

# COMPANY OVERVIEW

# AGENDA

- About Steel Man Telecom Pvt. Ltd.
- Services
  - TSP/ Infrastructure Services
  - Project Management
  - Radio Frequency Engineering Service
  - IBS
  - O&M
  - OFC
  - Power
- Our Partners/Customer
- Our Presence



# ABOUT STEEL MAN TELECOM PVT. LTD.

- Steel Man Telecom Pvt. Ltd. is an ISO Certified Company.
- We have a history of more than a decade for catering to the needs of Indian Telecom Industry through our products and services.
- Our company policy is

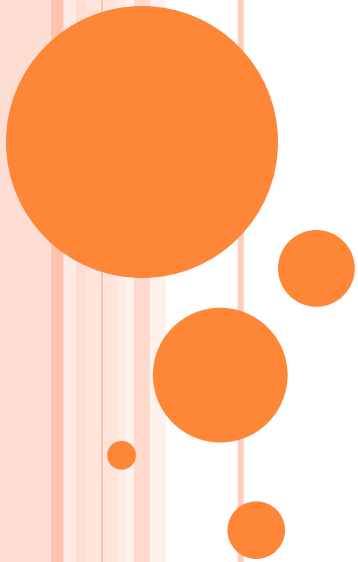
"To provide the Telecom Industry with Quality Products and Services at competitive prices" thus helping the customers to reduce

- Time
- CAPEX
- OPEX

through innovative solutions & Services" .



# TSP/INFRASTRUCTURE SERVICES



# WHAT DIFFERENTIATES STEEL MAN?

Our team consists of experienced, innovative, highly motivated and quality conscious professionals. They are capable of delivering 50 sites per month for each operator in every circle.

Many companies claim to build sites – so what makes us better?

- Application of technology, tailor-made for this business.
- Process in every step to deliver consistent results.
- Transparency in way we do business drives the behavior customers like.
- Not only Building Sites but maintaining them too.

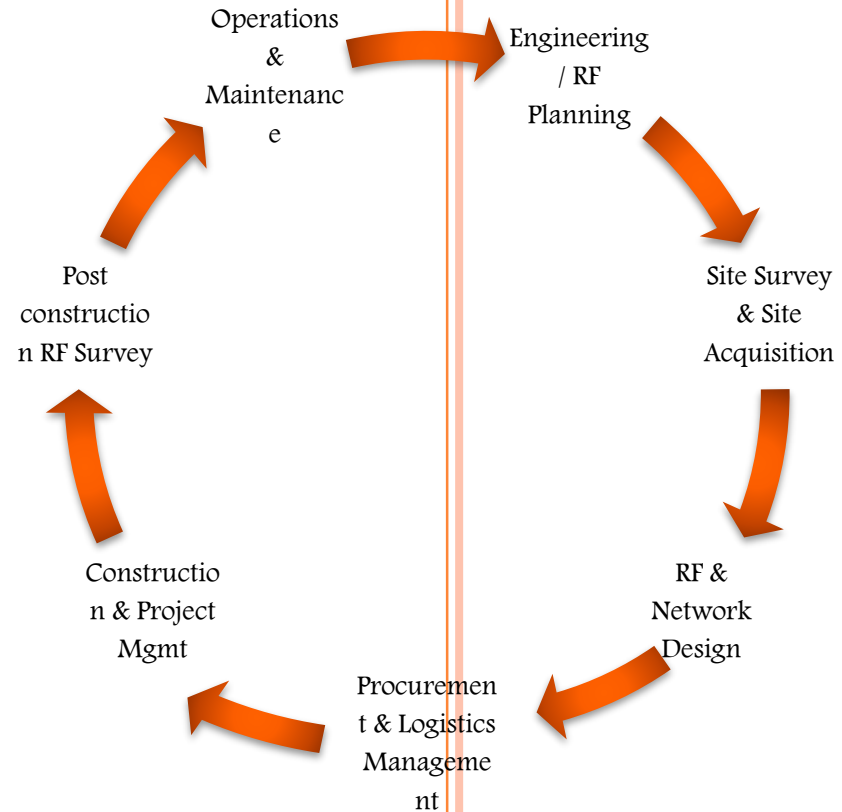
We offer the following services:

- Turnkey solutions for telecommunication network, right from site civil survey to completion of the site
- Design and Development of Telecommunication Towers with all allied civil & Electrical works
- Excellent customer service



# EPC LIFE-CYCLE

- End-to-End Turnkey EPC management
- Complete visibility to end-customer and OEM provider through proprietary Steel Man systems
- Optimize site-on-air schedule Full life-cycle of services from Site Selection, civil & electrical construction to installation and maintenance
- Ability to provide all materials
- Ability to deliver Turnkey services across the country & replicate our delivery model in other countries
- Awarded “Excellent Partner” award by Huawei/ZTE for our Service work in WB/ROWB .



# TURNKEY SERVICES FOR TELECOM INFRA

## ○ Site Survey & Design

- ✓ We provide Site Survey & Design as part of our Telecom Turnkey Solutions to our customers.
- ✓ Survey and design of the site are carried out before the installation of the towers in the following steps:
  1. Survey the site to plan specific placing of various components of the structures/building
  2. Test the soil for its bearing capacity
  3. Layout plan preparation of the site

## ○ Civil Works

- ✓ We carry out design and execution of foundations and associated Civil Works.
- ✓ We can provide you with the necessary geotechnical report complete with boring log and recommendations for proper foundation design that meets your tower specifications. We can provide installation on a completely raw land site with site clearing, grading and civil work, grounding installation and testing, telephone and electrical services and fencing.

## ○ Tower Supply

- ✓ Ground Based Towers
- ✓ Roof Top Towers
- ✓ Roof Top Poles



# TURNKEY SERVICES FOR TELECOM INFRA

- **Our Site execution includes**

- ✓ Tower Foundation
- ✓ Shelter / Outdoor Foundation
- ✓ DG Foundation
- ✓ Compound Wall
- ✓ Security Room

- **Supply & Installation:**

- ✓ DG sets
- ✓ Shelters
- ✓ Insulation Transformers
- ✓ Stabilizers
- ✓ Fire Alarm Panels

- **Other related services:**

- ✓ Liaison works for EB connections, municipal approvals
- ✓ **Earthing:** We carry out complete lightning conductors installation & earthing work
- ✓ **Aviation Lamps:** We Install Aviation Lamps as per the standards and Aviation Rules





# PROJECT MANAGEMENT



# PROJECT MANAGEMENT SERVICE

- Steel Man's Project Management Services (PMS) is a specialized service that provides its clients end-to-end project management services encompassing the entire life cycle of telecom infrastructure implementation – starting from site survey to site integration. Steel Man's Project Management helps complete compliance and ensures that all issues are strictly managed and controlled to the required specifications. In addition Steel Man's Project Management Services also includes supply of skilled manpower for Project Management activities on time and expense basis.

## Scope of Project Management Activities:

- Site Survey & Layout
- Site Design
- Site Implementation
- Co – ordination & Liaising
- Quality Assurance
- Verification of Contractor / Supplier Bills & P  
Closure



# **RADIO FREQUENCY ENGINEERING SERVICE**



# RF PLANNING, TRANSMISSION PLANNING & NETWORK DESIGN SERVICE

- Steel Man's RF Engineering Resources are well trained to use state-of-the-art industry standard tools for designing, planning and testing the network to ensure that the network design meets the network performance objectives of the customer.

Some of the Network Planning Tools that our engineers are trained to use in RF Planning and Network Design are:

- Aircom's Asset Planning Tool
- Forsk Atoll Planning Tool
- Pathloss 4.0
- Aircom's Connect Link Planner



# RF, MW LOS SURVEY AND NETWORK AUDIT SERVICE

## ○ RF Survey

The ultimate goal of a RF, Site Survey by SMTPL is to acquire ample information to determine the number and placement of access points that allows optimal coverage throughout the facility.

## ○ Line Of Site (LOS) Survey

The ultimate goal of LOS survey is to have MW connectivity between the two sites to ascertain the Line of Site clearance. The LOS survey is carried out physically checking the terrain between the hop and selecting the sites for acquisition. The survey is highly critical because any failure in LOS can lead to a delay in project and a subsequent loss on account.

## ○ Network Audit

Network requires consistent maintenance and vigilance to ensure reliable service

delivery and adherence to end user Service Level Agreements (SLAs).



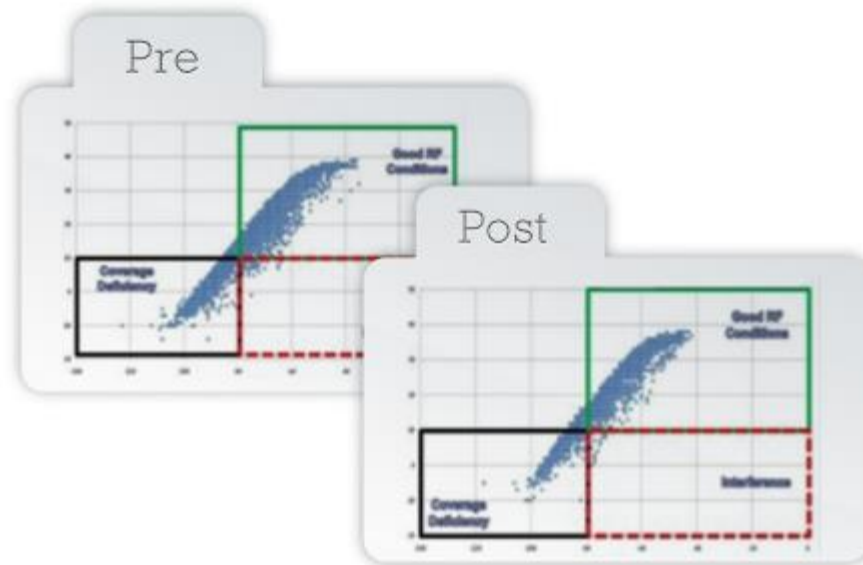
# DRIVE TEST & NETWORK OPTIMIZATION SERVICE

- Drive Test is conducted for checking coverage criteria of a cell site with RF drive test tool. The data collected by drive test tool as Log files is analyzed to evaluate various RF parameters of the network Drive Route and Site Data for the sites to be driven is taken from customer
- Drive Test LOG File of the specified Drive Route / Site is saved and the same will be handed over to customer at the end of the day
- DT Resource identify routine field optimization issues like cable swapping, missing neighbors etc., and rectify the same with the help of the customer



# RF OPTIMIZATION AND KPI ANALYSIS

- We offer RF Optimization Services for existing/new GSM and CDMA network operators. This service is performed as a continuous RF engineering activity for preventive maintenance. It ensures optimum network performance to meet the Quality of Service (QoS) targets of the customer.



# INSTALLATION & COMMISSIONING OF BTS EQUIPMENT

- Receive site information from customer along with TND/RND
- RFI check, ensuring all related permissions for the site
- Receive Material at site and checking as per packing list. Intimate to the customer in case of any deficiency
- Hoisting of GSM/CDMA Antenna on tower as per TND/RND
- Clamping and routing of RF cables from Antenna to Shelter
- Grounding the Antenna and RF cables at appropriate place
- Ensuring drip loop/Z loop at cable entry plate
- Ensuring no sharp bend on RF cables
- Checking VSWR





# INSTALLATION & COMMISSIONING OF BTS EQUIPMENT

- Weather Proofing
- Fixing OGB
- Fixing EMPs/Surge arrestors along with connectors in shelter
- Grouting the BTS
- Extending, power cables, E1 cables, grounding cables to BTS
- Fixing IGB and extending grounding to all peripheral equipment
- Fixing OGB
- Fixing DDF
- Commissioning the equipment as per defined procedure
- Power measurement
- Filling the check list and execution of quality audit



# MW INSTALLATION AND COMMISSIONING

- Receive site information from customer along with TND/RND
- RFI check in near end and far end besides ensuring the site permissions
- Receive Material at both ends and checking as per packing list and intimate the customer in case of deficiency
- Assembling and hoisting of MW Antennas & Radios on tower in both ends as per TND/RND
- Clamping and routing of IF cables from Shelter to Antenna on both ends
- Grounding the Antennas and RF Cables at appropriate place
- Fixing Transmission rack if required on both ends
- Installation & Commissioning of IDUs in shelters
- Alignment of MW antennas till we achieve required receive level
- Grounding, weather proofing and labeling all cables on both ends
- Acceptance Test

# BSC/MSC/STP/SDH/DWDM/PTN/XDM/DLC/FSO/DSLAM INSTALLATION AND COMMISSIONING

- Receive site information from customer along with TND/RND
- RFI check at the site besides ensuring the site permissions. Sending the SDR to customer
- Receive material and check as per packing list and intimate the customer in case of exigency
- Grouting the equipment rack and inserting all required modules as per the manual/lay out drawing
- Interconnection with appropriate cables/jumpers
- Grounding the equipment
- Installation of DCDB and extension of power to the equipment
- Installation of DDF and extension of E1s to the equipment by Kroning
- Installation of optical cables if required and measurement of power
- Switching on the equipment and commissioning as per the procedure
- Allotment of given IP address and extension of services to the subscribers
- BER test if required
- Preparation of AT document and sign off



# IN BUILDING SOLUTIONS



# IN-BUILDING SOLUTIONS

- Steel Man has a remarkable track record in providing In-building solutions in RF planning, design, installation and commissioning. Our project managers oversee every aspect of system design, installation and testing for the acceptance of the customer.

We are capable of providing the following In-Building solutions:

- RF planning and design
- Installation of RF cables and distributed antennas
- Coverage test
- Installation of Repeaters
- Installation of BTS & MW




# OPERATION & MAINTENANCE



- Steel Man's Operation and Maintenance (O&M) is committed to provide flexible, integrated, dependable, cost effective and responsive solutions for the Operation and Maintenance requirements of telecom industry.
- Now we are into handling Passive Maintenance of Telecom Cell Sites for Preventive and Corrective Maintenance, Break Down Maintenance, OFC Route Maintenance, Fault Rectification, Complete Health Check, Diesel Filling etc. With our expertise in the field as the backup, we are in a position to provide customized and turnkey solutions in Operation and Maintenance segment in telecom industry.

### Why Steel Man's O&M?

- **Flexibility:** We can create tailor made projects for the quality and time you seek within your budget
  - **Integration:** We aim at completing multi-disciplinary tasks and providing value added services through our in-house expertise
  - **Quality:** We follow ISO 9001- 2008 QMS (SOP) Standard Operating Procedures
  - **Experience:** We are highly experienced in O&M of Passive infra Telecom Cell Sites and Optical Fiber Cable networks
  - **Professionalism:** Honed by continual improvement programs, our professional services are maintained at high standards for customer satisfaction
  - **Manpower:** Our teams with their unique blend of knowledge, enthusiasm and ambition have turned our company the forerunner in the industry
  - **Capability:** We execute our projects successfully in stipulated time frame as per the defined SLAs and excel customer expectation
- 

# PASSIVE MAINTENANCE OF TELECOM CELL SITE

**Our Passive Maintenance services for the Telecom Cell Site include:**

- Comprehensive Maintenance
- Non-Comprehensive Maintenance
- Diesel Filling & EB Payments

**We provide Preventive, Corrective, Routine and Breakdown Maintenance including Diesel Filling in the Cell Sites.**

- We provide DG maintenance, diesel filling, first level maintenance for DG, AMF Panel, UPS, Fire Alarm System, FMC, NMS, follow up for alarms, order wire, battery voltage, level of distilled water in the secondary cells, battery charger and electrical installation of the prefabs / building and in case of any discrepancy report it to etc.,
- Preventive Maintenance services as per the SLA / SOW
- Corrective Maintenance
- DG servicing, AC servicing and Over Hauling in accordance with the specification by OEM / Customer
- Break down Maintenance like tracking of Alarms for site outages and link failures
- Diesel filling according to the BEET PLAN to ensure the availability of HSD in the DG tank



# PASSIVE MAINTENANCE OF TELECOM CELL SITE

**Preventive maintenance on the BTS and antenna system include:**

- Radio Power Management
- Voltage Standing Wave Ratio (VSWR) Measurement for RF feeder cables
- Verification and correction of Connectorization of RF / IF cables
- Validation of antenna orientations and corrections if required



# OPTICAL FIBER CABLE MAINTENANCE

## OFC Network Maintenance

- Patrolling is aimed at preventing cable disruptions along the OFC routes daily on fixed stretch
- Preventive and Corrective Maintenance is carried out as defined by the SLA / SOW
- All fibers are tested for the block sections and reported every month
- Any defects in the fiber or in any of the associated equipment is attended to, in consultation with the Customer at site
- Repeater stations and the optical equipment installed for alarms are monitored
- Breakdown OFC Maintenance includes 24\*7 mobilization of equipment and skilled manpower for fault identification and rectification
- Test link attributes like the splice loss/link loss after the rectification of fault are corrected
- Deployment of O&M teams to carry out Splicing and Termination of Optical Fiber Cable

## Splicing and Termination of Optical Fiber Cable

- Maintenance of OFC routes 24\*7 for Routine OFC Maintenance and Breakdown OFC Maintenance
- O&M team has a supervisor, splicer, assistant splicer, patroller and a helper for every range defined by customer
- Mode of transport of patrollers is customer specific

## Deployment of FRT team

- As per the customer's requirement we deploy:
- An FRT team consisting of a splicer, an assistant splicer, and a helper
- A four-wheeler with a driver is available 24\*7 with all the equipment (Splicing machine, OTDR, Power Meter, Portable Genset and supporting tools)



# MANAGED SERVICES

Steel Man's Managed Network services include:

- Active Maintenance of BTS and BSC
- Network Optimization
- Capacity Management

## Active Maintenance of BTS and BSC s by Steel Man's Telecom O&M

- Steel Man provides level-1 Active O&M services like fault monitoring & management, preventive and corrective maintenance for Base Station Subsystem elements comprising of BTS and BSCs.
- Managed Network services include the following activities:
  - Troubleshooting of BTS using Online Monitoring Tool (OMT)
  - Fault localization on BSS equipment (BTS / BSC) and antenna system
  - Simple repair procedures and replace faulty hardware units
  - Testing after corrective actions like test calls, test external alarms and antenna system test
  - Monitoring internal and external alarms of BTS using the OMT
  - Troubleshooting of T1/E1 link to bring site on air
  - Periodic drive testing of BTS Site
  - Verification, up-gradation / replacement of cards / devices
  - Firmware / hardware modification for cards / devices locally
  - Oversee replaced units
  - Logistics and documentation support for repair & return of faulty hardware units



# POWER PROJECT

- **Electrical Project Division (EHV Sub Stations Construction & Infra Electrification)**

The scope of EPD SBU consist of design, supply, erection & commissioning of Extra High Voltage Substations & Infra Electrification works. **Extra High Voltage (EHV) Substations**

Steel Man undertakes Design to Commissioning of Substations of ratings up to 400 kV. The scope of the services broadly covers Soil Investigation, Structural Foundations-cum-Construction, Supply and Installation of Equipment, Earth Mats, Cable Duct Runs, Control Rooms, Approach Roads, Culverts, Switch Yards, Fencing, Terminal Bays, Installation and Testing of Power Transformers, Breakers, Isolators, CT/PT, Lightning Arrestors, Control and Relay Panels, Battery Banks, Yard Lights and Air Conditioning of Control Room.



# GREEN TECHNOLOGY

- **Solar Panel**

Solar Photo voltaic (PV) cells seem to be promising in realizing the goal of indigenizing technologies with steep reduction in costs. It is the only long term sustainable and inexhaustible alternate energy which powers telecom towers with solar PV Cells. SPV uses sunlight to generate electricity and reduce the dependence on conventional power and other conventional fuels.



# MATERIAL SUPPLY & INSTALLATION

- Leverage buying across many customers
- Our O&M process monitors performance of models and vendors
- Creates buying power and fast response from suppliers
- Bulk Centralized Ordering capability
- Store materials in each state for quick response
- Warranty service of all materials handled by Steelman
- All inventory managed online for control & accountability



# EHS & CERTIFICATION

- We have 10 Technicians who have been trained by Capital Safety for CBTHR.
- Regular safety training is also provided periodically to all Engineers and Technicians in house.
- We have trainers who come from Training Co who deliver training to trainees once every Six Months.
- Every month our Project Managers and Senior Managers provide training (Class Room & Field)to our Engineers and Technicians.
- We also provide regular training to our Engineers and Technicians on New Technology that evolves with time.
- We also provide PPE Equipment as per Industry Standards



# TRAINING

- We have in house facilities to Provide training for 30 Persons.
- With real time training on Live Equipment on Field is also Provided by Senior Engineers.
- We provide Training for MW, BTS, RNC, DWDM, OFC, BSC, MSC, GATEWAY & MS (OFC/CELL SITES)
- Networking Training: MCSC, CCNA, CCMP, CCI
- Training is also given for reducing Lead Time through project management.





# OUR PARTNERS



- Tower



- Shelter



- AC



- DG



- Battery Bank



- SMPS & PSU



# OUR CUSTOMER



Empowered by Innovation



POWER GRID CORPORATION OF INDIA LIMITED  
(A Government of India Enterprise)



Your Partner for Growth



Wireless Solutions Integrator



Connect to the future.®

# PRESENCE IN INDIA AND ABROAD

Given below is the bird's eye view of the geographical location of Steel Man's Corporate Office, Project Office Facilities in India and Abroad

Head Office:

Steel Man Telecom Pvt. Ltd.

KB-27, Sector-3, Salt Lake

Kolkata-700106

Nepal Office:

House No.-110/44, Basundhara-3  
Kathmandu Metropolitan City  
Kathmandu, Nepal

Bangladesh Office:

289 Road 12/9, New Dohs Mahakhali  
Dhaka 1206



THANK YOU