



CoSSMic Concepts and Overall Architecture

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SINTEF ICT

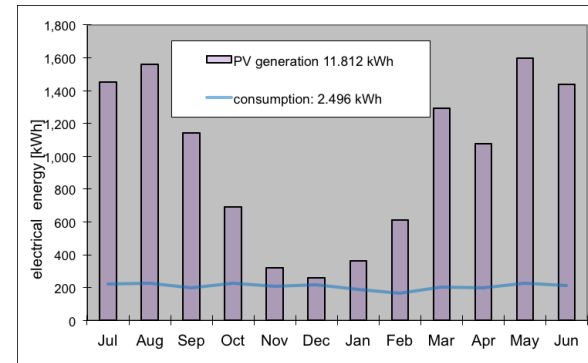
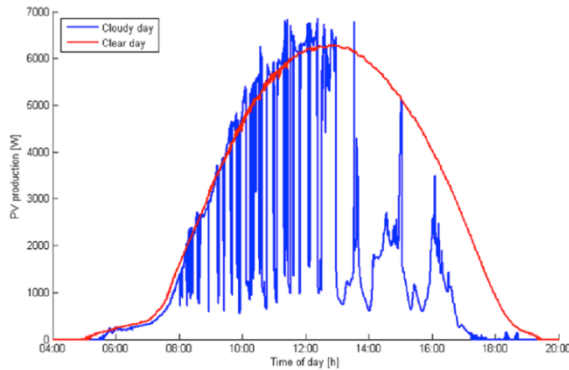
Smart Energy Workshop

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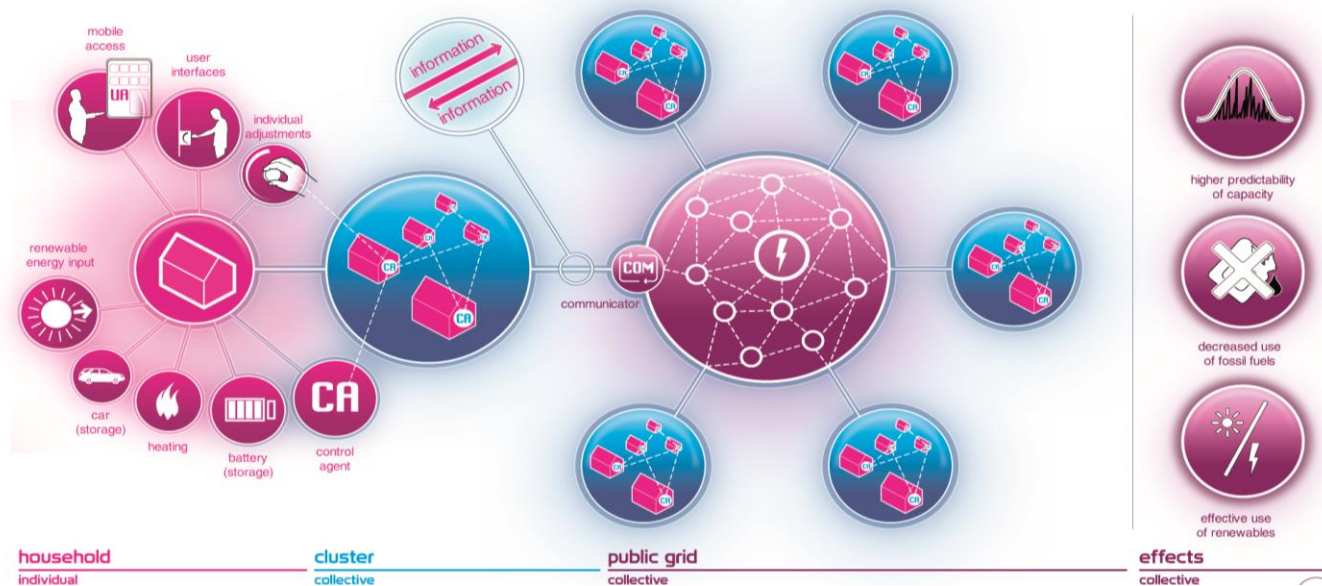
Motivation

- Locally deployed PV panels is an important element in ZEB and in the transition to a future energy supply system based on renewable energy sources
- However the fluctuating nature of the output from such panels is a challenge limiting both the achievable level of self consumption and self sufficiency
- Batteries are expensive
- Different buildings have different energy needs and usage patterns



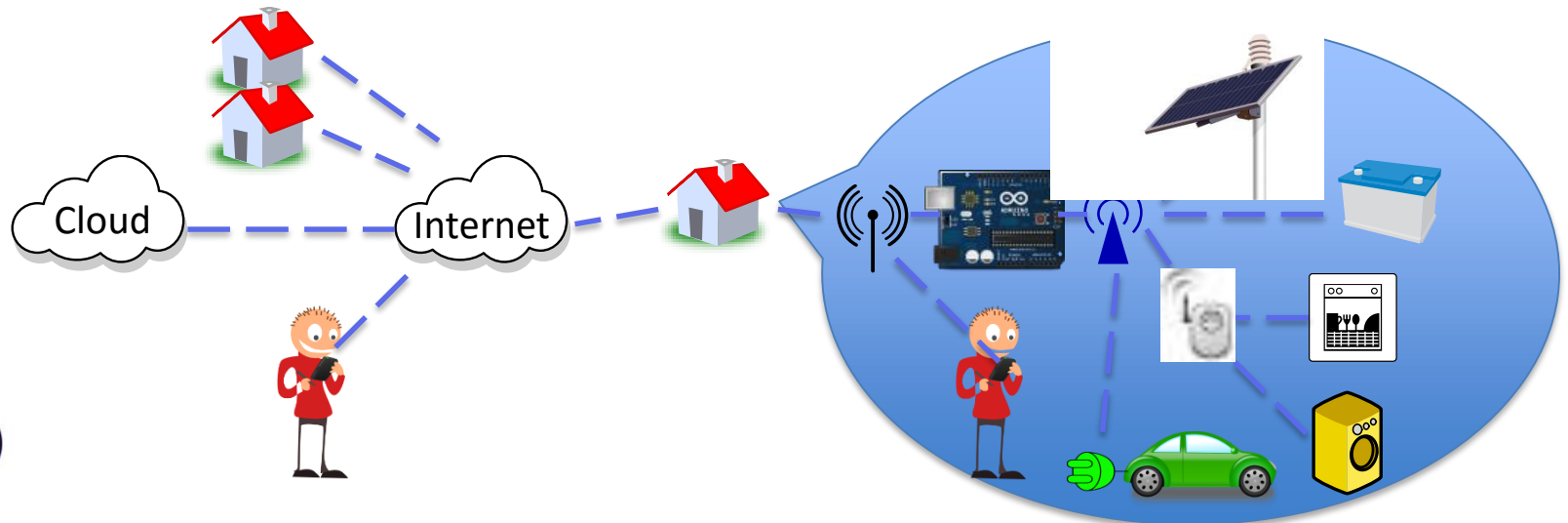
CoSSMic approach

- Exploit the variation in energy consumption patterns between buildings in a neighbourhood by coordinating load shifting and the use of storage capacities
- Automate the control of energy consuming tasks in the house in accordance with rules and constraints set by the house inhabitants
- Propose suitable business models both for sharing the benefits between the members of the neighbourhood and the trading of power with the public power grid



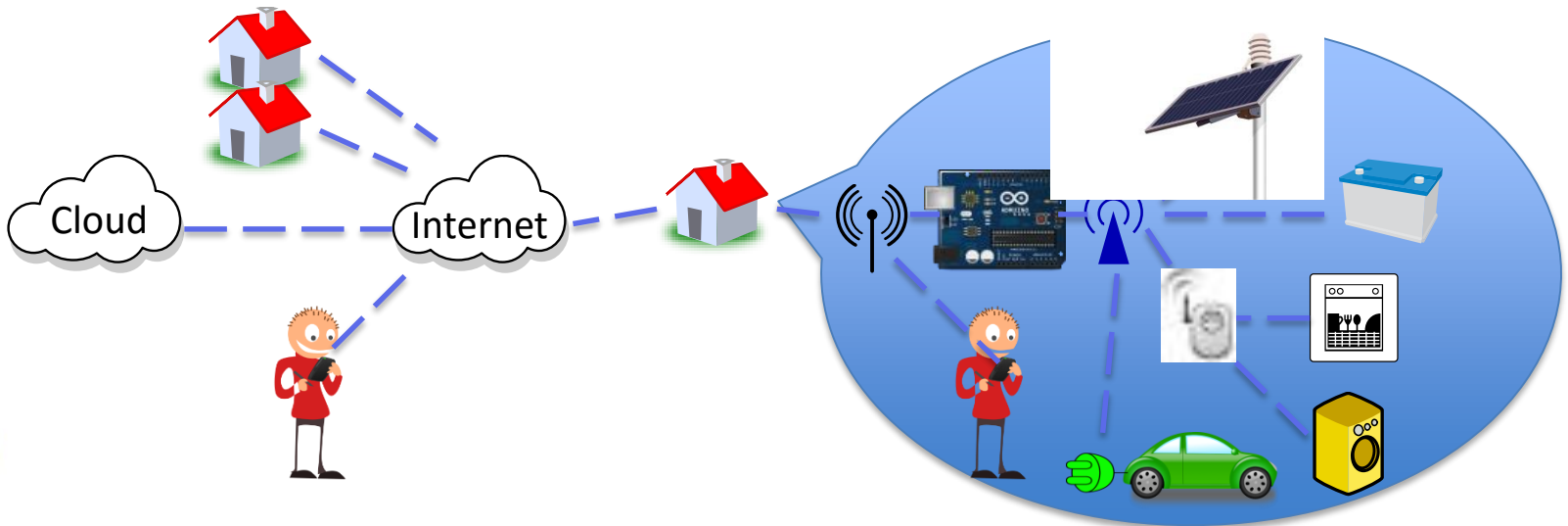
The CoSSMic concepts

- Household & neighbourhood
- Devices & tasks
- Distributed System Operator (DSO) & retailers
- Load shifting according to constraints and preferences set by the user
- Price model
- Weather forecasts

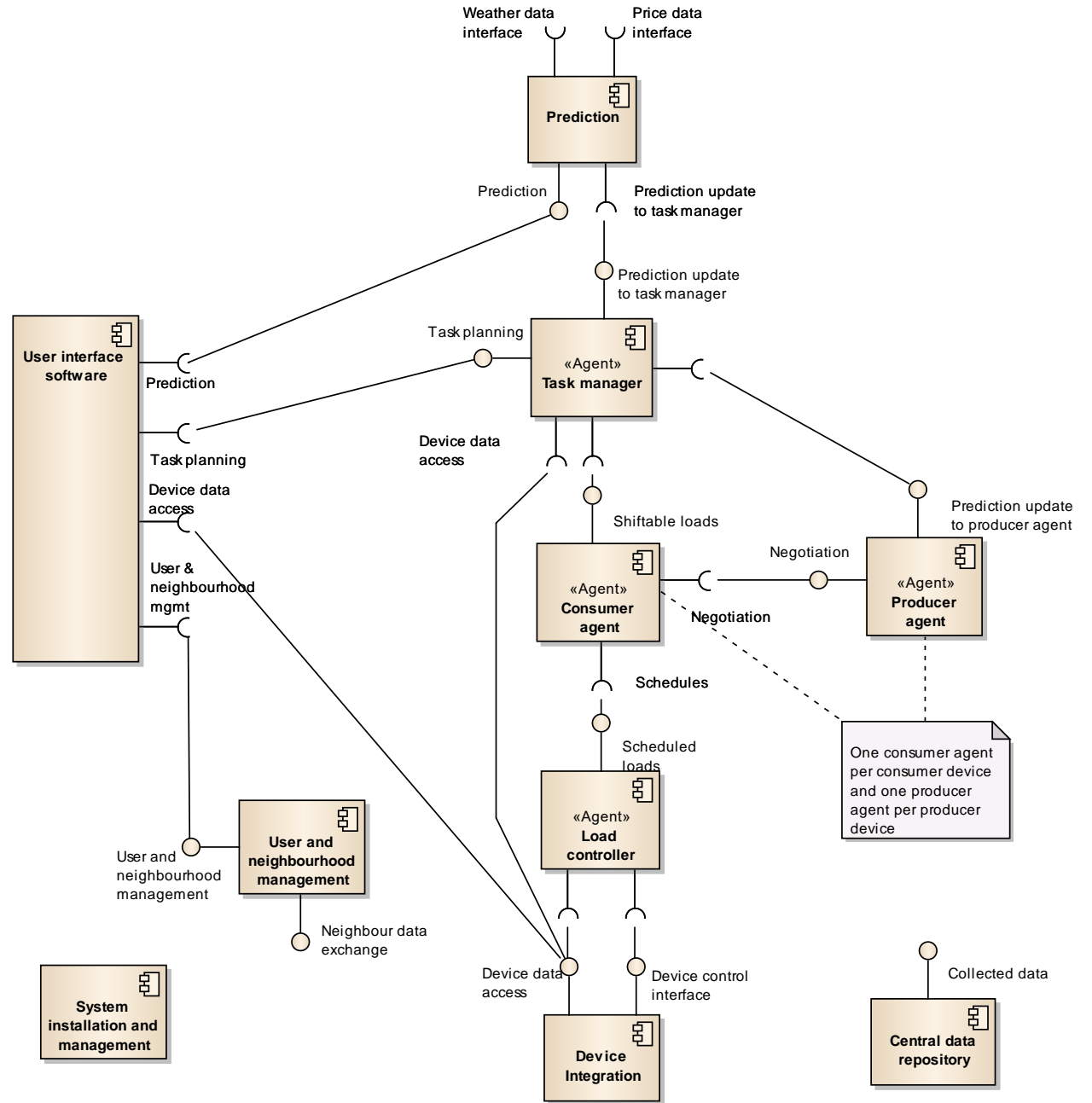


The CoSSMic system

- Controller in each building
- Communicating with other controllers in the neighbourhood through the house WiFi and the Internet
- User interface on smartphones or touch pads connected through the Internet
- Peer-to-peer, no central controller for the neighbourhood
- Low-threshold technology (low cost hw, easy to install and use, deployable locally or in the cloud)
- Open source software



Overall Architecture





Thank you!

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