

5G heralds new era of logistics

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The official opening of Fabriek Logistiek is a fact. In the logistics test center autonomous vehicles, robots, drones, AR smartglasses and other hi-tech solutions rely on a 5G-MPN (Mobile Private Network) from Proximus.

Fabriek Logistiek is an initiative of East-Flanders POM (Provincial Development Company). Via this project, POM is supporting the expansion of East-Flanders as a logistics hotspot, said An Vervliet, Provincial Deputy for Economy, at the official opening of the test center. “In terms of logistics, our province is strong, with two ports, large motorways and a lot of inland shipping. But logistics also take place in the warehouses of companies. With Fabriek Logistiek, we want to bring innovations closer to the entrepreneur and, by doing so, take the logistics sector to a higher level.”

5G test cases possible

In real terms, Fabriek Logistiek was allocated two logistics halls, on a new industrial site in Zwijnaarde. There, companies will get the opportunity to test in practice how they can optimize their logistics processes, by for example making full use of new technology. 5G has a key role to play in this. “POM convinced us that we had to implement 5G,” says Danny Vanrijkel, project manager at Fabriek Logistiek. “Proximus was the most interesting player in our market survey because of its overall concept, technical support and experience.”

High bandwidth and reliability

Innovation is the answer to the many challenges facing the logistics sector today, not least in e-commerce. Take, for instance, the ever shorter delivery times, a shortage of personnel and rising transport costs. In this context, 5G plays a key role as a platform for innovations, such as warehouse robots and artificial intelligence (AI). "With a 5G MPN, a company has a local 5G data network, with all the associated advantages: a high bandwidth, very high reliability and very low latency," says Eric Ibens, Business Development Manager at Proximus.

Data remains local

The local 5G breakout offered by the 5G-MPN is particularly important for the future. "Modern warehouse applications, such as robots, constantly exchange large volumes of data that simultaneously require rapid processing. With a local 5G-MPN data network, you can guarantee that speed," Ibens explained. "This opens doors for the use of countless applications at the same time. Furthermore, it is done securely: the data always remains within the private network."

Inventory drones

A good example of the possibilities of 5G is the use of drones for stock inventory in the warehouse. Ibens: "The drone takes several high-resolution photos per second of stock items. An AI application analyzes the data and searches for the correct code on the pallets. The local 5G network can process these data quickly and securely, and then sends them back to the drone."

Prioritizing data thanks to network slicing

DroneMatrix, a developer of drone applications and, like Proximus, a partner of Fabriek Logistiek, demonstrates in the logistics test center how to use drones in a warehouse. Frederik Winters, Director of Business Development, emphasizes the importance of 5G for the usability of drones in warehouses.

Not only the higher bandwidth, which enables the processing of large data volumes, but also the low latency plays a role. "If you want to operate a drone safely from a distance, you have to be sure that you can intervene quickly." At 5G, you can give priority to certain data streams, via network slicing, to guarantee crucial communication at all times.

Autonomy for robotics

In the warehouse, 5G supports the usability of automatically guided vehicles (AGVs) and other robotics, says David De Meyer, robot specialist at Computer Checkpoint. "Robots connected to wifi have a limited range. With 5G, you can extend the scope and guarantee autonomy in much larger areas. This is precisely why Proximus's 5G MPN is so important for our applications. Moreover, this is done in a more cost-effective way than other forms of connectivity, such as wifi."

Wifi versus 5G

"Wifi and 5G continue to coexist," emphasized Ibens of Proximus, "but, in an industrial context, wifi is not always available or there are elements that disrupt the signal. 5G is much more stable in this respect." This stability is also important for the continuity of the AGVs that drive through a warehouse. "Devices that move and make use of wifi switch from one antenna to the next. With each transfer, the signal briefly disappears, but that fraction of a second can have a major impact. With a 5G network, however, the connection is always guaranteed."

5G for added security

In a logistics setting, the potential of a 5G MPN is perhaps the most important in terms of safety. An innovative solution cannot be used if its safety is not guaranteed. The 5G network offers this guarantee, for example in the management and traffic control of AGVs. “Due to the low latency of 5G, AGVs can react very quickly, and thus stop on time and avoid accidents,” says Jens Roevens from Mabo Engineering & Automation.

Mabo is one of the partners of Fabriek Logistiek who worked out a use case together with Proximus in the test center. “Thanks to 5G, we can roll out communication protocols that ensure secure communication: all kinds of sensors form a real-time network that can intervene very quickly when things are in danger of going wrong.”

“With 5G, AGVs have a wider range and are safer”

Jens Roevens, Project Engineer Mabo Engineering & Automation

Optimization of AGVs thanks to 5G

Danny Vanrijkel, project manager at Fabriek Logistiek, is a firm believer in the potential of AGVs in combination with 5G. “AGVs are not always as profitable these days. For safety reasons they often have to drive slowly, which means that the number of movements per hour is low.

Thanks to a smart combination of portable tags for employees and smart navigation, AGVs will, in future, be able to drive faster in areas where there are no people. 5G makes this perfectly possible, which makes the investment in AGVs more interesting.” He also points to the potential of augmented reality (AR) in the context of training, one of the pillars of Fabriek Logistiek.

“5G allows us to offer a tailored service depending on each specific case.”

Eric Ibens, Business Development Manager Proximus

5G support needed by companies

The partners of Fabriek Logistiek are convinced that hi-tech applications using 5G are no longer in an experimental phase. “The market is ready,” said Ibens. “What's more, 5G allows us to offer a tailored service, depending on the specific case.” Fabriek Logistiek wants to take the logistics sector to a higher level with the use of innovative 5G applications.

“Today we notice that companies still have questions,” said Vanrijkel. “These companies see that wifi is starting to run up against its limits, but they don't always think about 5G in concrete terms because they don't yet know enough about its possibilities. This is precisely why the collaboration between Fabriek Logistiek and Proximus is so important here.”

“Companies are still not thinking enough about 5G because they don't yet know the possible applications.”

Danny Vanrijkel, Project Manager at Fabriek Logistiek