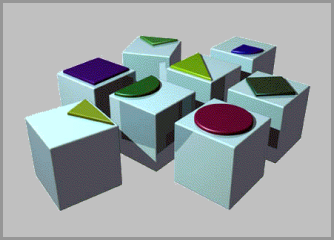

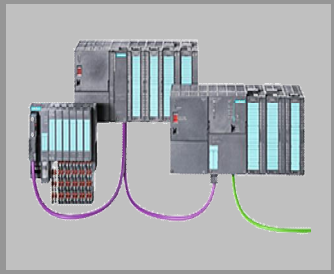

FGA E&T

Project Book 2.0.2-EMEA
FGA EMEA Project

Solutions for Powertrain

TRANSLINE

SIEMENS

SIEMENS

Solutions for Powertrain

FGA E&T

Project Book

FGA EMEA Project

Document Management Information

The controlled version of this document is located on the SIEMENS Powertrain Specifications web site for Fiat Group Automobile Engines & Transmissions (FGA E&T) and Chrysler Powertrain (CPT). Any printed copy is an uncontrolled copy. The user shall verify with the website that he/she is in fact using the appropriate version of the specification for the specific project he/she is working on.

Any questions or comments with respect to this specification should be directed to the project engineer for the specific project in question.

Revision Date	Version No.	Document Name	Revision	Section Affected	Revised By
08-02-2011	1.1.2	Project Book	August 2011	New version	Felletti
29-07-2013	1.1.3	Project Book	July 2013	New version with Comfort Panels	Felletti
17-10-2013	2.0	Project Book	October 2013	CPT updates	White
14-01-2014	2.0.1	Project Book	January 2014	Sample Application for “Continuous Moving Station” has been added FGA updates: Safety PLCs and I/Os Profinet are accepted by FGA E&T without previous approval	Tonin
03-02-2014	2.0.2 GSE	Project Book	February 2014	Customization for FGA GSE Project “CP343-1 may NOT be omitted.” has been added on PLC Sample applications.	Tonin
01-04-2014	2.0.2 EMEA	Project Book	April 2014	-	Tonin

Contents

1

1 Preface

Important

This manual is a supplement to the FGA E&T specifications and it shall help the machine supplier to build its machine according to them. In any case of dispute, the FGA E&T specifications shall be considered the only valid and official specifications.

Addressee

This present documentation is intended for machine tool suppliers for FGA E&T programs.

Objective

The documentation specifies the deviations for the FGA E&T programs from the Siemens standard specifications “Solution for POWERTRAIN“. The machine builder must also utilize the relevant Approved Component List, Solutions for Powertrain standard documentation and Siemens product catalogs.

The Siemens standard specifications can be downloaded from the Siemens project website for FGA E&T :

https://workplace.automation.siemens.com/extranet/fpt_cpt

Important

Only the sections of the Siemens standard Solutions for Powertrain Project Book, outlined below, are to be used:

Document and File Name
07_01_EN_SoftwareGuide_General_SL_2013.pdf *)
08_01_EN_HMI PRO sl_Description of Functions_2013.pdf
08_02_EN_HMI_PRO_Programming_Guide_2012_SL_2012.pdf
08_03_EN_HMILITE_Configuration Guide_2013.pdf
10_EN_SafetyIntegrated_2012.pdf

Notes

*) Any FGA E&T specification supersede the Software Guide General

The following notes with special meaning are used in the document:

Note

This symbol appears in this document whenever further additional facts are stated.

Important

This symbol appears in this document whenever an important issue is to be heeded.

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Notes

2 Contacts

Siemens Global Project Management

Account Management

Europe, FGA E&T

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FGA E&T	
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Telephone	+ 39 (011) 0033-099

Notes

3

3 Sample Applications

Important

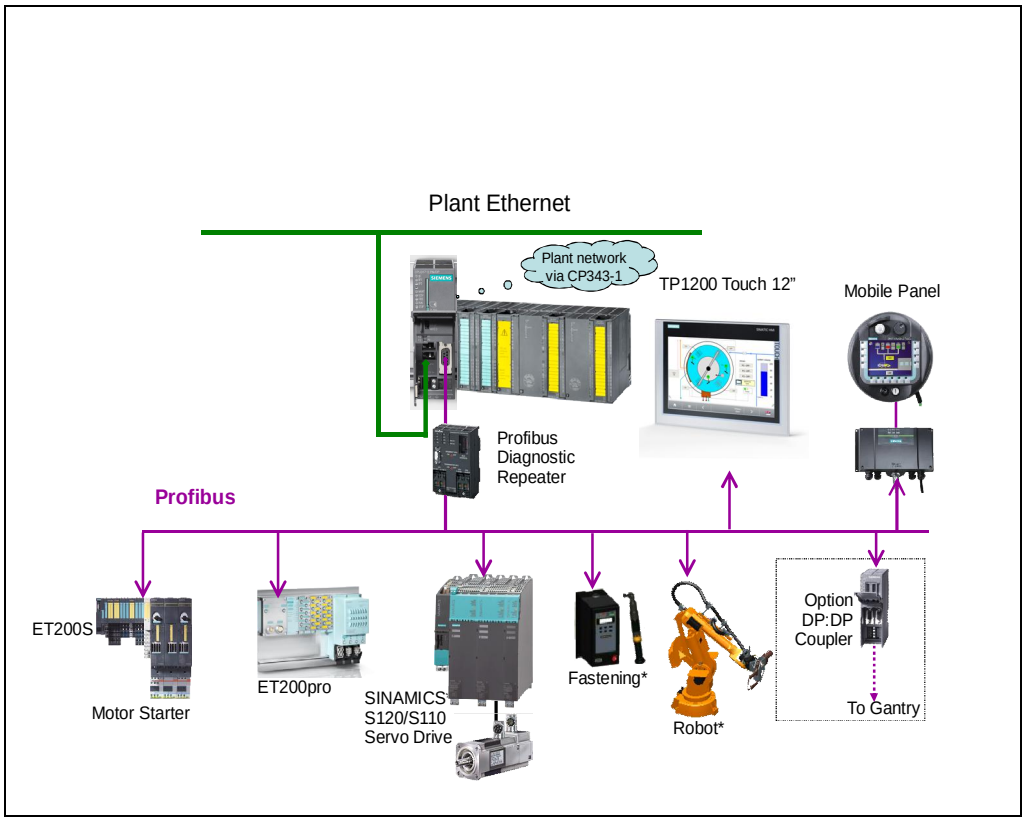
The application examples appropriate for FGA E&T plants are stated in **Solution for Powertrain - Sample Applications.**

They are intended to assist the machine tool builder in the selection of the architecture concept for FGA E&T. These architectures have been approved by FGA E&T and are to be used as examples only. The machine tool builder must utilize the Approved Components List and the appropriate Siemens product catalogs to determine the actual components.

3.1 Machining applications

3.1.1 PLC Based Machine with SIMATIC CE operator panel (PROFIBUS)

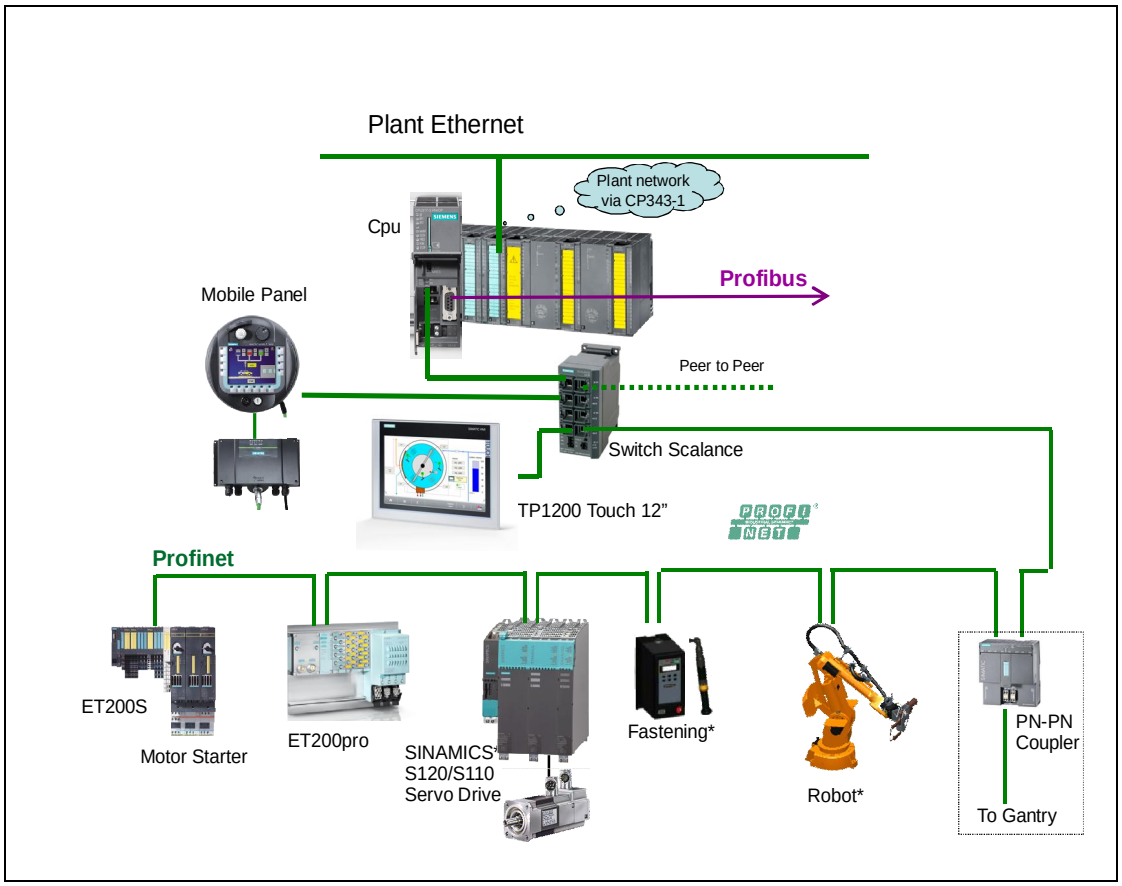
CP343-1 may NOT be omitted.



PLC Controller	SIMATIC S7-315-2 PN/DP, S7-317-2 PN/DP, S7-319-3 PN/DP , S7-315F-2 PN/DP, S7-317F-2 PN/DP or S7-319F-3 PN/DP
HMI – Main HMI – Secondary	SIMATIC TP1200 12” Touch Mobile Panel MP277 mobile SIMATIC TP 700 7” Touch HMI
I/O	ET200M, ET200S, ET200eco, ET200pro, S7-300 (PROFIBUS ONLY)
Drives	SINAMICS CU320-2
HMI Screens	TRANSLINE 2000 HMI Lite CE
Communications	CP 343-1 (Ethernet to plant host as required by FGA E&T)
Communications	Profibus Diagnostic repeater
Communications	DP/DP coupler for machine to machine communications via Profibus

3.1.2 PLC Based Machine with SIMATIC CE operator panel (PROFINET)

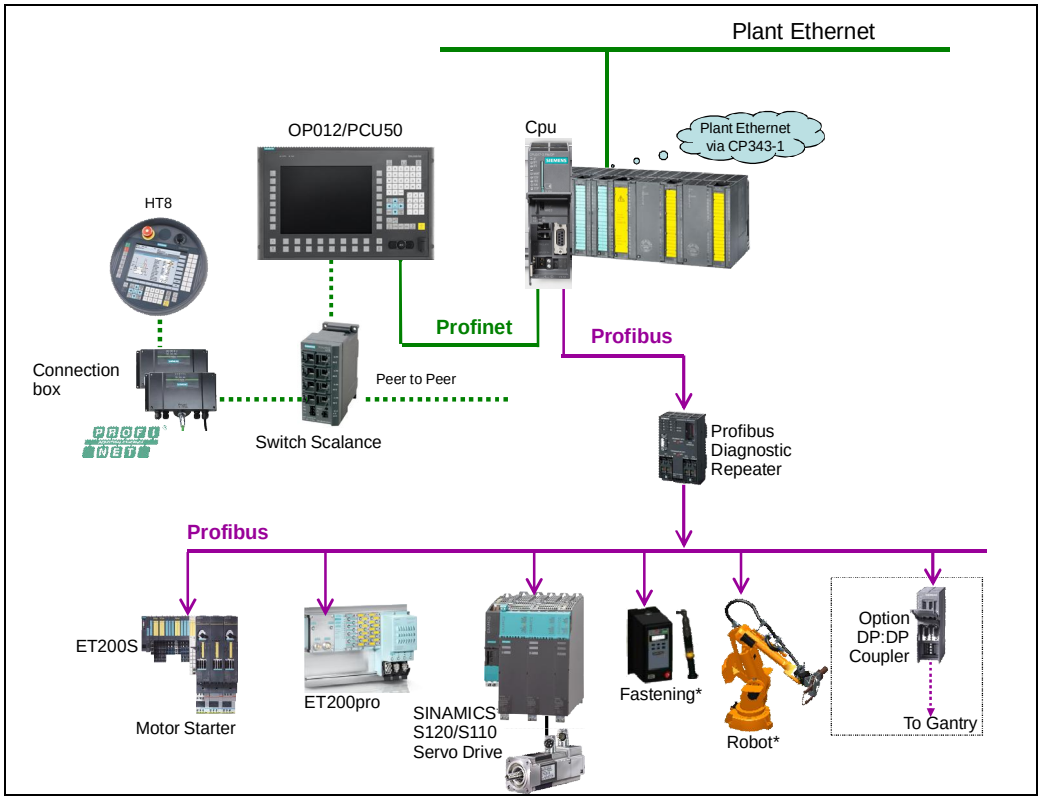
CP343-1 may NOT be omitted.



PLC Controller	SIMATIC S7-315-2 PN/DP, S7-317-2 PN/DP, S7-319-3 PN/DP , S7-315F-2 PN/DP, S7-317F-2 PN/DP or S7-319F-3 PN/DP
HMI – Main HMI – Secondary	SIMATIC TP1200 12" Touch Mobile Panel MP177 mobile SIMATIC TP 700 7" Touch
I/O	ET200M, ET200S, ET200eco, ET200pro, S7-300 PROFINET
Drives	SINAMICS CU320-2
HMI Screens	TRANSLINE 2000 HMI Lite CE
Communications	CP 343-1 (Ethernet to plant host as required by FGA E&T)
Communications	PN/PN coupler for machine to machine communications via Profinet
Network switch	Siemens Scalance managed switch for machine sub-net

3.1.3 PLC Based Machine with PC based operator panel (PROFIBUS)

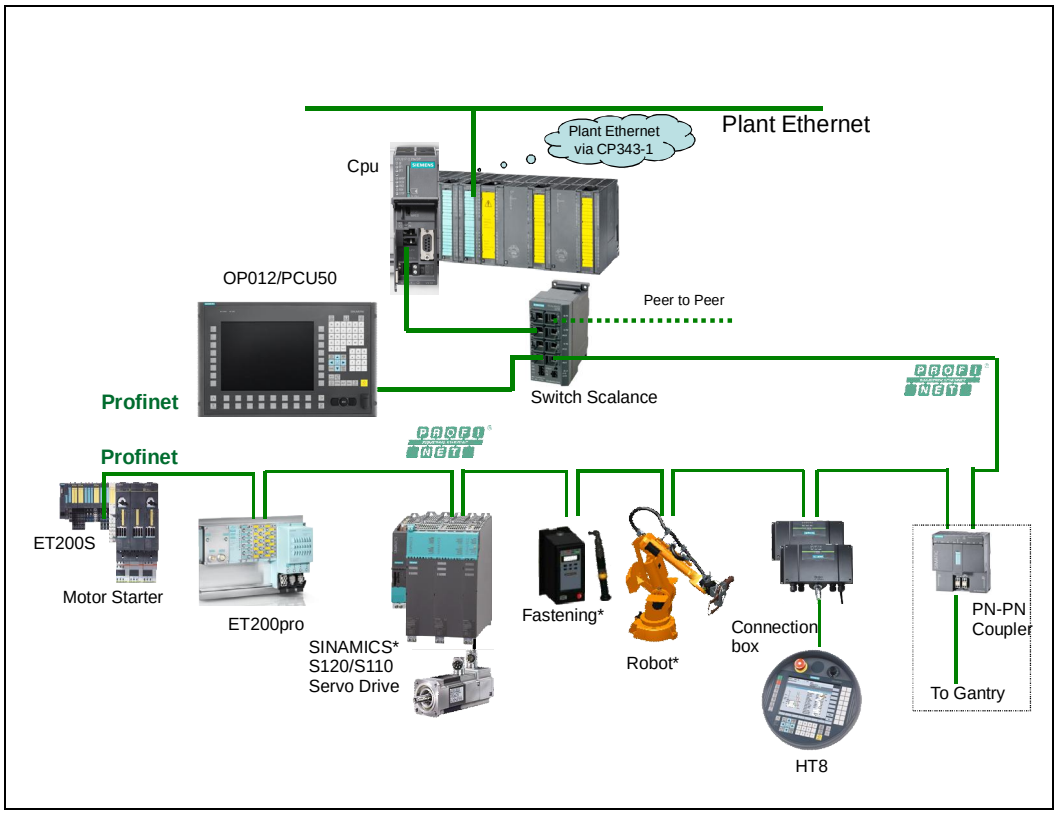
CP343-1 may NOT be omitted.



PLC Controller	SIMATIC S7-315-2 PN/DP, S7-317-2 PN/DP, S7-319-3 PN/DP , S7-315F-2 PN/DP, S7-317F-2 PN/DP or S7-319F-3 PN/DP
HMI - Main	SINUMERIK OP012/PCU50
HMI	MPP483 push button panel option
HMI - Secondary	HT8 mobile HMI
I/O	ET200M, ET200S, ET200eco, ET200pro PROFIBUS
Drives	SINAMICS CU320-2
HMI Screens	TRANSLINE 2000 HMI PRO
Communications	CP 343-1 (Ethernet to plant host as required by FGA E&T)
Communications	DP/DP coupler for machine to machine communications via Profibus
Communications	Profibus Diagnostic repeater
Network switch	Siemens Scalance managed switch for machine sub-net

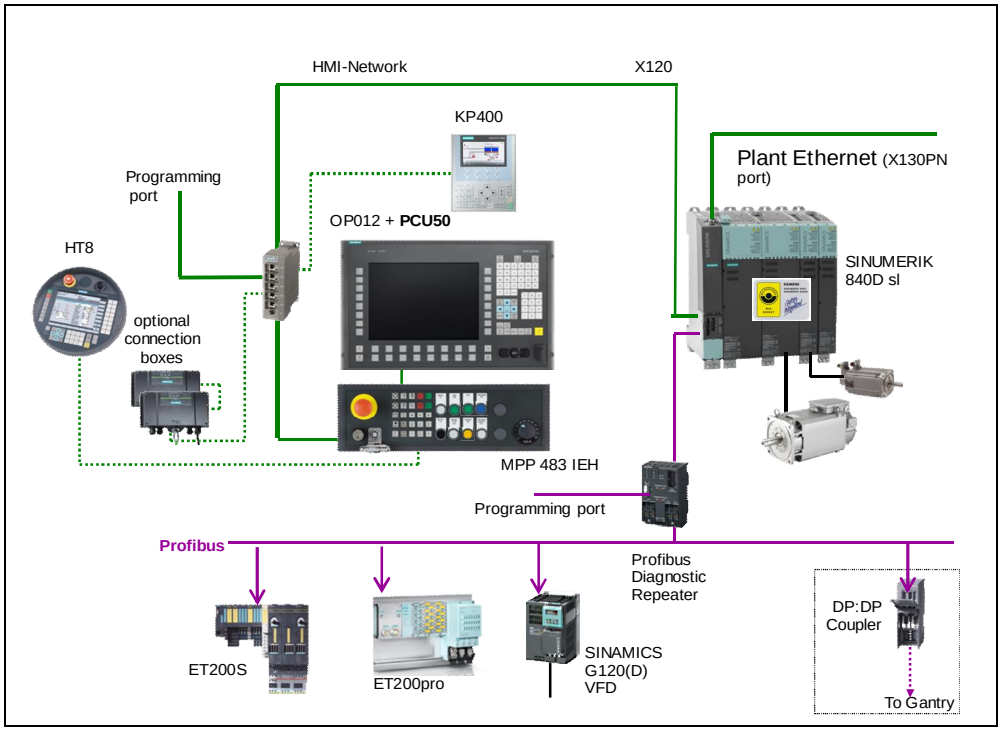
3.1.4 PLC Based Machine with PC based operator panel (PROFINET)

CP343-1 may NOT be omitted.



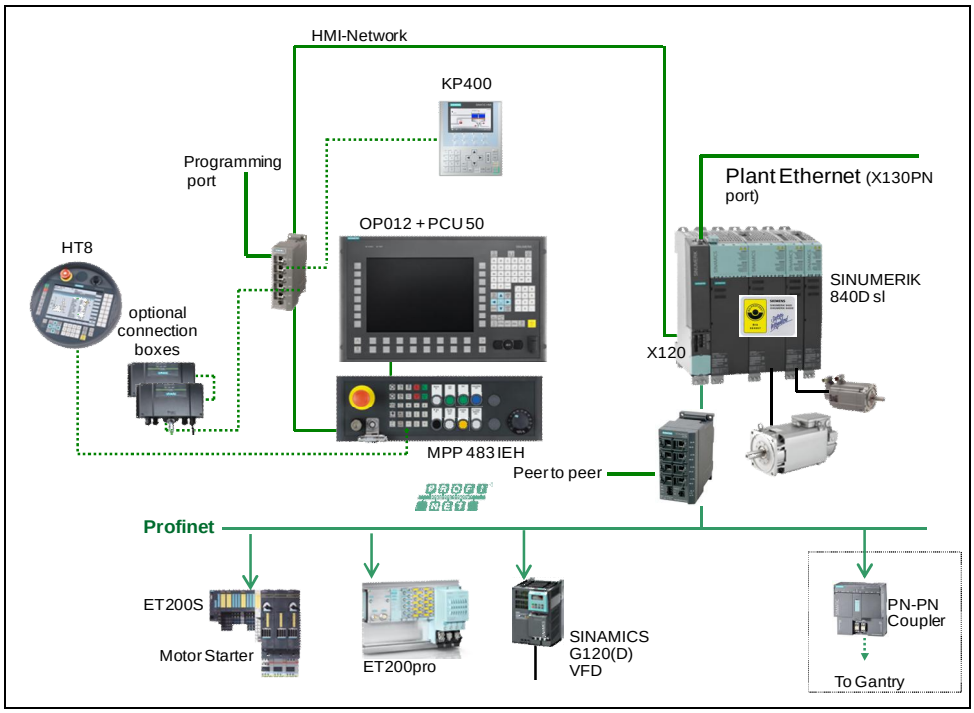
PLC Controller	SIMATIC S7-315-2 PN/DP, S7-317-2 PN/DP, S7-319-3 PN/DP , S7-315F-2 PN/DP, S7-317F-2 PN/DP or S7-319F-3 PN/DP
HMI - Main	SINUMERIK OP012/PCU50
HMI	MPP483 push button panel option
HMI - Secondary	HT8 mobile HMI
I/O	ET200M, ET200S, ET200eco, ET200pro, S7-300 PROFINET
Drives	SINAMICS CU320-2
HMI Screens	TRANSLINE 2000 HMI PRO
Communications	CP 343-1 (Ethernet to plant host as required by FGA E&T)
Communications	PN/PN coupler for machine to machine communications via Profinet
Network switch	Siemens Scalance managed switch for machine sub-net

3.1.5 CNC Based Machine with PC-based operator panel (PROFIBUS)



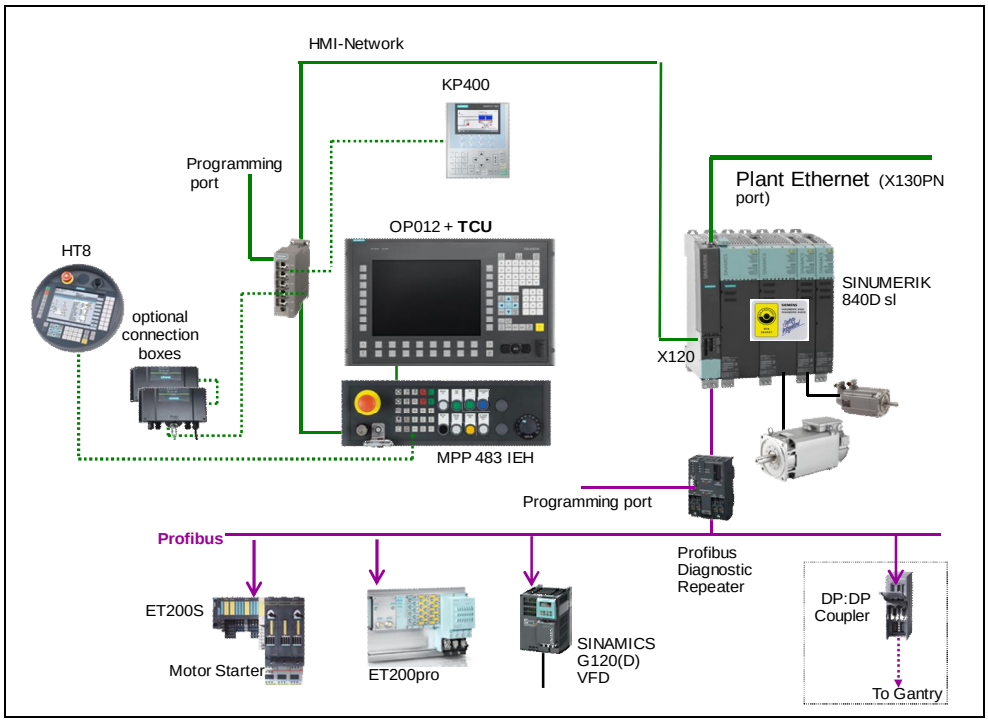
CNC Controller	SINUMERIK 840D Solution Line (Safety Integrated option for CPT only) (840D Power line requires approval from FGA E&T)
HMI - Main	SINUMERIK OP012/PCU50
HMI	MPP483 push button panel option
HMI Secondary	HT8 mobile HMI
HMI Secondary	KP400 4” HMI
I/O	ET200M, ET200S, ET200eco, ET200pro, S7-300 PROFIBUS
Drives	SINAMICS
HMI Screens	TRANSLINE 2000 HMI PRO
Communications	X130 PN port to be used for plant communication
Communications	Profibus Diagnostic repeater
Communications	DP/DP coupler for machine to machine communication via Profibus

3.1.6 CNC Based Machine with PC-based operator panel (PROFINET)



CNC Controller	SINUMERIK 840D Solution Line Profinet
HMI - Main	SINUMERIK OP012/PCU50
HMI	MPP483 push button panel option
HMI- Secondary	HT8 mobile HMI
HMI- Secondary	KP400 4” HMI
I/O	ET200M, ET200S, ET200eco, ET200pro, S7-300 PROFINET
Drives	SINAMICS
HMI Screens	TRANSLINE 2000 HMI PRO
Communications	X130 PN port to be used for plant communication
Communications	PN/PN coupler for machine to machine communication via Profinet
Network switch	Siemens Scalance managed switch for machine sub-net

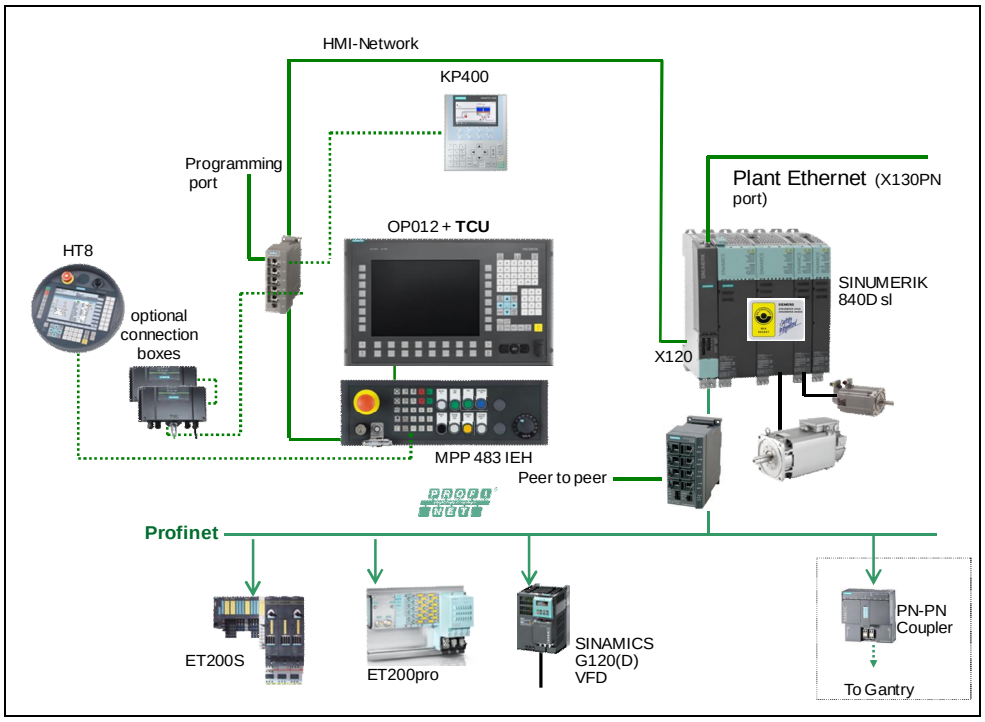
3.1.7 CNC Based Machine with Thin client operator panel (PROFIBUS)



CNC Controller	SINUMERIK 840D Solution Line (840D Power line requires approval from FGA E&T)
HMI - Main	SINUMERIK OP012/TCU
HMI	MPP483 push button panel option
HMI- Secondary	HT8 mobile HMI
HMI- Secondary	KP400 4” HMI
I/O	ET200M, ET200S, ET200eco, ET200pro, S7-300 PROFIBUS
Drives	SINAMICS
HMI Screens	TRANSLINE 2000 HMI PRO
Communications	X130 PN port to be used for plant communication
Communications	Profibus Diagnostic repeater
Communications	DP/DP coupler for machine to machine communication via Profibus

3.1.8 CNC Based Machine with Thin client operator panel (PROFINET)

Available only with NCU Profinet



CNC Controller	SINUMERIK 840D Solution Line NCU Profinet
HMI- Main	SINUMERIK OP012/TCU
HMI	MPP483 push button panel option
HMI - Secondary	HT8 mobile HMI
HMI - Secondary	KP400 4” HMI
I/O	ET200M, ET200S, ET200eco, ET200pro, S7-300 PROFINET
Drives	SINAMICS
HMI Screens	TRANSLINE 2000 HMI PRO
Communications	PN/PN coupler for machine to machine communication via Profinet
Communications	X130 PN port to be used for plant communication
Network switch	Siemens Scalance managed switch for machine sub-net

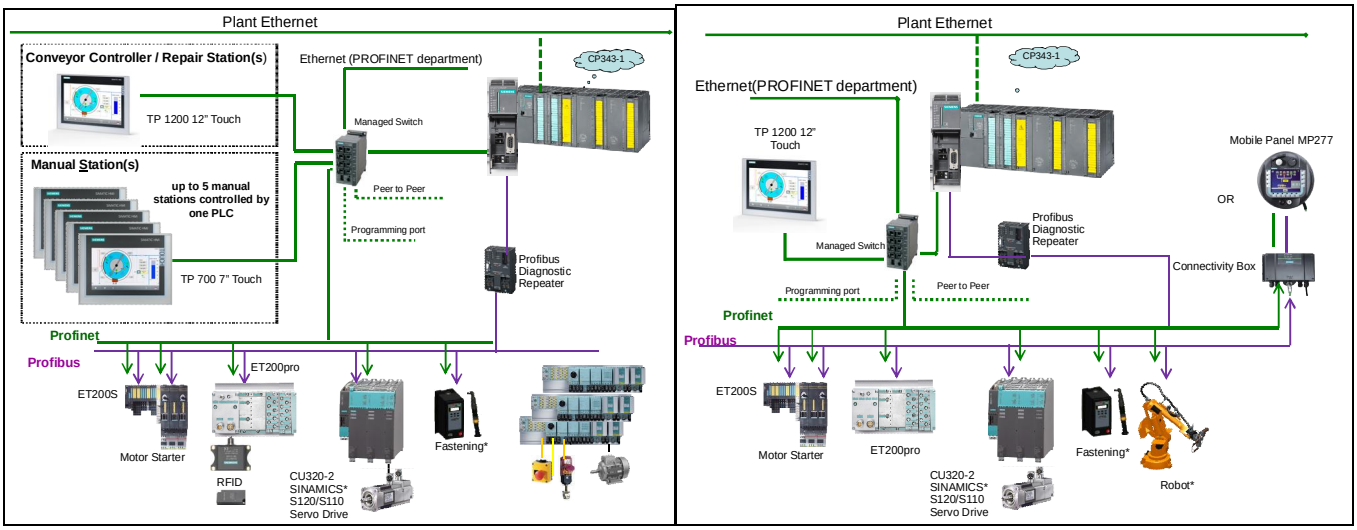
3.2 Machining Sample Architecture Summary

Item	PLC + CE HMI	PLC + PC HMI	CNC Machine PC based	CNC Machine TCU based
Controller	SIMATIC S7-315-2 PN/DP, S7-317-2 PN/DP, S7-319-3 PN/DP, S7-315F-2 PN/DP, S7-317F-2 PN/DP, S7-319F-3 PN/DP	SIMATIC S7-315-2 PN/DP, S7-317-2 PN/DP, S7-319-3 PN/DP, S7-315F-2 PN/DP, S7-317F-2 PN/DP, S7-319F-3 PN/DP	SINUMERIK 840D (SOLUTIONLINE)	SINUMERIK 840D (SOLUTIONLINE)
HMI- Main	TP1200 12” Touch	OP012 PCU50	OP012 PCU50	OP012/ TCU
HMI – Secondary	MP177 Mobile TP 700 7” Touch HMI		KP 400 4” HMI	KP 400 4” HMI
HMI Screens	TRANSLINE 2000 HMI Lite CE	TRANSLINE 2000 HMI PRO	TRANSLINE 2000 HMI PRO	TRANSLINE 2000 HMI PRO
Operator Panel (option)	--	MCP483 or MPP483	MCP483 or MPP483	MCP483 or MPP483
Hand Held Pendant (option)	MP277 Mobile panel	HT8	HT8	HT8
I/O	ET200M, ET200S, ET200pro, S7-300 ET200eco	ET200M, ET200s, ET200pro, S7-300 ET200eco	ET200M, ET200S, ET200pro, S7-300 ET200eco	ET200M, ET200S, ET200pro, S7-300 ET200eco
Connection to Plant Ethernet	CP 343-1 *	CP 343-1 *	X130 port	X130 port
Drives	SINAMICS	SINAMICS	SINAMICS	SINAMICS
Motion Control	SINAMICS	SINAMICS	SINAMICS	SINAMICS
Machine Subnet Ethernet switch	Scalance Managed	Scalance Managed	Scalance Managed	Scalance Managed

■

*) CP343-1 may NOT be omitted.

3.3 Assembly overview



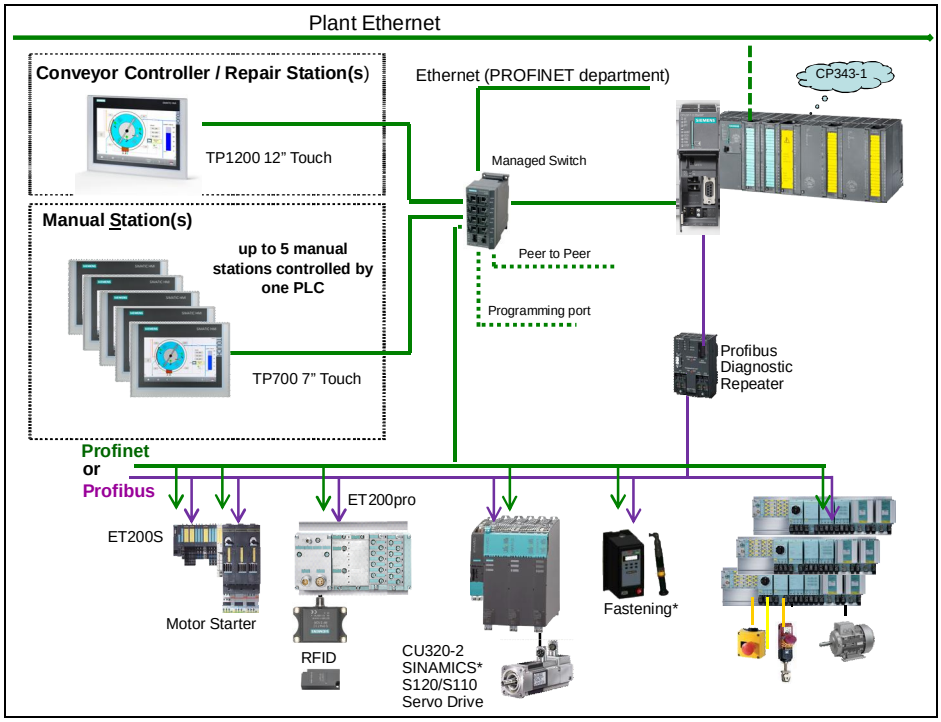
Zone controller **Automatic station**

- Conveyor controller
- Manual station
- Repair station

Automatic station	See sample application PLC machine or CNC machine
Zone controller	See sample application PLC machine
Between Automatic station and Zone controller	PROFINET, integrated interface of SIMATIC PLC

3.3.1 Master Zone controller

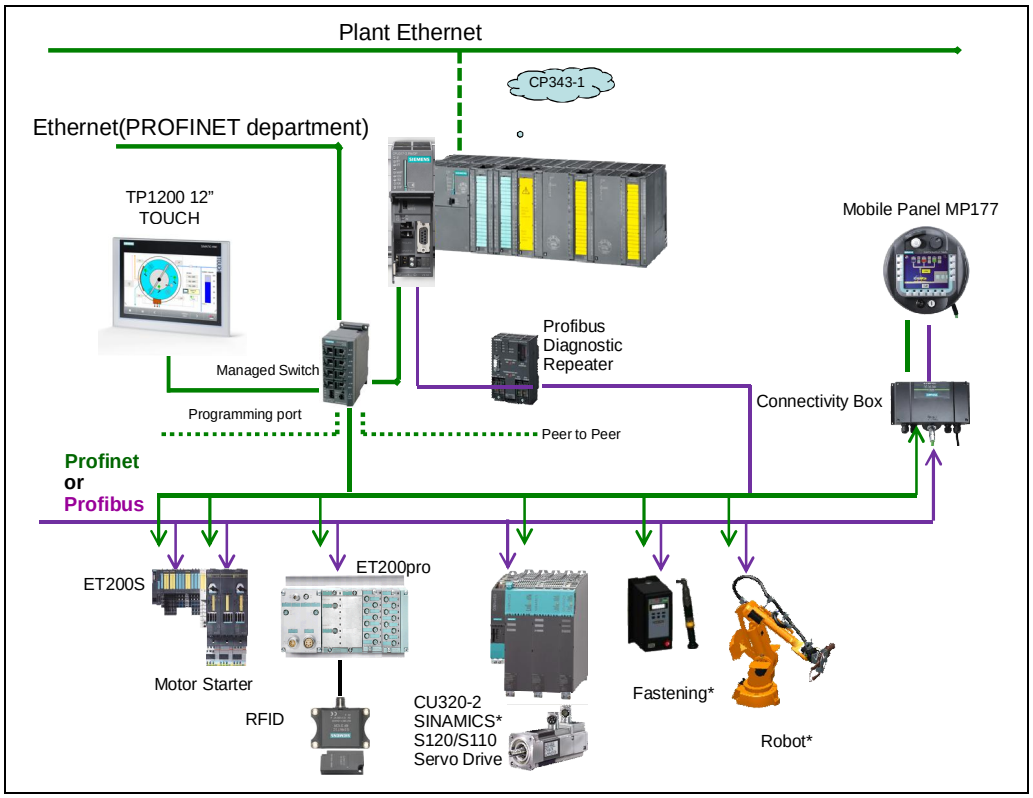
PLC based Machine with SIMATIC CE operator panel (PROFINET); up to 5 manual stations could be connected to one PLC.
CP343-1 may NOT be omitted.



PLC Controller	SIMATIC S7-317-2 PN/DP, S7-319-3 PN/DP, S7-317F-2 PN/DP or S7-319F-3 PN/DP
HMI – Conveyor Controller	SIMATIC TP1200 12" Touch
HMI – Manual station(s)	SIMATIC TP 700 7" Touch HMIs
HMI – Repair station Controller	SIMATIC TP1200 12" Touch
I/O	ET200M, ET200S, ET200eco, ET200pro, PROFIBUS or PROFINET
Drives	SINAMICS CU320-2
HMI Screens	TRANSLINE 2000 HMI Lite CE
Communications	CP 343-1 (Ethernet to plant host as required by FGA E&T)
Communications	Profibus Diagnostic repeater (PROFIBUS)
Communications	Peer to Peer via PROFINET machine subnet
Network switch	Siemens Scalance managed switch

3.3.2 Assembly Auto Station

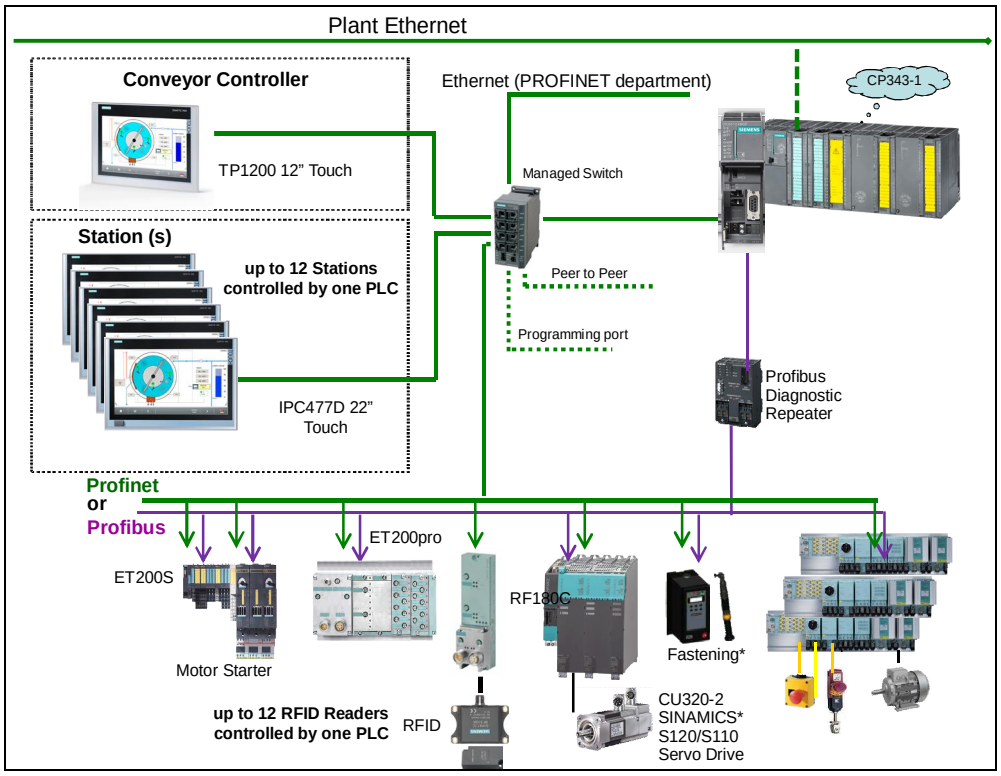
PLC based Machine with SIMATIC CE operator panel (PROFINET).
CP343-1 may NOT be omitted.



PLC Controller	SIMATIC S7-315-2 PN/DP, S7-317-2 PN/DP, S7-319-3 PN/DP , S7-315F-2 PN/DP, S7-317F-2 PN/DP or S7-319F-3 PN/DP
HMI – Main	SIMATIC TP1200 12" Touch
HMI - Secondary	Mobile Panel MP177 mobile
I/O	ET200M, ET200S, ET200eco, ET200pro, PROFIBUS or PROFINET
Drives	SINAMICS CU320-2
HMI Screens	TRANSLINE 2000 HMI Lite CE
Communications	CP 343-1 (Ethernet to plant host as required by FGA E&T)
Communications	Profibus Diagnostic repeater (PROFIBUS)
Communications	Peer to Peer via PROFINET machine subnet
Network switch	Siemens Scalance managed switch

3.3.3 Continuous Moving Station

PLC based Machine with SIMATIC CE operator panel and SIMATIC Panel PC (PROFINET); up to 12 Stations and up to 12 RFID Readers could be connected to one PLC.
CP343-1 may NOT be omitted.



PLC Controller	SIMATIC S7-319-3 PN/DP or S7-319F-3 PN/DP
HMI – Conveyor Controller	SIMATIC TP1200 12" Touch
HMI – Station(s)	SIMATIC IPC477D 22" Touch HMIs (up to 12 Stations controlled by one PLC)
I/O	ET200M, ET200S, ET200eco, ET200pro - PROFIBUS or PROFINET RF180C - Profinet (up to 12 Reader controlled by one PLC)
Drives	SINAMICS CU320-2
HMI Screens	TRANSLINE 2000 HMI Lite CE (SIMATIC TP1200 12" Touch) HMI OEM (IPC477D 22" Touch)
Communications	CP 343-1 (Ethernet to plant host as required by FGA E&T)
Communications	Profibus Diagnostic repeater (PROFIBUS)
Communications	Peer to Peer via PROFINET machine subnet
Network switch	Siemens Scalance managed switch

3.4 Assembly Sample Architecture Summary

Item	Zone Conveyor Controller/ Repair station	Automatic Station	Manual Station	Continuous Moving Station
Controller	S7 317-2 PN/DP, S7 319-3 PN/DP, S7 317F-2 PN/DP, S7 319F-2 PN/DP	S7 315-2 PN/DP, S7 317-2 PN/DP, S7 319-3 PN/DP, S7 315F-2 PN/DP, S7 317F-2 PN/DP, S7 319F-2 PN/DP	Use PLC of Master Zone Controller	S7 319-3 PN/DP, S7 319F-3 PN/DP
HMI - Main	TP1200 12” Touch	TP1200 12” Touch	TP 700 7”	TP1200 12” Touch IPC477 22” Touch
HMI - Secondary		Mobile MP 177		
HMI Screens	TRANSLINE 2000 HMI Lite CE	TRANSLINE 2000 HMI Lite CE	TRANSLINE 2000 HMI Lite CE	TRANSLINE 2000 HMI Lite CE HMI OEM
I/O – Profibus or Profinet	ET200M, ET200S, ET200pro, ET200eco	ET200M, ET200S, ET200pro, ET200eco	ET200M, ET200S, ET200pro, ET200eco	ET200M, ET200S, ET200pro, ET200eco, RF180C
Connection to Department Ethernet (machine Subnet)	Integral S7 31x-2PN/DP	Integral S7 31x-2PN/DP	Through the Master Zone Controller	Integral S7 31x-2PN/DP
Connection to Plant Ethernet	CP343-1 *	CP343-1 *	CP343-1 *	CP343-1 *
Drives	SINAMICS	SINAMICS	SINAMICS	SINAMICS
RFID	RF300	RF300	RF300	RF300
Machine Subnet Switch	Scalance Series	Scalance Series	Scalance Series	Scalance Series

*) CP343-1 may NOT be omitted.

Notes

4

4 Regional Information

Note

This section provides an overview of the Solutions for Powertrain TRANSLINE 2000 concept. It includes a short description of all used components of the control, drive, visualization and programming techniques. The current version of this document can be downloaded from the Siemens Extranet:

https://workplace.automation.siemens.com/extranet/solutions-powertrain/WSXP-EN000/manual/manual_2013/

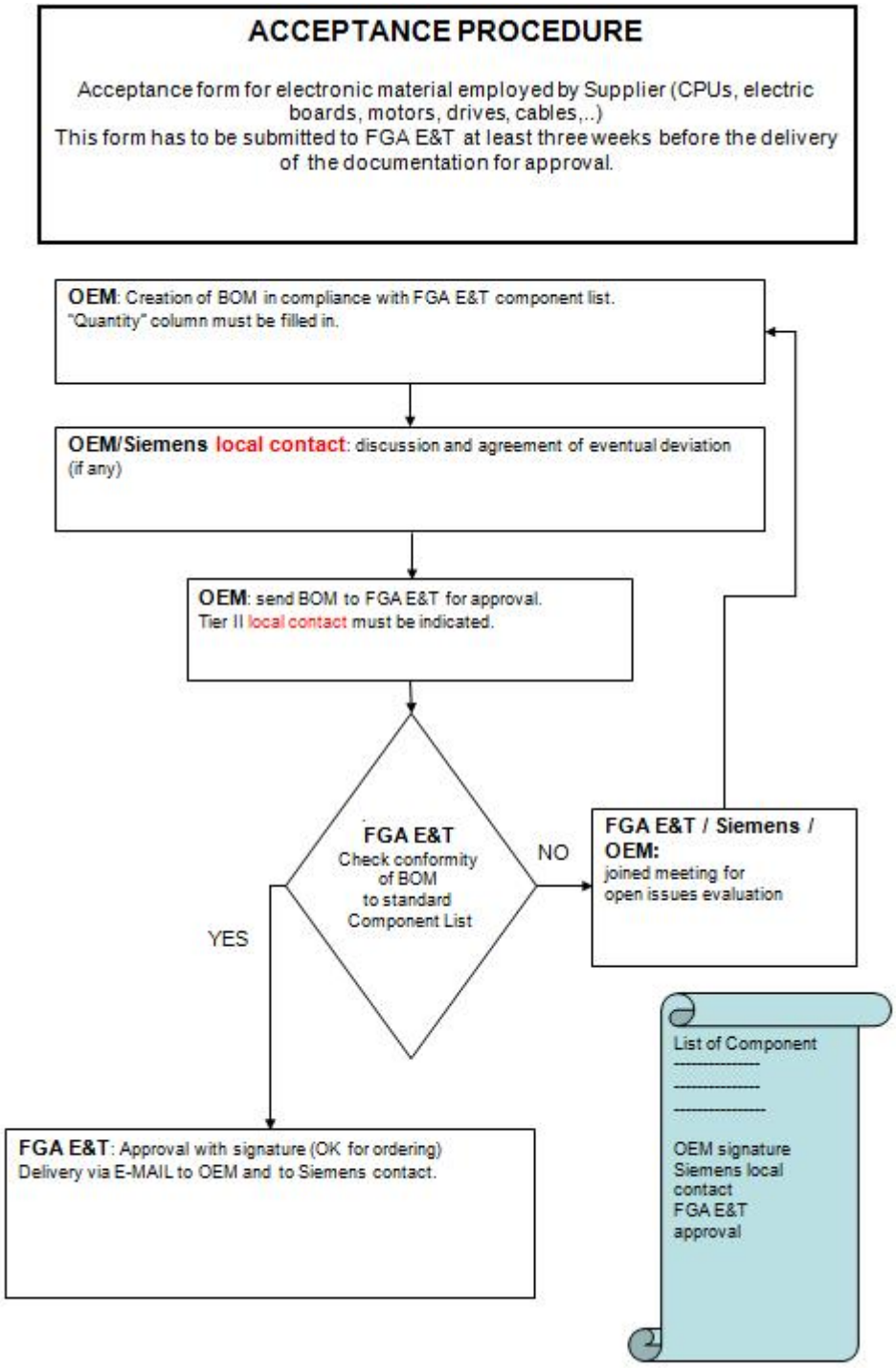
The following section contains deviations from the standard “Solutions for Powertrain” documentation.

4.1 FGA E&T

Note
This section contains FGA E&T specific product information.

4.1.1 Acceptance procedure for electronic material employed from supplier

The following flow chart apply to FGA E&T only



4.1.2 Cabinet Construction

Important installation instructions in switchgear cabinet design can be found on the Siemens Website for FGA E&T:

https://workplace.automation.siemens.com/extranet/fpt_cpt

5 Approved Components List

Note

The approved components list includes all components, which are approved for the utilization in FGA E&T. The approved components list includes controls, drive, HMI and network components inside Solutions for Powertrain TRANSLINE sl. The current version of this document can be downloaded from the respective project folder from the Fiat Chrysler Extranet:

https://workplace.automation.siemens.com/extranet/fpt_cpt

Notes

6 HMI

6.1 HMI PRO

Siemens Solutions for Powertrain HMI PRO screen set shall be used. A template project with end user navigation layout and example screens has been created and is available for download by the OEMs under there specific project folders within the supporting documentation folder.

The following standard documents are to be used as reference in conjunction with any FGA E&T HMI interface documentation:

08_01_EN_HMI PRO sl_Description of Functions_2013.pdf
08_02_EN_HMI_PRO_Programming_Guide_2012_SL_2012.pdf

Use the following link to browse to you respective project to download the template HMI Project:

https://workplace.automation.siemens.com/extranet/fpt_cpt

6.2 HMI Lite CE

Siemens TRANSLINE Lite CE for CPT and FGA E&T screen set shall be used. A template project with end user navigation layout and example screens has been created and is available for download by the OEMs under there specific project folders within the supporting documentation folder.

Important

A TRANSLINE 2000 HMI Copy license is required for authorized usage of HMI Lite CE.

The following standard documents are to be used as reference in conjunction with any FGA E&T HMI interface documentation:

08_03_EN_HMILITE_Configuration Guide_2013.pdf

Use the following link to browse to you respective project to download the template HMI Project:
https://workplace.automation.siemens.com/extranet/fpt_cpt

Notes