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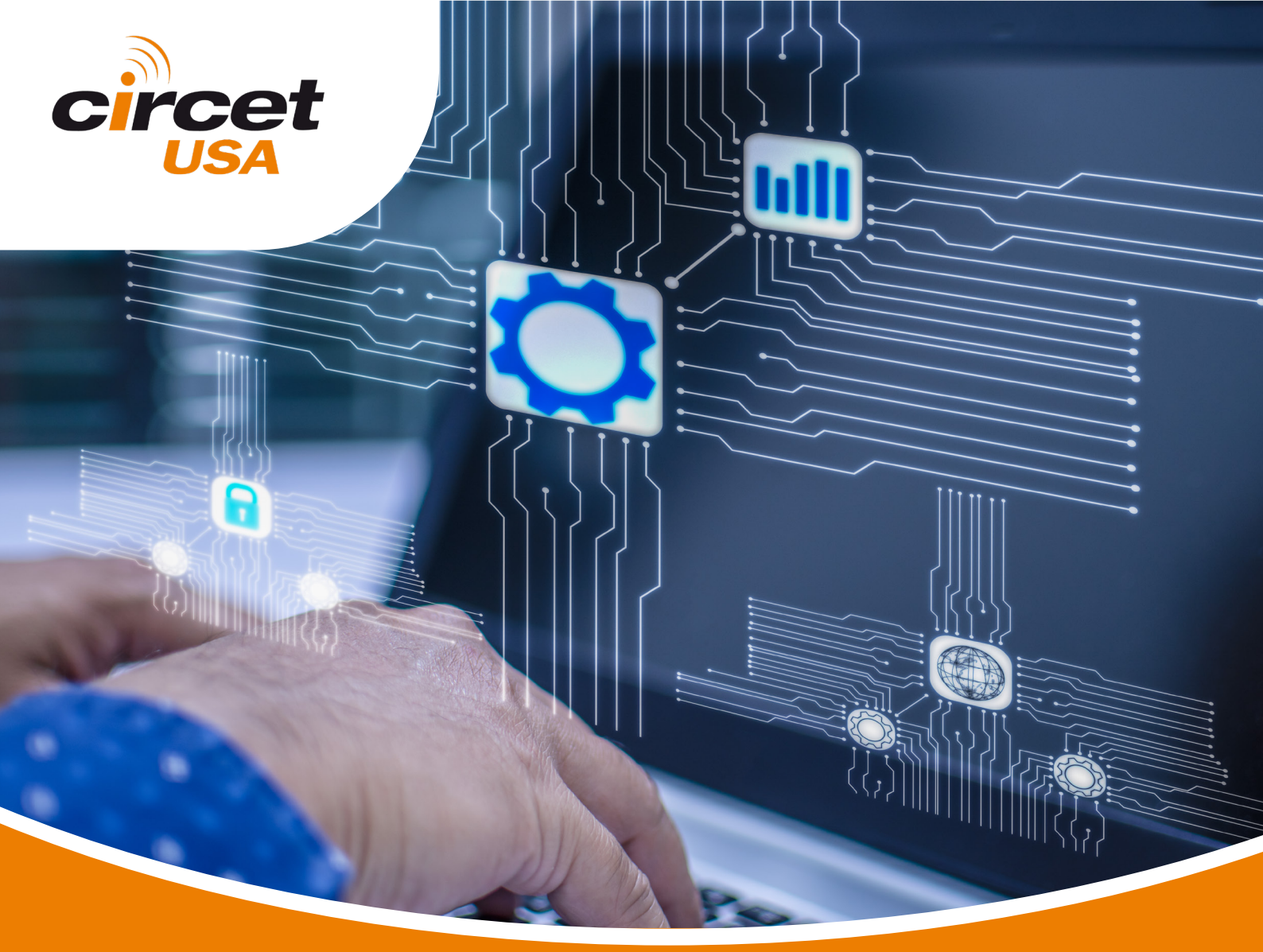

SYSTEMS INTEGRATOR FOR PRIVATE NETWORKS

As a Systems Integrator, we possess extensive experience in integrating private LTE/5G/O-RAN networks, which are becoming increasingly crucial for enterprises and organizations seeking to establish dedicated wireless networks tailored to their specific requirements. Our expertise encompasses working with a diverse range of private core providers, ensuring seamless integration and interoperability with various network architectures and technologies.Furthermore, we have cultivated strong partnerships and collaborations with numerous original equipment manufacturers (OEMs), enabling us to leverage cutting-edge hardware and software solutions from industry leaders.

This broad exposure to different OEM offerings allows us to design and implement private network deployments that optimally align with our clients' unique needs, whether in terms of performance, scalability, or specialized features.We take pride in positioning ourselves as a one-stop shop for private network deployment, offering comprehensive end-to-end solutions that encompass every aspect of the integration process.

Our expertise spans the following key areas:

Strategy & Roadmap Development

Assessing the organization's current infrastructure and future requirements is a critical first step in strategy and roadmap development. This involves a thorough evaluation of existing network components, operational processes, & technological capabilities to identify strengths, weaknesses, and areas for improvement. By understanding the current state, we can accurately forecast future needs, including traffic growth, new service demands, and scalability challenges. Defining a comprehensive LTE/5G strategy and implementati on roadmap follows this assessment, outlining clear, actionable steps to achieve the organization's objectives.

This roadmap includes timelines, milestones, resource allocation, and risk management plans to ensure a smooth and efficient rollout. Additionally, identifying target use cases and business opportunities enabled by LTE/5G is essential. This involves exploring specific applications such as IoT, enhanced mobile broadband, and mission-critical communications, and evaluating how these can drive new revenue streams, improve customer experiences, and provide a competitive edge.

Network Architecture Design

Designing the end-to-end LTE/5G network architecture is a complex process that includes planning the Radio Access Network (RAN), core network, and transport network components. The RAN design involves determining cell site locations, antenna configurations, and frequency planning to ensure optimal coverage and capacity. The core network design focuses on scalability, reliability, and security, incorporating elements like the EPC (Evolved Packet Core) for LTE and the 5GC (5G Core) for 5G.

Transport network design ensures efficient data transmission between RAN and core components, addressing backhaul and fronthaul solutions. Incorporating advanced LTE/5G features such as network slicing, edge computing, and automation is crucial for enhancing network flexibility, resource allocation, and performance. Network slicing allows for the creation of virtual networks tailored to specific use cases, while edge computing brings processing power closer to end-users, reducing latency. Automation streamlines network management, reducing operational costs and improving service delivery.

Public Cloud Solutions

For clients who prefer the flexibility and cost-efficiency of public cloud services, we design private network solutions that host core services on public clouds. These solutions leverage the extensive resources and capabilities of leading cloud providers, offering a scalable and resilient infrastructure.

By offering custom private network solutions hosted on edge private clouds or public clouds, we provide clients with the flexibility, security, and performance they need to achieve their business objectives. Our tailored approach ensures that each solution is designed to meet the unique requirements of the client, delivering a robust and reliable network infrastructure.

Custom-Designed Edge Private Cloud

For clients seeking enhanced control and security, we offer private network solutions hosted on custom-designed edge private clouds. These solutions bring computing resources closer to the end-users, reducing latency and improving performance for real-time applications. Our edge private cloud designs are customized to meet the unique requirements of each client, ensuring that the infrastructure supports their specific business objectives.

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System Integration

Deploying servers, appliances, or virtualized network functions that host LTE/5G core components is a fundamental part of system integration. This involves installing and configuring servers to meet performance, scalability, and redundancy requirements, and deploying specialized appliances for functions like security, load balancing, and traffic management. Implementing virtualized network functions (VNFs) enhances flexibility and reduces hardware dependency, ensuring optimized performance and reliability. Integrating LTE/5G hardware with cloud components is another crucial step. This includes connecting hardware with cloud infrastructure to leverage cloud computing capabilities, such as cloud-based management, analytics, and storage solutions. Developing hybrid solutions that combine on-premises and cloud components can provide optimal performance and cost-efficiency.

5G/LTE RAN Component Selection

Evaluating deployment models is a key aspect of 5G/LTE RAN component selection. This includes assessing non-standalone (NSA) and standalone (SA) models, as well as public, private, and hybrid network options. NSA leverages existing LTE infrastructure, while SA offers a pure 5G experience. Public networks provide broad accessibility, private networks offer enhanced security and control, and hybrid networks combine the benefits of both. Evaluating different LTE/5G base stations, radio units, and distributed units is essential for ensuring compatibility and performance. This involves selecting base stations based on coverage, capacity, and power consumption, and choosing radio and distributed units that meet specific network needs.

Additionally, selecting routers, switches, and other networking gear for backhaul and transport is critical. These components must handle increased data traffic, provide reliable connectivity, and support advanced features like high throughput, low latency, and robust security.

Custom Private Network Solutions

We specialize in designing private network solutions that host core services on custom-designed edge private clouds or on public clouds, tailored to meet the specific needs and requirements of our customers. Our approach ensures that each solution is optimized for performance, security, and scalability, providing a robust and reliable network infrastructure.

TESTING AND VALIDATION

Designing test plans and validating the LTE/5G network architecture is essential to ensure the network meets design specifications and performance criteria. This involves creating comprehensive test plans that cover functional, performance, and security testing. Conducting performance testing evaluates network speed, capacity, and reliability under various conditions, while interoperability testing ensures compatibility with existing infrastructure and third-party devices. User experience testing assesses the end-user experience to ensure high-quality service delivery. Identifying and resolving potential issues before full-scale deployment is critical. This involves detecting problems through thorough testing and analysis, using advanced diagnostic tools to pinpoint issues, and developing strategies to resolve them, ensuring the network is ready for deployment.

DEPLOYMENT AND MIGRATION STRATEGIES

Developing deployment plans and migration strategies from existing networks to LTE/5G is crucial for a successful transition. Deployment planning involves creating detailed plans that outline the steps for rolling out LTE/5G infrastructure, including timelines, resource allocation, and risk management. Migration strategies focus on transitioning from existing networks to LTE/5G with minimal disruption. This includes implementing measures to maintain service continuity, using phased approaches and backup solutions. Minimizing service disruptions and ensuring a smooth transition is achieved by providing comprehensive training and support to network operators and users. Additionally, offering guidance on network optimization and ongoing operation is essential. This includes tuning configurations, enhancing security, improving efficiency, and providing ongoing support for network monitoring, maintenance, and troubleshooting.

Network Architecture Design and Planning

Our team of skilled network architects and engineers collaborate closely with clients to understand their requirements, conduct site surveys, and develop detailed network designs that address factors such as coverage, capacity, and redundancy.

Optimization and Performance Tuning

Leveraging our extensive experience and industry best practices, we optimize private network deployments for optimal performance, throughput, and quality of service, ensuring that the network meets or exceeds the client's expectations.

Infrastructure Integration

We seamlessly integrate various network components, including radio access networks (RANs), core networks, transport networks, and operational support systems (OSS), ensuring interoperability and cohesive functionality across diverse hardware and software platforms. As an SI we perform interoperability testing in our in-house Lab.

Security and Compliance

We place a strong emphasis on security and regulatory compliance, implementing robust security measures and adhering to industry standards & guidelines to protect the privacy and integrity of our clients' data and networks.

Training and Knowledge Transfer

We recognize the importance of empowering our clients' teams with the necessary knowledge and skills to effectively manage and maintain their private networks. As such, we offer comprehensive training programs and knowledge transfer sessions tailored to their specific requirements.
By leveraging our extensive experience, industry partnerships, and comprehensive expertise, we strive to deliver tailored private network solutions that drive operational efficiency, enhance productivity, and provide a competitive edge for our clients across various industries.

Lifecycle Management

Our services extend beyond initial deployment, encompassing ongoing maintenance, software updates, hardware refreshes, and scalability planning to ensure that our clients' private networks remain future-proof and adaptable to evolving business needs.