

Remote Support

11-pager

Occurring drive train failures can cause severe damage

With their high degree of electronic and electrical components, frequency converters can suffer from disturbances and faults, endangering the drive train availability.

Operative challenges

- Disturbances and faults at electronic and electrical components are often subject to occur suddenly without any prior announcement
- This is why it is crucial to be able to immediately assess these faults and to quickly define remedial measures



Possible consequences

Sudden failure on converter component can lead to a breakdown of the complete drive train

Time consuming error identification and troubleshooting measures resulting in long non-scheduled plant downtimes

Significant financial loss due to the interruption of the production process

Fast downtime recovery by support via remote access connection



Remote Support

Solution

- Siemens is offering Remote Support as add-on for on-call service contracts for SINAMICS medium-voltage (e.g. SINAMICS PERFECT HARMONY) and low-voltage converters
- Based on customer request, a remote connection can be established to the customer's system, enabling data analysis, error detection and in several cases also direct troubleshooting



Remote Support as a service package out of our modular digital service approach



Remote Support service modules

1 Digital Check

IBase assessment

- Structured collection of required equipment data as basis for monitoring concept

Digital concept

- Conceptual overview of equipment connectivity and monitoring concept

Proposed specification

- Overview of required hardware, software and digital services

Digital
Check



2 Connect Package

Hardware package

- SIMATIC IPC, Network Equipment, Cables, Wear & Tear Material, Service Tool (Starter, Scout, Tool Suite)

Software package

- cRSP/ Customer Web Portal Platform Access & Settings (cRSP / CWP)

Mobilization package

- Installation, Commissioning and Initial Platform Settings

Connect
Package



3 Expert Assistance

Remote Support Service

- Remote Support Service by an expert on the basis of the Siemens Remote Service Platform (cRSP)

On-Call service

- Defined availability of Siemens experts with defined service times and reaction times

Onsite support

- Siemens Field Service experts to support and perform onsite trouble-shooting within defined reaction time

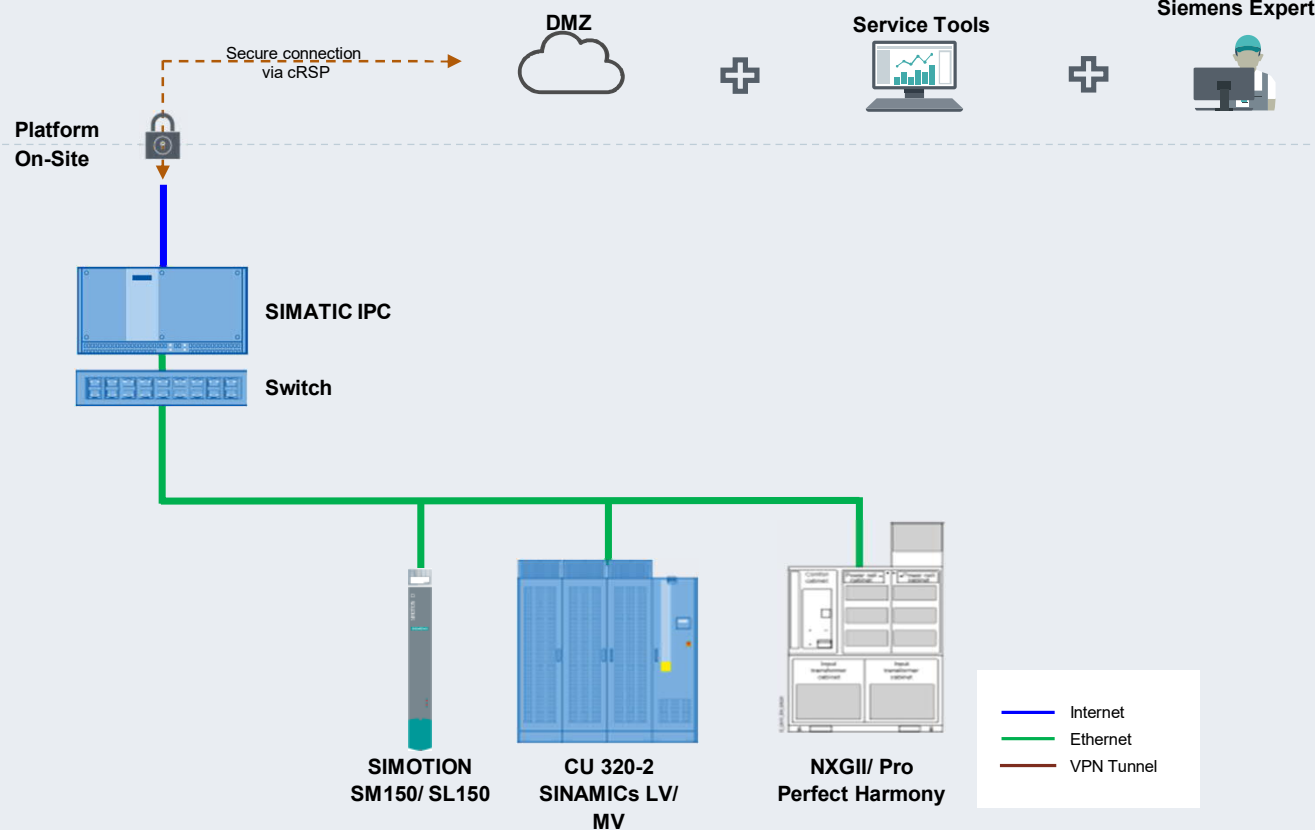
Expert
Assistance



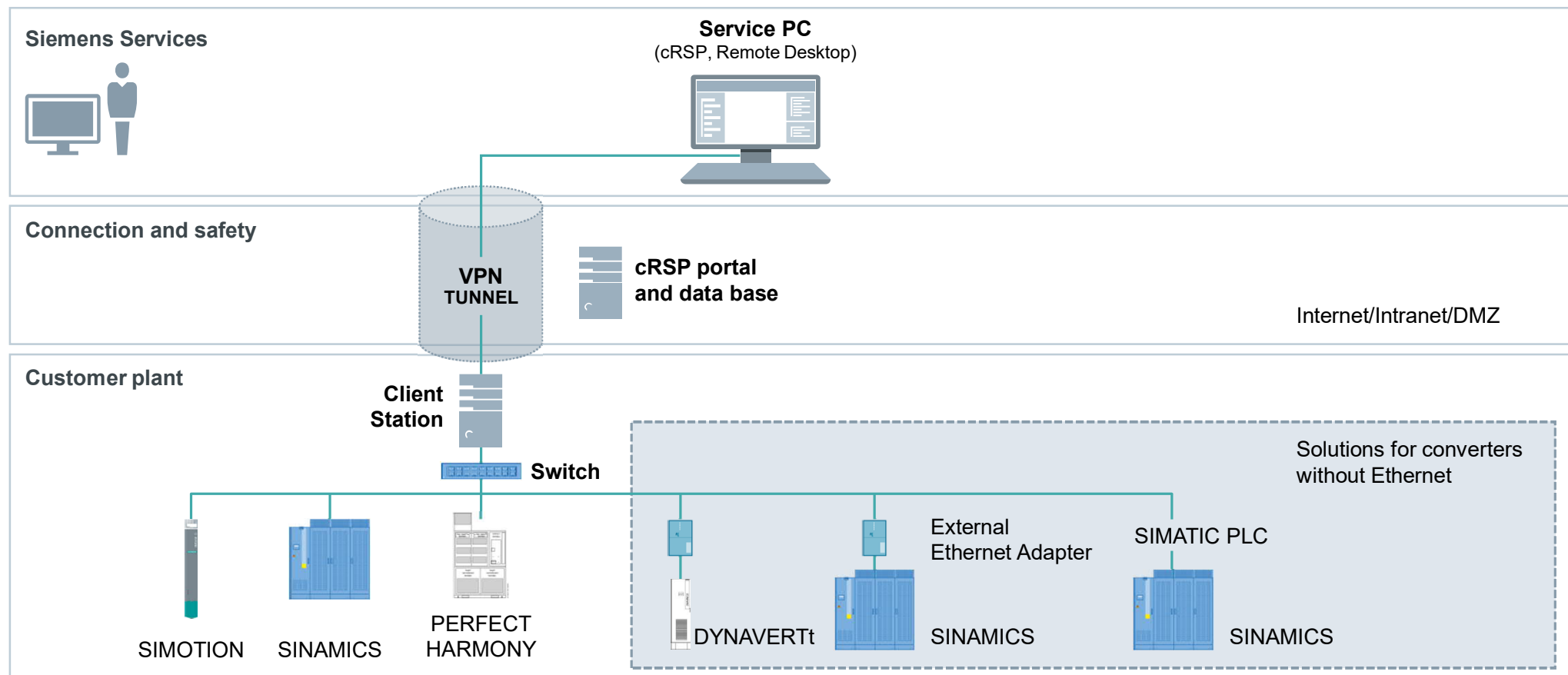
With Remote Support you can connect various converters and controls

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Single Line



Common Remote Service Platform (cRSP) – The software basis for Siemens Remote Services



Remote connection enables fast troubleshooting and easy optimization of the drive train

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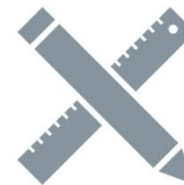
Alarm and fault
history



Black box
tool



Trace
record tool



Parameter
settings



Customer
Web Portal

...based on







cRSP



Remote connection enables faster access to alarm and fault history

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Fault buffer	Component	Fault code	Description (with fault value)
Current fault - fault 1	–	7950	Drive: Incorrect motor parameter(Parameter: 304)
Current fault - fault 2	–	49112	Fan monitoring: Differential pressure actual value not plausible(1)
1. acknowledged fault - f...	–	7950	Drive: Incorrect motor parameter(Parameter: 300)
1. acknowledged fault - f...	–	7950	Drive: Incorrect motor parameter(Parameter: 300)
1. acknowledged fault - f...	–	30098	External safety circuit opened
Current alarm buffer 1	203	1416	Topology: Component additionally inserted(Voltage Sensing Module, to Contro...
Current alarm buffer 2	–	30091	Protection: The EMERGENCY STOP function has been activated
Current alarm buffer 3	–	8526	PN/COMM BOARD: No cyclic connection
Current alarm buffer 4	30 - TM15_1	35906	TM: 24 V power supply missing(10 hex)
Current alarm buffer 5	1 - CU	1073	POWER ON: required for backup copy on memory card

 Alarm history  Convert  BICO server  Topology output

- Alarm and fault history of the converter gives an **overview of latest faults and alarms**
- Customer can access a **limited view** of the alarm and fault history **via the converter panel**
- Remote connection enables **faster access to the alarm and fault history** and all detailed information

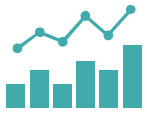


Converter data is stored on the “black box” which can be easily accessed remotely

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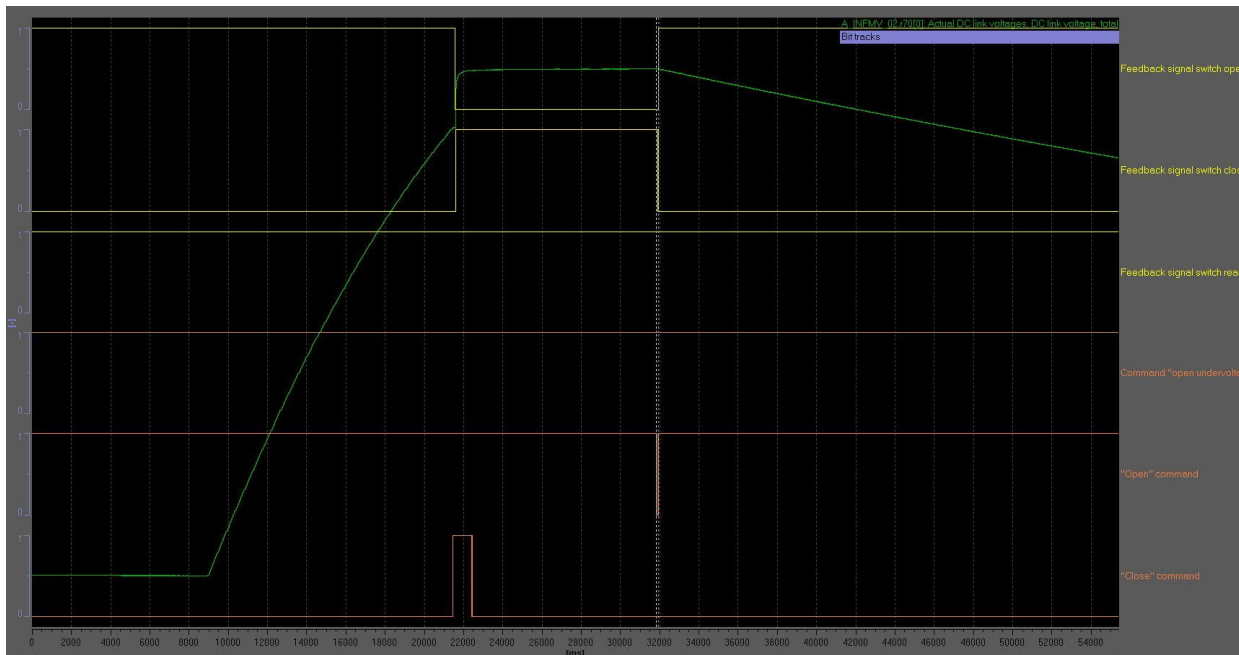


- Siemens converters **provide a powerful black box tool** for experienced Service experts
- To find the root cause of faults and eliminate them, it is very important to **know the converter status before and during a fault situation**
- Converter operation data is stored on the black box tool which can be **easily accessed remotely**
- **Without remote connection the customer has to switch off the converter completely** to remove the CF card for copying files



Trace record tool enables to analyze the whole drive system based on actual converter data

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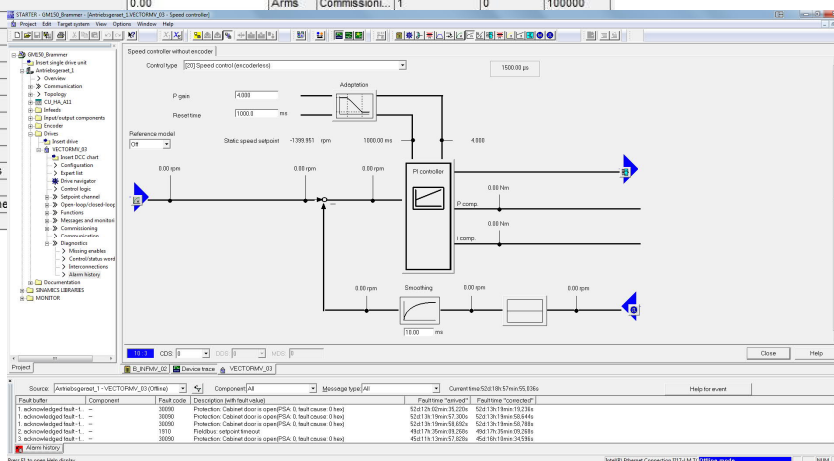
- STARTER provides a powerful trace record tool which **records important parameter values**, such as output voltage, output current, motor speed and output torque
- Trace record tool enables to **evaluate the converters actual state** and also external or feedback signals can be checked
- Based on this data analysis the **converter performance can be improved** which is only possible during field service if remote access is not available



Checking parameters and parameterizing can be easily done via remote connection

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121	p300[0]	M	Motor type selection	[1] Induction motor		Commissioni...	1		
122	p304[0]	M	Rated motor voltage	4160	Vrms	Commissioni...	1	0	20000
123	p305[0]	M	Rated motor current	640.00	Arms	Commissioni...	1	0	100000
124	p306[0]	M	Number of motors connected in parallel	1		Commissioni...	1	1	100
125	p307[0]	M	Rated motor power	3800.00	kW	Commissioni...	1	0	5E+006
126	p308[0]	M	Rated motor power factor	0.860		Commissioni...	1	0	1
127	p310[0]	M	Rated motor frequency	60.40	Hz	Commissioni...	1	0	3000
128	p311[0]	M	Rated motor speed	1750.0	rpm	Commissioni...	1	0	30000
129	r313[0]	M	Motor pole pair number, actual (or calculated)	2			2		
130	p314[0]	M	Motor pole pair number	2		Commissioni...	1	0	255
131	p320[0]	M	Motor rated magnetizing current/short-circuit current	0.000	Arms	Operation	3	0	100000
132	p322[0]	M	Maximum motor speed	2275.0	rpm	Commissioni...	1	0	100000
133	p323[0]	M	Maximum motor current	0.00	Arms	Commissioni...	1	0	100000
134	p326[0]	M	Motor stall torque correction factor						
135	r330[0]	M	Rated motor slip						
136	r331[0]	M	Actual motor magnetizing current						
137	r332[0]	M	Rated motor power factor						
138	r333[0]	M	Rated motor torque						
139	p335[0]	M	Motor cooling type						
140	p336[0]	M	Actual rated motor frequency						
141	r337[0]	M	Rated motor EMF						
142	r339[0]	M	Rated motor voltage						
143	p340[0]	D	Automatic calculation motor/control parameters						
144	p341[0]	M	Motor moment of inertia						
145	p342[0]	M	Ratio between the total and motor moment of ine						
146	p344[0]	M	Motor weight (for the thermal motor model)						

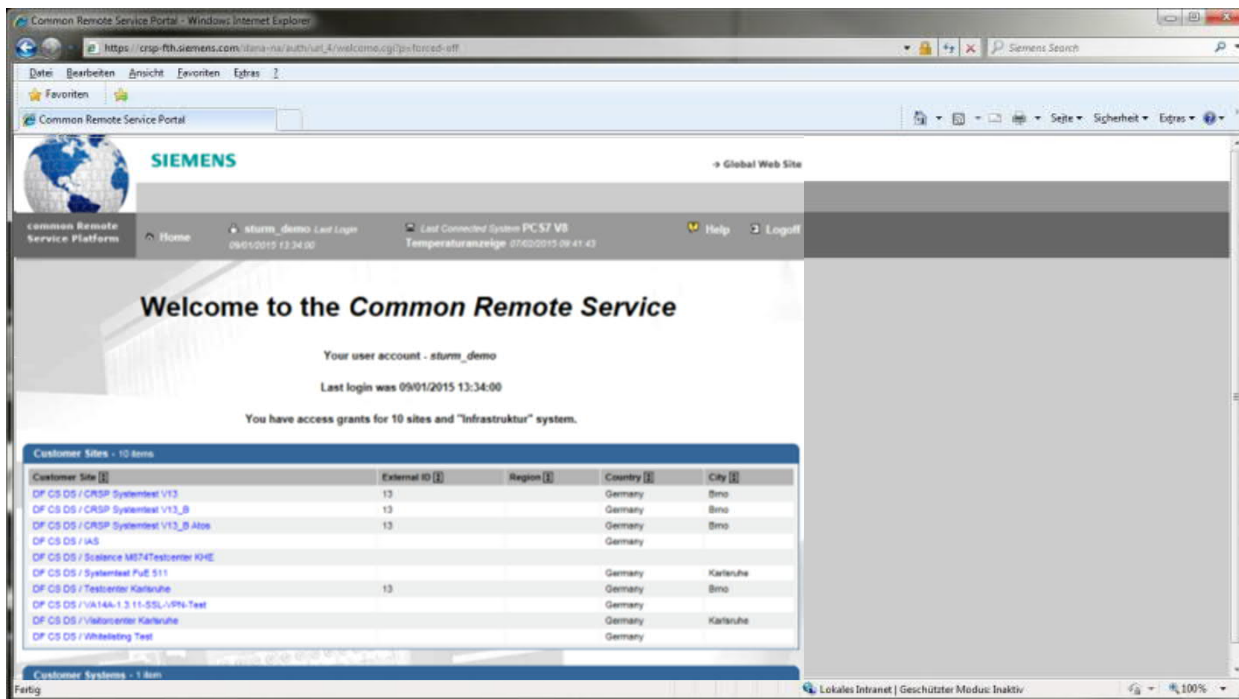


- STARTER tool supports you when **parameterizing, commissioning, troubleshooting** and when service is required
- **Remote connection parameters and control settings** as well as signal exchange can be **easily checked**
- If the customer need to **change any parameters during operation** this could be done **easily via remote connection**



Customer Web Portal provides a good overview of connected plants and systems

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- Customer Web Portal provides a **good overview of connected plants** and systems for customers
- Via the Customer Web Portal the customer can **activate or lock the remote access** for Siemens expert
- After permission a Siemens expert can **connect to the system via remote access** using the cRSP connection
- This provides **full control** over all systems for the customer

Why you should choose Remote Support



Shorten unplanned downtimes by faster access to expert analysis and thus faster converter troubleshooting

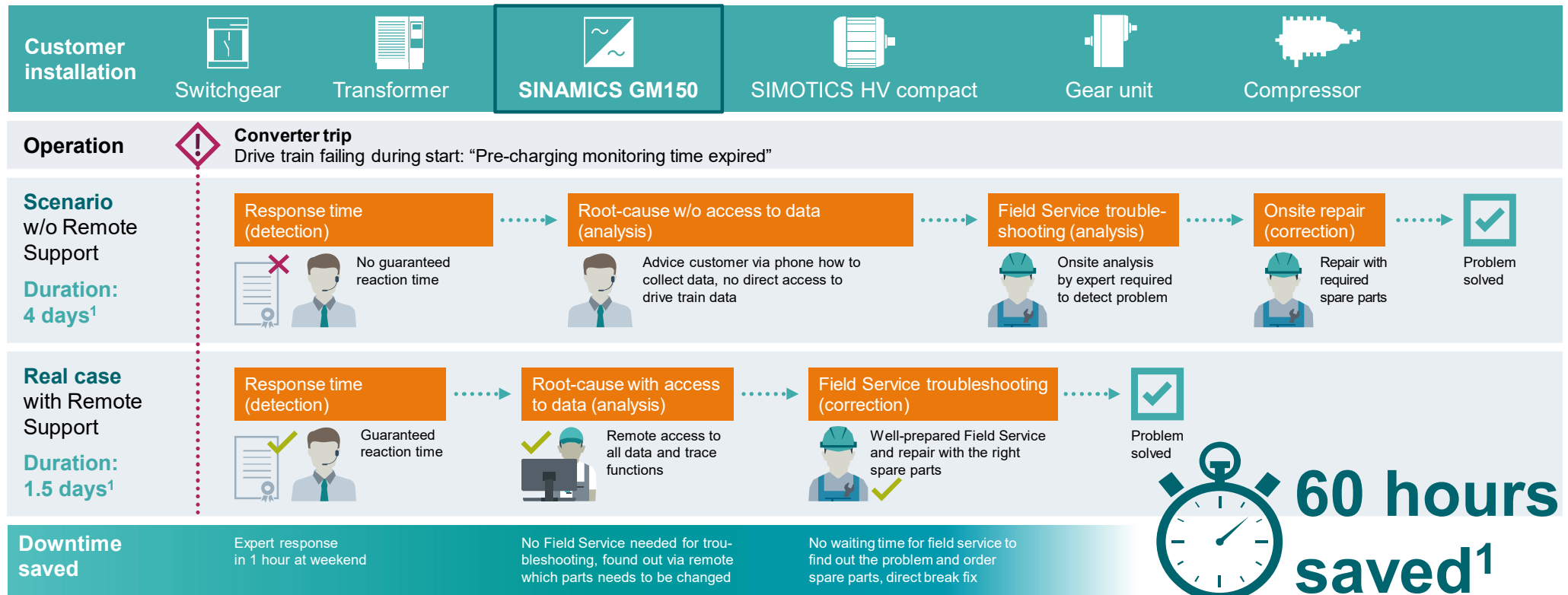


Reduced service intervention cost by less and faster on site services and a high rate of first-time-fix



High data security by state of the art security standards (ISO 27001 & CERT certified) and full customer control

Use-Case “Polluted short-circuiter”



¹ Specific use-case, exact time depending on e.g. contact time/availability of spares

Unplanned downtime

Let us know if there is anything we can support you with!

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You want to find out more?
Contact your Siemens partner
near you:

[Siemens Contact Database](#)

