Seamless and Efficient Operation of AGVs (Arçelik and Turkcell)

ICT-19-2019 Use-Case Offer in a Factory Floor in Istanbul

- AGVs are playing a key role in improving productivity in factories, increasing worker safety, reducing product damage and preventing erroneous inventory management by replacing material handling type of operations traditionally carried out through forklifts.

- An AGV has a central controller relaying work orders. Upon receiving the work order, AGVs move around the factory with the help of their navigation system to complete their tasks. Precise coordination of AGVs is essential to prevent collisions, coordinate charging and maintenance, identify failures and take relevant actions, efficiently deploy across assembly lines to improve productivity.

- Considering such tight requirements, for a failsafe operation of AGVs, uninterrupted and very low latency (on the orders of 10 ms) wireless communication is critical between the central controller and the vehicle.

- Note that the factory environment that AGVs operate in has a very dynamic radio nature due to constantly changing factors such as machine locations, other AGVs operating in the region, and worker mobility.

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Arçelik R&D Research Areas / Interests overlaps with many ICT Topics. Interested 5G topics:

- ICT-19-2019: Advanced 5G validation trials across multiple vertical industries (e.g. Smart Factories)
- ICT-23-2019: EU-Taiwan 5G collaboration (e.g. Factory of the future)

Arçelik R&D Centers’ Research Areas and Interests

- Household Appliances and Consumer Electronics
- Covers a broad range of disciplines:
- Arçelik creates its own technology with its R&D culture. Arçelik R&D development teams focuses on products that:
  - Are environment friendly (low energy, water, and detergent consumption, and 4Rs <recover, reuse, recycle and reduce>),
  - Ensure comfort and customer satisfaction (affordable, easy to use, smart, quiet, practical),
  - Comply with standards of the future.

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Arçelik Anonim Şirketi

Europe’s 3rd largest home appliance company

- 18 production facilities in 7 countries (Romania, Russia, Turkey, South Africa, China, Thailand and Pakistan)
- 11 brands (arstil, arçelik, beko, blomberg, dawlance, defy, elektrabregenz, flavel, grundig and leisure) in household appliances / consumer electronics
- 13 R&D Centres in 4 Countries (Turkey, USA, UK, Taiwan)
- Please check Arçelik Garage and Atölye videos in YouTube (https://www.youtube.com/playlist?list=UU5wnYoU2zpFOwclVwYWB9Bw)
- Workforce ~30,000
- R&D workforce 1300+

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