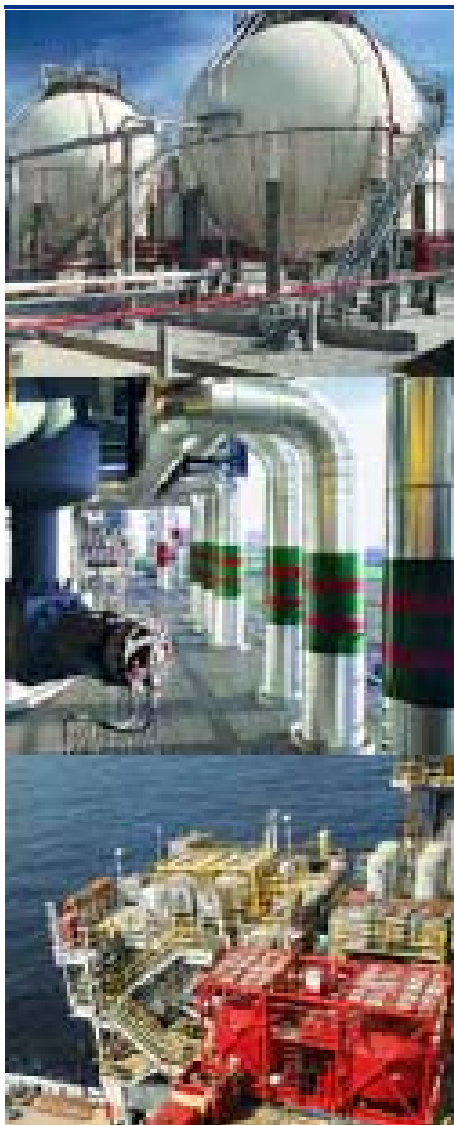




# Remote HMI next generation





# Remote HMI/ Remote PC general definition



- > What are RemoteHMIs / RemotePCs?
  - PC and transmission unit in safe area –  
display unit (monitor) and operation  
(keyboard, mouse, etc.) in hazardous area  
or industrial area





# Remote HMI different technologies



- > KVM (Keyboard, Video, Mouse)
  - The transmission unit (KVM box) is connected to the keyboard (K), graphics interfaces (V) and mouse (M) at the PC.
  - A data cable is used for the connection to the display and operation unit



- > Thin Client Technologies
  - Usage of modern Ethernet IP network capabilities
  - Many different protocols on the market (RDP, VNC, Citrix, ...)





# Remote HMI KVM Classic



## > Classic configuration

- Can replace old systems like ET-518
- Digital data transmission, better display quality, independent from distance
- Flexible data transmission: CAT7 up to 150m (Ethernet up to 100m), fiber optic up to 10 km
- Point-to-Point connection from one PC to one Remote HMI
- Support of modern widescreen formats (16:9, 16:10), 22" and 24"
- Touch Screen (Standard with Exicom, Option with T-Series)



**DISPLAY SIZES**  
19"/22"/24"



**VARIOUS DISPLAY RESOLUTIONS**  
1280X1024 / 1680X1050 / FULL HD  
ASPECT RATIO 4:3 / 16:9 / 16:10



**INGRESS PROTECTION**  
STAINLESS STEEL FOR HARSH ENVIRONMENTS,  
CUSTOM ENCLOSURES TO YOUR SPECIFICATIONS.



**ADVANCED DATA  
TRANSFER TECHNOLOGY**  
DIGITAL KVM TECHNOLOGY



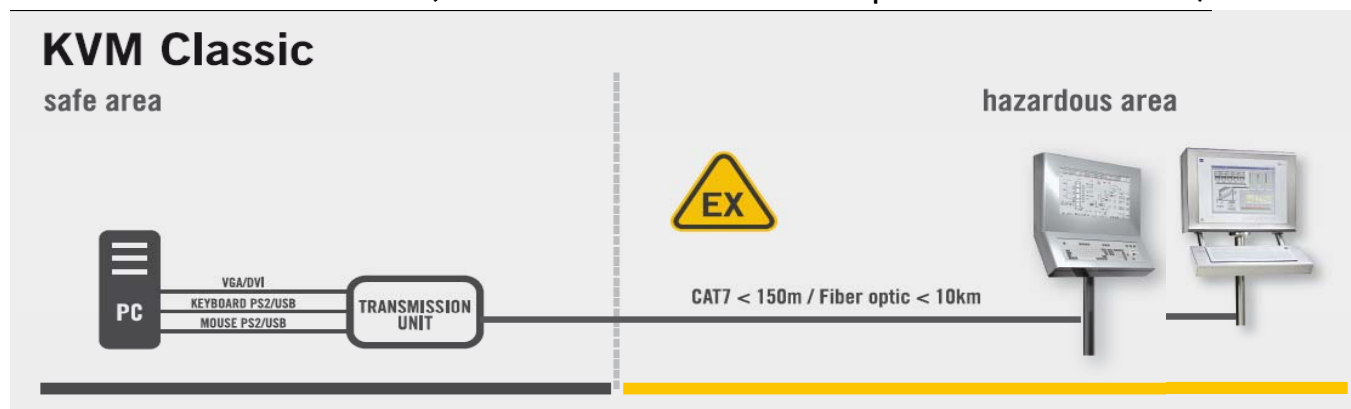
**LED TECHNOLOGY**  
16.7 MILLION COLORS  
AMAZINGLY BRILLIANT.



**ECO-FRIENDLY**  
MERCURY, HALOGEN, AND LEAD-FREE  
VERY LOW POWER CONSUMPTION.

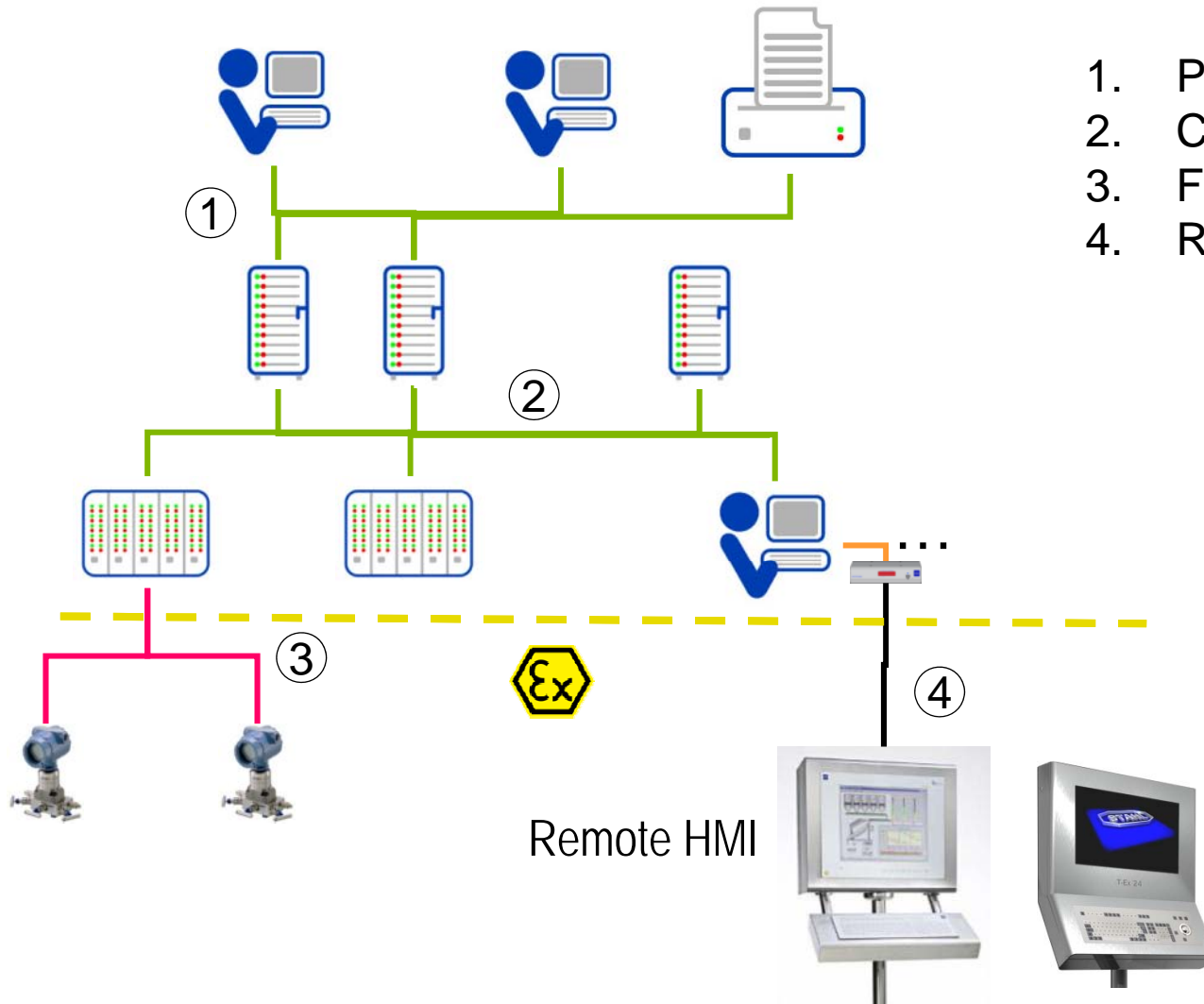


**CUSTOMER SPECIFIC  
SOLUTIONS**





# DCS System with Local Operation KVM-Classice



1. Plant LAN
2. Control network
3. Fieldbus
4. Remote HMI

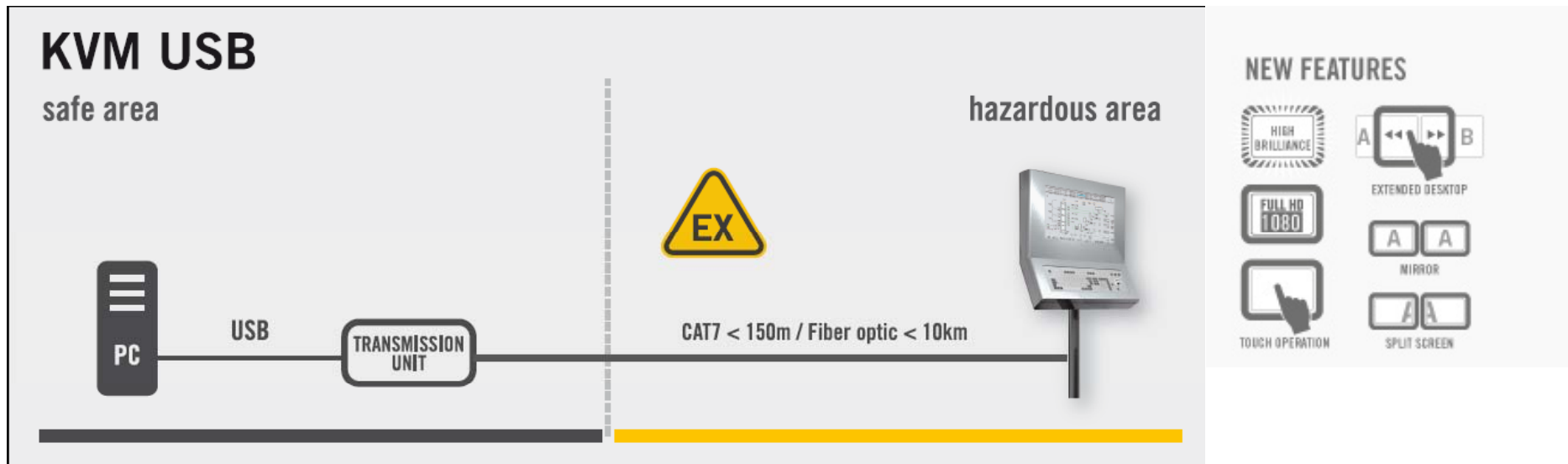


# Remote HMI KVM-USB



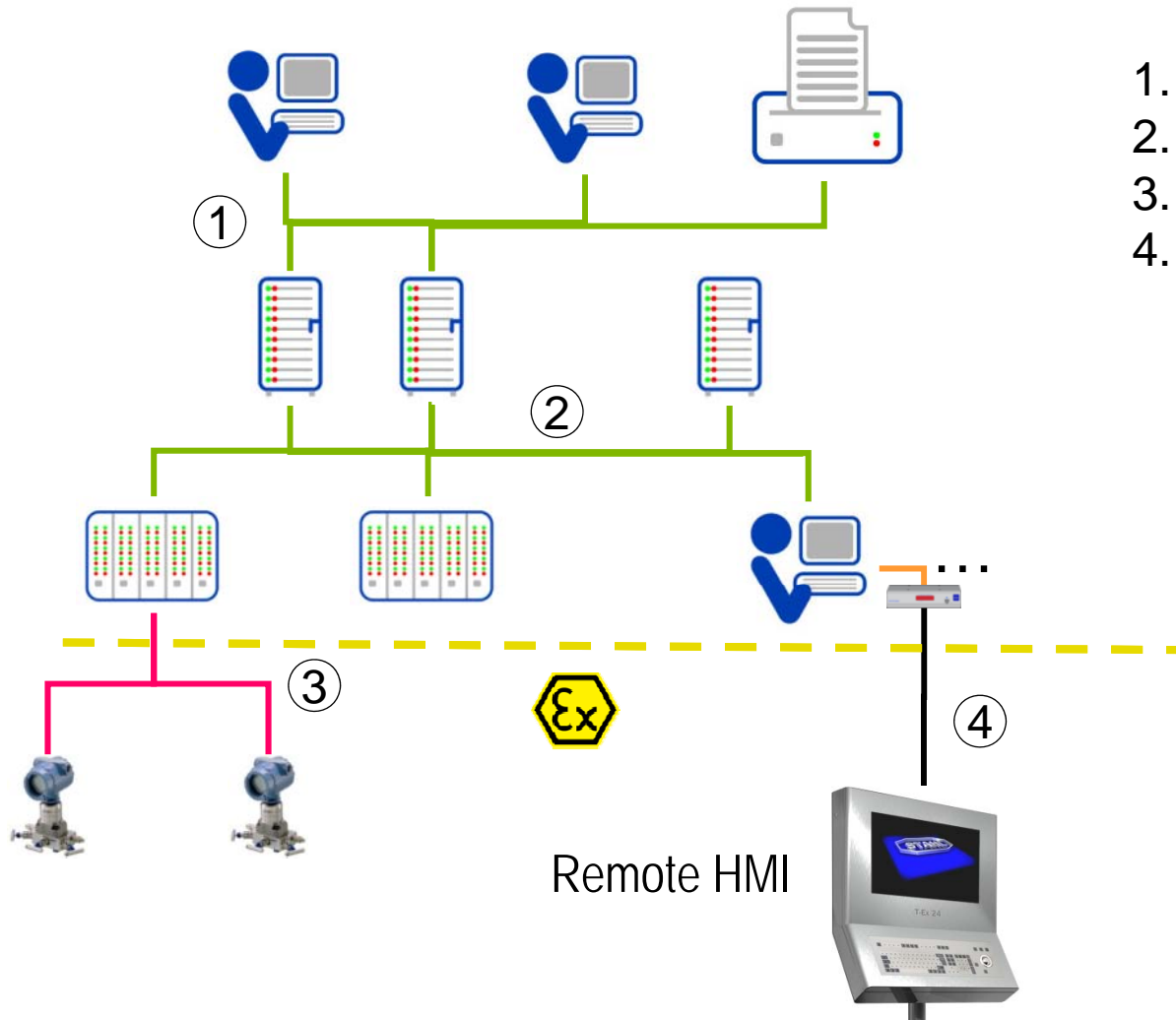
## > KVM-USB

- Use of enhanced Windows functionality like Extended Desktop or Clone Mode
- Digital data transmission, better display quality, independent from distance
- Flexible data transmission: CAT7 up to 150m (Ethernet up to 100m), fiber optic up to 10 km
- Point-to-Point connection from one PC to one Remote HMI
- Extremely fast data transmission
- Support of modern widescreen formats (16:9, 16:10), 22" and 24"





# DCS System with Local Operation KVM-USB



1. Plant LAN
2. Control network
3. Fieldbus
4. Remote HMI

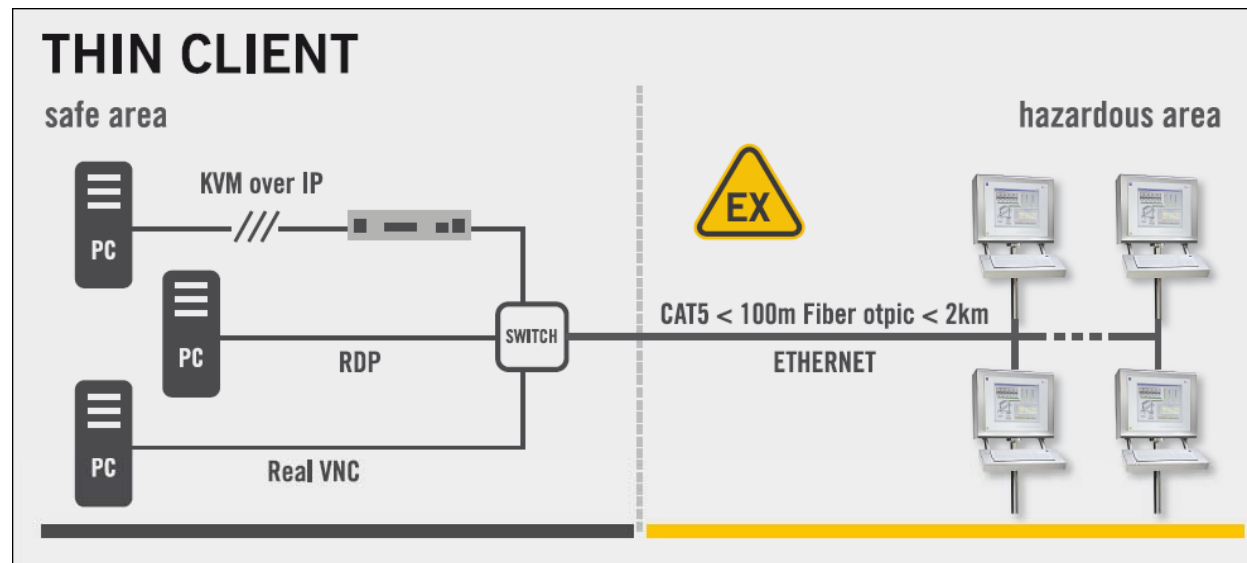


# Remote HMI ThinClient und KVM over IP



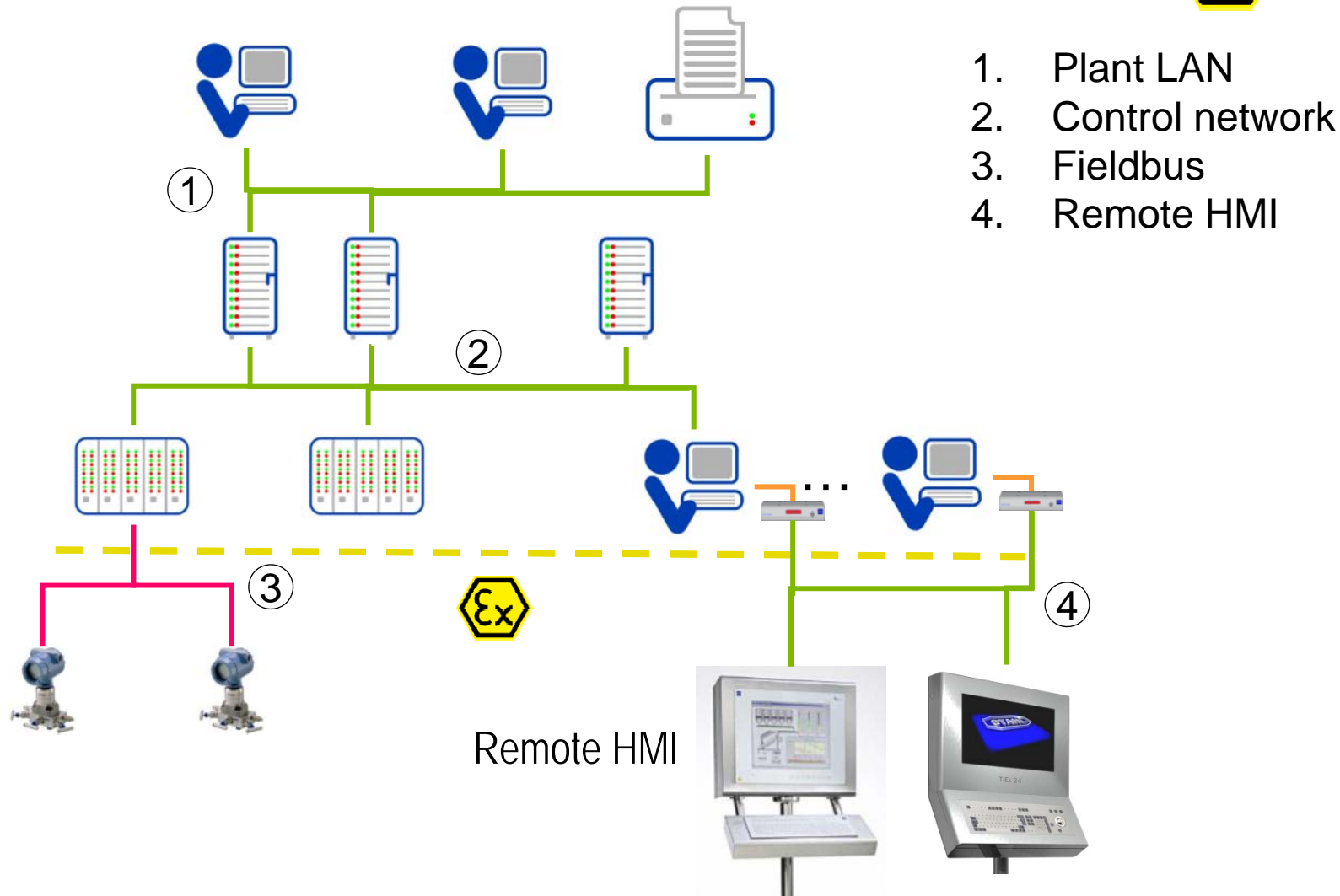
## > The future option

- Access from one or more Remote Systems to one or more PCs
- Remote PC network
- Access to a server via RDP
- Remote control of hybrid automation systems (SCADA, DCS, QM, ERP,...)



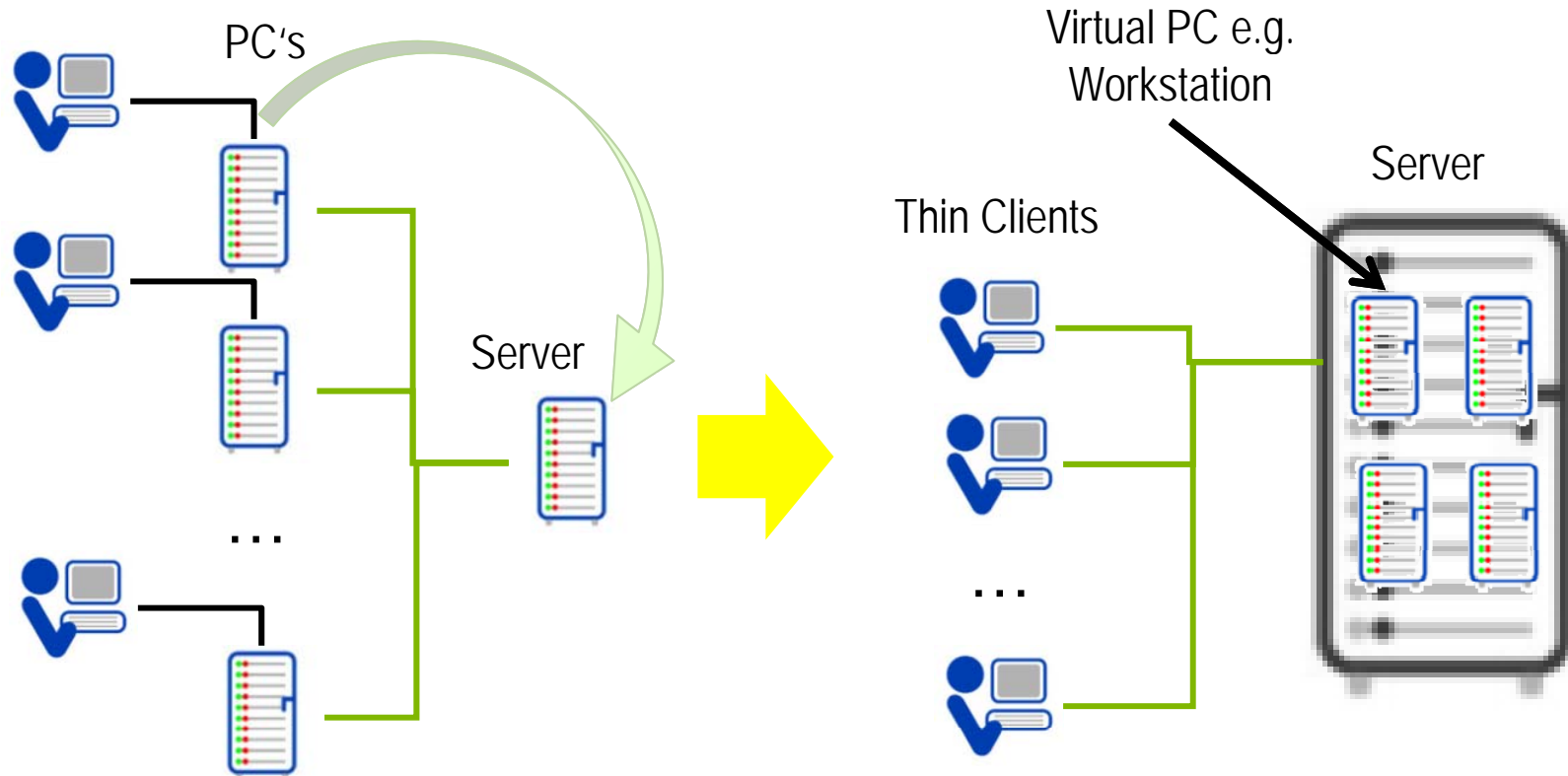


# DCS System with Local Operation KVM-over-IP



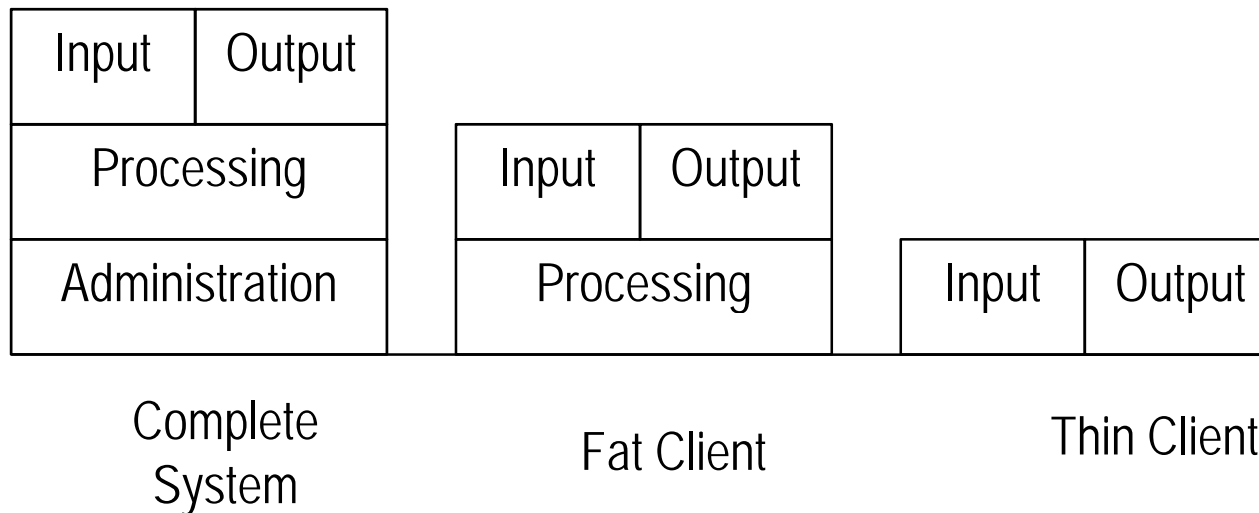


# Changes in Application Structures





# Thin Client definition and distinguishing features



Open HMI/ Panel PC

Remote Monitor

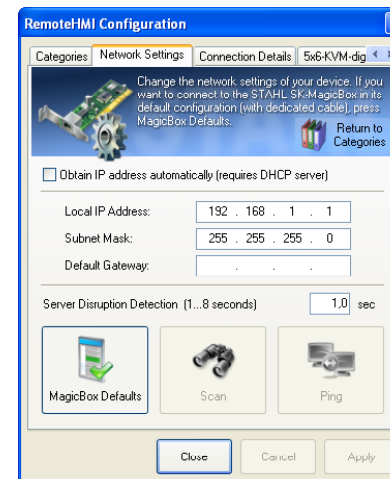
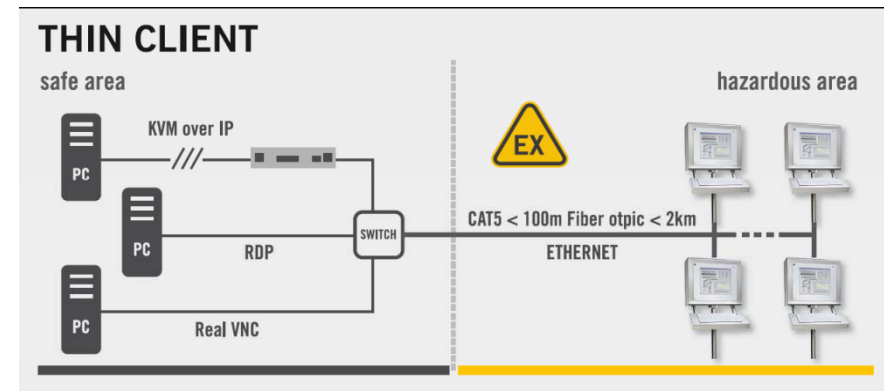
Source: Wikipedia



# Remote HMI Thin Client



- > The Remote Stations can be connected
  - via KVM box
- > as well as Thin-Client
  - via RDP (Remote Desktop Protocol)
  - via VNC (Virtual Network Computing)
- > to PC or server












# Remote Stations








					
Type Zone 1/ 21	ET-536	ET-556	T-EX 19"	T-EX 22"	T-EX 24"
Type Zone 2/ 22	MT-536	MT-556			
Type Non Ex			T-IND 19"	T-IND 22"	T-IND 24"
Display	TFT 15" 4:3	TFT 19" 4:3	TFT 4:3	LED TFT 16:10	LED TFT 16:9
Front panel	Polyester/ optional stainless steel		complete system stainless steel		
Keyboard	8 F-Tasten	8 F-Tasten	Full keyboard		
IP Front / Rear	IP66		IP66		
Resolution	XGA 1024 x 768	SXGA 1280x1024	SXGA 1280x1024	WSXGA 1680 x 1050	HD 1080 1920 x 1080
Keyboard/ Touch	Optional/ Yes		Yes/ Optional		
Weight	17 kg	22kg			



# Remote Stationen



					
Type Zone 1/ 21	ET-536	ET-556	T-EX 19"	T-EX 22"	T-EX 24"
Type Zone 2/ 22	MT-536	MT-556			
Type Non Ex			T-IND 19"	T-IND 22"	T-IND 24"
Front mounting	✓	✓	optional	optional	optional
Field enclosure	optional	optional	✓	✓	✓
GMP	optional	optional	optional	optional	optional
KVM Classic			✓	✓	✓
KVM USB			✓	✓	✓
KVM-over-IP	✓	✓	Pending	Pending	Pending
Thin-Client	✓	✓	Pending	Pending	Pending



# Systematic Variety



## Display and front plates



MT-536



MT-536



ET-556

Stainless steel front



ET-556

Polyester front

## Interfaces

**Ethernet**  
--- Optical fiber, 100BaseFX, Ex op is  
or  
--- Copper 10/100 BaseTx, Ex-e / Ex-nA

**Serial**  
RS-232 / RS-422, Ex-e  
RS-232, Ex-i (optional)  
Wiegand, Ex-i (optional)

## Remote System & Housings



Stand

Elbow upright mounting

Elbow suspended mounting



Heater



Special housing

## Input devices



Keyboards with and without pointing devices



Trackball, joystick



Barcode and RFID readers





# World-wide application in hazardous locations and more



## > ET-Series

- Zone 1, 21, 2, 22: ATEX, GOST-R  
(i.V: INMETRO, KTL , IECEX)
- Class I Div 2: UL (Dokumentation)
- Maritime: DNV

## > MT-Series

- Zone 2, 22: ATEX, GOST-R  
(i.V: INMETRO, KTL , IECEX)
- Class I Div 2: UL (Dokumentation)
- Maritime: DNV

## > T-Ex-Series

- Zone 1, 21, 2, 22 ATEX ,IECEX





# Solution for Yokogawa Centum CS



- > Centum CS Release 3 or higher
- > HIS on Windows 2003 Server
- > LHS1150, LHM1150 "server for remote operation and monitoring function"
- > Number of remote stations depends on the licence model

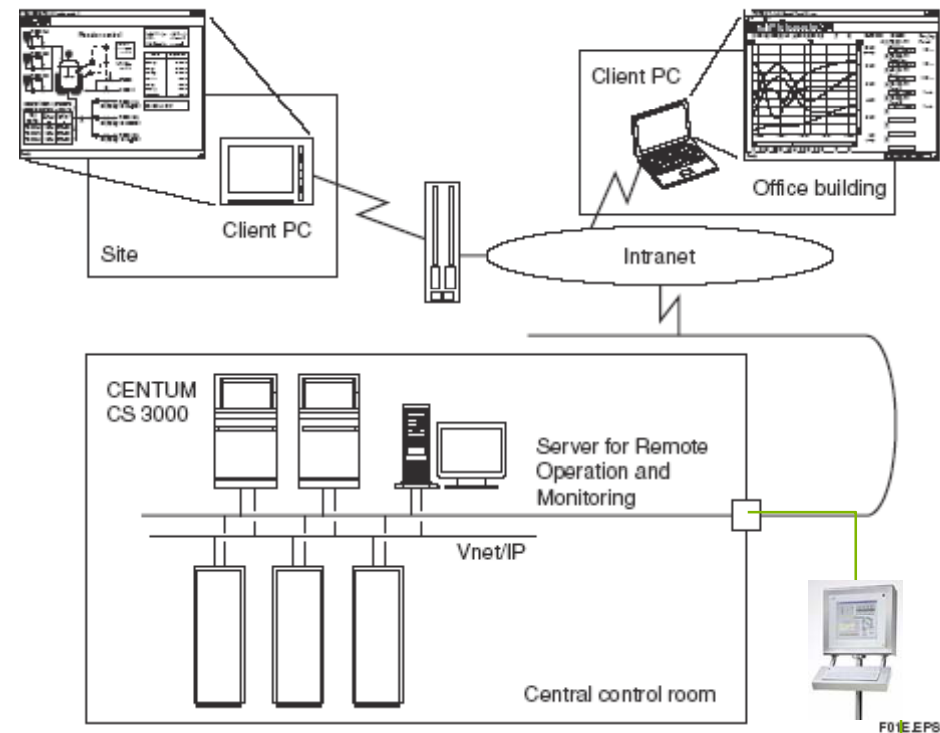


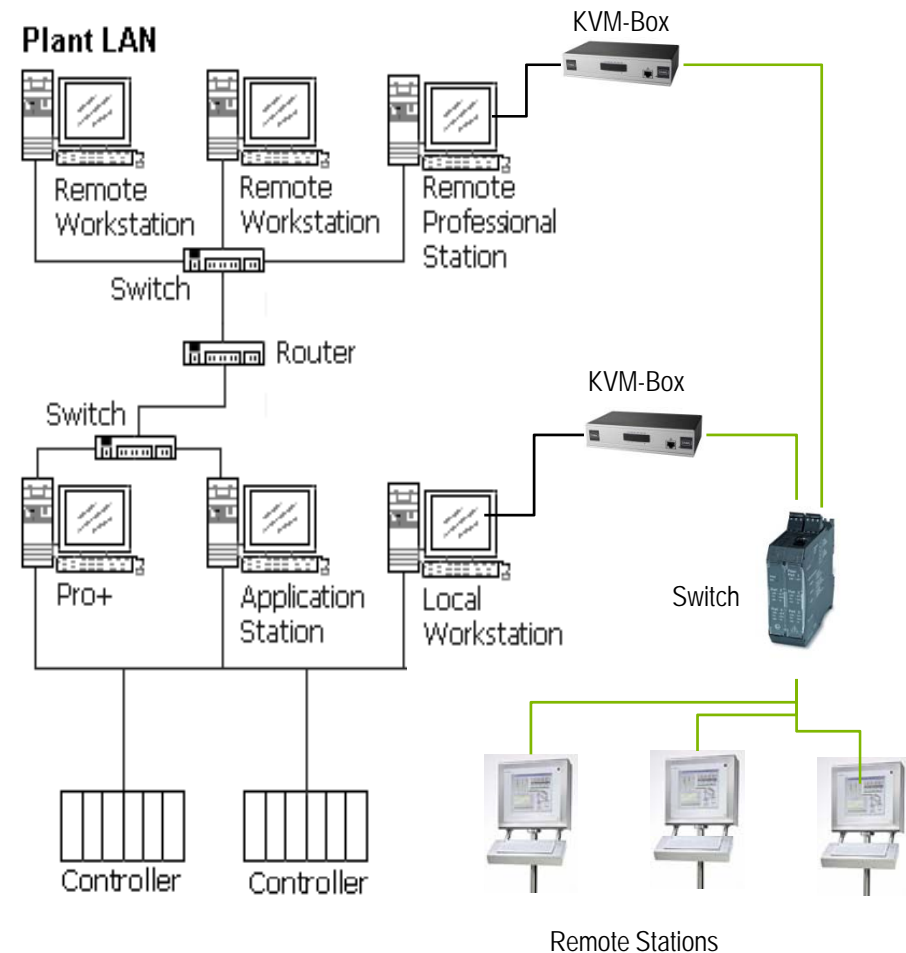
Figure Example of Configuration of Server for Remote Operation and Monitoring Function



# Solution for Emerson DeltaV

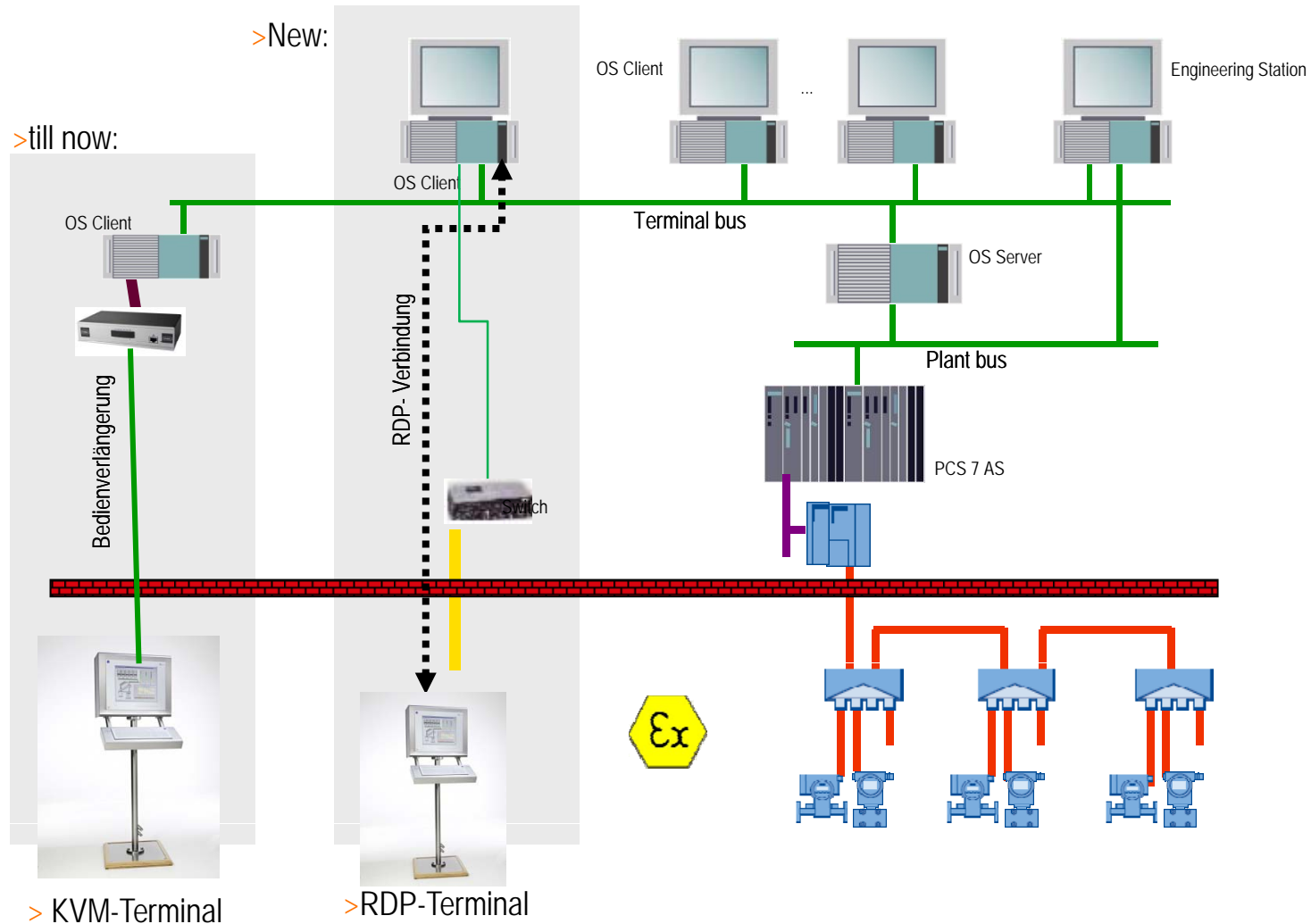


- > Requirement for DeltaV
  - All PC based systems
- > maximum numbers of remote stations
  - unlimited
- > Advantages
  - Number of remote stations independent from node limitation
  - Connection of different network islands (ERP, DeltaV,...)
  - flexible assignment of remote station and workstation





# Solution for Siemens PCS7 bei PCS 7





## ... - Requirements PCS7



- No RDP- connection to OS Servern
- only one RDP- connection per OS Client
- OS Client Operating System is WinXP Professional
- the RDP Terminal has no other connections
- while the RDP-sessionno direct operation of OS Client



# Summary

STAHL

- > STAHL is able to offer all different technologies for a competitive pricing
- > Functional compatible to all automation systems
- > Target markets
  - Operating system for control systems
  - Prozess automation of chemical industry
  - Process automation of pharmaceutical industry including clean rooms



**The worlds best  
Remote HMIs**

## Remote HMI - T-Series and Exicom Series