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Telent Professional Services for:

Ericsson Private 5G

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CONFIDENTIALITY STATEMENT

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1. EXECUTIVE SUMMARY

This document will provide a brief description of the services that we can offer regarding the delivery of Ericsson and other vendor private 5G solutions.

Telent offers professional services as part of its service offer covering a wide range of technology disciplines. This has enabled Telent to build a set of professional services that allows us to design, build and implement multi-tiered technology programmes into complex and harsh operating environments. To facilitate that, Telent, as an organisation invests heavily in ensuring our engineering teams are accredited in technologies that we deliver, sustain and maintain.

Harnessing 100+ years of radio technology capabilities within the radio engineering and an even greater number of years of engineering capability across the wider Telent engineering community ensures our PS capabilities and competencies meet the most rigorous standards. This enables Telent to draw upon a wide and diverse set of competencies within our radio engineering group that are tightly aligned to other areas within the Telent engineering community to deliver professional services.

Telent also invests heavily in testing tools to provide a wide suite of services. For radio-based projects such as the delivery of 5G PMN, RF testing tools like Rohde and Schwarz signal generators and RF planning tools such as Ekahau for Wi-Fi and iBWave for all Radio Frequencies ensure that an accurate capture of the environment is realised through both predictive RF planning (pre-site survey) and physical site survey audits.

This has enabled Telent to deliver a wide and diverse range of projects incorporating radio technologies covering PMR, DMR, GSM-R, TETRA, 2G/3G/4G and 5G cellular technologies as well as internal and external Wi-Fi technologies from the likes of Cisco Systems, Juniper Networks and HPE Aruba to complement our traditional network engineering and integration services we offer today.

2. INTRODUCTION

The purpose of this document is to introduce Telent's Professional Services (PS) and the benefits of engaging with Telent when you start on your journey of implementing and deploying a Private 5G Network (5G PMN). Telent has a pedigree in delivering radio solutions over many decades in some of the harshest and demanding locations imaginable to a diverse customer base. We have built a reputation on providing excellence and high-quality solutions for our customers.

The document will set out baseline details on the PS that a services organisation such as Telent offer in the delivery of a 5G PMN project. Telent shall provide detail on the type of services and approach to ensuring the installation and service activation of the service in line Ericsson Professional Services partner roles and responsibilities.

The infographic below provides a high-level overview of primary PS capabilities Telent can provide in the delivery of a 5G PMN solution.

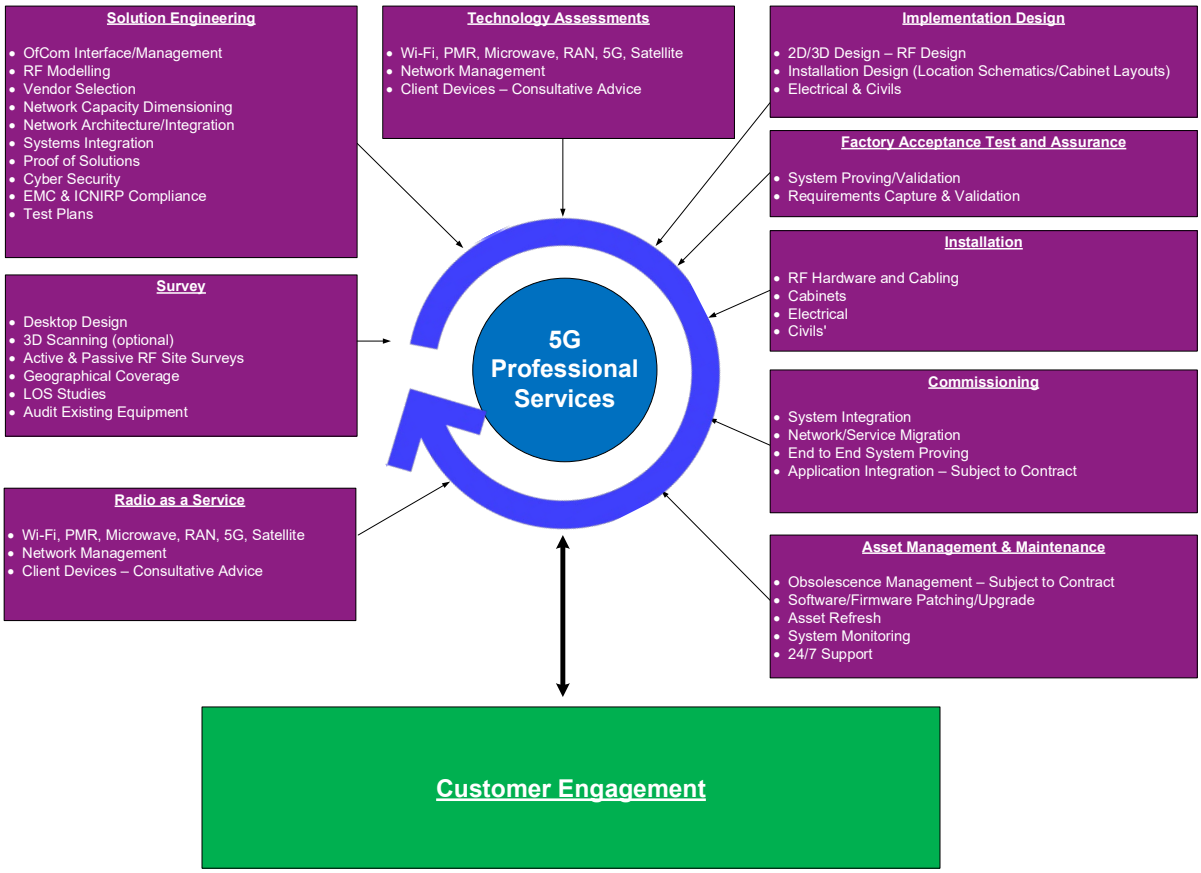

Figure 1: Telent's 5G PMN Professional Services

3. 5G PMN PROFESSIONAL SERVICES

3.1 Solution Design

Key to the successful implementation of a 5G solution for a customer is having a solution design that is going to deliver the customer requirements. Telent Solution Architects (SA) engage with the customer to ensure that a full requirements capture is completed. By completing this process, the customer has the opportunity to present their entire scope of work (SoW) and network deliverables. The capture of requirements is used to populate the Customer Information Questionnaire (CIQ), the CIQ is then circulated to all parties involved in the project/solution within Telent and with the vendor of the 5G hardware.

The CIQ template facilitates the capture of key data requirements highlighted below.

- **Cover:** In this first tab named Cover, you add version, date, author, and if the cell colour legend is not applicable, status Value, site-specific, or under review.
- **Site Information:** In this menu, you provide the contact phone number, cabling installer information with feeder cable to dot and fibre to Micro Radio, the company name, contact name email, and phone number.
- **Network Controllers:** When entering this tab, you find four areas as follows: Cloud Management IP Configuration, Enterprise LAN IP Configuration, Enterprise LAN IP Configuration, and Core-Radio Network Application IP Information.
- **Radio Information:** Finally, in the radio tab you fill in the information about the communication standard with parameter name, description, and value. You also fill 5G or 4G band and spectrum information about channel bandwidth and frequency assignment with parameter name, description, and value

The solution design encompasses a number of activities which all have documentation as a deliverable output. These are detailed below:

- RF desktop design
- IP network design
- High-level design
- Low-level design
- Installation design storyboard

The Solution Design is where the IP networking is undertaken; the SA will take the customer through the IP requirements of the 5G PMN and explain how the IP configuration is allocated and managed. The early engagement of the IP design ensures that the correct allocation of addresses is set aside and removes the instances of IP clashes at the deployment of the solution. The output of the IP networking design is captured in the Enterprise IP Network Form.

The infographic below is representative of a 5G PMN high-level solution which is produced from the SA engagement with the customer and the completion of the CIQ. This solution overview will then be used by the radio engineering team to create a radio design.

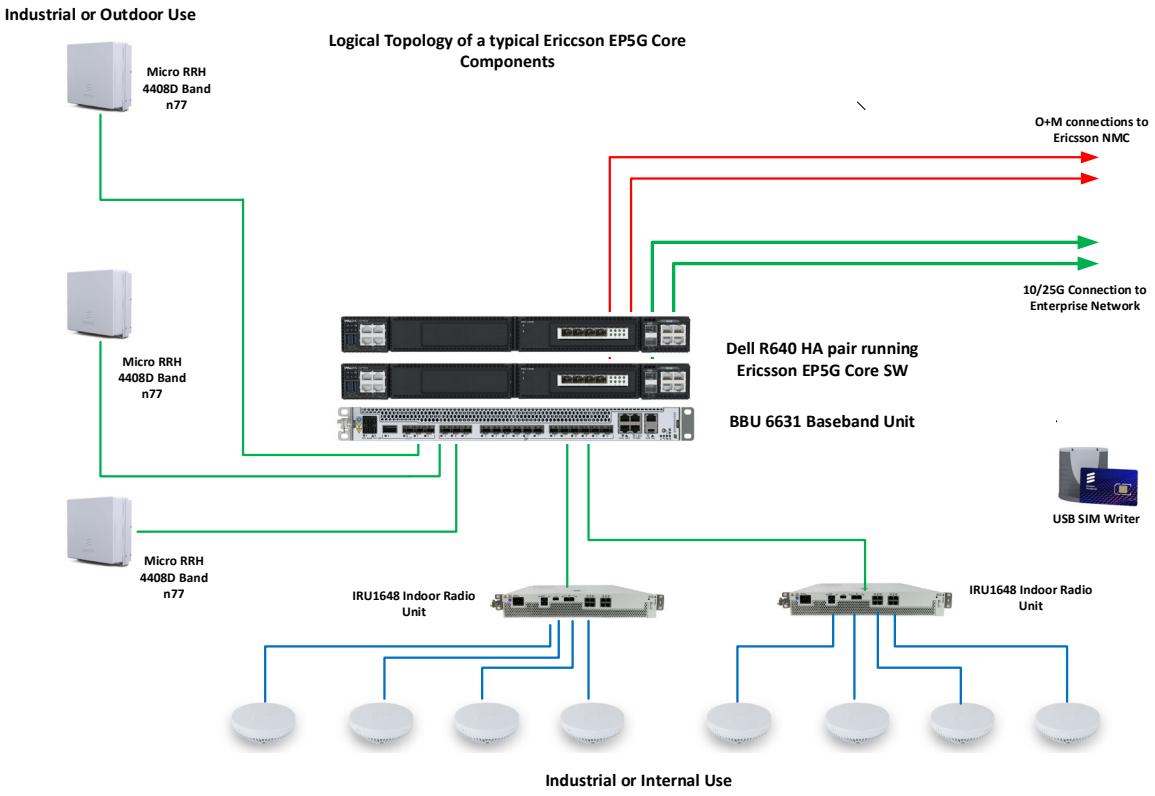

Figure 2: 5G PMN High Level Solution

3.2 Radio Planning

All 5G PMN solutions require detailed radio planning to ensure that the solution that is created for the customer will meet the SoW and requirements capture.

- At Telent we have a dedicated radio engineering team who are fully qualified on vendor products and industry recognised radio planning tools.
- The radio engineering team has a dedicated suit of RF engineering tools which include iBwave and CloudRF to create radio solution designs to meet the SoWs and requirements of any customer.
- Radio plans are typically created in the first instance using desktop planning tools. The predictive output of the RF planning tools is then validated onsite by the RF engineers, this is normally done during the .
- The radio plans define the exact number of radio units required to create the solution against the high-level solution schematic; this information is fed back into the SA who uses it to finalise the 5G PMN bill of materials (BoM).
- The BoM is sent to the equipment vendor so that they can commence the internal ordering processes that they have to fulfil.

As a baseline for all 5G PMN radio designs to be completed against Telent uses the very latest issue of the Joint Operators Technical Specification (JOTs). The JOTs standards/best practices are defined by all of the leading UK mobile network operators and sets out parameters relating to solution/service deliverables that need to be built into any solution that they would consider delivering service over.

The infographic below shows an example of the radio design and the output from iBwave radio planning tool, a 3D floor plan and a predictive coverage map.

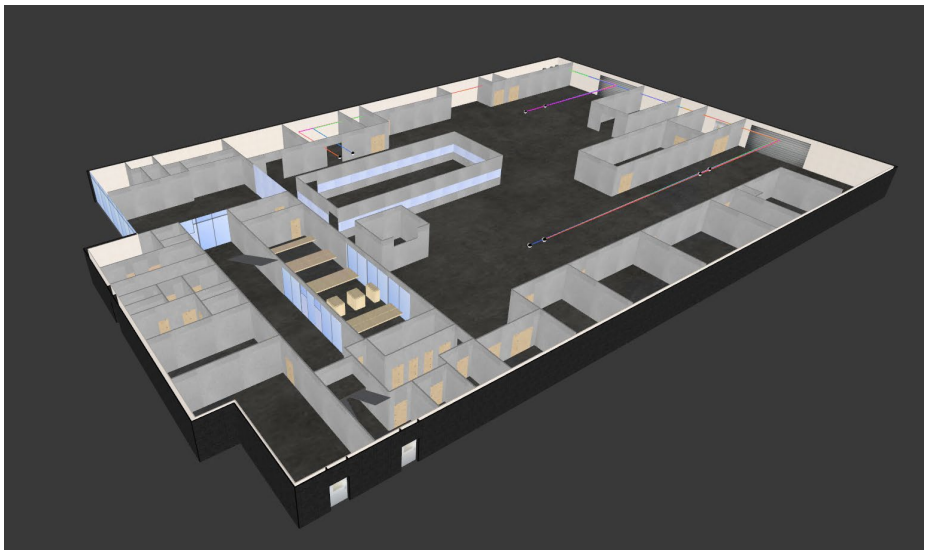

Figure 3: 3D Floor Plan

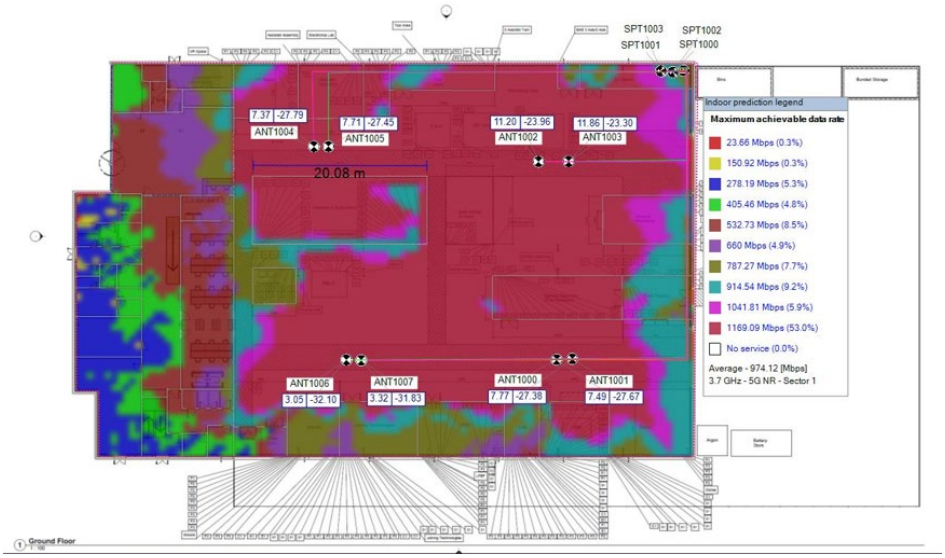

Figure 4: 5G PMN RF Coverage Plan

3.3 Surveys and Site Audits

To ensure successful solution delivery sites surveys are required to validate the information captured in the CIQ and to validate the outputs of the RF design. Telent uses a multi-skilled site visit approach to surveying, this means we send installation engineers who conduct the physical installation surveying activities.

- Installation engineers will capture data on cable routes, antenna installation locations, siting of external GPS antennas and also any specialist access or site working regimes that need to be factored into the delivery process.
- The RF engineers will conduct RF surveys on site using signal generators and measurement tools to validate the output of the desktop design.
- Installation engineers also capture data on equipment rack space within the customers IT suites to locate 5G rack mountable hardware, internet ingress points and any cross connect locations to the customers enterprise network.

The output of these site visits will be survey reports which will define the validated RF design and BoM. All of these documents are shared with the customer to keep them fully appraised of the progress and requirements. The 5G PMN BoM is also forwarded to the equipment vendor to kick start the vendor supply process.

3.4 Installation Design

To assure a successful implementation of the solution Telent creates an installation design document for every customer project. By creating an installation design for each customer project/solution Telent ensures that all data captured at site surveys is translated into a format that can be used by our installation engineers to deliver against onsite.

The installation design has schematics identifying the following

- cable routes,
- rack face elevation plans,
- patching and labelling schemes,
- antenna placements.

This level of detail makes sure that our installers execute installation works exactly against the design requirements. High-level design documents are translated into low-level designs which are used in the pre-staging and factory acceptance stages.

3.5 Acceptance Testing and Commissioning

Every solution that is produced for 5G PMN undergoes a number of assurance checks/processes to ensure that the hardware is functional and delivers against the vendors equipment criteria, and the solution design requirements. The assurance checks start with pre-staging of every element that is going to be deployed into the customers 5G PMN solution. Conducting pre-staging provides the delivery teams with a solution that has been pre-configured, checked and tested that it is functional, this piece of work reduces equipment failures and delays when teams are in attendance and installing.

After the hardware has been installed at the customers location Telent engineers perform a series of site acceptance tests. These tests are fully aligned to the vendor processes relating to site commissioning and acceptance into service. The tests do not stop with hardware supplied, cable assemblies are tested, both copper and fibre. The RF propagation is also tested against the validated predictions and the network is optimised for performance based upon these findings.

The final stage of assurance testing involves the customer and is User Acceptance Tests (UAT). UAT will involve walking the customer through the installation that has been completed, demonstrating to them that their system is live on the vendor portal and showing them that their devices, if they have them onsite, connect to the 5G network.

All of this data is collated into the Close Out Package (COP) which is circulated into the vendor. The COP contains the following key data collection parameters detailed below.

- Site Contacts
- Scope of Works Checklist
- As Built details/schematics
- Testing Results
- Photographic information capture

3.6 QEHS

Telent is totally committed to quality, the environment and health and safety and ensuring that every customer engagement has a QEHS plan assigned to it. The QEHS plan is created at the beginning of the customer engagement, and it is designed to capture any potential health and safety issues and provide the steps to mitigate and remove these hazards. Quality management and measuring metrics are put in place to ensure that all engineering activities comply and pass the Telent quality process, the net result of the quality plan is a document which details compliance to standards and processes.

The environment is important to Telent and every solution which is engineered for delivery into customer locations is assessed for its impact and to ensure it is as green as possible and aligns fully with Telent's targets for achieving Net Zero.

3.7 Project Management

Project management is a key deliverable in Telent's PS offerings, the successful delivery of a customers solution relies on smooth execution of multiple tasks and actions. The project manager (PM) co-ordinates the delivery and execution on behalf of Telent and for the customer. To deliver projects Telent PMs have a variety of planning methodologies at their disposal which include PRINCE2, APM and Agile. All of our PM's are qualified against these practices. 5G PMN projects are delivered against the APM processes and standards.

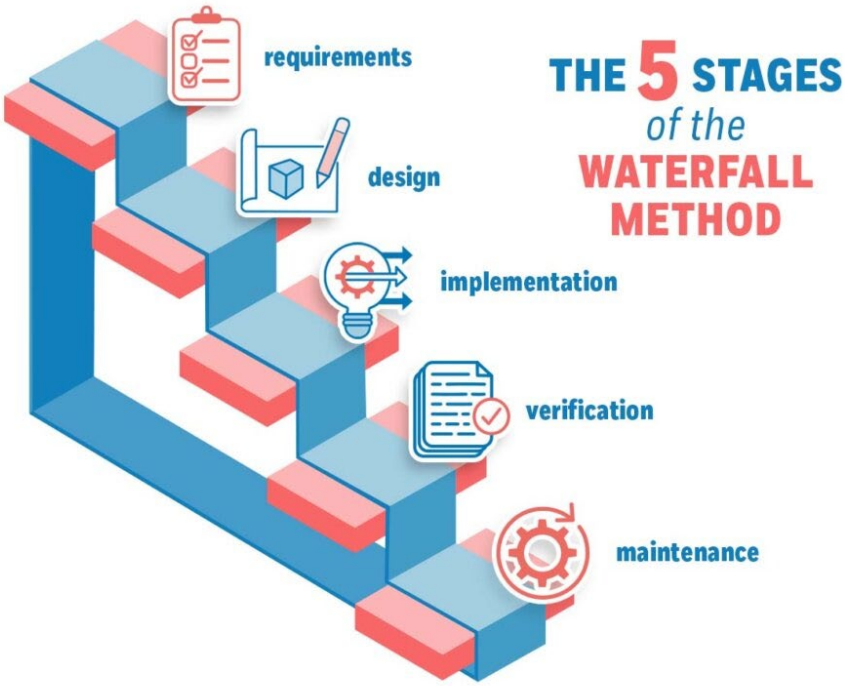

Figure 1: APM Methodology

They provide updates and progress reports to the customers against the agreed program of works and activities. The PM ensures that every mandatory process is followed, and the requisite output/deliverable is shared with the customer and also the vendor. The PM is the single point of contact between the customer and Telent delivery teams and our PMs are assigned to projects for their lifecycle of delivery.