

Telecom Argentina boosts service quality and radio network performance with automation

- Ensuring scalability
- Enhancing service quality
- Guaranteeing network stability

NOKIA |

telecom



”

“At Telecom, we are committed to ensuring that our multi-technology mobile network is updated and optimized at all times. In Nokia, we found a partner that can support our strategic vision and share industry-leading experiences from different corners of the world.

Nokia EdenNet SON helped us enhance customer experience by fully automating the time-consuming configuration and optimization tasks with artificial intelligence and machine learning.”

Carlos Montemilone

Radio Access Network Assurance Manager,
Telecom Argentina



Telecom is one of the leading telecommunications companies in Argentina, aiming to provide superior connectivity experience and service quality for its subscribers

Telecom’s network complexity has increased with the availability of new spectrum bands and the coexistence of multiple generations of mobile technologies, similarly to many operator networks throughout the world. To tackle the complexity, the operator chose Nokia EdenNet Self-Organizing Networks (SON), a market-leading solution with a proven track record of providing seamless automation and optimization in multi-technology networks.

This case study describes how EdenNet SON helped Telecom Argentina optimize network performance and service quality in its 3G and 4G networks.

Objective: Improving service quality and connectivity experience

Telecom is one of the leading telecommunications companies in Argentina with over 20 million mobile subscribers. In autumn 2022, the operator is running 2G, 3G and 4G networks, while getting ready for the future 5G deployments. The number of configurations, parameters, and functionalities that the operator needs to optimize for excellent network performance has grown almost exponentially from thousands to millions with the introduction of new technologies.

Telecom aims to provide superior connectivity experience for mobile users and best service quality for mobile entertainment and other advanced use cases.

To further enhance network performance, the operator required an automated solution that meets the following key criteria:

- Keeping the network optimized and running at all times – autonomously and based on traffic demand.
- Guaranteeing the stability of network configuration.
- Ensuring network scalability to support the introduction of new services.

Solution: Radio network optimization and automation with SON

Telecom Argentina chose Nokia EdenNet SON, a market-leading solution that delivers seamless automation and optimization across radio networks.

EdenNet SON provides a highly scalable solution for the operator's 3G and 4G networks, helping manage the millions of parameters and keeping the services running in all

circumstances. With a track record of managing multi-technology networks including 5G, it is a future-proof tool for the operator's environment.

Telecom is increasingly automating its network operations, resulting in higher network performance, less need for human intervention and OPEX savings.

The operator is able to trust in SON automation, as the algorithm takes into account all predicted impacts of optimization and guarantees stable network configuration at all times.

Trust in automation

Many operators choose to run SON modules first in **open loop** with manual approval of recommended actions. Seeing how SON brings concrete quality improvements helps gain trust in automation.

The final step is **closed loop** execution, which means the automated system operates with no need for human intervention.



Key improvements

With network optimization and automation, Telecom saw improvements in key areas that are directly impacting mobile connectivity experience, such as increased call stability, avoiding network congestion, and maintaining the stability of network configuration.

This case study explores three EdenNet SON modules that were essential for optimizing network performance and service quality in Telecom's environment that consists of multiple generations of radio access technology.

Improved call stability with Automatic Neighbor Relations (ANR) Optimization

Mobile subscribers expect reliable service and stable connectivity while on the move, for example, when using public transport.

Telecom deployed the Automatic Neighbor Relations Optimization module to improve call stability in changing circumstances.

The ANR module implements one of the key features of automated self-organizing networks. As the

complexity of a network increases, provisioning and managing neighboring cells manually becomes time-consuming and difficult. ANR automatically establishes relations between radio network entities to enable mobility and load balancing.

In this multi-technology environment, the module optimizes intra-frequency and inter-frequency, and inter-RAT neighbor lists, which are used for handovers. It automatically initializes

neighbor lists for newly arranged cells. ANR detects and ranks cells, adds missing neighbors, and removes poorly performing neighbors.

ANR Optimization increases the number of successful handovers.

This leads to fewer dropped connections that would happen with missing or incorrect neighbor relations, thus increasing call stability.

Guaranteed connectivity with Mobility Load Balancing (MLB)

Mobile subscribers are expecting stable connectivity experience in all situations. Radio network congestion can happen when massive amounts of people who are using mobile services at the same time accumulate in a certain area, for example, to attend events or because of sudden interruptions such as traffic jams.

Telecom implemented the Mobility Load Balancing module to avoid radio network congestion.

This module identifies congested cells and optimizes parameters for transferring traffic to the surrounding cells. To identify congested cells,

it analyses key performance indicators (KPIs), such as data access failures, call drop rates, and average power levels received by the base station that indicates uplink interference.

The MLB algorithm triggers traffic redistribution from congested cells to the neighboring cells that have a lighter network. It also ensures none of the cells become congested as a result. When the congestion has ended, the algorithm reverts the network back to its original settings.



Ensuring stable network configuration with Parameter Consistency Enforcement (PCE)

To gain trust in network automation, operators need to be sure that the resulting optimizations in network configuration are not impacting network stability.

Telecom implemented the Parameter Consistency Enforcement module to keep the network configuration stable in all conditions.

The PCE module audits and monitors the configuration throughout the

network. It detects RAN parameters that are not correctly configured or that have been recently changed.

The module reads a configuration file that contains the baseline parameter settings recommended by the operator and compares the changes made by the optimization algorithm to the baseline.

Additionally, the module monitors and enforces permanent parameter

settings that the operator has configured for unique network conditions in known locations such as tunnels or stadiums.

If the PCE module detects invalid parameter values or changes that are not within the allowed limits, the algorithm reverts the network back to the baseline or the permanent settings.

Nokia EdenNet SON ensures superior service quality in multi-technology networks

Many operators are running multiple generations of telecommunications technology from 2G, 3G, and 4G, to 5G. A scalable solution is needed for optimizing and automating the multi-layered network.

A common automation solution across all radio access technologies helps achieve the best results for optimizing multi-technology networks. Closed loop automation takes away the burden from humans and shifts it to machine learning algorithms, also enabling OPEX savings.

The SON modules described in this case study are part of the comprehensive Nokia EdenNet SON solution with the industry's widest range of SON modules for self-configuration, self-healing, and self-optimization.

With EdenNet SON, significant improvements in network performance and service quality are possible in all types of radio networks.



Visit [EdenNet SON webpage](#) to learn more.



Nokia OYJ
Karakaari 7
02610 Espoo
Finland

Tel. +358 (0) 10 44 88 000

CID: 212819
nokia.com

NOKIA

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering the future where networks meet cloud to realize the full potential of digital in every industry.

Through networks that sense, think and act, we work with our customers and partners to create the digital services and applications of the future.

Nokia is a registered trademark of Nokia Corporation. Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

© 2022 Nokia