SDN
Redefine
Your Network

SDN = Self-Defined Network

SDN is a new approach to the development and management of the telecommunications network and services. This is a **revolutionary change** of the network concept, in which the network management layer and data transmission layer are disaggregate.

For us, SDN transcends the traditional **Software Defined Network** framework, evolving into a **Self Defined Network** - a network that we create according to our own vision.

As a result, we can design and develop the network architecture and our customers can **gain many benefits,** such as: **greater flexibility and improved network performance, simplified management, enhanced security** and the **ability to easily integrate with new technologies** such as cloud solutions and 5G.

SDN **redefines** the approach to network management, introducing **process simplification**, **automating configuration functions,** and providing **faster diagnosis and troubleshooting.** This approach not only **increases operational efficiency but also significantly improves the quality** of our services, reinforcing our position as a **leader** in the adaptation of **future-proof telecommunications technologies.**

EXATEL represents the **leading regional operators in Central and Eastern Europe** and in Poland is recognised as one of the **leaders in the B2B market.**
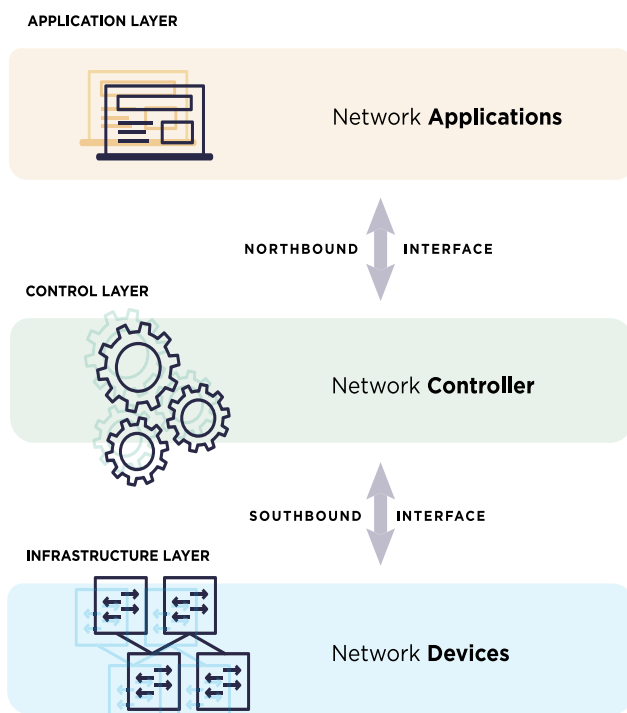
We have an **extensive fibre-optic network of over 23,000 kilometres.** Our priority has always been **higher quality,** which has allowed us to **gain the trust of the most demanding B2B customers in Poland and abroad.** Our services are used by the **majority of banks** operating in Poland, as well as other companies from finanse sector, **energy sector,** the most important **government offices, Polish and intenational operators,** and many other **market leaders** in their sectors of activity. These are clients for whom the **quality and stability of services is a superior value.**

In the fast-moving world of ICT, where innovations emerge overnight, we have concluded that quality alone is not enough. Rather than just following trends, **we want to actively shape the future of technology** so that our services not only respond to but also define the expectations of the modern world.

We believe the future belongs to those who invest in research and development. This is why EXATEL continues to **dynamically expand its Research and Development (R&D) Department,** which currently employs **over 100 experts** from various fields. Our specialists work on several ambitious projects that aim to improve existing technologies and to **introduce completely new solutions** in areas such as packet networks, cyber security, 5G, and optical wireless communications.
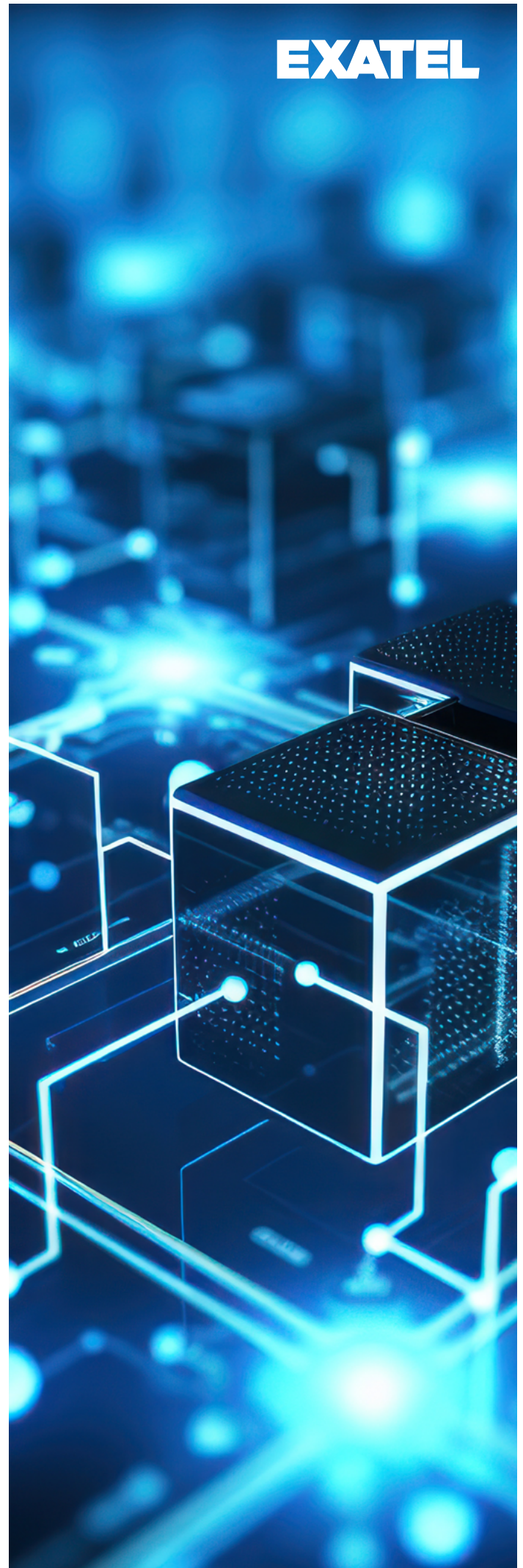
SDN at EXATEL

In 2023, we launched one of the most ambitious projects, which development is still continued, namely the implementation of SDN technology in our aggregated and core network. This innovative step enables us to design networks not only with our own needs in mind but also with a deep understanding and drive to meet our customers' requirements.

APPLICATION LAYER

Network **Applications**

NORTHBOUND   INTERFACE

CONTROL LAYER

Network **Controller**

SOUTHBOUND   INTERFACE

INFRASTRUCTURE LAYER

Network **Devices**

EXATEL's SDN has been designed according to a layered model, including:

- **application layer** – in-house developed applications,

- **control and orchestration layer** – configuration and service management tools including the in-house SDNomni controller and SDNexpo portal,

- **infrastructure layer** – open and powerful devices, SDNcore and SDNedge, allowing the installation of any control software.

Stages of implementation

The first SDN implementation phase at EXATEL involved redesigning and developing the network according to the new architecture. Currently, we have already installed both **backbone (SDNcore)** and **edge (SDNedge)** devices in our network which are configured and managed from our own **SDN controller (SDNomni)** and **operator portal (SDNexpo).** EXATEL's network is currently undergoing a second phase of deployment to extend coverage and make superfast services available virtually throughout the country.

By the end of 2024, we will have installed in the network **more than a hundred devices of both types: SDNcore and SDNedge.** At the same time, the transition of data services provided to existing customers to the new SDN infrastructure is underway. This will result in relieving the network of the current equipment provider (ultimately, the network will be switched off and the equipment uninstalled). The second area we are developing within SDN is the **implementation of a fully proprietary SDNbox, with its operating system.** The device provides an endpoint for VPN MPLS services at the customer's location, offering EXATEL administrators a **simple and intuitive platform to manage and monitor services via SDNexpo.**

SDNbox devices have already been implemented also in a commercial project for a large customer in the financial sector.

SDN

- **SDNexpo** - intuitive network management system

- **SDNomni** - programmable network controller

- **SDNedge** - multifunctional edge devices

- **SDNcore** - high-performance backbone devices (including 400G ports supporting OpenZR+ inserts)

- **SDNbox** - CPE network device

- **NetVisorium** - a panel in which the customer monitors VPN statistics
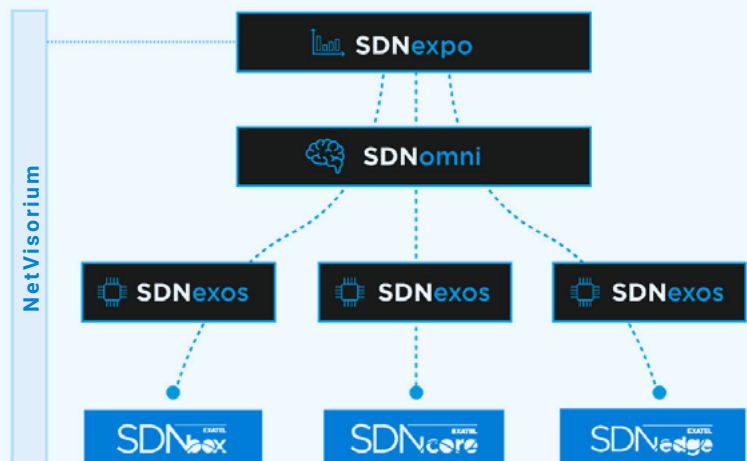
Unique solutions ———

Although SDN technology is currently popular in data centres and cloud solutions, our approach takes it to a **whole new level**. How? We implement the **latest developments and innovations in SDN networks** to provide our customers with access to national and international data services. Our solution combines **innovation with the robustness that meets stringent Carrier Ethernet standards.**

Without hesitation, we can say that we are pioneers in the implementation of ideas in line with the spirit of the **Open Networking Foundation (ONF)** and the **Open Compute Project (OCP),** putting into practice the postulates related to **transformation of architecture towards open, modular, flexible and cost-effective network solutions** – in our case going far beyond a LAN or even a single Data Centre.

A highlight of our strong commitment to the Open Networking philosophy is the fact that **we were the first in the world to use QSFP-DD 400G OpenZR+ High Power Coherent DWDM plugables compliant with the Multi--Source Agreement** (MSA ver.3) specification in our Core network. Doing so enabled our customers to **achieve unprecedented data rates and, on the other hand, strengthened our roots** in the Open approach and interoperability. These plugables have been used to create 400G links between backbone routers and have been used in a commercial network for more than a year, rather than in a laboratory environment.

Innovation has to produce tangible results

Indicators that make a difference

SDN implementation allows us to achieve tangible results on many levels:

	Standard	Alternative -> SDN
Cost (CAPEX and OPEX)	High	Low
Security	Standard	Above standard: • Security by design, • Data Security (data on the client's server). • Easier network monitoring.
Logistics	Complicated and expensive	Simple and cheap
Reliability	Low	High (less Single Points of Failure)
Time: delivery of components and installation	Normal	High
Scalability	Normal	High

Want to know more about this technology?
Feel free to talk to us:

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