

## Packaging Line Control

### Food Producer, Ireland

#### Project Summary:

The company, makes prepared frozen meals for the retail and catering trade. They have several Lines in the factory which make a variety of products. All products are cooked, filled, frozen and packed on site.

<b>Project Name:</b>	Line Control – Various Lines
<b>Industry:</b>	Food – Ready Made Meal Production
<b>PLC:</b>	4 x Siemens S7-300s
<b>SCADA:</b>	Simatic Operator Panels
<b>Networks</b>	Profibus
<b>I/O count</b>	800 I/O
<b>Project Value:</b>	Various

Logicon provide high-speed variable and fixed Line control systems to the company. The Lines controlled by Logicon systems are:

- Line 3 Packing and Filling.
- Line 4 Packing and Filling.
- Line 5 packing.
- Line 6 packing.

All systems are controlled by Siemens S7 PLCs and Simatic Panels. The PLCs control all aspects of the filling and packing Lines including machines from Ishida, Multi-Fill, Fuji Flow, Mondini and Frigo Scantias.

### Project requirements:

The introduction of new product ranges to Line 3 and 4 required additional control to be added to the Lines. These Lines previously had a large manual element to their operation. The automation of Lines 3 and 4 involved the installation of an S7-300 PLC and Panel on each Line. In addition, these Lines were controlled by servo motors to allow precise motion control of the conveyor and shuttle fillers. Line 4 was fitted with 3-axes servo control system, while Line 3 was fitted with 7-axes control. The addition of precise motion control to the Lines and filler heads resulted in increased Line efficiency and product flexibility.

The main aspects of the project were:

- Upgrade of Line 3 from a mainly manual process to a completely automated Line – the addition of an S7-300 PLC and an Panel.
- Replacement of the inverter on Line 3 with servo motors – one to control the conveyor and 6 to control the shuttle fillers.
- Complete automation of a new Line for Line 4. This was also controlled by an S7-300 and an OP.
- Line 4 uses 3 servos motors for motion control – one for the conveyor and two for the shuttle fillers.
- Control and monitoring off all the machines on the Lines – fillers, packers, freezers, wrappers etc.
- Line 4 operators can select between 10 recipes which allows several different products to be made on the same Line.
- Line 3 is fully customisable. Because of the large number of different recipes possible on Line 3, each machine was made fully customisable to avoid having too many recipes.