Telkom infra
by Telkom Indonesia

INFRA NETWORK SERVICES

Infra Network Services

Our Services

Telkominfra delivers end-to-end infrastructure network services that cover the complete telecommunications infrastructure lifecycle, from initial network planning and deployment through optimization, ongoing operations, and maintenance support.

Our service portfolio includes both active infrastructure (base stations, microwave links, antennas, core & data network elements) and passive infrastructure, supported by regular preventive maintenance and responsive field corrective actions. We also manage critical site operations including spare part handling, site security, fuel logistics, and remote network supervision through our 24/7 Integrated Operation Center (IOC), ensuring high availability and operational continuity across all sites

Advantages

- We provide fully integrated network services covering planning, deployment, optimization, operation, and maintenance—across RAN, transport, and core domains.

- Our services are executed by certified technical experts, combining field experience with deep domain knowledge to deliver tailored solutions with precision.

- We ensure operational excellence through structured project management, accurate diagnostics, and proactive maintenance methodologies.

- With a 24/7 Integrated Operation Center (IOC), we offer network & service real-time monitoring and demarcation, enabling high network & service availability and rapid issue resolution.

- Our holistic approach encompasses both active and passive infrastructure, including spare part management, security, fuel logistics, and end-to-end site support.

Our Scope Of Work

- Deployment :
  Network Planning, NW Deployment, NW IT Solution
- Operation :
  NW Optimization, NW Reengineering, NW Operation & Maintenance, Network & Service Operation Center, Sparepart Management

NW Planning
RAN, Transport & Core Network Planning

NW Deployment
RAN, Transport & Core Network Deployment

NW IT Solution
Solutions IT Tools for Telco

NW Optimization
Network Quality Optimisation

NW Reengineering
Network dismantle & relocation

NW Operation & Maintenance
RAN, Transport & Core network maintenance

Sparepart Management
Network Spare Parts Management

WHY CHOOSE US

In the Mobile Broadband era, Telkominfra continuously focuses on delivering the best solutions to improve end-users experience. Our best solutions include helping mobile operators to obtain the maximum benefit of network deployment, reducing TCO (total cost of operation) as well as improving network efficiency.

Infra Network Services - Deployment

NW Planning

Network Planning serves as the foundation for building high-quality telecommunications infrastructure. Telkominfra provides strategic planning services to ensure optimal coverage, capacity, and performance, tailored to the specific growth needs of mobile operators.
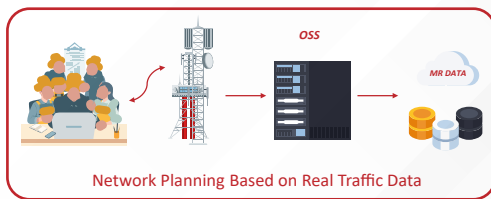
⬈ Service Offered :
- Coverage and Capacity Planning
- Site Survey and Selection
- Frequency and Parameter Planning
- Network Topology Design
- Radio Access and Transport Planning

⬈ Advantages :
- Reduces CAPEX through strategic planning
- Supports multi-technology networks (2G/3G/4G/5G)
- Expertise in end-to-end planning services
- Backed by professional engineers and advanced tools

⬈ Scope of Work :
- Identifying optimal site locations
- Conducting technical surveys
- Designing network layout and parameters
- Providing simulation and modeling for accurate forecasting

Network Planning Based on Real Traffic Data

NW Deployment

Telkominfra's Network Deployment service ensures fast, reliable, and cost-effective implementation of telecommunication infrastructure. Our services includes hardware provisioning, installation, commissioning, and acceptance processes.

⬈ Service Offered :
- Site Installation and Integration
- Antenna and Radio Equipment Deployment
- Project and Quality Management
- Testing and Commissioning
- Acceptance Certification

⬈ Advantages :
- Fast rollout with quality control
- Nationwide deployment capability
- Scalable to support multi-vendor environments
- Efficient project execution with minimal downtime

⬈ Scope of Work :
- Coordination with vendors and local stakeholders
- Installation of base station and transport equipment
- On-site testing and troubleshooting
- Handover with documentation and quality assurance

Infra Network Services - Network IT Solution

NW IT Solution

This service provides intelligent, data-driven solutions to enhance operational visibility and automation in telecommunications networks. It integrates application systems and analytics to optimize network performance, service delivery, and customer experience.
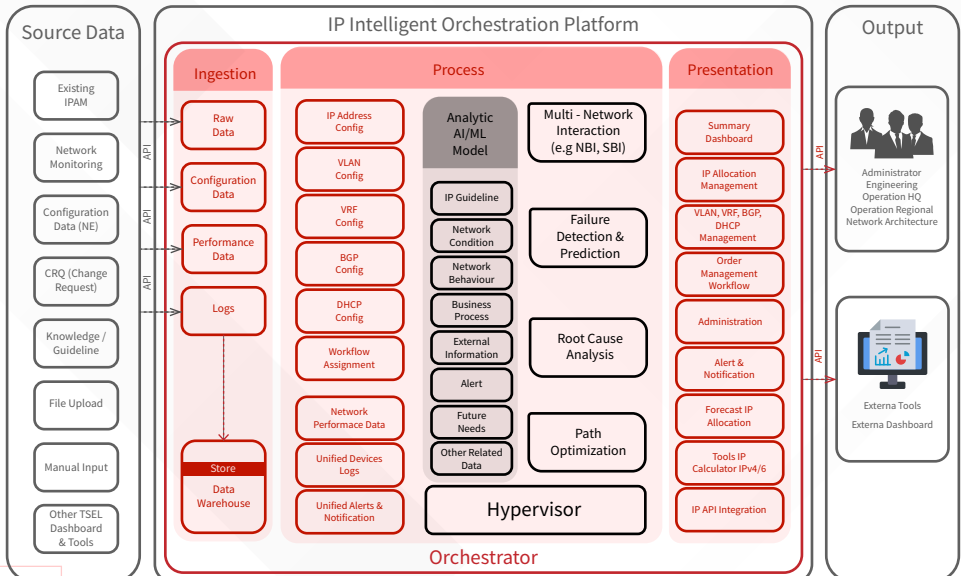
Service Offered :

- Intelligent Fault Management Platform
- Workforce Management system
- Automation RAN Optimization
- Core CS/PS Autonomous Optimization
- Core DPI Autonomous
- Internet Service Monitoring & Benchmark Automation
- Datacomm Umbrella Fault Management Platform
- Datacomm Backbone Autonomous Optimization
- Network & Service Configuration Mgt, catalogue & Service Impact correlation mgt
- IP Intelligent Orchestration Management
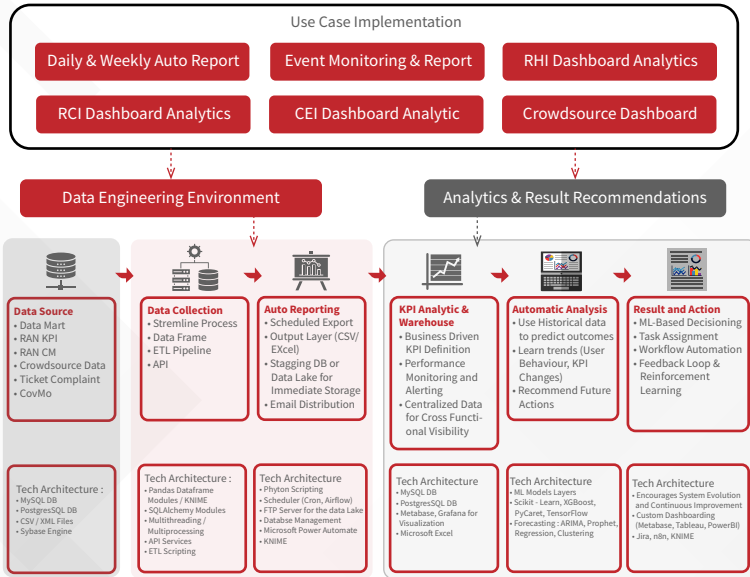
Scope of Work :

- Developing and integrating customized Network & service Autonomous solutions
- Monitoring network KPIs and user experience
- Supporting multi-platform, multi-vendor environments
- Enabling predictive and proactive network management

Advantages :

- Real-time performance monitoring and reporting
- Streamlines operations and reduces manual effort
- Enhances decision-making with actionable insights
- Accelerates digital transformation for telecom operators

IP Intelligent Orchestration Platform

Source Data

- Existing IPAM
- Network Monitoring
- Configuration Data (NE)
- CRQ (Change Request)
- Knowledge / Guideline
- File Upload
- Manual Input
- Other TSEL Dashboard & Tools

Ingestion

- Raw Data
- Configuration Data
- Performance Data
- Logs
- Store
  Data Warehouse

Process

- IP Address Config
- VLAN Config
- VRF Config
- BGP Config
- DHCP Config
- Workflow Assignment
- Network Performace Data
- Unified Devices Data
- Unified Alerts & Notification

Analytic AI/ML Model
- IP Guideline
- Network Condition
- Network Behaviour
- Business Process
- External Information
- Alert
- Future Needs
- Other Related Data

- Multi - Network Interaction (e.g NBI, SBI)
- Failure Detection & Prediction
- Root Cause Analysis
- Path Optimization

Hypervisor

Presentation

- Summary Dashboard
- IP Allocation Management
- VLAN, VRF, BGP, DHCP Management
- Order Management Workflow
- Administration
- Alert & Notification
- Forecast IP Allocation
- Tools IP Calculator IPv4/6
- IP API Integration

Orchestrator

Output

Administrator Engineering Operation HQ Operation Regional Network Architecture

Externa Tools
Externa Dashboard

API

Infra Network Services - Network IT Solution

Use Case Implementation

Daily & Weekly Auto Report	Event Monitoring & Report	RHI Dashboard Analytics
RCI Dashboard Analytics	CEI Dashboard Analytic	Crowdsource Dashboard

Data Engineering Environment

Analytics & Result Recommendations

Data Source
- Data Mart
- RAN KPI
- RAN CM
- Crowdsource Data
- Ticket Complaint
- CovMo

Data Collection
- Stremline Process
- Data Frame
- ETL Pipeline
- API

Auto Reporting
- Scheduled Export
- Output Layer (CSV/ EXcel)
- Stagging DB or Data Lake for Immediate Storage
- Email Distribution

KPI Analytic & Warehouse
- Business Driven KPI Definition
- Performance Monitoring and Alerting
- Centralized Data for Cross Functional Visibility

Automatic Analysis
- Use Historical data to predict outcomes
- Learn trends (User Behaviour, KPI Changes)
- Recommend Future Actions

Result and Action
- ML-Based Decisioning
- Task Assignment
- Workflow Automation
- Feedback Loop & Reinforcement Learning

Tech Architecture :
- MySQL DB
- PostgresSQL DB
- CSV / XML Files
- Sybase Engine

Tech Architecture :
- Pandas Dataframe Modules / KNIME
- SQLAlchemy Modules
- Multithreading / Multiprocessing
- API Services
- ETL Scripting

Tech Architecture
- Phyton Scripting
- Scheduler (Cron, Airflow)
- FTP Server for the data Lake
- Databse Management
- Microsoft Power Automate
- KNIME

Tech Architecture
- MySQL DB
- PostgresSQL DB
- Metabase, Grafana for Visualization
- Microsoft Excel

Tech Architecture
- ML Models Layers
- Scikit - Learn, XGBoost, PyCaret, TensorFlow
- Forecasting : ARIMA, Prophet, Regression, Clustering

Tech Architecture
- Encourages System Evolution and Continuous Improvement
- Custom Dashboarding (Metabase, Tableau, PowerBI)
- Jira, n8n, KNIME

a. General Description
Renewable energy system supply and installation solutions such as :
- Solar PV
- Fuel Cell
- Hybrid System (Solar + Battery + Generator)
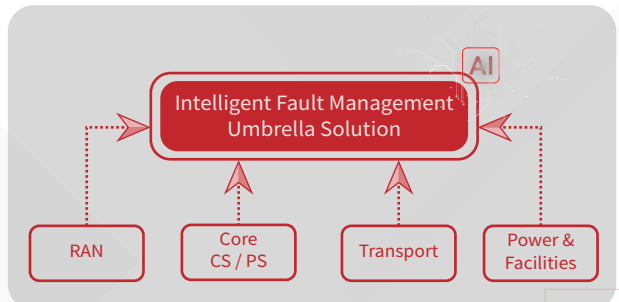
b. Services Offered
- Survey and System Design (engineering & system sizing)
- Procurement & installation of solar panels, battery, inverter, fuel cell
- Integration into existing system (grid/off-grid)
- Certification and commissioning

c. Advantages
- Save Energy & Operational Costs
- Reduction of carbon emissions (ESG-oriented)
- Modular System and scalable
- Monitoring real-time base on cloud

d. Case Study or Portfolio (Optional)
- ex : Solar Installation PV 5 kWp for 20 sites BTS Telkomsel in Kalimantan area

AI

Intelligent Fault Management Umbrella Solution

RAN	Core CS / PS	Transport	Power & Facilities

Infra Network Services - Network IT Solution

Development Application With Functionalities

NAURA
Network Administration Automation Rollout and Acceptance is a modular apps to workforce on New Site Integration across Telco RAN Vendor

RAN Sysinfo
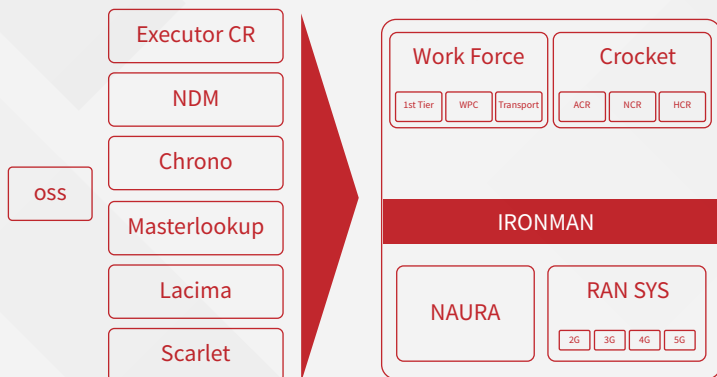RANSYS is an integrated database as main source of the RAN information

CROKET
Change Request on Ticket will be launch as CR Generator nationwide. Every activity related to Change Request will be served by CROKET as main gateway.

Workforces
Workforce to develop efficient process and workforce them in a proper manner related to 1st Tier Optim, Worst Performance Cell (WPC), RCI.

Provide capabilities to utilize AI (Artifcial Intelligent) in order to find correlation KPI/KQI.

IRONMAN - Integrated RAN Automation Solution

| OSS |

- Executor CR
- NDM
- Chrono
- Masterlookup
- Lacima
- Scarlet

Work Force
1st Tier | WPC | Transport

Crocket
ACR | NCR | HCR

IRONMAN

NAURA

RAN SYS
2G | 3G | 4G | 5G

Infra Network Services - Operation

NW Optimization

Telkominfra offers advanced optimization services to maximize the quality and efficiency of network performance. This ensures superior user experience and supports the evolving demands of telecom networks.
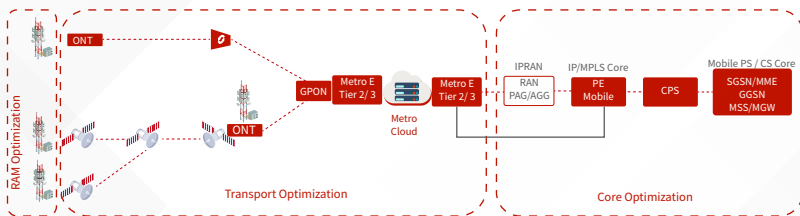
Service Offered :
- RAN Optimization
- Transport & Datacom Optimization
- Core & Application Layer Optimization
- Network Audit and Benchmarking

Scope of Work :
- KPI-based drive tests and coverage analysis
- Parameter adjustment and tuning
- Comparative benchmarking with industry standards
- Engineering feedback and corrective implementation

Advantages :
- Improves coverage, capacity, and service quality
- Reduces network congestion and inefficiencies
- Provides measurable performance improvements
- Winning Benchmark Crowdsource Parameter
- Aligns with global telecom best practices

RAM Optimization

ONT

GPON | Metro E Tier 2/ 3 | Metro Cloud | Metro E Tier 2/ 3

ONT

Transport Optimization

IPRAN RAN PAG/AGG | IP/MPLS Core PE Mobile | CPS | Mobile PS / CS Core SGSN/MME GGSN MSS/MGW

Core Optimization

NW Operation & Maintenance

This service ensures continuous, stable operation of network & Service through preventive and corrective maintenance, supported by a 24/7 Integrated Operation Center (IOC) and nationwide engineering teams.
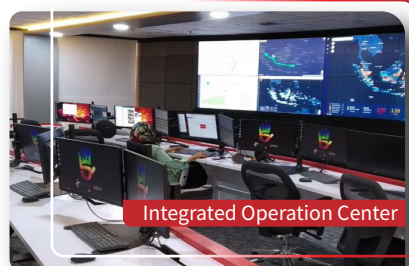
Service Offered :
- Integrated Network Operation Center (NOC) & Service Operation Center (SOC) Operations
- Preventive & Corrective Maintenance RAN, Power, Core & Facilities
- Network & Service Event, Incident, Complain Handling Management
- Security, Power, and Facilities Monitoring

Scope of Work :
- Network, Service & Complain Handling monitoring & Demarcation
- Routine site inspections and troubleshooting
- Real-time issue escalation and resolution
- Power management and fuel control

Advantages :
- 24/7 network, service & Complain Handling surveillance & Demarcation via IOC
- Specialized teams for active and passive components
- Enhances network & Service availability and reliability
- ISO-certified service processes (ITIL, eTOM)

Integrated Operation Center

Infra Network Services - Operation

NW Reengineering

Network Reengineering is a strategic approach to restructure existing infrastructure for improved efficiency and cost-effectiveness. This includes dismantling obsolete sites, relocating equipment, and upgrading components of mobile operators.

Service Offered :
- Site Decommissioning and Relocation
- Transport and Radio Migration
- Equipment Modernization and Spectrum Efficiency
- Asset Warehousing and Documentation

Advantages :
- Optimizes infrastructure utilization
- Reduces operational costs and site redundancy
- Comprehensive national support across 11 regions
- Seamless coordination with customer asset systems

Scope of Work :
- Tagging and dismantling equipment
- Transporting assets to warehouse
- Upgrading hardware (e.g., multiport antennas, LTE capacity)
- End-to-end project documentation and handover

Sparepart Management

Telkominfra provides a comprehensive spare part management service, including repair, logistics, inventory optimization, and reporting. This enables telecom operators to minimize downtime and reduce operating costs.
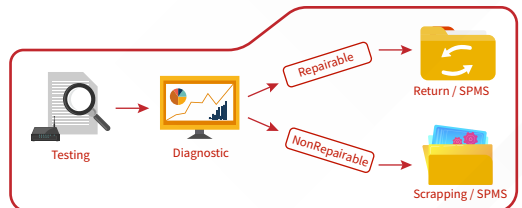
Service Offered :
- Spare Part Repair and Screening
- Logistics and Inventory Management
- Local Repair Center Operations
- Spare Part Reporting and Root Cause Analysis

Advantages :
- Cost savings of up to 20% in spare part OPEX
- Reduces logistics and customs delays
- Transparent and traceable repair workflow
- Supports national scale operations with local repair hubs

Scope of Work :
- Repair and return of faulty components within 24 hours
- Screening to identify repairable vs non-repairable parts
- Inventory pooling and cost optimization strategies
- Tracking and documentation through digital platform

Project References INS Deploy & Ops

NOC RAN
- Manage NOC and Automation
- RAN event and Incident Monitoring, Escalation and Report

RAN Optimization
- Optimize RAN Coverage, Capacity, Quality Service and Productivity
- Crowd Event National Support
- Implement Optmization Workflow Automation With IRONMAN and Sysinfo

RAN Reengineering
- Optimize Spectrum, RAN and infra-asset for Productivity and Cost Efficiency
- Low - Cost Invesment Solutions
- High Capablity of New NE Deployment With Surrounding Optimization

ENOM (Enhanced Network Operation Model)
- Improve Availability RAN
- RAN L0 and L1 Operation Excellence

NPI Transport
- Improve Transport Service Performance
- Transport (Access) Service Performance Improvement

TSA CNOP
- Manage Transport CNOP
- CNOP Transport Technical Support Assitance

NSPI (Network Service Performance Improvement)
- Improvement Customer Experience and Applcation Layer Service
- Core and Application Optimization Services for Core Packet Switch, Circuit Switch and IMS
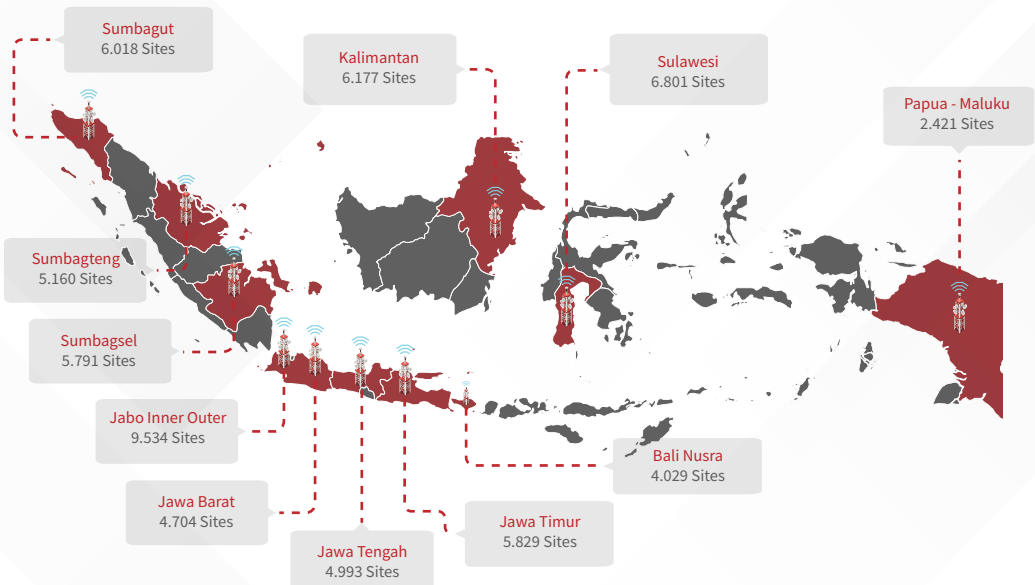
DPI Solman
- Configure Core PS DPI to Support Product Implementation
- Core PS - Deep Packet Inspection Solution Management

Infra Network Services Site Maintenance

Sumbagut
6.018 Sites

Kalimantan
6.177 Sites

Sulawesi
6.801 Sites

Papua - Maluku
2.421 Sites

Sumbagteng
5.160 Sites

Sumbagsel
5.791 Sites

Jabo Inner Outer
9.534 Sites

Jawa Barat
4.704 Sites

Jawa Tengah
4.993 Sites

Jawa Timur
5.829 Sites

Bali Nusra
4.029 Sites

*as of 2024
ENOM (Enhanced Network Operation Model)
Telkominfra only Manages two areas :
Area 1 (Sumatra)
Area 3 (Jawa Tengah, Jawa Timur, Balnus)

Site Maintenance
(Including Power System, Rectifier, Battery,
ELectrical, Standby Generator)

61.457 Sites

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