

Agent Substitution Mechanism Demonstration: Indoor Light Level Control System

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Abstract

The demo shows application of the agent substitution mechanism developed for dataflow networks implemented on top of Smart-M3 platform. This mechanism allows to temporarily replace an unexpectedly disconnected agent with a substitute one till the moment of the original agent reconnection.

The use of mechanism allows network to appropriately operate despite the agent failure.

The designed demonstration system controls light level inside the living room. The system consists of:

- Sensors that measure light level inside and outside the room.
- Actuators that allow to control window blinds and lamp light intensity.
- Remote control unit, which allows user to set desired light level.
- Agent that controls actuators using information from sensors and remote control.

The system controlling window blinds and lamp light intensity makes light level in the room corresponding to the desired light level. If the agent loses connection with the network it is substituted by another agent. It allows to prevent interruption of the system operation and not to disturb user in cases, when the agent breaks down.