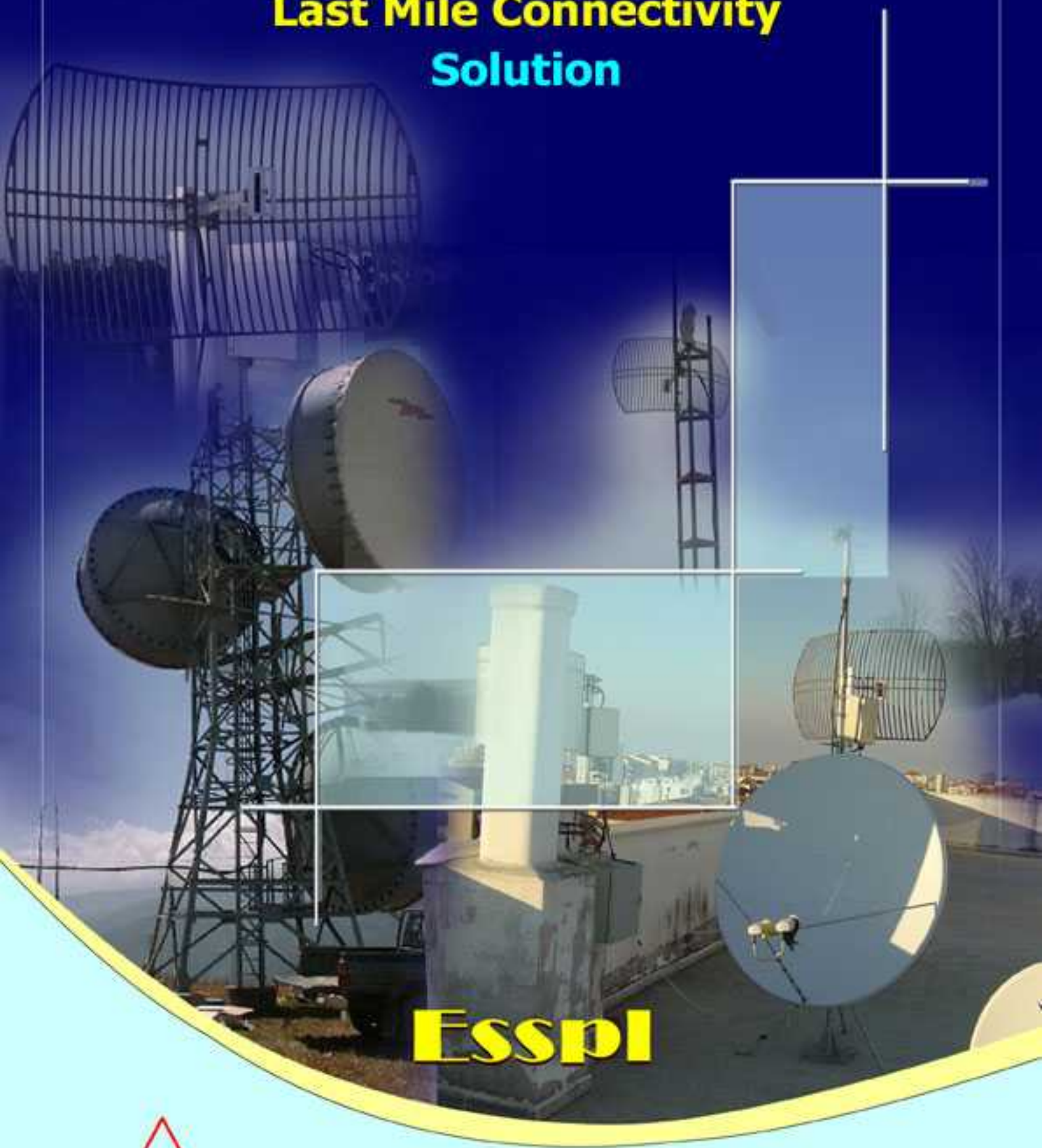
Wireless Technology For Last Mile Connectivity Solution



Esspl

Eastern Star Solutions Pvt. Ltd.

Extending WiFi from LAN to WAN Topology.

IEEE 802.11 or Wi-Fi denotes a set of Wireless LAN standards developed by working group 11 of the IEEE LAN/MAN Standards Committee (IEEE 802). The term is also used to refer to the original 802.11, which is now sometimes called "802.11legacy."

It falls under the category of WLAN (Wireless Local Area Network). The 802.11 family currently includes six over-the-air modulation techniques that all use the same protocol, the most popular (and prolific) techniques are those defined by the a, b, and g amendments to the original standard. Other standards in the family (c–f, h–j, n) are service enhancement and extensions, or corrections to previous specifications. 802.11b was the first widely accepted wireless networking standard, followed by 802.11a and 802.11g.

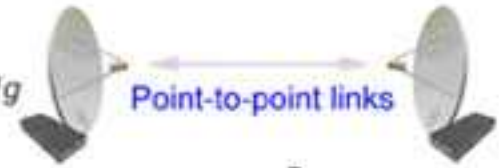
802.11b and 802.11g standards use the unlicensed 2.4 gigahertz (GHz) band. The 802.11a standard uses the 5 GHz band. Operating in an unregulated frequency band, 802.11b and 802.11g equipment can incur interference from microwave ovens, cordless phones, and other appliances using the same 2.4 GHz band.

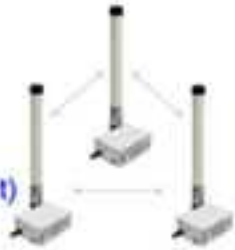
This is one area where 802.11a scores over b and g. However, this high carrier frequency also brings disadvantages. It restricts the use of 802.11a to almost line of sight, necessitating the use of more access points; it also means that 802.11a cannot penetrate as far as 802.11b since it is absorbed more readily, other things (such as power) being equal.

802.11a, 802.11b, 802.11g specify three different PHY layers however MAC is the same in all the three.

802.11: What does it Specify?

- *PHY sub-layer – 802.11a, 802.11b, 802.11g*
- *MAC sub-layer – Independent of the PHY*
- *DCF (Distributed Coordination Function)*
- *CSMA/CA – PCF (Point Coordination Function)*
- *MAC management*





The Key Enabler

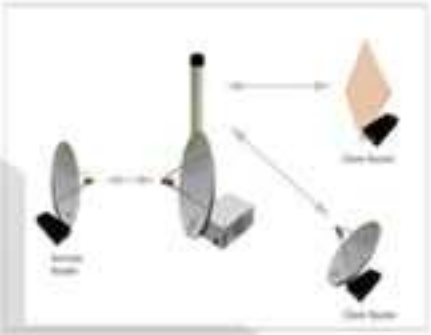
OUR SERVICES

- Data Center Configuration, Management & Services.
- Wide Area Network Establishment ; conceptualization, design, installation, configuration & maintenance, to provide customer with robust best of the bread technology.
- Our specialization lies in providing technical solution of configuration & maintenance of server farm under windows & linux operating systems.We provide setting up of Local Area Network with Fiber optic Backbone for Small - Medium to Large enterprise with Virtual LAN setting, Wireless LAN configuration & management

Prof. Samir Ranjan Das is currently an Associate Professor in the Computer Science Department in the State University of New York at Stony Brook. He received his Ph.D. in Computer Science from Georgia Institute of Technology, Atlanta, in 1994. Before then he was educated in Jadavpur University and Indian Institute of Science in India. He previously held faculty positions in the University of Texas at San Antonio and University of Cincinnati and visiting researcher position in Sun Microsystems. His research interests include wireless networking and systems, mobile computing and performance evaluation. He has about eighty five refereed research articles journals and conferences.

ESSPL WiFi Solution

- ESSPL uses Wireless Router and appropriate Antenna to provide LAST MILE CONNECTIVITY for all Bandwidth users.
- Our Solution uses the 2.4 & 5.2-5.8 GHz frequency according to the local regulations
- The Multi Function application of this technology voice and data (Information Exchange)

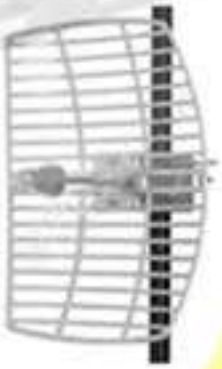


Wireless Enables :
- Mobility, Low Deployment and Maintenance Cost
- Spectrum Limitation, Wireless Interference is the actual Limitation Factor

Plug in with any backbone :
- GSM Network
- CDMA Network
- TC/IP fiber backbone
- Substitute for Low usage Fiber Backbone, overcoming the distance limitation.
- Universal nature, compatible with any WiFi enabled devices.

- ***The link is expanded to long distance by using appropriate antennas like, 2.4 - 5.8 GHz Grid Antennas***

Grid WiFi Antennas are ideal for long-range highly directional 5.8GHz ISM and UNII band applications. These antennas are ideal for point to point systems, point to multi-point and wireless bridges.



Advantages:
- Cost effective solution
- High-speed wireless data links (Up to 10.8 Mbps)
- Connection distance up to 70 km without repeater sites.
- IP - NAT, Routing, DHCP
- Security - Firewall, Secure Tunnels
- Control - Queues, Proxy, Accounting, HotSpot
- Fast and simple installation for base station and clients
- Reliable and instant 24 hour internet access

o up to 25 km for point-to-multipoint links depending on the Antenna
o up to 70 km for point-to-point links depending on the Antenna

- ***Standards***

IEEE 802.11a, IEEE 802.11b, IEEE 802.11ab, IEEE 802.11g
Security : High speed 802.11a/b/g wireless with WEP/WPA, WDS and Virtual AP, Stateful firewall, tunnels
Device Interface : 3 10/100 LAN Ports
1 Consol Port, 2 Wireless Ports i.e. N(female)
Wireless Signal Range:
AP – 100 to 200 meter
Backbone – 500 to 700 meter

Our Clients:

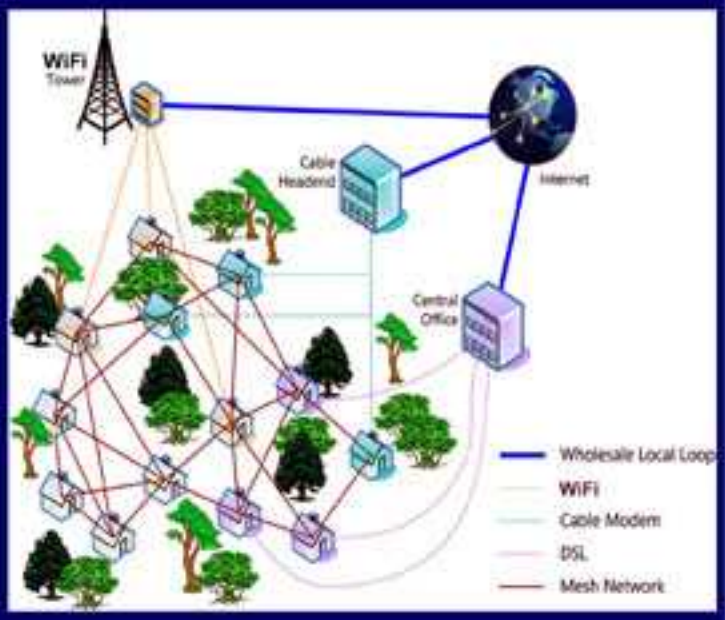
Sister companies of ESSPL has been operational since 1992 in the area of IT-Consulting. Clients are :

- *ALSTOM,*
- *West Bengal Government Health Department*
- *Public Health Engineering Department*
- *Damodar valley Corporation ,*
- *Department of Environment*
- *Thakurpukur Cancer Hospital,*
- *Bidhan Chandra Krishi Viswavidyalay*
- *West Bengal Tourism Department*

Esspl

- Eastern Star Solutions Pvt. Ltd. (ESSPL) is a Networking Sales-Service-Consultancy Company, incorporated to meet the challenging needs of IT-Services. It's a multifaceted IT organization that has integrated it's operation backwards, offering total flexible IT solutions in India and overseas. We believe in establishing long term partnership with our clientele, and the only way of doing so is ensuring superior quality and service in every thing we do.

- Our Value Proposition:
  Eastern Star Solutions Pvt. Ltd. presents an innovative solution to provide a low cost, flexible, zero recurring cost, bandwidth connectivity from any, Internet Service Provider (ISP) connecting it's backbone network to the customer by extending WiFi from LAN to WAN Topology. With it's own Wireless Router and appropriate Antennas.



We Promise
. . . State of the Art Technology
We Deliver
. . . On Line / On Time Support and Service
We Guarantee
. . . Customer Satisfaction
We Cherish
. . . Success

- ESSPL Total Support Plan
  Methodology you can afford
  Most Reliable in Indian Context (Rural & Urban)

This solution is effective in providing upto 10 mbps bandwidth connectivity from the core MPLS backbone of SDCA's of all mobile operators to the customers using Line of Site (LOS) antennas.

ESSPL Solution Encompasses - AN ONE STOP IT SOLUTION COMPANY--

- Designing, Implementation of the WAN Connectivity.
- Interfacing with the Backbone ISP / Mobile Operators.
- Supply, Installation, Maintenance of Wireless Routers and Antennas, in Annual Maintenance Contract (AMC) and Resource Facility Service (RFM) Mode.
- We provide comprehensive solution on all your network needs.
  - Configuration of your Data Center.
  - Establishing Wide Area Connectivity and Server Farm maintenance.
  - Development and Maintenance of Web Portal, Custom Software Application, SMS Gateway etc.
  - Sign Service Level Agreement (SLA) and provide best of the breed technology to the customers.

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