECM
- EGD functionality is not supported in LECM
- Modbus Serial RTU multi drop is not supported

PART NUMBERS:



LECM 1.02-1 Release Notes

DATE:

June 1, 2018

BACKGROUND:

LECM GAP Programmer 1.02-1 is a new release of the Coder / Operating System for the Woodward LECM

COMPATIBILITY:

To use this version of GAP/Coder, you must use GAP Editor 3.12 or higher.

To use this version of GAP/Coder, you must use SOS 4.12 or higher.

To use this version of GAP/Coder, you must use Control Assistant 4.12 or higher.

To use this version of GAP/Coder, you must use Toolkit 5.3 or higher.

NEW FEATURES:

- AI_MPU_ENG Improved speed recognition time at startup. AI_MPU output reports speed after 2 sample regions (SAMPLES) have been observed and AI_MPU_MON reports speed after 1 sample region has been observed regardless of the number of sampling regions used by the speed filter algorithm. For example, if 8 sample regions were used by the speed filter algorithm, the prior algorithm required 2x the number of sampling regions to be observed before speed was reported. The current algorithm will begin to report speed after the first sample region has been observed. After 2 sample regions have been recognized, the average of the 2 sampling regions will be reported. As speed samples are accumulated, the block will continue reporting the average of the sample regions as they are recognized, e.g. the 3 sample average, 4 sample average, etc. until 8 samples have been observed. Once the desired number of sample regions are observed the speed filter algorithm will report the average of the most recent 8 sample regions.
- Enabled MATLAB block support
- The Ethernet hostname is now in the format LECM_<MAC ID> where MAC ID is in hex with a '-' delimiter. For example: LECM_00-12-8C-00-02-C0
- Enabled new reception queue features that are available in the MPC5566. There are now 8 hardware mailboxes available to queue incoming messages. This will help prevent losing messages in the case that the operating system is not able to process a message before another new message is received. A lost incoming message is indicated by RXOVERFLOW incrementing. This is caused by an insufficiently sized RCV_BF_SZ setting or insufficient time for the operating system to move the message from the HW mailbox to the receive FIFO buffer queue. Prior to this change, only 1 HW mailbox per channel was available to hold incoming messages for the OS to process.
- Added publisher signing to the installation

ISSUES:





The following Product Issue Database ("PID") issues and requests were addressed in 1.02-1:

Issue #	Description	Solution
18417	Coder corruption from large A_CURVE3 tables	Added a coder exit if the following curve sizes are exceeded: CAL_CURVE2 - NUM_PTS limit 0-200 A_CURVE2 - NUM_PTS limit 0-1000 CAL_CURVE3 - NUM_X/Y_PTS limit 0-200 A_CURVE3 - NUM_X/Y_PTS limit 0-1000

Issue #	Description	Solution
18356	IO Lock and Save values DAB function support for Netsim	Save and IO Lock features now work in NETSIM when using new Toolkit Data Access Based functions.
17803	CAN_P_STAT LNK_ERR and LNK_ALM	LNK_ERR and LNK_ALM now take into account successfully transmitted msgs. LECM disables self reception so these alarms were tripped if the LECM was the only controller on the bus generating messages.
18652	Serial ASCII Modbus not working	Fixed bug when using 7 bit serial data. Parity bit was not being masked.
18637	AI_MPU_ENG speed output drops to zero.	Under certain configurations and speed scenarios the deceleration limit check could incorrectly report a speed fault which causes the speed to drop to zero. The control was more sensitive to this if the target contained a missing tooth. The deceleration limit check was changed from 200% to 400%.
18743	CRC check not taking into account all flash sections	Added missing .data and .sdata read only memory sections to crc check.
18744	Page update function issue	Fixed a small timing window that occurred during initialization that could cause an ee corruption if power was interrupted during the first initialization of an app after it is loaded.
18641	SERVLINK block buffer overflow	Added protection if the application name is too long.
18629	LECM CAN Hardware Rx Overflows	Enabled new reception queue features. HW receive queue is now 8 deep.
18748	LECM Hostname	The Ethernet hostname is now in the format LECM_<MAC ID> where MAC ID is in hex with a '-' delimiter. For example: LECM_00-12-8C-00-02-C0

UNSUPPORTED BLOCKS AND FUNCTIONALITY:

The following blocks may be available in the Template and GAP Editor, but are not supported for customer use in the LECM 1.02-1 release version of the Coder (compiler):

-  [AN_OUT](#)
-  [SPI_RD](#)
-  [SPI_WR](#)
-  [RT_CAN_NTW](#)
- FBUS functionality is not supported in LECM
- EGD functionality is not supported in LECM
- Modbus Serial RTU multi drop is not supported

PART NUMBERS:

Version 1.02-1
GAP/Coder Part Number: 9927-2575

LECM 1.02-0 Release Notes



DATE:

May 19, 2017

BACKGROUND:

LECM GAP Programmer 1.02-0 is a new release of the Coder / Operating System for Woodward controls

COMPATIBILITY:

To use this version of GAP/Coder, you must use GAP Editor 3.12 or higher.

To use this version of GAP/Coder, you must use SOS 4.12 or higher.

To use this version of GAP/Coder, you must use Control Assistant 4.12 or higher.

To use this version of GAP/Coder, you must use Toolkit 5.3 or higher.

NEW FEATURES:

- This version of LECM coder officially releases a verified version of [UDS](#) over CAN (ISO15765).
- Added support for the HMI_ENUM block with UDS
- LECM 1.02-0 will reload defaults whenever an application is loaded, even if the same application is loaded. Prior releases of Coder would only reload defaults if the application Date code changed (application was recompiled or is different than currently loaded.)
- The [SYS_INFO](#) block contains a new input that was added for other platforms as a means to disable 10% step enforcement for analog values. This field performs the same function as the TUNE_LIMIT input on the [STATUS_LECM](#) block. If either of these inputs is set to allow a step change >10% the step will be allowed. Both inputs default to a state that enforces the 10% step change.
- New [LECM_BOOT_FLAGS](#) block which allows for customization to the forced boot behavior over CAN. Requires a compatible hard boot version.

NOTE:

The BOOT_SEC_EN input that was introduced on the STATUS_LECM block in the LECM1.01-0 release has been relocated to the LECM_BOOT_FLAGS block in this release.

ISSUES:

The following Product Issue Database ("PID") issues and requests were addressed in 1.02-0:

Issue #	Description	Solution
18281	Can buffer_gen function	corrected issue that could cause issue on certain machines during compile time.
18311	RTC DOW help	The help file incorrectly stated that SET_DOW and DOW_IN were ignored. This is not true for LECM. An appropriate note was added in help.
18316	AI_PWM missing from NetSim build	AI_PWM for simulation support added for speed inputs.
18314	LECM TRIG_OUT for simulation	TRIG_OUT for simulation support added.

Issue #	Description	Solution
18355	Load Default values	Control will now reload defaults whenever an application is loaded, even if the same application is loaded. Prior releases of Coder would only reload defaults if the application Date code changed (application was recompiled or is different than currently loaded.)
18284	GetClockTime_diff_uS function not declared LECM	Added declaration.
18285	XCP default Identifiers	Changed the XCP_CAN default identifiers were modified to match Identifiers defined for Woodward devices for XCP instance 1.
18249	J1939_NTW block incorrect allowed ranges	J1939_NTW inputs used to create the NAME used in the address claim were modified to allow the correct ranges per the j1939 standard.
18317	CURVES_3 Y values not increasing	Added compile check that makes sure the x and y values are monotonically increasing. Coder will now exit if this check fails.
18394	A_STEP_PER behaves differently in simulation	fixed this input behavior in SIMULATION.

UNSUPPORTED BLOCKS AND FUNCTIONALITY:

The following blocks may be available in the Template and GAP Editor, but are not supported for customer use in the LECM 1.02-0 release version of the Coder (compiler):

- [↻ AN_OUT](#)
- [↻ SPI_RD](#)
- [↻ SPI_WR](#)
- [↻ RT_CAN_NTW](#)
- FBUS functionality is not supported in LECM
- EGD functionality is not supported in LECM
- Modbus Serial RTU multi drop is not supported

PART NUMBERS:

Version 1.02-0
GAP/Coder Part Number: 9927-2575

LECM 1.01-0 Release Notes



DATE:

September 30, 2016

BACKGROUND:

LECM GAP Programmer 1.01-0 is a new release of the Coder / Operating System for Woodward controls

COMPATIBILITY:

- To use this version of GAP/Coder, you must use GAP Editor 3.11 or higher.
- To use this version of GAP/Coder, you must use SOS 4.11 or higher.
- To use this version of GAP/Coder, you must use Control Assistant 4.12 or higher.
- To use this version of GAP/Coder, you must use Toolkit 5.2 or higher.

NEW FEATURES:

- This version of the Coder / Template is dedicated to the LECM platform only. The Product Release Strategy has evolved so that other platforms such as MicroNet, 2301, and AtlasII each have their own dedicated Coder and Template versions. Common GAP blocks that all platforms use are included in this Coder / Template version. However, platform specific blocks from other platforms are not included.
- UDS over CAN (ISO15765) Support (Woodward use only)
- Shared Memory Region Producer/Consumer
- PID_OPTI
- Added the ability to disable Security when using the force boot jumper to load applications via BOOT_SEC_EN input on the STATUS_LECM. Use of this feature requires Hard Boot version 2.008 or greater, otherwise the boot security override will not be altered. The Hard boot version is now reported on the STATUS_LECM block HB_MAJ and HB_MIN outputs.

ISSUES:

The following Product Issue Database ("PID") issues and requests were addressed in 1.01-0:

Issue #	Description	Solution
18118	Add support for AI_PWM on LECM main speed inputs	AI_PWM block is now supported on the speed inputs
18064	Add support for LECM AI_EGO	AI_EGO can now be used on analog inputs 1-18.
14555	EE Save from SYS_INFO	A request from the UPDATE_EE input on the SYS_INFO block is now latched and will be acted on even if request is changed back to FALSE before the save is initiated.
18063	Shared memory region updates	The SH_MEM_PROD and SH_MEM_CONS blocks have officially been integrated with a tunable source address. Passwords have been removed.
18060	LECM TRIG_OUT FAULT output	Fixed issue when the STATUS_x BOOL_OUT blocks are in a slower RG than one of the trigger outputs. The TRIG_OUT FAULT output would not work correctly.
18053	Data_Log email port	Added the ability to change the SMTP port used when transferring a data log via EMAIL
18050	LECM TRIG_OUT and RG crossing	Fixed issue when the OUT_TYPE input comes from a name block at a slower rate group. TRIG_OUT would not function.
18008	XCP reset request response	Changed response to an XCP reset request to cause a ToolKit disconnect if RESET_ENABLE is set FALSE. A Generic Error is returned instead of Busy.
17992	Add support for disable/enable force boot security	When the Hard Boot is version 2.008 or greater, Boot Security when using the force boot jumper can be disabled if desired.
17981	Fix Cal curves settings in simulation	Fixed issue when trying to use values other than default.
17978	Add XCP IOLOCK and SAVE functions	Added support for Data Access Based functions. IOLOCK and SAVE commands will work over XCP when using SID schema 22. GAP editor 3.11 or greater, Toolkit 5.2 or greater and SOS 4.11 or greater are required.
17971	LECM Analog output not accounting for offset correctly.	Fixed issue that was adding a small offset to the low end of the current range.

Issue #	Description	Solution
17970	Increased the number of resets allowed in the EVENT_MGR block	Increased allowed number of repeats to 1600
17969	Datalog email subject	The format of the resulting data log file is <EMAIL_SBJ>_<YEAR>-<MONTH>-<DAY>_<HOUR>.<MIN>.<SEC>.LOG
17959	LECM Number of AI_INTRVL blocks allowed	Fixed Coder enforcement of a maximum of 4 AI_INTRVL blocks. It was being performed too late in the process to be effective.
17955	J1939 Address claim issue.	Fixed issue with J1939 address claim.
NA	Updated to LECM FPGA image 2.041	This image update modifies some of the FAULT bits on the TRIG_OUT block and the DIAG_PULSE output on the AO_PWM_FLT block.
NA	Updated the Soft Boot bundled in the WAPP file to 2.018	Includes misc. bug fixes and adds LED blink codes while programming: Main (Soft Boot): CPU LED (in order of priority) 1. Flashes GREEN 1Hz, 50% DC rate while FPGA is being programmed 2. Solid GREEN ON once FPGA programming has completed Remaining LED's (RS232/485/CAN1/2/3) 1. Flashes GREEN in a cyclic pattern while application is being programmed 2. All LEDs go solid GREEN ON once application programming has completed

UNSUPPORTED BLOCKS AND FUNCTIONALITY:

The following blocks may be available in the Template and GAP Editor, but are not supported for customer use in the LECM 1.01-0 release version of the Coder (compiler):

- [↻ AN_OUT](#)
- [↻ UDS_CAN](#)
- [↻ UDS_DID_ORDER](#)
- [↻ UDS_SECURITY](#)
- [↻ UDS_SVC_10](#)
- [↻ UDS_SVC_11](#)
- [↻ UDS_SVC_22](#)
- [↻ UDS_SVC_27](#)
- [↻ UDS_SVC_2E](#)
- [↻ UDS_SVC_31](#)
- [↻ SPI_RD](#)
- [↻ SPI_WR](#)
- [↻ RT_CAN_NTW](#)
- FBUS functionality is not supported in LECM
- EGD functionality is not supported in LECM
- Modbus Serial RTU multi drop is not supported

PART NUMBERS:

Version 1.01-0
GAP/Coder Part Number: 9927-2523

DATE:

June 19, 2015

BACKGROUND:

LECM GAP Programmer 1.00-0 is a new release of the Coder / Operating System for Woodward controls

COMPATABILITY:

To use this version of GAP/Coder, you must use GAP Editor 3.10 or higher.

To use this version of GAP/Coder, you must use SOS 4.09 or higher.

To use this version of GAP/Coder, you must use Control Assistant 4.10 or higher.









To use this version of GAP/Coder, you must use Toolkit 4.8.3 or higher.

NEW FEATURES:

- This version of the Coder / Template is dedicated to the LECM platform only. The Product Release Strategy has evolved so that other platforms such as MicroNet, 2301, and AtlasII each have their own dedicated Coder and Template versions. Common GAP blocks that all platforms use are included in this Coder / Template version. However, platform specific blocks from other platforms are not included.

UNSUPPORTED BLOCKS AND FUNCTIONALITY:

The following blocks may be available in the Template and GAP Editor, but are not supported for customer use in the LECM 1.00-0 release version of the Coder (compiler):

-  [AN_OUT](#)
-  [I_TO_NAN](#)
-  [PID_OPTI](#)
-  [SH_MEM_PROD](#)
-  [SH_MEM_CONS](#)
-  [SPI_RD](#)
-  [SPI_WR](#)
-  [RT_CAN_NTW](#)
- FBUS functionality is not supported in LECM
- EGD functionality is not supported in LECM
- Modbus Serial RTU multidrop is not supported

PART NUMBERS:

Version 1.00-0

Gap/Coder Part Number: 9927-2400