Optima
In control since 1995

Optima completed installation of S57 processor in less than 48 hours

The customer

Our customer for this project was a leading producer of bottled and canned meals. One of the company's UK based factories turns out more than 1 billion cans of food each year. At the production rate of 3 million cans per day, control systems reliability is not simply a must, it ultimately affects the company's overall profitability.

The brief

The customer approached us with regards to upgrading a food-processing machine at their largest production site. The obsolete Siemens S5 PLCs installed on site were no longer seen as reliable in the long term. However, the migration from S5 to S7 PLCs was not something any other system integrator could do. Why? Some items of the PLC equipment in the main rack are high-feature modules and cannot be upgraded in stages using any other method:

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- 525 Serial module
- 535 Serial modules
- WF470 VGA Module
- IP242 Counter module

Some upgrade proposals suggested using the S5 racks as remote IO with a new Siemens S7 PLC, but this could not be achieved with the modules shown above, so the only option was to use our internally-developed S57 processor.

Our solution

Optima initiated a S5 to S7 PLC upgrade for the plant utilising our S57 processor hardware and Siemens S5-S7 interface card. The S57 processor was first installed into the existing S5 rack to minimise downtime whilst the code was converted in stages. Following the conversion, a new S7-400 rack will be installed with a new S7 processor running the converted software.

Optima's new S57-II processor was installed and running after a one weekend shutdown. The machine is required to run from Sunday evening until Friday afternoon. Because of this, the customer had only a limited amount of downtime.

Optima also completed the commissioning of the installed equipment. The screen hardware and printer functions required some re-addressing to function with the higher-performance processor, but otherwise commissioning was straightforward. The customer had very stringent guidelines in place for modification of the program software because of food safety. With our initial upgrade, there was no re-commissioning of the code required because the program had not been altered.

How does the S57 processor function?

The S57 is supplied pre-loaded with the customer's original S5 operating software and is then installed directly into the slot previously occupied by the original S5.
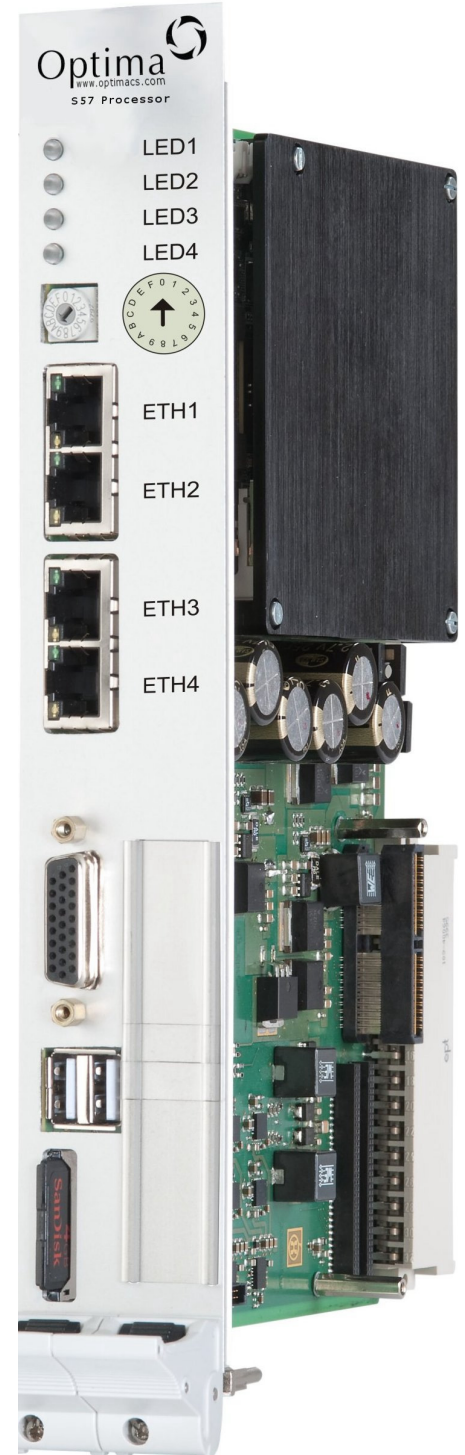
WE HAVE COMPREHENSIVE SYSTEMS & MACHINE SAFETY EXPERIENCE WITH…

↻ **Siemens, S5&S7 PLC, WinCC Scada, MasterDrives, Sinamics & Simotion** ↻ **Allen Bradley PLC,SCADA & Drives**

↻ **GE Fanuc PLC&SCADA** ↻ **Fortress GuardMaster** ↻ **Parker SSD Drives** ↻ **Wonderware SCADA** ↻ **Profisafe**

↻**Pilz, PSS, PNOZ Multi SICK UK** ↻**Intellution SCADA** ↻**SICK UK** ↻ **Schneider** ↻

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The existing S5 software can then be converted into the S7 programming language by our skilled engineers, either as a complete system or a piecemeal one section at a time. The S57 processor runs both S5 & S7 software in parallel. Migration of the S5 program can be activated in stages. We can revert to the original program at every stage of the process. When all of the existing S5 software has been converted, the S57 and S5 hardware is replaced with a standard Siemens S7 processor.

The benefits

Now that the S57 processor is successfully running at the customer site, we can upgrade the HMI to WinCC or WinCC Flexible and test this side-by-side with the old screen with no loss of production and only a few hours of downtime to connect the new HMI/SCADA.

Because the new S57-II Processor is equipped with a PROFINET network, ET200S/M Remote IO can be installed to replicate the counter functionality as and when budgets allow.

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