Honeywell

Technical Information

ENTIS R140.1 Specification

ETDOC-X618-en-R140.1

Release 140.1

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Revision History

Revision	Date	Description
1.0	September 2019	Release version
1.1	October 2019	Text corrections
2.0	December 2019	Release version R110.1 updates
3.0	June 2020	Release version R120.1 updates
4.0	July 2020	Maximum number of tanks updated
5.0	September 2020	Release version R121.1 updates
6.0	June 2021	Release version R122.1 updates
7.0	December 2022	Release version R130.1 updates
8.0	April 2023	Release version R130.2 updates
9.0	April 2025	Release version R140.1 updates

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1. Introduction

1.1. ENTIS

ENTIS's unique, flexible system architecture ensures robust operation as a Windows 10 IoT Enterprise LTSC 2021. ENTIS integrates with the dedicated Communication Interface Unit, CIU 888 via OPC UA. The CIU 888 retrieves and processes data from field devices and systems by constantly scanning, calculating, and monitoring. Reliable data is continuously provided to a wide range of applications to support operators with dedicated tasks in ENTIS. This allows users to operate the tank farm safely and efficiently.
A variety of displays are available for inventory management, movement (simple and advanced), including but not limited to, bar graphs, tabular data, iconized tanks, and a whole range of optional modules such as trending, report printing, and a what if...tank calculator.
ENTIS screens are displayed in the Experion Station environment.

1.2. Experion® HS System

Experion® HS is a powerful software platform that incorporates innovative applications for Human Machine Interface applications (HMI) and Supervisory Control and Data Acquisition (SCADA). It is comprised of a subset of Experion PKS components specifically packaged to provide a targeted and robust system for small to medium automation projects.

Various brands of controllers are brought together into a single operator environment where plant visualization, history, trending, alarming, and reporting are performed in a simple, consistent fashion. Experion HS is easy and intuitive, and can be used by plant managers, plant maintenance engineers, process engineers and operators in many industries to improve efficiency and productivity.

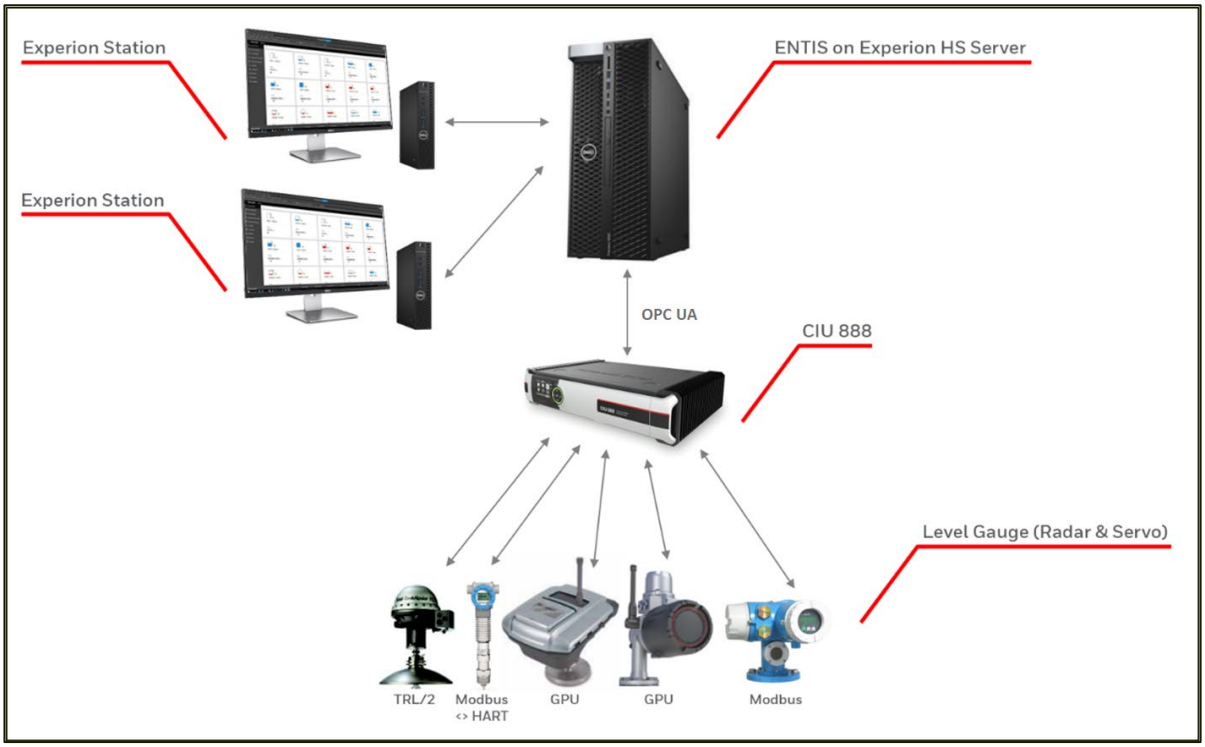

Figure 1 – Architecture Overview

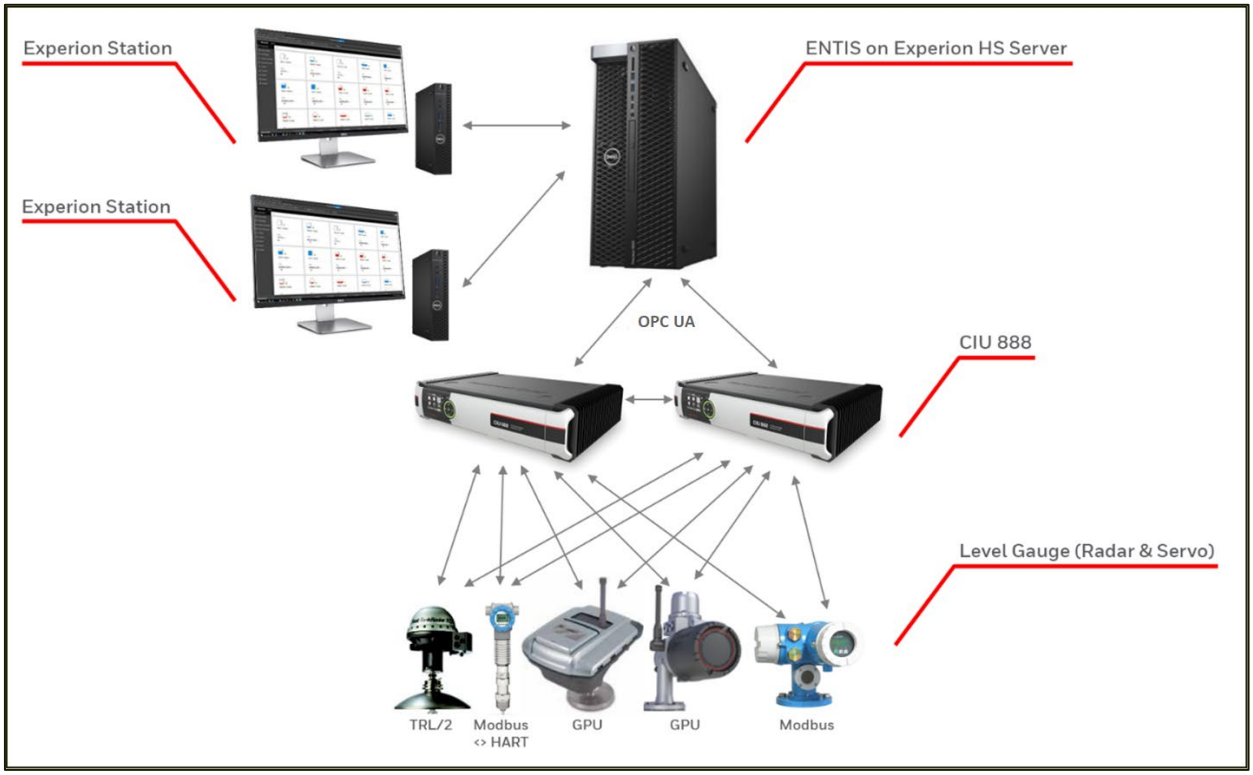

Figure 2 – CIU Hot Standby Architecture

ENTIS requires an Experion HS server to run the ENTIS package. The ENTIS package will be installed next to Experion HS and uses Experion functionality but has its own scanning mechanism to collect tank data from the field. The ENTIS software will connect to the CIU 888 via OPC UA connection to get tank records that contain the inventory data of the different connected storage tanks. The CIU 888 will scan the data from the Level Gauges on top of the tanks. These Level Gauges will measure the product level and are also used as data concentrator for other sensors like temperature and pressure.

1.3. CIU 888

The CIU 888 is a Communication Interface Unit. The CIU 888 is the crucial link between tank gauging instruments and the ENTIS control room systems. It provides operators with reliable and accurate real-time tank inventory data every couple of seconds, 24 hours a day, 7 days a week.

1.4. Level Gauges

The level gauge will measure the tank level via a radar gauge or a servo gauge. Level gauges are also used as a data concentrator on the tank to connect a Vito multi spot temperature sensor and pressure sensors. ENTIS will support all Honeywell Enraf gauges and several third-party gauges.

1.5. Experion HS Flex Station

The Experion HS Flex Station is the Human Machine Interface (HMI) that can be utilized for different functions around a plant including operations, monitoring, maintenance, and engineering.

1.6. Experion HS Server

The Experion HS server combination functions as a system-wide historian and global database. The Experion HS server also supports communication with SCADA point sources, DSA point sources, OPC clients/servers and holds the system event journal, system configuration files, custom applications, and server scripts. The server is the source for data, alarms, events, etc., for the client-connected application Experion HS Station(s). The Experion HS Server is an Experion system node that supports the Station and Server functions. Experion HS Server can be used as an operator or an engineering station. For a redundant Experion HS Server system, it is recommended to use the backup Server as the engineering station.

1.7. Experion HS / ENTIS Redundancy

ENTIS Redundancy will follow the same principal of Experion HS Redundancy with server A and server B. Figure 3 shows the redundant ENTIS/Experion HS architecture and Figure 4 show the combination of CIU 888 redundancy and ENTIS/Experion HS redundancy.

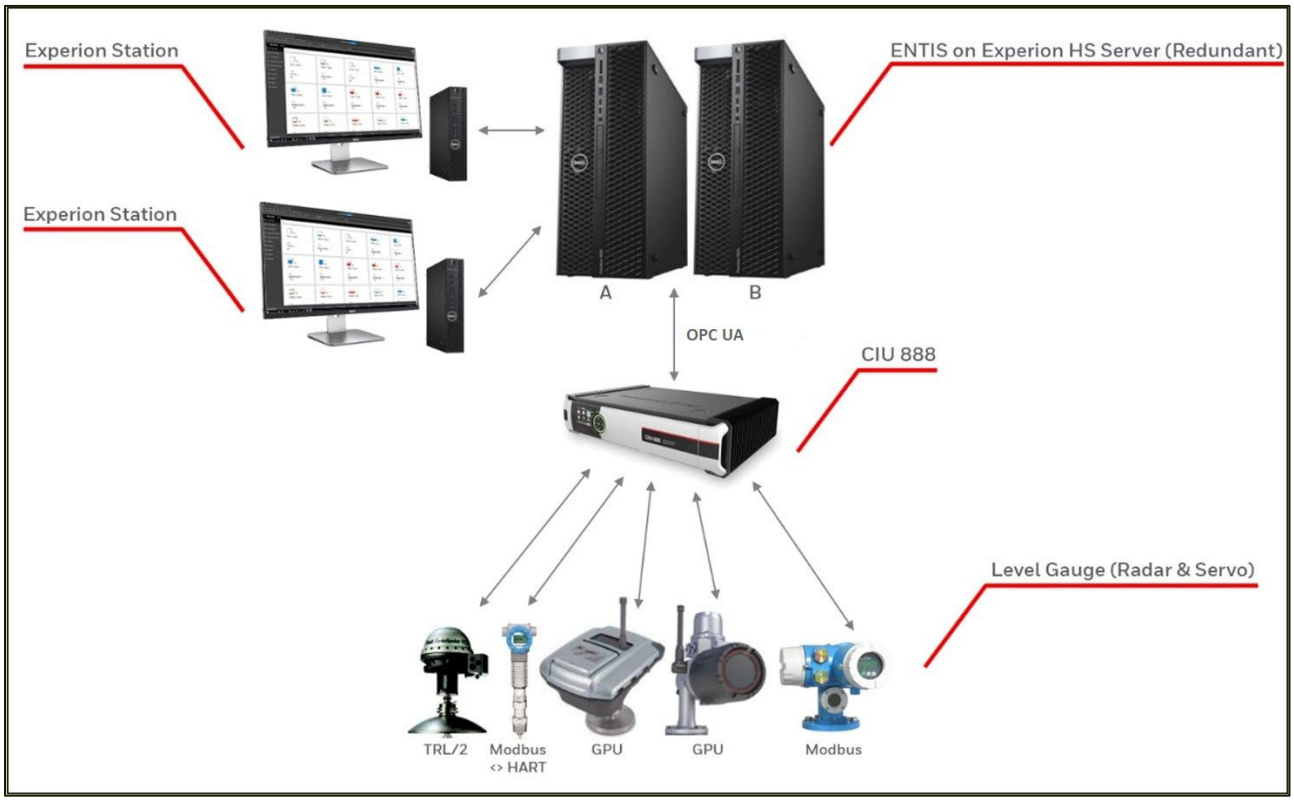

Figure 3 - Redundant Architecture Overview

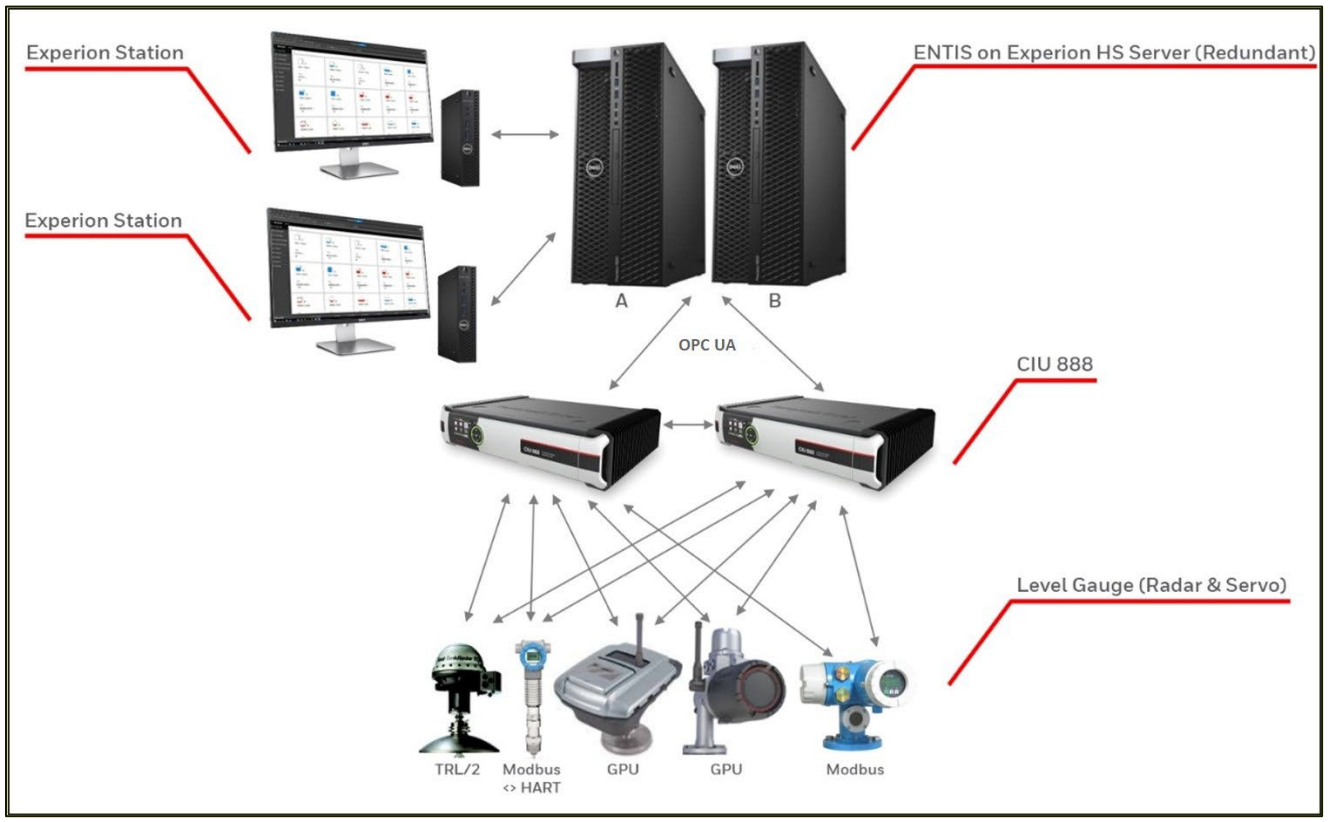

Figure 4: CIU Hot Standby Architecture in combination with ENTIS/Experion HS redundancy

Notes:

- Experion HS does not support Fault-Tolerant-Ethernet but supports dual networks.
- ENTIS has been qualified for single redundancy only.
- For simplicity, switches needed to connect multiple CIU's and PC's and or create network separation to respect the Purdue layers are not visualized.

Note: ENTIS and Experion HS are meant to be deployed as a Client/Server topology. It is not recommended to use the Server as an operator station. The station browser on the Server is meant for maintenance and commissioning purposes. Deviation from this could result in security, performance and legal metrology risks.

2. Specifications

2.1. ENTIS license specifications

Item	Specification	Comments
Maximum number of tanks	400 (5 CIU's, 80 Tanks)	The ENTIS license will give you the option to start with 5, 10, 15, 20… 310, 315, 320…400 400 Tank License is needed to support 400 tanks.
Maximum number of CIU 888s supported	8 (non-redundant)	ENTIS will support 8 CIU's. Each CIU can support up to 80 tanks.
Maximum number of redundant CIU 888 pairs supported	8 (16 CIU's)	ENTIS will support 8 primary CIU 888 devices and 8 secondary CIU 888 devices.
Maximum number of Tanks with Dual Gauges	320 (8 CIU's, 40 Tanks)	Since the number of points are based on the tank, having a second gauge on the tank lowers the maximum number of tanks. 1 gauge on a tank = 1 tank (80 in total) 2 gauges on a tank = Claims the space of 2 tanks (40 + 40 in total) 320 Tank License is needed. Gauge commands to execute on second gauge are limited.
Minimum required CIU 888 version	R220.1	ENTIS uses the CIU 888 OPC UA connection and the Profiles interface. CIU 888 version R150.1 and onwards supports 50 density points and dual gauges. CIU 888 R220.1 has been qualified for Legal Metrology (previously known as Weight & Measures).
Experion HS version	R520.2	Experion HS R530.1 release with HMI Web Update 10 is required for ENTIS.
Experion HS version	R530.1	Experion HS R530.1 release with HMI Web Update 2 is required for ENTIS.
Legal Metrology	Yes	ENTIS R140.1 has been qualified for Legal Metrology (previously known as Weight & Measures).

2.2. Experion license HS specifications

ENTIS uses Experion HS to run ENTIS. The following Experion specifications, shown in the table below, are required.
For more information on Experion HS refer to Experion HMI Specification (EP03-200-530/520).

Item	Specification	Comments
Maximum number of composite SCADA points for Experion HS is 16,500. For ENTIS we require the following range	5 tanks = 205 points 80 tanks = 3280 points 160 tanks = 6560 points 240 tanks = 9840 points 320 tanks = 13120 points 400 tanks = 16400 points	The database starts at a minimum of 50 points, with increments of 100 points up to 16,500 points. For 1 Tank in ENTIS we need 41 points, the possible number of tanks in ENTIS ranges from 5 to 400 tanks. **Note: 4 points need to be added for each CIU.**
Maximum number of Stations	20	ENTIS can have multiple stations, supporting the same number of stations as Experion HS
Maximum number of SCADA channels in Experion HS is 50	1	ENTIS uses 1 SCADA channel
The maximum number of SCADA controllers in Experion HS is 500	8	ENTIS is using 1 - 8 SCADA controllers. Each CIU 888 gets its own controller. A redundant CIU 888 setup will use only 1 controller per CIU 888 pair in Experion.

2.3. ENTIS Compatibility Matrix

OS	Experion- HS	ENTIS	CIU888
Windows 10 2016 LTSB	R511.2	R120.1	R150.1
Windows 10 2016 LTSB	R511.3	R121.1	R150.1
Windows 10 2016 LTSB/Win Server 2016	R511.4	R121.2	R161.2
Windows 10 2016 LTSB/Win Server 2016	R511.5	R130.1	R210.1
Windows 10 2019 LTSC/Win Server 2019	R520.2	R130.2	R210.1 & R210.2
Windows 10 2021 LTSC/Win Server 2021	R530.1	R130.2	R210.1 & R210.2
Windows 10 2019 LTSC/Win Server 2019	R520.2	R140.1	R220.1
Windows 10 2021 LTSC/Win Server 2021	R530.1	R140.1	R220.1

Note: For the Experion latest SHU patch version should be applied.

2.4. ENTIS SCADA points specifications

ENTIS SCADA Points are shown in below table:

The following points will be available from ENTIS R140.1.

Each CIU takes 5 SCADA Points:

Entity	SCADA Point name	Point description
CAL	[Controller]_CAL	The communication alarm from ENTIS system to CIU
CCAL	[Controller]_CCAL	The checksum status from ENTIS system to CIU is wrong
SSAL	[Controller]_SSAL	The scan process fail status from Entis system
HAL	[Controller]_HAL	CIU 888 Hot Standby Alarm
PCAL	[Controller]_PCAL	Product Specification out of synchronization alarm

The next table shows the 40 points for which most of them contain a user defined parameter which holds the SV (Status/Validity) value.

Entity	SCADA Point name	Has Status Param?	Point description
AALB	[Tank]_AALB	N	Background age alarm
AALF	[Tank]_AALF	N	Foreground age alarm
DAL	[Tank]_DAL	N	Product Level Difference alarm
DisplacerPosition	[Tank]_DisplacerPosition	Y	The displacer position in the tank
DObs	[Tank]_DObs	Y	The product density
EXT	[Tank]_EXT	N	Position of gauge external contacts
FlowTOV	[Tank]_FlowTOV	Y	The Total Observed Volume (TOV) of the product per time unit
FRMAL	[Tank]_FRMAL	N	Floating roof alarm
GAL	[Tank]_GAL	N	The gauge level alarm
Gauge2Level	[Tank]_Gauge2Level	Y	The second gauge level measurement in the tank
GaugeLevel	[Tank]_GaugeLevel	Y	The gauge level measurement in the tank
GOV	[Tank]_GOV	Y	The Gross Observed Volume is total volume of all petroleum liquids,sediment,water excluding free water at observed temp and pressure
GSV	[Tank]_GSV	Y	The Gross Standard Volume is total volume of all petroleum

Entity	SCADA Point name	Has Status Param?	Point description
			liquids,sediment,water excluding free water corrected by appropriate CTL
MovementStartLevel	[Tank]_MovementStartLevel	Y	Movement start level
MovementStatus	[Tank]_MovementStatus	N	The tank movement function status
MovingStatus	[Tank]_MovingStatus	N	Tank level moving status
NSM	[Tank]_NSM	Y	The Nett Standard Mass of the product (NSM)
PAT1	[Tank]_PAT1	N	Movement pre-alert 1
PAT2	[Tank]_PAT2	N	Movement pre-alert 2
PAT3	[Tank]_PAT3	N	Movement pre-alert 3
PAT4	[Tank]_PAT4	N	Movement pre-alert 4
PlannedVolume	[Tank]_PlannedVolume	Y	Movement planned volume
ProductDRef	[Tank]_ProductDRef	Y	The reference density for the product in the tank
ProductLevel	[Tank]_ProductLevel	Y	The corrected product level in the tank
ProductTemp	[Tank]_ProductTemp	Y	The product temperature
TargetLevel	[Tank]_TargetLevel	Y	Movement target level
TCAL	[Tank]_TCAL	N	Checksum calculated over tank related parameters by the CIU
TGSV	[Tank]_TGSV	Y	The Total Gross Standard Volume (TGSV)
TimeToTarget	[Tank]_TimeToTarget	Y	The calculated time to target of a movement
TNSM	[Tank]_TNSM	Y	The Total Net Standard Mass of the product (TNSM)
TOV	[Tank]_TOV	Y	The Total Observed Volume (TOV)
TransferredVolume	[Tank]_TransferredVolume	Y	Movement transferred volume
UFLAL	[Tank]_UFLAL	N	Unplanned flow level alarm
UFMAL	[Tank]_UFMAL	N	Unplanned flow mass alarm
UFVAL	[Tank]_UFVAL	N	Unplanned flow volume alarm
VapRoomPress	[Tank]_VapRoomPress	Y	The product vapor pressure
VapRoomTemp	[Tank]_VapRoomTemp	Y	The product vapor temperature
VolumeLeft	[Tank]_VolumeLeft	Y	Movement volume left
WaterLevel	[Tank]_WaterLevel	Y	The water level in the tank
WaterVol	[Tank]_WaterVol	Y	The water volume in the tank

The next table show the 41th SCADA Point of a tank which contains the remaining values published as User Defined Parameters of a point named [Tank]_Common:

Entity	SCADA Point name	Param
AALB	[Tank]_Common	Tank_AALB
AALF	[Tank]_Common	Tank_AALF
AmbientTemperature	[Tank]_Common	AmbientTemperature
AmbientTemperatureStatus	[Tank]_Common	AmbientTemperatureStatus
AvaGSM	[Tank]_Common	AvaGSM
AvaGSMStatus	[Tank]_Common	AvaGSMStatus
AvaGSW	[Tank]_Common	AvaGSW
AvaGSWStatus	[Tank]_Common	AvaGSWStatus
AvailableGOV	[Tank]_Common	AvailableGOV
AvailableGOVStatus	[Tank]_Common	AvailableGOVStatus
AvailableRoom	[Tank]_Common	AvailableRoom
AvailableRoomStatus	[Tank]_Common	AvailableRoomStatus
BackgroundTimeStamp	[Tank]_Common	BackgroundTimeStamp
CCAL	[Tank]_Common	[ENTISTANKCONTROLLER]_CCAL
CIUPlusTankID	[Tank]_Common	CIUPlusTankID
Concentration	[Tank]_Common	Concentration
ConcentrationStatus	[Tank]_Common	Concentration
CTL	[Tank]_Common	CTL
CTLStatus	[Tank]_Common	CTLStatus
CTSH	[Tank]_Common	CTSH
CTSHStatus	[Tank]_Common	CTSHStatus
DAL	[Tank]_Common	Tank_DAL
DisplacerPosition	[Tank]_Common	DisplacerPosition
DisplacerPositionStatus	[Tank]_Common	DisplacerPositionStatus
EXT	[Tank]_Common	Tank_EXT
FlowDirection	[Tank]_Common	FlowDirection
ForegroundTimeStamp	[Tank]_Common	ForegroundTimeStamp
FRL1	[Tank]_Common	FRL1
FRL1Status	[Tank]_Common	FRL1Status
FRL2	[Tank]_Common	FRL2
FRL2Status	[Tank]_Common	FRL2Status
FRL3	[Tank]_Common	FRL3
FRL3Status	[Tank]_Common	FRL3Status
GAL	[Tank]_Common	Tank_GAL
Gauge2Status	[Tank]_Common	Gauge2Status
GaugeStatus	[Tank]_Common	GaugeStatus
GRH	[Tank]_Common	GRH
GRHStatus	[Tank]_Common	GRHStatus
GSM	[Tank]_Common	GSM
GSMStatus	[Tank]_Common	GSMStatus
GSW	[Tank]_Common	GSW
GSWStatus	[Tank]_Common	GSWStatus
GVM	[Tank]_Common	GVM
GVMStatus	[Tank]_Common	GVMStatus
GVW	[Tank]_Common	GVW

Entity	SCADA Point name	Param
GVWStatus	[Tank]_Common	GVWStatus
HydrometerCorr	[Tank]_Common	HydrometerCorr
HydrometerCorrStatus	[Tank]_Common	HydrometerCorrStatus
Innage	[Tank]_Common	Innage
InnageStatus	[Tank]_Common	InnageStatus
LiqInVap	[Tank]_Common	LiqInVap
LiqInVapStatus	[Tank]_Common	LiqInVapStatus
MassCalcType	[Tank]_Common	MassCalcType
MovementStatus	[Tank]_Common	Tank_MovementStatus
MovingStatus	[Tank]_Common	Tank_MovingStatus
NSV	[Tank]_Common	NSV
NSVStatus	[Tank]_Common	NSVStatus
PlannedQuantity	[Tank]_Common	PlannedQuantity
ProductName	[Tank]_Common	ProductName
ProductPressure	[Tank]_Common	ProductPressure
ProductPressureStatus	[Tank]_Common	ProductPressureStatus
ProductTC	[Tank]_Common	ProductTC
ProductTCStatus	[Tank]_Common	ProductTCStatus
QuantityLeft	[Tank]_Common	QuantityLeft
QuantityTransferred	[Tank]_Common	QuantityTransferred
SedAndWater	[Tank]_Common	SedAndWater
SedAndWaterStatus	[Tank]_Common	SedAndWaterStatus
SedAndWaterVolStatus	[Tank]_Common	SedAndWaterVolStatus
TankName	[Tank]_Common	TankName
TankStatus	[Tank]_Common	TankStatus
TargetDirection	[Tank]_Common	Tank_TargetDirection
TCAL	[Tank]_Common	Tank_TCAL
TNSW	[Tank]_Common	TNSW
TNSWStatus	[Tank]_Common	TNSWStatus
TObs	[Tank]_Common	TObs
TObsStatus	[Tank]_Common	TObsStatus
Ullage	[Tank]_Common	Ullage
UllageStatus	[Tank]_Common	UllageStatus
UllGSM	[Tank]_Common	UllGSM
UllGSMStatus	[Tank]_Common	UllGSMStatus
UllGSW	[Tank]_Common	UllGSW
UllGSWStatus	[Tank]_Common	UllGSWStatus
VolumeCorrections	[Tank]_Common	VolumeCorrections

Notes:

1. Since ENTIS R121.2 some points have been renamed and others removed. In most, the leading character c has been removed e.g. cProductLevel is now presented as ProductLevel.
2. For more details on all changes, see the ENTIS Software Change Note (ETDOC-X616-en-R140.1) included in the installation media of ENTIS

3. ENTIS & Experion HS Hardware and Software Requirements

A computer platform must meet the following specifications to be used for ENTIS & Experion HS. These guidelines are intended to provide a minimum baseline. The actual hardware requirements will depend on the system configuration. Computers platforms should meet or exceed these specifications.

3.1. ENTIS as a Server

System Configuration	Specifications-Experion HS R520	Specification-Experion HS R530.1
Processor	Single Intel 3.00GHz, 6-core processor	Single Intel 3.00GHz, 6-core processor
RAM [1,2]	32GB[2]	32GB[2]
Networking	Dual-port Network Interface Card for Fault Tolerant Ethernet	Dual-port Network Interface Card for Fault Tolerant Ethernet
Operating System	Windows 10 IoT Enterprise LTSC 2019, Windows Server 2019 64-bit	Windows 10 IoT Enterprise LTSC 2021, Windows Server 2022
Video resolution	1600x1200, 1680x1050, 1920x1200, 1920x1080; 65K colors	1600x1200, 1680x1050, 1920x1200, 1920x1080; 65K colors
Hard drive	500 GB (100 GB for Virtual Machine)	500 GB (100 GB for Virtual Machine)
Example Hardware	Dell T5820XL Tower Workstation, T7920XL, HP Z4 G3 or equivalent [1,2]	Dell T5860XL Tower Workstation, Dell T7960XL, HP Z4 G5 equivalent [1,2]

Note 1 – Experion platforms may require additional memory due to the installation of other supported Experion and 3rd party advanced applications, and platform memory should be increased as necessary to ensure that Experion applications performs at the optimal level

Note 2 – For ENTIS specifically, it is recommended to upgrade to 32GB of RAM instead of the standard 16GB. Additional memory module should be requested during the placement of the order of the above example hardware machines.

3.2. ENTIS as a Client (User Interface)

System Configuration[1]	Specifications-Experion HS R520	Specifications-Experion HS R530.1
Processor	Single Intel Processor i3-4330, 3.50GHz (or equivalent)	Single Intel Processor i3-4330, 3.50GHz (or equivalent)
RAM [1]	16GB [1]	16GB [1]
Networking	100 Mbps Ethernet	100 Mbps Ethernet
Operating System	Windows 10 IoT Enterprise LTSC 2019	Windows 10 IoT Enterprise LTSC 2021
Video resolution	1600x1200, 1680x1050, 1920x1200, 1920x1080; 65K colors	1600x1200, 1680x1050, 1920x1200, 1920x1080; 65K colors
Video Memory	512MB VRAM per channel	512MB VRAM per channel
Hard drive	500GB	500GB
Example Hardware	Dell T5820XL Tower Workstation, HP Z4 G4 or equivalent, Experion PPC[2]	Dell Precision T5860XL Tower Workstation, Experion PPC[2]

Note 1 – Experion platforms may require additional memory due to the installation of other supported Experion and 3rd party advanced applications, and platform memory should be increased as necessary to ensure that Experion applications performs at the optimal level

Note 2 – The above hardware configuration needs to be referred for Panel PC platform when used as remote station of Experion HS system. Honeywell offers Experion PPC (Panel PC) which is highly recommended for field operations. Please refer Experion PPC hardware specification for more details.

4. Model number

4.1. Model numbers for ENTIS R140.1

Model Number	Description
EN-BASESW [1]	ENTIS Base Software License
EN-R1401SW	ENTIS Software Media Kit - Standard
EN-R1401ED	ENTIS Software Media Kit - Electronic Delivery
EN-TANKS5 [2]	ENTIS Tanks (multiples of 5)
EN-REDUND [3]	ENTIS Redundancy
EN-CUSTWM [4]	ENTIS Custody Transfer - LM
EN-UPGRAD	ENTIS upgrade License
EN-BASMNT [5]	ENTIS Simple Movement
EN-ADVMT [6]	ENTIS Advanced Movement
EN-INFMNT [7]	ENTIS Advanced Movement Infrastructure pipeline
EN-LANG-EN [8]	ENTIS Language in English
EN-LANG-FR [9]	ENTIS Language in French
EN-LANG-IT [10]	ENTIS Language in Italian
EN-LANG-NL [11]	ENTIS Language in Dutch
EN-LANG-ES [12]	ENTIS Language in Spanish
EN-LANG-CH [13]	ENTIS Language in Simplified Chinese
EN-LANG-PL [14]	ENTIS Language in Polish
EN-LANG-DE [15]	ENTIS Language in German
EN-LANG-HU [16]	ENTIS Language in Hungarian

Note 1 – ENTIS bases software includes all ENTIS functions.
Note 2 – ENTIS Tanks includes the number of tanks that is available in ENTIS the maximum number of tanks is 400.
Note 3 – ENTIS Redundancy will enable ENTIS server redundancy.
Note 4 – ENTIS Custody Transfer includes Legal Metrology for the ENTIS system.
Note 5 – ENTIS Simple Movement will enable the simple movement functionality.
Note 6 -- ENTIS Advanced Movement will enable the advance movement functionality.
Note 7 -- ENTIS Infrastructure Movement will enable the infrastructure pipelines in advanced movement functionality.
Note 8 -- ENTIS EN enables English Language.
Note 9 -- ENTIS FR enables French Language.
Note 10 -- ENTIS IT enables Italian Language.
Note 11 -- ENTIS NL enables Dutch Language.
Note 12 -- ENTIS ES enables Spanish Language.
Note 13 -- ENTIS CH enables Chinese Language.
Note 14 -- ENTIS PL enables Polish Language.
Note 15 -- ENTIS DE enables German Language.
Note 16 -- ENTIS HU enables Hungarian Language.

4.2. Experion HS R520.2 minimum required model numbers for ENTIS R140.1

ENTIS uses Experion HS to run ENTIS, the following Experion specifications, shown in the table below, are required. For more information on Experion HS refer to Experion HS technical specification (EP03-200-530) https://www.honeywellprocess.com/experion-hs.aspx.

Model Number	Description
HS-DEQ100 [11]	100 Equipment Adders to Database Size
EP-HMBASE [1]	Database Base Software
EP-HME520 [2]	Experion HS Media Kit - Standard
EP-HME520-ESD [3]	Experion HS Media Kit - Electronic Delivery
EP-HME100 [4 5 6]	Experion HS 100 Points Adder
EP-HME01K [4 7]	Experion HS 1,000 Points Adder
EP-HME02K [4 8]	Experion HS 2,000 Points Adder
EP-HME05K [4 12]	Experion HS 5,000 Points Adder
EP-HME08K [4 13]	Experion HS 8,000 Points Adder
EP-HME16K [4]	Experion HS 16,000 Points Adder
EP-HSTA01 [9 10]	Experion HS Station
MZ-SQLCL4	SQL Server 2019

Note 1 – Experion HS bases software includes 50 SCADA points, 1 Flex Station license, 1 Display Builder license, 1 Quick Builder license, Display Versioning Control, DSA enabling License, Recipe Management, ODBC Driver, Network Server, User Scan task, Batch Report, Honeywell ControlEdge PLC Integration, Allen-Bradley integration, Allen Bradley Serial Interface, Allen Bradley RSLinx Interface, Modbus interface, Honeywell S9000 interface, Honeywell 620 LCS interface, Honeywell RM7800 Flame Safeguard, Honeywell DPR Recorders interface, DNP3 interface, Honeywell Safety Manager and FSC interface, Interface to various EFM controllers/ protocols (Enron Modbus Interface, ABB Totalflow, Fisher ROC, Omni, FlowX, and Bristol Babcock OpenBSI), GE Fanuc Series 90 PLC via Ethernet, Server peer responder, cross reference report, alarm groups, OPC Classic Client Interface, OPC UA Client Interface, OPC Advanced Data Client Interface, OPC Display Data Client, 3 Excel Data Exchange Users, and OPC Data Access Server with 3 Client Access Instances.

Note 2 – The media kit doesn't include hardware security key (dongle). The Hardware security key is required only for select countries and this can be purchased separately using following models. EP-DONUSB (Hardware Security key) and EP-DONENB (Software Protection Enabler).

Note 3 – When selected, this option will enable electronically distributed media kit in place of physical media kit delivery. Recipients (as specified in ordering instructions) will receive e-mail with web links to download the media ISOs.

Note 4 – Up to 16,000 additional Points can be ordered for a maximum of 16,500 Points per Server For a system.

Note 5 – For each CIU 888 you need 5 points.

Note 6 – For 5 tanks in ENTIS you need 205 point (41 points per tank). So, that means you need to order 3 times EP-HME100. For every additional 5 tanks you need to order more points.

Note 7 – For 40 tanks in ENTIS you need 1640 point (41 points per tank). So, that means you need to order 2 times EP-HME01K.

Note 8 – For 80 tanks in ENTIS you need 3280 point (41 points per tank). So, that means you need to order 2 times EP-HME02K.

Note 9 – Up to 19 additional Stations can be ordered for a maximum of 20 Stations per Server. EP-HSTA01 can also be used with Experion PPC (Panel PC) connecting to Experion HS server as a remote station.

Note 10 – Two instances of Station can be run on the same computer. This consumes a single Station license. This feature is not available with Experion PPC.

Note 11 – Every tank = 1 equipment and every CIU 888 = 1 equipment. If you are above 100 equipment's you need to add an additional HS-DEQ100. So, the maximum number is 8 CIU's and 400 tanks (408 equipment's) so consider ordering the total of 500 equipment's (5 times HS-DEQ100).

Note 12 – For 119 tanks need 4879 points so you can select EP-HME05K with 5000b points. For more tanks, you can combine this with EP-HME100, EP-HME01K or EP-HME02K or you can select EP-HME08K

Note 13 – For 185 tanks need 7585 points so you can select EP-HME08K with 8000b points. For more tanks, you can combine this with EP-HME100, EP-HME01K or EP-HME02K. The maximum number of tanks is 400 this is 16400 points

4.3. Experion HS R530.1 minimum required model numbers for ENTIS R140.1

ENTIS uses Experion HS to run ENTIS, the following Experion specifications, shown in the table below, are required. For more information on Experion HS refer to Experion HS technical specification (EP03-200-530) https://www.honeywellprocess.com/experion-hs.aspx.

Model Number	Description
HS-DEQ100 [11]	100 Equipment Adders to Database Size
EP-HMBASE [1]	Database Base Software
EP-HME530 [2]	Experion HS Media Kit - Standard
EP-HME530-ESD [3]	Experion HS Media Kit - Electronic Delivery

EP-HME100 [4 5 6]	Experion HS 100 Points Adder
EP-HME01K [4 7]	Experion HS 1,000 Points Adder
EP-HME02K [4 8]	Experion HS 2,000 Points Adder
EP-HME05K [4 12]	Experion HS 5,000 Points Adder
EP-HME08K [4 13]	Experion HS 8,000 Points Adder
EP-HME16K [4]	Experion HS 16,000 Points Adder
EP-HSTA01 [9 10]	Experion HS Station
MZ-SQLCL4	SQL Server 2019

Note 1 – Experion HS bases software includes 50 SCADA points, 1 Flex Station license, 1 Display Builder license, 1 Quick Builder license, Display Versioning Control, DSA enabling License, Recipe Management, ODBC Driver, Network Server, User Scan task, Batch Report, Honeywell ControlEdge PLC Integration, Allen-Bradley integration, Allen Bradley Serial Interface, Allen Bradley RSLinx Interface, Modbus interface, Honeywell S9000 interface, Honeywell 620 LCS interface, Honeywell RM7800 Flame Safeguard, Honeywell DPR Recorders interface, DNP3 interface, Honeywell Safety Manager and FSC interface, Interface to various EFM controllers/ protocols (Enron Modbus Interface, ABB Totalflow, Fisher ROC, Omni, FlowX, and Bristol Babcock OpenBSI), GE Fanuc Series 90 PLC via Ethernet, Server peer responder, cross reference report, alarm groups, OPC Classic Client Interface, OPC UA Client Interface, OPC Advanced Data Client Interface, OPC Display Data Client, 3 Excel Data Exchange Users, and OPC Data Access Server with 3 Client Access Instances.

Note 2 – The media kit doesn't include hardware security key (dongle). The Hardware security key is required only for select countries and this can be purchased separately using following models. EP-DONUSB (Hardware Security key) and EP-DONENB (Software Protection Enabler).

Note 3 – When selected, this option will enable electronically distributed media kit in place of physical media kit delivery. Recipients (as specified in ordering instructions) will receive e-mail with web links to download the media ISOs.

Note 4 – Up to 16,000 additional Points can be ordered for a maximum of 16,500 Points per Server For a system.

Note 5 – For each CIU 888 you need 5 points.

Note 6 – For 5 tanks in ENTIS you need 205 point (41 points per tank). So, that means you need to order 3 times EP-HME100. For every additional 5 tanks you need to order more points.

Note 7 – For 40 tanks in ENTIS you need 1640 point (41 points per tank). So, that means you need to order 2 times EP-HME01K.

Note 8 – For 80 tanks in ENTIS you need 3280 point (41 points per tank). So, that means you need to order 2 times EP-HME02K.

Note 9 – Up to 19 additional Stations can be ordered for a maximum of 20 Stations per Server. EP-HSTA01 can also be used with Experion PPC (Panel PC) connecting to Experion HS server as a remote station.

Note 10 – Two instances of Station can be run on the same computer. This consumes a single Station license. This feature is not available with Experion PPC.

Note 11 – Every tank = 1 equipment and every CIU 888 = 1 equipment. If you are above 100 equipment's you need to add an additional HS-DEQ100. So, the maximum number is 8 CIU's and 400 tanks (408 equipment's) so consider ordering the total of 500 equipment's (5 times HS-DEQ100).

Note 12 – For 119 tanks need 4879 points so you can select EP-HME05K with 5000b points. For more tanks, you can combine this with EP-HME100, EP-HME01K or EP-HME02K or you can select EP-HME08K

Note 13 – For 185 tanks need 7585 points so you can select EP-HME08K with 8000b points. For more tanks, you can combine this with EP-HME100, EP-HME01K or EP-HME02K. The maximum number of tanks is 400 this is 16400 points

4.4. Experion HS Server Redundancy

ENTIS uses Experion redundancy model, For more information on Experion HS refer to Experion HMI Specification (EP03-200-530/520) https://process.honeywell.com/content/process/us/en/support/technical-publication

Model Number	Description
EP-HMRBAS [1 2]	Experion HS Redundancy Base Software
EP-HMESAO [2]	Experion HS Server Automation Object
EP-HMR100	Experion HS 100 Points Redundancy Adder
EP-HMR01K	Experion HS 1,000 Points Redundancy Adder
EP-HMR02K	Experion HS 2,000 Points Redundancy Adder
EP-HMR05K	Experion HS 5,000 Points Redundancy Adder
EP-HMR08K	Experion HS 8,000 Points Redundancy Adder
EP-HMR16K	Experion HS 16,000 points redundancy adder
Note 1 – Redundancy software follows the same methodology as selecting the database size. Note 2 – When the ENTIS redundancy option EN-REDUND is selected this Experion redundancy option should be enabled.	

4.5. Microsoft Windows 10 Operating System for Experion HS R520.2

Model Number	Description
MS-OSLW19 [1 2 3]	Windows 10 IoT Enterprise LTSC 2019
EP-COAS19	Windows Server 2019 64-bit
MZ-SQLCL4	SQL Server 2019
Note 1 – - Experion HS R520.2 uses Long Term Servicing Channel (LTSC) based Windows 10 2019 operating system. Note 2 – Check the compatibility of your computer platform with Windows 10 IoT Enterprise LTSC 2019 OS before selecting computer hardware. Note 3 – Starting with HS R520, Supports Windows server OS 2019 is also available.	

4.6. Microsoft Windows 10 Operating System for Experion HS R530.1

Model Number	Description
EP-COAW21[1,2,3]	Windows 10 IoT Enterprise LTSC 2021
EP-COAS22[4]	Windows Server 2022 64-bit
MZ-SQLCL4	Microsoft® SQL Server® 2022 Standard, 64-bit Embedded CALs

Note 1 – Experion HS R530 uses Long Term Servicing Channel (LTSC) based Windows 10 IoT Enterprise LTSC 2021 operating system.
Note 2 – This is an optional model for Honeywell supplied Win10 OS is required.
Note 3 – Check the compatibility of computer platform with Windows 10 IoT Enterprise LTSC 2021 before selecting computer hardware.
Note 4 – Starting HS R530, support for *Supports Windows server OS 2021* is also available.

4.7. Panel PC

Model Number	Description
MZ-PPCT02	Experion Panel PC, Standard 19 inch

4.8. EBR Software for Experion HS R520.2

Model Number	Description
EP-BRSE06[1]	Experion Backup-Restore R520 Server License
EP-BRWE06[1]	Experion Backup-Restore R520 Workstation License
EP-BRM520	Experion Backup-Restore R520 Media Kit[2]
EP-BRM520-ESD	Experion Backup-Restore R520 Media Kit (Electronic Delivery – Default)

Note 1 – One server license is required for each computer with a server operating system that will be backed up in a physical environment. One workstation license is required for each computer with a workstation operating system that will be backed up in a physical environment.
Note 2 – One EBR Media Kit (physical or electronic delivery) is required with each EBR system.

4.9. EBR Software for Experion HS R530.1

Model Number	Description
EP-BRM530	Experion Backup-Restore R530 Media Kit
EP-BRM530-ESD	Experion Backup-Restore R530 Media Kit (Electronic Delivery – Default)
EP-BRSE06	Experion Backup-Restore R530 Server License
EP-BRWE06	Experion Backup-Restore R530 Workstation License
Note 1 – One server license is required for each computer with a server operating system that will be backed up in a physical environment. One workstation license is required for each computer with a workstation operating system that will be backed up in a physical environment. Note 2 – One EBR Media Kit (physical or electronic delivery) is required with each EBR system.	

4.10. Email/SMS Software

Model Number	Description
EP-HAPAGE	Experion HS Alarm Pager

4.11. Virtual Environment

For detailed information, refer to Experion HS Virtualization Spec document: EP03-700-100.

For service-related questions, contact:

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