

RELEASE NOTE FOR EDI

EDI 4.00A – 4.25A

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1. RELEASE 4.25A

NEW SOFTWARE RELEASE FOR ACCURET/ULTIMET PRODUCT FAMILY		
Type of release:	Production Software Package – PSWP 09-2021	
Date of release:	2021-09-30	
Versioning and concerned products:		
AccurET version 3.21A	AccurET 48	AccurET 300
	AccurET 400/600	AccurET VHP48
	AccurET VHP100	AccurET VHP48 ZxT
	AccurET VHP48 QuiET	AccurET VHP100 QuiET
UltimET version 3.21A	UltimET Light PCI	UltimET Light TCPIP
	UltimET Light PCIe	UltimET Advanced
Software and APIs	WINGLET 1.01A	ComET version 4.25A
	EDI version 4.25A	IMP version 1.04A
	XT API version 1.01A	
Main new features introduced with this release:		
AccurET	Improved management of gantry motion systems	
	Permanent Dual Encoder Feedback improvements with absolute EnDat22	
UltimET	Minor improvements of the interpolation	
	Behavior of HLx commands on UltimET Advanced CSM was improved for a better security	
WINGLET	Faster multi-site identification tests	
	Faster simulation	
	Numerous usability improvements	
ComET	Setting tool improvements for Dual Feedback and TTL encoders	
	Support of additional stroke software limits modes	
EDI	Migration from RTX64 3.5 to RTX64 4.0	
IMP and XT API	Compilation under Visual Studio 2019	
Warning notice:		
None		
Compatibility breaks:		
There are 13 compatibility breaks: 2 on AccurET, 2 on UltimET Advanced, 3 on WINGLET, 2 on ComET and 4 on EDI. For further details, refer to the corresponding release notes.		
Notes concerning this release:		
The version just released supersedes the former one that is now considered as a “Supported” item for a period of two years. Support on old FW/SW versions is subject to specific conditions, please contact your ETEL S.A. representative in case of need.		
All above versions have been developed and qualified to be operated together. Users upgrading FW/SW to the most recent versions must do so on all products simultaneously (UltimET, AccurET, EDI, etc.). Operation of multiple products with non-synchronized FW/SW releases is not guaranteed and not supported by ETEL S.A.		
Information about production deployment:		
The following products produced from 2021-10-11 will contain this software package until further notice:		
• Firmware for AccurET Modular 48 / 300 / 400-600 / VHP48 / VHP100: 3.21A		
• Firmware for UltimET Light PCI / PCIe / TCPIP and UltimET Advanced: 3.21A		
Internal reference number: 771421 ver./rev. 15/A.		

1.1. DLL versions

LIB 4.22A, EKD 4.21A, EMP 4.18A, DMD 4.23A, ETB 4.22A, ESD 4.18A, DSA 4.25A, TRA 4.21A, ETN 4.20A, ESC 4.18A (only for 32-bit version).

1.2. Compatibility break

There are four compatibility breaks with this release:

- Reference number: 165887 → DSA - Visual Studio C++ compilation options modified
- Reference number: 164069 → DSA - `dsa_wait_customer_software_module_s/a` functions were modified
- Reference number: 162956 → GENERAL - EDI migration to RTX64 4.0
- Reference number: 158066 → GENERAL - Unsupported Firmware versions removed from the Firmware pool

The compatibility breaks are highlighted in red in the tables below.

1.3. Deprecated features

None.

1.4. Additional remarks / DLL versions / etc.

None.

1.5. List of new features

Reference number	Description
94110	DSA - Increment to ISO conversion inaccuracies It could happen that the conversion from Increments to ISO could lead to minor accuracy problems (e.g. 2.399999999 instead of 2.4). Although this phenomenon cannot be completely avoided, the sequence of mathematical operations was optimized to minimize this kind of effect.
164069	DSA - <code>dsa_wait_customer_software_module_s/a</code> functions were modified The <code>dsa_wait_customer_software_module_s/a</code> functions have an additional argument to specify a wait condition. These are the options possible: - Wait for the CSM to be fully connected and remotely controlled. - Wait for the CSM to have established the communication with the UltimET Advanced. - Wait for the CSM to have started the reserved core.
161318	DSA/ETB - <code>dsa_get_rtv_handler_times</code> function behavior corrected The <code>dsa_get_rtv_handler_times</code> was returning an unusual big value for the minimum time only at the first execution. Returning such huge value is normal when the user handler has never been executed before. But, the <code>dsa_get_rtv_handler_times</code> function should always return such value while the condition remains valid (i.e. the user handler was not yet executed) and not only at the first function call. This behavior has been corrected and documented.
162956	GENERAL - EDI migration to RTX64 4.0 EDI has been migrated to RTX64 4.0 version. Consequently, EDI on RTX64 3.5 is no longer supported.
158066	GENERAL - Unsupported Firmware versions removed from the Firmware pool Firmware older than version 3.17A and recalled versions have been removed from the Firmware pool.

1.6. List of corrections

Reference number	Description
166080	DSA - CSM log printing functions not handling properly very long messages The log printing functions <code>dsa_csm_dbg_printf/dsa_csm_dbg_vprintf</code> and <code>dsa_host_file_printf/dsa_host_file_vprintf</code> were generating an unexpected termination of a CSM when trying to print messages with a size longer than 4096 characters. Now, the messages are truncated to 4095 characters.
165887	DSA - Visual Studio C++ compilation options modified Compiling an EDI C++ Visual Studio project with the Conformance mode compilation option set to its default setting (Yes, /permissive-) generated compilation errors. This is now solved. The EDI C++ example <code>rtv3</code> has also been modified to take this compatibility break into account.
165015	ETB - UltimET Advanced log files time was not correct when viewed through TCP/IP connection When a TCP/IP or a PCIe connection is established, the EDI of the host computer provides its time to the UltimET Advanced. This time is then applied in the log files. Due to a problem with the time zone management over TCP/IP connection, all files and logs are now specified in UTC time.
165888	GENERAL - Compilation of Windows 64-bit projects required the manual definition of the WIN32 pre-processor macro To compile Windows projects using EDI it was required to have defined the WIN32 pre-processor macro. As this macro is no longer defined by default in Visual Studio 2019 64-bit projects, the user had to manually define it in order to compile successfully his Windows 64-bit project. Now, EDI Windows compilation also uses the <code>_WIN64</code> pre-processor macro, which is defined by default in Visual Studio 2019 64-bit projects.
163262	GENERAL - Information not accessible in the HTML documentation The HTML documentation was not displaying information about the EDI functions when accessed via the functionality groups, only via the <code>DsaAll</code> , <code>DmdAll</code> , <code>EtbAll</code> ... groups.

2. RELEASE 4.24A

NEW SOFTWARE RELEASE FOR ACCURET/ULTIMET PRODUCT FAMILY		
Type of release:	Software Package – SWP 03-2021	
Date of release:	2021-03-31	
Versioning and concerned products:		
AccurET Modular version 3.20A	AccurET 48 HW	AccurET 300
	AccurET 400/600 HW	AccurET VHP48 HW
	AccurET VHP100	AccurET VHP48 ZxT
	AccurET VHP48 QuiET	AccurET VHP100 QuiET
UltimET version 3.20A	UltimET Light PCI	UltimET Light TCP/IP
	UltimET Light PCIe	UltimET Advanced
Software and APIs	EDI version 4.24A	ComET version 4.24A
	IMP version 1.03A (no update)	XT API version 1.00B (no update)
	WINGLET 1.00A (no update)	
Main new features introduced with this release:		
EDI	Upgrade to .NET framework version 4.8.	
	Various improvements to the user documentation: - New chapter explaining the use of EDI for real-time applications. - List of deprecated functions not recommended for new developments.	
ComET	New Force Control Tool, with support of a new mode of operation (Mode =2).	
	Digital signature of the application by ETEL S.A.	
Warning notice:		
None		
Compatibility breaks:		
There are 12 compatibility breaks: 2 on UltimET Light, 1 on UltimET Advanced, 2 on AccurET, 3 on EDI and 4 on ComET. For further details, refer to the corresponding release notes.		
Notes concerning this release:		
The version just released supersedes the former one that is now considered as a “Supported” item for a period of two years. Support on old FW/SW versions is subject to specific conditions, please contact your ETEL S.A. representative in case of need.		
All above versions have been developed and qualified to be operated together. Users upgrading FW/SW to the most recent versions must do so on all products simultaneously (UltimET, AccurET, EDI, etc.). Operation of multiple products with non-synchronized FW/SW releases is not guaranteed and not supported by ETEL S.A.		
Information about production deployment:		
This Software Package is available through ETEL Application Support. It will not be introduced in the production line. The manufactured products will still contain the last Production Software Package:		
• Firmware for AccurET Modular 48 HW / 300 / 400-600 HW / VHP48 HW / VHP100: 3.19B		
• Firmware for UltimET Light PCI / PCIe / TCP/IP and UltimET Advanced: 3.19B		
Internal reference number: 771421 ver./rev. 14/A.		

2.1. DLL versions

LIB 4.21A, EKD 4.20A, EMP 4.17A, DMD 4.22A, ETB 4.21A, ESD 4.17A, DSA 4.24A, TRA 4.20A, ETN 4.19A, ESC 4.17A (only for 32-bit version).

2.2. Compatibility breaks

There are three compatibility breaks with this release:

- Reference number: 159704 → GENERAL - EDI on RTX 2016 no longer supported
- Reference number: 158401 → GENERAL - Migration to .NET Framework 4.8
- Reference number: 158058 → Classic Sequences no longer supported

The compatibility breaks are highlighted in red in the tables below.

2.3. Deprecated features

Several deprecated functions (refer to EDI4 User's Manual for the exhaustive list).

2.4. Additional remarks / DLL versions / etc.

None.

2.5. List of new features

Reference number	Description
158058	Classic Sequences no longer supported
	The support for former Classic Sequences has been removed from the compiler (only Compiled Sequences are now supported).
159770	DEX - Increase string length for describing the input/output registers of a given transfer a function
	The length of the string used for defining the input/output registers of a transfer function using the function "dex_set_frequency_transfer_function_io_registers" was increased from 32 to 1024 characters.
154162	DOC - Real-time programming
	The User's Manual includes now a brand new chapter dedicated to the use of EDI on the RTX Operating System targeting real-time applications. An example in C-code is provided as complement to the documentation.
129227	DOC - Specific EDI functions are now declared deprecated
	A list of deprecated functions was added to User's Manual. Additionally, a deprecated function is clearly identified as such in the HTML online documentation. ETEL strongly recommends against using these functions for the development of new applications, as they might be removed at the earliest in the next major or minor release.
161997	DSA - Determining the stage mapping activation status for all devices of the group
	A new function "dsa_stage_mapping_get_activation_masks" was implemented to retrieve the stage mapping activation status of all devices belonging to the group (the existing function "dsa_stage_mapping_is_activated" was not fulfilling this requirement because it returned TRUE as soon as the stage mapping of a single axis of the specified group was active).
161323	DSA - HTML documentation of function dsa_destroy_rtv updated
	The C HTML documentation was updated with the information that the UltimET slot reserved during the creation of the object is released when calling the dsa_destroy_rtv function. For the .NET HTML documentation, this information can be found in the description of the Constructor and Destructor of the DsaRtvData object.

Reference number	Description
162077	DSA - Determining if a UltimET motion controller must be rebooted after a system configuration download When downloading a firmware to an UltimET PCI/PCle, it might be required to power off/on the PC to force the UltimET to realize a "cold" reboot. As the UltimET only needs to do a "cold" reboot if the FPGA has been modified, EDI has extended the different dsa_system_configuration_download... functions to provide such information. The new functions are: - dsa_system_configuration_download_ex - dsa_system_configuration_download_fw_pool_ex - dsa_device_configuration_download_ex - dsa_device_configuration_download_fw_pool_ex C++ & .NET interfaces have also been upgraded.
158041	DSA - Improvement of the download via the System Configuration Manager When downloading via ComET's System Configuration Manager, EDI was switching into different boot modes even if nothing had to be downloaded. Now, EDI has been optimized to avoid switching into the DIRECT boot mode if the UltimET controller is up-to-date or into the BRIDGE boot mode if all AccurET controllers are up-to-date.
156347	DSA - New function available for uploading a Sequence Uploading a Sequence from a Controller should use the new function "dsa_upload_sequence_s", which returns directly the Sequence source code. Before, two functions had to be used ("dsa_start_upload_sequence_s" and "dsa_upload_data_s"), with an additional post-processing of the returned buffer to finally retrieve the Sequence source code (further explanations about this post-processing can be found in the HTML documentation of the dsa_start_upload_sequence_s function).
156980	EKD - Improved error handling when failing to open a PCI/PCle communication Before, the error being raised when failing to open a PCI/PCle communication was misleading and did not enable a correct understanding of its cause. Now, the root cause is properly traced and a more meaningful error message is displayed to the user.
159704	GENERAL - EDI on RTX 2016 no longer supported The support of EDI on RTX 2016 is stopped, as this version of the RTX operating system is no longer supported by its vendor (IntervalZero). EDI on RTX64 3.5 is still supported.
158401	GENERAL - Migration to .NET Framework 4.8 EDI .NET interface and samples are now compiled using .NET Framework 4.8.

2.6. List of corrections

Reference number	Description
155716	DEX - Stage mapping data inconsistency not detected The DEX library was not ensuring the consistency of the stage mapping correction data imported from a file.
155294	DSA - .NET interface for DsaGantry object methods failing with an exception The exception "Dsa::EBADPARAM" was incorrectly raised when calling the .NET interface methods of the DsaGantry object.
146754	DSA - Several functions allowing to assign/unassign slots were generating an error with misleading text The functions dsa_assign_slot_to_register_s/a, dsa_unassign_slot_to_register_s/a, dsa_assign_register_to_slot_s/a, dsa_unassign_register_to_slot_s/a were generating an error -322 with the misleading message "Invalid <typ> parameter. 64 bits requested" if invoked with an uninitialized or wrong DSA_RTV_SLOT object. The message was improved to "Invalid DSA_RTV_SLOT object".
158044	DSA - System Configuration Manager erroneously checking W parameters on UltimET Light controllers When downloading a configuration onto an UltimET Light controller using ComET's System Configuration Manager, EDI was checking the version of parameters that are not supported by this product (W parameters). The download was nonetheless successfully executed, but the misleading log message "W parameters are not present on UltimET Light" was displayed.

Reference number	Description
158929	DSA - System Configuration was not supporting the UltimET Advanced motion controller The UltimET Advanced motion controller with firmware 3.20A or greater is now supported by the System Configuration tool.
161148	DSA - dsa_upload_zipped_log_file_s function not managing properly all possible use cases The dsa_upload_zipped_log_file_s function was generating an error when only part of the specified log files were available for upload and did not return any of the existing log files. Now, the function still generates an error in this case, but creates nevertheless a zip file with the available log files.
117166	DSA - Incorrect stage mapping axis name When downloading the mapping information into the controller(s), the stage mapping axis name of the devices acting as source only was not set properly.
158564	ETB - Download firmware while status toggling was failing Downloading a firmware while the status of the connected device was toggling was not working (the download process could block or generate an error).
162845	ETB - Firmware download failure to an UltimET Advanced Under certain circumstances, the downloading of a Firmware or CSM to an UltimET Advanced could be interrupted by the error Net connect error.
158500	GENERAL - Incorrect value returned for .NET interface methods returning a Boolean type The .NET interface methods returning bool or Boolean types could return a false "True".
158400	GENERAL - Windows console momentarily displayed On a Windows based application like for e.g. ComET, the execution of certain EDI functions was causing the annoying effect of having the Windows console suddenly appearing and disappearing (only when not using the verbose mode).
161293	TRA - Downloading register file was generating an unexpected error The tra_etcom_download_register_stream_s/a functions were generating an error if the ISO conversion was not known for the specified product even if the concerned registers were not selected for downloading.

3. RELEASE 4.23A

NEW SOFTWARE RELEASE FOR ACCURET/ULTIMET PRODUCT FAMILY		
Type of release:	Production Software Package – PSWP 09-2020	
Date of release:	2020-09-30	
Versioning and concerned products:		
AccurET Modular version 3.19A	AccurET 48 HW REV2	AccurET 300
	AccurET 400/600 HW REV2	AccurET VHP48 HW REV2
	AccurET VHP100	AccurET VHP48 ZxT
	AccurET VHP48 QuiET	AccurET VHP100 QuiET
UltimET version 3.19A	UltimET Light PCI	UltimET Light TCPIP
	UltimET Light PCIe	UltimET Advanced
Software and APIs	EDI version 4.23A	ComET version 4.23A
	IMP version 1.03A (no update)	XT API version 1.00B (no update)
Main new features introduced with this release:		
AccurET Modular	The new Power Sag Detection feature improves the immunity to sudden and short power voltage sag.	
UltimET	First firmware release for the new UltimET Advanced product that will be launched by the end of 2020. This package includes all necessary files and tools to operate it.	
EDI	Improved real-time execution of EDI on RTX operating system. Reaction time to cyclic interrupts has been reduced and made more deterministic.	
ComET	Refactoring of multiple menus & tools in the GUI to improve user experience.	
	Extensive revision of the user documentation.	
Warning notice:		
None		
Compatibility breaks:		
There are 6 compatibility breaks: 4 on AccurET, 1 on EDI and 1 on ComET. For further details, refer to the corresponding release notes.		
Notes concerning this release:		
The version just released supersedes the former one that is now considered as a “Supported” item for a period of two years. Support on old FW/SW versions is subject to specific conditions, please contact your ETEL S.A. representative in case of need.		
All above versions have been developed and qualified to be operated together. Users upgrading FW/SW to the most recent versions must do so on all products simultaneously (UltimET, AccurET, EDI, etc.). Operation of multiple products with non-synchronized FW/SW releases is not guaranteed and not supported by ETEL S.A.		
Information about production deployment:		
The following products produced from 2020-10-05 will contain this software package until further notice:		
• Firmware for AccurET Modular 48 HW Rev2 / 300 / 400-600 HW Rev2 / VHP48 HW Rev2 / VHP100: 3.19A		
• Firmware for UltimET Light PCI / PCIe / TCPIP and UltimET Advanced: 3.19A		
Internal reference number: 771421 ver./rev. 13/A.		

3.1. DLL versions

LIB 4.20A, EKD 4.19A, EMP 4.17A, DMD 4.21A, ETB 4.20A, ESD 4.16A, DSA 4.23A, TRA 4.19A, ETN 4.18A, ESC 4.16A (only for 32-bit version).

3.2. Compatibility breaks

There is one compatibility break with this release:

- Reference number: 148963 → GENERAL - Update of the AccurET USB driver

The compatibility breaks are highlighted in red in the tables below.

3.3. Deprecated features

None.

3.4. Additional remarks / DLL versions / etc.

None.

3.5. List of new features

Reference number	Description
152381	Documentation - The supported platforms are now well defined in EDI documentation EDI documentation contains a clear definition of the supported platforms.
145348	EDI - A chapter about Acquisition (Normal & Continuous) programming has been inserted inside EDI documentation A chapter about Acquisition (normal & continuous) has been inserted inside EDI documentation.
157007	EDI - Compilation under Visual Studio 2019 EDI for Windows is now compiled under Visual Studio 2019 (EDI for RTX 2016 and RTX64 3.5 remains under Visual Studio 2015).
153438	ETB - Error -214 (ETB_ENODRIVE) returned in case of connection failure was too generic If something went wrong when attempting to establish a connection to a controller, the returned error -214 (ETB_ENODRIVE) was too generic to help understand the nature of the failure. New error codes have been added, enabling a better diagnostic of the problem.
150191	ETB - etb_etcom_download_firmware_ex did not allow to erase sequence or register blocks The etb_etcom_download_firmware_ex function has now an argument to specify if the sequence or/and register blocks must be erased while downloading a firmware.
151568	GENERAL - UltimET Advanced product The new motion controller UltimET Advanced is now supported.
158012	GENERAL - Firmware pool clean-up The AccurET and UltimET Light firmware files corresponding to releases prior to version 3.00 have been removed from the firmware pool. This modification also impacts ComET's installation.
148963	GENERAL - Update of the AccurET USB driver A new version of the AccurET USB driver is available (ver. 2.18.28, 2017). Please refer to EDI technical note "USB.pdf" for the installation of the driver. Be aware that your application MUST use at least EDI-4.23A/ComET-4.23A to be able to use this new driver. On the other hand, an application based on EDI-

Reference number	Description
	4.23A can use as well the former driver version (ver. 2.06.02, 2010).
153326	SAMPLES - C++ code samples were enhanced
	The C++ code samples were enhanced with recommended coding best practices leading to improved troubleshooting capabilities of user applications.

3.6. List of corrections

Reference number	Description
156329	DEX - Scale mapping file import failure
	An error was raised when importing a scale mapping file with the correction mode set to negative.
154163	DMD - .NET definition of DmdData::TYP_TRIGGER_INT64 was missing
	The .NET definition of DmdData::TYP_TRIGGER_INT64 was unintentionally removed.
155538	DSA - .NET HTML documentation: changeSetPoint method wrongly documented
	The .NET HTML documentation related to the changeSetPoint method mentioned wrongly that the related command is STI (ST movement on Input), when it is indeed STA (STArt movement).
153826	DSA - .NET functions RTVSlot::read32Bit and RTVSlot::read64Bit did not return the slot values
	The .NET functions allowing to read RTV slot values were not accepting a reference argument to return the value read. Additionally, the functions allowing to read and write RTV slots are not supported on non-real-time communication buses like TCP/IP. The HTML documentation has been updated accordingly.
149969	DSA - Disable group items methods failed on interpolation groups
	Disabling an item of an interpolation group (DSA_IPOL_GROUP) was not supported before. Now, all interpolation functions <code>dsa_ipol...</code> manage the disabling of group items. For complete functionality of interpolation functions (G-Code), the UltimET Light firmware 3.19A or above is required.
146882	DSA - Function <code>dsa_get_parameter_version_s</code> returning wrong value
	The <code>dsa_get_parameter_version_s</code> function was always returning 0 in <code><version></code> argument instead of the corresponding depth of M282 parameter.
153658	DSA - In certain very specific configurations, the upload of traces was failing with a bad parameter exception
	In certain acquisition configurations, like for example acquiring a mix of PLTI and MLTI sampled traces with a periodicity of 150 µs, was failing with a bad parameter exception.
141909	DSA - Modifying an already set trigger was not handled properly
	Modifying a trigger already set on one axis to act on a different axis although not allowed, was not generating an error.
151269	EDI-RTX - PCI/PCIe IRQ management improved
	RTX PCI/PCIe IRQ management has been modified to improve the reaction time for executing the user callback function after PCI IRQ (cyclic interrupt).
151363	ETB - Functions <code>etb_etcom_start_upload(_ex)</code> were not returning an error if the specified block is not available
	As the functions <code>etb_etcom_start_upload(_ex)</code> were not returning an error if the specified block is not available for that device, the subsequent call to <code>etb_upload_segment</code> caused EDI to crash.
157250	TRA - Abnormal termination of EDI during registers uploading
	Uploading registers using a TRA traductor created using one of the flag options <code>TRA_FLAG_ALL_SUBINDEXES</code> , <code>TRA_FLAG_GROUP_SUBINDEXES</code> , <code>TRA_FLAG_COMMENT_LINE</code> and <code>TRA_FLAG_MOST_PRECISION</code> could abnormally terminate EDI.
123728	TRA - The product reference displayed in the uploaded registers file was incorrect

Reference number	Description
	The product reference included in the header of the uploaded registers file had an additional unexpected '-' character inserted.

4. RELEASE 4.22A

NEW SOFTWARE RELEASE FOR ACCURET/ULTIMET PRODUCT FAMILY		
Type of release:	Production Software Package – PSWP 12-2019	
Date of release:	2019-12-20	
Versioning and concerned products:		
AccurET Modular version 3.18A	AccurET 48 HW REV2	AccurET 300
	AccurET 400/600 HW REV2	AccurET VHP48 HW REV2
	AccurET VHP100	AccurET VHP48 ZxT
	AccurET VHP48 QuiET	AccurET VHP100 QuiET
UltimET light version 3.18A	UltimET light PCI	UltimET light TCPIP
	UltimET light PCIe	
Software and APIs	EDI version 4.22A	ComET version 4.22A
	IMP version 1.03A	XT API version 1.00B
Main new features introduced with this release:		
AccurET Modular	AccurET EtherCAT improvements: better support of Station Alias (axis number), new flexible PDO objects and possibility to share data like RTV.	
	New braking distance monitoring for an increased safety.	
	Faster setting of the Trigger feature thanks to new commands available.	
	I/O management through RTV now available.	
ComET	Setting tool enhancements: support of EtherCAT mode.	
	QuiET tool enhancements: individual tuning of X and Y static masses.	
	ZxT tool enhancements: support of USB connection.	
	Minor cosmetic improvements to the user interface.	
EDI	Update of the UltimET light PCI/PCIe driver.	
	Renaming of the AccurET USB driver.	
	Drivers’ signature for Windows and RTX operating systems.	
	Addition of functions for configuring Fast I/Os.	
Warning notice:		
ETEL will no longer support any action (neither on feature changes, nor on bug fixes) for AccurET and UltimET light firmware versions 2.xx and older. These firmware were designed and released until 2012 to run on AccurET rev.1 discontinued since then.		
Compatibility breaks:		
There are 9 compatibility breaks: 2 on EDI, 2 on ComET and 5 on AccurET. For further details, refer to the corresponding readme files.		
Notes concerning this release:		
All above versions have been developed and qualified to be operated together. Users upgrading FW/SW to the most recent versions must do so on all products simultaneously (UltimET, AccurET, EDI, etc.). Operation of multiple products with non-synchronized FW/SW releases is not guaranteed and not supported by ETEL S.A.		
Information about production deployment:		
The following products produced after 2020-01-10 will contain this software package until further notice:		
• Firmware for AccurET Modular 48 HW Rev2 / 300 / 400-600 HW Rev2 / VHP48 HW Rev2 / VHP100: 3.18A		
• Firmware for UltimET light PCI / PCIe / TCPIP: 3.18A		
Internal reference number: 771421 ver./rev. 12/A.		

4.1. DLL versions

LIB 4.19A, EKD 4.18A, EMP 4.16A, DMD 4.20A, ETB 4.19A, ESD 4.15A, DSA 4.22A, TRA 4.18A, ETN 4.17A, ESC 4.15A (only for 32-bit version).

4.2. Compatibility breaks

There are two compatibility breaks with this release:

- Reference number 146899: EKD/ETB - AccurET USB driver renamed
- Reference number 141538: GENERAL - Update of the UltimET PCI/PCIe driver

The compatibility breaks are highlighted in red in the tables below.

4.3. Deprecated features

None.

4.4. Additional remarks / DLL versions / etc.

None.

4.5. List of new features

Reference number	Description
143182	DSA - Disable watchdog documented The <code>dsa_set_watchdog</code> function can be used to disable the watchdog functionality by setting the <code><time></code> parameter to zero (0). The HTML documentation has been updated accordingly.
108751	DSA - EDI functions for Fast I/O implemented Six new DSA functions have been implemented: - <code>dsa_set_fast_digital_output_s/a</code> - <code>dsa_get_fast_digital_output_s/a</code> - <code>dsa_get_fast_digital_input_s/a</code> C++ & .NET interfaces have been updated.
143177	DSA - Opening communication flags documented The documentation of the flags which can be used on the <code><url></code> parameter of the <code>dsa_open_u</code> functions has been improved. This information can be found in both the HTML and EDI documentations.
144195	EDI version introduced in the C include files EDI include (header) files now contain the corresponding EDI version to ease the match between these and the library (DLLs).
146899	EKD/ETB - AccurET USB driver renamed The USB driver currently used by ETEL products (FTDI version 2.06.02) may be overwritten by other third-party products installing a newer version of the same driver. One of the symptoms when this occurs is that the USB communication with the AccurET controller becomes very slow. To avoid this, the USB driver required by ETEL products has been renamed, making it specific to the ETEL product suite. A re-installation of the USB driver is required to use this new version (refer to EDI USB technical notes on how to install this specific USB driver). Be aware that your application MUST use at least EDI-4.22A/ComET-4.22A to be able to use this new driver (but, EDI/ComET-4.22A or higher can also interface the former USB driver ensuring backward compatibility).
147413	ETND/ETNE - .net HTML documentation missing ETNE class definition Information related to the ETNE class was added to the .net HTML documentation.
148937	GENERAL - Driver signature for Windows and RTX operating systems

Reference number	Description
	The UltimET PCI/PCle and USB drivers for Windows 7, 8, 8.1 and 10 are signed with an EV certificate. The following versions of Windows 10 are now supported: 1506, 1511, 1607, 1703, 1709, 1803, 1809, 19H1, RS1 to RS5. The drivers for RTX, RTX2016 and RTX64 are also signed.
141538	GENERAL - Update of the UltimET PCI/PCle driver A new version of UltimET PCI/PCle driver is available (ver. 14.1.1). This driver fully supports Windows 10 versions 1506, 1511, 1607, 1703, 1709, 1803, 1809, 19H1, RS1 to RS5. Please refer to EDI technical note "UltimET PCI-PCle.pdf" for the installation of the driver. Be aware that your application MUST use at least EDI-4.22A/ComET-4.22A to be able to use this new driver. On the other hand, an application based on EDI-4.22A can use as well former versions of driver (ver. 10.2.1 or 11.1.0).
147073	SAMPLES - New C# and vb.NET examples demonstrating the use of ETNE added to the EDI package New C# & vb.NET EDI code examples have been added to the EDI package. These examples show how to use ETNE to allow multiple connections to the connected hardware.

4.6. List of corrections

Reference number	Description
150458	DMD - Wrong command range defined on AccurET and UltimET firmware versions below 3.0 The available command range was wrongly defined on the AccurET and UltimET firmware versions before 3.00. This leads to assertion error seen mainly by the TRA dll (or ComET terminal) in debug mode.
146882	DSA - Function dsa_get_parameter_version_s returning wrong value The dsa_get_parameter_version_s function was always returning 0 in <version> argument instead of the corresponding depth of M282 parameter.
148925	DSA - Missing last point of a trace acquisition for a register sampled at the MLTI rate When mixing the acquisition of traces for registers sampled at the PLTI and MLTI rates, the last point of the MLTI sampled register trace could be missing. This was occurring when the total number of points to acquire was not even.
141629	ESC - Download of sequence with reference to a device not available When downloading a sequence containing commands to an axis with which the communication is not established, the following error message was displayed "No device found for target axis". This message was insufficient for understanding the nature of the error and has been replaced by a more explicit one: "The sequence contains a command for a device with which the communication is not established. The application must open the communication to all devices referenced in the sequence."

5. RELEASE 4.21B

NEW SOFTWARE RELEASE FOR ACCURET/ULTIMET PRODUCT FAMILY		
Type of release:	Intermediate Release – RELEASE 08-2019	
Date of release:	2019-08-30	
Versioning and concerned products:		
Software and APIs	EDI version 4.21B	ComET version 4.21B
		XT API version 1.00B
Main new features introduced with this release:		
EDI	These corrective versions fix a potential problem with the System Configuration Manager tool and the related EDI functions. Indeed, a bug could occur when the system image contained a sequence with an “autostart” function that executes a *SAV command.	
ComET		
XT API	This corrective release fixes the conversion calculations that were incorrect when having an angle offset between the Wafer and the Stage coordinate reference systems.	
Warning notice:		
It is recommended to upgrade EDI and ComET with these new versions where the System Configuration Management is used.		
Compatibility breaks:		
None		
Notes concerning this release:		
Above versions have been qualified with AccurET firmware 3.17A and UltimET light firmware 3.17A. It is therefore strongly recommended to use the same configuration. Operation with other configuration is not guaranteed and not supported by ETEL S.A.		
Information about production deployment:		
No modification on the production. The manufactured products will still contain the same firmware version until further notice:		
<ul style="list-style-type: none">Firmware for AccurET Modular 48 HW Rev2 / 300 / 400-600 HW Rev2 / VHP48 HW Rev2 / VHP100: 3.17AFirmware for UltimET light PCI / PCIe / TCPIP: 3.17A		
Internal reference number: 771421 ver./rev. 11/A.		

5.1. DLL versions

LIB 4.18A, EKD 4.17A, EMP 4.15B, DMD 4.19B, ETB 4.18C, ESD 4.14A, DSA 4.21A, TRA 4.17B, ETN 4.16B, ESC 4.14B (only for 32-bit version).

5.2. List of new features

Reference number	Description
147413	ETND/ETNE - .net HTML documentation missing ETNE class definition.
	Information related to the ETNE class was added to the .net HTML documentation.

5.3. List of corrections

Reference number	Description
150458	DMD - Wrong command range defined on AccurET and UltimET firmware versions below 3.0.
	The available command range was wrongly defined on the AccurET and UltimET firmware versions below 3.00. This leads to assertion error seen mainly by the TRA dll (or ComET terminal) in debug mode.
146882	DSA - Function <code>dsa_get_parameter_version_s</code> returning wrong value.
	The <code>dsa_get_parameter_version_s</code> function was always returning 0 in <version> argument instead of the corresponding depth of M282 parameter.
148925	DSA - Missing last point of a trace acquisition for a register sampled at the MLTI rate.
	When mixing the acquisition of traces for registers sampled at the PLTI and MLTI rates, the last point of the MLTI sampled register trace could be missing. This was occurring when the total number of points to acquire was not even.
141629	ESC - Download of sequence with reference to a device not available.
	When downloading a sequence containing commands to an axis with which the communication is not established, the following error message was displayed (No device found for target axis). This message was insufficient for understanding the nature of the error and has been replaced by a more explicit one: The sequence contains a command for a device with which the communication is not established. The application must open the communication to all devices referenced in the sequence..

6. RELEASE 4.21A

NEW SOFTWARE RELEASE FOR ACCURET/ULTIMET PRODUCT FAMILY		
Type of release:	Production Software Package – PSWP 06-2019	
Date of release:	2019-07-05	
Versioning and concerned products:		
AccurET Modular version 3.17A	AccurET 48 HW REV2	AccurET 300
	AccurET 400/600 HW REV2	AccurET VHP48 HW REV2
	AccurET VHP100	AccurET VHP48 ZxT
	AccurET VHP48 QuiET	AccurET VHP100 QuiET
UltimET light version 3.17A	UltimET Light PCI	UltimET Light TCPIP
	UltimET Light PCIe	
Software and APIs	EDI version 4.21A	ComET version 4.21A
	IMP version 1.03A	XT API version 1.00A
Main new features introduced with this release:		
AccurET Modular	EtherCAT Touch Probe feature.	
	Force Control enhancement for faster touchdown detection.	
	Improved TTL encoder integration.	
	VHP100 protection.	
UltimET light	Support of TELICA dual-gantry system.	
ComET	Improved settings tool for incremental EnDat and TTL encoders.	
XT API version 1.00A	First release of the library for controlling CHARON2 XT systems.	
Warning notice:		
It is mandatory to upgrade any AccurET VHP100 to this firmware 3.17A. There is a risk of hardware damage when using the previous firmware versions.		
Compatibility breaks:		
There are minor compatibility breaks that are described under the specific readme files (3 for AccurET and 2 for ComET).		
Notes concerning this release:		
All above versions have been developed and qualified to be operated together. Users upgrading FW/SW to the most recent versions must do so on all products simultaneously (UltimET, AccurET, EDI, etc.). Operation of multiple products with non-synchronized FW/SW releases is not guaranteed and not supported by ETEL S.A.		
Information about production deployment:		
The following products produced after 2019-07-08 will contain this software package until further notice:		
• Firmware for AccurET Modular 48 HW Rev2 / 300 / 400-600 HW Rev2 / VHP48 HW Rev2 / VHP100: 3.17A		
• Firmware for UltimET light PCI / PCIe / TCPIP: 3.17A		
Internal reference number: 771421 ver./rev. 11/A.		

6.1. DLL versions

LIB 4.18A, EKD 4.17A, EMP 4.15B, DMD 4.19A, ETB 4.18B, ESD 4.14A, DSA 4.21A, TRA 4.17B, ETN 4.16A, ESC 4.14B (only for 32-bit version).

6.2. List of new features

Reference number	Description
125214	DSA - New EDI functions to set target position with increments The DSA functions <code>dsa_set_target_position_from_register_s/a</code> have been added. C++ and .NET interface have also been updated.
144583	DSA/DMD - New ISO conversion KDF_FCTRL (128) has been defined and implemented.
146625	GENERAL - EDI libraries for RTX2016 are compiled with RTX2016 Update 3 The RTX2016 Update 3 provided by IntervalZero resolves an issue where the Real-time Subsystem would fail to start and cause a reboot after applying any of the Microsoft Windows 7 security updates released after March 2018 to fix the Meltdown-Spectre issue.
146627	GENERAL - EDI libraries for RTX64 are compiled with RTX64 3.5 The RTX64 3.5 update provided by IntervalZero resolves an issue where the Windows security update that prevents the Meltdown-Spectre vulnerabilities for Windows 10, Windows 8.1 and Windows 7 caused the Real-time Subsystem to crash on startup.

6.3. List of corrections

Reference number	Description
142351	DSA - Upload trace error not always signaled In some conditions, the upload process of a trace did not signal an internal error correctly.
137692	DSA - Upload of mapping data from ZxT failed Uploading mapping data from ZxT was generating an error indicating that the time information of the axes are different.
138658	EMP/DMD - Error messages truncated Error messages of 50 characters were only returning the first 49 characters. All 50 characters are now returned.
137504	ESC - Sequence compilation failed Sequence compilation failed when several drives were connected through USB and the application did not open the communication on all the drives.
142718	ETB - Download firmware using MD5 failed The ETB function <code>etb_download_firmware_ex</code> , which detects if a block has changed using MD5 before downloading, was not working for firmware with more than 64 blocks. This has been corrected and now firmware up to 256 blocks can be downloaded.
141705	TRA - Memory leak during parameters download The <code>tra_etcom_download_register_stream_e2</code> function configured with <code>TRA_SKIP_NON_SYSTEM</code> generated a memory leak.

7. RELEASE 4.20A

NEW SOFTWARE RELEASE FOR ACCURET/ULTIMET PRODUCT FAMILY		
Type of release:	Production Software Package – PSWP 12-2018	
Date of release:	2018-12-14	
Versioning and concerned products:		
AccurET Modular version 3.16A	AccurET 48 HW REV2	AccurET 300
	AccurET 400/600 HW REV2	AccurET VHP48 HW REV2
	AccurET VHP100	AccurET VHP48 ZxT
	AccurET VHP48 QuiET	AccurET VHP100 QuiET
UltimET light version 3.16A	UltimET Light PCI	UltimET Light TCPIP
	UltimET Light PCIe	
EDI version 4.20A	ComET Version 4.20A	IMP Version 1.03A
Main new features introduced with this release:		
AccurET Modular	EtherCAT compatibility (requires specific AccurET hardware P/N)	
	Incremental EnDat2.2	
	Intermittent Dual Encoder Feedback	
	Continuous Traces	
	Faster Compiled Sequence with execution stack in fast internal memory	
UltimET light	Continuous Traces	
	Faster Compiled Sequence with execution stack in fast internal memory	
EDI	Continuous Traces Acquisition	
ComET	ZxT tool: possibility to perform feedforward tuning and simulate the regulator	
	Possibility to perform cogging measurement in a single direction	
	Warning to user when firmware / register download attempted on wrong device	
Warning notice:		
It is mandatory to upgrade any AccurET VHP100 to this firmware 3.16A! There is a risk of hardware damage when using the previous firmware versions.		
Compatibility breaks:		
There are minor compatibility breaks that are described under the specific readme files (1 for AccurET, 1 for ComET and 2 for IMP).		
Notes concerning this release:		
None		
Information about production deployment:		
The following products produced after 2018-12-17 will contain this software package until further notice:		
• Firmware for AccurET Modular 48 HW Rev2 / 300 / 400-600 HW Rev2 / VHP48 HW Rev2 / VHP100: 3.16A		
• Firmware for UltimET light PCI / PCIe / TCPIP: 3.16A		
Internal reference number: 771421 ver./rev. 10/A.		

7.1. DLL versions

LIB 4.17A, EKD 4.17A, EMP 4.15A, DMD 4.18A, ETB 4.18A, ESD 4.14A, DSA 4.20A, TRA 4.17A, ETN 4.16A, ESC 4.14A (only for 32-bit version).

7.2. List of new features

Reference number	Description
138436	DSA - New EDI functions for SAFRX/SAFRY commands
	4 new DSA functions have been added: - dsa_set_rx_advanced_filter_s/a - dsa_set_ry_advanced_filter_s/a C++ and .NET interface have also been updated
138304	DSA - New EDI functions for SETFCI command
	6 new DSA functions have been added: - dsa_force_control_set_immediate_s/a - dsa_force_control_set_immediate_ex1_s/a - dsa_force_control_set_immediate_ex2_s/a C++ and .NET interface have also been updated
137878	DSA - New EDI functions for WTWZXT command
	2 new DSA functions have been added: - dsa_wait_window_zxt_s/a C++ and .NET interface have also been updated
134341	DSA - New EDI functions for continuous acquisition
	11 new DSA functions have been added: - dsa_acquisition_continuous_config : configure the parameters - dsa_acquisition_continuous_acquire : start acquisition - dsa_acquisition_continuous_get_nb_available_values : number of data that can be uploaded - dsa_acquisition_continuous_wait_available_values_s/a : wait a specified number of data - dsa_acquisition_continuous_upload_int32/64_trace : upload data in increment 32/64bit integer - dsa_acquisition_continuous_upload_float32/64_trace : upload data in increment 32/64bit float - dsa_acquisition_continuous_upload_trace : upload data in ISO standard unit - dsa_acquisition_continuous_get_data_integrity : integrity of the uploaded data C++ and .NET interface have also been updated

7.3. List of corrections

Reference number	Description
136930	DSA - Continuous acquisition stops after a few loops
	With certain specific combinations of buffer size and number of uploaded points, the continuous acquisition stops and displays an error (-322) after a few loops. This error occurs, for example, with the following configuration: buffer size = 16384 and uploaded data = 1024.
138725	DSA - Return of asynchronous functions callback equal to 0
	The returned values of the callback for asynchronous functions are always equal to 0 when executed in 64bits environment. This has been corrected.
139499	EKD - UltimET opening not possible
	The UltimET opening is impossible if another PCI board is detected with the same vendor ID (0x1556) than an UltimET.

8. RELEASE 4.19A

NEW SOFTWARE RELEASE FOR EDI	
Type of release:	Intermediate
Date of release:	2018-09-13

8.1. DLL versions

LIB 4.16A, EKD 4.16A, EMP 4.15A, DMD 4.17A, ETB 4.17A, ESD 4.14A, DSA 4.19A, TRA 4.16A, ETN 4.16A, ESC 4.14A (only for 32-bit version).

8.2. List of new features

Reference number	Description
135677	DSA - New gain functions for ZxT 14 new functions have been added, allowing to set/get gains of specified sub-axis of ZxT (Rx or RY) - dsa_get_pl_proportional_gain_ex_s/a - dsa_set_pl_proportional_gain_ex_s/a - dsa_get_pl_speed_feedback_gain_ex_s/a - dsa_set_pl_speed_feedback_gain_ex_s/a - dsa_get_pl_integrator_gain_ex_s/a - dsa_set_pl_integrator_gain_ex_s/a - dsa_set_tilt_advanced_filter_s/a C++ and .NET interface have also been added
135716	TRA - This dll checks if a register has been downloaded and stores this status A new C function tra_register_downloaded has been implemented allowing to check this status. JNI dll calls C function to download register and then calls C function to check if a register has been downloaded. If not, JNI dll generates a TRA_ENOREGDOWNLOADED exception. ComET will receive this exception. No modification of ComET is required. C++ and .NET interface on tra_register_downloaded have been implemented.

8.3. List of corrections

Reference number	Description
137160	GENERAL - Metadata processing generated error not accurate enough The processing of metadata can generate several error like: Upload error, metadata structure not correct, unzip problem, firmware not present in pool, etc. All these errors end up to a single error "Bad drive version", which does not provide enough indication to user. This has been corrected and now each situation generates its own error.

9. RELEASE 4.18A

NEW SOFTWARE RELEASE FOR AccurET/UltimET PRODUCT FAMILY.		
Type of release:	Intermediate	
Date of release:	2018-06-29	
Versioning and concerned products:		
AccurET Modular firmware Version 3.15A	AccurET 48 HW REV2	AccurET 300
	AccurET 400/600 HW REV2	AccurET VHP48 HW REV2
	AccurET VHP100	AccurET ZxT VHP48
	AccurET QuiET VHP100	AccurET QuiET VHP48
UltimET Light firmware Version 3.15A	UltimET Light PCI	UltimET Light TCPIP
	UltimET Light PCle	
EDI middleware Version 4.18A		
ATP Analysis software Version 5.03A		

9.1. DLL versions

LIB 4.15A, EKD 4.16A, EMP 4.15A, DMD 4.16A, ETB 4.16A, ESD 4.14A, DSA 4.18A, TRA 4.15A, ETN 4.15A, ESC 4.13C (only for 32-bit version).

9.2. List of new features

Reference number	Description
132862	DSA - New EDI functions allowing to send optional JERK parameters of command MVE, SMP and RMVE.
	6 new DSA functions have been added: - dsa_start_profiled_movement_ex_s/a allow to specify jerk time for command MVE - dsa_set_profiled_movement_ex_s/a allow to specify jerk time for command SMP - dsa_start_relative_profiled_movement_ex_s/a allow to specify speed, acceleration and jerk time for command RMVE C++ and .NET interface have also been updated

9.3. List of corrections

Reference number	Description
133612 (From EDI-4.18beta1 of 2018-05-25)	64bit version of Linux EDI library fails to download sequences A problem appears during the download of a pre-compiled sequence on Linux 64-bit. The download process ends up with a timeout, and the destination device has to be rebooted to recover. This has been corrected. A second problem appears, the drive was generating a STREAM WRITE error. This have been corrected, too.
133877	DSA - Missing argument name for dsa_start_movement_a() in dsa40.h For consistency dsa40.h updated with the name handler for DSA_HANDLER type
134140	DSA - dsa_wait_sgn_register_lower_s does not wait for register value Function dsa_wait_sgn_register_lower_s does not wait that the specified register has a value lower than the one specified. This was due to a bad setting of the specified timeout, which was set to 0 instead of the specified one. This has been corrected.

10. RELEASE 4.17C

NEW SOFTWARE RELEASE FOR EDI	
Type of release:	Intermediate
Date of release:	2018-04-12

10.1. DLL versions

LIB 4.14B, EKD 4.15B, EMP 4.14A, DMD 4.15B, ETB 4.15B, ESD 4.13A, DSA 4.17C, TRA 4.14A, ETN 4.14A, ESC 4.13B (only for 32-bit version).

10.2. List of new features

None.

10.3. List of corrections

Reference number	Description
132809	DSA - Change parameter type of enableGroupItem/disableGroupItem() The parameter type of following functions: enableGroupItem and disableGroupItem has changed from dsaDeviceGroup to dsaDeviceBase for .NET interface.
132990	DSA - Group command split in several ETCOM records even if not necessary Sending a command on a group did not test correctly the resulting ISO to INC value and was generating several ETCOM records. This was due to bad calculation of size of data to copy. This bug has been introduced by EDI-4.17B.

11. RELEASE 4.17B

NEW SOFTWARE RELEASE FOR EDI	
Type of release:	Intermediate
Date of release:	2018-04-04

11.1. DLL versions

LIB 4.14B, EKD 4.15B, EMP 4.14A, DMD 4.15B, ETB 4.15B, ESD 4.13A, DSA 4.17B, TRA 4.14A, ETN 4.14A, ESC 4.13B (only for 32-bit version).

11.2. List of new features

Reference number	Description
126272	ETNE (RTX) - etne_start_custom using a Virtual Network between Windows and RTX. A RTX application can now allow a Windows application to access its connected devices by starting a TCP/IP access port using etne_start_custom. With this functionality, a Windows application like ComET will be able to talk to the connected devices. A documentation describing how to configure RTX Virtual network (see doc\ETND-ETNE.pdf) and a small RTX example (samples\40\c(Rtx)\etn2) help the user to setup this kind of communication. This feature is available on RTX 2016, RTX 64 (3.1), RTX-2014. This feature is already implemented inside EDI-RTX. Only documentation about RTX Virtual network configuration as well as etne RTX example has been added.

11.3. List of corrections

Reference number	Description
132313	DSA - Access violation with array read of RTV The following functions: dsa_read_rtv_int64_array, dsa_read_rtv_float32_array and dsa_read_rtv_float64_array generate an Access violation. These functions are now corrected.
129832	DSA / LIB / ETB / EKD - Functions not accessible for linking The following functions were missing in the corresponding .def files DSA : dsa_set_parameters_version_s LIB : dir_file_copy / dir_dir_copy ETB : etb_endian_memcpy16 EKD : ekd_get_drive_version
128099	ETB - USB connection with a drive with corrupted firmware When an ETEL device with corrupted firmware is detected on USB communication bus, EDI was returning an error without checking the presence of other ETEL USB devices. Due to this, EDI was not able to detect every ETEL devices connected through USB. Another problem was that the open process (USB communication synchronization) could not be stopped, leading to an infinite opening process in the case where corrupted devices are connected. All these problem have been corrected.

12. RELEASE 4.17A

NEW SOFTWARE RELEASE FOR AccurET/UltimET PRODUCT FAMILY		
Type of release:	Production Software Package (PP08) – PSWP Q4 2017	
Date of release:	2017-12-07	
Versioning and concerned products:		
AccurET Modular firmware Version 3.14A	AccurET 48 HW REV2	AccurET 300
	AccurET 400/600 HW REV2	AccurET VHP48 HW REV2
	AccurET VHP100	AccurET VHP48 ZxT
	AccurET VHP48 QuiET	AccurET VHP100 QuiET
UltimET Light firmware Version 3.14A	UltimET Light PCI	UltimET Light TCPIP
	UltimET Light PCIe	
EDI Version 4.17A	ComET Version 4.17A	IMP Version 1.01A
Main new features introduced with this release:		
AccurET 3.14A	Continuous Trigger	
	Extend the number of TransnET RTV slots to 16 for reading and 16 for writing	
	New dual axis force control	
UltimET 3.14A	None	
EDI 4.17A	Support of RTX 2016 and RTX 64	
	Functions for Continuous Trigger	
	Functions for control of acquisitions	
	Signed drivers for UltimET PCI, UltimET PCIe & USB, under Windows 7, 8, 10	
ComET 4.17A	Force control setting tool for dual axis systems	
	Improvement of ZxT tool	
	Improvement of error and warning list	
IMP 1.01A	Continuous Trigger management	
	Bounds & kinematics evaluation between two trajectory points	
	Save PVT list to repeat execution without re-generating trajectory	
	Add trigger/time mark on way point	
	Double triggering issue solved	
Warning notice:		
There is no warning notice within this release.		
Compatibility breaks:		
There are minor compatibility breaks that are described under the specific readme files (2 for AccurET, 3 for ComET and 3 for IMP).		
Behavior changes:		
There is no behavior change within this release.		
Notes concerning this release:		
None		
Information on production release for the AccurET/UltimET product family:		
The software package installed in production from 2017-12-11 on our products contains the following versions:		
<ul style="list-style-type: none">AccurET Firmware for AccurET 48 HW Rev2 / 300 / 400-600 HW Rev2 / VHP48 HW Rev2 / VHP100: 3.14A.UltimET Firmware for UltimET Light PCI / PCIe / TCPIP: 3.14A.EDI versions compatible with this package: 4.17A (32bits and 64bits).ComET on software DVD: 4.17A.		
This package is referenced in TIS Document Nb.: 771421 ver./rev. 09/A.		

12.1. DLL versions

LIB 4.14A, EKD 4.15A, EMP 4.14A, DMD 4.15A, ETB 4.15A, ESD 4.13A, DSA 4.17A, TRA 4.14A, ETN 4.14A, ESC 4.13A (only for 32-bit version).

12.2. List of new features

Reference number	Description
112879	DSA - 8 new functions on items of a devices group 8 DSA Functions have been added: - dsa_disable_all_group_items - dsa_enable_all_group_items - dsa_disable_group_item - dsa_enable_group_item - dsa_disable_group_item_position - dsa_enable_group_item_position - dsa_disable_group_item_position_mask - dsa_enable_group_item_position_mask These functions allow to disable and re-enable item of a devices group. A group can be composed by a sub-group. Disable an item which is a sub-group will disable all devices of the sub-group. A command sent on a group containing disabled item will not be sent on the disabled items. It is not possible to send a command on a group whose all items are disabled. Acquisition functions are not allowed on groups containing disabled items. Mapping functions are not impacted by disabled group's items, this means that mapping functions used on a group containing disabled items will work as if the items are not disabled. C++ and .NET interface have also been upgraded
120239	DSA - Continuous trigger function 22 functions have been added: - dsa_trigger_continuous_last_event_loaded_s/a - dsa_trigger2d_continuous_last_event_loaded_s/a - dsa_trigger_set_continuous_nb_free_event_s/a - dsa_trigger_get_continuous_nb_free_event_s/a - dsa_trigger_set_continuous_user_status_bit_s/a - dsa_trigger_get_continuous_user_status_bit_s/a - dsa_trigger_set_combi_event_counter_group_s/a - dsa_trigger_get_combi_event_counter_group_s/a - dsa_trigger_get_nb_free_event_s/a - dsa_trigger_get_first_free_event_index_s/a - dsa_trigger_get_treated_event_number_per_group_s/a C++ and .NET interface also available
126280	DSA - Enable/disable group items on different buses Functions allowing to disable/enable group items can now be called on group of devices connected to different buses (TransnET, USB, Dummy,). The restriction is that the each axis of the group must have its own number
125444	DSA - Flag list of STA command updated Update the flag list of the STA AccurET command to cover all configurations
121903	DSA - New function to clear all RTV slots A new function allowing to clear RTV slots assignation on all devices connected on transnET has been implemented: dsa_free_all_transnET_slots_s C++ and .NET interface also available
120970	DSA - New functions for acquisition configuration 3 new functions to configure an acquisition have been added: - dsa_acquisition_config_with_nb_points_and_total_time - dsa_acquisition_config_with_nb_points_and_sampling_time - dsa_acquisition_config_with_sampling_time_and_total_time 3 new functions to get data of a configured acquisition have been added: - dsa_acquisition_get_real_nb_points - dsa_acquisition_get_real_sampling_time - dsa_acquisition_get_min_sampling_time 1 new function to get the max number of point for an acquisition has been added: - dsa_acquisition_get_max_nb_points C++ and .NET interface available
122413	DSA - New functions for force control 2 dsa functions have been implemented: - dsa_force_control_dual_axes_on_s/a

Reference number	Description
	- dsa_force_control_dual_axes_off_s/a C++ and .NET are also available
122673	DSA - Position compensation functions 4 new functions have been implemented: dsa_trigger_get_position_compensation_s dsa_trigger_get_position_compensation_a dsa_trigger_set_position_compensation_s dsa_trigger_set_position_compensation_a C++ and .NET interface also available
117011	DSA/DMD - New ISO conversion ISO_POS(70) has been defined and implemented.
127823	ETB - RTX dummy driver Dummy ETB driver is now available with RTX Operating System
122245	GENERAL - Add support of RTX2016 EDI for RTX2016 is compiled with Visual Studio 2015 and Target Platform Version must be configured with 10.0.14393.0. In case of file management by RTX application, the following macros defined by lib40.h must be used: EFILE, EOPEN, EFCLOSE, EFPRINTF, EVPRINTF, EFSCANF, EFWRITE, EFREAD, EFSEEK, EFTELL, EFGETS, Efeof, EFERROR.
122244	GENERAL - Add support of RTX64 EDI for RTX64 is compiled with Visual Studio 2015 and Target Platform Version must be configured with 10.0.14393.0. In case of file management by RTX application, the following macros defined by lib40.h must be used: EFILE, EOPEN, EFCLOSE, EFPRINTF, EVPRINTF, EFSCANF, EFWRITE, EFREAD, EFSEEK, EFTELL, EFGETS, Efeof, EFERROR.
127768	GENERAL - EDI with Visual Studio 2015 Compiled with VisualStudio 2015 and Target Platform Version set to 10.0.14393.0
124501	GENERAL - New boolean type: ebool Definition of a new boolean type based on a char built-in type and named ebool. This method guarantees that the sizeof of this new boolean type is identical between EDI and C/C++ Application. Caution: ebool must be used instead of bool type. Not applicable for .Net
122247	GENERAL - Signed drivers for Windows Drivers of UltimET PCI/PCle and USB for Windows 7, 8, 8.1 and 10 are signed with an EV certificate. Regarding Windows 10, the following versions are supported: 1506, 1511, 1607, RS2 and RS3. The UltimET drivers for RTX, RTX2016 and RTX64 are also signed.
127767	LIB - Macros for files management Definition of specific macros for the files management - EFILE - EOPEN - EFCLOSE - EFPRINTF - EVPRINTF - EFSCANF - EFWRITE - EFREAD - EFSEEK - EFTELL - EFGETS - Efeof - EFERROR

12.3. List of corrections

Reference number	Description
127760	DMD - DisplayName instead of productName Add file dmdprndname.c, which is parsed when generating Metadata and Static DMD and which contain default product name. The generation of this default name has also been corrected and take now displayName instead of product name. If different displayName exist for a single product, EDI will return the newest one.
127570	DMD - Function not accessible for linking The function dmd_is_simulation cannot be linked with an application. This was due to the missing declaration in the .def file of the DMD library. This is now corrected
127770	DSA - Correction of dsa_get_nb_available_slots Correction of dsa_get_nb_available_slots function which was not returning correct value
127438	DSA - Disabled items used for get status functions

Reference number	Description
	Functions <code>dsa_grp_get_or_status</code> and <code>dsa_grp_get_and_status</code> take into account the disabled items of a group. Now the disabled items are excluded of the status.
127757	DSA - Optimization of dsartv functions
	Optimize dsartv functions avoiding creating a parallel etb port (dynamic allocation)
115124	DSA - Scale mapping change error
	Function <code>dsa_scale_mapping_activate</code> : change displayed error when K294 or KL167 are = 0.
127766	DSA - Stage mapping activation
	<code>dsa_stage_mapping_activate</code> did not run correctly. This was due to underlaying <code>_dsa_mapping_create_slot</code> which was initialising msl even for 32 bit slot. (NULL pointer)
127771	DSA - Update RTV monitoring check
	Check of RTV monitoring value (M450) adapted for new FW version 3.13
124658	DSA - Update comments of acquisitions and triggers
	The source code comments have been updated allowing Doxygen document to be correct
125318	DSA - Update disable group function
	Disabling a group item from a group was disabling all further items of the group
127772	DSA - Wrong return with async acquisition
	When communication is closed, the asynchronous acquisition threads are correctly terminated but have a return value of -123. This has been corrected and return value is now 0.
118742	DSA - Wrong setting of the sampling time
	EDI now takes into account the trigger axis to compute the acquisition frequency.
127765	DSA - Wrong setting of the sampling time with COMMON frequency
	Trace frequency correction also for COMMON frequency. Trace frequency was not computed correctly when Trigger is on UltimET and No UltimET trace is selected. In this case, the computation could give values which cannot be handled by UltimET (like 150us). This is now corrected, and the frequency computation take in account the Trigger device.
126814	DSA - dsa_set_profiled_movement_s/a with 0 as speed and acceleration parameter
	Using <code>dsa_set_profiled_movement_s/a</code> with 0 as speed and acceleration parameter was setting the depth 0 instead of the depth specified as parameter. This has been corrected and now the correct depth is set.
128629	DSA - dsa_set_watchdog returns DSA_EBADPARAM error
	The test about the product on which the function is called has been corrected and returns an error only if the function is used on a product different than UltimET PCI or UltimET PCIe
127761	EKD - Driver version checking modified
	LINUX driver version checking will now accept pcteb driver version 4.xx
124130	EKD - Update emp40.h for C++
	Update emp40.h with extern C {..} for C++ application
106854	ESC - Check presence of Command/Register alias on every targeted axes
	A correction has been brought in ESC (Sequence Compiler): When a command (or a register) alias is used, the ESC checks on all targeted devices ONLY if the command is defined. If not, an error message will appears. Example CMD.1; - Download on UltimET => Targeted devices are all devices connected on UltimET - Download on 1 or several axes => Targeted devices are all axes on which we download
124662	ESC - Update pre-processor
	Sequence compiler avoid the use of Register in pre-processor definition. The check is now NOT case sensitive
123910	ETB - Loss of axis with USB communication
	USB driver waits for USB event and if the waiting returns with a timeout, ETB now processes the USB data if any.
127762	ETB - TCP/IP connection with T=-1
	On TCP/IP connection, when opening the communication with T=-1 (keep-alive disabled), the etb underlaying bus could nevertheless fall in error when the communication is still. This is now corrected
127759	ETB - TCP/IP open not synchronized
	TCP/IP open after device has disappeared was not synchronized. It could happen that EDI reads ML512 before having a stable transNET. This is now corrected
123666	ETB/ETNE - Issue with some C++ method
	It was not possible to use any etne C++ method (startCustom, stopCustom, ...). Calling these methods was generating some compilation errors like: - cannot convert parameter 1 from EtbBus to void* - cannot access protected member declared in class 'EtneException' This has been corrected. To use the correction please update both etb and etne.
121632	PCTEB - Linux driver issue with 4.04

Reference number	Description
	LINUX UltimET driver had a problem with kernel 4.04. vm_operations attached on Virtual memory driver were wrong
126904	<p>TRA - Download unselected registers with bad format value</p> <p>EDI allows to download a file containing registers and specify which register type of the file EDI must download. It's then possible to have a file containing all registers and specify only few register type to download. This is especially used when downloading a file containing monitoring registers which must not be downloaded.</p> <p>A problem appears when the file contains Mx450-465 (RTV registers). For AccurET, M450, MF450, ML450 and MD450 point on the same memory location. Depending on the value, it could appear that the floating representation of the value cannot be done. In this case, Uploading the registers will give, e.g, MF450=-1.#QNANF. The problem appears when a user want to download such registers. EDI detects an error and the download is aborted. It's correct to detect an error if the register must really be downloaded. But, in the case of M/MF/MD/ML register, the register must not be downloaded. A correction has been brought to EDI TRA dll, and the error is detected only if the register must be downloaded.</p> <p>Another correction has been brought, on value exceeding 32 digits. TRA was not able to read such big value. This has been also corrected.</p>

13. RELEASE 4.16A

RELEASE OF A NEW PRODUCTION SOFTWARE PACKAGE (PP07).

This new software package, released on December 22nd 2016, introduce the following new features:

- AccurET 3.12A:
 - Trigger: missed event mechanism.
 - Use of 2D Triggers in gantry systems is now possible.
 - SPI Communication.
 - Stage Mapping for ZxT.
- UltimET 3.12A:
 - Improvement for two groups of interpolation.
- EDI 4.16A:
 - Offline Sequence Compiler with ISO values.
 - New Trigger functions have been added in DSA.
- ComET 4.16A:
 - ZxT Tool.
 - Processor Load Tool.
 - Improvements in Force Control Tool.

Warning notice: this package corrects two situations in which axes may be damaged:

- After a loss of 1Vpp encoder signals, see point 4853 of Readme AccurET 3.12A.pdf file for full description. The modification changes the behavior after encoder errors.
- After a SAV command, see point 4892 of Readme AccurET 3.12A.pdf file for full description. The modification changes the behavior after SAV command.

Compatibility breaks: this package introduce two compatibility breaks and two behavior changes:

- ZxT FW: MF249 has wrong iso conversion which leads to a failure of the identification, see point 4823 of Readme AccurET 3.12A.pdf file for full description of scope of the compatibility break.
- New definition for Trigger External register reference axis K356.<axis>, see point 4840 of Readme AccurET 3.12A.pdf file for full description of scope of the compatibility break.
- Stage Mapping: behavior change of the command ASP=0, see point 4911 of Readme AccurET 3.12A.pdf file for full description of scope of the behavior change.
- Behavior change for motion commands when K63 is different from 0 or K61 is different from 1, see point 4844 of Readme AccurET 3.12A.pdf file for full description of scope of the behavior change.

Notes concerning this package:

- The below combination of FW&SW must be used together in order to benefit from all new features.
- New features are only implemented on the AccurETs Hardware Revision 2. This package does not support AccurETs Hardware Revision 1.

Note on production release for the AccurET/UltimET product family:

The new software package installed in production from January 23rd 2017 on our products contains the following versions:

- AccurET Firmware for AccurET 48 **HW Rev2** / 300 / 400-600 **HW Rev2** / VHP48 **HW Rev2** / VHP100: **3.12A**.
- UltimET Firmware for UltimET Light PCI / PCIe / TCPIP: **3.12A**.
- ComET on software DVD: **4.16A**.
- EDI versions compatible with this package: **4.16A** (32bits and 64bits).

This package is referenced in TIS Document Nb: 771421 ver./rev. 08/A.

EDI 4.16A (16.12.2016) (PP07) LIB 4.13A, EKD 4.14A, EMP 4.13A, DMD 4.14A, ETB 4.14A, ESD 4.12B, DSA 4.16A, TRA 4.13B, ETN 4.13B, ESC 4.12B (only for 32-bit version).	
13.1. New features	
DSA	New upi3, dpi3 ISO conversion function, allowing to convert auxiliary encoder value
	New sec ISO conversion function (seconds)
	New trigger functions have been added: <ul style="list-style-type: none"> - dsa_trigger_enable_ex_s/a - dsa_trigger2d_enable_ex_s/a - dsa_trigger2d_get_box_tolerance_increment_s/a - dsa_trigger2d_set_box_tolerance_increment_s/a - dsa_trigger_get_missed_event_detection_timeout_s/a - dsa_trigger_set_missed_event_detection_timeout_s/a - dsa_trigger_get_missed_event_detection_tolerance_s/a - dsa_trigger_set_missed_event_detection_tolerance_s/a - dsa_trigger_get_missed_event_detection_tolerance_increment_s/a - dsa_trigger_set_missed_event_detection_tolerance_increment_s/a - dsa_trigger_get_missed_event_detection_action_s/a - dsa_trigger_set_missed_event_detection_action_s/a - dsa_trigger_get_time_compensation_s/a - dsa_trigger_set_time_compensation_s/a - dsa_trigger_get_position_mean_filter_s/a - dsa_trigger_set_position_mean_filter_s/a - dsa_trigger_set_standard_mode_event_increment_s/a - dsa_trigger_set_incremental_mode_event_increment_s/a .NET and C++ interface also upgraded See HTML EDI documentation for more details
	For Windows, QNX and LINUX OS, the number of simultaneous asynchronous acquisition has been upgraded to 5. For other embedded OS, this number stays to 2.
EKD/ETB (From EDI-4.16beta of 20.09.2016)	Add USB for LINUX (Ubuntu12 32 & Ubuntu 14 64 bits)
ETB	(Offline Compiler) DUMMY adapted to accept Master and several drive of different types DUMMY adapted to accept Parameter file
13.2. Corrected bugs	
ESC	Correction of error message displaying product version in hexa
DSA	Configuring an acquisition on UltimET and an AccurET using "Common frequency" did not work correctly, and was using 400us frequency instead of 100us. This has been corrected
DSA (From EDI-4.16beta of 20.09.2016)	The following EDI functions, when used inside a DSA transaction, could generate a "memory violation" error. These functions are now protected against transaction use and it is no more allowed to used them inside a transaction: <ul style="list-style-type: none"> - dsa_get_sequence_code_usage_s - dsa_get_sequence_source_usage_s - dsa_get_sequence_data_usage_s - dsa_get_nb_available_slots_s/a The function <ul style="list-style-type: none"> - dsa_get_status_from_drive has the same problem, but has been modified to be allowed in a transaction

14. RELEASE 4.15A

RELEASE OF A NEW PRODUCTION SOFTWARE PACKAGE (PP06)

This new software package, released on July 19th 2016, will allow our customers to benefit mainly from the following new features:

- AccurET 3.10A:
 - 2D Trigger.
 - Force Control improvements.
 - Release of ZXT FW for VHP48 HW Rev2.
- UltimET 3.10A:
 - Provide tangential velocity for any mode of interpolation and its associated monitoring.
- EDI 4.15A:
 - New functions in DSA (Trigger, Force Control, ZXT support).
 - Windows 10 compatibility.
- ComET 4.15A:
 - New dockable desktop.
 - QuiET setting tool.
 - Force Control setting tool improvements.
 - Advanced Feedforward Tuning tool (formerly called: Friction & Cogging Compensation).

Warning: one issue that could lead to damaging the linear amplifier on AccurET VHP100 have been corrected with this release. VHP100 users are requested to upgrade to this release. See detailed description in the AccurET readme file under correction point 4538.

Safety notice: there is no safety issue reported since last intermediate release (released on December 11th 2015).

Notes concerning this package:

- The below combination of FW&SW must be used together in order to benefit from all new features.
- New features are only implemented on the AccurET Hardware Revision 2. This package does not support AccurET Hardware Revision 1.
- From release version 3.10A of AccurET, the number of EL events is increased from 256 to 512. Care must be taken in case of downgrading firmware as described in the AccurET readme file under correction point 4649.
- Users of trigger and position capture functionalities on HSEI encoder (AccurET VHP48 and AccurET VHP100) must take care of correction point 4650 described in AccurET readme file.
- Users of trigger functionality on AccurET must take care that there are more protections introduced with this release, avoiding bad parameters setting, especially with PG (Pulse Generator). Please consult the point 4725 in the AccurET readme file before upgrading.

Note on production release for the AccurET/UltimET product family:

The new software package installed in production from July 25th 2016 on our products contains the following versions:

- AccurET Firmware for AccurET 48 **HW Rev2** / 300 / 400-600 **HW Rev2** / VHP48 **HW Rev2** / VHP100: **3.10A**.
- UltimET Firmware for UltimET PCI / PCIe / TCPIP: **3.10A**.
- ComET on software DVD: **4.15A** (32bits application).
- EDI versions compatible with this package: **4.15A** (32bits and 64bits).

This package is referenced in TIS Document Nb: 771421 ver./rev. 07/A.

EDI 4.15A (04.07.2016) (PP06) LIB 4.12A, EKD 4.13A, EMP 4.13A, DMD 4.13A, ETB 4.13A, ESD 4.12A, DSA 4.15A, TRA 4.13A, ETN 4.12A, ESC 4.12A (only for 32-bit version).	
14.1. New features	
DOC	A new chapter has been implemented in .pdf documentation concerning the use of "system" registers. The list of "system" registers is also provided. All EDI function allowing to access system registers are also specifically HTML documented
GENERAL <small>(From EDI-4.15beta of 15.04.2016)</small>	ITRON: Compiled under new F_ITRON OS (V07.12_019_d)
GENERAL <small>(From EDI-4.14Bx of 14.04.2016)</small>	Ported on LINUX Ubuntu 14 as 64 bits libraries
DSA <small>(From EDI-4.14Bx of 14.04.2016)</small>	New ISO ZTBox conversion dpiPhysical, curPhysical
DSA <small>(From EDI-4.14Bx of 14.04.2016)</small>	New specific force control functions have been implemented: <ul style="list-style-type: none"> - dsa_force_control_set_s/a - dsa_force_control_set_ex1_s/a - dsa_force_control_set_ex2_s/a - dsa_force_control_set_ex3_s/a - dsa_force_control_set_ex4_s/a - dsa_force_control_reset_s/a - dsa_force_control_reset_ex1_s/a - dsa_force_control_reset_ex2_s/a - dsa_force_control_reset_ex3_s/a - dsa_force_control_new_s/a - dsa_force_control_new_ex1_s/a - dsa_force_control_new_ex2_s/a - dsa_force_control_wait_s/a - dsa_force_control_enable_s/a - dsa_force_control_set_default_force_range_s/a - dsa_force_control_get_default_force_range_s/a - dsa_force_control_set_default_force_duration_s/a - dsa_force_control_get_default_force_duration_s/a - dsa_force_control_get_force_range_s/a - dsa_force_control_get_force_duration_s/a .C++ and .Net interfaces also available

(Already in 4.14Bx of 14.04.2016)	<p>New specific trigger functions have been implemented:</p> <ul style="list-style-type: none"> - dsa_trigger2d_enable_s/a - dsa_trigger2d_disable_s/a - dsa_trigger_set_pulse_generator_period_s/a - dsa_trigger_get_pulse_generator_period_s/a - dsa_trigger_set_pulse_generator_delay_coeff_s/a - dsa_trigger_get_pulse_generator_delay_coeff_s/a - dsa_trigger_set_pulse_generator_wide_coeff_s/a - dsa_trigger_get_pulse_generator_wide_coeff_s/a - dsa_trigger_set_pulse_generator_period_coeff_s/a - dsa_trigger_get_pulse_generator_period_coeff_s/a - dsa_trigger_set_source_register_type_s/a - dsa_trigger_get_source_register_type_s/a - dsa_trigger_set_source_register_idx_s/a - dsa_trigger_get_source_register_idx_s/a - dsa_trigger_set_source_register_sidx_s/a - dsa_trigger_get_source_register_sidx_s/a - dsa_trigger_set_source_register_axis_s/a - dsa_trigger_get_source_register_axis_s/a - dsa_set_error_dout_mask_s/a - dsa_get_error_dout_mask_s/a - dsa_set_error_fdout_mask_s/a - dsa_get_error_fdout_mask_s/a - dsa_trigger2d_set_box_tolerance_s/a - dsa_trigger2d_get_box_tolerance_s/a <p>.C++ and .Net interfaces also available</p>
(Already in 4.14Bx of 14.04.2016)	<p>New specific ZTT Box functions have been implemented:</p> <ul style="list-style-type: none"> - dsa_start_tilt_movement_s/a - dsa_start_relative_tilt_movement_s/a - dsa_set_tilt_user_position_s/a - dsa_get_position_ctrl_error_ex_s/a - dsa_get_position_demand_value_ex_s/a - dsa_get_position_actual_value_ex_s/a <p>.C++ and .Net interfaces also available</p>
(Already in 4.14Bx of 27.01.2016)	<p>Correct EDI error handling requests to use DSA_DIAG (or DSA_EXT_DIAG) macro, allowing to find quickly the source of the error. For some errors (like DSA_EBADPARAM), it was quite difficult to know exactly the source, because it was not specified which parameter generates the error. This is now improved and each error indicates an additional text indicating the exact error source. Actually, this feature has been implemented in DSA only. Other libraries will follow.</p>
(Already in 4.14Bx of 27.01.2016)	<p>Add 4 new functions:</p> <ul style="list-style-type: none"> - dsa_trigger_status_enable_s/a - dsa_trigger_status_disable_s/a <p>Allowing to enable/disable the trigger status (TRS command) .NET interface also available</p>
(Already in EDI-4.15beta of 15.04.2016)	<p>ITRON: Mapping functions are now available</p>

ETN (Already in 4.14Bx of 27.01.2016)	<p>3 new functions has been implemented:</p> <ul style="list-style-type: none"> - <code>etne_is_custom_connected</code> This function allows to check if the communication on the custom port (created for host connection using <code>etne_start_custom</code> function) has been opened. - <code>etne_add_custom_connect_handler</code> - <code>etne_remove_custom_connect_handler</code> These functions allow to attach/detach a user callback which will be called when the host connection is opened/closed. As for all callbacks, the user function should be as quick as possible, avoiding blocking the caller (in our case host open/close communication) <p>The user callback must have this prototype: <code>void connect_callback(ETB *etb, int custom_accept_port, bool connect, void *user);</code></p> <p>All these functions allow the user to check if a host application is connected to the hardware managed by the application. Implemented also in C++ and .Net interface</p>
DBGVIEW (Already in 4.14Bx of 27.01.2016)	<p>DBGVIEW allows to redirect the output into a file. A new option can be used:</p> <ul style="list-style-type: none"> - After the filename, you can specify 2 parameters: <ul style="list-style-type: none"> o The maximal file length With this option, the output is redirected into a file which won't exceed the specified length o The maximal number of archive file With this option, when the actual log file exceed the specified length, it will be backed up into an archive file whose name will be <code><fileName>-n.<fileextension></code>. This option allows to limit the number of kept archive files <p>Example:</p> <ul style="list-style-type: none"> - tp > c:\log.txt 1M 20 Redirect output of PCI/PCle communication into file c:\log.txt When c:\log.txt becomes 1MB large: <ul style="list-style-type: none"> o c:\log.txt is renamed into c:\log-1.txt o a new c:\log.txt is created. When this new c:\log.txt file becomes 1MB large: <ul style="list-style-type: none"> o c:\log-1.txt is renamed into c:\log-2.txt o c:\log.txt is renamed into c:\log-1.txt o a new c:\log.txt is created. Keep logfiles from c:\log.txt to c:\log-19.txt
<h3>14.2. Corrected bugs</h3>	
GENERAL	<p>RTX Thread Priorities has been redefined. Now EDI will use its own definition of Thread Priority avoiding conflict with RTX thread priorities. The new priority definition allow now to manage precisely the RTX EDI thread priorities. Before, RTX ETB priority was set to 15 (instead of 127). This was too low, allowing other customer thread being with higher priority, which then bother realtime application.</p>
	<p>DMD_PRODUCT_VHP48_ZTT definition and name has been changed to DMD_PRODUCT_VHP48_ZXT</p>
SAMPLES	<p>Umeg samples has been corrected. Reference to dsa30 was still present. Creation of interpolation group must use <code>dsa_set_group</code> item to fix axis position.</p>

<p>DSA (Already in 4.14Beta1 of 09.05.2016)</p>	<p>Prototype of following functions have been changed:</p> <ul style="list-style-type: none"> - dsa_trigger_set_pulse_generator_delay_coeff_s - dsa_trigger_get_pulse_generator_delay_coeff_s - dsa_trigger_set_pulse_generator_wide_coeff_s - dsa_trigger_get_pulse_generator_wide_coeff_s - dsa_trigger_set_pulse_generator_period_coeff_s - dsa_trigger_get_pulse_generator_period_coeff_s - dsa_trigger_get_pulse_generator_period_coeff_s <p>and accept now a float as "coeff" parameters. "tolerance" parameter of following functions is now converted using UPI ISO conversion function:</p> <ul style="list-style-type: none"> - dsa_trigger2d_set_box_tolerance_s - dsa_trigger2d_get_box_tolerance_s <p>Following function have been renamed:</p> <ul style="list-style-type: none"> - dsa_trigger_get_pulse_generator_wide_s/a into dsa_trigger_get_pulse_generator_pulse_width_s/a - dsa_trigger_set_pulse_generator_wide_s/a into dsa_trigger_set_pulse_generator_pulse_width_s/a - dsa_trigger_get_pulse_generator_wide_coeff_s/a into dsa_trigger_get_pulse_generator_pulse_width_coeff_s/a - dsa_trigger_set_pulse_generator_wide_coeff_s/a into dsa_trigger_set_pulse_generator_pulse_width_coeff_s/a <p>.NET prototypes have also been modified</p>
<p>(Already in 4.14Bx of 14.04.2016)</p>	<p>HTML documentation about DsaStatusSWMode updated</p>
<p>(Already in 4.14Bx of 14.04.2016)</p>	<p>.NET interface did not wrap correctly the following functions:</p> <ul style="list-style-type: none"> - ipolWaitMark - ipolTranslateMatrix - ipolScaleMatrix <p>ipolRotateMatrix</p>

(Already in 4.14Bx of 14.04.2016)	<p>On some 64 bits OS (LINUX), the "long" datatype become 8 bytes length. Some DSA functions prototype were using a long parameter wrongly, especially those accessing 32 bits registers.</p> <p>Therefore, the prototype for these functions has been changed. This can unfortunately generate some compilation warning, especially on OS like LINUX and ITRON.</p> <p>The concerned functions are:</p> <ul style="list-style-type: none"> - dsa_execute_command_d_s/a - dsa_execute_command_dd_s/a - dsa_execute_command_id_s/a - dsa_execute_command_di_s/a - dsa_get_register_s/a - dsa_get_register_int32_s/a - dsa_get_array_s/a - dsa_get_array_int32_s/a - dsa_set_register_s/a - dsa_set_register_int32_s/a - dsa_set_array_s/a - dsa_set_array_int32_s/a - dsa_ipol_mark_s/a - dsa_ipol_mark_2param_s/a - dsa_convert_to_iso - dsa_convert_int32_to_iso - dsa_convert_from_iso - dsa_convert_int32_from_iso - dsa_quick_register_request_s/a - dsa_quick_register_int32_request_s/a - dsa_quick_address_request_a - dsa_get_ctrl_offset_s/a - dsa_get_ctrl_offset_ex_s/a - dsa_get_drive_sequence_line_s/a - dsa_set_ctrl_offset_s/a - dsa_set_ctrl_offset_ex_s/a - dmd_get_register_min_value - dmd_get_register_max_value - dmd_get_register_default_value - dmd_get_register_min_value_int32 - dmd_get_register_max_value_int32 - dmd_get_register_default_value_int32 - dmd_get_parameter_min_value - dmd_get_parameter_max_value - dmd_get_parameter_default_value - dmd_get_parameter_min_value_int32 - dmd_get_parameter_max_value_int32 - dmd_get_parameter_default_value_int32 - dmd_get_enum_value <p>dmd_get_enum_value_int32</p>
(Already in 4.14Bx of 27.01.2016)	Functions dsa_ipol_begin_s/a were generating an error when a second interpolation group is started. This is now corrected
(Already in 4.14Bx of 27.01.2016)	Functions dsa_ipol_end_s now closes also the interpolation group if the command itself generates an error on UltimET
(Already in 4.14Bx of 27.01.2016)	All function allowing GROUP of device now check against the Group consistency. In the case where the user calls a function with an incomplete device group, EDI was crashing. An incomplete device group is obtained by creating a device group with a size of <n>, and filling the group with a number of device smaller than <n>.
(Already in 4.14Bx of 27.01.2016)	Checks that communication is opened for functions dsa_start_delayed_rtv_handler, dsa_start_rtv_handler, dsa_stop_rtv_handler, dsa_set_watchdog

(Already in 4.14Bx of 27.01.2016)	.NET interface for dsa_trigger_init_s/a, dsa_trigger_enable_s/a, dsa_trigger_disable_s/a were missing.
(Already in 4.14Bx of 27.01.2016)	SystemConfiguration (ITRON): downloading a system configuration file into a system with UltimET and AccurET not up-to-date could follow into a DSA_EBADPARAM error, directly after downloading the firmware blocks of the drive. This has been corrected
(Already in EDI-4.15beta of 15.04.2016)	.NET interface setSeveralRegister method were passing wrong value to the drive resulting in a BAD_PARAM error on the AccurET. This is now corrected.
(Already in EDI-4.15beta of 15.04.2016)	RTX/QNX/LINUX: DSA was not compiled with dsaFctrl.c file. Therefore, all dsa_force_control... functions were not included in EDI-4.14Bx of 14.03.2016
(Already in EDI-4.15beta of 15.04.2016)	<p>It was not possible to start 2 acquisitions, each on one single axis (1 axis of 1 AccurET), if these drives are connected through transnET. The 2nd acquisition was erasing the 1st acquisition configuration. This is now corrected.</p> <p>A bit theory:</p> <ul style="list-style-type: none"> - When an acquisition is done on a single axis (1 axis of an AccurET), the acquisition is not transnet-synchronized. - When an acquisition is done on both axes of a single AccurET, if AccurET is connected through transnET, the acquisition will be transnet-synchronized. - When acquisition is done on several axes of several AccurETs, if the AccurETs are connected through transnET, the acquisition will be transnet-synchronized. - On transnET, only a single transnet-synchronized acquisition is possible. <p>Therefore, what's possible with several acquisition:</p> <ul style="list-style-type: none"> - Several acquisitions, each on one single axis (1 axis of one AccurET) (TransnET connected or not) - A single transnet-synchronized acquisition (on several axis on single or several AccurET) with several not-transnet-synchronized acquisition (on a single axis of a single AccurET) <p>What's not possible with acquisition:</p> <ul style="list-style-type: none"> - Several transnet-synchronized acquisition (on several axis on single or several AccurET) <p>A single acquisition on several AccurETs not connected on same communication bus. (e.g. 2 AccurET connected through TCP/IP).</p>
(Already in EDI-4.15beta of 15.04.2016)	Function dsa_force_control_enable_s/a have been replaced dsa_force_control_set_enable_s/a
(Already in EDI-4.15beta of 15.04.2016)	It was not possible to address the correct type of trigger for 2dTrigger, because EDI did not allow other value than 1 or 2. This has been corrected.
TRA	When uploading registers without axis number specification, EDI indicates the parameter version and specifies wrongly the axis number. This has been corrected and the axis number # is now indicated. By downloading the register, the parameter version is set now on the downloaded axis.
	When downloading a file containing registers of several axes on a subset of the axes, the parameter versions are set also on the not downloaded axes. This is now corrected, and only the version of the downloaded axes are touch. The problem does not appear for sequence download
(Already in 4.14Bx of 27.01.2016)	Upgrade buffer size to 1024 allowing handling very long line. Upgrade number of internal structure <part> to 65 allowing 64 depths
(Already in 4.14Bx of 27.01.2016)	<p>When registers are uploaded using TRA (ComET editor register upload), a header is inserted automatically. This header contains the registers's version which can be modified by the user.</p> <p>By uploading C registers from AccurET and UltimET together, the header was containing a version for UltimET "C" registers on UltimET, which is not possible. Another mistake was that sometime, UltimET register version was specified as '*' and sometimes as axis 63. This has been uniformised, and UltimET is always specified as '*'.</p>
ETB (Already in 4.14Bx of 27.01.2016)	When opening the communication via TCP/IP, it is now possible to specify the flags even without the port number specified

	When the UltimET driver is not well installed, opening a communication on it could freeze ComET. This was due to a software bug avoiding to free a critical section in some situation (_ekd_ultimet_irq_enable returning error). This has been corrected
DMD (Already in 4.14Bx of 27.01.2016)	Function dmd_is_register_writable was returning TRUE for ML, MF and MD. This is now corrected
LIB (Already in 4.14Bx of 14.04.2016)	ITRON: At the first call of any File access function, EDI will empty the etmp directory, avoiding to have some old created files in it
ESC	In a compiled sequence, the following character sequence //* was bad compiled and considered as /* (Opening comment). A workaround was to insert a space between // and * . This has been corrected.

15. RELEASE 4.14B

EDI 4.14B (05.11.2015) LIB 4.11C, EKD 4.12C, EMP 4.12C, DMD 4.12B, ETB 4.12C, ESD 4.11C, DSA 4.14B, TRA 4.12C, ETN 4.11C, ESC 4.11B (only for 32-bit version)	
15.1. New features	
15.2. Corrected bugs	
DSA	Functions <code>dsa_assign_slot_to_register_s/a</code> , <code>dsa_unassign_slot_to_registers_s/a</code> have been corrected, allowing 16 RTV slot on a UltimET (instead of 8 as for AccurET)
	The following DSA functions, which accepts a boolean parameter, were translating wrongly the boolean parameter, especially when the parameter is set to false. (The parameter could be interpreted as true instead of false) <ul style="list-style-type: none"> - <code>dsa_ipol_set_lkt_cyclic_mode_s</code> - <code>dsa_ipol_set_lkt_cyclic_mode_a</code> - <code>dsa_ipol_set_lkt_relative_mode_s</code> - <code>dsa_ipol_set_lkt_relative_mode_a</code> - <code>dsa_ipol_set_urelative_mode_s</code> - <code>dsa_ipol_set_urelative_mode_a</code> - <code>dsa_debug_sequence_enable_breakpoint_at_s</code> - <code>dsa_debug_sequence_enable_breakpoint_everywhere_s</code>
	ISO conversion for KF313 (plti_inv) has been corrected. This is a compatibility break which must be taken in account in the following case: If you have uploaded drive parameter in ISO with previous EDI or ComET version (EDI version < 4.14B, ComET version < 4.14A), you must be very carefull by downloading these ISO psarameter file with the new EDI or ComET versions (EDI >= 4.14B, ComET version >= 4.14A). KF313 is used by Force Control MODE 1 (SETFC= <ForceReference>, 1, ...)
	ITRON: Using <code>dsa_system_configuration_backup</code> , <code>dsa_system_configuration_backup_fw_pool</code> , <code>dsa_device_configuration_backup</code> , <code>dsa_device_configuration_backup_fw_pool</code> was generating an DSA_ESYSTEM error if the drive of the specified file path was starting with an Uppercase. Example "A:/SystemConfig.zip". This has been corrected
	The acquisition functions now makes dynamic allocation on <code>dsa_create_acquisition</code> function only. In some special cases, for example when a trace on a 2 nd device is configured for, dynamic allocation also appears
	Functions <code>dsa_trigger_set_standard_mode_event_s/a</code> and <code>dsa_trigger_set_incremental_mode_event_s/a</code> were limiting the number of event to 15. This has been corrected and the limit is now set to 255.
	Function <code>dsa_ipol_uline_time_s/a</code> : correction about parameter transmitted to UltimET. The acceleration was not setted correctly
GENERAL	HTML documentation updated concerning the warning about heap allocation
SAMPLES	Stream example (upload) was not working and generating an application crash. This has been corrected. This example has also been upgraded allowing to upload in a binary file. Downloading using stream can only be done using binary files
ETB	Download password for VHP100_QUIET has been corrected and is now same as VHP100 (in Boot and Firmware mode)
ESC	Use of dynamic allocation abstraction level
	Correct HTML documentation of <code>esc_compiled_cseq_file/buffer</code>

16. RELEASE 4.14A

EDI 4.14A (17.09.2015) LIB 4.11B, EKD 4.12B, EMP 4.12B, DMD 4.12A, ETB 4.12B, ESD 4.11B, DSA 4.14A, TRA 4.12B, ETN 4.11B, ESC 4.11A (only for 32-bit version). Windows & ITRON Only. Release version of EDI-3.13Bx of 11.09.2015. No change	
16.1. New features	
DSA/DMD	new ISO conversions functions added (ZTBox): <ul style="list-style-type: none"> - cur_Nm (Vurrent in Nm) - mass_acc_ffwd (Mass for acceleration feed forward) These conversion function uses K239 (KT), then K239 has been set as system register
DSA	4 new functions have been added: <ul style="list-style-type: none"> - dsa_reset_error_with_check_s/a - dsa_reset_error_with_check_ex_s/a These functions will return an error (DSA_DRVERROR) if the drive is still in error after command has been executed .NET interface also available
	16 new function have been added: <ul style="list-style-type: none"> - dsa_get_ctrl_source_type_ex_s/a - dsa_set_ctrl_source_type_ex_s/a - dsa_get_ctrl_source_index_ex_s/a - dsa_set_ctrl_source_index_ex_s/a - dsa_get_ctrl_offset_ex_s/a - dsa_set_ctrl_offset_ex_s/a - dsa_get_ctrl_gain_ex_s/a - dsa_set_ctrl_gain_ex_s/a allowing to set/get corresponding register depth .NET interface also available
16.2. Corrected bugs	
DSA	Dsa_ipol_uline_time_... function were missing in HTML documentation
	Comment for HTML corrected dsa_trigger_set_combi_dout_mask_s/a, dsa_trigger_set_combi_fdout_mask_s/a, dsa_trigger_get_combi_dout_mask_s, dsa_trigger_get_combi_fdout_mask_s, dsa_trigger_init_s/a
DMD	Comment for HTML corrected Dmd_is_double_register, dmd_is_double_parameter
TRA	Comments for tra_etcom_download_register_stream_e and tra_etcom_download_register_stream_e2 corrected
GENERAL	Update DOXYGEN HTML comment about dynamic memory allocation
	Add dynamic memory allocation abstraction level
DMD	Correct generated error on dmd_process_metatada_buffer avoiding oweriting parser error
ETB	Close correctly etb thread on DMY etb driver
	Reserved area for etb driver has been stretched on F_ITRON
LIB	Remove dbgview for ITRON, even for dbg library, avoiding to reserve a shared memory of 15 Mo
DSA/DMD	new ISO conversions functions added (ZTBox): <ul style="list-style-type: none"> - cur_Nm (Vurrent in Nm) - mass_acc_ffwd (Mass for acceleration feed forward) These conversion function uses K239 (KT), then K239 has been set as system register

17. RELEASE 4.13B

EDI 4.13B (23.07.2015) LIB 4.11A, EKD 4.12A, EMP 4.12A, DMD 4.11A, ETB 4.12A, ESD 4.11A, DSA 4.13A, TRA 4.12A, ETN 4.11A, ESC 4.11A (only for 32-bit version). .NET package upgrade ONLY	
17.1. New features	
17.2. Corrected bugs	
DSA	.NET package. DsaStatus access has been upgraded allowing to get and set status bits more easily

18. RELEASE 4.13A

RELEASE OF A NEW SOFTWARE PRODUCTION PACKAGE (PP05)

This new software package, released on June 1st 2015, will allow our customers to benefit mainly from the following new features:

- AccurET:
 - release of VHP100
 - release of QuiET FW for VHP48 and VHP100
 - Master/Slave Compensation
 - SSR command (Set Several Registers)
- UltimET:
 - Improvement of the sequence efficiency when RTV are used
- EDI:
 - SSR command in DSA
 - support of C preprocessor define in sequence compiler
 - 7zip replace zip.exe and unzip.exe
- ComET:
 - Force Control Setting tool
 - Full transfer and Advanced functions in identification tool
 - Option to avoid the source code in precompiled sequence file (*.eseq)

Safety notice:

There is no safety issue reported since last Software Package (released on January 9th 2015).

Notes concerning this package:

- The below combination of FW&SW should be used together in order to benefit from all new features.
- New features are only implemented on the AccurET Hardware Revision 2. This package does not support AccurET Hardware Revision 1.
- UltimET Improvement of the sequence efficiency in UltimET will induce a gain of time in case of use of RTV in UltimET sequences.

Note on production release for the AccurET/UltimET product family:

The new software package installed in production from June 22nd 2015 on our products contains the following versions:

- AccurET Firmware for AccurET 48 **HW Rev2** / 300 / 400-600 **HW Rev2** / VHP48 **HW Rev2** / VHP100 **HW Rev2** : 3.02A
- UltimET Firmware for UltimET PCI / PCIe / TCPIP : 3.02A
- ComET on software CD : 4.13A (32bits application)
- EDI versions compatible with this package : 4.13A (32bits and 64bits)

This package is referenced in TIS Document Nb: 771421 ver./rev. 06/A

Note that AccurET Firmware for AccurET 48 **HW Rev1** / 400-600 **HW Rev1** / VHP48 **HW Rev1** remains in 2.07B (same as PP03).

EDI 4.13A (07.05.2015)

LIB 4.11A, EKD 4.12A, EMP4.12A, DMD 4.11A, ETB 4.12A, ESD 4.11A, DSA 4.13A, TRA 4.12A, ETN 4.11A, ESC 4.11A (only for 32-bit version).

18.1. New features

GENERAL	VHP100-QUIET is fully supported
ESC	Add SSR command as command with indirect registers
	<p>It is now possible to declare c-define in sequences.</p> <p>Example</p> <pre>#define AXIS_X1 #define AXIS_Y2 void func10(void) { RST.AXIS_X; PWR.AXIS_X = 1; }</pre> <p>However, there are some restrictions, comparing to C-define:</p> <p>It is not possible to declare #define from other #define:</p> <p>Example</p> <pre>#define AXIS_X 1 #define AXIS_Z AXIS_X + 1 => This is not allowed !!!!!</pre>
ESC/ESD/ LIB	<p>It is now possible to avoid inserting the sequence source code into a pre-compiled file. Call <code>esc_compile_cseq_file</code> or <code>esc_compile_cseq_buffer</code> with flag <code>ESC_FLAG_AVOID_INSERT_SRCCODE</code></p>
DSA	<p>2 functions have been added:</p> <ul style="list-style-type: none"> - <code>dsa_set_profiled_movement_s/a</code> <p>allowing to set the movement profile parameters using SMP command .NET interface also available</p>
	<p>4 functions have been added:</p> <ul style="list-style-type: none"> - <code>dsa_set_several_registers_s/a</code> - <code>dsa_set_several_iso_registers_s/a</code> <p>allowing to set 6 registers in one command using command SSR .NET interface also available</p>
	Add function <code>dsa_set_policy</code> allowing to change the policy and priority of dsa thread
ETB	Add function <code>etb_set_policy</code> allowing to change the policy and priority of etb thread
LIB	Zip/unzip features are now provided by 7Zip. 7z.exe and 7z.dll are provided with EDI package. Please see 7zip licensing condition found in all EDI .h include file

18.2. Corrected bugs

EMP/DMD	<p>Including a third party include file defining MIN/MAX was causing some problem when <code>dsa40.h</code> is included before the third party include file.</p> <p>This was due to the internal include sequence inside EDI which was wrongly including <code>lib40.h</code> (who defines MIN/MAX). This has been corrected, and <code>dsa40.h</code> does no more include <code>lib40.h</code>.</p> <p>A project which includes <code>lib40.h</code>, <code>ekd40.h</code> or <code>esd40.h</code> will still have this problem when including a third party library defining MIN/MAX</p>
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EKD	UltimET. When the UltimET device cannot be opened, a software crash could appear in some cases, because EDI was trying to close it. This has been corrected.
ETB	At startup, EDI is asking for the status of all connected devices. The user status was not up-to-date (the first 8 bits was updated only), when connected using USB and TCP/IP
	Opening a Dummy on a version 3.01 and 3.02 was not possible. This was due to the missing of the default value of M60 (=0x8(present)) on these releases. Etbdmy initializes its register value with the default value coming from metadata. Etbdmy.c has been patched to solve this problem temporarily. Drive team will take this into account and put again the default value on Monitoring registers
DSA	It is now possible to use dsa_grp_wait_... functions on a group of axes connected to different UltimET.
	Function dsa_get_cl_proportional_gain was reading K80 instead of KF80. This is now corrected
	Retrieve acquisition asynchronous thread EDI trace on error
ESC	Sequence compiler does an automatic cast between variables. When a integer 64 bits register was set with a integer 32 bits variable, the resulting value was wrong. This is now corrected. void func10(void) { int value = 10; XL10.0 = value; } XL10.0 resulting value was wrong !!!!
TRA	Do not check min/max of command parameters and register if min and max are 0

19. RELEASE 4.12A

**This a new software package which includes the following versions described below
They can be used with the other software of the May 2014 software production package (PP04):**

Software package for the AccurET/UltimET product family:

This software package is mainly needed for customers:

- Needing Dual Encoder Feedback on AccurET
- Support of the UltimET PCIe that will be released in a close future.

Please update all products with the following versions:

- AccurET Firmware for AccurET 48/300/400-600 : 3.01A
- UltimET Firmware for UltimET PCI / TCPIP : 3.01A
- ComET : 4.12A
- EDI versions compatible with this package : 4.12A (32bits and 64bits)

Note on production release for the AccurET/UltimET product family:

Please note the software package installed in production and shipped on our products remains unchanged and contains the following versions:

- AccurET Firmware for AccurET 48 HW Rev.2 / 300 / 400-600 HW Rev.2 / VHP48 HW Rev.2: 3.00A
- UltimET Firmware for UltimET PCI/ PCIe / TCPIP : 3.00A
- ComET on software CD : 4.10A (32bits application)
- EDI versions compatible with this package : 4.10A (32bits and 64bits)

This package is in use starting May 19th 2014 and is referenced in TIS Document Nb: 771421 ver./ rev. 04/A

EDI 4.12A (09.12.2014)
LIB 4.10E, EKD 4.11A, EMP4.11B, DMD 4.10E, ETB 4.11B, ESD 4.10C, DSA 4.12A,
TRA 4.11A, ETN 4.10C, ESC 4.10C (only for 32-bit version).

19.1. New features

DSA	4 functions have been added: - dsa_get_min_user_soft_position_limit_s/a - dsa_get_max_user_soft_position_limit_s/a Allowing to access software position limit (ML434, ML435) relative to user offset Available also in .NET interface
	System Configuration sends a RES before doing backup/download. Now the functions is also preceded by a !END=0 and !HLO which stops all sequences thread of all devices
SAMPLES	Trigger examples uses now the specific dsa trigger functions

19.2. Corrected bugs

DMD	Function dmd_get_default_typ_text was returning bad information on unknown typ parameter. This is now corrected and "UnknownTyp" is returned
	By looking for already uploaded metadata of a firmware version, we were checking the exact version. In some situation, ComET could wrongly generate a "Bad Version" error.
	Add metadata block type in JAVA to handle metadata blocks
ESC	Correcting dmd access on unavailable command making dmd crash (iso conversion)

20. RELEASE 4.11A

EDI 4.11A (22.10.2014) LIB 4.10D, EKD 4.11A, EMP4.11A, DMD 4.10D, ETB 4.11A, ESD 4.10C, DSA 4.11A, TRA 4.10C, ETN 4.10C, ESC 4.10C (only for 32-bit version).	
20.1. New features	
DSA	Add 18 new specific functions: <ul style="list-style-type: none"> - dsa_set_user_position_(s/a) - dsa_register_int32_logical_and_(s/a) - dsa_register_int32_logical_or_(s/a) - dsa_register_int32_logical_and_not_(s/a) - dsa_register_int32_logical_or_not_(s/a) - dsa_register_int64_logical_and_(s/a) - dsa_register_int64_logical_or_(s/a) - dsa_register_int64_logical_and_not_(s/a) - dsa_register_int64_logical_or_not_(s/a) .NET interface also available
	Add 2 functions: <ul style="list-style-type: none"> - dsa_reset_error_ex_s - dsa_reset_error_ex_a These function allow to send RST command with a parameter. This allows especially to exit the "torque motor-off" on stage protection mode Available in .NET interface
	Add 2 functions: <ul style="list-style-type: none"> - dsa_grp_get_and_status - dsa_grp_get_or_status These function allow to get the anded (or ored) status of all devices of a group. Available in .NET interface

	<p>Add 62 trigger functions:</p> <ul style="list-style-type: none"> - dsa_trigger_set_position_type_(s/a) - dsa_trigger_get_position_type_(s/a) - dsa_trigger_set_dout_mask_(s/a) - dsa_trigger_get_dout_mask_(s/a) - dsa_trigger_set_fdout_mask_(s/a) - dsa_trigger_get_fdout_mask_(s/a) - dsa_trigger_set_combi_dout_mask_(s/a) - dsa_trigger_get_combi_dout_mask_(s/a) - dsa_trigger_set_combi_fdout_mask_(s/a) - dsa_trigger_get_combi_fdout_mask_(s/a) - dsa_trigger_set_combi_user_status_mask_(s/a) - dsa_trigger_get_combi_user_status_mask_(s/a) - dsa_trigger_set_pulse_generator_dout_mask_(s/a) - dsa_trigger_get_pulse_generator_dout_mask_(s/a) - dsa_trigger_set_pulse_generator_fdout_mask_(s/a) - dsa_trigger_get_pulse_generator_fdout_mask_(s/a) - dsa_trigger_set_pulse_generator_delay_(s/a) - dsa_trigger_get_pulse_generator_delay_(s/a) - dsa_trigger_set_pulse_generator_wide_(s/a) - dsa_trigger_get_pulse_generator_wide_(s/a) - dsa_trigger_set_pulse_generator_interval_(s/a) - dsa_trigger_get_pulse_generator_interval_(s/a) - dsa_trigger_set_pulse_generator_number_(s/a) - dsa_trigger_get_pulse_generator_number_(s/a) - dsa_trigger_get_pulse_generator_sent_pulse_number_(s/a) - dsa_trigger_set_standard_mode_event_(s/a) - dsa_trigger_set_incremental_mode_event_(s/a) - dsa_trigger_init_(s/a) - dsa_trigger_enable_(s/a) - dsa_trigger_disable_(s/a) - dsa_trigger_get_treated_event_number_(s/a) <p>allowing to set the AccurET trigger fonctionnality .NET interface also available</p>
	<p>12 new functions have been added:</p> <ul style="list-style-type: none"> - dsa_read_32bit_rtv_slot_array - dsa_write_32bit_rtv_slot_array - dsa_read_64bit_rtv_slot_array - dsa_write_64bit_rtv_slot_array - dsa_read_rtv_int32_array - dsa_read_rtv_int64_array - dsa_read_rtv_float32_array - dsa_read_rtv_float64_array - dsa_write_rtv_int32_array - dsa_write_rtv_int64_array - dsa_write_rtv_float32_array - dsa_write_rtv_float64_array <p>allowing to read/write many slots in a single shot</p>
EMP	New parser

EKD	<p>UltimET PCIe is now MSI capable. (Message Signaled Interrupt). This has been especially enabled for RTX. For this OS, thanks MSI, it is now more needed to find a dedicated IRQ for the board.</p> <p>To enable this feature, you need:</p> <p>Windows (and RTX) systems:</p> <ul style="list-style-type: none"> - UltimET PCIe firmware 3.01A (or further) - Windows PCIe driver 11.1.0 (or further) - EDI-4.11A (or further) <p>Linux:</p> <ul style="list-style-type: none"> - UltimET PCIe firmware 3.01A (or further) - PCTEB 4.01A (or further) <p>EDI-4.11A (or further)</p>
20.2. Corrected bugs	
GENERAL	Resources files specifies 32bits or 64bits allowing checking version with dll properties
ETB	<p>Some internal ETB function did initialise a critical section in runtime. This leads to long delay, especially seen on RTX (Request of memory). This has been corrected, and the critical section is now initialized on communication open</p> <p>Flush pending message on !CLRWAIT command acknowledge</p> <p>Remove definition of ETEL_OO_API</p>
DSA	<p>SystemConfigurationManager make now correctly VHP and VHP_QUIET compatibility</p> <p>LINUX: Number of synchronous event set to 300 for LINUX version of DSA</p> <p>Correction of ISO conversion for the following functions:</p> <p>dsa_get_ttl_speed_filter_..., dsa_set_ttl_speed_filter_...</p> <p>dsa_get_encoder_phase_1_factor_..., dsa_set_encoder_phase_1_factor_...</p> <p>dsa_get_encoder_phase_1_offset_..., dsa_set_encoder_phase_1_factor_...</p> <p>dsa_get_encoder_phase_2_factor_..., dsa_set_encoder_phase_2_factor_...</p> <p>dsa_get_encoder_phase_2_offset_..., dsa_set_encoder_phase_2_offset_...</p> <p>dsa_get_ctrl_gain_..., dsa_set_ctrl_gain_...</p> <p>dsa_get_homing_fine_tuning_mode_..., dsa_set_homing_fine_tuning_mode_...</p> <p>dsa_get_motor_phase_correction_..., dsa_set_motor_phase_correction_s</p> <p>dsa_get_syncro_start_timeout_..., dsa_set_syncro_start_timeout_...</p> <p>Addition of an example about DEVIDX parameter in dsa_open_u in the HTML documentation</p> <p>A new macro has been defined DSA_INIT_STATUS allowing to initialise the DSA_STATUS structure. The default partial initialisation like:</p> <p>DSA_STATUS stat = {sizeof(DSA-STATUS)};</p> <p>did not initialise all member on QNX6</p> <p>Addition of a comment in dsa_get_status</p> <p>Acquisition output messages printed only for debug version</p>
LIB	<p>On RTX, the setting of thread priorities was done using SetThreadPriority. This has been changed and the function RtSetThreadPriority is used, allowing to set more precise priorities on RTX. Related EDI function are dsa_set_prio (setting the priority of DSA thread managing the asynchronous callbacks) and etb_set_prio (setting the priority of the ETB Thread managing the acknowledge of the command sent to the drives)</p> <p>On RTX, AUTOEVENT, MUTEX and SEMACOUNT macros were using WaitForSingleObject instead RtWaitForSingleObject.</p> <p>RTX: debug version of EDI did not run correctly and was generating an application crash. This is now corrected</p>
ESC	<p>Pre-compiling a sequence was generating a file with a <plist> tag followed by a link to an internet link. This link has been removed</p> <p>Creating an offline compiler was allowing to create only simulation package which must be present in fw pool. Now the offline compiler allows to create memory existing package (static and dynamic).</p> <p>When no package is found, the compiler returns a BADPARAM error which could follow in a compiler (ComET) crash.</p>

	Accessing dmd_metadata packages was not always protected by a CRITICAL SECTION. This allows to access to partially created dmd metadata packages, followed by a crash of ComET. This has been corrected
EKD	RTX: IST thread priority set to 127
	Due to a conflict definition in errno.h, error ETB_EBADMSG (C++ EtbException::EBADMSG) has been changed into ETB_EBADMESSAGE (C++ EtbException::EBADMESSAGE)
TRA	Due to a conflict definition in errno.h, error TRA_EBADMSG (C++ TraException::EBADMSG) has been changed into TRA_EBADMESSAGE (C++ TraException::EBADMESSAGE)
ETND/ETNE	Function etne_start_custom was returning a wrong error code in some situation (ETNE_EBADPARAM instead of ETNE_ESYSTEM). This is now corrected
	LINUX: etne40.h was including typeinfo.h which was generating a compilation error on LINUX. This is now corrected
ESD	Avoiding looking for source code in pre-compiled sequence file when download without source. This bug was generating a EBADFILEFORMAT error in ComET.
EMP	Modification of drive version mask in emp_get_productInfo to be able to handle drives with FW >3.00. Modification is done to support devices until FW 3.09.

21. RELEASE 4.10A

THIS IS A NEW SOFTWARE PRODUCTION PACKAGE (PP04)

This software package will allow our customers to benefit from:

- Scope viewer in ComET
- Change in the metadata management → This generates a compatibility break. See document [TN-SWPackage PP04-01-E.pdf](#) for more informations
- Force Control

Note concerning this package: from now on, new features are only implemented on the AccurET Hardware Rev. 2. This package does not support Hardware Rev. 1. Consequently, the customers using AccurET Hardware Rev. 1 together with Rev. 2 and/or UltimET in the same machine must downgrade all controllers (AccurETs and UltimETs) to a previous SW Package (PP03 at least).

Note on production release for the AccurET/UltimET product family:

Please note the new software package released by May 19th 2014 contains the following versions:

- AccurET Firmware for AccurET 48 **HW Rev.2** / 300 / 400-600 **HW Rev.2** / VHP48 **HW Rev.2** : 3.00A
- UltimET Firmware for UltimET PCI / TCP/IP : 3.00A
- ComET on software CD : 4.10A (32bits application)
- EDI versions compatible with this package : 4.10A (32bits and 64bits)

This package is referenced in TIS Document Nb: 771421 ver./rev. 04/A

Note that AccurET Firmware for AccurET 48 **HW Rev.1** / 400-600 **HW Rev.1** /VHP48 **HW Rev.1** remains in version 2.07B (same as PP03).

EDI 4.10A (29.04.2014)

LIB 4.10A, EKD 4.10A, EMP4.10A, DMD 4.10A, ETB 4.10A, ESD 4.10A, DSA 4.10A, TRA 4.10A, ETN 4.10A, ESC 4.10A (only for 32-bit version).

21.1. New features

GENERAL (From 4.10beta)	Add Metadata handling
EMP (From 4.10beta)	Addition of new library for parsing
DSA (From 4.10beta)	Add two functions for advanced filters: - dsa_set_advanced_filter_s - dsa_set_advanced_filter_a

21.2. Corrected bugs

DSA	Opening a AccurET Version 3.xx through a UltimET TCP/IP 2.xx version is not possible and was generating a "internal error". The error has been replaced bad a "Bad drive Version" error.
	Function dsa_ipol_get_ipol_grp will now return an error if the interpolation group passed as parameter is not in interpolation mode
	Almost all dsa_ipol.. functions cannot be called if the interpolation group is not in interpolation mode. Until now, calling these function in NOT interpolated mode let the UltimET fall in error. This is now corrected and the dsa_ipol... functions will return a DSA_EBADPARAM error.
	Function dsa_get_timer prototype has changed from long dsa_get_timer to unsigned eint64 dsa_get_timer

ESC	<p>A sequence using a command with a mix of ISO and INCREMENT passed as variable parameters did not work correctly.</p> <p>Example:</p> <pre>long pos = lconv(-2.5, _upi, 0); MVE.0=pos, 0.5, 2.0;</pre> <p style="text-align: right;"><i>//Wrong compiled</i></p>
	<p>Using SD1 alias for M60 was considering SD1 as a double register and was generating an compilation error on following instruction:</p> <pre>if (SD1.0 & 0x01)</pre> <p style="text-align: right;"><i>//Wrong compilation error</i></p>
ETB	<p>Handle correctly startup message coming from old versions of ETND (or etne_start_custom)</p>
	<p>Allocate boot_rx etcom message with maximal size allowing uploading data from ETND (or etne_start_custom)</p>
	<p>Function etb_get_timer prototype has changed from long etb_get_timer to unsigned eint64 etb_get_timer</p>
DBGVIEW40	<p>Add second traductor allowing translation of UltimET command</p> <p>Be aware that, from EDI-4.10A, dbgview40 will only be able to print out messages from an application compiled with debug version of EDI. Then, the dbgview40 feature Id/Ir is no more available. Renaming the EDI dll manually will lead into unpredictable results.</p>
TRA	<p>.NET interface: the delegate function used to set an ISO converter was returning void value, which was interpreted as an error from C TRA dll. This has been corrected in .NET interface</p>
	<p>Check only first Etcom parameter to detect system/non-system register otherwise it was not possible to detect non-system parameter</p>
LIB	<p>Function tim_counter prototype has changed from long tim_counter to eint64 tim_counter allowing to detect time difference more than 23 days</p>

22. RELEASE 4.01A

THIS IS A NEW SOFTWARE PRODUCTION PACKAGE

All AccurET / UltimET products shipped from June 24th 2013 will contain the versions described below.

This software package will allow our customers to benefit from:

- Advanced gain scheduling in AccurET.
- Sequence debugger in ComET.

Note concerning the System Configuration Manager: this package is required to ensure compatibility from AccurET hardware Revision 1 to Revision 2.

Note on production release for the AccurET/UltimET product family:

Please note the new software package installed in production from June 17th 2013 on our products contains the following versions:

- AccurET Firmware for AccurET 48 / 300/ 400-600 /VHP48 : 2.07A
- UltimET Firmware for UltimET PCI / TCPIP : 2.07A
- ComET on software CD : 2.11A (32bits application)
- EDI versions compatible with this package :
 - 3.16A (32bits)
 - 4.01A (32bits and 64bits)

This package is referenced in TIS Document Nb: 771421 ver./rev. 02/A

EDI 4.01A LIB 4.01A, EKD 4.01A, DMD 4.01A, ETB 4.01A, ESD 4.00B, DSA 4.01A, TRA 4.00B, ETN 4.00B, ESC4.01A (only for 32-bit version).	
22.1. New features	
GENERAL	AccurET and UltimET version 2.07 supported
DSA	A new function has been added: - dsa_start_delayed_rtv_handler()
	.NET interface implements now DsalpolGroup.ipolGetIpolGroup which returns the interpolation group number of an Ipolgroup object
	Status bit definition has been modified to fit AccurET definition
DSA/ETB	A new status bit (exec_sequence_thread) has been defined. This bit can be accessed by DSA_STATUS.drive.exec_seq_thread or DSA_STATUS.ultimet.exec_seq_thread. This status bit is 1 if one of the threads defined in K297 (mask) is in execution. It is possible to wait on this status bit like for other status bits using dsa_wait_status ...() functions
EKD	LINUX: Accessing a UltimET PCI does no more request "root" privileges. This new feature request UltimET PCI driver pcteb40
DMD	A new function has been added: bool_DMD_EXPORT dmd_is_master(int prod) DMD_FAMILY_DMD_EXPORT dmd_get_prod_family(int prod)
22.2. Corrected bugs	
GENERAL	Debugging a .NET application using EDI could generate a /PInvoke error on 32bits system. This is now corrected
ESD	Downloading a pre-compiled sequence file did not function correctly. This followed into a ERROR -2509 : bad file format. This is now corrected

DSA	<p>System Configuration Manager handles now AccurET REV1-REV2 compatibility from firmware version 2.06C.</p> <p>The following functions are not available for RTX nor POSIX systems The firmwares are taken from the sub-directory “fw” of the directory containing the dll (for fw version 2.06C and further)</p> <ul style="list-style-type: none"> - dsa_system_configuration_backup() - dsa_system_configuration_download() - dsa_device_configuration_backup() - dsa_device_configuration_download() <p>The following functions are not available for RTX systems For backup and download, the firmwares are taken from the specified sub-directory (for fw version 2.06C and further)</p> <p>Functions:</p> <ul style="list-style-type: none"> - dsa_system_configuration_check_hardware() - dsa_system_configuration_check_software() - dsa_system_configuration_backup_fw_pool() - dsa_system_configuration_download_fw_pool() - dsa_device_configuration_backup_fw_pool() - dsa_device_configuration_download_fw_pool()
	<p>Function dsa_get_warning_code_... () were accessing M621 for UltimET, too. This is now corrected and M66 is accessed instead</p>
ESC	<p>The pre-processor #define tag was replacing the tag into comment, too. This is now no more the case.</p> <p>In some situation, where many #define were defined, it could lead to some strange compilation error, especially in the case like:</p> <pre>#define AXIS 0 #define AXIS1 1</pre> <p>This is now coorrected, too</p>
DSA/TRA	<p>HTML documentation updated (remove of references to DMD_TYP_REALTIME and DMD_TYP_SEQUENCE)</p>
EKD	<p>It was not possible to open UltimET PCI with 64 bits version using old PCI driver 10.21. This is now possible</p>

23. RELEASE 4.00A

EDI 4.00A LIB 4.00A, EKD 4.00A, DMD 4.00A, ETB 4.00A, ESD 4.00A, DSA 4.00A, TRA 4.00A, ETN 4.00A, ESC4.00A (only for 32-bit version).	
23.1. New features	
GENERAL	AccurET and UltimET version 2.07 supported
DSA	A new function has been added: - dsa_start_delayed_rtv_handler
DMD	Add new conversion functions for force controll
23.2. Corrected bugs	
ESD	Downloading a pre-compiled sequence file did not function correctly. This followed into a ERROR -2509 : bad file format. This is now corrected
DSA	Functions have been removed: - dsa_set_float_register_s - dsa_set_float_register_a - dsa_get_float_register_s - dsa_get_float_register_a These function accessed to F register which is not present on AccurET family