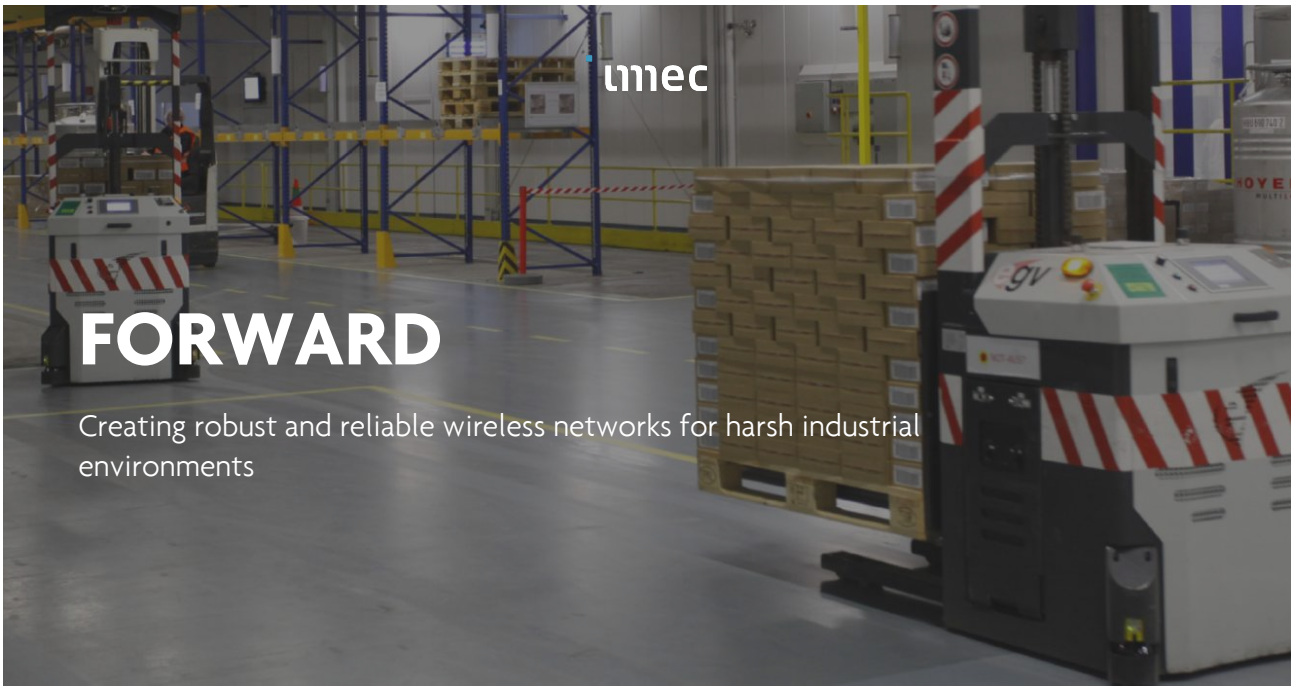

MANUFACTURING

The roll-out of robust and reliable wireless networks in harsh industrial environments (such as factories and large warehouses) is utterly complex: machines constantly interfere with the network, and its signals may get blocked by moving piles of stock and materials – resulting in loss of connectivity. This often negatively impacts productivity and business operations.

The FORWARD project investigated how white spots (i.e. areas that lack wireless coverage) and sources of network interference in industrial settings can be predicted more quickly – using that knowledge to automatically initiate on-the-fly network (re)configurations. Objective: to provide optimal network coverage and support a quick hand-over of traffic between (Wi-Fi) access points at all times – in any warehouse or production facility.

FORWARD resulted from a very concrete and pressing need, down at the production floors and warehouses of industrial partners ArcelorMittal, Volvo and Egemin. While their range of activities is very different – going from steel and car/truck manufacturing up to the delivery of automated material handling solutions for warehouses and production/distribution centers, each of them was suffering from unstable indoor wireless coverage, massive interference and hand-over issues between the Wi-Fi access points at their industrial facilities.

The outcomes

- A software tool that accurately predicts Wi-Fi coverage, and sources of interference, in industrial settings 10x faster than current approaches
- Tools that lay the foundation for the intelligent reconfiguration of Wi-Fi networks
- Algorithms that automatically (re)configure Wi-Fi networks on-the-fly, switching access points on/off (and adapting their energy levels) as is needed

FORWARD Leaflet

imec-icon_forward_leaflet

FORWARD (Factories Operating on Robust Wireless Automation: Research and Design) is a imec.icon research project.

It ran from 01.01.2014 until 31.12.2015.

Project informatie

Industry

- ArcelorMittal Ghent
- Egemin
- Excentis
- Siemens
- Volvo Group Belgium

Research

- Technical Testing Lab (iLab.t)
- imec - IBCN - UGent
- WiCa - UGent
- imec - WAVES - UGent

Contact

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