MINDA Industrieanlagen GmbH

Remote Support Solution

SIEMENS SINEMA Remote Connect

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1. Scope of this document

This document describes the secure setup at MINDA and the technical specifications and functions of the Siemens Sinema system.

2. SINEMA Remote Connect system

SINEMA Remote Connect is a management platform developed by Siemens that streamlines secure, centralised remote access to industrial assets worldwide. Developed by Siemens, it is a management platform that enables secure, global remote access to distributed machines and plants. It provides a centralised solution for remote maintenance and teleservices by establishing encrypted VPN connections, which allow authorised users to access control systems and devices, regardless of their network environment. The system uses a server-client architecture in which a central SINEMA RC server manages VPN tunnels to client devices, including SCALANCE routers and automation components. Technicians can connect to the server to access remote systems without the need for complex network configurations.

3. SINEMA Remote Connect Server

The SINEMA Remote Connect server is the heart of the entire system. It is self-hosted at our MINDA headquarters in Germany. No third parties are involved in managing the server, and there are no connections to a cloud system. The server is responsible for the following tasks:

- Managing all connections from SCALANCE S615 VPN routers and technicians.
- Ensuring the separation of every customer network, regardless of IP configuration.
- Roll out firmware updates for the VPN routers.
- Annually updating the VPN certificates.
- Managing users and rights.
- Encrypting all network traffic between clients

4. SCALANCE S615 VPN router

The SCALANCE S615 VPN router forms the backbone of the MINDA remote support solution at our customers' sites. This device enables MINDA to connect to the on-site MINDA server and, if necessary, to the PLC, providing the full range of remote support possibilities. MINDA will configure and maintain the router. There is no need to open incoming connections on the customer's firewall; the router only establishes outgoing connections to the SINEMA Remote Connect Server.

5. Cryptography and the use of VPN tunnels

The VPN tunnel is based on OpenVPN. Encryption is performed using TLS 1.2 with an SHA256 certificate with RSA encryption. The certificate is switched annually.

6. Identity and MFA

Every technician has a personalised account which is limited to connecting to the systems they need access to. Multifactor authentication is carried out via multiple layers. The technical device must be part of the MINDA domain, where MFA is handled via 'Windows Hello' and the Authenticator app. On top of this, there is also a separate login for the SINEMA system.

7. Operational control of the VPN tunnel

The SCALANCE S615 VPN router can be equipped with a key switch to enable the operator to activate the VPN tunnel for remote support. The active connection is also signalled. The key switch can also be used to cut the connection in an emergency.

8. Network segmentation and least privilege

There are endless ways to manage access to our customer networks, ranging from entire subnets to individual IP addresses and ports.

9. Logging and traceability

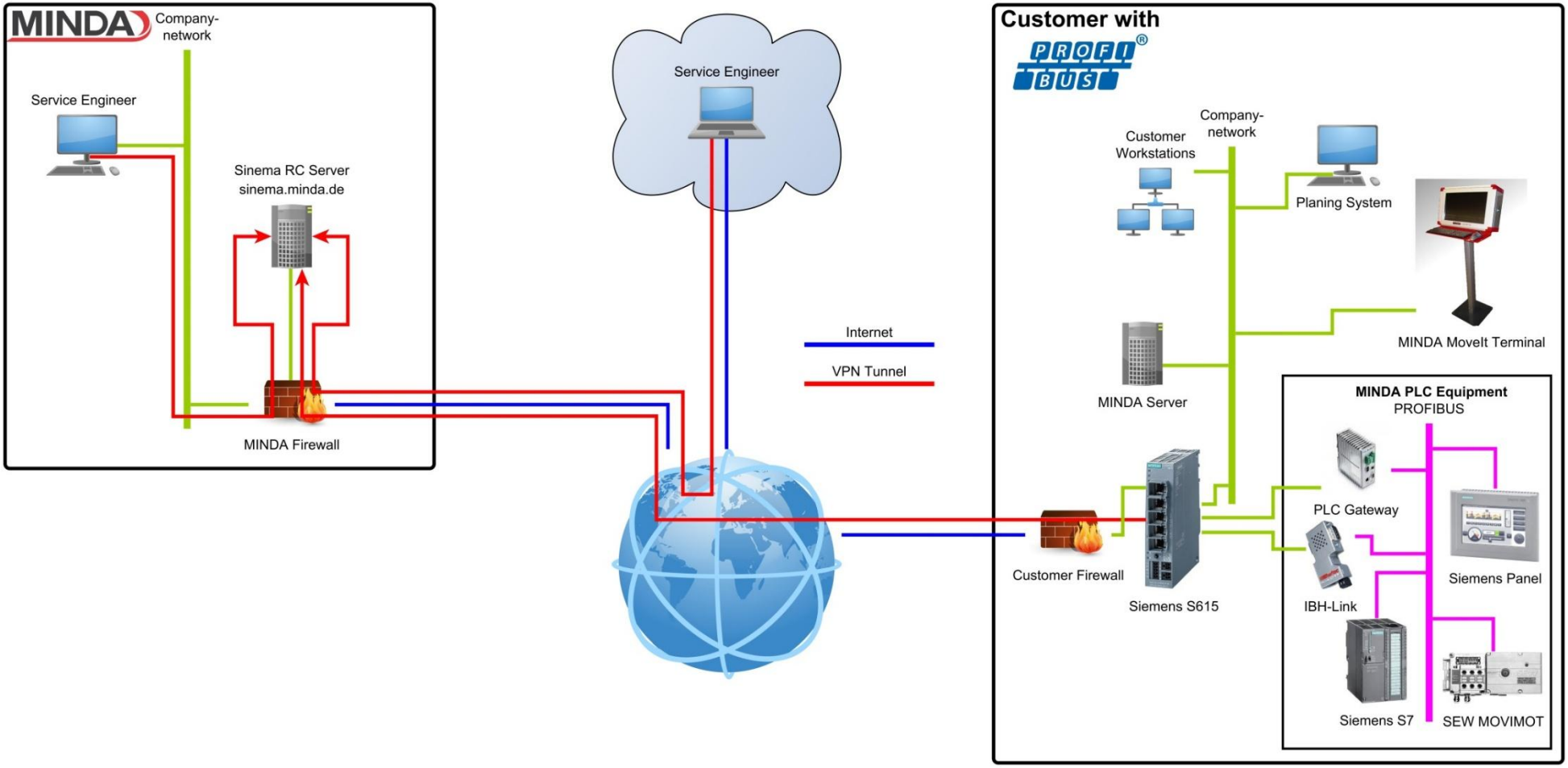
The SINEMA Remote Connect system logs all connections established from any device or technician.

10. Network requirements

The SCALANCE S615 VPN router requires access to the following ports on the address https://sinema.minda.de (217.89.43.245):

Protocol	Port	Description
TCP	443	
TCP	5443	OpenVPN
UDP	1194	OpenVPN
TCP	6220	Certificate exchange
UDP	123	NTP

11. Setup examples



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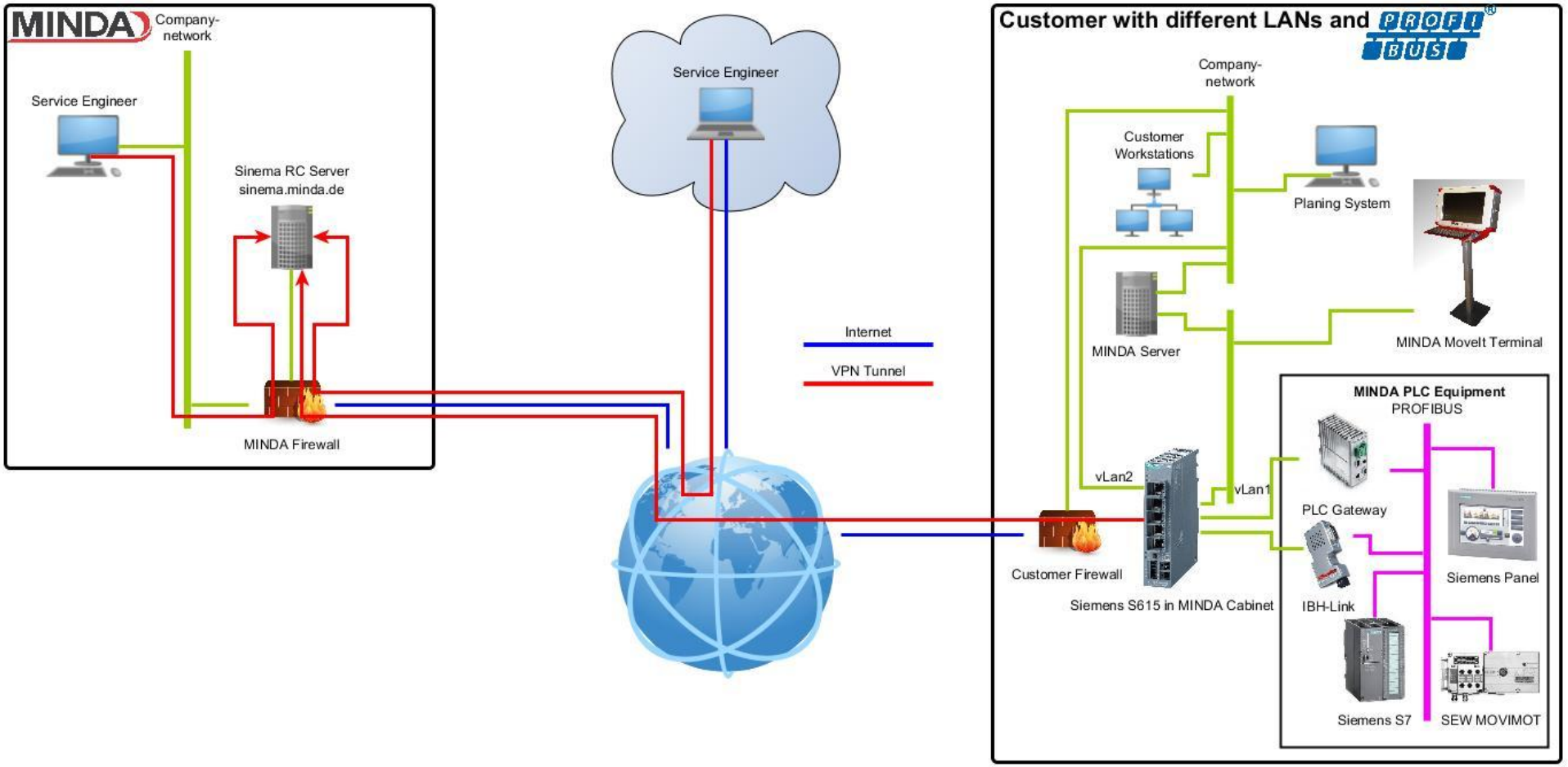
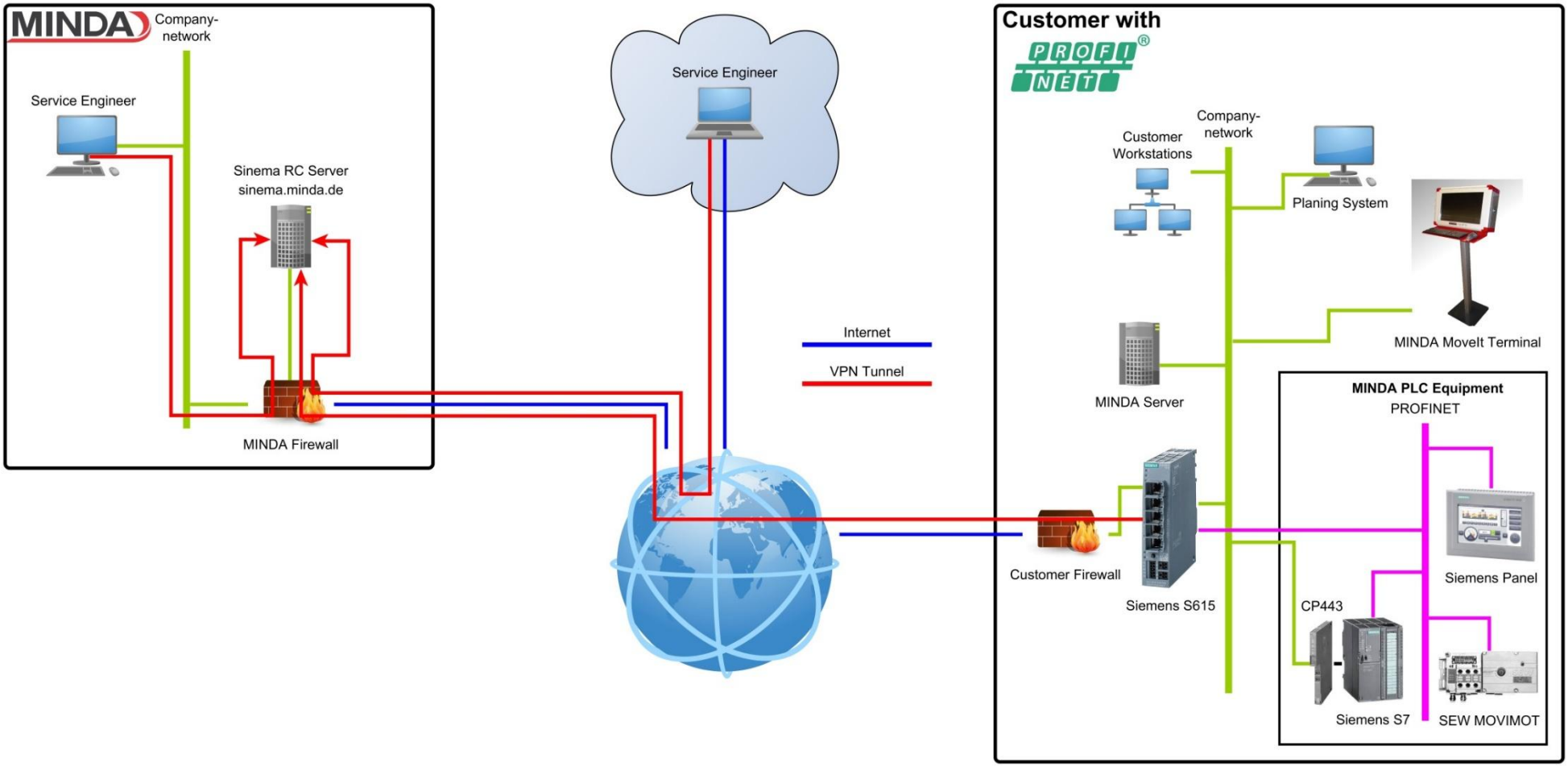
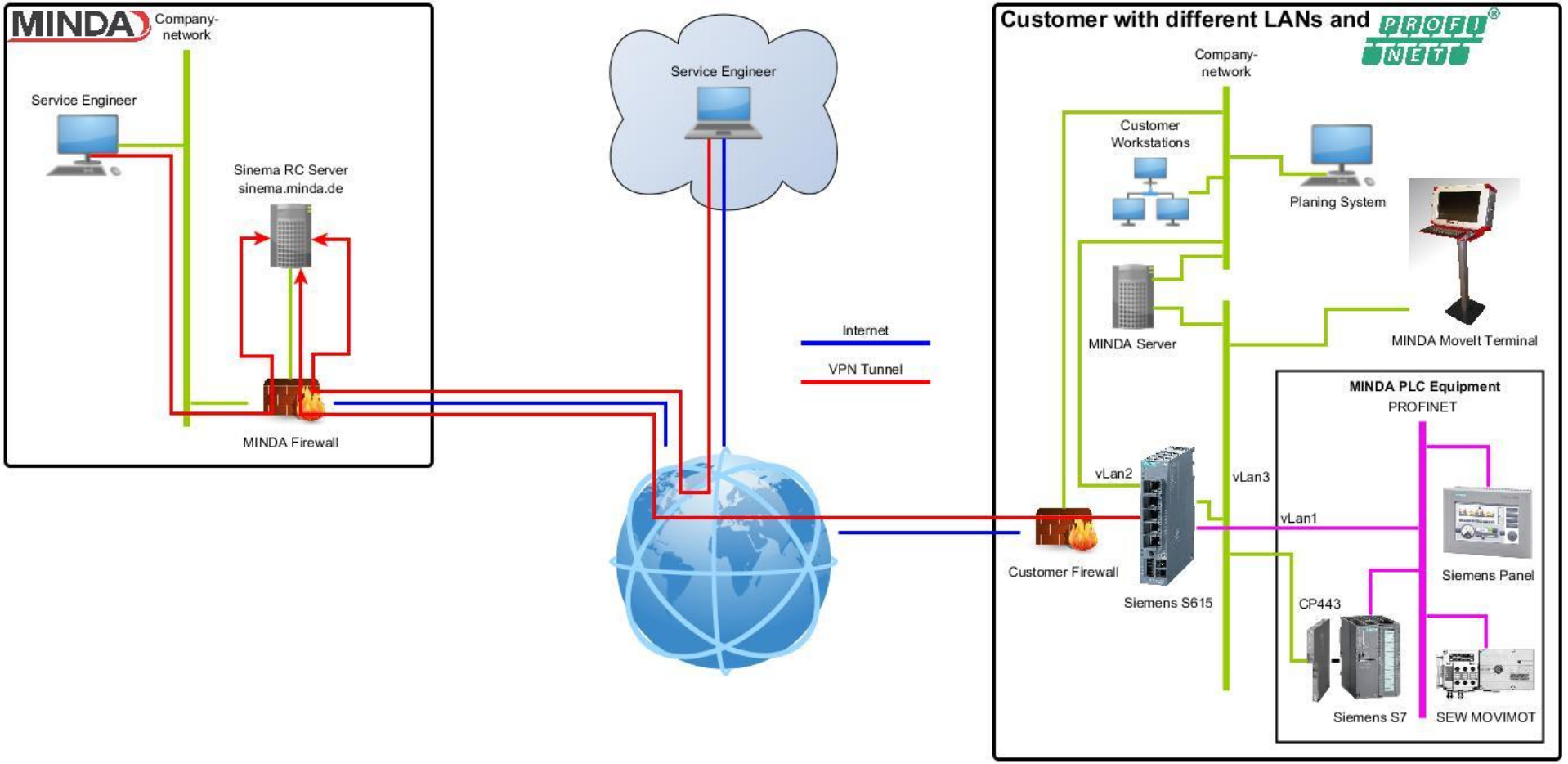


Remote Support Solution SINEMA Remote Connect




MINDA
Company-network
Service Engineer
Sinema RC Server
sinema.minda.de
MINDA Firewall
Service Engineer
Internet
VPN Tunnel
Customer with different LANs and PROFINET
Company-network
Customer Workstations
Planing System
MINDA Server
MINDA MoveIt Terminal
MINDA PLC Equipment
PROFINET
vLan2
vLan3
vLan1
Customer Firewall
Siemens S615
Siemens Panel
CP443
Siemens S7
SEW MOVIMOT

12. Technical specifications for SCALANCE S615

transfer rate	
transfer rate	10 Mbit/s, 100 Mbit/s
interfaces	
number of electrical/optical connections / for network components or terminal equipment / maximum	5
number of electrical connections	
• for power supply	1
• for redundant voltage supply	1
type of electrical connection	
• for power supply	5-pole terminal block
design of the removable storage / C-PLUG	Yes
signal inputs/outputs	
number of electrical connections	
• for digital input signals	1
• for digital output signals	1
number of electrical connections	
• for digital input signals	2-pole terminal block
• for digital output signals	2-pole terminal block
supply voltage, current consumption, power loss	
type of voltage / 1 / of the supply voltage	DC
supply voltage / 1 / rated value	24 V
power loss [W] / 1 / rated value	4 W
supply voltage / 1 / rated value	10.8 … 28.8 V
consumed current	
• at DC / at 24 V / typical	0.2 A
product component / 1 / fusing at power supply input	Yes
fuse protection type / 1 / at input for supply voltage	Non-replaceable melting fuse (F 2 A5 / 32 V)
ambient conditions	
ambient temperature	
• during operation	-40 ... +70 °C
• during storage	-40 ... +80 °C
• during transport	-40 ... +80 °C
relative humidity / at 25 °C / without condensation / during operation / maximum	95%
protection class IP	IP20

design, dimensions and weights	
design	compact
width	35 mm
height	147 mm
depth	127 mm
net weight	0.4 kg
fastening method	
• 35 mm top hat DIN rail mounting	Yes
• S7-300 rail mounting	Yes
• S7-1500 rail mounting	Yes
product functions / management, configuration, engineering	
product function	
• CLI	Yes
• web-based management	Yes
• MIB support	Yes
protocol / is supported	
• HTTP	Yes
• SNMP v1	Yes
• SNMP v2	Yes
• SNMP v3	Yes
type of configuration	Web Based Management, CLI, SNMP, SCT (Configuration support for certificate generation)
product functions / diagnostics	
product functions / diagnostics product function	
• SysLog	Yes
• packet filter log	Yes
• audit log	Yes
• system log	Yes
product functions / DHCP	
product function	
• DHCP client	Yes
• DHCP server - internal network	Yes
product functions / routing	
product function / static IP routing	Yes
product functions / security	
firewall version	stateful inspection
product function / with VPN connection	IPsec, OpenVPN (as client for SINEMA RC)
type of encryption algorithms / with VPN connection	AES-256, AES-192, AES-128, 3DES-168, DES-56
type of authentication procedure / with VPN	Preshared key (PSK), X.509v3 certificates

connection	
type of hashing algorithms / with VPN connection	MD5, SHA-1, SHA-256, SHA-384, SHA-512
number of possible connections / with VPN connection	20
product function	
• password protection	Yes
• bandwidth limitation	No
• NAT/NAPT	Yes
product functions / time	
protocol / is supported	
• NTP	Yes
product component / hardware real time clock	Yes
product feature / hardware real time clock w. battery backup	No
standards, specifications, approvals	
standard	
• for FM	FM16US0205X
• for safety / from CSA and UL	UL 60950 E115352
• for emitted interference	EN 61000-6-4
• for interference immunity	EN 61000-6-2
certificate of suitability	ATEX, EMC, RoHS
• CE marking	Yes
reference code	
• according to IEC 81346-2:2019	KED
product function / is supported / identification link	Yes
standards, specifications, approvals / marine classification	
Marine classification association	
• American Bureau of Shipping Europe Ltd. (ABS)	Yes
• French marine classification society (BV)	Yes
• DNV GL	Yes
• Korean Register of Shipping (KRS)	Yes
• Lloyds Register of Shipping (LRS)	Yes
• Nippon Kaiji Kyokai (NK)	Yes
• Polski Rejestr Statkow (PRS)	Yes
• Royal Institution of Naval Architects (RINA)	Yes

standards, specifications, approvals / hazardous environments	
standard / for hazardous zone	EN 60079-15, EN 60079-0, II 3 G Ex nA IIC T4 Gc, KEMA 07ATEX0145 X
certificate of suitability / CCC / for hazardous zone according to GB standard	Yes; GB3836.1, GB3836.8
certificate of suitability / CCC / for hazardous zone according to GB standard / as marking	Ex nA IIC T4 Gc
standards, specifications, approvals / Environmental Product Declaration	
Environmental Product Declaration	Yes
Global Warming Potential [CO2 eq]	
• total	141.25 kg
• during manufacturing	15.64 kg
• during operation	125.19 kg
• after end of life	0.42 kg
accessories	
product extension / optional	
• C-PLUG	Yes
• KEY-PLUG	Yes
accessories	optional KEY-PLUG