

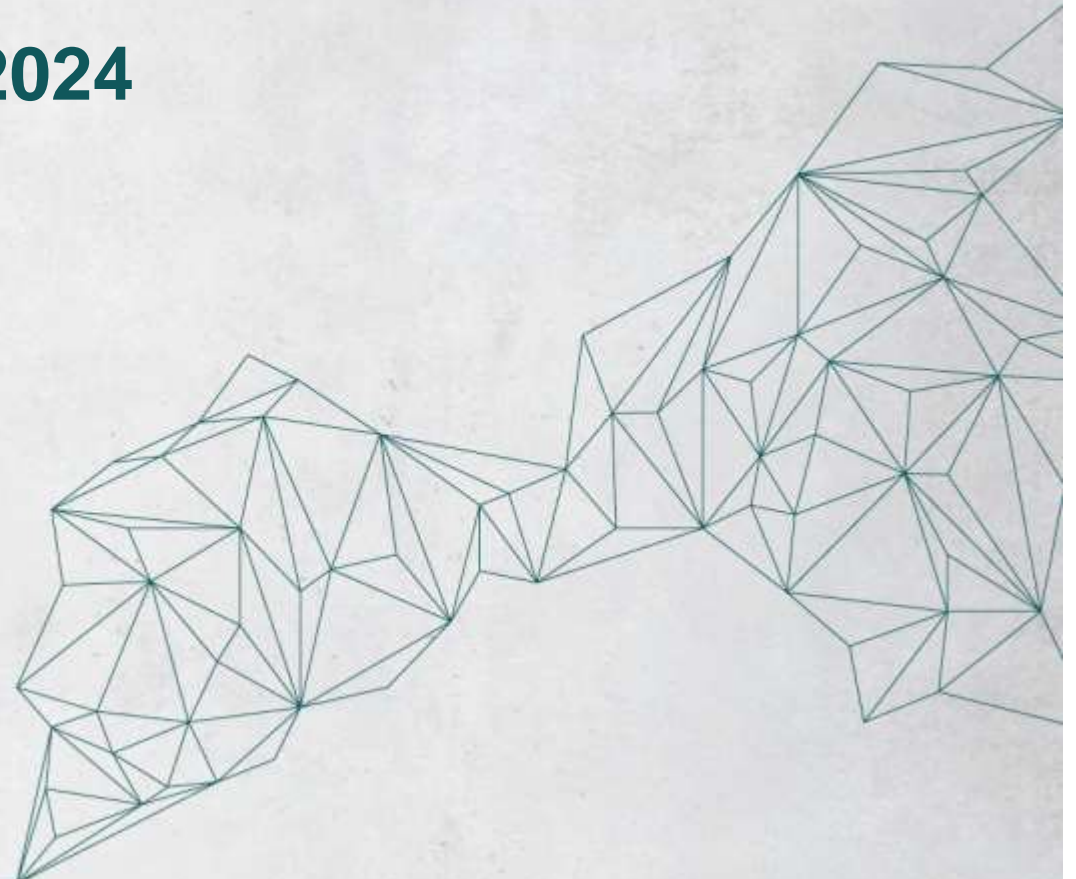
Hall 8 booth 8-516

**CHILLVENTA**

# **Chillventa Specialist Forums 2024**

## **Chillventa Fachforen 2024**

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# Unveiling the Cyber Security challenges in industrial controllers

Stay informed and protected!

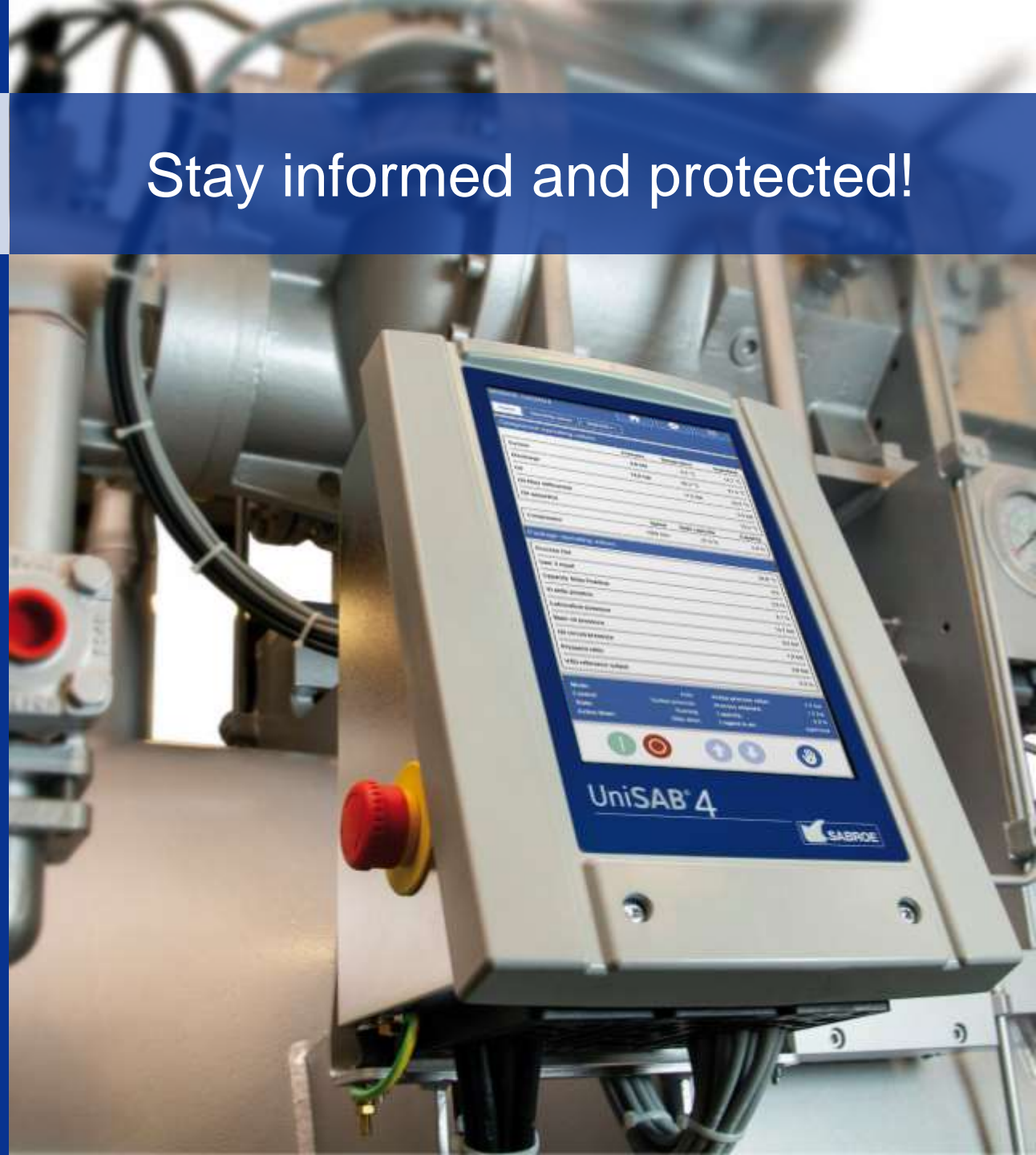
## Agenda

- Cyber Security threat landscape
- Cyber Security in Development and in Operations
- What does great look like?



**Lars Pasgaard**

Product Manager  
IR Product Technology (Sabroe)  
Johnson Controls



# Cyber Security in industrial controllers

## Threat landscape



### Evolving threats

1. Increased frequency
2. Increased sophistication
3. Targeting critical infrastructure
4. Regulatory pressures
5. Human factor
6. Expansion of attack surface



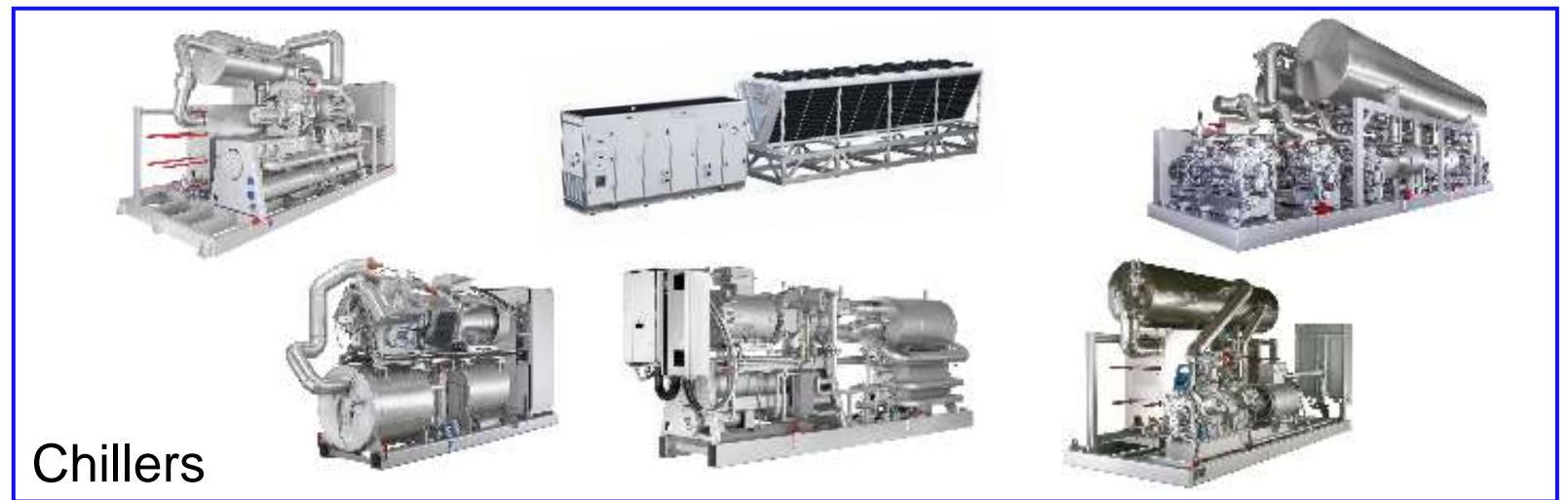
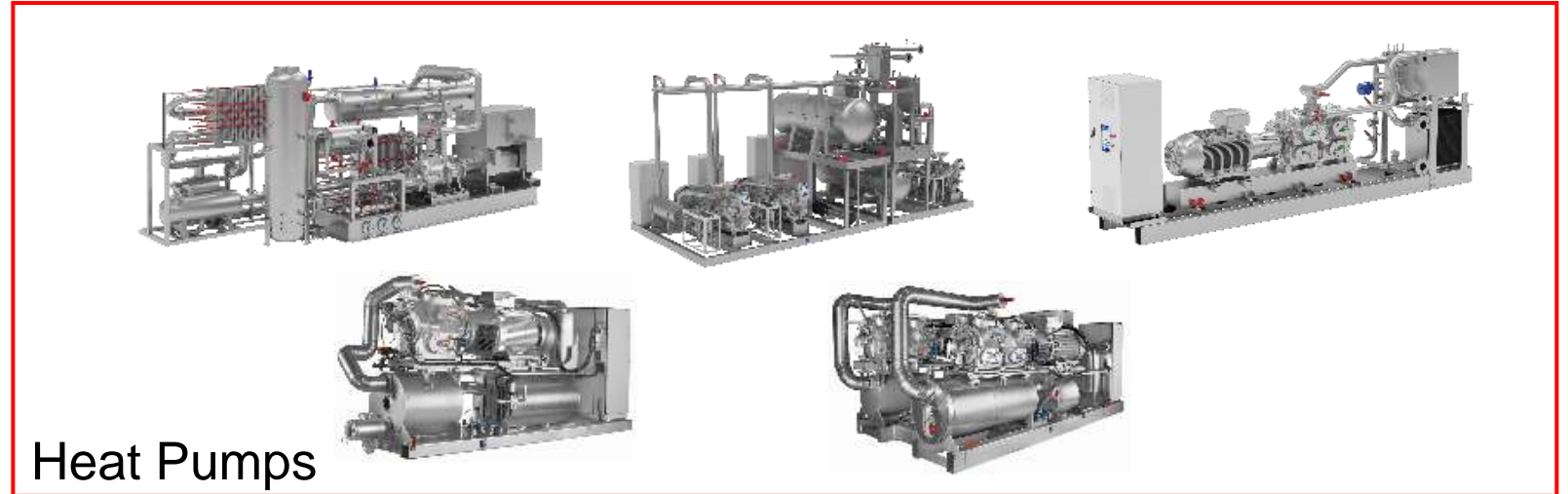
### Risks and consequences

1. Protection of Assets
2. Protection of Critical Infrastructure
3. Operational Continuity
4. Reputation Management
5. Compliance with Regulations
6. Innovation and Competitive Edge
7. Target for Future Attacks



# Cyber Security in industrial controllers

## Why we concern



# Cyber Security in industrial controllers

## Challenges balancing Cyber Security and Operational Continuity



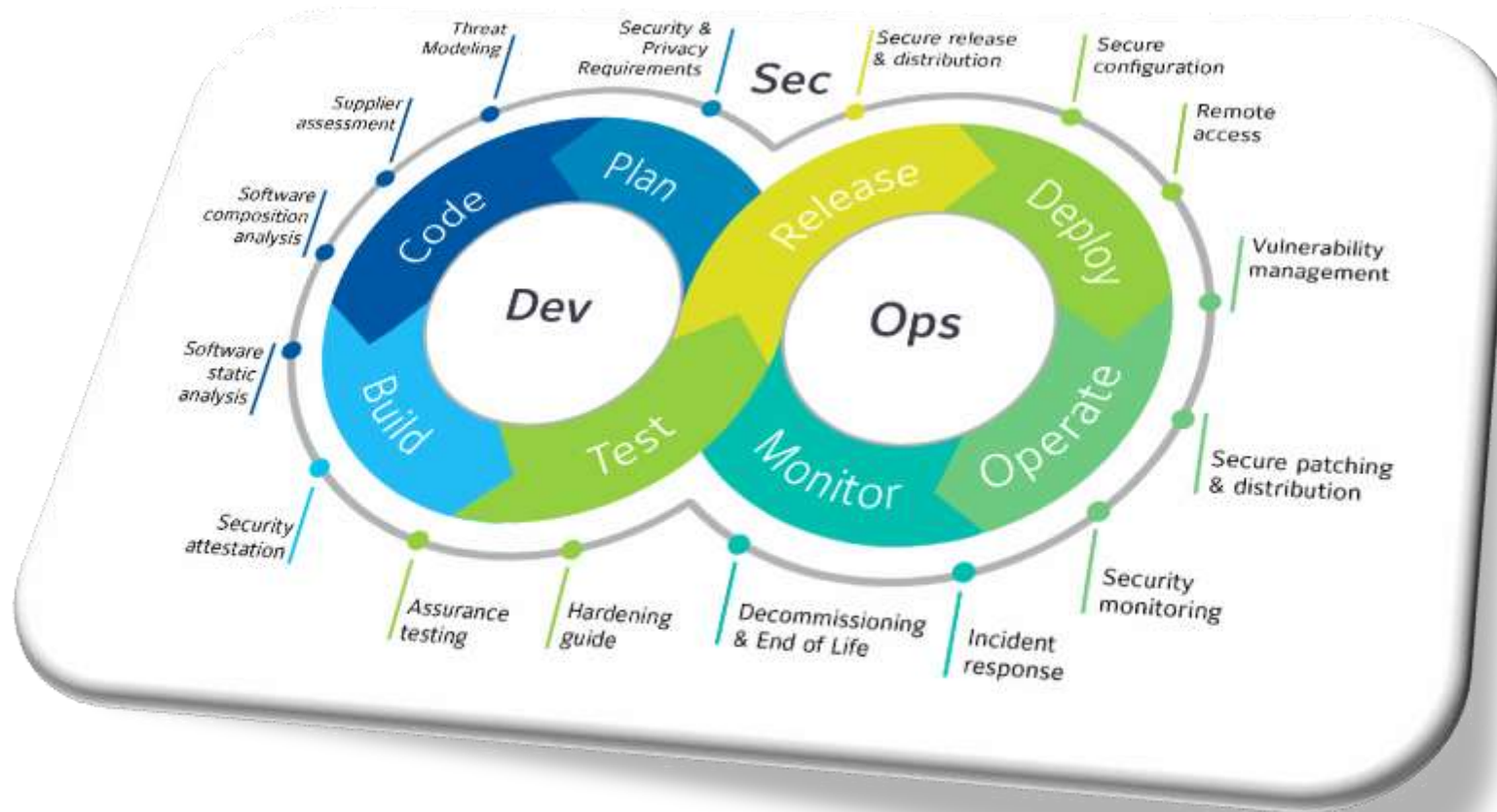
- **Limitations to access**
- **Limited connectivity**
- **Operational downtime**
- **Network complexity**
- **Legacy systems**
- **Human factors**

**Need for a nuanced approach!**



# Cyber Security in industrial controllers

## In product Development and in Operations



Global Product Security

# Cyber Security in industrial controllers

## Risk touch points and Security tiers



1. Security at rest
2. Security in transit (runtime protection)
3. Security in use
4. Physical (mechanical protection)
5. Retaining cyber security
6. Further hardening by owners





# Cyber Security in industrial controllers

## Security at rest in UniSAB 4



### Encrypted firmware

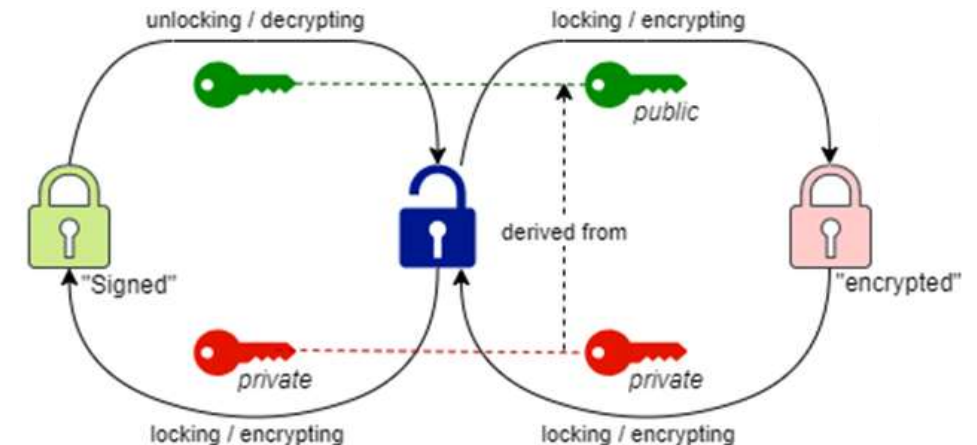
- Preventing unauthorized copy and interpretation

### Digitally signed firmware

- UniSAB 4 knows that firmware is made by Johnson Controls

### Secure boot

- UniSAB 4 will not boot in the unlikely event of malicious changes to firmware
- Redundant boot if firmware is compromised (backup firmware)





# Cyber Security in industrial controllers

## Runtime security in UniSAB 4



Sensors

Signals

Settings

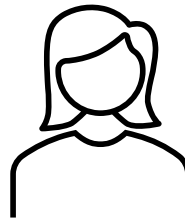


Add new user

Username	<input type="text"/>
New password	<input type="password"/>
Re-enter new password	<input type="password"/>
User level	<input type="text" value="User"/>

Add Exit

Hashing and Salting passwords



TLS encryption

White listing of network peers

SABROE UniSAB4

Capacity control	Drive line	Compressor	System	Oil system
Communication	Measuring	External input	Relay outputs	
User defined refrigerant	MultisAB++			

Modbus allowed IP's

10.150.56.62	Add IP
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Multisab allowed IP's

10.150.56.62	Add IP
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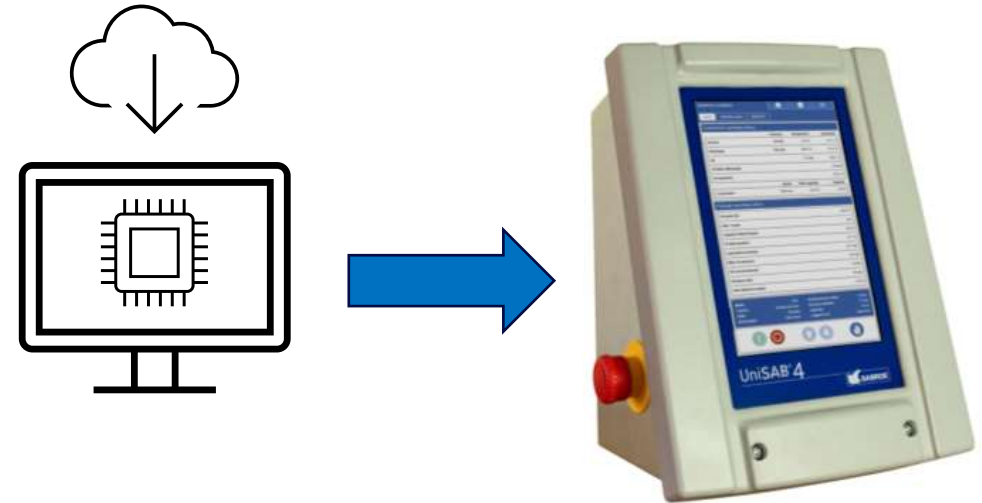
# Cyber Security in industrial controllers

## Retain protection and further hardening



### Firmware updates

- Patching vulnerabilities
- Renewing certificates
- Updating technologies
- Applying new features



### Further hardening by customers



# Key take-aways

## Cyber Security with Sabroe UniSAB 4 is:

1. Robust Security Framework
2. Advanced access control
3. Continuous Monitoring and Threat Detection
4. Rigorous Testing and Compliance
5. Firmware updates throughout the lifecycle



**Want to know more? Visit us at booth 7-240 in hall 7**

**CHILLVENTA**



**Maximizing Heat Pump Potential:  
Empowering Steam Generation with  
MVR Technology**

**Specialist forum: Tue 13:40-14:00  
Hall 4A Booth 4A-419**



**Unveiling the Cyber Security  
Challenges in Industrial Controllers:  
Stay Informed and Protected!**

**Specialist forum: Wed 12:00-12:20  
Hall 8 Booth 8-516**



**Overcoming the obstacles to achieve  
temperature above 100 °C with  
hydrocarbon-based Heat Pumps**

**Specialist forum: Wed 12:20-12:40  
Hall 4A Booth 4A-419**



**Future developments in refrigeration  
technology - thinking about heat**

**Specialist forum: Thu 11:00-11:20  
Hall 8 Booth 8-516**



**Unlocking the potential of absorption  
heat transformer. The path to de-  
carbonization of steam generation**

**Specialist forum: Thu 13:20-13:20  
Hall 8 Booth 8-516**



**Complex made simple – how and why  
sales and selection tools helps you  
select the best products**

**Specialist forum: Tue 11:40-12:00  
Hall 8 Booth 4A-419**



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