



Program VGR-5G

Technical- and Functional target architecture

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Västra Götaland Region (VGR) is now planning to establish a private 5G network for indoor coverage in its properties. The properties are located across more than 500 geographical sites within the Västra Götaland territory, with a total floor area of approximately 1.7 million square meters.

With the goal of establishing so-called radio access with its own core, outdoor coverage will need to be achieved in collaboration with existing commercial operators.

Initially, a 4G/5G NSA (Non-Stand Alone) installation will be deployed. Over time, this is intended to evolve into a 5G SA (Stand Alone) solution, once the technology is more established on the market.

Availability, resilience, and operational independence are key principles for VGR's deployment. As such, a large portion of the mobile radio networks in the properties will be built for "autonomy," meaning that functionality for calls and alarms will remain operational — for example in major hospital facilities — in the event that network connections to the outside world are disrupted. This requires the installation of several redundant core nodes.

VGR has a PLMN ID registered with the Swedish Post and Telecom Authority (PTS), and it is expected that this will be supported by all partners, suppliers, and manufacturers of core infrastructure, radio networks, handheld devices, and so forth.

VGR will transmit radio signals on frequencies within Band 3 and N78. Frequency licenses for VGR:s properties have been applied for and granted by PTS, and are published in their public records.

The number of handheld devices will be "one per employee," amounting to just under 60,000 units. In addition, there will be a yet unknown number of IoT devices, which are likely to, over time, greatly exceed the number of handheld units.

Additional functions will be implemented on top of the core technical platform. Examples include:

A: Mission Critical functionality with priority classes, which requires that all involved components and suppliers provide support for such capabilities.

B: Indoor positioning, which will be at least "cell-based."

All products installed by VGR must support integration with other systems within our IT environment, such as systems for asset management, SIM card management, subscription management, and IAM (Identity and Access Management).

There is a requirement for both push and pull functionality. Examples of solutions for this could include an open REST API. Operational and alarm monitoring of all products must be possible, with products supporting at least the SNMP protocol.

Suppliers' support for both installation and ongoing operation/maintenance must be established in Sweden.