Enabling Digitization in Farming via Private 5G Connectivity

Name of the Organisations Involved

- CampusGenius GmbH, Germany

Challenges Identified

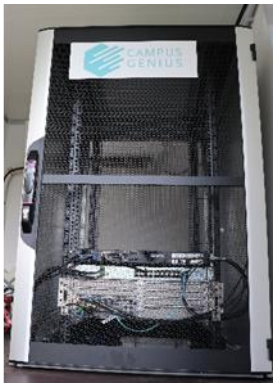
Wireless connectivity in rural areas offers in general a low performance not comparable to densely populated areas. In some rural areas, insufficient infrastructure, characterized by a lack of well-developed telecommunications networks, represents a significant obstacle to providing reliable and high-speed Internet access. On the other hand, geographical features such as hills, valleys and remote landscapes further complicate the problem by hindering the propagation of wireless signals. This results in patchy coverage and dead zones, making it a challenge to establish a consistent and reliable connection. These conditions hinder the adoption of digital agricultural practices in rural communities.

Goals and Solution

GeniusNetwork enables the use of digital technologies (sensors, drones, agricultural machinery or other devices) by bringing reliable 5G connectivity to farmers where it is needed - in fields, in buildings and anywhere else in rural areas.

Short description of the technology and the beneficiaries

GeniusNetwork is a customized network solution for small, medium and large farmers, and agribusinesses for 5G wireless communications of all sizes. Application areas are customized according to user requirements.



Pictures: GeniusNetwork

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Various technical use cases have been developed that provide true 5G-SA connectivity for any type of applications that require wireless communication. 5G-SA GeniusNetwork is a transportable system and can be ordered at any time for evaluation, testing or special purposes in different use cases.

Actions Taken

GeniusNetwork company builds trailers including a 5G network that can be moved between fields and provides connectivity wherever required. They include a indipendend energy supply, edge computing power and a satellite or LTE backhaul for remote managing or data transmissions.

Benefits and Impact

- **Connection of agricultural machineries for automatic acquisition of a wide variety of data, e.g., images from drones, temperature, humidity or material condition sensors, localization, machine information;**
- **Enabling drones to transmit video streams and analyse them on the edge in real time for harvesting and security control;**
- Mass sensor networks and automated irrigation of crops;
- Perfect wireless control of automated guided vehicles in logistics;
- Enables wireless automation of building services, internal telephony, flexible work controll
- Enables position sensing of devices in the building, localization of vehicles and equipment, autonomous control of transport vehicles or drones, and autonomous transport systems for freight.

Contact Information

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Application Area

☒ Plant ☒ Soil ☒ Location of assets ☒ Condition of assets

Digital Technology in the Value Chain

☒ Agricultural Input and Services

Digital Technologies

☒ Others

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