



ENTWURF UND TESTEN VON REGELSYSTEMEN MIT HILFE VON
SIMULATIONEN UND DER TIL-SUITE



Vorstellung Wurm

Motivation (Warum Simulation?)

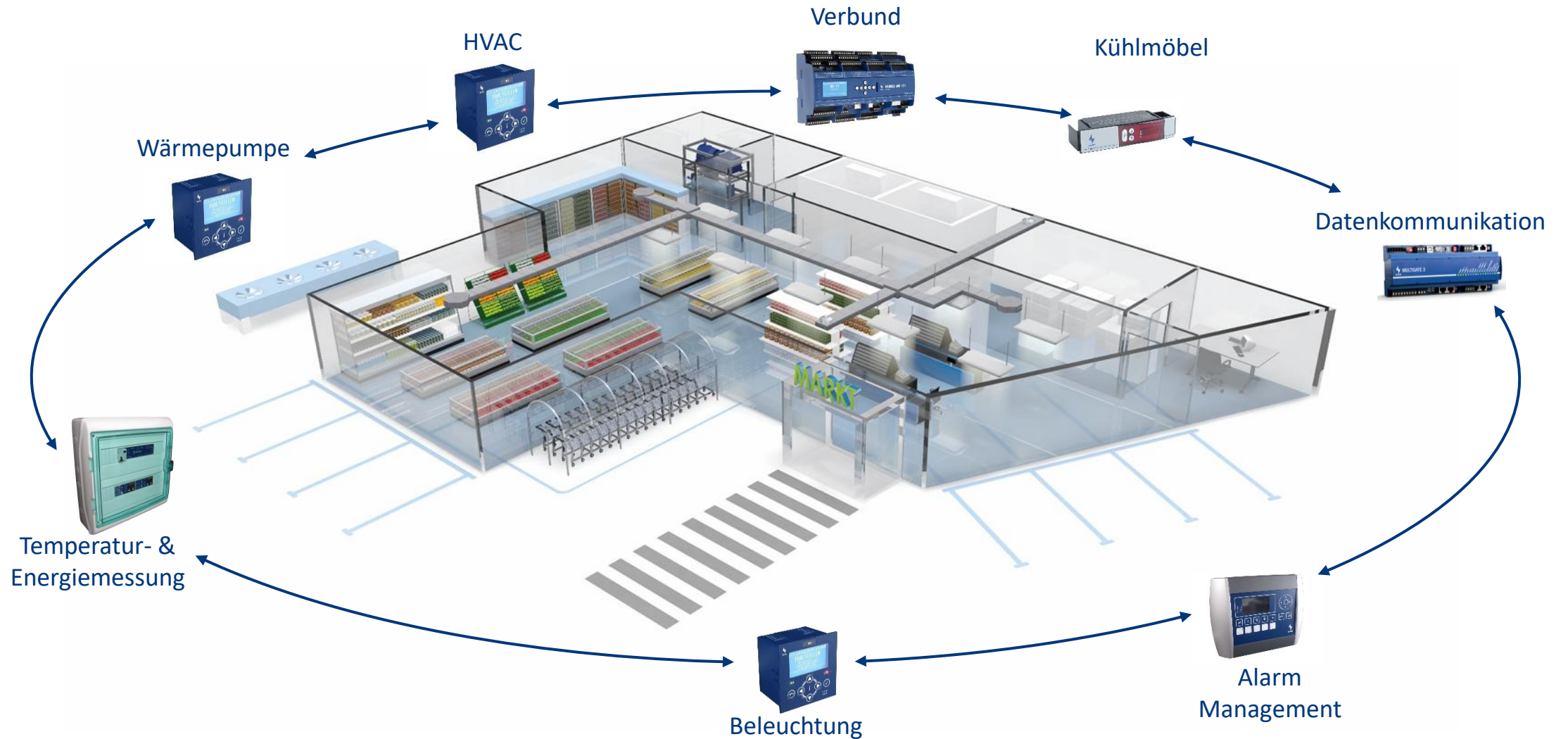
Modelle und Herausforderungen

Entwicklung und Testen von Regelgeräten

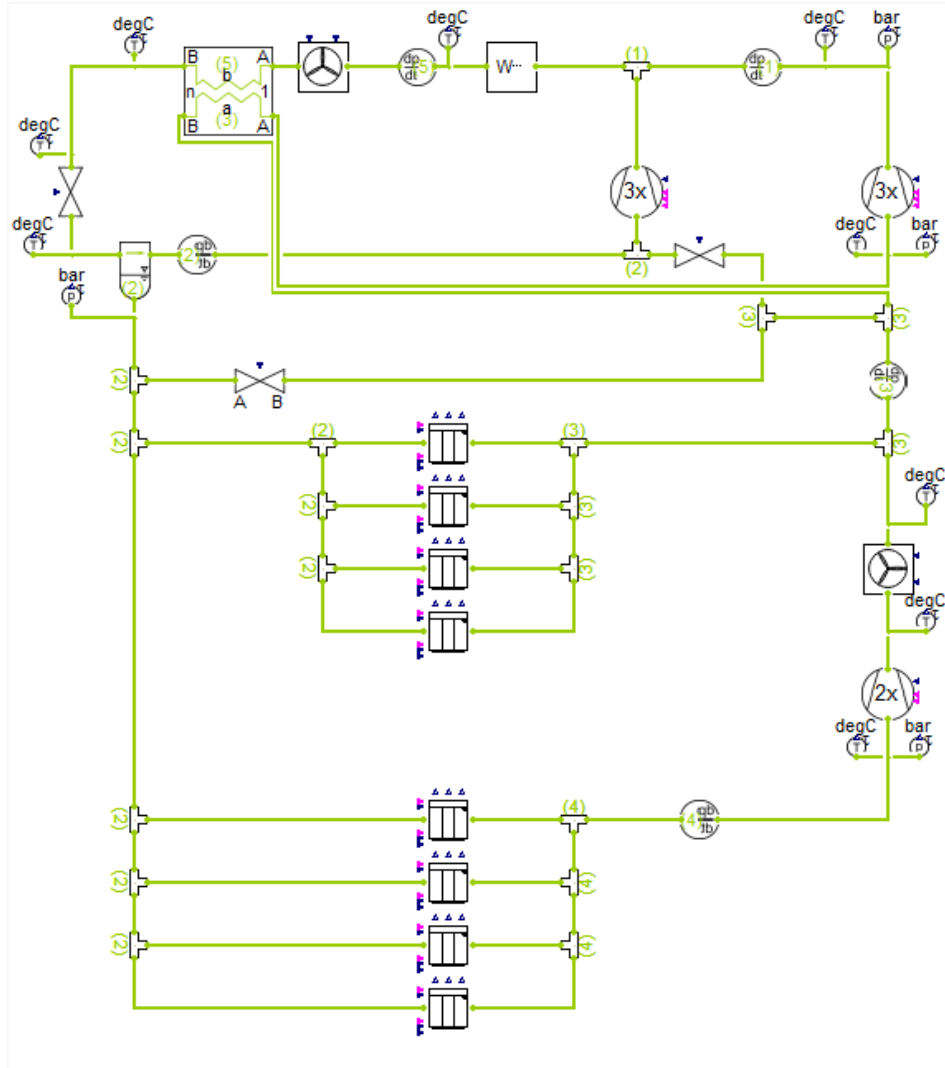
Gesamtsystem

Abschluss

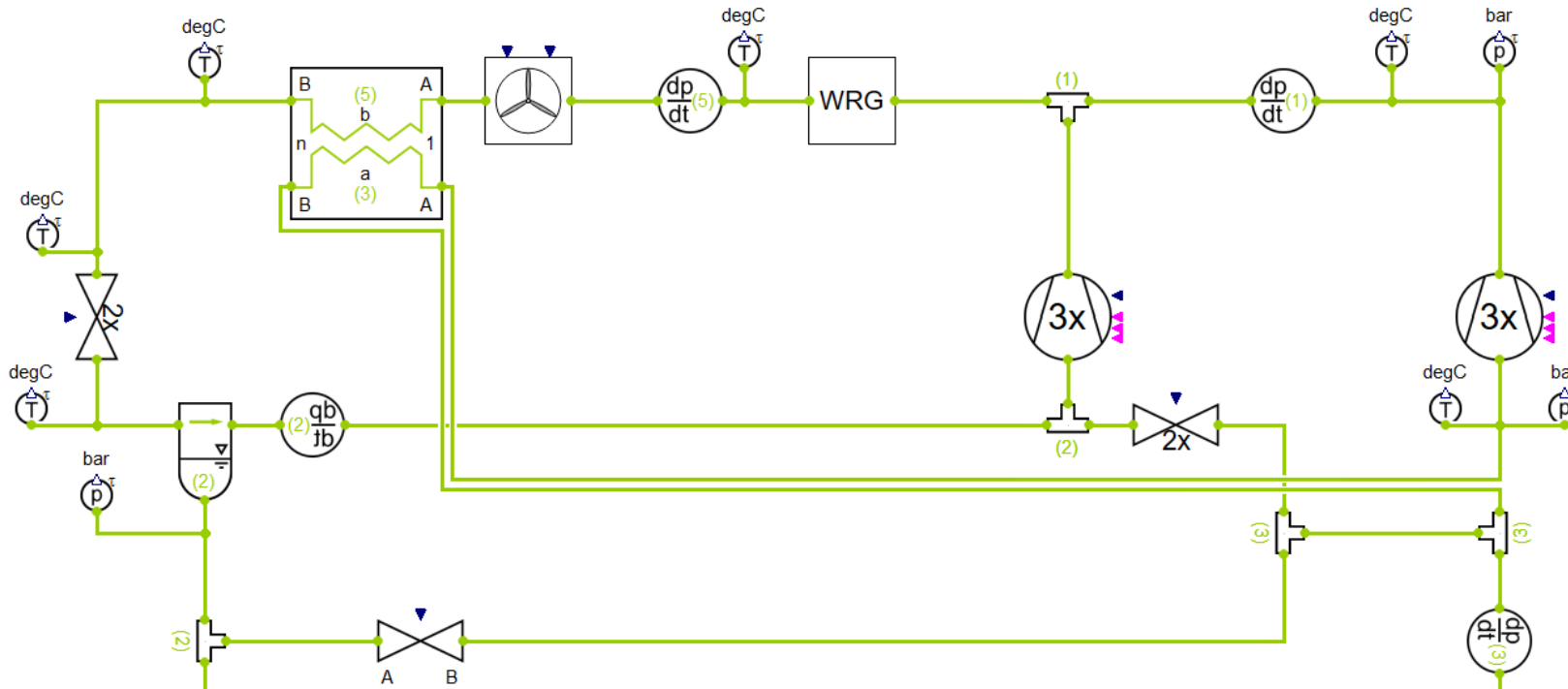
WER SIND WIR?





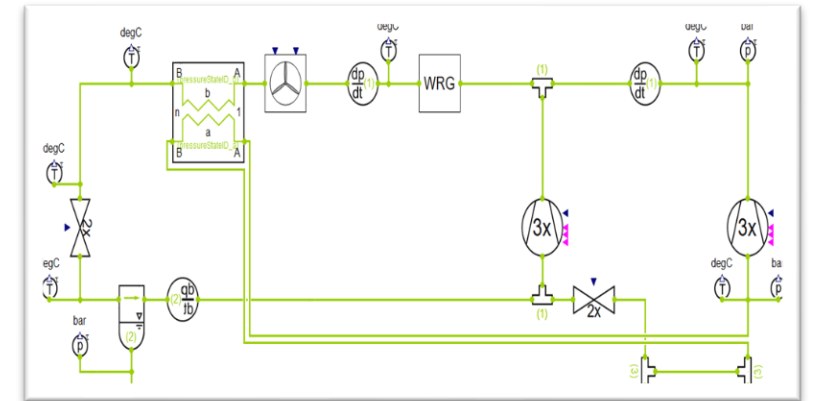


- TIL-Suite als Grundlage
- Komponentenbibliothek
- Verschiedene Setups



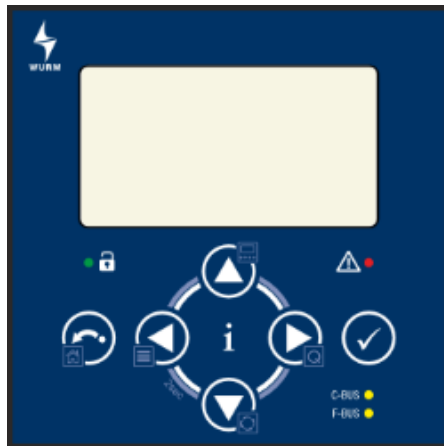
Herausforderungen

- Dimensionierung
- Verhältnisse zwischen Komponenten
- Anzahl Kühlstellen





Emulator



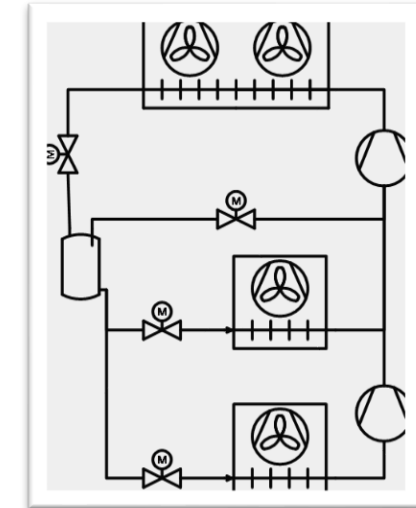
Aktoren



Sensoren



Simulator

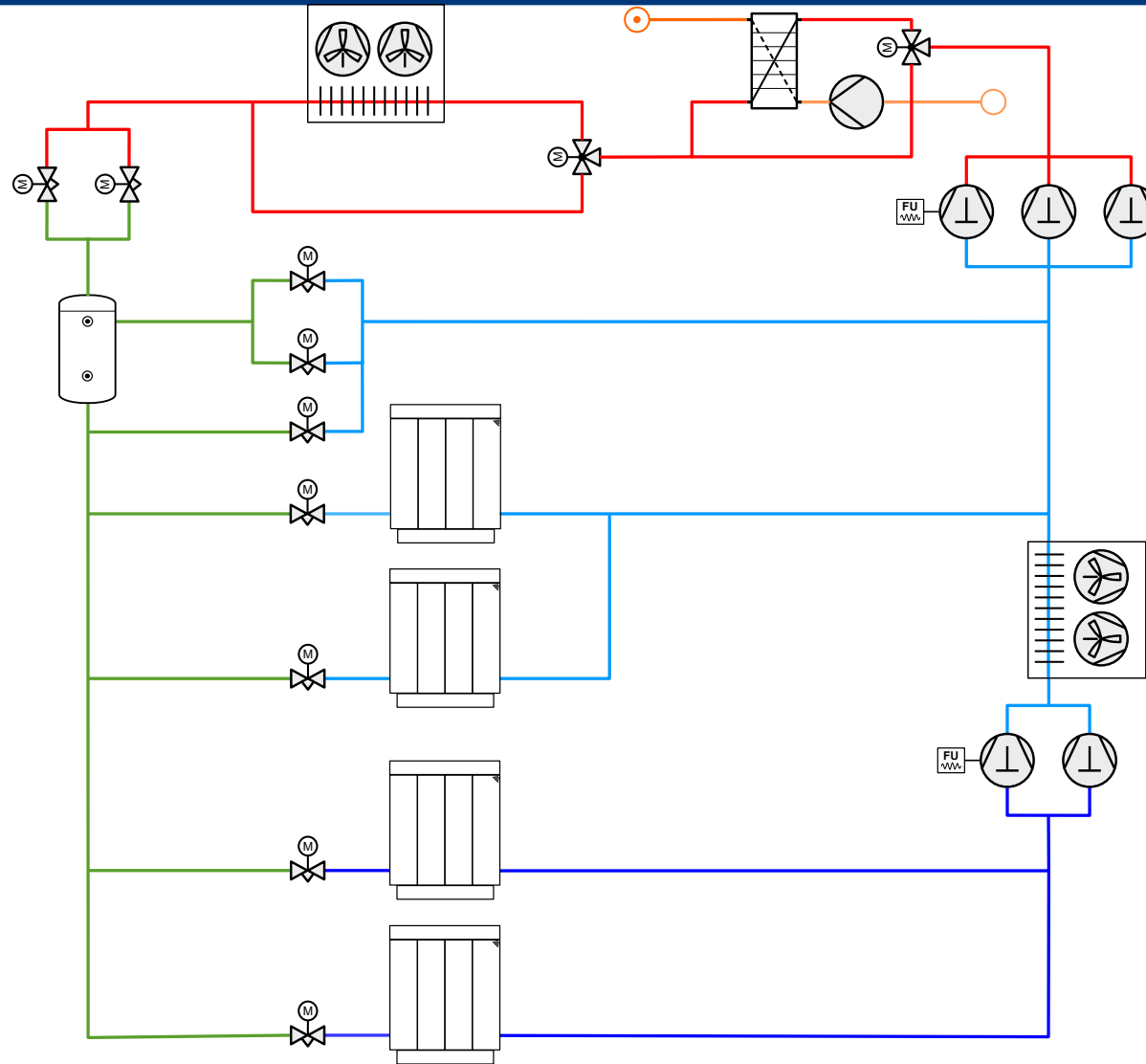


FMU

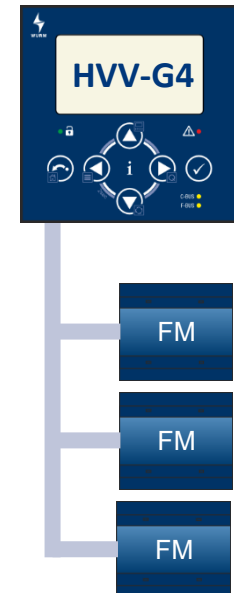
CO2-Prozess-Regler



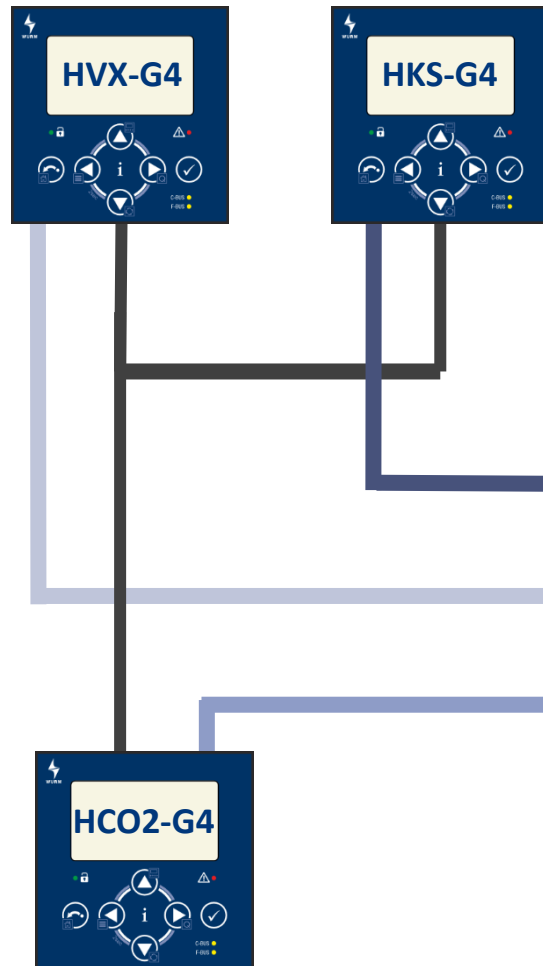
Kühlstellen-Regler



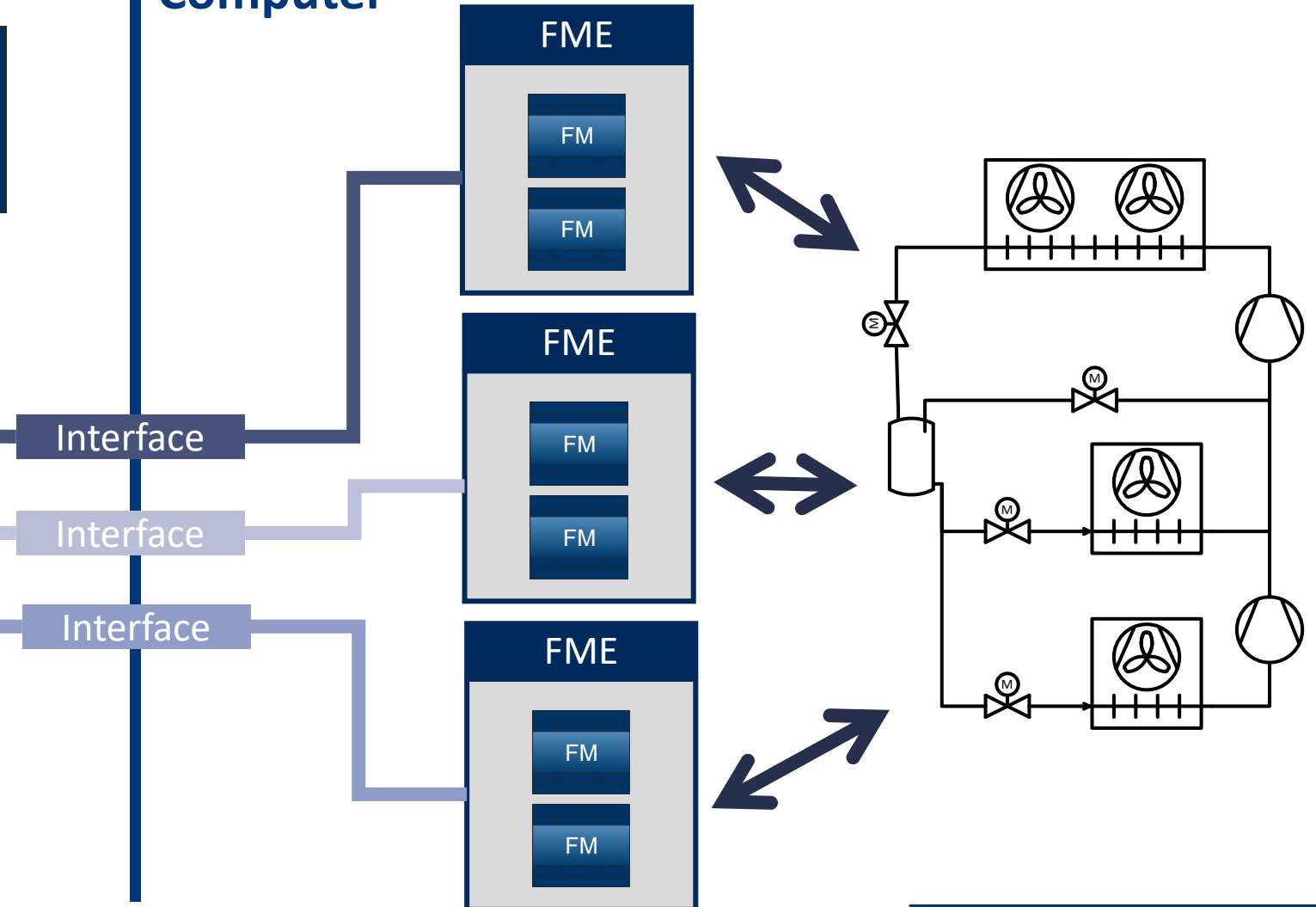
Verbund-Regler



Hardware



Computer



- **Was können wir**

- Testen und Entwicklung mit Hilfe von Simulationen
- SiL, „HiL“
- Betrachtung / Untersuchung von Teilsystemen bis Gesamtsystemen

- **Was haben wir**

- Komponentenbibliothek
- Emulatoren
- Bus-Kommunikation zur Hardware

- **Herausforderungen**

- Dimensionierung, Setup

- Hardware in the Loop für Geräte ohne Buskommunikation
- Ausbau der Emulatoren auf weitere Geräte
- Aufbau eines virtuellen Supermarktes (Kälte- und Gebäudetechnik)
- Einsatz von Simulationen in Schulungen von Kältetechnikern

Fragen?

Wurm GmbH & Co. KG

Morsbachtalstr. 30
42857 Remscheid
Germany

 +49 2191 / 8847 - 300

 www.wurm.de

 info@wurm.de

*“WAS DENKBAR IST,
MUSS AUCH MACHBAR SEIN.”*

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