

SIEMENS



SCALANCE W700 IEEE 802.11n

– Industrial Wireless LAN

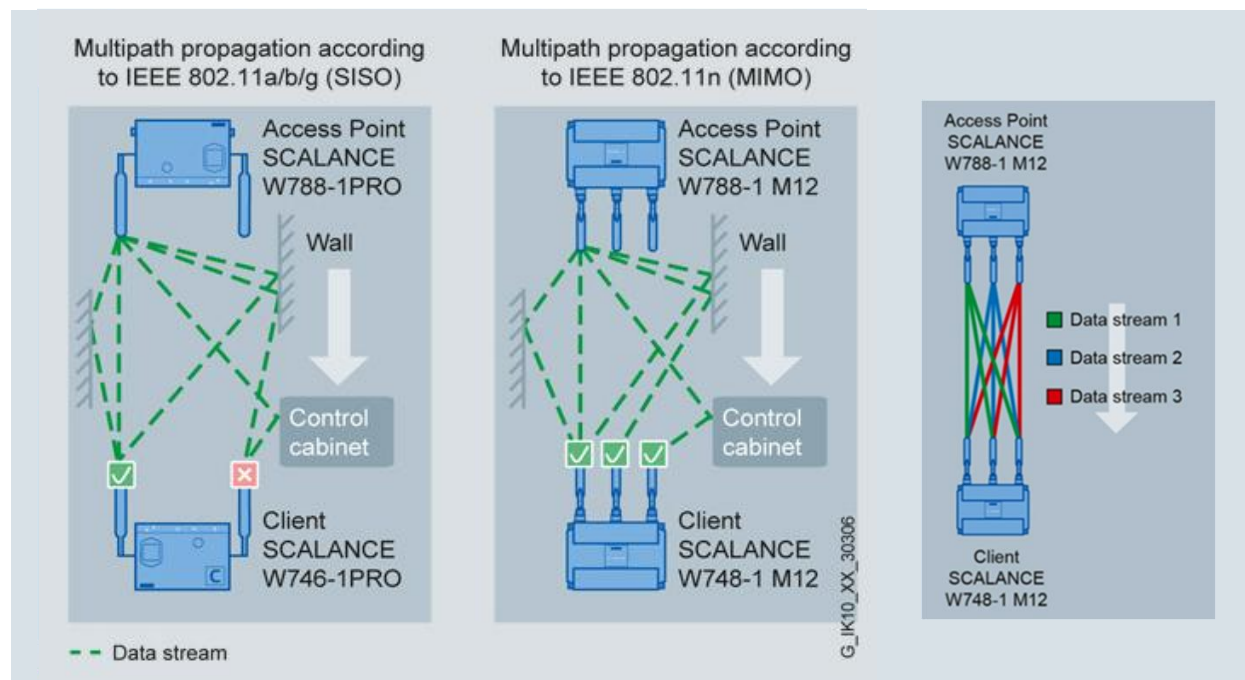
SCALANCE W - Making the most of air



- Technology / portfolio
- Use cases

IEEE 802.11n versus IEEE 801.111abg

Multiple In Multiple Out vs. Single In Single Out



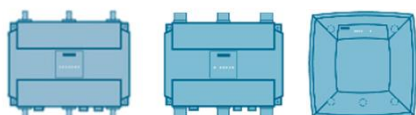
Multiple In Multiple Out (MIMO) allows greater bandwidth and reliability than Single In Single Out (SISO). Bandwidth and reliability grow due to the active use of multiple antennas.

IEEE 802.11n

Why are there different data rates?

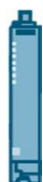
The maximum data rate of a data stream (spatial stream) is 150 Mbps. The maximum data rate of a device depends on the number of antennas and the number of data streams. With each antenna, one data stream can be sent or received.

Number of transmitting antennas x number of receiving antennas: Data streams (S x R : D)



SCALANCE W780/W740 (3x3:3)

3 transmitting antennas x 3 receiving antennas: 3 data streams = max. **450 Mbps**



SCALANCE W770/W730 (2x2:2)

2 transmitting antennas x 2 receiving antennas: 2 data streams = max. **300 Mbps**



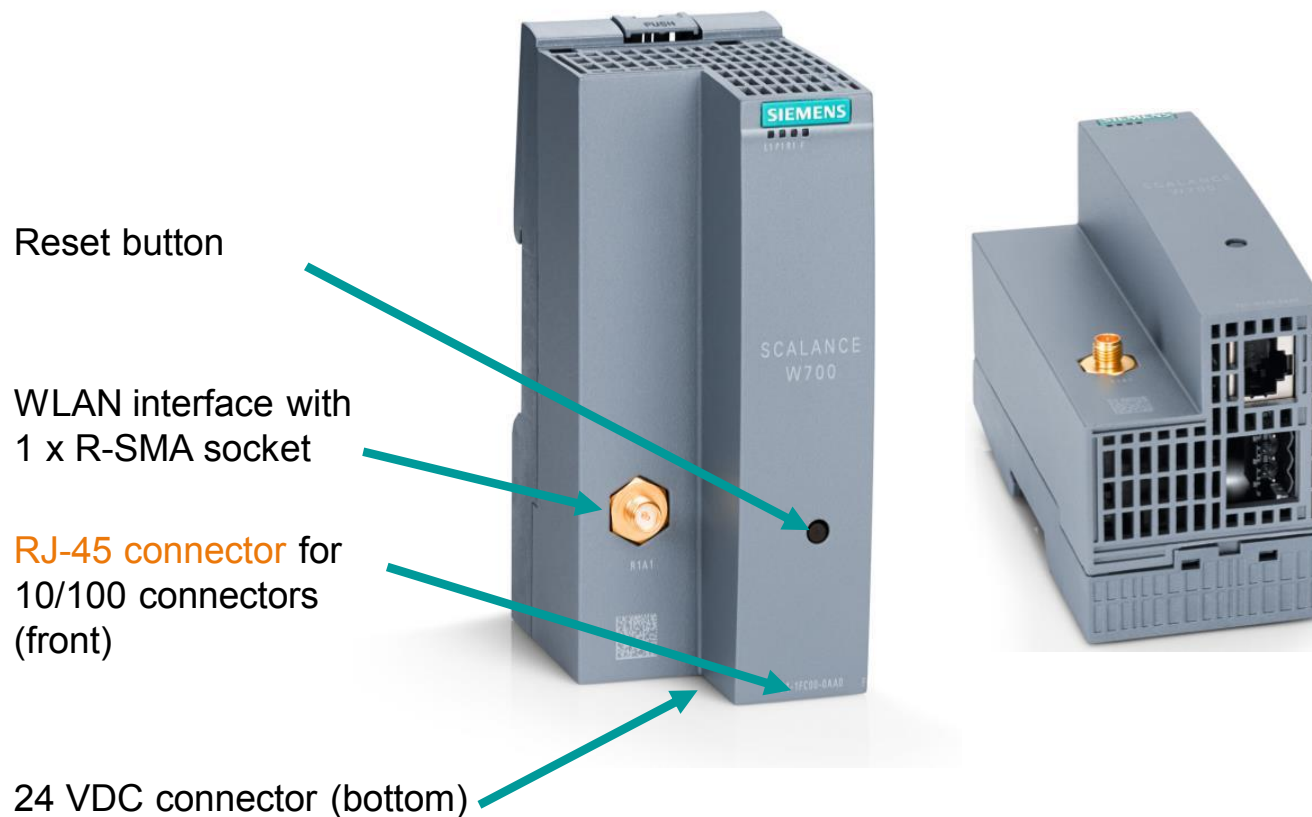
SCALANCE W760/W720 (1x1:1)

1 transmitting antenna x 1 receiving antenna: 1 data stream = max. **150 Mbps**

Note: one physically existent antenna can be counted as a transmitting and receiving antenna at the same time

Access points / client modules

W761-1 RJ45, W722-1 RJ45, W721-1 RJ45 for the control cabinet



Features:	
Supported frequencies:	2.4 & 5 GHz
Temperature range:	0 °C...+55 °C
Supported antennas:	Omnidirectional, RCoax
Special features:	SIMATIC design ET200SP
Mounting:	35 mm DIN rail
Protection class	IP20

Access points / client modules

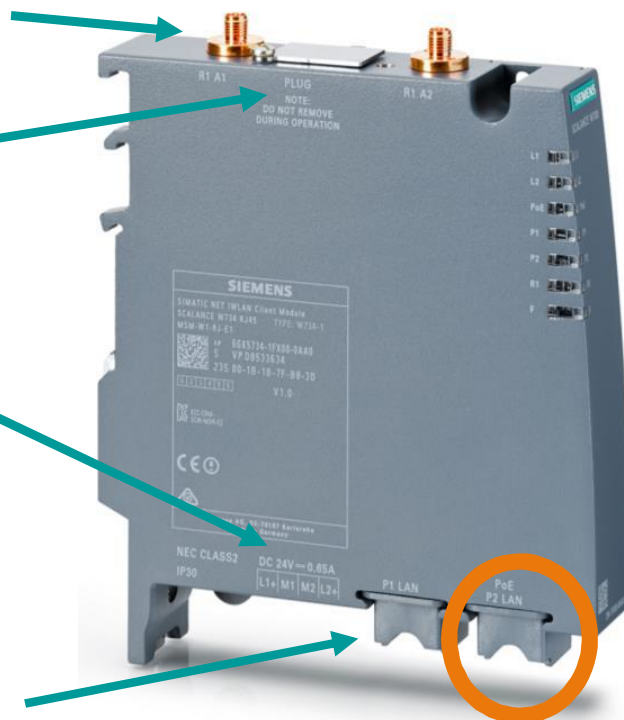
W774-1 RJ45, W734-1 RJ45 for the control cabinet

WLAN interface with
2 x R-SMA sockets

PLUG slot and
reset button

24 VDC connector

2 x RJ-45 connection
10/100 Mbps with
integrated 2-port switch;
**1 port supports PoE-IEEE
802.3at**



Features:	
Supported frequencies:	2.4 & 5 GHz
Temperature range:	-20 °C...+60 °C
Supported antennas:	Sector Omnidirectional RCoax
Special features:	SIMATIC design ET200MP S7-1500
Mounting:	Wall, S7 standard rail, 35 mm DIN rail
Protection class	IP30

Access points / client modules

W788-1 RJ45, W788-2 RJ45, W748-1 RJ45 for the control cabinet

Mounting: Wall, S7 standard rail or 35 mm DIN rail

1 WLAN interface with
3 x R-SMA sockets

2 WLAN interfaces with
3 x R-SMA sockets

Reset button

PLUG slot

Signal contact (DI/DO)



Features:	
Supported frequencies:	2.4 & 5 GHz
Temperature range:	-20 °C...+60 °C
Supported antennas:	Omnidirectional Sector Directional RCoax
Controller version:	Yes

RJ-45 connector for 10/100/1000 Mbps
with PoE IEEE 802.3at

24 VDC connector

SCALANCE W700

industrial Point Coordination Function – Management Channel (iPCF-MC)

With iPCF-MC two wireless channels are used:

Data Channel (DC):

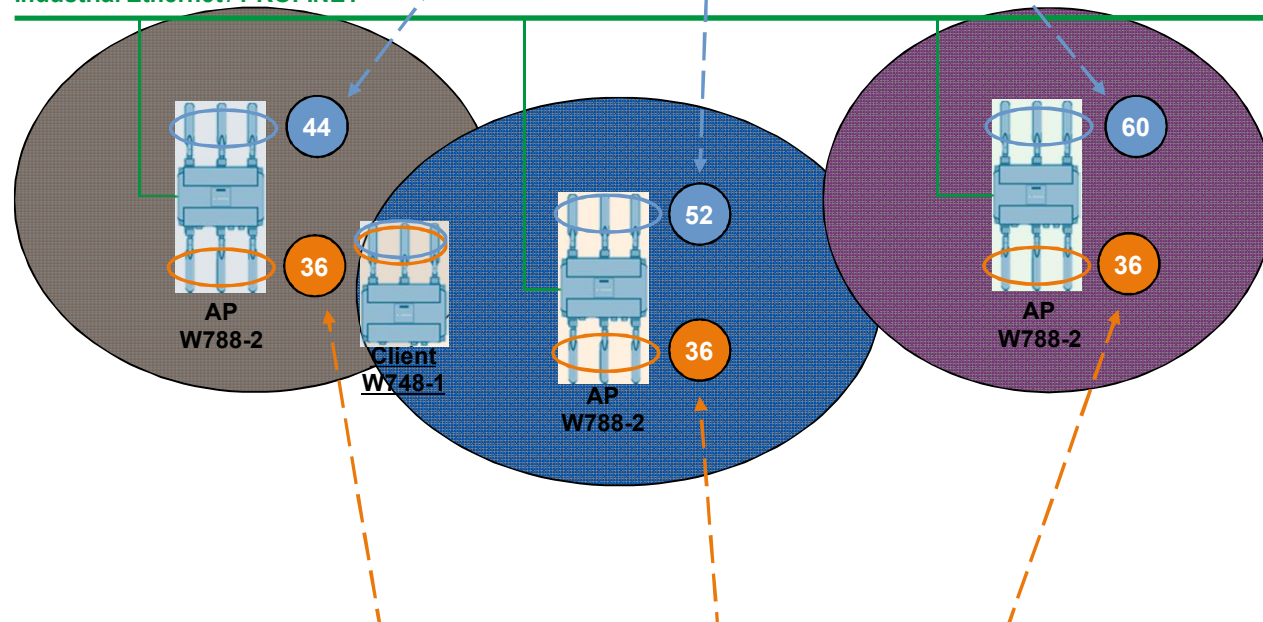
- Transports cyclic data between CPU and the distributed I/O devices in polling mode. Different data channels can exist per network (SSID).

Management Channel (MC):

- This channel is fixed for all APs and only contains information about the signal strength of the current AP. Important: Not a data channel

Each access point (AP) has a different data channel





Industrial Ethernet / PROFINET



Each access point has the same management channel (here channel 36)




SCALANCE W700

Ordering data stand-alone access points

Product name	MLFB		Remarks
SCALANCE W788-1 RJ45	RoW: USA:	6GK5 788-1FC00-0AA0 6GK5 788-1FC00-0AB0	
SCALANCE W788-2 RJ45	RoW: USA:	6GK5 788-2FC00-0AA0 6GK5 788-2FC00-0AB0	
SCALANCE W788-1 M12	RoW: USA:	6GK5 788-1GD00-0AA0 6GK5 788-1GD00-0AB0	
SCALANCE W788-2 M12	RoW: USA:	6GK5 788-2GD00-0AA0 6GK5 788-2GD00-0AB0	
SCALANCE W788-2 M12 EEC	RoW: USA:	6GK5 788-2GD00-0TA0 6GK5 788-2GD00-0TB0	
SCALANCE W786-1 RJ45	RoW: USA:	6GK5 786-1FC00-0AA0 6GK5 786-1FC00-0AB0	
SCALANCE W786-2 RJ45	RoW: USA:	6GK5 786-2FC00-0AA0 6GK5 786-2FC00-0AB0	
SCALANCE W786-2IA RJ45	RoW: USA:	6GK5 786-2HC00-0AA0 6GK5 786-2HC00-0AB0	
SCALANCE W786-2 SFP	RoW: USA:	6GK5 786-2FE00-0AA0 6GK5 786-2FE00-0AB0	
SCALANCE W774-1 RJ45	RoW: USA:	6GK5 774-1FX00-0AA0 6GK5 774-1FX00-0AB0	
SCALANCE W774-1 M12 EEC	RoW: USA:	6GK5 774-1FY00-0TA0 6GK5 774-1FY00-0TB0	
SCALANCE W761-1 RJ45	RoW: USA:	6GK5 761-1FC00-0AA0 6GK5 761-1FC00-0AB0	

SCALANCE W700

Ordering data client modules

Product name	MLFB	Remarks
SCALANCE W748-1 RJ45	RoW: 6GK5 748-1FC00-0AA0 USA: 6GK5 748-1FC00-0AB0	
SCALANCE W748-1 M12	RoW: 6GK5 748-1GD00-0AA0 USA: 6GK5 748-1GD00-0AB0	
SCALANCE W734-1 RJ45	RoW: 6GK5 734-1FX00-0AA0 USA: 6GK5 734-1FX00-0AB0	
SCALANCE W722-1 RJ45	RoW: 6GK5 722-1FC00-0AA0 USA: 6GK5 722-1FC00-0AB0	
SCALANCE W721-1 RJ45	RoW: 6GK5 721-1FC00-0AA0 USA: 6GK5 721-1FC00-0AB0	











KEY-PLUGs

Ordering data KEY-PLUGs









Product name	MLFB	Remarks
KEY-PLUG W780 iFeatures	6GK5907-8PA00	
KEY-PLUG W740 iFeatures	6GK5907-4PA00	
KEY-PLUG W700 Security	6GK5907-0PA00	

IWLAN antennas

Overview of antennas

Antennenart	Frequenz (GHz)	Antennen	SCALANCE W780W740	SCALANCE W770W730	SCALANCE W760W720
omnidirektional	2,4		ANT792-6MN	•	•
	2,4 und 5		ANT795-4MA	•	•
			ANT795-4MC	•	
			ANT795-4MD	•	
			ANT795-6MN	•	•
			ANT795-6MT	•	
Sektor	5		ANT793-6MN	•	•
	2,4 und 5		ANT795-6DC	•	
	5		ANT793-6DG	•	
			ANT793-6DT	•	























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Antennenart	Frequenz (GHz)	Antennen	SCALANCE W780W740	SCALANCE W770W730	SCALANCE W760W720
gerichtet	2,4		ANT792-8DN	•	
	5		ANT793-8DP	•	
			ANT793-8DJ	•	
			ANT793-8DK	•	
RCoax	2,4		RCoax Leckwellenleiter 2,4 GHz	•	•
			ANT792-4DN	•	•
	5		RCoax Leckwellenleiter 5 GHz	•	•
			ANT793-4MN	•	•

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IWLAN antennas and accessories

Ordering data antennas (1)

Image	Product name	MLFB	Remarks	suitable for use with
	ANT795-4MA	6GK5795-4MA00-0AA3		  
	ANT795-4MC	6GK5795-4MC00-0AA3		
	ANT795-4MD	6GK5795-4MD00-0AA3		
	ANT792-6MN	6GK5792-6MN00-0AA6		  
	ANT793-6MN	6GK5793-6MN00-0AA6		  
	ANT795-6MT	6GK5795-6MT00-0AA0		
	ANT795-6MN	6GK5795-6MN10-0AA6		  



SCALANCE W780/W740



















SCALANCE W770/W730



SCALANCE W760/W720

IWLAN antennas and accessories

Ordering data antennas (2)

Image	Product name	MLFB	Remarks	suitable for use with
	ANT795-6DC	6GK5795-6DC00-0AA0		 
	ANT793-6DG	6GK5793-6DG00-0AA0		 
	ANT793-6DT	6GK5793-6DT00-0AA0		
	ANT793-8DP	6GK5793-8DP00-0AA0		
	ANT793-8DJ	6GK5793-8DJ00-0AA0		
	ANT793-8DK	6GK5793-8DK00-0AA0		
	ANT792-8DN	6GK5792-8DN00-0AA6		



SCALANCE W780/W740























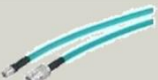

SCALANCE W770/W730



SCALANCE W760/W720

IWLAN antennas and accessories

Ordering data antennas and accessories

Image	Product name	MLFB	Remarks	suitable for use with
	RCoax leaky feeder 2.4 GHz	6XV1875-2A		  
	RCoax leaky feeder 5GHz	6XV1875-5A		  
	ANT792-4DN	6GK5792-4DN00-0AA6		  
	ANT793-4MN	6GK5793-4MN00-0AA6		  
	LP798-2N	6GK5798-2LP10-2AA6		  
	IWLAN QMA / N- Connect flexible connection cable	6XV1875-5JH10		



SCALANCE W780/W740

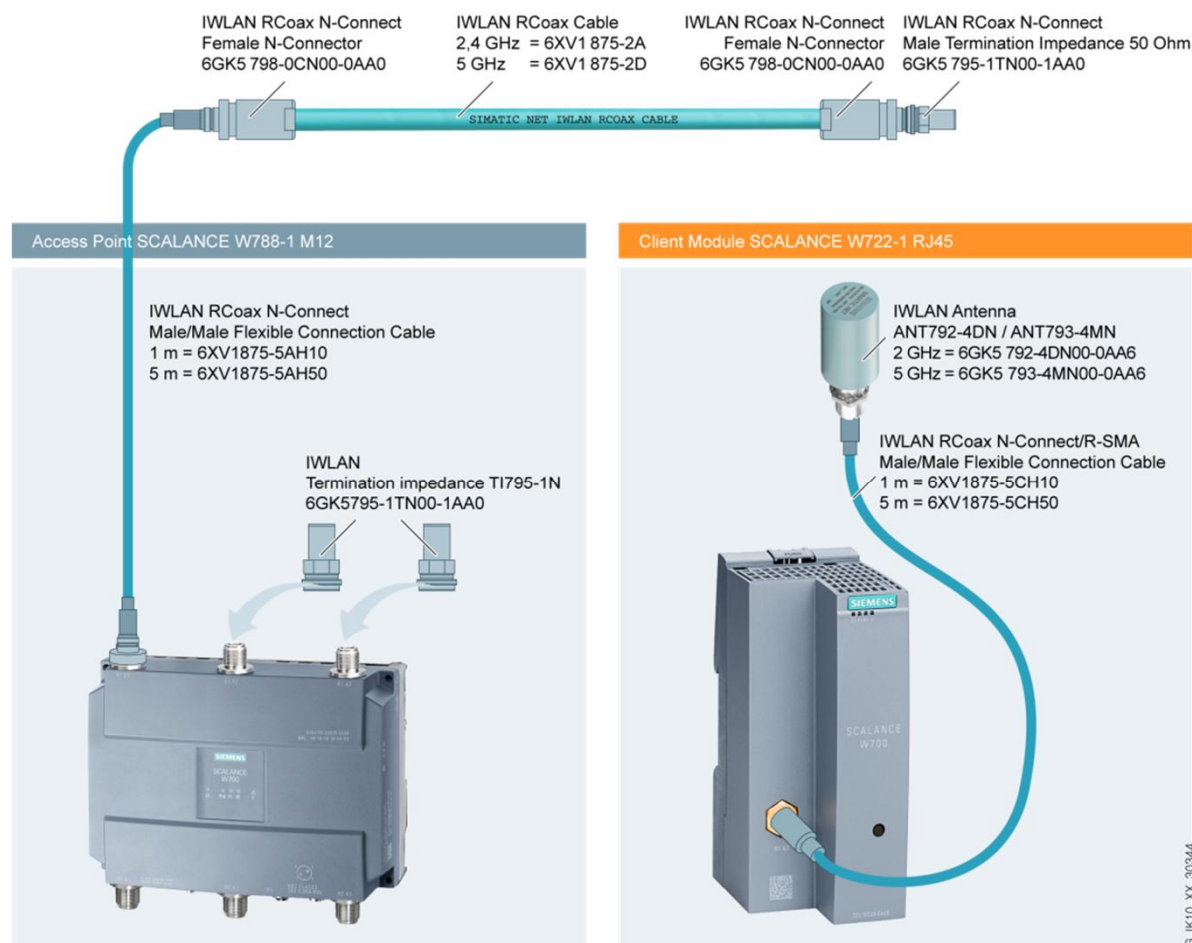


SCALANCE W770/W730



SCALANCE W760/W720

Example of a SCALANCE W788-2 M12 and W722-1 RJ45 configuration with RCoax



SCALANCE W - Making the most of air



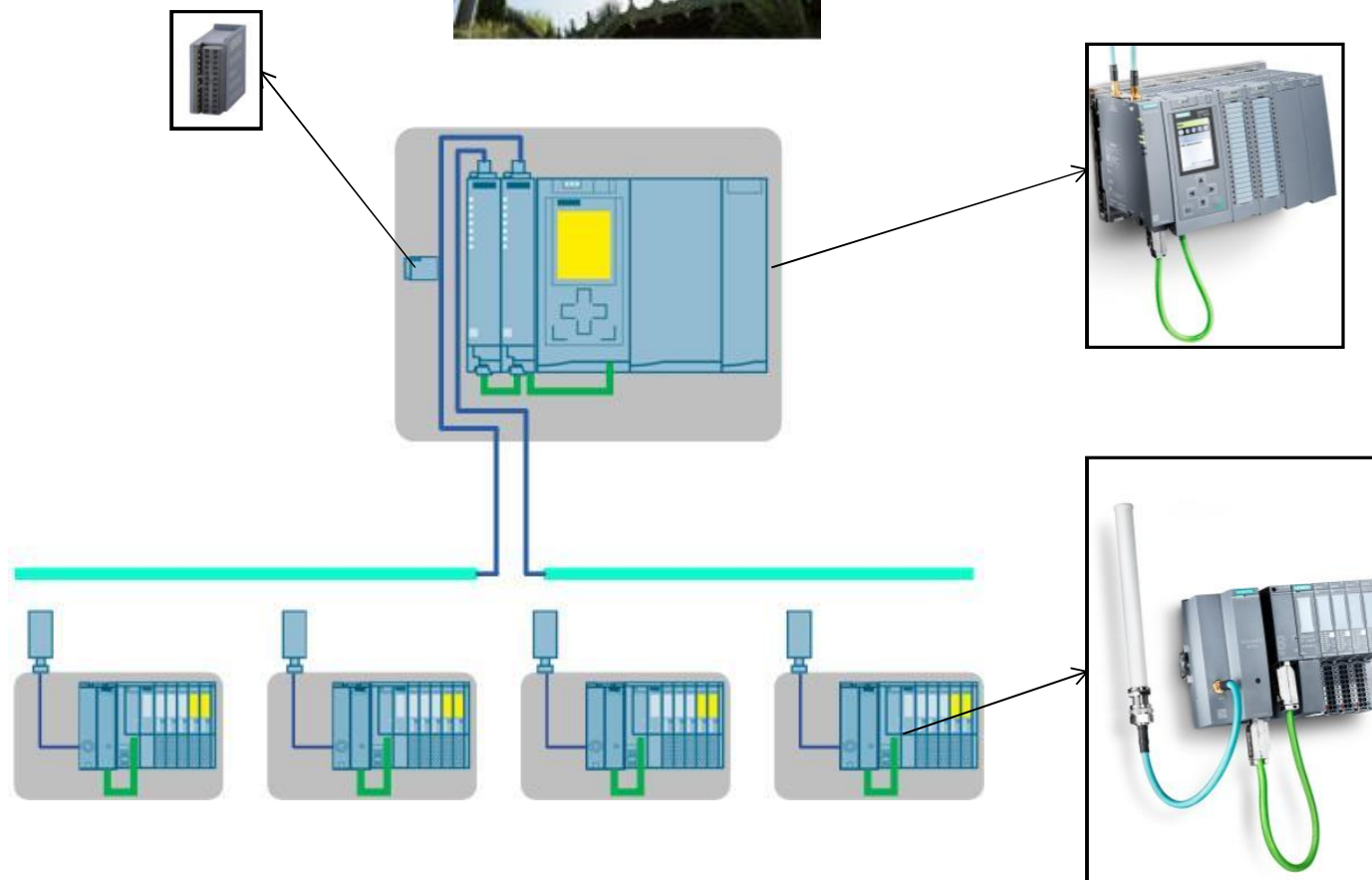
- Technology / portfolio
- **Use cases**

Use case: Overhead monorail

SCALANCE W722-1 RJ45 & W774-1 RJ45 with RCoax



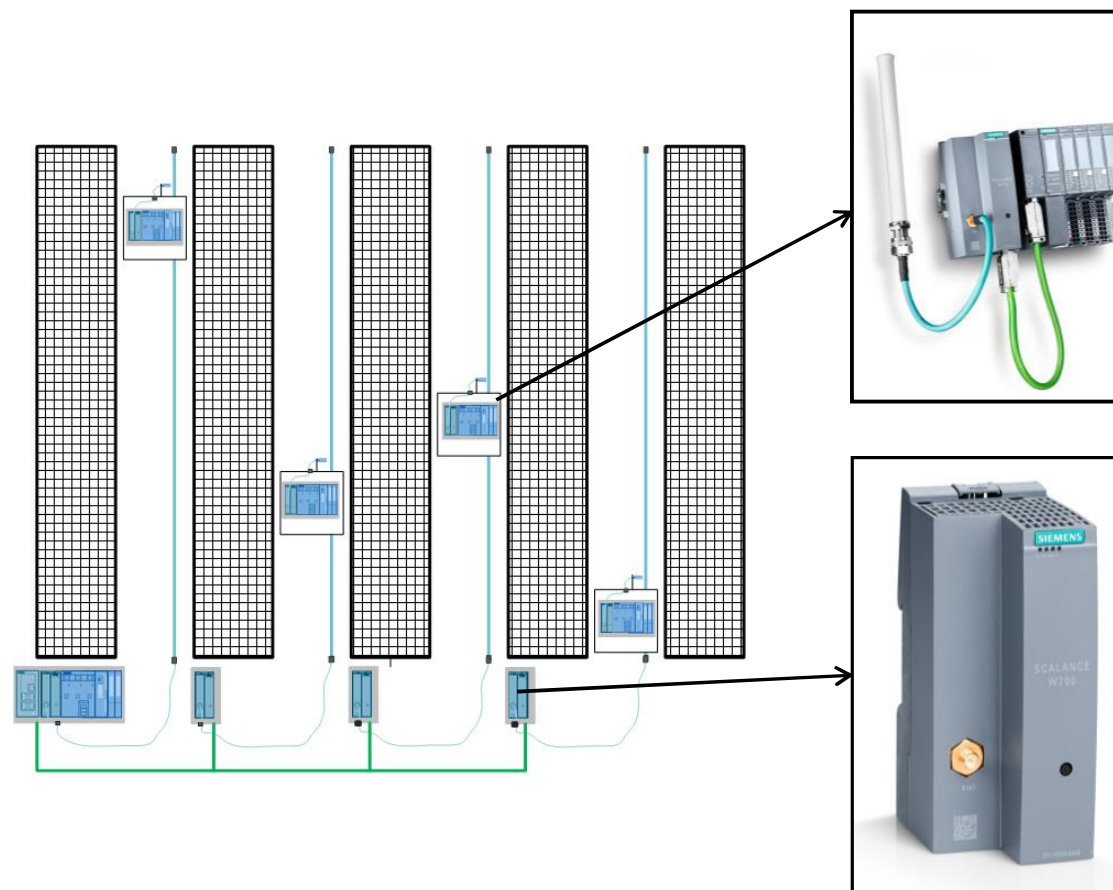
- The new SCALANCE W devices with their compact design are ideally suited for use with overhead monorails
- With iPCF, the deterministic response and fast roaming required for PROFINET IO can be guaranteed
- At the client end the W722-1 RJ45 is equipped directly with iFeatures
- At the AP end, a SCALANCE W774-1 RJ45 with KEY-PLUG is used



Use case: Storage and retrieval machines in high bay warehouses

SCALANCE W721-1 RJ45 & W761-1 RJ45 with RCoax

- Wireless S7 communication without wear and tear between a central PLC and a storage and retrieval machine
- As an access point, the SCALANCE W761-1 RJ45 feeds into individual RCoax segments laid in different aisles
- Use of 2.4 GHz or 5 GHz possible
- Can be expanded with video data thanks to the higher bandwidths (150 Mbps) by using the current wireless standard IEEE 802.11n



SCALANCE W 700

