Mipro relies on HIMA for over 20 years

Raimo Laine, Managing Director of Mipro Oy and one of the company's founders, has been a pioneer of the development of the railway system. Mipro was the first company to use industrial safety logics for the control of railway traffic.

"Mipro is an expert company that specialises in safety. We have been involved in the automation and safety business for various industries for over three decades," is how Raimo Laine, Managing Director and one of the company's founders, describes Mipro Oy. "Today our main products include safety-related systems for railways and industrial processes, and solutions for water and energy management. We are based in Mikkeli, Finland, and also have activities in Eastern Europe and the Middle East. In the 2010s we have strongly focused our business efforts on new market areas, for example in Europe."

Co-operation and a comprehensive product range to score in the railway sector

"In the early 1990s we started to focus on the development of safety-related systems, especially for railway traffic management," explains Laine. "Right from the start our development work was conducted in close co-operation with the customer – the Finnish Rail Administration (Finnish Transport Agency nowadays). This formed the foundation for our competence and strength in the railway sector today. We have thus always been able to understand customer needs and take them into account in practical product development. Another significant success factor is that we are able to provide a complete product selection for railway traffic management, including interlocking and traffic control systems for main lines, regional lines and rail yards."

Applying industrial safety logics to the railway environment

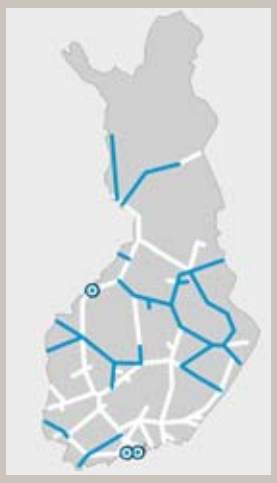
"Our co-operation with HIMA started in 1987, actually before we were involved in the railway business. Initially we used HIMA safety logics in our safety-related systems for industry. Examples include solutions for energy production, the chemical and mining industries, and the metal industry, to manage the functional safety of various production plants. To be precise, we have used HIMA safety logics as part of our railway systems since 1992. Actually Mipro was the first company to apply industrial safety logics to the railway environment," states Laine.

HIMA safety logics in the core of Mipro's interlocking systems

> "In a sense, HIMA's safety logics can be said to be ageless."

"HIMA safety logics are an essential part of our MiSO TCS interlocking system," adds Laine. "For the interlocking system core we need SIL4 level electronics. HIMA was the first supplier to deliver this in the sector. The scope in which we have used HIMA products is evident from the fact that today our interlocking systems are used to manage almost half of the Finnish railway network. This translates to over 2000 track kilometres. Since the 1990s we have played a central role in the modernisation and renewal of the signalling and traffic control systems of the Finnish railway network, so that it complies with European standards."

The number of track kilometres controlled by Mipro's HIMA-based systems will significantly increase in the near future, as in 2013 the company was selected as the supplier of the Kokkola-Ylivieska signalling system project. The project is the largest ever implemented in Finland and it is also globally significant because of its high safety requirements and scope. A challenge of the project is that it covers the existing single-track section and an additional new track which are being built simultaneously. These form the new double-track section on the Finnish west coast, the total length being about 80 track kilometres.



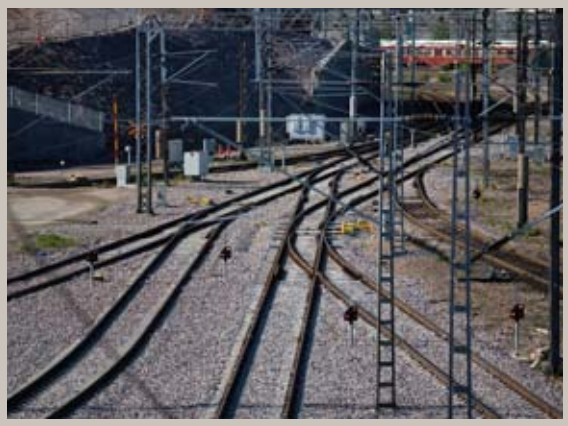
Mipro's MiSO TCS systems control nearly half of the Finnish railway track kilometers. That is in kilometers over 2000.

Certified and approved products with long lifecycles

"We have applied HIMA's safety controllers, such as HIQuad and HIMatrix series, as a part of our interlocking and axle counting systems and our new product MiSO TC turnout controller," explains Laine. "Our level crossing systems are built on both the HIQuad and HIMatrix platform. The modernisation and renewal of the signalling systems of the Finnish regional lines is based on the HIQuad and HIMatrix product series too. We also introduced HIMatrix controllers in the modernisation project of the Ilmala marshalling yard between 2007 and 2012; in this project SIL 4 level electronics were already available."

"The HIQuad based interlocking systems that were commissioned in the 90's are still in use and there is no need to upgrade them," adds Laine. "In a sense, HIMA's safety logics can be said to be ageless. Of course, new features are introduced with new generations and they are utilised in our new projects."

"We have chosen HIMA's safety controllers because they are suitable for and easy to embed into our systems and applications," states Laine. "They are certified according to CENELEC standards, up to SIL 4 level, and thus meet the requirements imposed on our business. The modular structure of the logics allows us to configure systems of various sizes which are also easy to integrate into existing infrastructures through standardised interfaces. As for the maintenance, the long lifecycle of the products is an undisputed benefit and strength."



Ilmala marshalling yard

A long joint history with HIMA

"The interlocking systems we have delivered to the Finnish railway network therefore include several generations of HIMA electronics. In the beginning the railway safety requirements were not as high as today, and not until the end of the 1990s were SIL3 level deliveries required by our clientele. The fact that HIMA invested in the manufacture of SIL4 level electronics from an early stage was of decisive importance for us. It has been a precondition and basis for our current status as the only Nordic company supplying safety-related systems for railways according to the highest safety integrity level," says Laine.

"We have a long joint history with HIMA and we have come to appreciate the high quality and reliability of their products. The same applies to the company; we value their experience and knowledge. We are confident that our future co-operation will continue to be as close and as successful as it has been until now."

"We have come to appreciate the high quality and reliability of HIMA products."

The Ilmala marshalling yard modernisation project successfully concluded:

Mipro's flexible and distributed interlocking system ensures safe and efficient traffic management at one of the biggest marshalling yards in Europe

In January 2013, Mipro concluded one of their biggest projects and handed over the signalling system delivered to the Ilmala marshalling yard to the Finnish Transport Agency.

The size of the marshalling yard, scheduling of the project over several years, and consequently, implementation in stages without disturbing or stopping the daily yard operations gave the project specific characteristics and challenges. The marshalling yard modernisation project started in 2006 and continued until the end of 2012.

In the project, Mipro was responsible for the modernisation of interlocking and traffic control, as well as for the planning and implementation of the data transmission solution for the marshalling yard, which covers an area of 60 hectares and has 70 kilometres of tracks. The unique MiSO system features, such as modular distributed system architecture and centralised traffic management, enabled the marshalling yard areas to be constructed and commissioned in stages.

The modernisation of interlocking at Ilmala meant that approximately 270 points were centralised under the control of one interlocking system. In addition, over 200 points and signals were replaced, about 40 new system cabinets were furnished and installed and 10 traffic control servers were installed. Three new operator working places and an additional one for training purposes were equipped. The modernisation of the traffic control resulted in centralised traffic management of the entire yard via one control centre.

In addition to the interlocking and traffic control system Mipro delivered eight level crossing systems and a separate train movement alarm system.

The Ilmala marshalling yard plays a crucial role in providing functional and smooth passenger traffic for the whole of Finland; currently, about 80 percent of Finland's long-distance cars, 65 percent of its electrified locomotives and all the commuting trains in the capital area are maintained at Ilmala. As control operations this equates to approximately 1600 shunting permissions and approximately 3300 centralised point movements daily.

HIMatrix Safety systems (SIL 4) of HIMA were used in this project.