

SOLUTION OVERVIEW

AI-Driven Network Operations: Accelerating Autonomous Networks for CSPs

Introduction

As Communication Service Providers (CSPs) transition towards fully autonomous networks, managing complex infrastructures while ensuring 24/7 service reliability and optimizing operational costs remains a challenge. Traditional manual network operations struggle to keep up with the scale, speed, and complexity of modern telecom networks.

Sutherland's AI-powered Network Operations solutions empower CSPs with intelligence-driven automation, predictive insights, and closed-loop orchestration. By leveraging deep telecom expertise, proprietary AI models, and industry best practices such as TM Forum Autonomous Networks (AN) standards, we provide a structured approach to network transformation, service reliability, and cost optimization.

This document outlines Sutherland's comprehensive AI-driven solutions, covering:

- **Autonomous Network Level Assessment** – A proprietary framework leveraging Sutherland's deep Telecom domain expertise and TM Forum AN methodologies.
- **NetSentinel.AI** – AI-powered predictive intelligence for fault detection and energy optimization.
- **GenAI+ Offerings for Network Operations** – Generative AI-based automation for incident resolution and operational optimization.
- **NetAssist.AI** – An AI-powered Incident Co-Pilot for network operations teams.
- **Service Management and Orchestration (SMO)** – AI-powered orchestration across RAN, Core, Edge, and Transport networks.

1. Autonomous Network Level Assessment

A Roadmap to AI-Powered Network Autonomy

As CSPs strive for self-driving networks, it is critical to assess their current level of network automation and define an AI-powered transformation strategy. Sutherland's Autonomous Network Level Assessment (ANLA) provides a structured four-stage approach that evaluates existing capabilities and outlines a clear roadmap to achieving higher levels of network autonomy.

Key Methodologies & Approach:

- 1. Proprietary Assessment Checklists & Questionnaires** – Developed based on Sutherland's telecom expertise and industry best practices.
- 2. TM Forum AN-Level Assessment Framework** – Incorporating TM Forum's Autonomous Networks (AN) training and certification insights to assess CSPs' automation maturity.
- 3. Use Case Prioritization** – Identifying high-impact AI-driven automation scenarios for immediate efficiency gains.
- 4. Strategic Roadmap Definition** – Crafting a phased AI-driven approach, focusing on scalability, interoperability, and measurable ROI.

Key Benefits:



reduction in OPEX
through strategic
automation adoption.



**decrease in network
downtime** via AI-
driven predictive fault
management.



**improvement in
operational efficiency**
through automation-driven
workflows.



Faster time-to-autonomy
with a structured, TM Forum-
aligned implementation
roadmap.

With Sutherland's deep domain expertise, AI accelerators, and structured frameworks, CSPs can efficiently transition to a self-healing, AI-driven network.

2. NetSentinel.AI: Predictive Network Intelligence for Fault and Energy Optimization

AI-Powered Fault Prediction & Energy Optimization

CSPs experience significant network failures, SLA breaches, and high operational costs due to unpredictable outages. Sutherland's NetSentinel.AI is a next-gen AI-powered platform that offers fault prediction, closed-loop automation, and energy optimization to enhance service reliability and reduce OPEX.

Core Capabilities:

- **Fault Prediction (Up to 48 Hours in Advance):** AI-powered models detect potential failures two days before occurrence, preventing outages.
- **Pre-Trained AI Models:** Leveraging historical network data, pre-built AI models accelerate fault detection, anomaly detection, and RCA.
- **Multi-Layered Analytics:** Provides predictive insights across RAN, Core, Edge, and Transport networks.
- **Closed-Loop Automation:** Automates fault resolution via seamless ITSM and orchestrator integration.
- **Energy Optimization:** AI-based dynamic resource allocation and network-wide power consumption adjustments reduce energy costs by up to 20%.

Business Impact:



reduction in outages,
ensuring higher
service reliability.



**operational efficiency
boost,** reducing manual
troubleshooting efforts.

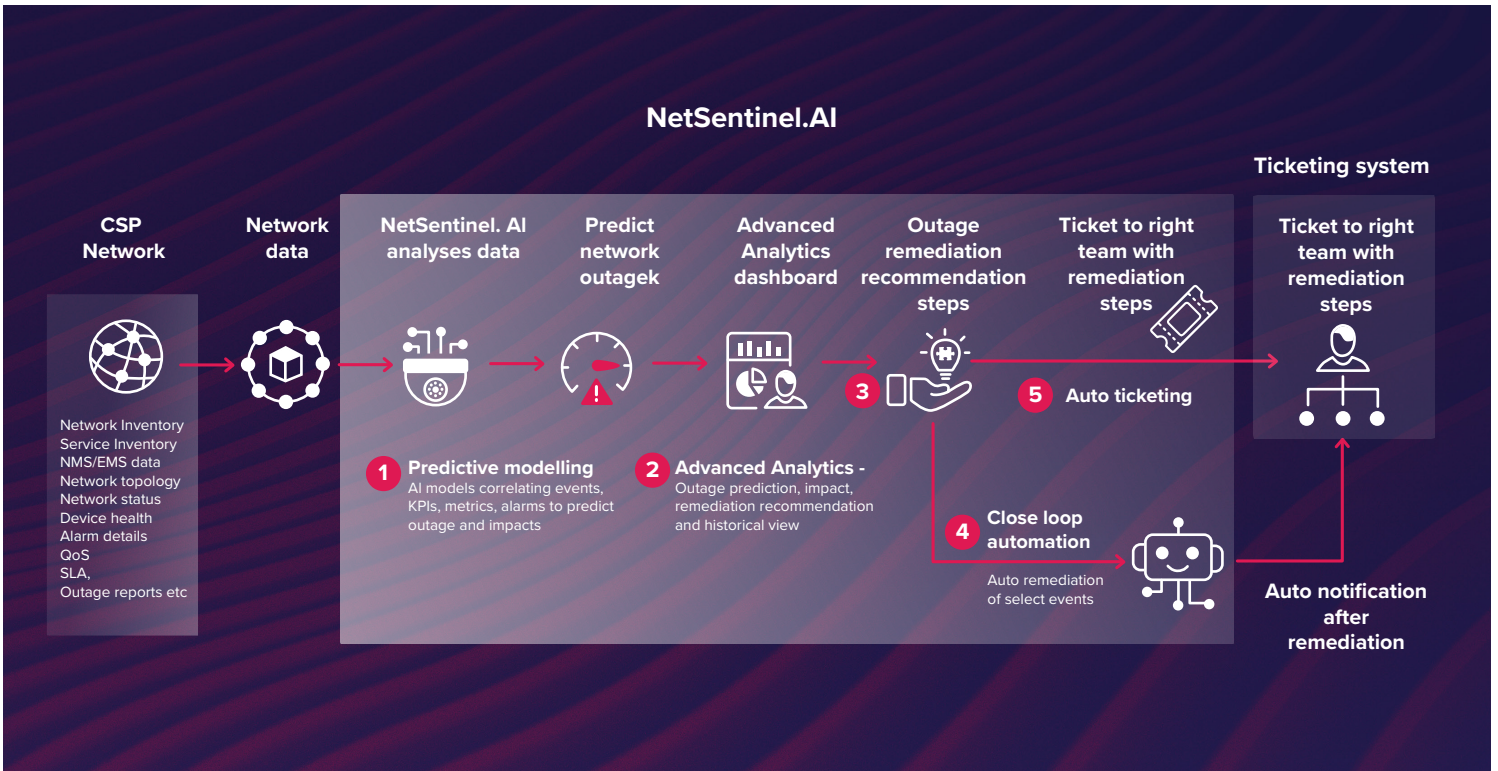


energy cost savings,
optimizing network power
consumption.



**Significant reduction
in SLA penalties,**
ensuring compliance with
performance benchmarks.

With NetSentinel.AI, CSPs can proactively manage network faults, optimize energy costs, and drive AI-led operational efficiency.



3. GenAI+ Offerings for Network Operations: Enhancing Operational Efficiency

Leveraging Generative AI for Intelligent Network Management

Sutherland’s GenAI+ integrates Generative AI, automation, and predictive intelligence to enhance CSPs’ network operations. It transforms incident resolution, service management, and network optimization through AI-powered automation.

Key Capabilities & Use Cases:

AI-Powered Incident Management:

- **Diagnostics as a Service:** Automates health checks, alert correlation, and actionable resolutions.
- **NetAssist.AI:** GenAI-powered co-pilot for real-time troubleshooting and remediation.
- **LogAnalyzer.AI:** Interactive GenAI-driven log analysis for faster issue identification.

Automated Ticketing & Resolution:

- **AI-driven ticketing** with enriched resolution steps.
- **Incident prioritization** based on urgency and SLA impact.

AI-Enabled Change Management:

- **Proactive network optimization** with AI-driven recommendations.
- **Automated change impact assessment** for risk mitigation.
- **Intelligent workflow automation** for seamless change approvals.

Key Benefits:



reduction in Mean Time to Repair (MTTR) for network incidents.



downtime reduction through predictive insights and self-healing capabilities.



OPEX savings via AI-driven operational efficiency.

4. NetAssist.AI – AI-Powered Incident Co-Pilot for Telecom Networks

AI-Driven Assistance for NOC & Field Teams

CSPs experience significant network failures, SLA breaches, and high operational costs due to unpredictable Sutherland's NetAssist.AI is an advanced AI-powered co-pilot designed to assist NOC engineers, field technicians, and back-office teams by automating diagnostics, triaging incidents, fulfillment tasks, troubleshooting, resolution and ticketing tasks. It simplifies network management through Conversational AI, real-time analytics, and automated workflows.

Key Features & Capabilities:

- **Intelligent Triage & Truck Roll Decisioning:** Determines if an issue requires a field technician dispatch (truck roll) or can be resolved remotely.
- **Conversational AI for NOC Engineers:** AI-driven responses to natural language queries, simplifying troubleshooting.
- **AI-Powered Root Cause Analysis (RCA):** Analyzes logs, network alarms, and past incidents to determine the root cause.
- **Automated Diagnostics as a Service:** Automates API calls for network health checks and performs deep-dive API diagnostics.
- **Ticket Automation:** Auto-updates ITSM systems with diagnosis details and recommended resolutions.
- **Guided Troubleshooting and Fulfillment Playbooks:** AI-assisted, step-by-step fulfillment and resolution guidance for NOC teams.
- **Self-Service Portal & Customer Support Extension:** Can be integrated into self-service portals and assist customer service agents in conducting basic service status checks.

Business Value Proposition:



MTRR reduction, significantly accelerating incident resolution.



lower OPEX via automated diagnostics and ticket handling.

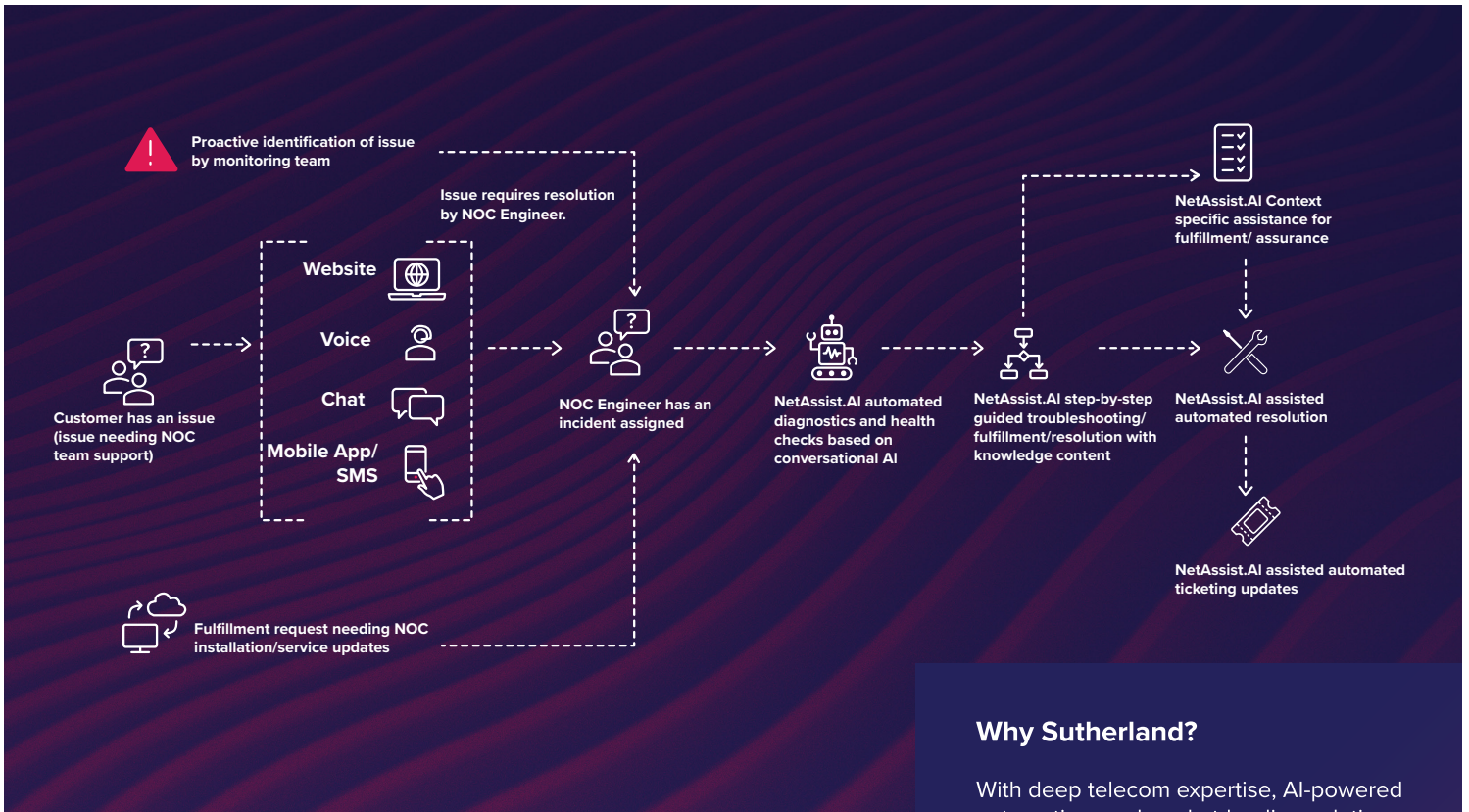
Intelligent triage reducing unnecessary truck rolls, optimizing field resource allocation.

Reduced network downtime, ensuring better service continuity.

Enhanced NOC productivity, allowing engineers to focus on critical issues instead of repetitive tasks.

Multi-Domain Compatibility, covering **RAN, Core, Transport, and Edge networks.**

NetAssist.AI empowers CSPs to streamline network troubleshooting and resolution, reduce field dispatch costs, accelerate fulfillment, enhance self-service capabilities, and optimize network resilience.



Transforming CSP Network Operations with AI

Sutherland's AI-powered solutions redefine network operations with intelligence-driven automation, predictive insights, and closed-loop remediation. Partner with us to unlock the power of AI-driven transformation. By integrating Autonomous Network Level Assessments, NetSentinel.AI, GenAI+, NetAssist.AI, and AI-driven SMO, CSPs can:

- **Reduce outages by 40%** through AI-driven fault prediction.
- **Lower OPEX by 25-35%** via automated operations.
- **Enhance service reliability and QoS**, minimizing customer churn.
- **Achieve energy efficiency goals**, reducing power consumption by **15-20%**.

Sutherland is committed to accelerating CSPs' journey toward AI-powered network autonomy, ensuring scalable, cost-efficient, and future-ready telecom operations. Partner with us to unlock the power of AI-driven transformation.

Why Sutherland?

With deep telecom expertise, AI-powered automation, and market-leading solutions Sutherland is a trusted transformation partner to some of the largest Telecom brands worldwide. We empower CSPs to transform network operations, reduce costs, and enhance customer experience. Our solutions deliver proven results, operational efficiencies, and competitive differentiation in an evolving telecom landscape.

- **AI & Automation-Driven Digital Transformation**
- **Proven Telecom Domain Expertise**
- **End-to-End Network Optimization & Intelligence**
- **Accelerated Time-to-Value with Pre-Built AI Models**

Sutherland delivers comprehensive digital solutions for telcos from network operations that enhance reliability to agentic AI driving productivity and unified AI-powered service hubs optimizing operations. **Partner with Sutherland to accelerate your telco transformation!**

Unlocking Digital Performance. Delivering Measurable Results.

At Sutherland, we are a leading global business and digital transformation partner. We work with iconic brands worldwide in Healthcare, Insurance, Banking & Financial Services, Communications, Media & Entertainment, Technology, Travel & Hospitality, Logistics, Retail, Energy & Utilities industries. We bring our clients a unique value proposition through market-leading technology and business process excellence. Leveraging our advanced products and platforms, we drive digital transformation, optimize critical business operations, reinvent experiences, and pioneer new solutions, all provided through a seamless "as a service" model. For each company, we tailor proven and rapid formulas to fit their unique DNA. We bring together human expertise and artificial intelligence. In short, we do digital chemistry. It unlocks new possibilities, great client partnerships, and transformative outcomes.

