A LONG-LINE FISHING SYSTEM

Microcontroller increases sales by 1000%

The Dexter Products Company has applied microcontroller technology to enhance the performance of its long-line fishing system enabling the improved system to be applied in larger fishing vessels. The improved performance of the system will enable the company to improve the company's competitive position significantly enabling it to double sales within 2 years of its launch.

The Dexter Products Company is a long-established family-owned business which has specialised in the design, development and manufacture of general engineering products including specialised products for the fishing industry. The company's product ranges include sports and commercial fishing equipment, handcuffs and precision components for machinery manufacturers.

Sales of Dexter Products' Microliner mono-filament long-line fishing system were limited by the fact that the hauling systems on these vessels had to be manually operated. This limited the system's application to boats of typically less than 15 metres in length. The introduction of electronic control of the spooling and hauling systems removes this limitation allowing the system to be employed on larger vessels with minimum operator intervention, thereby resulting in increased sales. The prototype development was funded under the FUSE project at a total cost of 58 K€.

The additional profits will repay this investment within 21 months. The return on investment over 5 years will exceed 600%. Industrialisation costs are 30 K€.

SIGNIFICANT ECONOMIC BENEFITS

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PRODUCT IMPROVEMENTS

Dexter Product’s long-line system was manually controlled and required continuous operator supervision. The introduction of a microcontroller allows much lower operator involvement and provides the following product features:

- Constant tension control of the mono-filament line as it is deployed and during hauling to prevent damage after being wound in a wet state.
- Line tension monitoring to detect line snags when hooks are caught or obstructed, and the automatic reduction in spooling speed or stopping of the reels to enable the obstruction to be removed.
- The provision for operator controls for the line shooting and line hauling speed and to enable line maintenance and repair.

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<thead>
<tr>
<th>DEXTER PRODUCTS COMPANY LTD</th>
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<tr>
<td>Employees</td>
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<td>NACE code: 28</td>
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<td>Technical expertise before the project</td>
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<td>Technical expertise at the end of the project</td>
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FUSE: Innovation with Microelectronics

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Choosing the Right Technology

Dexter Products selected microcontroller technology for this application because it provided:

- A flexible electronic control solution for the complex electromechanical system enabling system tuning to be performed relatively easily.
- The speed of response required to prevent system damage when line snagging occurred.
- Design flexibility based on programmability to enable the system to be fitted to different types of vessels in the future.
- Low component cost in a cost-conscious product market.

A Partnership for Success

Dexter Products were assisted in conducting the project by subcontractors who provided the following support:

- Microcontroller training.
- Specification development.
- Detailed hardware and software design.
- Prototype evaluation and design iterations during the evaluation process.

The main project tasks, effort and costs are listed in the adjacent table.

You Can Also Benefit from Microelectronics

Dexter Products applied microcontroller technology to improve the operability of its long line-fishing system and thereby open up new market opportunities. You can also achieve significant benefits by acquiring the right microelectronics technology and utilising it in your product or manufacturing process. You can get help from FUSE to realise this.

FUSE is a technology transfer programme, funded by the European Commission to stimulate the wider use of microelectronics technologies by European enterprises to increase their competitiveness and enhance their economic growth. The demonstrator described here is one of many examples in the public FUSE portfolio covering the whole spectrum of microelectronics technologies and spanning a wide range of applications and industry sectors.

FUSE provides you with:

- Best practice in acquiring specific microelectronics technologies and conducting full development projects through the FUSE portfolio of real life demonstrator documents.
- Local training and expert support to plan your innovation realistically and help you conduct your project successfully.

Further information and support relating to this and other demonstrators can be obtained from the addresses below.