



WHERE TELECOMMUNICATION MEETS IT

As a system and service integrator of fixed, mobile and access networks, Kontron Transportation (KTR) addresses the full spectrum of your requirements from analysis, consulting, design, product development, integration, installation and training to maintenance and operation of complete networks. We take on system integration projects that are geared to the future and offer an end-to-end approach in the project realization. In doing so, we pursue a multivendor strategy with leading technology partners. When choosing Kontron Transportation, you choose our extensive experience, global presence and our clear focus on delivering measurable customer benefits and true customer satisfaction. We successfully tackle all challenges that come with Big Data to provide a high-performance customer experience.

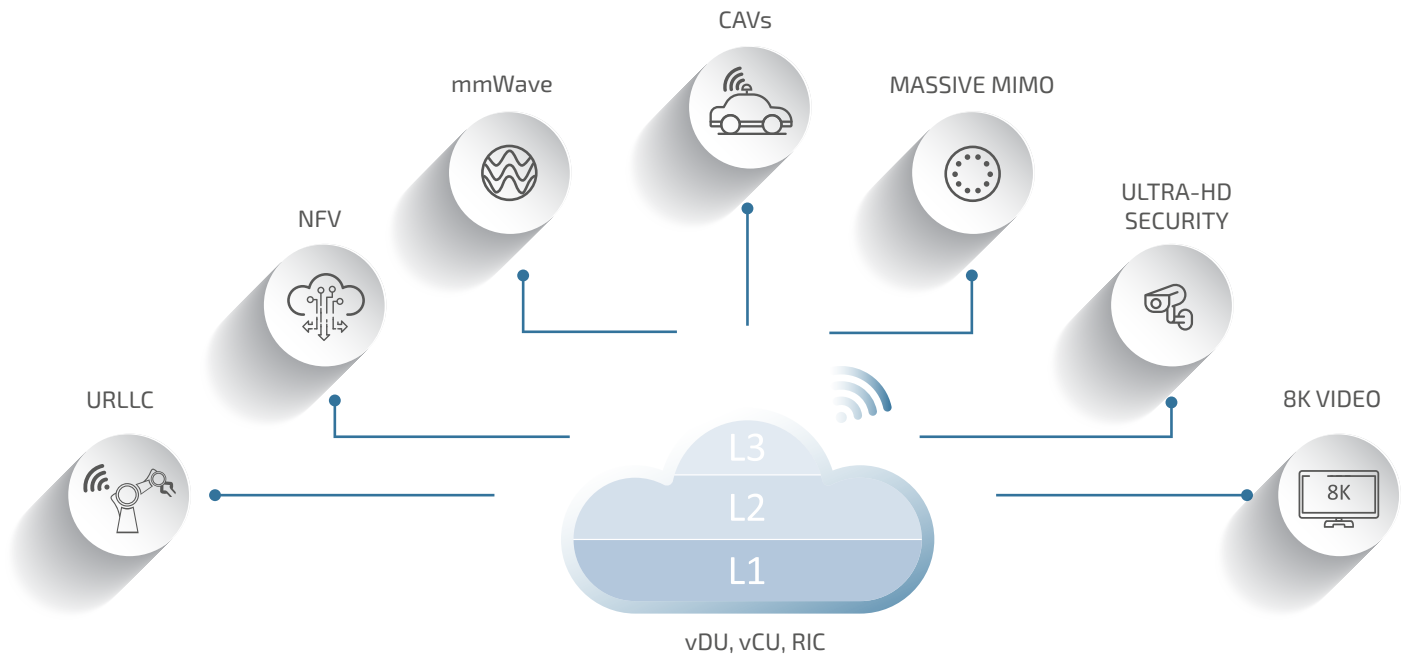
► **NFV NETWORK FUNCTIONS
VIRTUALIZATION FOR TELCO NETWORKS**

The Network Functions Virtualization (NFV) is a disruptive innovation within the telecommunications industry. Most of its providers are unified in the NFV Industry Specification Group or NFV ISG. Digital transformation started with the migration of mobile and fixed line networks to an all IP network several years ago and is now reaching the next step towards SDN (Software-Defined Networking) with the introduction of NFV Infrastructure and VNFs as well as service providers, equipment and new communication ideas on top of it. A software defined architecture that includes SD-WAN, NFV-I & VNF's, cloud and edge computing network services, open and virtualized RAN and orchestrated zero touch automation is the answer of today's operators pains and needs in terms of time to market, introduction of new application and operational needs.

Virtualization has led to a surge of new Telecoms Equipment Manufacturers (TEMs) offering innovative and disruptive solutions. There are plenty of new start-ups operating on an efficient cost structure to mix-up the traditional Telecommunications Equipment global providers with their power to drive change. Only an experienced system and service integrator is able to keep pace and put the puzzle together to integrate the NFV solutions into the surrounding virtual network system. Such a system and service integrator is Kontron Transportation.

5G CAMPUS SOLUTIONS FOR TELCO NETWORKS

5G, which comes with three main performance profiles: Enhanced Mobile Broadband (eMBB), Ultra Reliable Low Latency Communications (URLLC) and Massive Machine Type Communications (mMTC), will drive uncountable digital transformation use cases across various industries. Our 4G/5G campus networks is simple to manage and easy to deploy. You will get all advantages of a 3GPP 5G architecture to the campus using existing infrastructure and scalability. You do not depend on Makro Network Providers and inflexible roadmaps. You are able to easily manage and launch edge services up to your use cases need and can integrate with WIFI solutions.



SECURITY SOLUTION FOR TELCO NETWORKS

We've always had to implement adequate security solutions into our network functions. We've done end-to-end deployments for Telco and critical infrastructure networks and applications, so security has always played an important role. The more the network services have shifted to All IP and the virtualization of Telco functions inside the IT datacenter, the more we focused on network security. As classical telco networks transformed into IP data networks, IP services like DNS, DHCP and NAT added several new attack vectors and security risks to the Telecommunications world. Therefore, our major goals are to protect the network and the transferred data in a best practice way also using state of the art IT technologies adapted to telco business needs.



TECHNICAL CONSULTING FOR TELCO NETWORKS

KTR Technical Consulting professionals are experienced industry experts combining IT with legacy and state of the art telecommunications expertise in terms of protocol, architecture and engineering capabilities to help telecom providers to transform their networks into fully operational NFV.

We understand communications investments as business decisions. Business objectives, such as cost reduction, productivity increase and customer service improvement and Digital Transformation should drive the investment process. We understand the short- and long-term costs and benefits associated with different communication solution alternatives, and can help you to avoid critical pitfalls, such as high cost and poor quality.

Our Technical Consulting service saves time, money, and prevents network degradation by monitoring and analyzing information, evaluating alternatives, implementing changes and working with vendors to continuously optimize network performance.

PROFESSIONAL SERVICES FOR TELCO NETWORKS

KTR Professional Services for NFV offer clearly structured service-packages tailored to technical and commercial business needs. We work closely with you to define the individual service deliverables in each project according to your requirements.

Our staff consists of technical and business experts who are familiar with today's global business issues and Telecommunications - equipment and are able to relate and apply their experience to similar challenges that you, our customers, face daily. Manufacturer and telecom companies benefit from our years of operational and consulting expertise, by choosing from our flexible service-portfolio.

Our Service-Mission is based on:

- ▶ Quality
- ▶ Competence
- ▶ Commitment
- ▶ Flexibility & Agility



THIS IS US

Building strong and long-lasting partnerships is our philosophy. Uniting latest IT, virtualization and telecommunications technologies is our key differentiator. Agile, lean and holistic is how we live. Together with our charming and experienced staff, strongest partners and leading technologies, we support you on the way to your digital business transformation, from Telco Cloud infrastructure and 5G to consulting & implementation services for design, engineering, deployment and operations.

About Kontron – Member of the S&T Group

Kontron is a global leader in IoT/Embedded Computing Technology (ECT). As part of the S&T technology group, Kontron offers individual solutions in the areas of Internet of Things (IoT) and Industry 4.0 through a combined portfolio of hardware, software and services. With its standard and customized products based on highly reliable state-of-the-art technologies, Kontron provides secure and innovative applications for a wide variety of industries. As a result, customers benefit from accelerated time-to-market, lower total cost of ownership, extended product lifecycles and the best fully integrated applications.

For more information, please visit: www.kontron.com

About Kontron Transportation – Member of the S&T Group

Kontron Transportation is a leading global supplier of end-to-end communications solutions for mission-critical and carrier networks. Its portfolio includes GSM-Railways, FRMCS (future railway mobile communication system), TETRA, DMR, LTE solutions for mission critical networks as well as mobility solutions for the public transport sector and is enabled with the entire service value chain, from planning, developing and producing to deploying, integrating, maintaining and operating. A further mission is to provide a critical E2E IIoT solution dedicated for railway operators to support data collection, transport, monitoring and analysis.

Kontron Transportation invests in research and development and is driving the evolution into the next generation of broadband solutions for mission-critical networks, for instance as an associated member of the European research initiative Shift2Rail.

Kontron Transportation is part of S&T group and headquartered in Vienna (Kontron Transportation GmbH) with main subsidiaries in Belgium, France, Germany, Portugal, Spain, the Czech Republic and United Kingdom.

For more information, please visit: www.kontron.com/ktrdn



GLOBAL HEADQUARTERS

Kontron Transportation GmbH

Lehrbachgasse 11
1120 Vienna, Austria
Tel.: +43 1 25 33 700
kta_office@kontron.com

www.kontron.com/ktrdn

Kontron Europe GmbH

Gutenbergstraße 2
85737 Ismaning, Germany
Tel.: +49 821 4086-0
Fax: +49 821 4086-111
info@kontron.com

www.kontron.com