

# cipunet®

## SmartGrid Solutions

by Josef Lehmann

Overview over communication setups using PPC and Cipunet communication solutions for **Distribution Automation** and **Automatic Meter Reading**



# Product Overview Narrowband PLC Modems

Technology	Type	Description	Status	OEM
Narrowband PLC Modems	CMM75	Raw data rate of 2.4kbps. Offering RS232 and RS485 2/4 wire. Available with internal and prepared for external coupler	Production	Cipunet
	CMM1000	Raw data rate up to 240kbps. Offering RJ45, RS232 and RS485 2/4 wire. Available with internal and prepared for external coupler. G3 mode available	Production	Cipunet
	CMM2500	Raw data rate up to 1Mbps. Offering RJ45 interface. Available for external coupler. Optimized for transparent Ethernet transmission (Ethernet bridge)	Production	Cipunet

# Product Overview Broadband PLC Modems

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Technology	Type	Description	Status	OEM
Broadband PLC Modems of type Aranuka	LGW200	Gateway with wireless M-Bus and Ethernet. Raw Data Rate up to 45 Mbps.	Production	PPC AG
	MV200	Gateway for external couplers. Raw Data Rate up to 45 Mbps.	Production	PPC AG
	LR200	Repeater with Ethernet Interface, Raw Data Rate up to 45 Mbps.	Production	PPC AG
	LH200	Head-End with Ethernet Interface, Speed up to 45Mbps.	Production	PPC AG

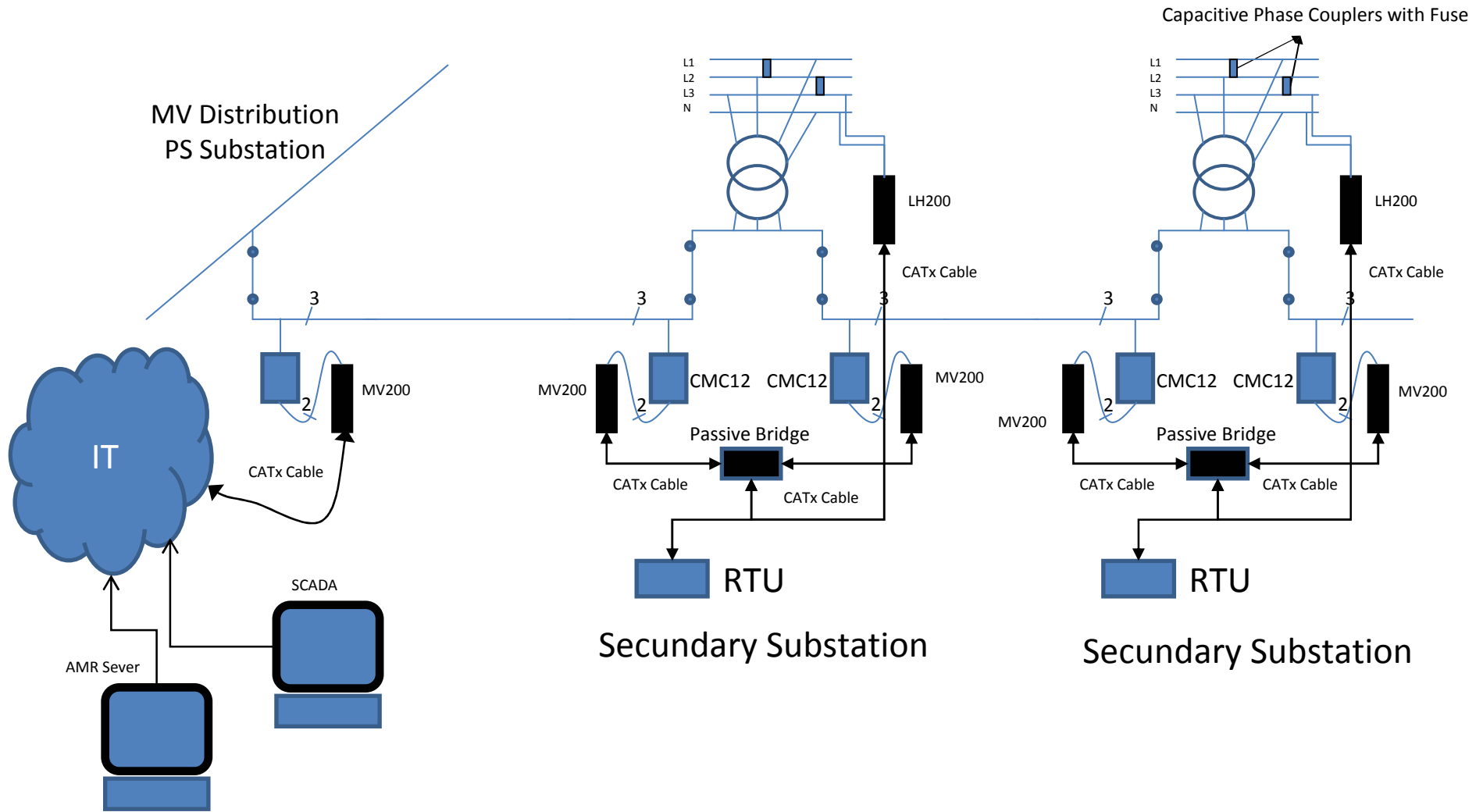
# Product Overview Gateways and Signal converters

Technology	Type	Description	Status	OEM
Gateways	CMM6380	Intelligent Note Controller working as data concentrator and protocol converter. Ideal use for IP driven reading of Elster, L&G....Meters Provides interface to RS232, RS485 2/4 wire (Insulated), radio, GSM, GPRS, and 3G Networks.	Production	Cipunet
	LGW200DR	Transparent Gateway between Wireless M-Bus, 2 and 4 wire RS485.	Production	PPC AG
	MIU 1000	Interface between RS485 2/4 wire and 2 * RS232 multidrop.	Production	Cipunet

# Product Overview Medium Voltage and Low Voltage Signal couplers

Technology	Type	Description	Status	OEM
Signal Couplers	CMC100	Intrusive Inductive Screen coupler for inductive signal coupling up to 10 MHz.	Production	Cipunet
	CMC01	Capacitive coupling network for industrial applications with a rated voltage of 1500VACRMS. The system has integrated fuses and is available for BB and NB systems.	On Demand	Cipunet
	CMC12	Capacitive medium voltage 12kVACRMS coupler, available for BB PLC and NB PLC. The couplers are KEMA certified.	Production	Cipunet
	CMC24	Capacitive medium voltage 24kVACRMS coupler, available for BB PLC and NB PLC. The couplers are KEMA certified.	Production	Cipunet
	CMCLV	Capacitive 400VACRMS coupler.	On Demand	Cipunet

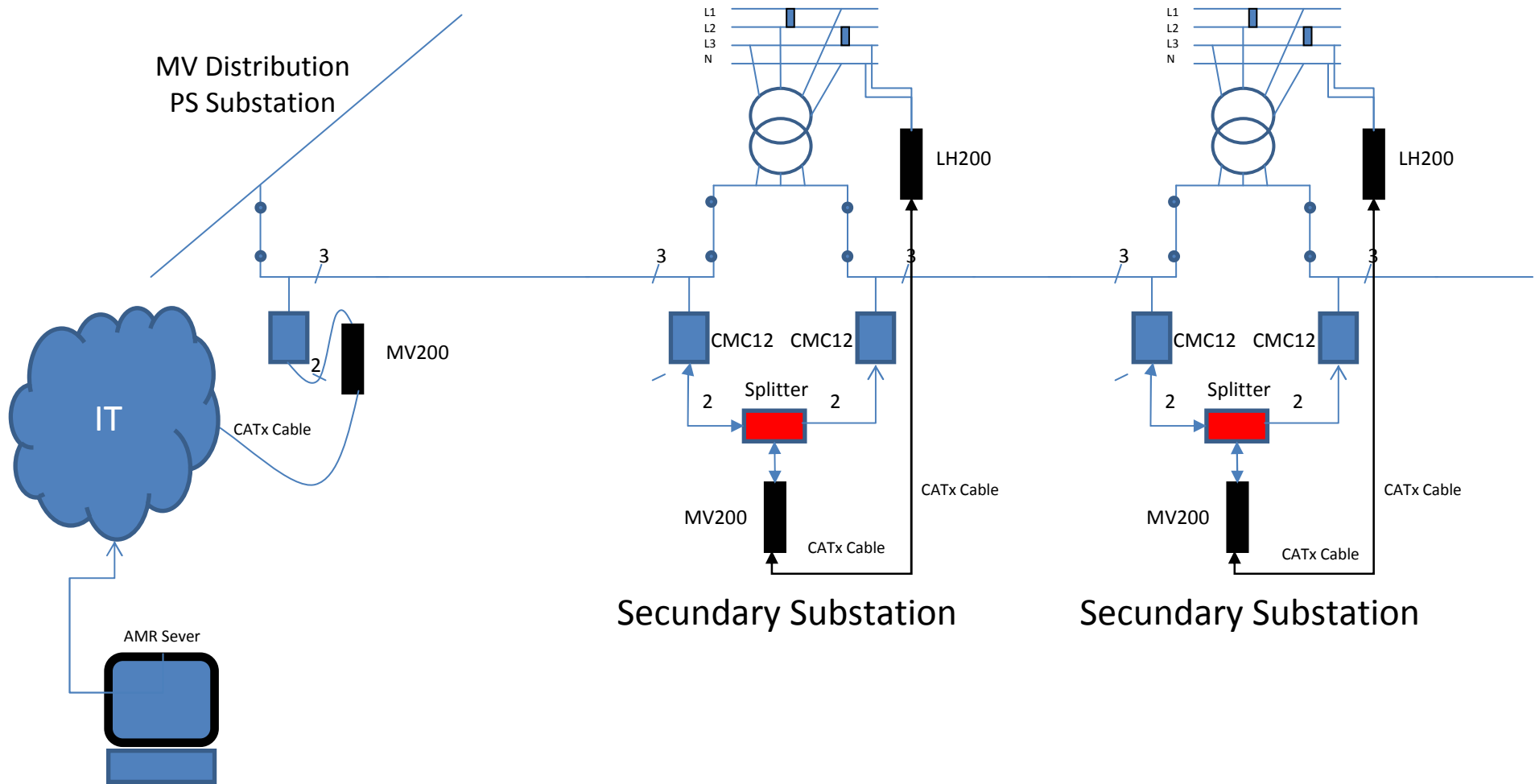
# MV/LV BB PLC System independent of system configuration, very robust for distribution automation and meter reading



Communications the key for SmartGrid



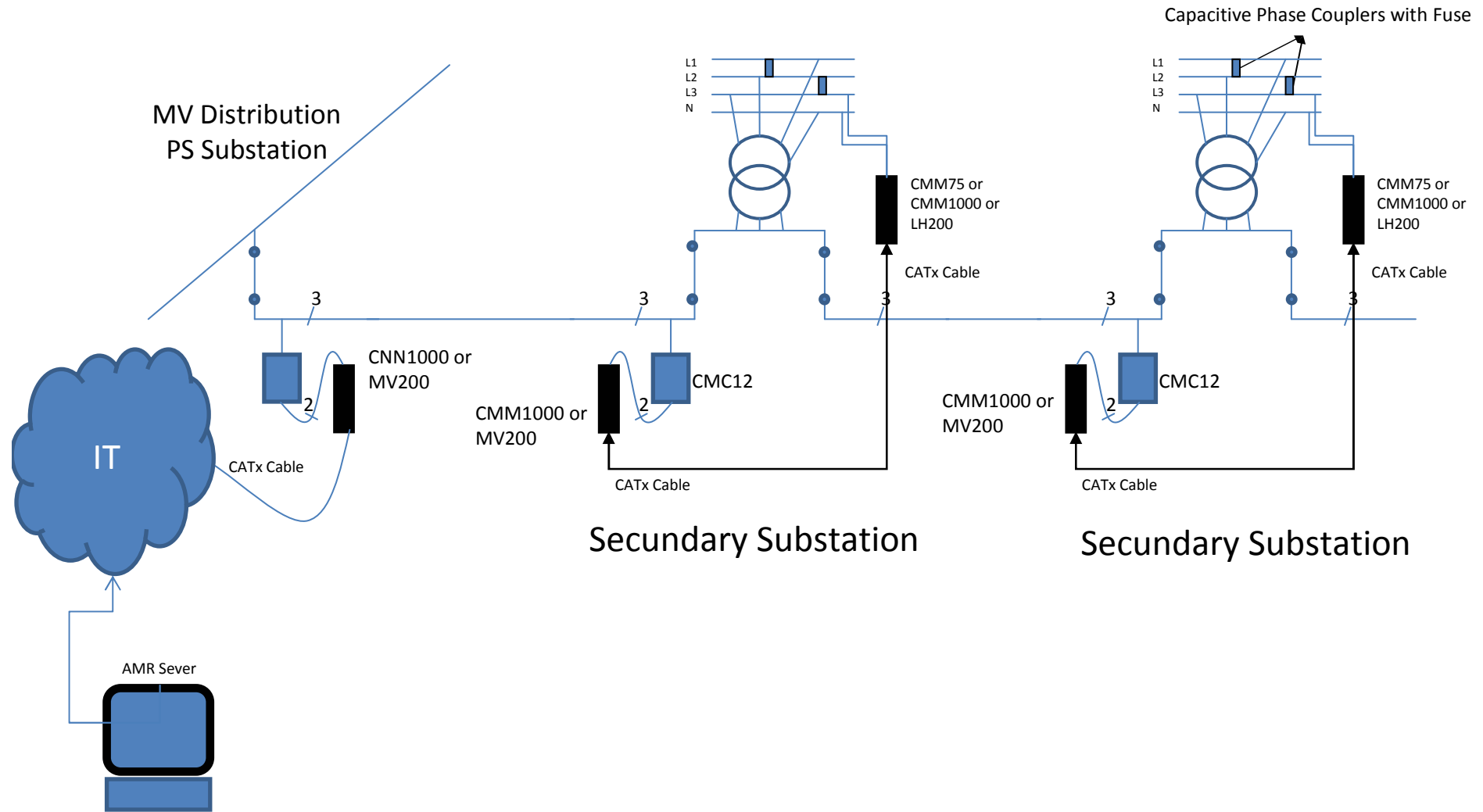
# MV/LV BB PLC System for meter reading in dynamic network



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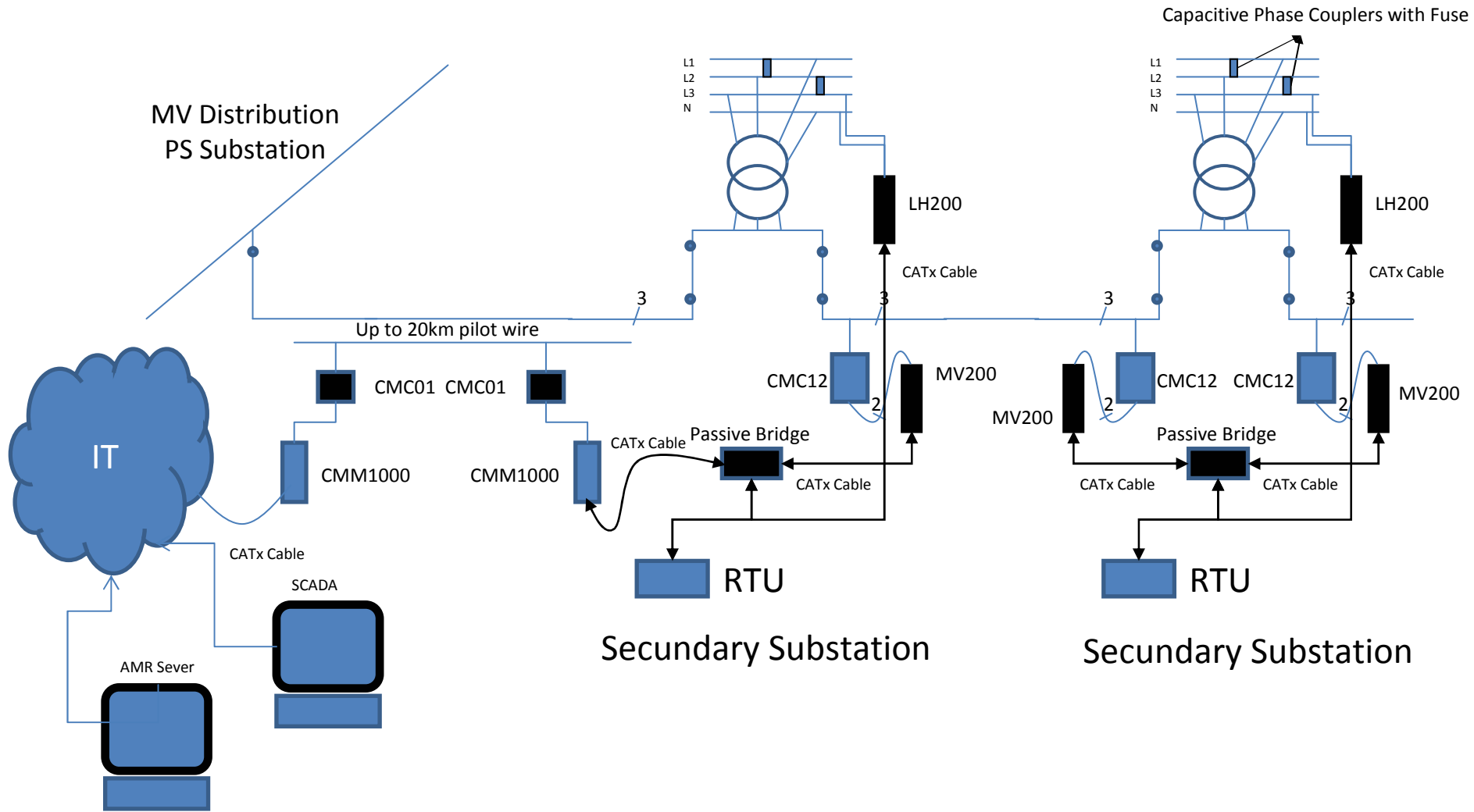


# MV/LV BB/NB PLC System for pure meter reading in static network





# MV/LV BB NB PLC, Pilot wire System independant of system configuration, very robust for distribution automation and meter reading

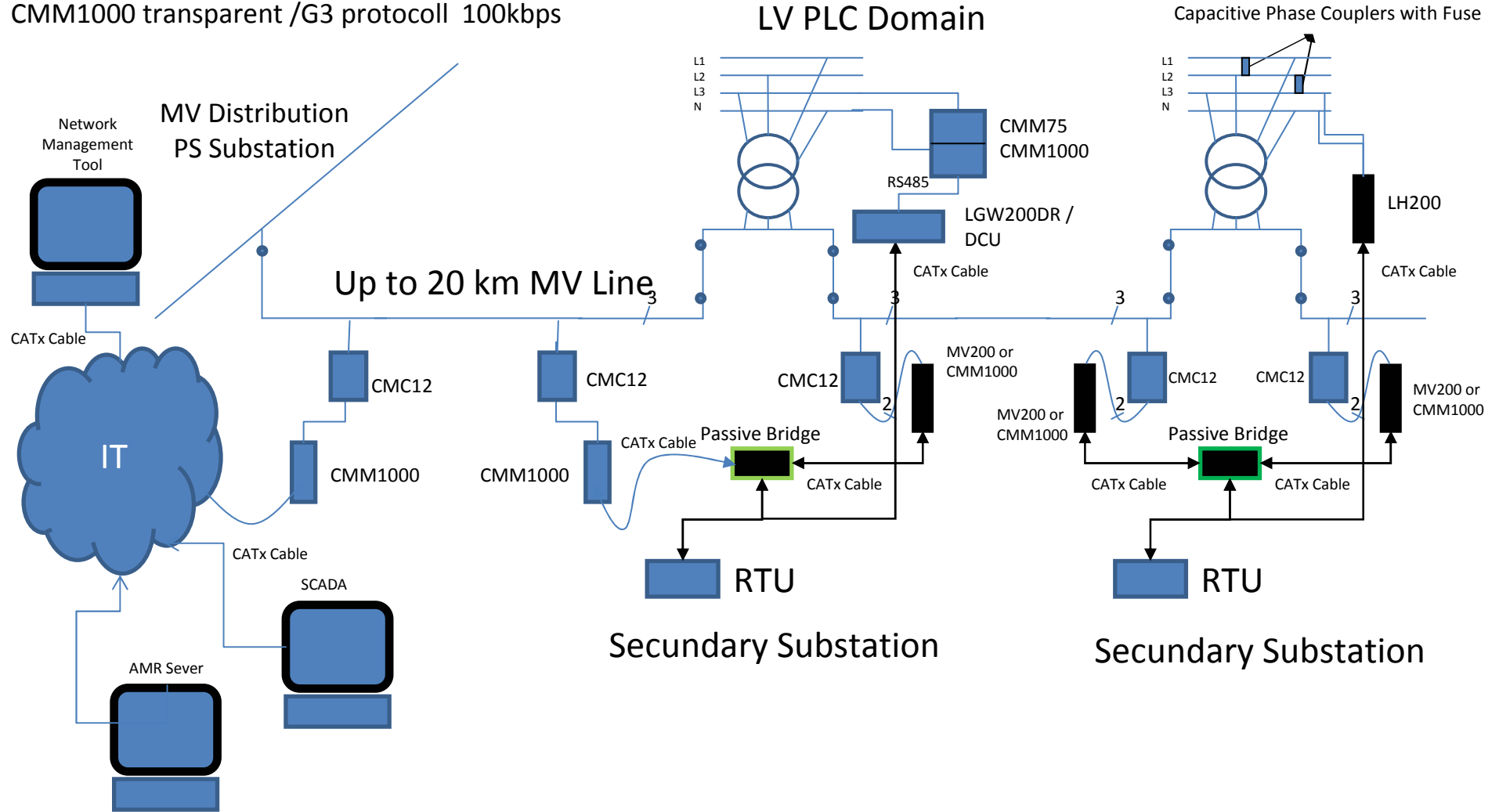


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# MV/LV BB NB PLC, very robust for distribution automation and LV PLC based meter reading

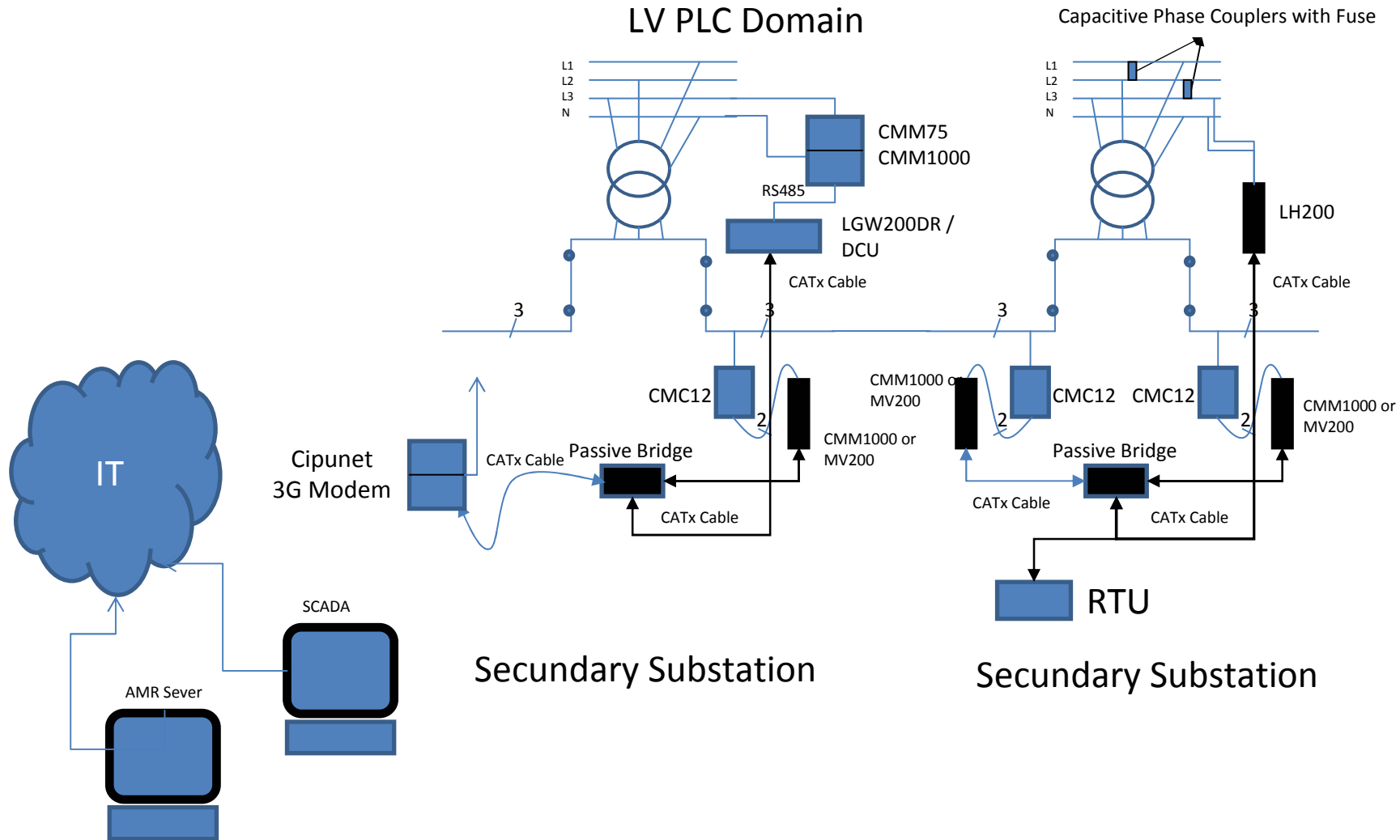
CMM1000 transparent /G3 protocol 100kbps



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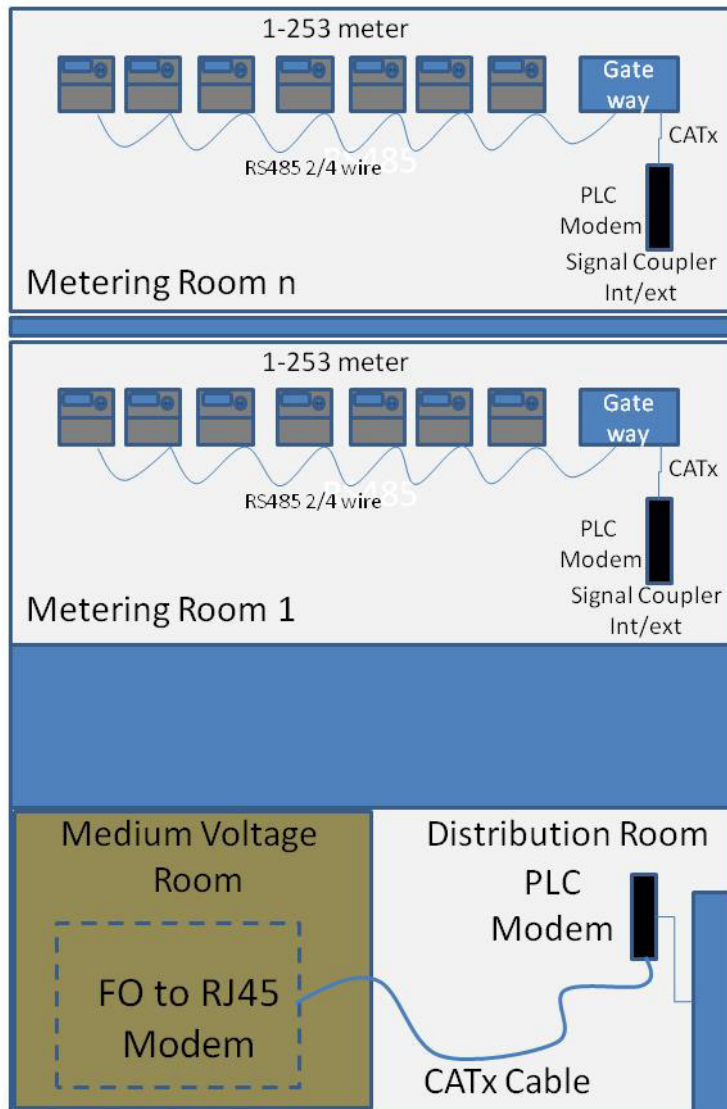
# MV/LV BB PLC, 3G independent of system configuration, very robust for distribution automation and meter reading



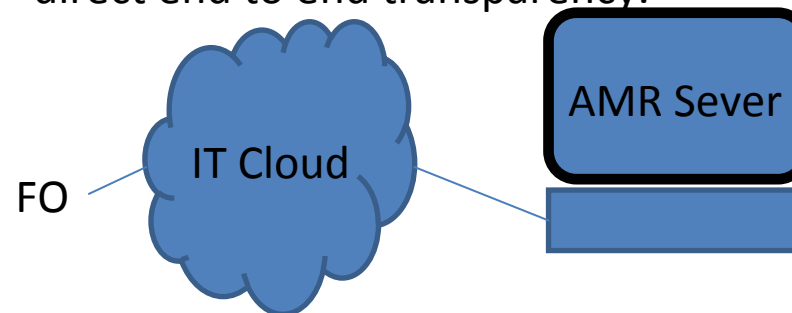
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## System Implementation within high rising building

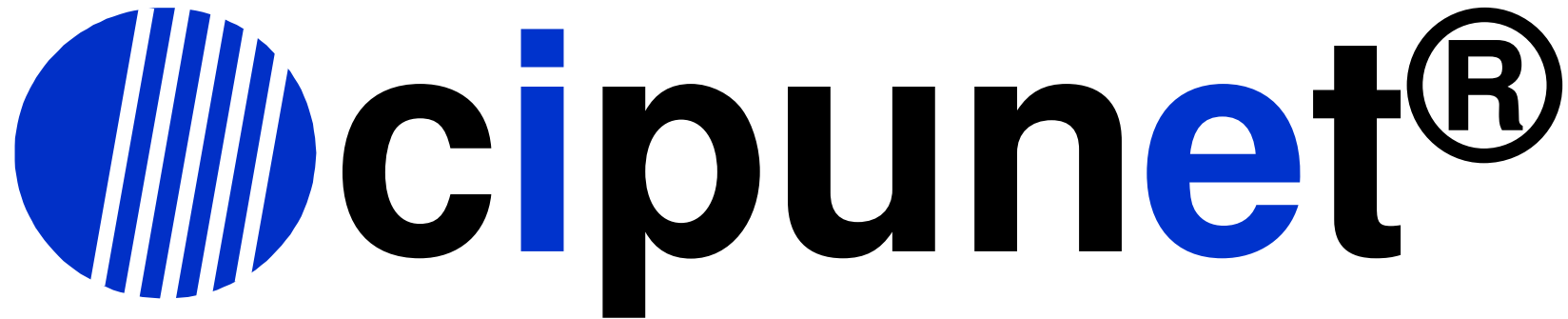


- Every PLC Modem can work as Repeater.
- PLC Modems for internal and external couplers are provided.
- All Communication is fully end to end transparent.
- Data encryption on demand for public lines if meters are not encrypted by itself.
- Speed related to used technology kb to Mb.
- Gateway
  - LGW200DR Transparent Metering Gateway.
  - DCU transparent and internal intelligence.
- Coupling has to be optimized dedicated phase couplers are connection kits are available.
- System can work with every AMR Server due to direct end to end transparency.



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