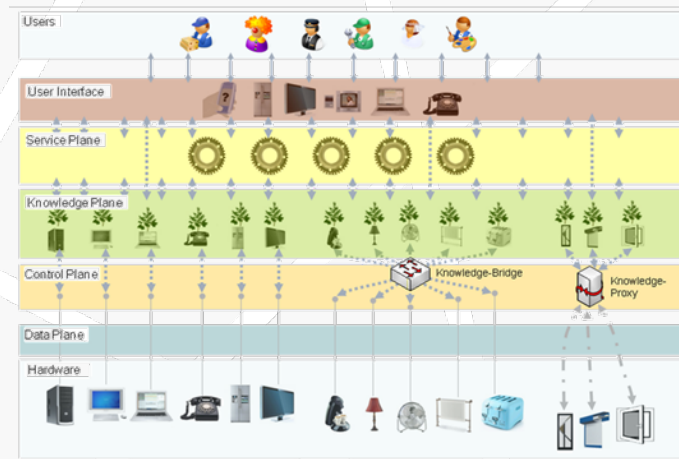




# Knowledge-Based Middleware for Future Home Networks

Wireless Days 2009



Marc-Oliver Pahl

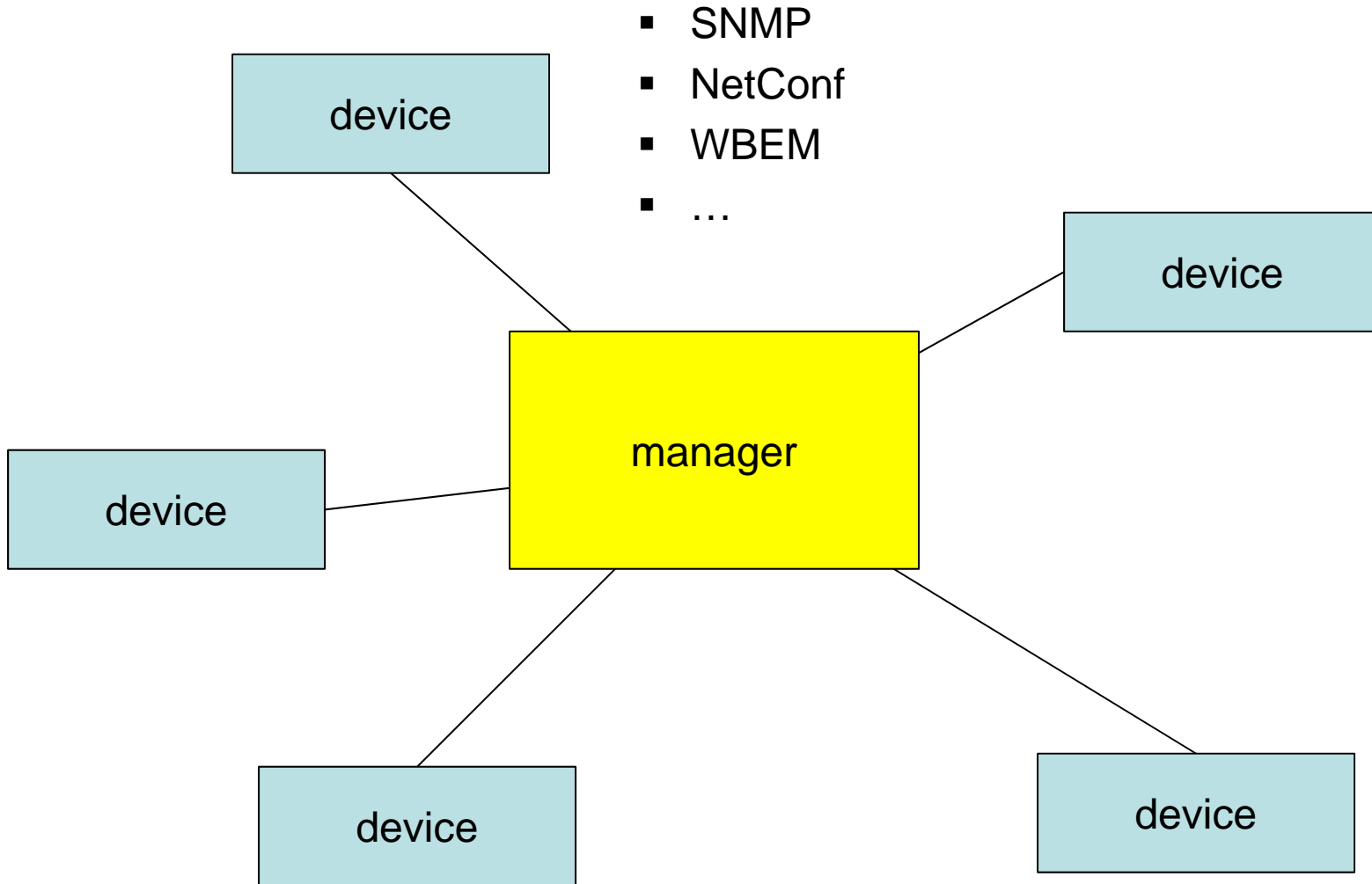




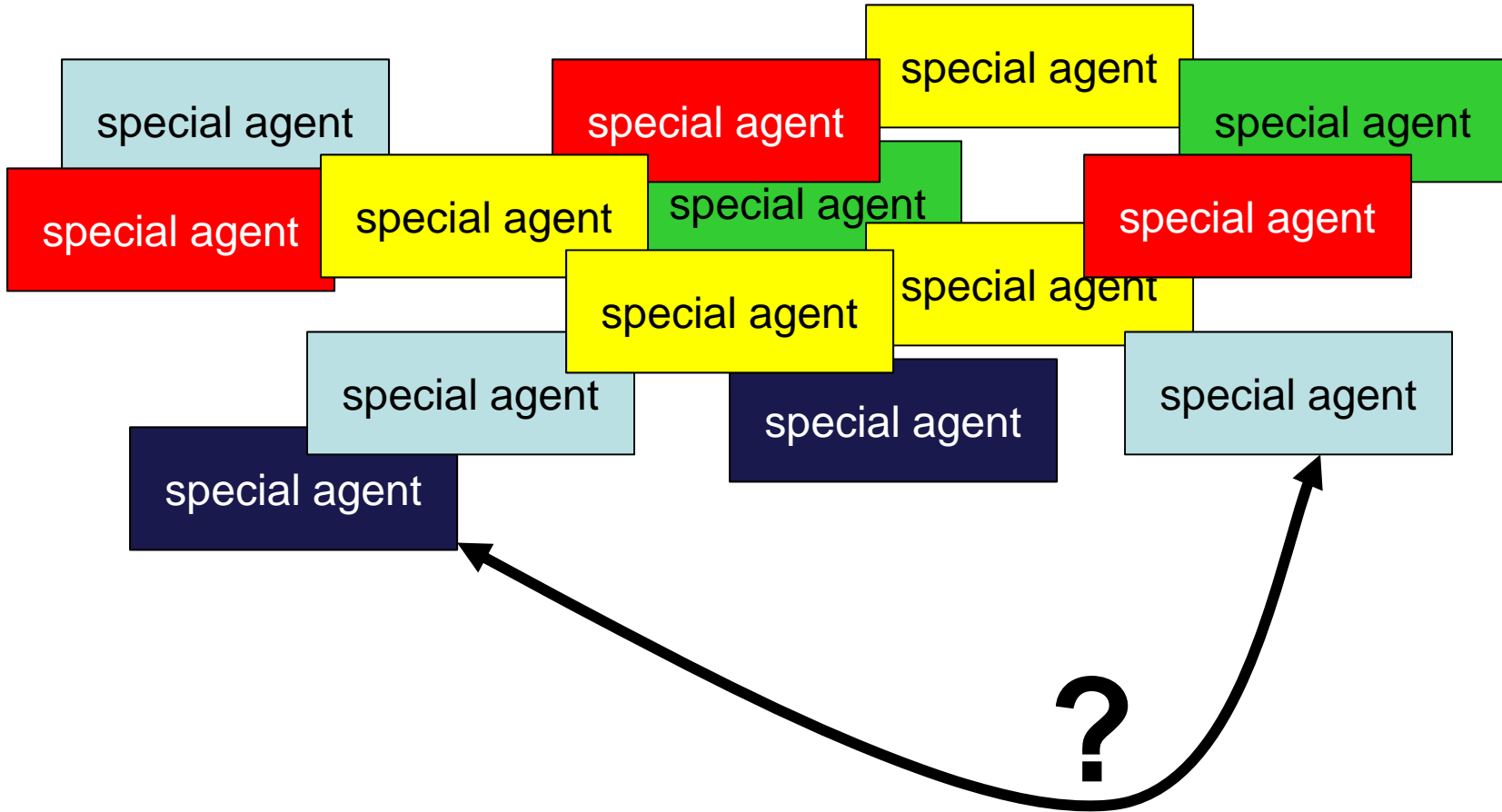
# Equipment inside a home that could be connected...



...



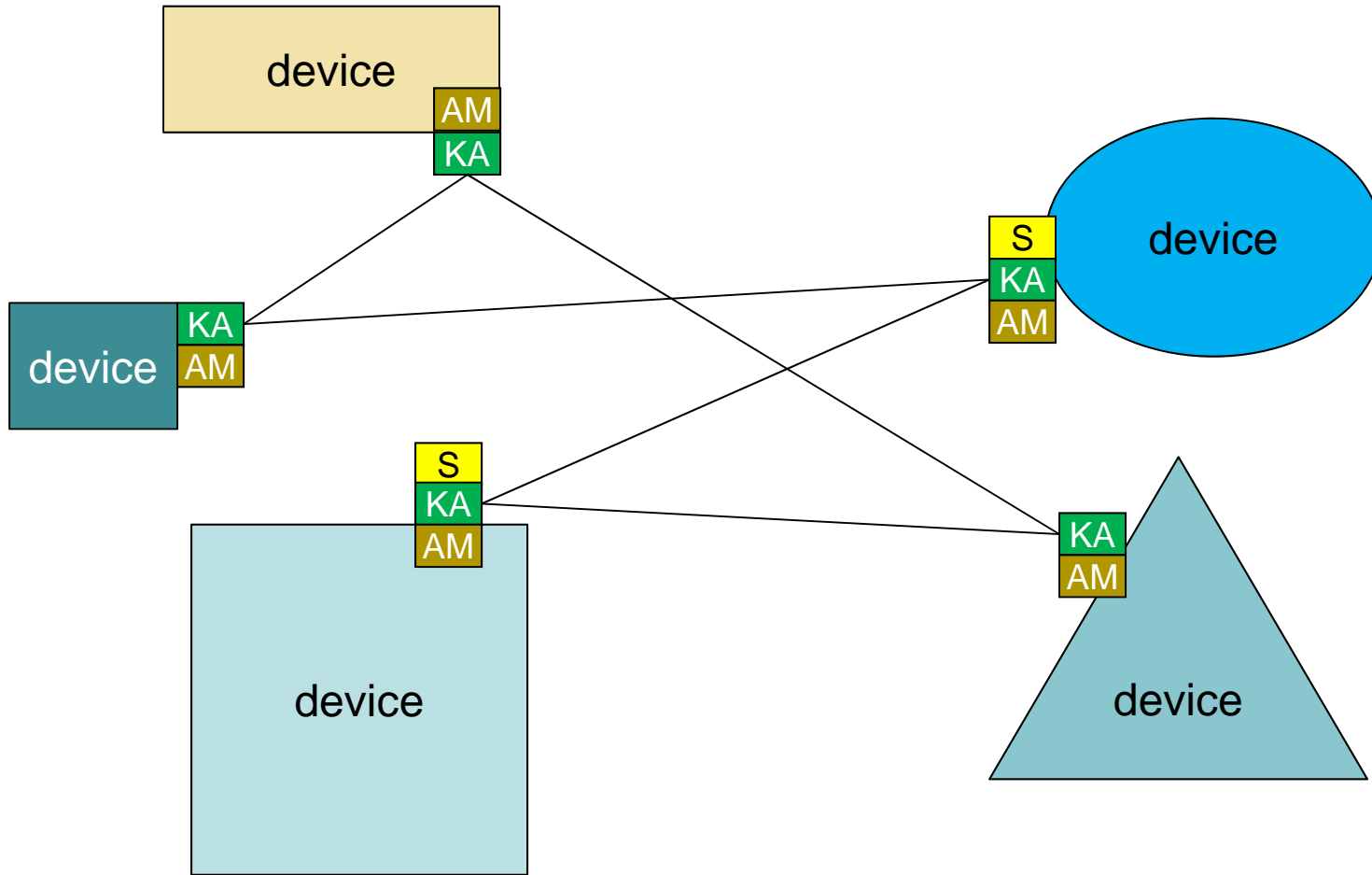
**universal** but **centralized**



**autonomic** but **s p e c i a l i z e d & b i g**



# What we need...



**KA** Knowledge Exchange    **AM** Autonomic Control    **S** Distributed Management

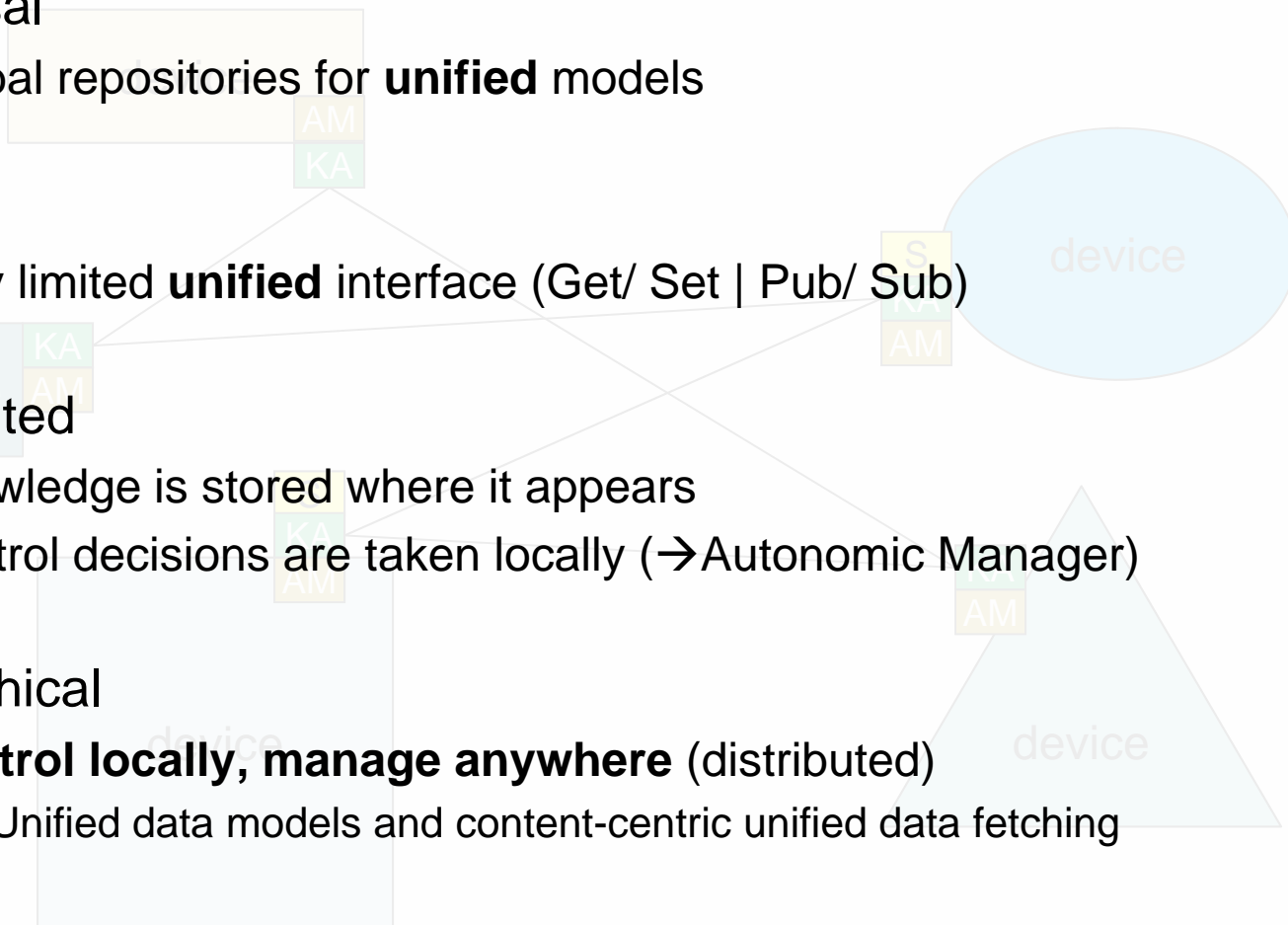
**autonomic and universal & small and hierarchical and distributed**



# What we need...



- ❑ Universal
  - Global repositories for **unified** models
- ❑ Small
  - Very limited **unified** interface (Get/ Set | Pub/ Sub)
- ❑ Distributed
  - Knowledge is stored where it appears
  - Control decisions are taken locally (→Autonomic Manager)
- ❑ Hierarchical
  - **Control locally, manage anywhere** (distributed)
    - Unified data models and content-centric unified data fetching

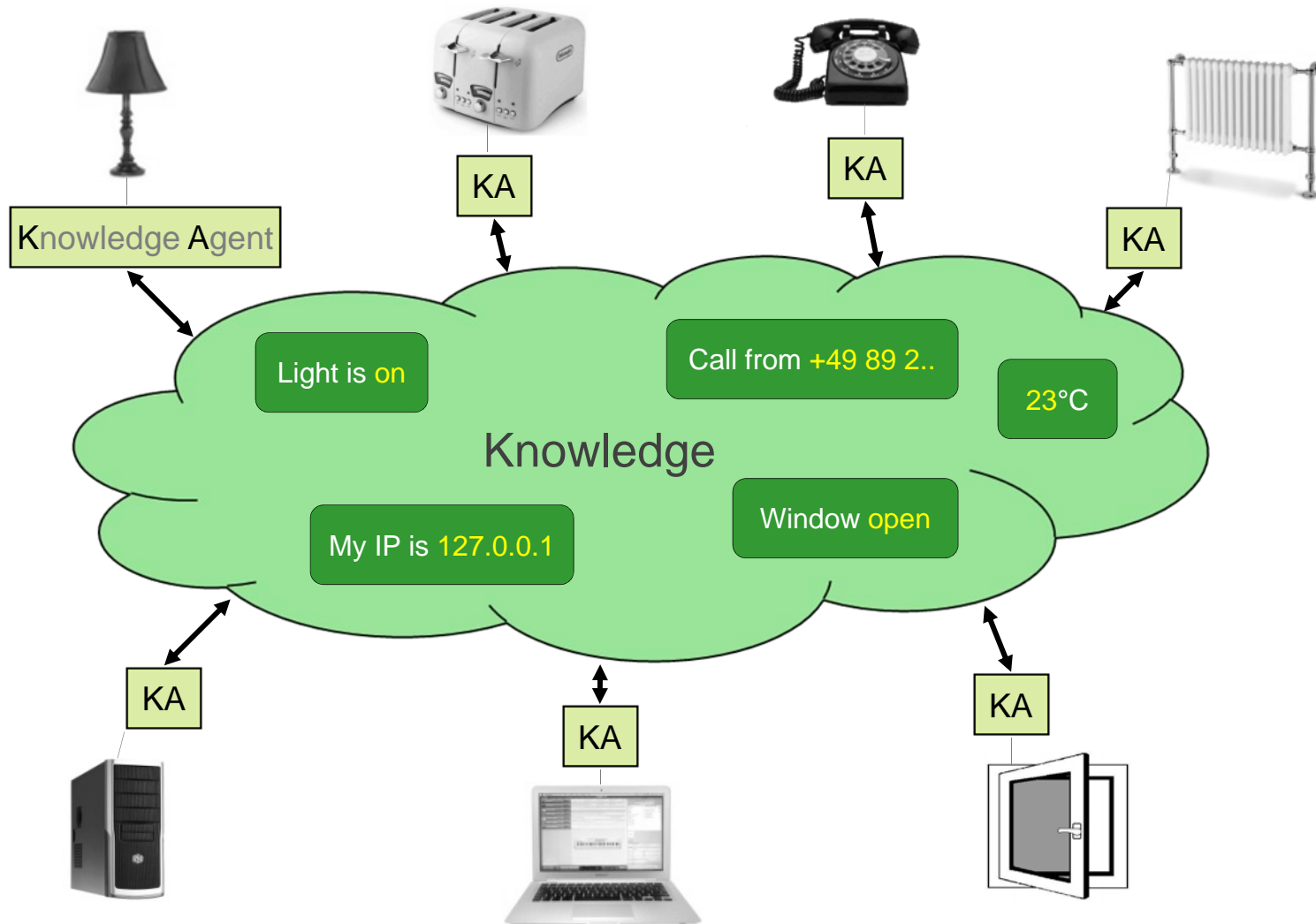


KA Knowledge Exchange    AM Autonomic Control    S Distributed Management

→Autonomic Manager & small and hierarchical and distributed



# Knowledge Agent: Content Centric Management





- Unified interface to hard- and software components



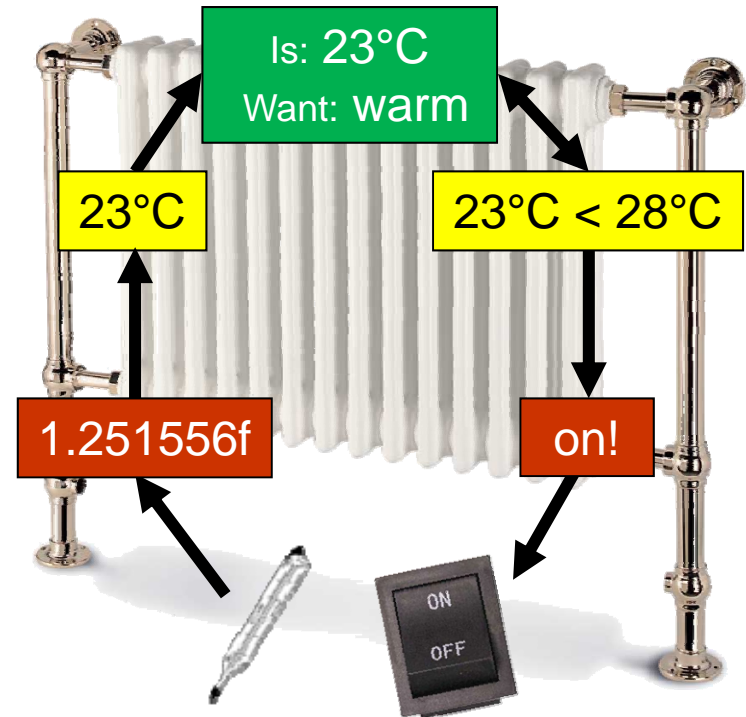
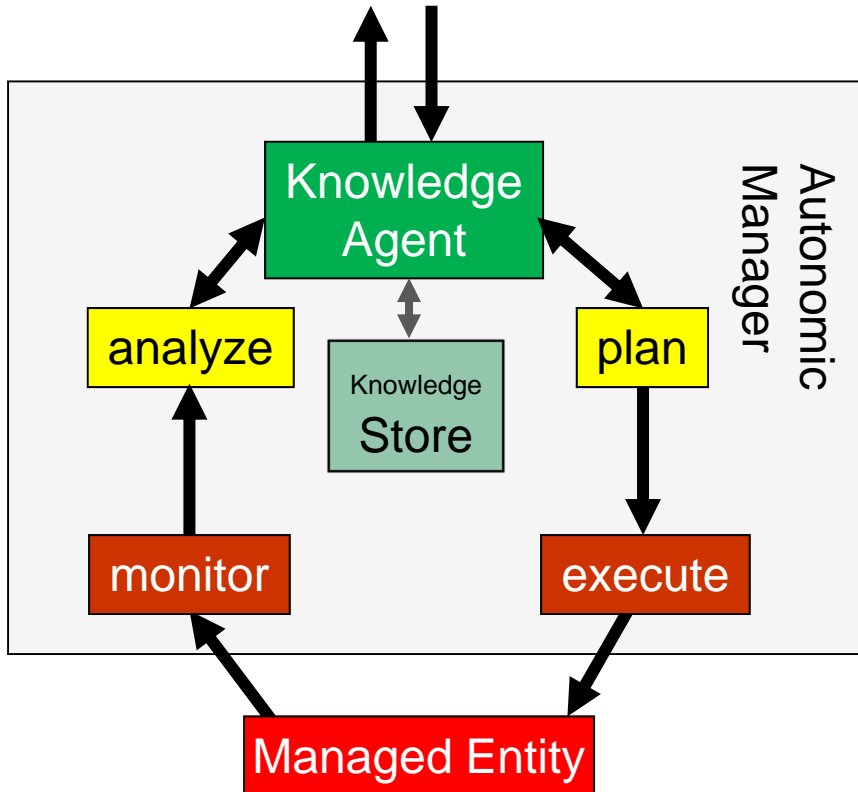
- „Pluggability“ → Synergy → easy consistent to use

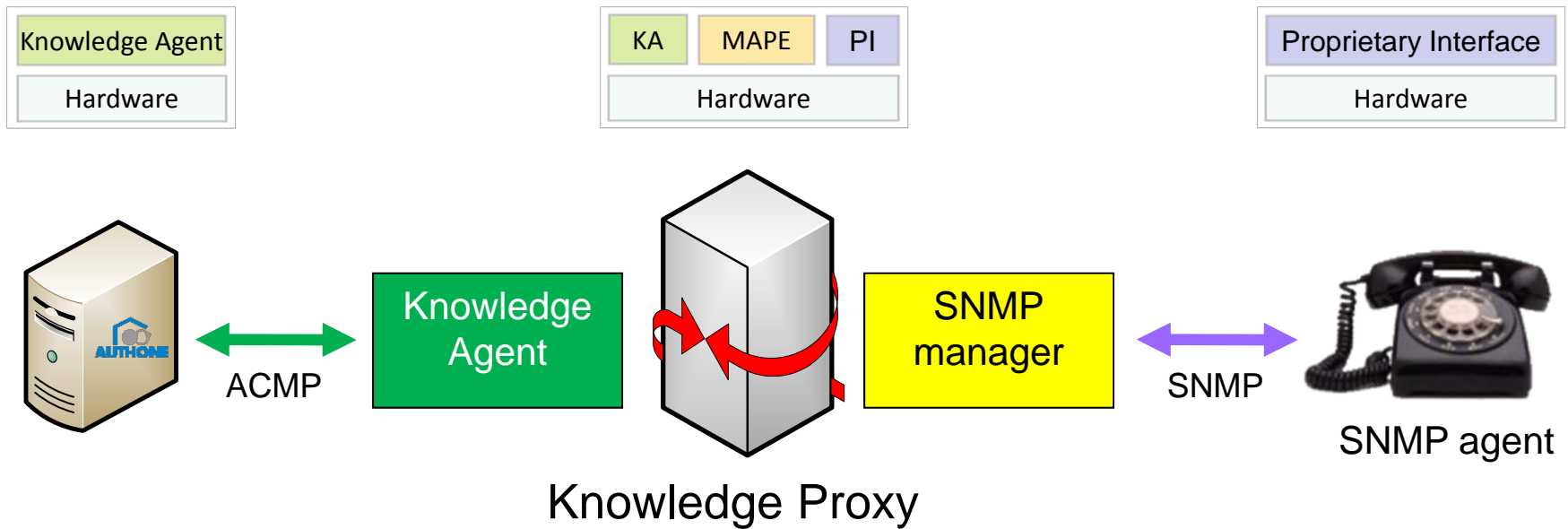
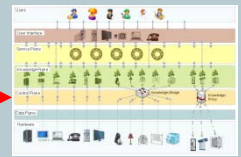


# Autonomic Manager



abstraction

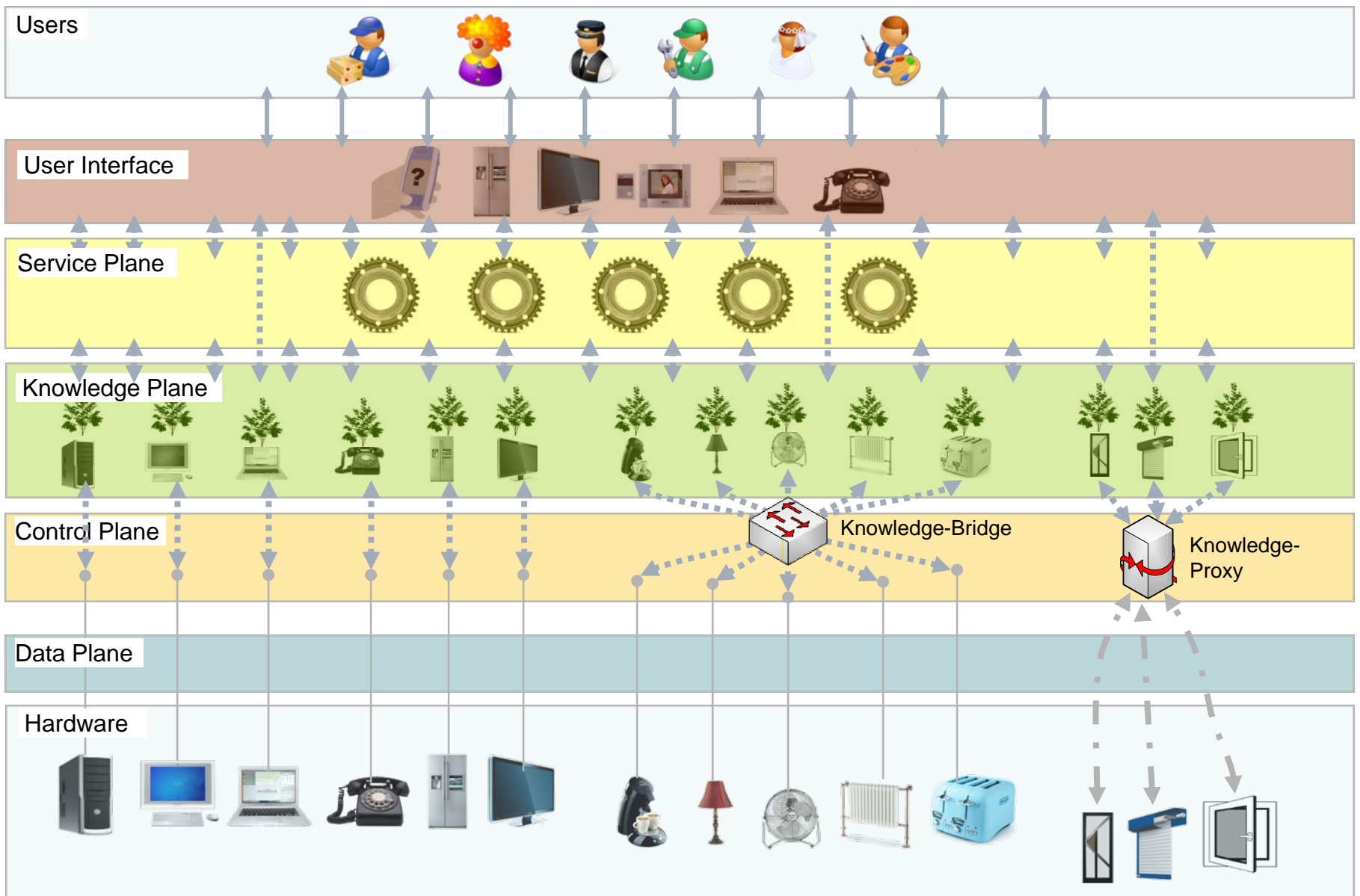




- ❑ Transform data (proprietary ↔ ACMP)
- ❑ Provide autonomous functionality as proxy



# Layered Architecture





Thanks for your attention!

**Questions/ Discussion?**

Further information...

project: [www.authone.de](http://www.authone.de) | ongoing work: [www.pahl.de](http://www.pahl.de)