COOLING CONTROL

My Fruit
The Best Fruit

VAN AMERONGEN CA technology

Version 2024-01

Unique reason for combining Cooling & CA control in My Fruit

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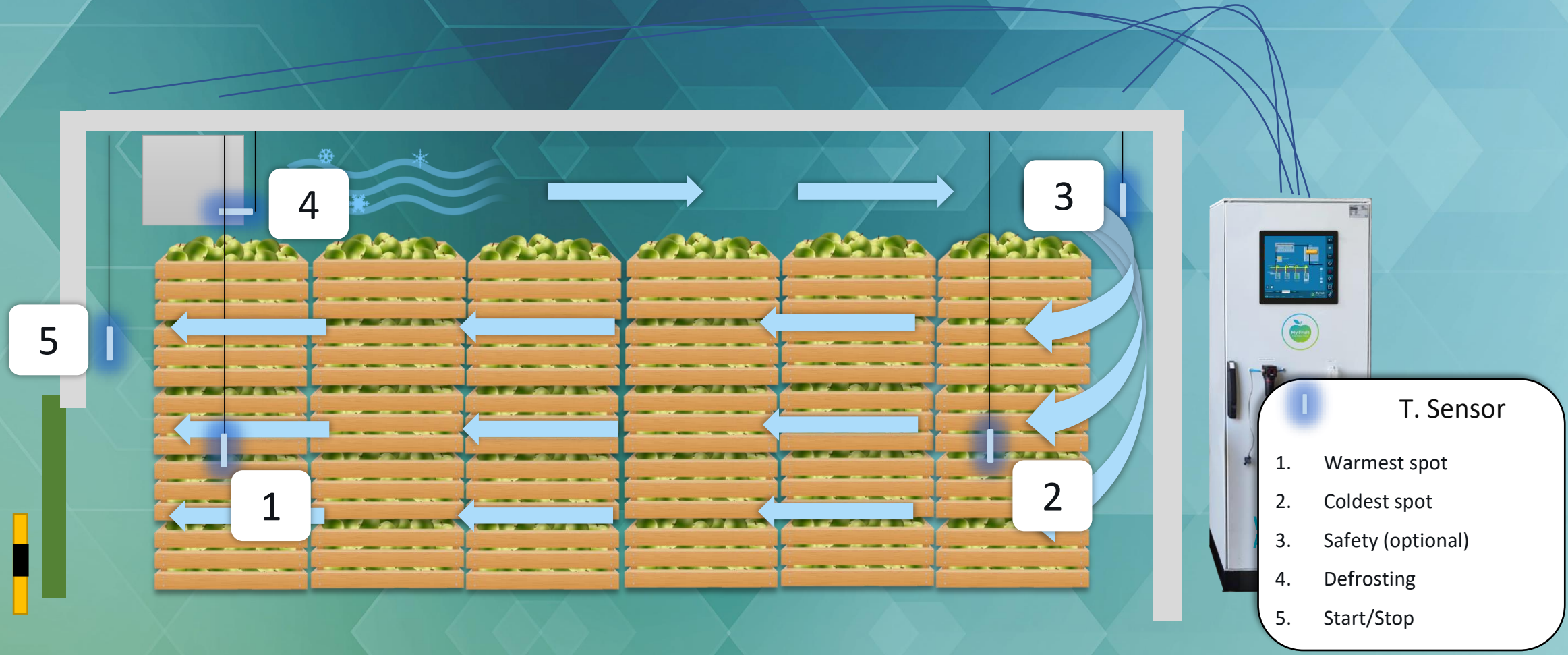
CA:	Inseparable combination of Temperature & Air composition control
Storage conditions:	Every product has its specific requirements regarding the CA-condition determined experimentally in collaboration with knowledge institutions and based on practical experience
Storage protocols:	Bringing together storage conditions and the technique to create them in one protocol to ensure that the product retains its initial quality during the long-term storage period
Our goal:	• Prevent loss of quality due to loss of moisture • Prevent failure • Minimum usage of energy and maintenance cost
My Fruit control:	The intelligence to understand and control the technology of cooling and air compositions in favor of the stored product and relieve the cold store manager

Full cooling control on room level

- My Fruit can control different types of cooling systems : Freon – Glycol - Ammonia - CO2
- Multiple PT-1000 sensors for optimal cooling control (Customized sensor names)



How does MyFruit control different types of cooling systems on room level

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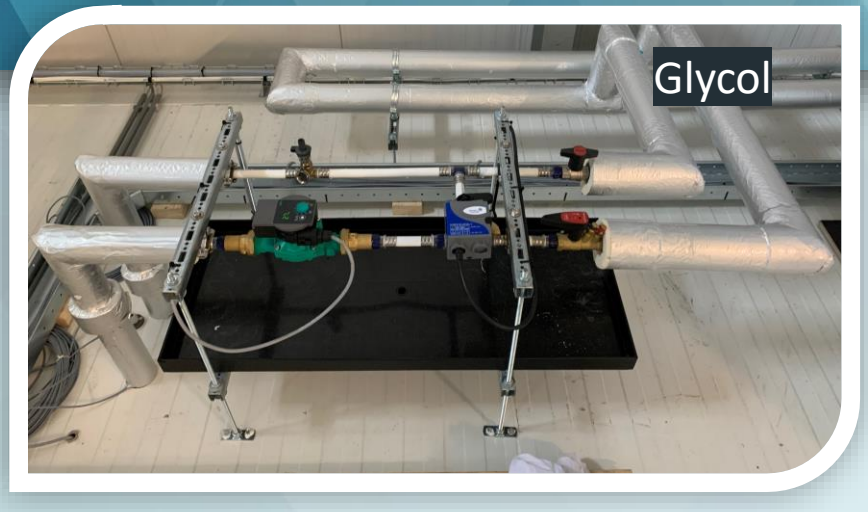
Freon
- Direct expansion
- Defrosting by hot gas

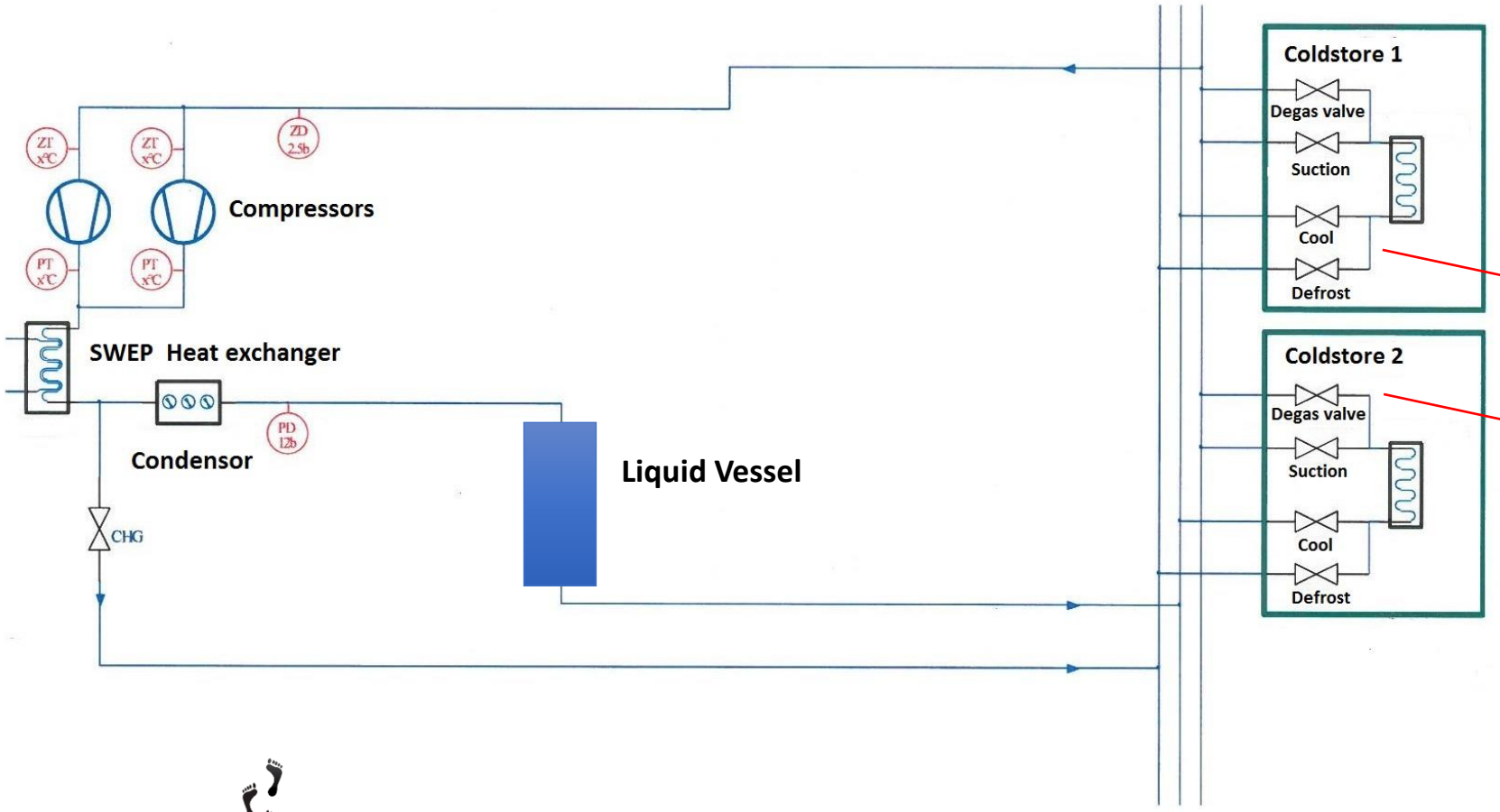
Glycol indirect
- Temperature control incoming glycol
- Mixing valve control
- Defrosting by warm glycol

Ammonia
- Direct expansion / pump system
- Defrosting by hot gas
- Suction valve

CO2
- Direct expansion / Indirect Propane
- Defrosting by hot gas / warm glycol



DX System



Expansion valve

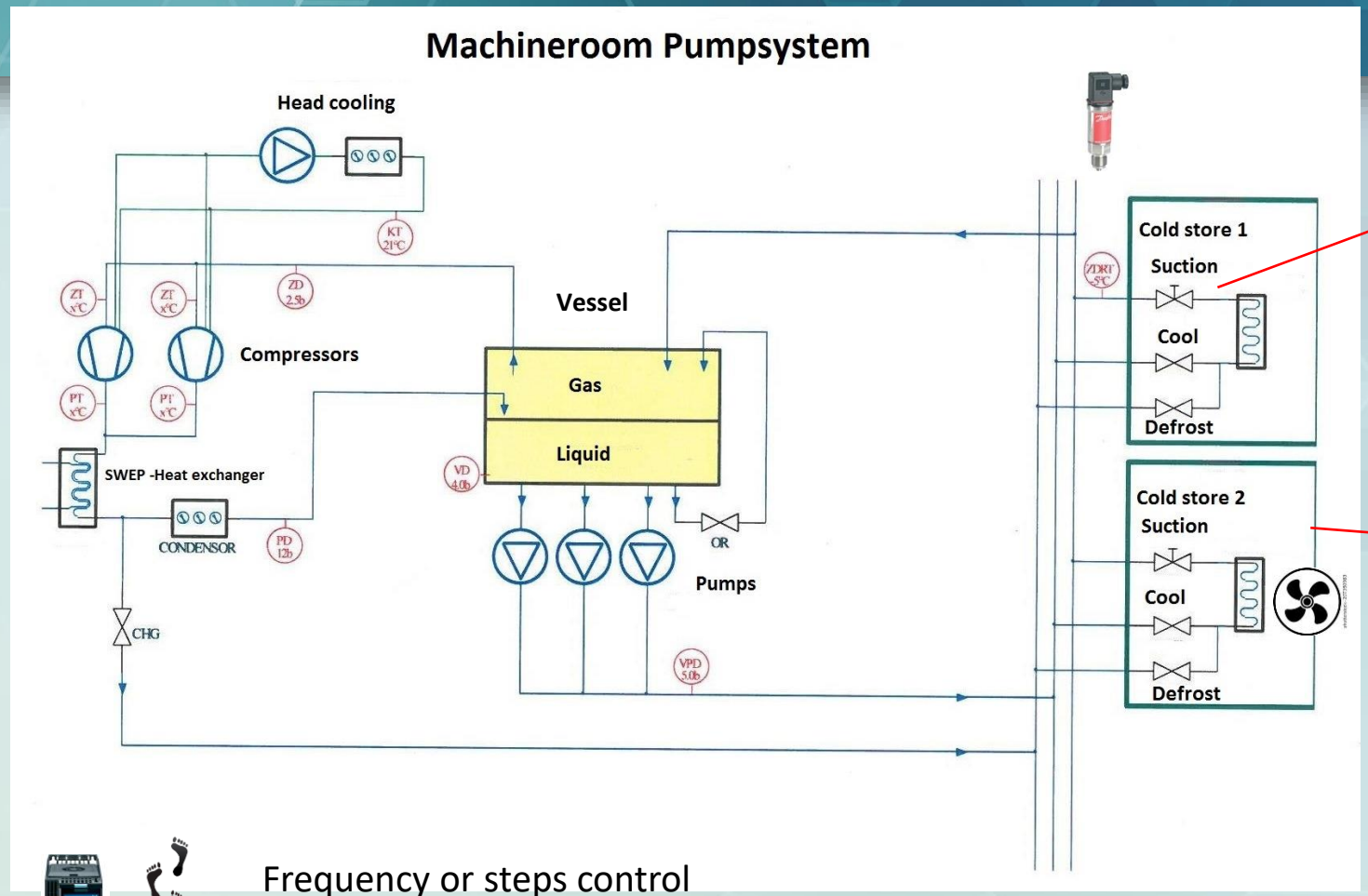
- Thermal
- Electronic

Temperature sensors

- Fixed sensor
- 1 or 2 Defrost sensors
- 1 pilot sensor
- 1 exhaust sensor
- 1 to 10 product sensors

Frequency or steps control
Compressor, condensor, pump and fans.

Ammonia Pump System

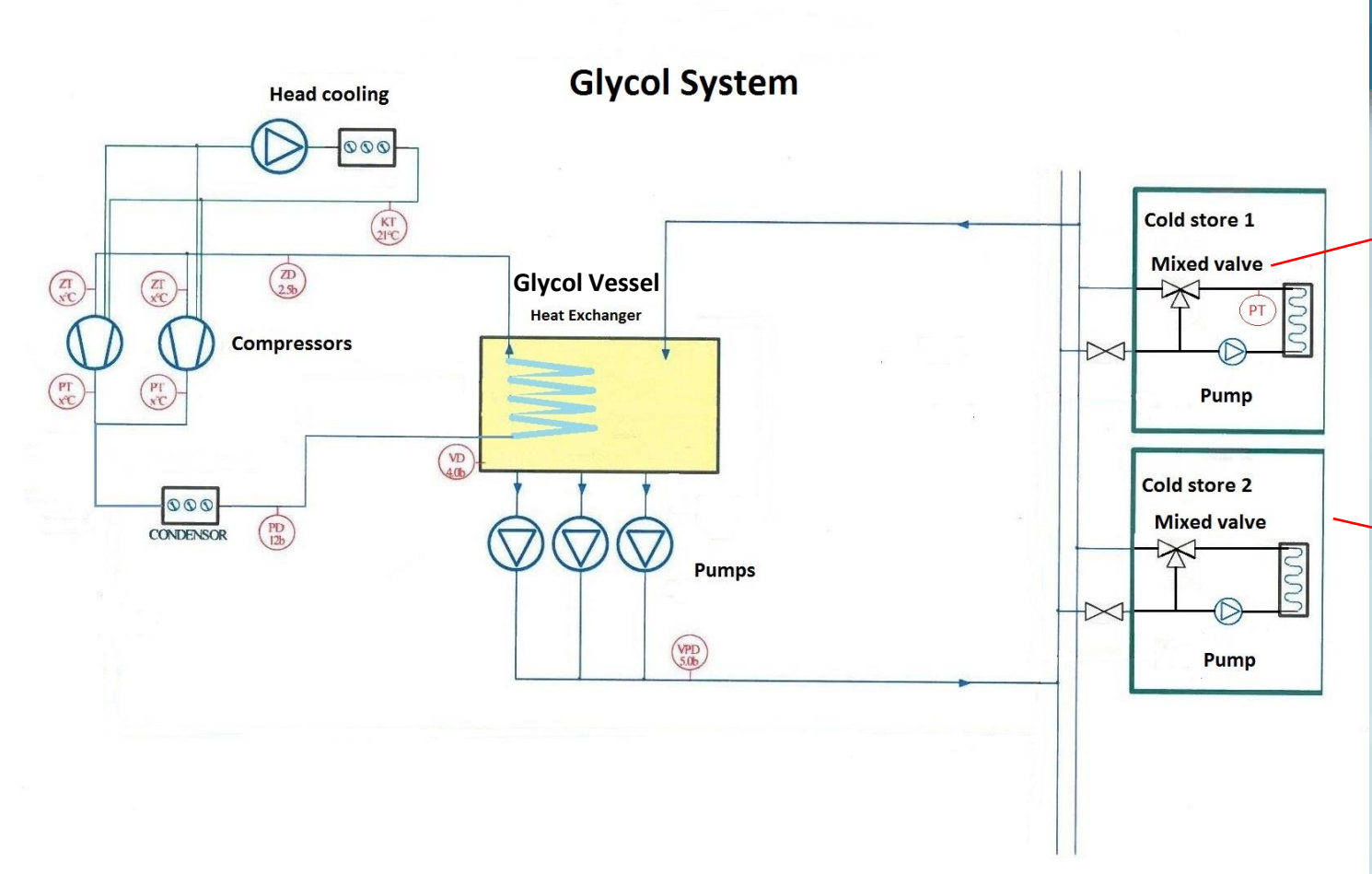


Kornwestheim valve
Analog signal 4-20mA

Temperature sensors
- Fixed sensor
- 1 or 2 Defrost sensors
- 1 pilot sensor
- 1 exhaust sensor
- 1 to 10 product sensors

Frequency or steps control
Compressor, condensor, pump and fans.

Glycol System



Temperature sensors

- Fixed sensor
- 1 or 2 Defrost sensors
- 1 water sensor
- 1 pilot sensor
- 1 to 10 product sensors

Frequency or steps control
Compressor, condensor, pump and fans.

Cooling Control & Energy Management

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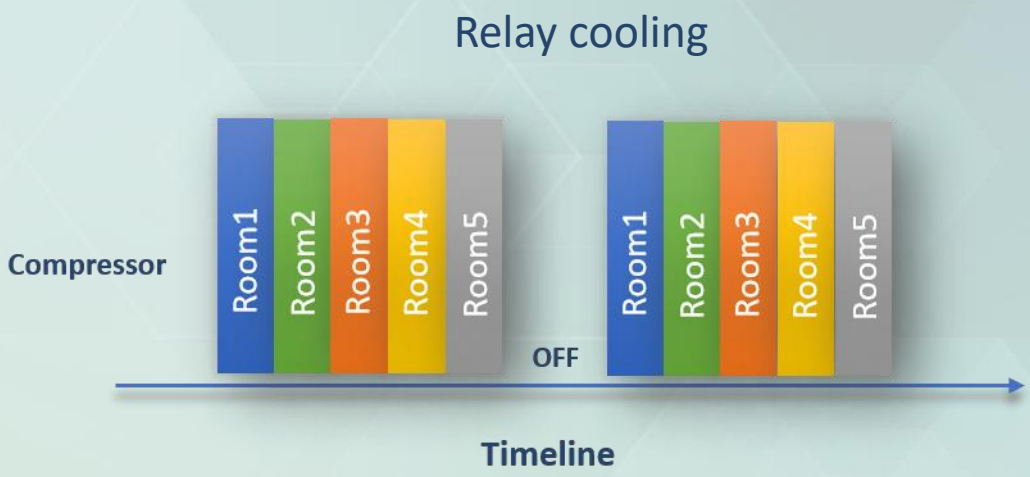
2 ways to start cooling during the storage period

- Δ Delta Temperature
  Target temperature – Measured temperature
- Relay cooling
  A group of rooms start cooling based on interval time one by one and each room uses the compressor (frequency controlled) in the most efficient way (ENERGY SAVING)

Innovative Energy Management (IEM)

- Advanced control of circulation
- Smart Cooling: based on power-consumption, solar-cooling during daytime, low-price energy, etc.
- Auto Defrosting: interval measurement of coil temperature
- Machine room: compressor & condenser control the needed capacity for cooling & protection of technical parts of the compressor
- Respiration/heat-production control: Active Control of Respiration (ACR)



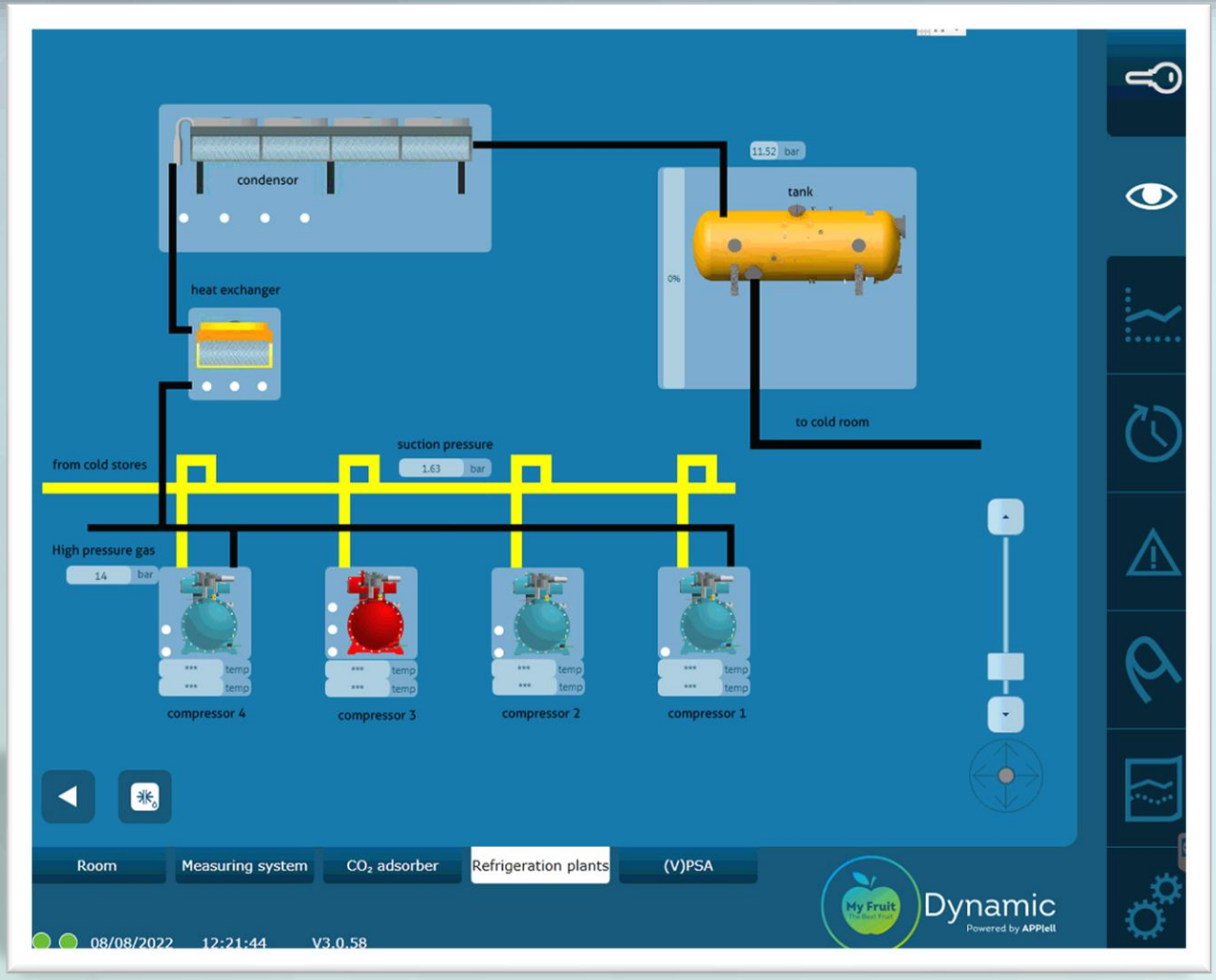
My Fruit Machine Room Control

Up to 6 refrigeration plants

- Compressors (frequency control)
- Condensers (frequency control)
- Tanks for liquid refrigerant
- Pumps
- Compressor head cooling
- Heat exchanger for indirect cooling

Safety management

- Refrigerant level sensors
- Refrigerant Leakage detection sensors
- Input alarms (compressors, condensers, pumps)



My Fruit Cooling & CA control

Benefits for Operation & Management

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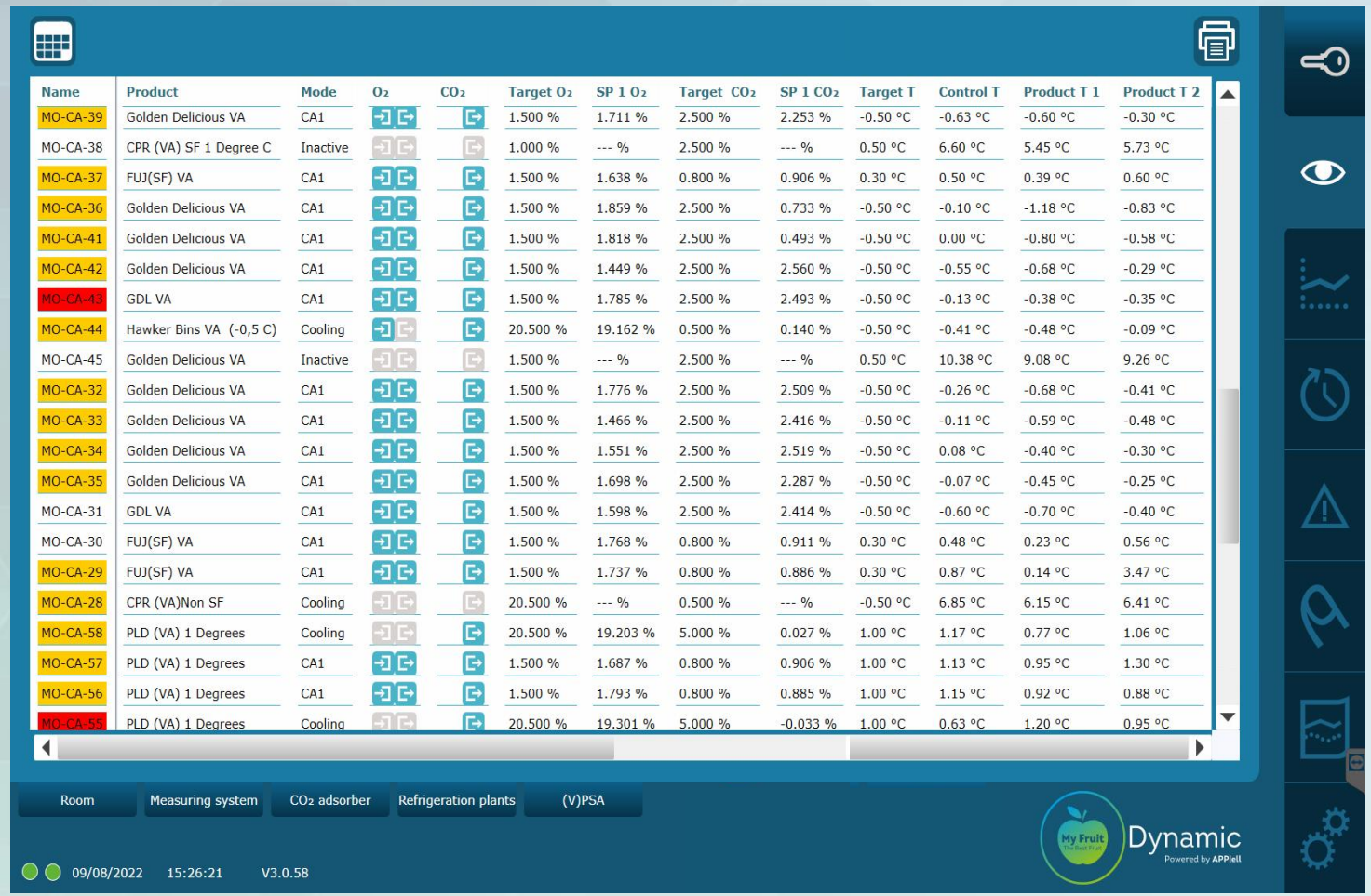
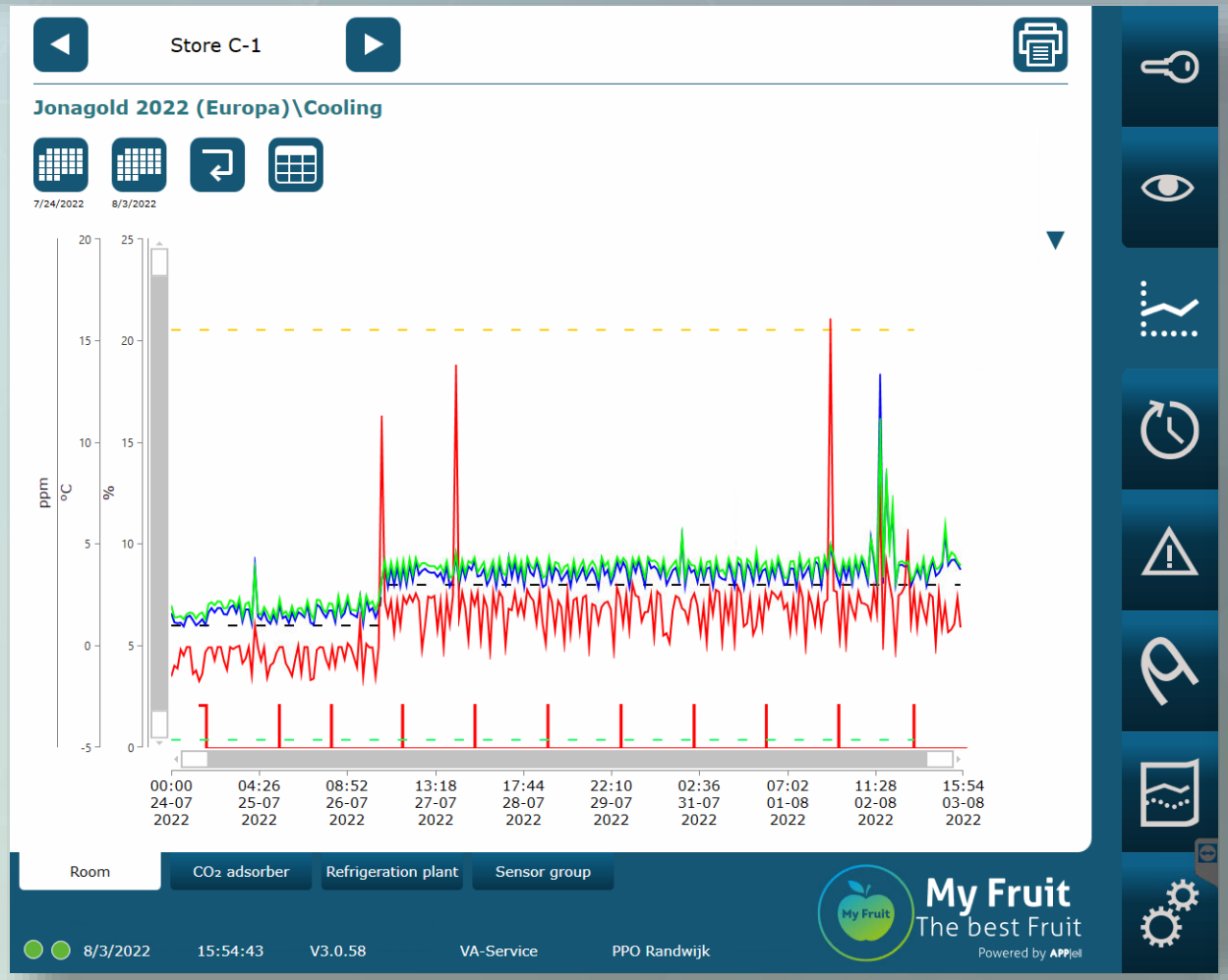
- All setting and monitoring in one system
- Multiple functionalities:
  - Clear overview of cooling & CA data in ONE table or graph
  - Registration overviews
  - Alarm system for cooling & CA overviews
  - Number of actions & running hours for service & energy info

My Fruit makes it simple

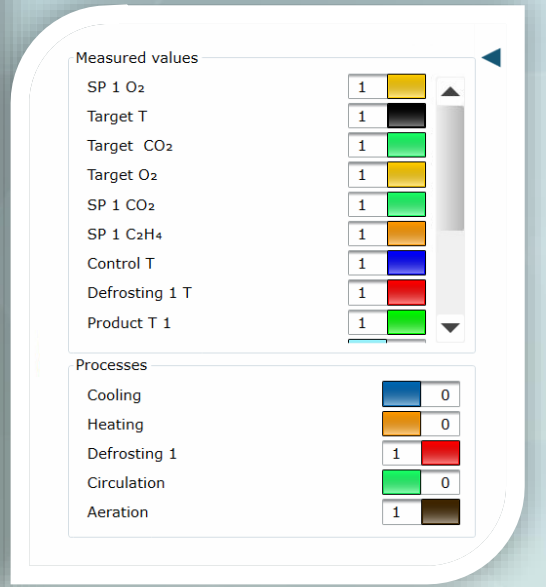


My Fruit Cooling & CA control

Benefits for your products



- All related parameters in one (customized) graph
  - CA conditions
  - Temperature & RH
  - Product status indicator
  - CA & cooling: processes & data
- Easy to track & trace the deviations
- Historical data gives information for future storage



My Fruit makes it simple

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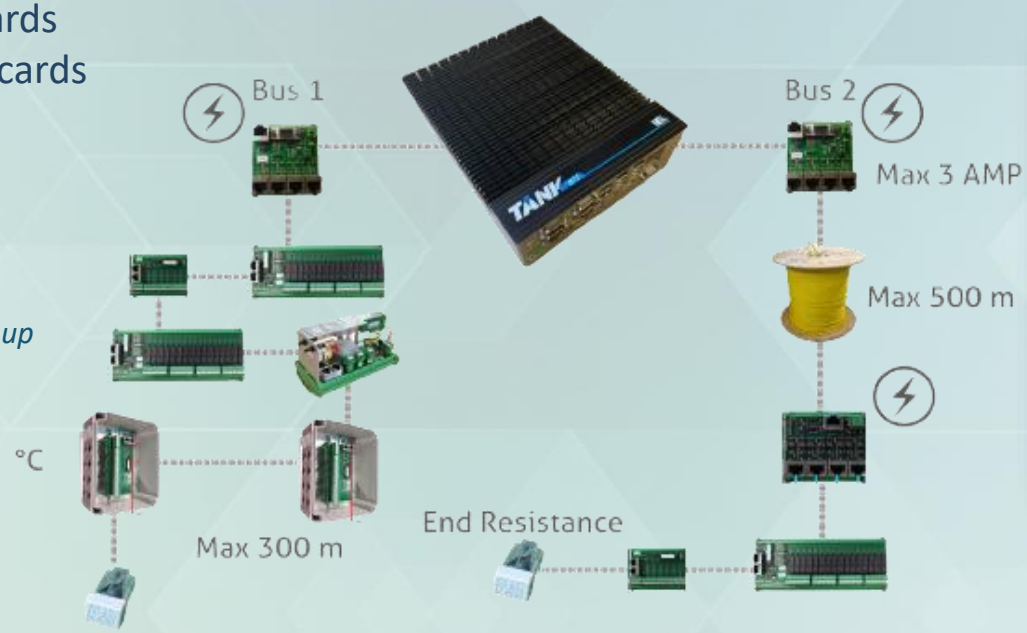
Benefits for Installation & Communication

- Cat6 cables
- Manual forcing of relay outputs via a print switch
- Plug & play
- Easy to extend
  - Relay cards
  - Digital input cards
  - Analogue entry cards
  - Analogue output cards
  - PT100 and PT1000 cards

My Fruit can customize your CA & cooling installation via flexible configuration of In/Outputs



Example of installation set up

Cooling panel

Main panel

These Options Make Big Differences!

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Pressure sensor per room:
- Pressure control during cooling
- Pressure control for leakage testing
- Pressure control during ACR respiration measurement

Water meter per room:
- Water loss indicates the functioning of cooling system
- Water loss gives info on fruit quality

Independent temperature pilot sensor per room:
- To prevent too low temperature

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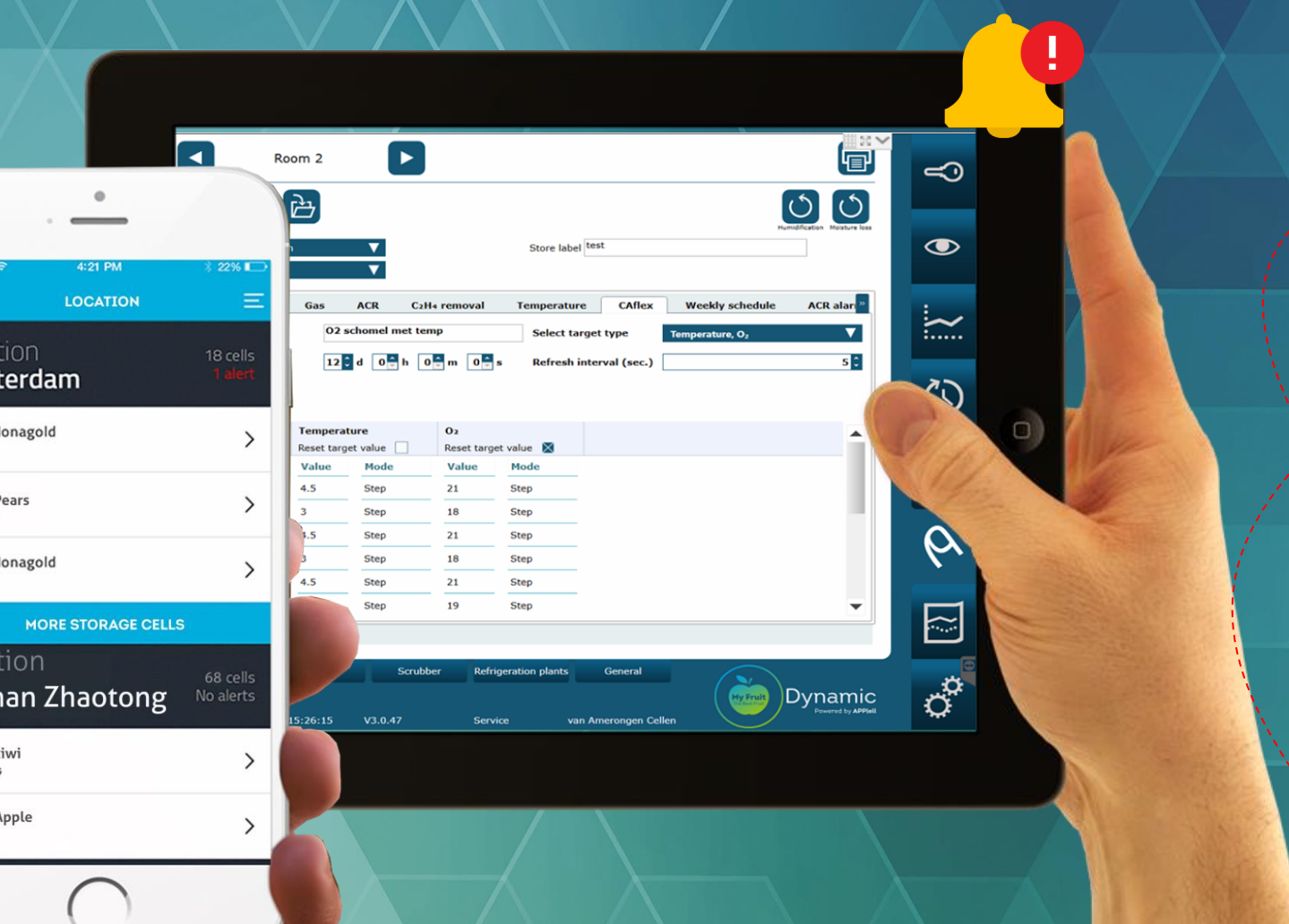
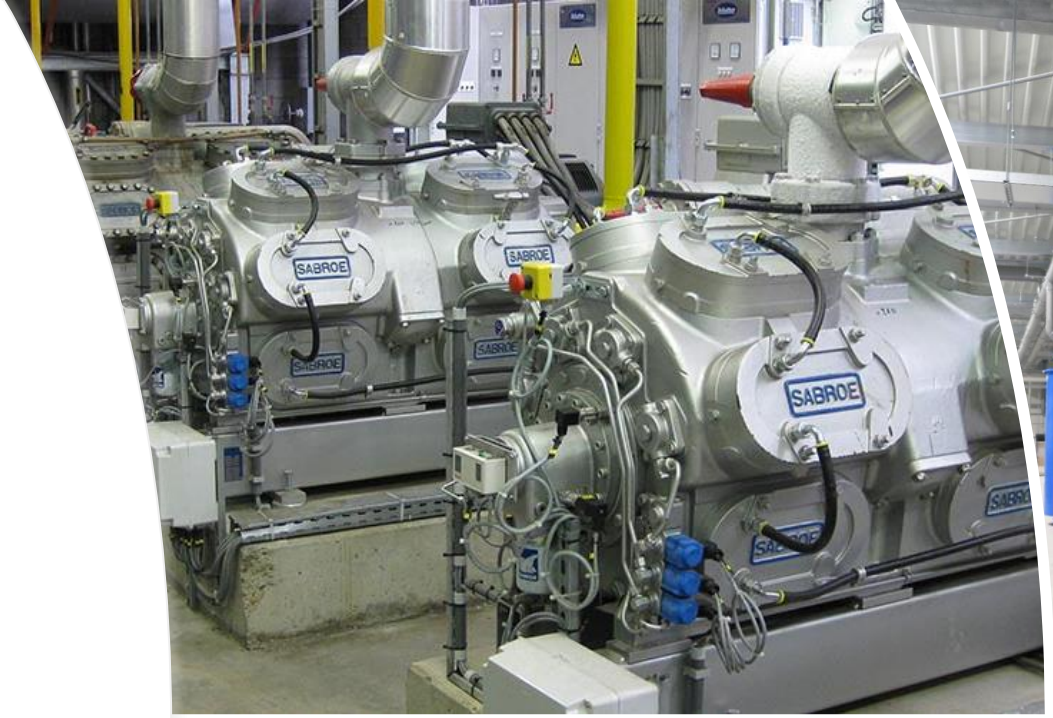
Worldwide monitoring and control
Data is safe in the Cloud



References in over 60 countries



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