



Bayer Technology Services

Mastering Technological Complexity
Interdisciplinary. Integral. Innovative.

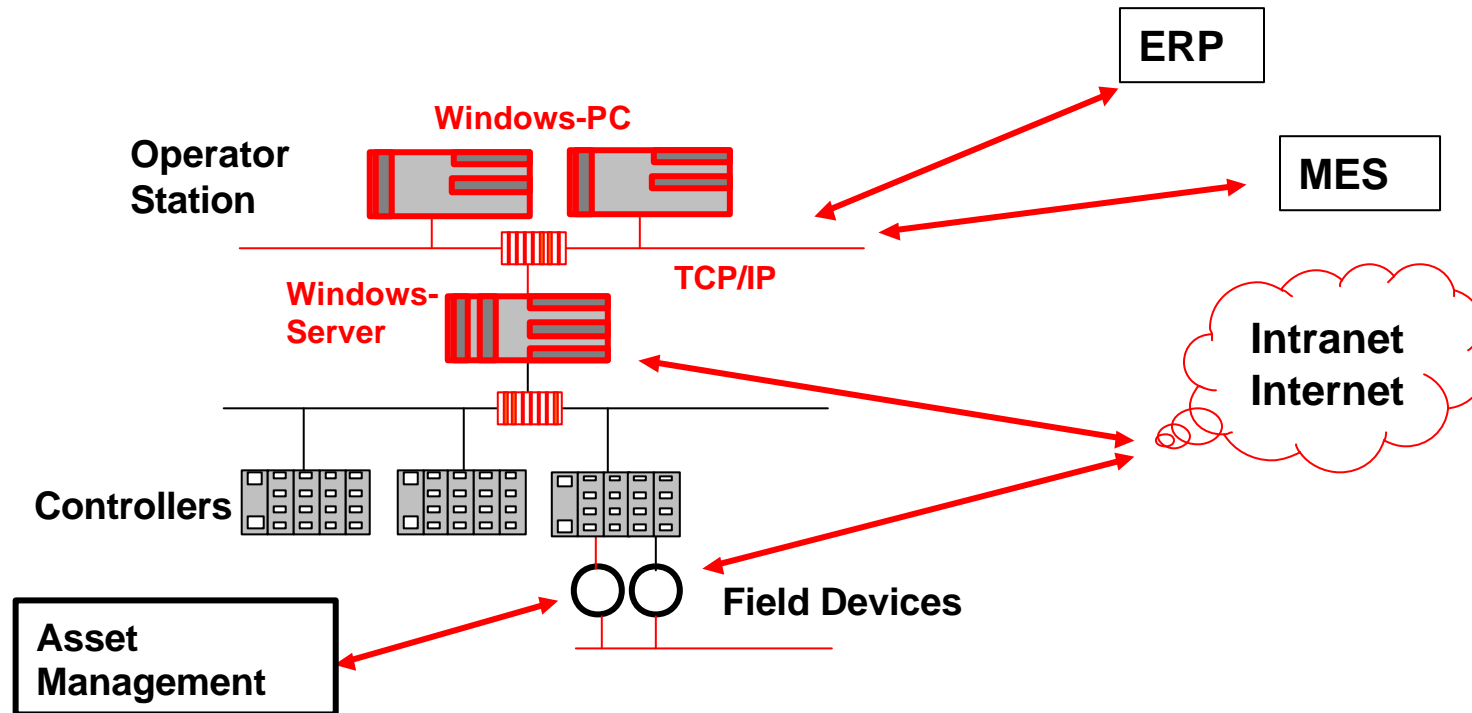
IT-Security for Process Control

Point of View of a System Owner

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- **System owners are concerned about IT-Security:**
 - **Possible threats for the Systems:**
 - ◆ Availability
 - ◆ Integrity
 - ◆ Confidentiality
 - **Uncertainty about costs for counter measures:**
 - ◆ Additional software and devices (Firewalls, IP-Sec.....)
 - ◆ Maintenance
 - ◆ Complexity of the systems is further increasing

Point of View of a System Owner



Typical Process Control System

Red: Devices most likely exposed to threats (today)

Requests of System Owners

➤ Simple, cost efficient solutions

- ◆ IT-Security should be a design objective:
 - “Built in Security”
 - Tailor functionality of the systems to the requirements, e.g.:
 - No Internet access unless required by application
 - Do not leave components in the system, that are not used
e.g.: components of office applications, communication protocols...
 - If possible do not attach devices and components to retroactively solve (structural) problems of the systems.
- ◆ Complexity of the systems should not increase due to necessary counter measures:
 - No connections, that are not needed otherwise (e.g. for updating software or patterns.
 - Minimize additional effort for maintenance of the systems.