embin

BUILDING AUTOMATION

Building Automation Protocol Gateway

Embedded Firmware | Protocol Translation | Industrial Communication

CLIENT

A global manufacturer of mechanical and electronic building automation equipment.

THE PROBLEM

The client's equipment — widely used and well established — spoke its own proprietary communication protocol, developed years before industry-wide standards existed. That was fine when their equipment only needed to talk to itself, but increasingly their customers wanted to connect it into modern building management systems, which all expect to speak an industry-standard building automation protocol. Redesigning the equipment's internal communication from scratch wasn't realistic — there were too many units already in the field running the existing protocol.

WHAT WE BUILT

Rather than touching the client's existing equipment at all, we built a gateway that sits between it and the building management system and speaks both languages. On one side, the gateway presents itself to the building management system using the industry-standard protocol, so it looks and behaves like any other compliant device. On the other side, it talks to the client's equipment in their existing proprietary protocol, translating messages back and forth in both directions in real time. We developed the gateway firmware to run on the client's existing control hardware over their standard industrial wiring, so there was no new hardware to design or certify — just firmware that made old and new systems understand each other.

WHAT IT DOES

- ✓ Presents the client's equipment to building management systems using an industry-standard automation protocol
- ✓ Translates messages in both directions between the standard protocol and the client's existing proprietary protocol, in real time
- ✓ Runs as firmware on the client's existing control hardware — no new circuit boards or hardware certification needed
- ✓ Communicates over the standard industrial wiring already used across building automation installations
- ✓ Lets already-deployed equipment in the field gain compatibility with modern building management systems via a firmware update

OUTCOME

The client's existing product line — including units already installed in buildings — gained a path into modern building management systems without a hardware redesign, opening up integration with a much broader range of installations than the original proprietary protocol allowed on its own.

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