

# 5G set to boost robots in Denmark

**To begin using mobile robots in production should be as easy for companies as buying a consumer product and hitting 'play'. That is the purpose of a new research project led by Aalborg University. The project will combine the possibilities of 5G technology with the experience in autonomous and intelligent robots as well as intelligent automation.**

Together with some of the country's leading companies in autonomous robots and 5G technology, researchers from Aalborg University (AAU) will develop a comprehensive and user-friendly system that makes it much easier for companies to start using mobile robots. Innovation Fund Denmark invests 30 million Danish kroner in the project, which spans over the course of three years.

- We want to democratize the use of robots. Automation is crucial for economic growth, and we must thus increase the general use of robots in the Danish society. To get there, it must be much easier, so that not only major players, but also small companies can participate, says Preben Mogensen, who is a professor at AAU and the project manager.

## 5G is the key to the project

Under the title of *5G-Robot - 5G Enabled Autonomous Mobile Robotic Systems*, the project aims to increase the prevalence of mobile robot systems by 50%. By means of 5G connections, the project will work towards reducing both cost and startup challenges in connection with the use of mobile robots – and will thus provide a much better starting point for a company to transform its processes.

- With 5G, we get the same wireless reliability and speed as a physical cable. In this way, we will be able to have several robots running, while the computer processors and data will be combined in one central place rather than every robot having its own programmed intelligence. It lowers the unit price and makes it possible to utilize data much better, Preben Mogensen explains.

## This project will open brand new markets

The large companies already use robots on a large scale, but the goal is to lower the barriers so that robots are no longer reserved for large companies with an entire department dedicated to developing and implementing robot systems. The project will develop a *plug and play*-solution that is advanced but easily accessible in the user interface.

This will increase both the flexibility and complexity of the tasks the robots are able to fulfill and reduce the base price. The existing players such as Novo Nordisk will be able to use robots to an even greater extent, but the project will also open brand-new markets.

Therefore, Odense City Council is also involved in the project and will compile a catalogue of ideas for how future robots can provide a better service to citizens in the public sector.

- Essentially, we need to drastically increase the use of robots, so that Denmark can continue to keep up with technological and economic developments. Our project is necessary if the robots are to be moved from the largest production halls and out to benefit the rest of the community," says project manager Preben Mogensen from AAU.



## Project Partners

Technology partners:

- MIR (Mobile Industrial Robots A/S) and UR (Universal Robots) are leading in mobile robots and robot arms respectively.
- Intelligent Systems and Technicon are leading in digital industrial automation and integration respectively.
- 5G technology is provided by Telenor and Nokia.

Industrial end-users:

- Novo Nordisk A/S,
- GRUNDFOS Holding A/S,
- Danfoss A/S
- LEGO System A/S.

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## Facts

Innovation Fund Denmark investment: 30 million Danish kroner

Total budget: 52 million Danish kroner

Duration: 3 years

Official Title: *5G-Robot - 5G Enabled Autonomous Mobile Robotic Systems*