Welcome

Pushing Performance

HARTING
Pushing Performance

Ha-VIS Middleware Management Tool Manual

DRAFT

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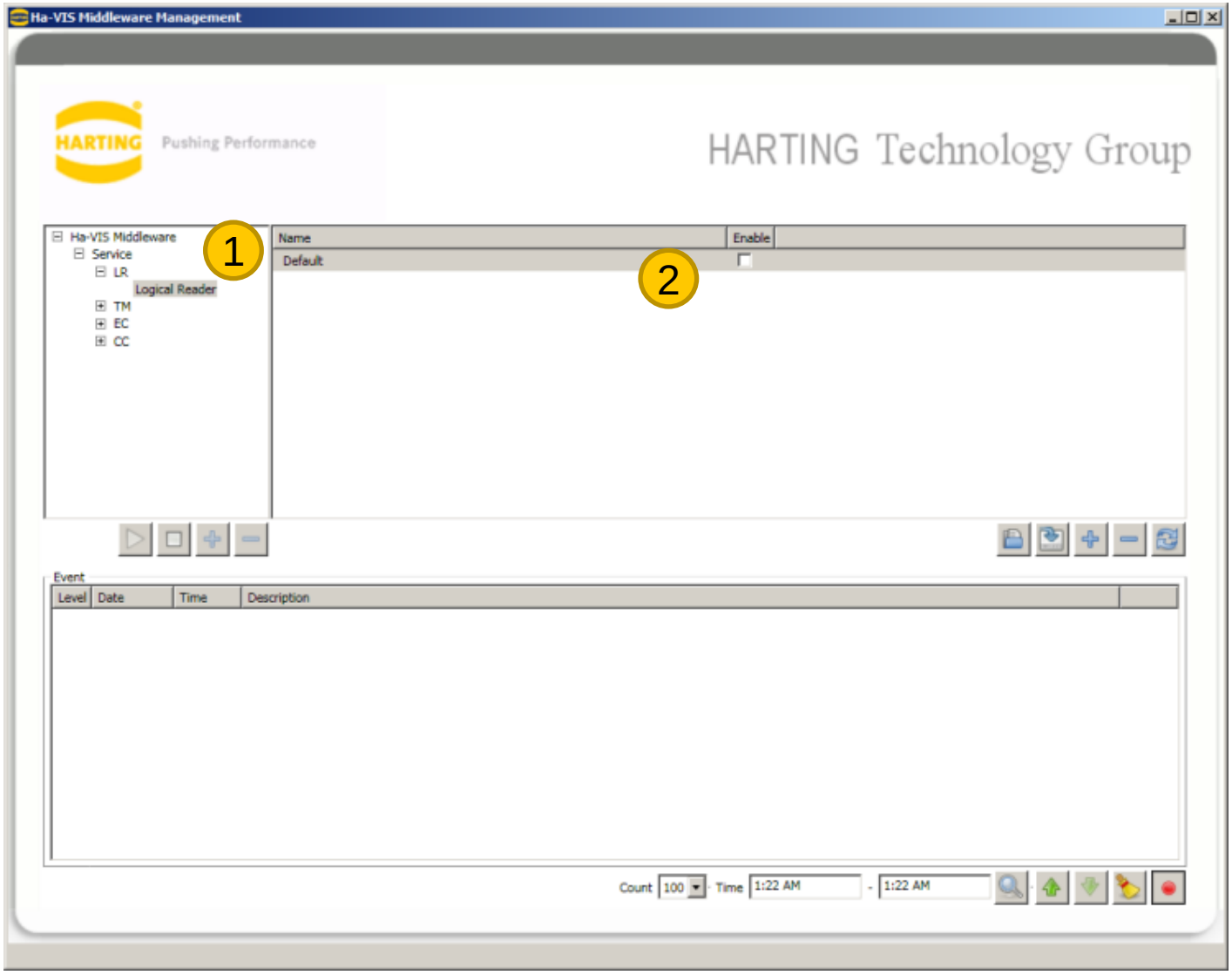
The Main Screen

The Main Screen

1. the menu tree
2. the content area
   the link opens the vendor specification from HARTING which specifies the HARTING specific functionality of the middleware (in addition have a look into the EPCglobal ALE 1.1 specification) →available in version 2.1.0 or newer
3. the event logging area
   - 3.1 event search
   - 3.2 scroll functionality
   - 3.3 clean history view
   - 3.4 enable/disable event logging visualization → events are e. g. info about connection loss to a reader

Logical Readers

Logical Reader

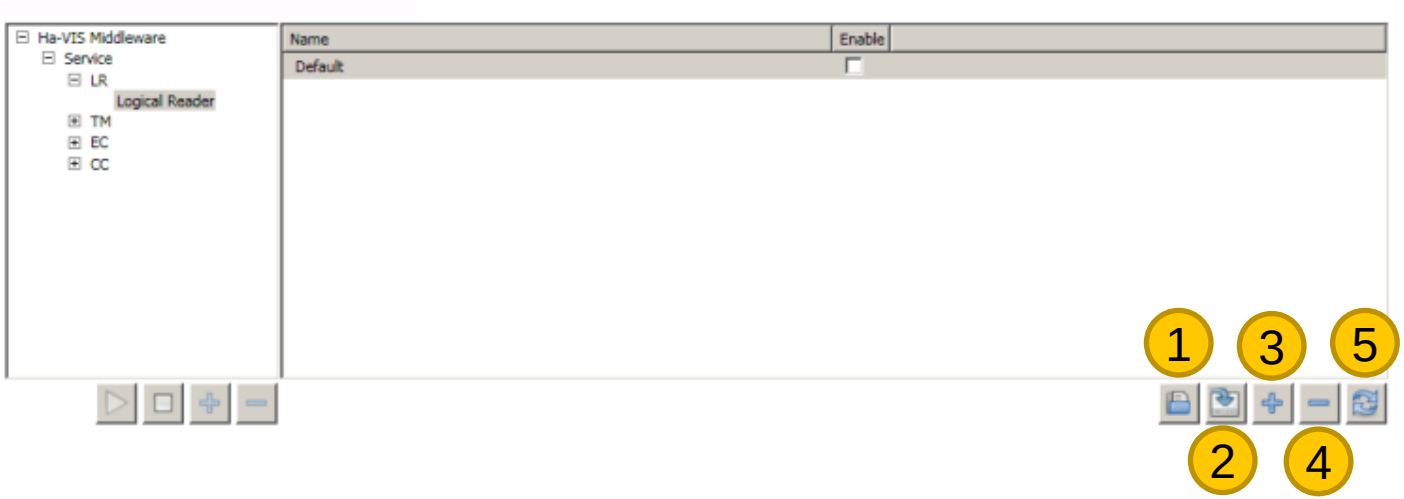


1. main menu items are:
   LR: Logical Readers
   TM: Tag Memory
   EC: Event Cycle
   CC: Command Cycle

   The Logical Reader section, which is selected, includes all configured physical and composite readers

2. the default configuration includes a physical reader which builds up a connection to a RF-R500 with the IP-address 192.168.10.10, port 10001

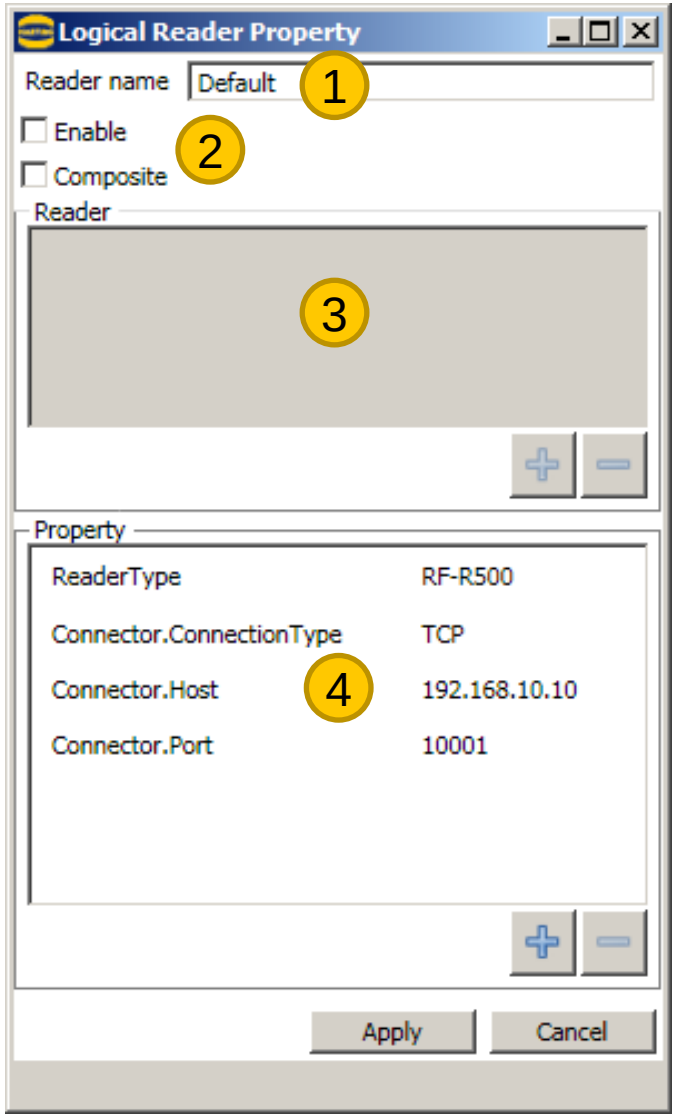
Logical Reader



1. open from file: loads an existing configuration from file
2. save to file: saves the configuration to a file
3. add: adds a new reader (in this case)
4. remove: deletes the selected reader (in this case)
5. reload: make a refresh of the list with all the readers (in this case)

Logical Reader

Logical Reader Property

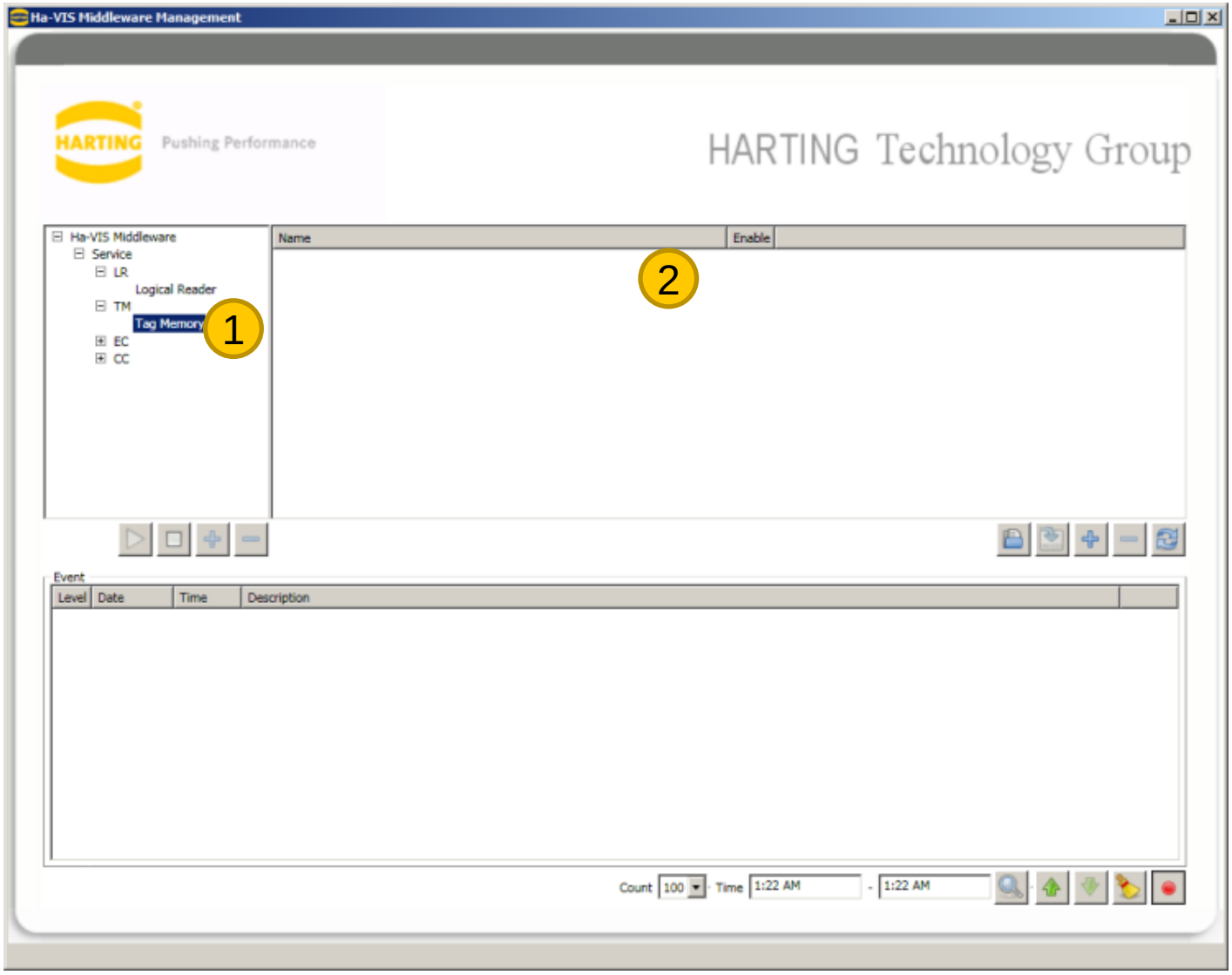


With a double click on the Default reader or by clicking the + (add) the configuration of the existing Default reader or of a new reader is opened

1. reader name
2. enable and decide if it is a Composite reader which can combine several physical / composite readers or some antennas to one logical reader (e. g. two readers, each of them in one gate, are combined in one reader “incoming goods”)
3. list of physical / composite reading points for a composite reader (only available for composite readers)
4. parameters of the reader which have to be adjusted and can be extant with additional available parameters e. g. to define exactly which antennas should be used

Tag Memory

Tag Memory

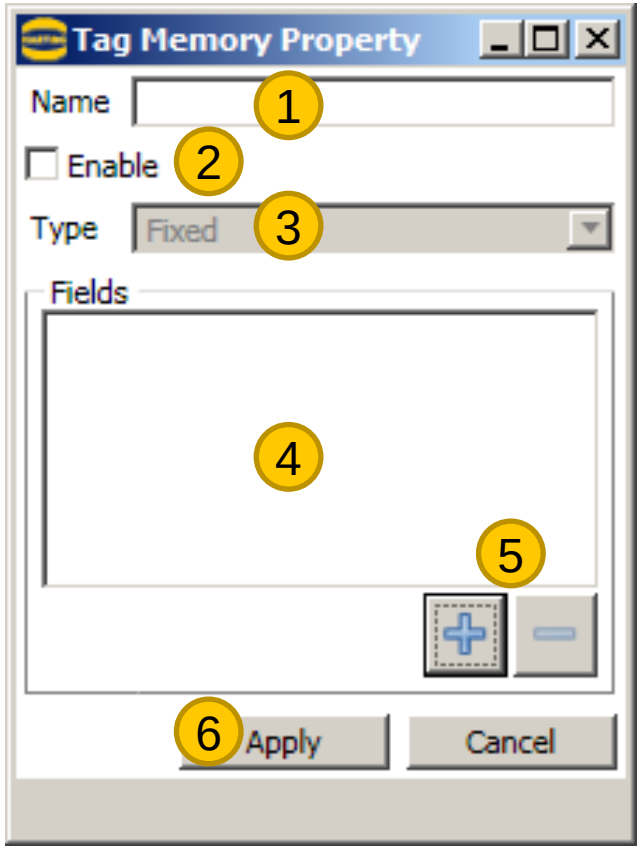


1. Tag Memory is selected. In this section customized memory sections can be configured, so that this memory section can be accessed by name – and not each time with memory bank, offset and length.

2. per default no tag memory definition exists. With the + (add) you can add a new tag memory.

Tag Memory

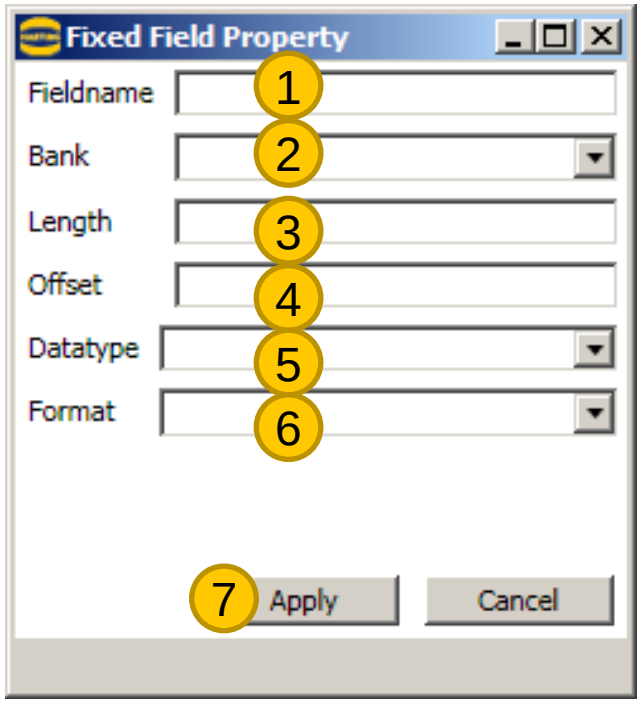
Tag Memory Property



With the + (add) button or with a double click on an existing tag memory definition you can open the tag memory property window.

1. the name of the tag memory which will identify it
2. if enabled you can use it but you cannot change the parameters of it
3. the type is always “Fixed” – so far
4. list with already defined fields in this Tag Memory Specification. Because one tag memory can include several fields. Each field is linked with a memory section (Bank, Offset, Length)
5. add or remove fields
6. with apply the configuration can be stored

Tag Memory
Fixed Field Property

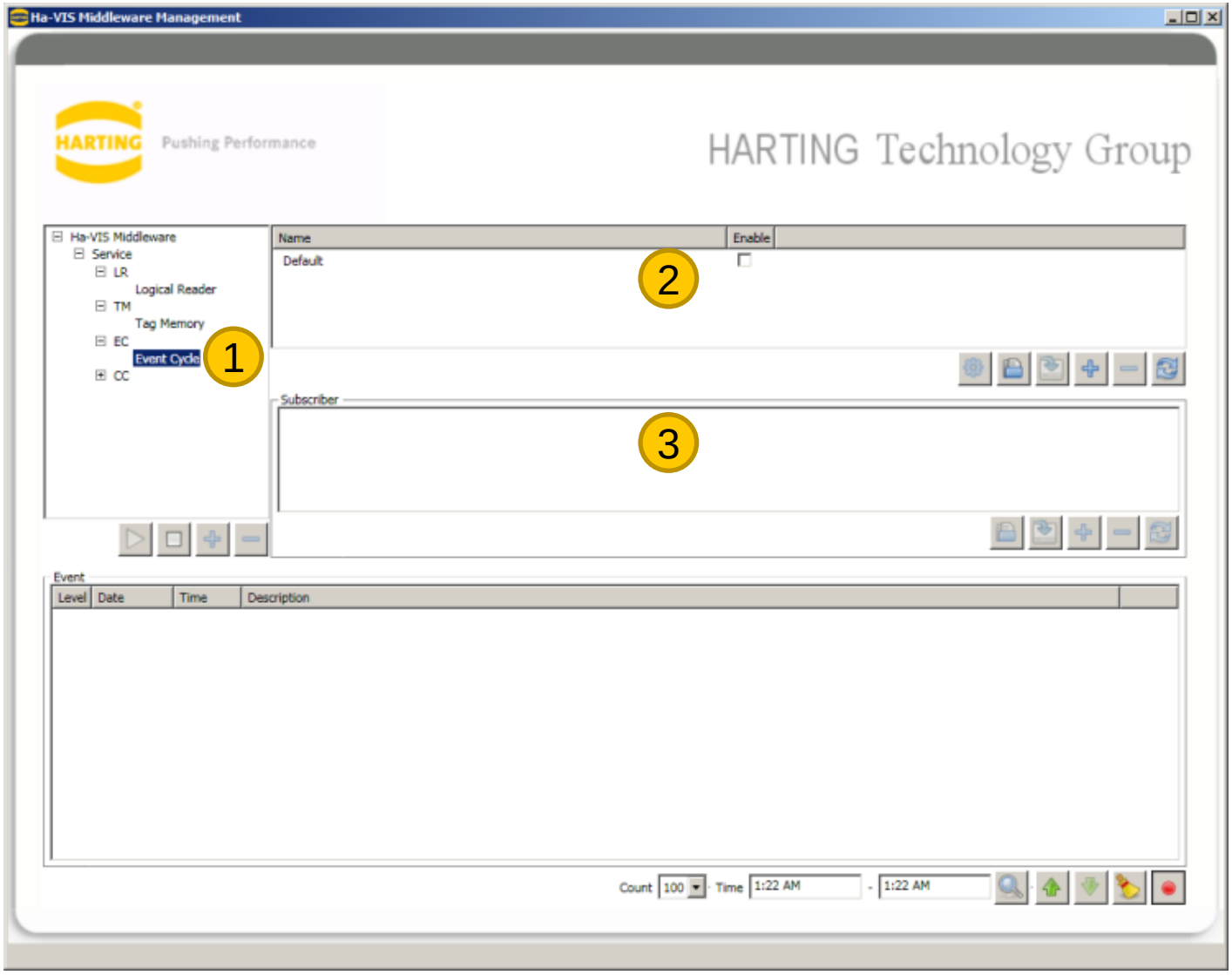


Field properties which defines the name and the exact memory section to which a field of a tag memory is linked to.

1. the name of the field which will identify it
2. memory bank to which the field is linked to (Reserved, EPC/UII, TID, User)
3. the length of the memory section to which this field is linked to
4. start position of the field inside the selected memory section
5. data type of the field (epc, uint, bits) – how to interpret the information inside the selected memory by default
6. the format defines the visualization/interpretation of the field data (epc-pure, epc-tag, epc-hex, hex, decimal) – data type and format is always a combination
7. with apply the configuration can be stored

Event Cycle

Event Cycle

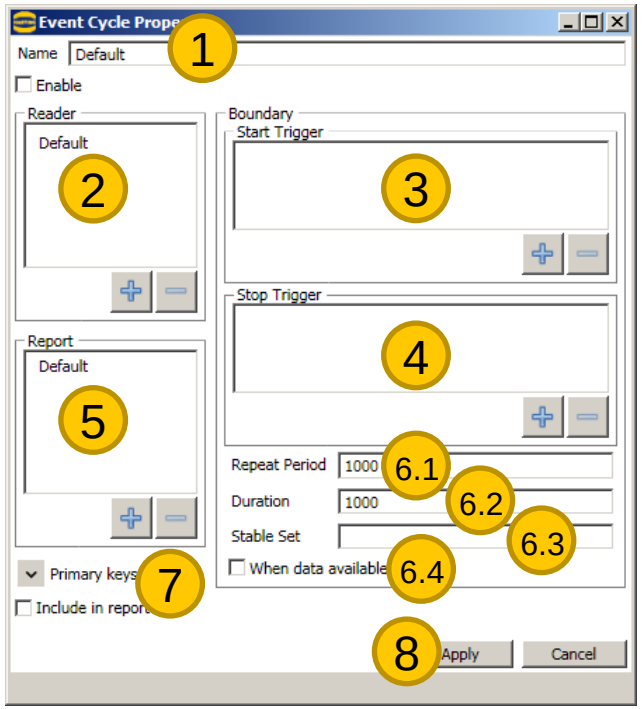


1. Event Cycle is selected. An event cycle holds the report configuration to report transponder events

2. the default event cycle is including one report which reports every second the EPC of all detected transponders. If no transponder is detected no report is generated
3. List with defined subscribers (for each event cycle)

Event Cycle

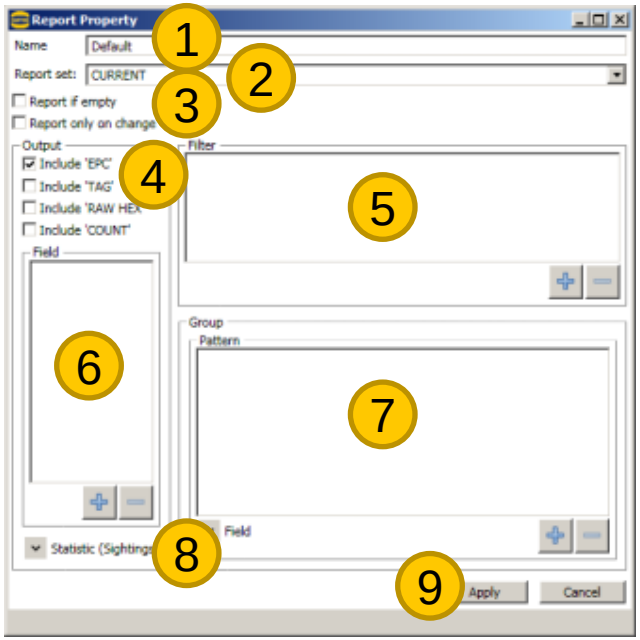
Event Cycle Property



With the + (add) button or with a double click on an existing event cycle definition you can open the event cycle property window.

1. the name of the event cycle which will identify it
2. list of connected readers from which the information is reported
3. start trigger list which holds all defined start triggers
4. stop trigger list which holds all defined stop triggers
5. report list which holds all defined reports
6. general event cycle conditions. Keep in mind: the first stop condition will win:
   6.1 **Repeat Period**: every n milliseconds start once again the event cycle. If the report duration is longer than the repeat period the event cycle will start immediately again.
   6.2 **Duration**: duration of the event cycle in milliseconds. At the end of each duration reports are generated including the collected data which was detected during the duration.
   6.3 **Stable Set**: if in n milliseconds no additional tags are detected a report with the collected data is generated
   6.4 if “When data available” is activated the reports are generated as soon as data is available.
7. With the primary key option you can customize the default setting which is the EPC.
   If the include in report checkbox is activated, the event cycle specification is written into the report itself.
8. with apply the configuration can be stored

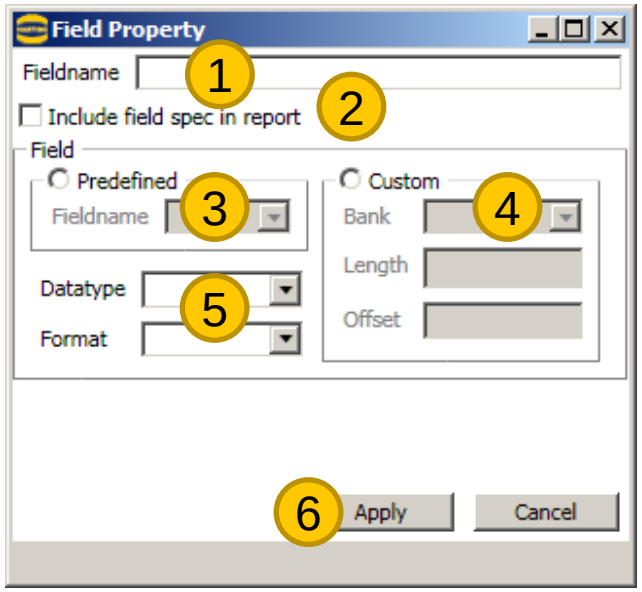
Event Cycle
Report Property



With the + (add) button or with a double click on an existing report definition you can open the report property window.

1. the name of the report which will identify it
2. three options are available to configure which transponders should be included in the report:
   - 2.1 CURRENT: all detected transponders
   - 2.2 ADDITIONS: only new transponders
   - 2.3 DELETIONS: only transponders which were no longer detectable (last duration detected but not now)
3. Two options can be activated:
   - Generate an report even if it is empty
   - Report transponder only when the sighting situation has changed (detectable or not)
4. The format of the EPC information (more information about this is available in the tag data standard from the EPCglobal)
5. List with filters, which will affect the report result
6. List with additional fields which should be included in the report
7. List with group patterns which will organize the report output
8. with Statistics you can include additional information into the report:
   - Timestamp: Time of detection
   - Count: How often the tag was detected
   - Readers: Which reader has the tag detected
   - Signals: including the RSS value
9. with apply the configuration can be stored

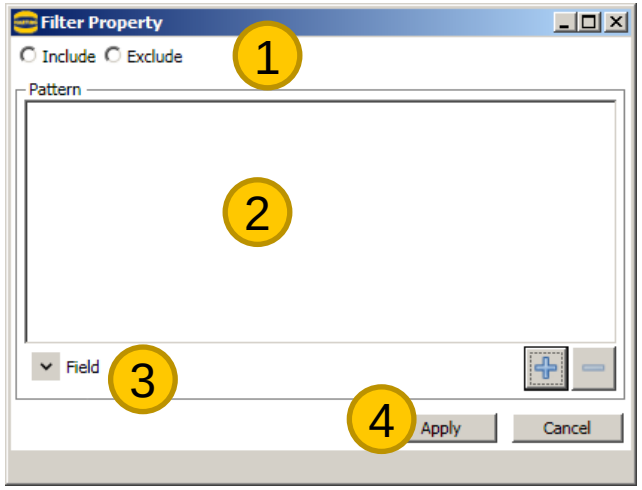
Event Cycle
Field Property



With the + (add) button or with a double click on an existing field definition you can open the field property window.

1. the name of the field which will identify it
2. if activated the field specification is written into the report itself
3. Predefined fields like EPC or existing tag memory definitions, defined with data type and format
4. Custom definitions which are related directly to a memory section of a specific memory bank
5. Datatype and Format will define the actual data interpretation/visualization
6. with apply the configuration can be stored

Event Cycle
Filter Property

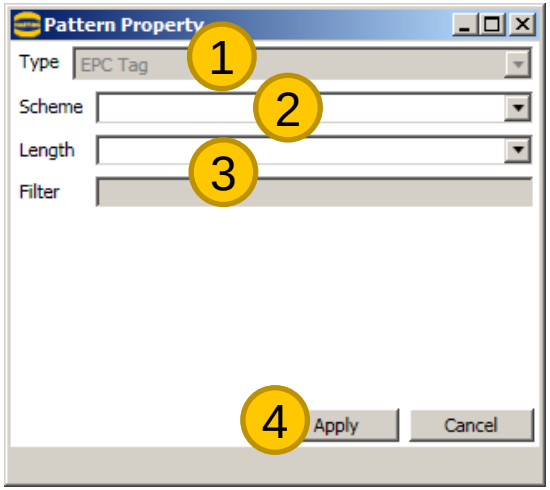


With the + (add) button or with a double click on an existing filter definition you can open the filter property window.

1. you can choose if it is an including or excluding filter condition
2. list with all defined patterns
3. with the field option you can set a filter directly on a predefined or custom field
4. with apply the configuration can be stored

Event Cycle

Pattern Property

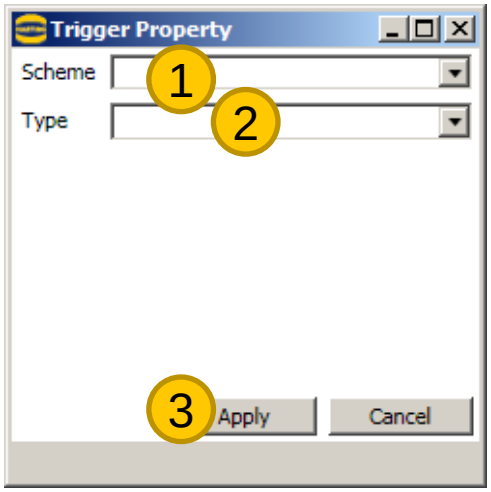


With the + (add) button or with a double click on an existing filter or group pattern definition you can open the pattern property window.

1. the type is defined with the field definition in the Filter Property window
2. the scheme of the pattern means which type of transponders should be take into account e. g. SGTIN, SSCC, GRAI, a. s. o. coded transponders
3. the different options like length or filter are related to the chosen scheme
4. with apply the configuration can be stored

Event Cycle

Trigger Property

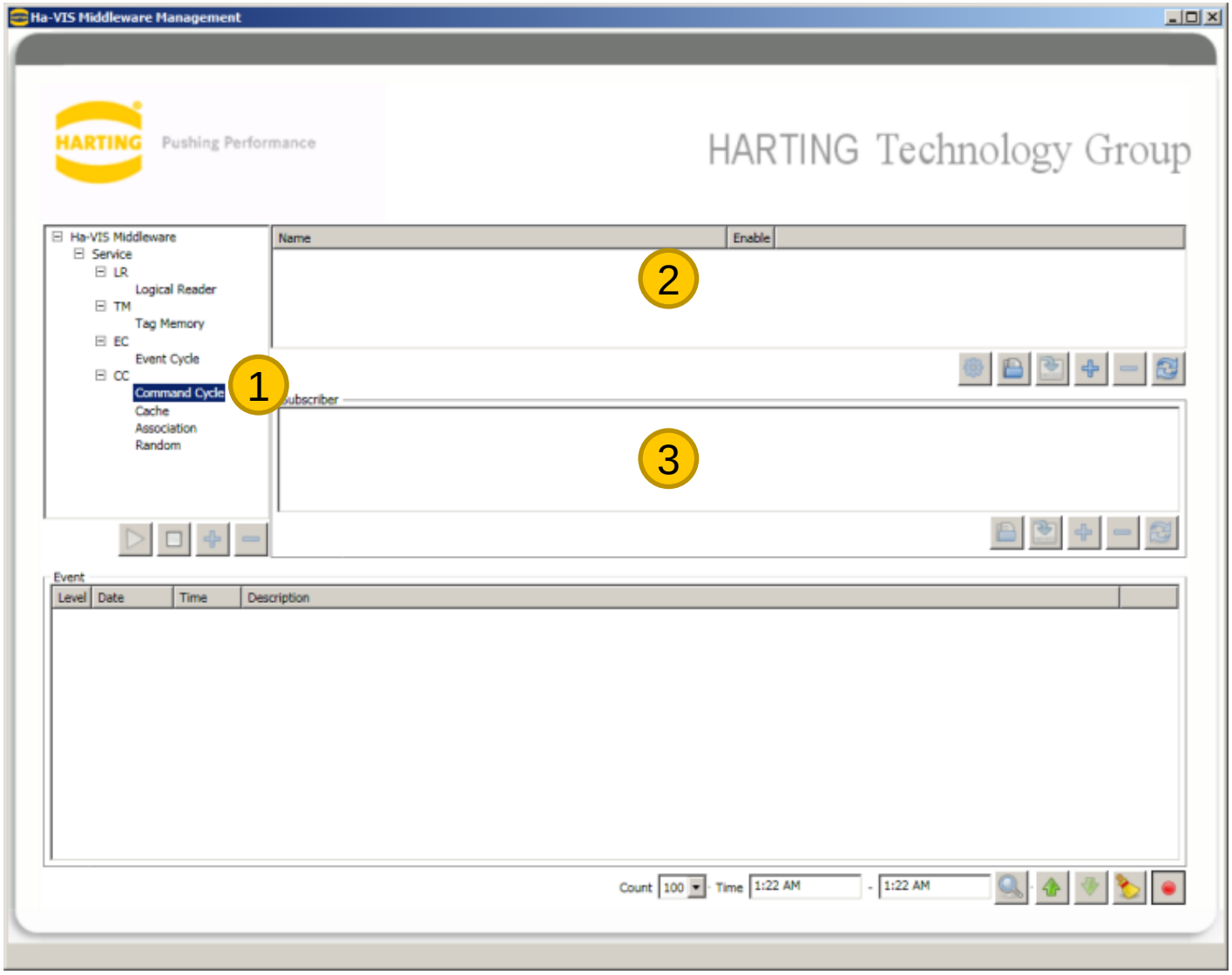


With the + (add) button or with a double click on an existing trigger definition you can open the trigger property window.

1. the scheme of the trigger means which type trigger should be take in account. The schemes EPCglobal and Ha-VIS are available
2. the scheme EPCglobal includes the Rtc (real time clock) triggers, which means time based triggers.
   The scheme Ha-VIS includes the HARTING defined triggers
   http: which means trigger by http telegram or
   port: which means trigger by digital input of the reader (available for the RF-R500 from HARTING and LLRP based readers)
3. with apply the configuration can be stored

Command Cycle

Command Cycle



1. Command Cycle is selected. An command cycle holds a configuration to initiate read –write scenarios.

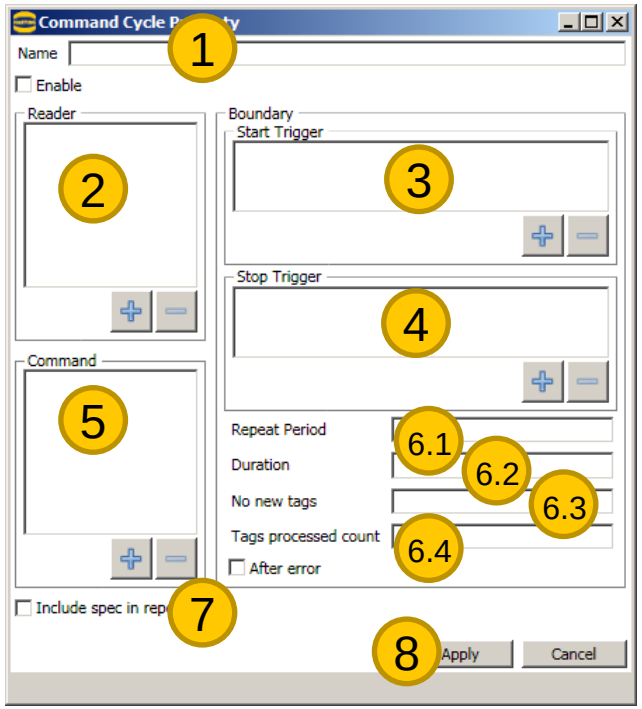
   With Cache, Association and Random which are as well available in this section you can predefine data sources which can be used for the different operations

2. list with all defined command cycles. Per default no command cycle is defined

3. List with defined subscribers (for each command cycle)

Command Cycle

Command Cycle Property

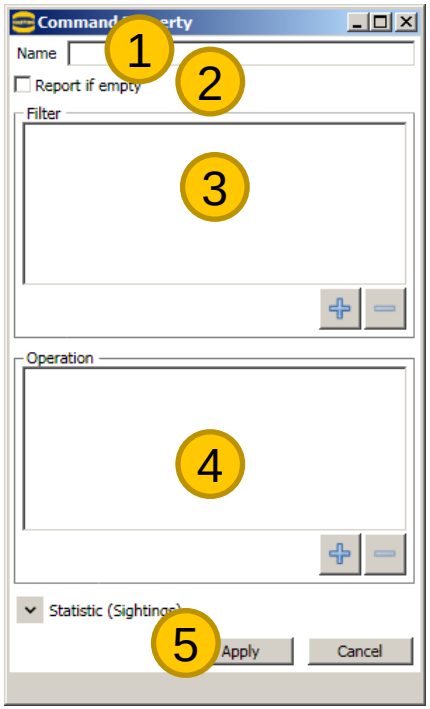


With the + (add) button or with a double click on an existing command cycle definition you can open the command cycle property window. The options are nearly the same like the options of an event cycle (see extra slide).

1. the name of the command cycle which will identify it
2. the connected readers which should be work with
3. start trigger list which holds all defined start triggers
4. stop trigger list which holds all defined stop triggers
5. command list which holds all defined commands
6. general command cycle conditions. Keep in mind: the first stop condition will win:
   - 6.1 **Repeat Period**: every n milliseconds start once again the command cycle. If the command duration is longer than the repeat period the command cycle will start immediately again.
   - 6.2 **Duration**: duration of the command cycle in milliseconds. At the end of each duration an feedback report is generated including all the error or success messages of the performed commands.
   - 6.3 **No new tags**: command cycle stops if no new tags are detected
   - 6.4 **Tags processed count**: Command cycle stops after the specified number of tags have been processed
7. If the include in report checkbox is activated, the command cycle specification is written into the feedback report itself.
8. with apply the configuration can be stored

Command Cycle

Command Property

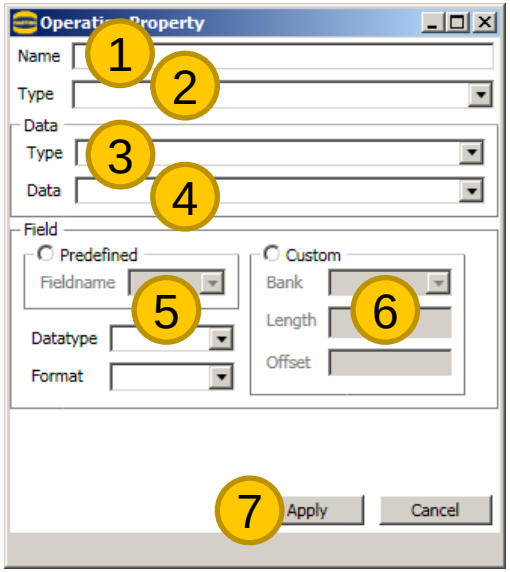


With the + (add) button or with a double click on an existing command definition you can open the command property window.

1. the name of the command which will identify it
2. if activated reports will be generated even if nothing has to be reported
3. filter list which holds all defined filters
4. operation list which holds all defined operations (operation = what to do / what to write to transponders)
5. with apply the configuration can be stored

Command Cycle

Operation Property



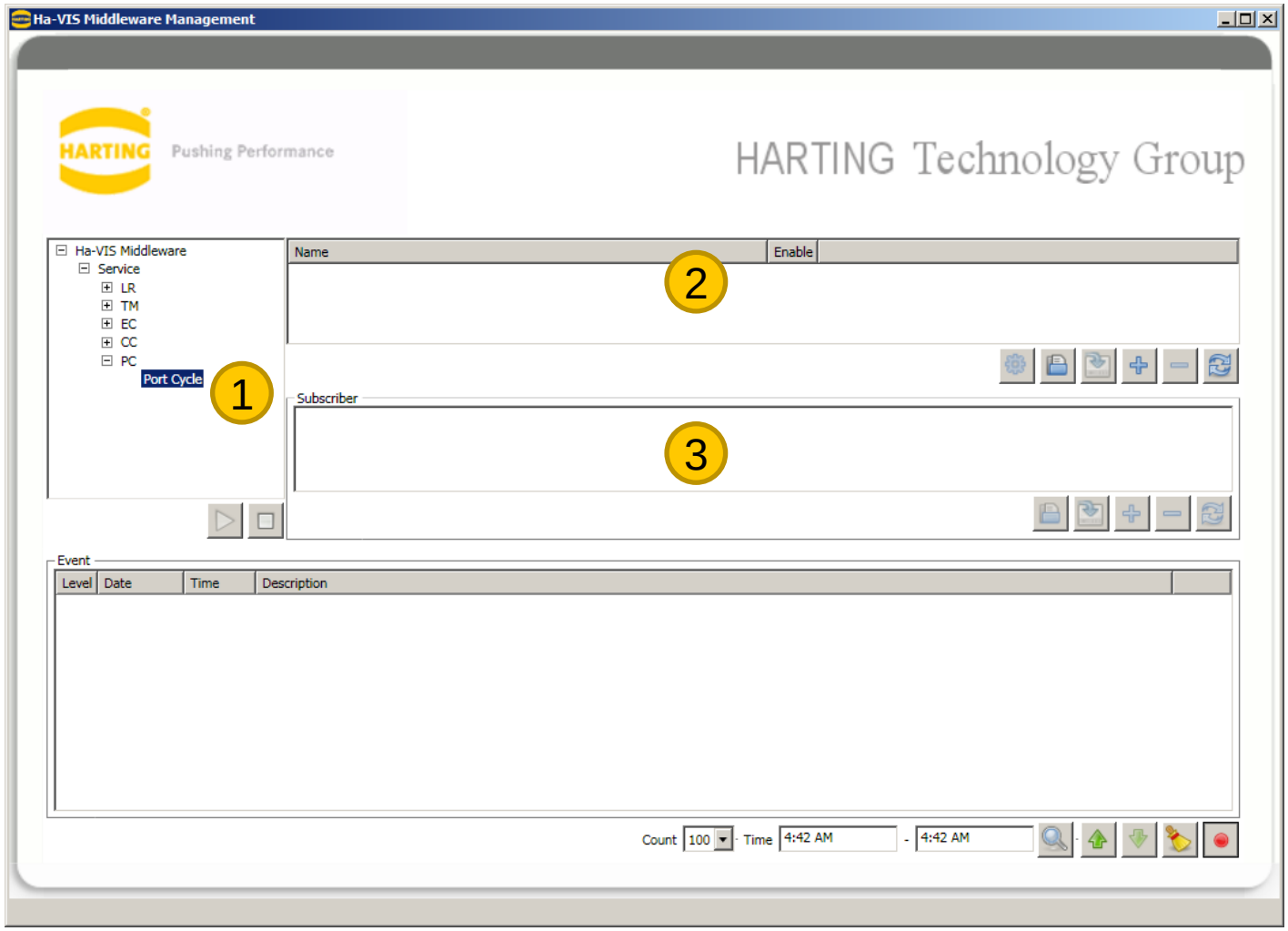
With the + (add) button or with a double click on an existing operation definition you can open the operation property window.

1. the name of the operation which will identify it
2. the type which indicates what kind of operation should be processed like write, read, kill, password or lock
3. the data type defines what kind of data should be used for this operation
   - Literal: for data an literal which is interpreted according the field definition should be used
   - Parameter: parameter is a specialty which enables an external program to run this operation on demand (with a poll operation) with dynamic parameters – which come maybe somewhere from a backend system. Parameters from the external program are always key value pairs. For data the key of the parameter which identifies the value should be used
   - Cache: for data the name of the defined cache should be used
   - Association: for data the name of the defined association table should be used
   - Random: for data the defined random parameter should be used
4. different kind of data types always interpreted according the field definition
5. predefined fields like EPC or existing tag memory definitions, defined with data type and format
6. custom definitions which are related directly to a memory section of a specific memory bank
7. with apply the configuration can be stored

Port Cycle

Port Cycle

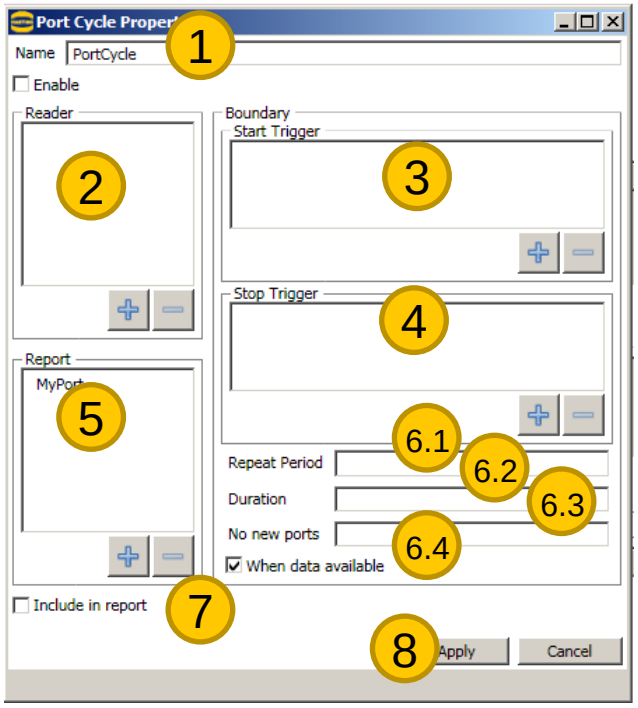
available in version 2.1.0 or newer



1. Port Cycle is selected. A port cycle holds the configuration to observe or switch the digital inputs and outputs
2. list with all defined port cycles
3. list with defined subscribers (for each port cycle)

Port Cycle

Port Cycle Property

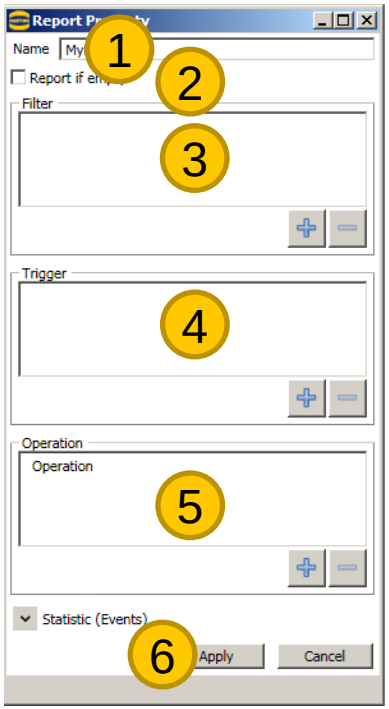


With the + (add) button or with a double click on an existing port cycle definition you can open the port cycle property window. The options are nearly the same like the options of an command cycle (see extra slide).

1. the name of the port cycle which will identify it
2. the connected readers which should be work with – not a must have, if you select no working reader you have to define a trigger inside the port report definition
3. start trigger list which holds all defined start triggers for this Port Cycle
4. stop trigger list which holds all defined stop triggers for this Port Cycle
5. report list which holds all defined port cycle reports
6. general port cycle conditions. Keep in mind: the first stop condition will win:
   - 6.1 **Repeat Period**: every n milliseconds start once again the port cycle. If the duration is longer than the repeat period the port cycle will start immediately again.
   - 6.2 **Duration**: duration of the port cycle in milliseconds. At the end of each duration an feedback report is.
   - 6.3 **No new ports**: port cycle stops if no new events are detected for n milliseconds
   - 6.4 **When data available**: report is generated immediately when data is available
7. If the include in report checkbox is activated, the port cycle specification is written into the feedback report itself.
8. with apply the configuration can be stored

Port Cycle

Report Property

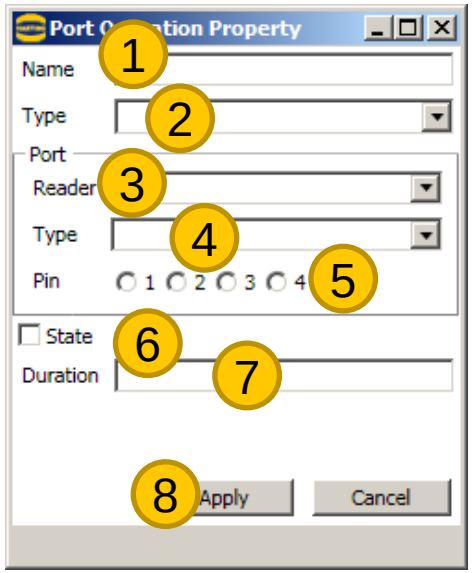


With the + (add) button or with a double click on an existing port cycle report definition you can open the report property window.

1. the name of the report which will identify it
2. if activated reports will be generated even if nothing has to be reported
3. filter list which holds all defined filters. Filters can only be used if a working reader in the Port Cycle Property window is defined.
4. trigger which will activate the defined operations. Trigger must be defined if no working reader in the Port Cycle Property windows is defined.
5. operation list which holds all defined operations (operation = what to do / which digital I/O should be observed or toggled)
6. with apply the configuration can be stored

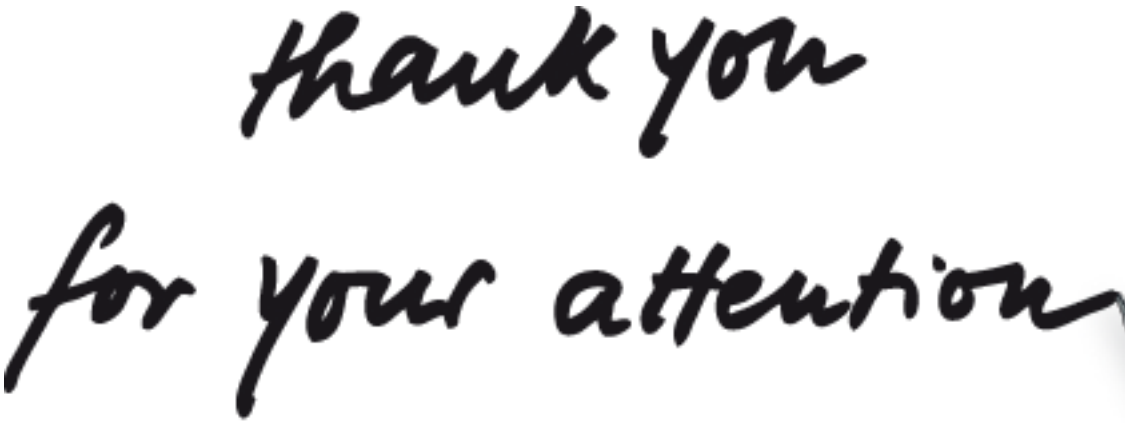
Port Cycle

Port Operation Property



With the + (add) button or with a double click on an existing operation definition you can open the operation property window.

1. the name of the operation which will identify it
2. the type which indicates what kind of operation should be processed READ or WRITE
3. the associated reader to this port operation
4. the type INPUT or OUTPUT operation
5. which IO pin
6. State is checked is equal to IO pin is activated (e. g. the output pin will be activated during this operation).
7. Duration is only available for the HARTING reader. You can define how many milliseconds the new output state of a pin will be activated (after this period the original state of the pin will be activated). If nothing is defined the state of the output pin will be active until another port cycle operation takes effect.
8. with apply the configuration can be stored


thank you
for your attention