Possible Contributions to Subtask B Quality Procedure

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- Consortium of different companies
- Turnkey provider for solar cooling systems
- Test of whole systems in own test bench

Interest in Task 38 follow up:

- Best market and system, Subtask A
- Quality assurance in predesign, design, installation and commissioning, Subtask B
- Certification and contracting, Subtask C
- Dissemination and market support measures, Subtask D

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Centre of Applied Research - Sustainable Energy Technologies
at University of Applied Sciences Stuttgart

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Who is zafh.net?

- Prof. Dr. Ursula Eicker (Scientific Director)
- Dr. Dirk Pietruschka (General Manager- Solar Energy Systems and Building Physics)
- Dipl.-Ing. Michael Bossert (General Manager – Architecture and Building Integration)
- Approx. 25 researchers in Stuttgart (physicians, building physicians, architects,...)
- Cooperation with Building Physics, Architecture, City Planning and Geo-Informatics at the HFT Stuttgart

Research Groups at zafh.net

- Solar Heating and Cooling
- Energy Efficient Buildings and Building Operation
- Energy Efficient Cities and Communities
- Simulation and Communication

Solar Heating and Cooling

Development of Small Power Solar Cooling Systems

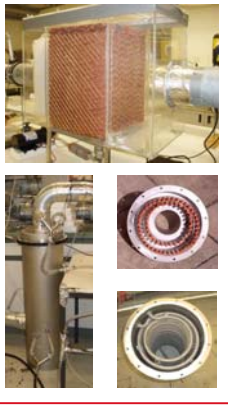
Closed Absorption Cooling (Systems + Components)

NH_3-H_2O
DACM 2 – 5 kW

Open Desiccant Cooling Systems

Solid desiccant system analysis

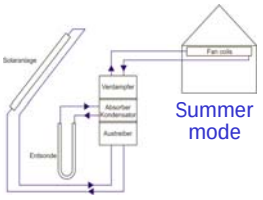
Liquid desiccant (LiCl; $CaCl_2$) components + systems

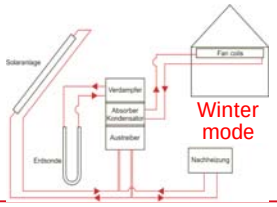


Operational Analysis and Simulation Based Control Optimisation of Solar Cooling systems

SOLARNEXT

DACM + Geothermal





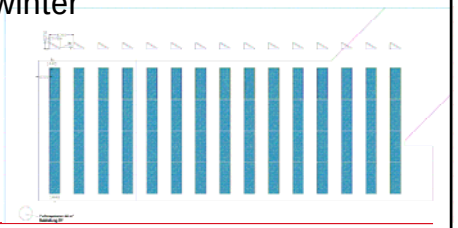
FESTO, Esslingen

Possible Contributions to TASK 38fu

aeteba solar cooling project for an airplane production in Berlin, Germany:

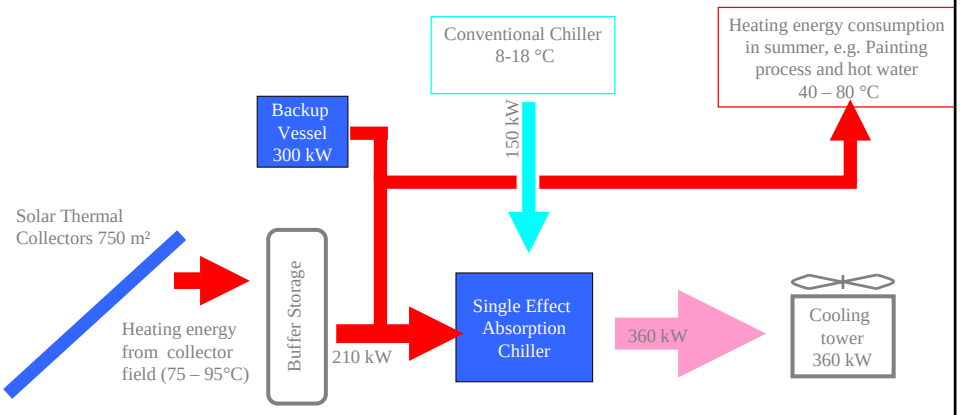
→ Best practice solar cooling system

- 750 m³ flat plate Collectors, 50 m3 hot water storage
- Solar cooling container with 150 kW SE Absorption Chiller
- Use of solar heat for heating in winter



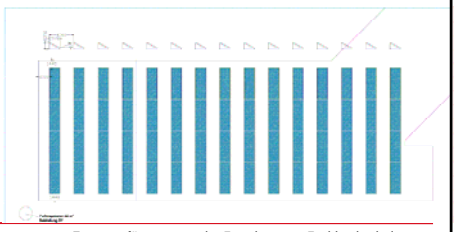
Possible Contributions to TASK 38fu

System scheme:



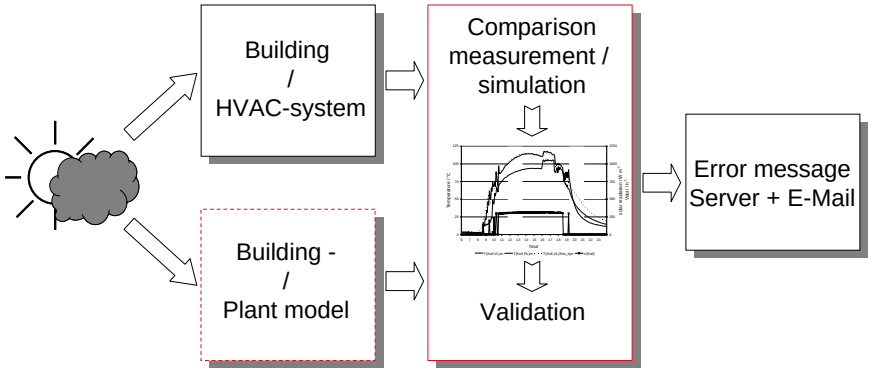
Possible Contributions to TASK 38fu

- Simplified design tool development / improvement (Control issues and electricity consumption)
- Optimisation of design and commissioning procedure (Commissioning kits with simulation support)
- Improved methods for automated system observation + control optimisation through online simulations



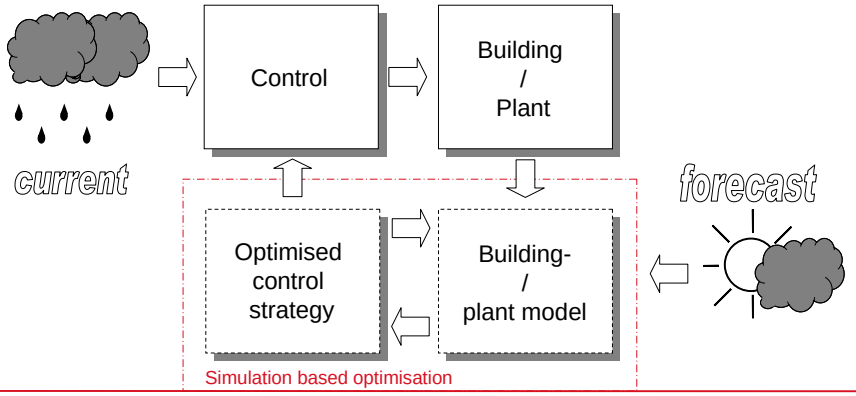
Possible Contributions to TASK 38fu

- Automated system observation through online simulations (Server applications → Quality Assurance)



Possible Contributions to TASK 38fu

- Predictive control methods for improved control of backup heating and cooling systems for maximum solar contribution (Server applications → efficiency improvement)



Possible Contributions to TASK 38fu

- Optimised control of heat rejection systems (cooling tower and pump control) for large adsorption cooling systems on the example of FESTO in Esslingen, Germany

Possible participation in TASK 38fu

- Subtask B leader?
- Leader of Tasks within Subtask B?
- Contribution to Tasks of Subtask B and other Subtasks?

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Thanks for your attention!