

## EliteAAA enables BSNL Roll out WiMAX Services

### Case Study Facts

**Customer** - BSNL, Tier 1 Operator in India

**Service Coverage & Subscriber Segment** - PAN India Presence (4 POPs)

#### Key Requirement for WiMAX

- Support for latest WiMAX forum NWG compliance
- Support Multiple Authentication EAP-TTLS & TLS and Certificate base Authentication
- Support for Multiple ASN gateways from different vendors
- Support for Prepaid and postpaid service offering
- Multiple services on WiMAX Network through single interface
- Cost effective solution to roll out WiMAX Services

#### ElitecoreProducts

Upgrade of existing Products for WiMAX network

- EliteAAA & Policy Manager
- Elite Charging Gateway

**Subscriber base** - 10 Million

#### Networks Supported on same solution

- Dial Up (PSTN/ISDN)
- xDSL
- WiMAX
- WiFi
- VPN



### BACKGROUND

Bharat Sanchar Nigam Ltd. is India's largest and the world's 7th largest telco, providing Broadband, GSM Mobile, Leased Line, MPLS-VPN, Dial-up, with pre-paid and post-paid business models. BSNL has more than 7 million Broadband subscribers.

BSNL planned on WiMAX rollout across India for which it has set up WiMAX base stations across India. BSNL plans to have 1.8 million subscribers using its services in Rural areas of India.

In order to offer WiMAX services, BSNL not only needed to upgrade its equipment infrastructure but also upgrade its billing and authentication system to support WiMAX service. WiMAX network required upgrade of AAA protocol as per WiMAX forum driven by networking group, AAA is the basic building block to effectively capitalize on the opportunities presented by WiMAX, the role of the AAA extends well beyond access security and accounting, and into the very enablement of WiMAX services.

### Leveraging Existing Infrastructure - Reduced Cost Increased ARPU

Elitecore's EliteAAA was selected by BSNL for WiMAX roll out. EliteAAA is Network and Vendor Agnostic AAA which can support multiple network requests on the same platform.

Elitecore offered BSNL upgrade WiMAX feature on the existing EliteAAA platform which has been running smoothly at BSNL since 2003. Elitecore helped meet BSNL objective of time to market & cost through

- A Centralized Authentication server for Wireline & Wireless Data Services
- Reduced CAPEX as no additional hardware had to be procured, service could be launched by simply upgrading licenses & upgrading additional WiMAX features.
- Fast time to market no major integration required.

### Elitecore offered BSNL following key WiMAX Features on its EliteAAA

**Multi-service, Multi-business Support:** The system supports AAA for multiple services to provide access to the subscriber considering bandwidth, QoS, IP, and concurrent sessions. It supports multiple business models based on subscriber profile.

**Policy Management:** EliteAAA policy repository provides control over access to advanced services across multiple networks in fixed, mobile & multiservice deployments. It uses global or NAS-specific IP pools comprising a list or range of IP-Address and allows more than one NAS to share common centralized address pools.

**Pre-provisioned QoS:** It can communicate pre-provisioned QoS parameters such as upload or download bandwidth related parameters to the network elements, where the metering could be time-based or volume-based.

**MIP for Roaming:** EliteAAA offers support for wireless Mobile-IP (MIP) standards that is very essential for data roaming facility which would allow subscribers from one network to use their devices to access their "home" data services easily on another network.

### Key Solution Features

- EliteAAA & Policy Manager
  - Access Agnostic
  - Vendor Agnostic
- Centralised AAA & Policy Management for Multiple Services
- Convergent Centralized Subscriber Profile
  - Wireline & Wireless Broadband
- AAA for Prepaid and Postpaid Subscribers Together

#### Deployment Architecture

- Centralized NOC with Redundant operations
- Disaster Recovery Site
- 99.999 % Service Availability

**Session & Flow Based Accounting** EliteAAA supports both Flow based & Session based accounting needed for WiMAX. EliteAAA receives and synthesizes large volume of accounting records. An additional benefit is simultaneously support for Session based & Flow based accounting enables BSNL to deploy innovative pricing schemes.

**Support for ASN gateways with different QoS Parameters:** The infrastructure and access networks for realizing services over WiMAX are varied, with multiple ASN gateways. Each ASN gateway has different QoS parameters. EliteAAA policy manager supports ease configuration for different ASN gateway QoS Parameters. Supporting a truly open WiMAX ecosystem.

**Multi Protocol & Multiple Authentication Method Support** EliteAAA supports multiple EAP methods (EAP-TLS, EAP-TTLS, for WiMAX, It supports Device and User Authentication via X.509 Certificates or Pre Shared Key and Intelligent Proxy based Authentication while also enables support for Mobile IP key derivation.

**Hotlining Module**

EliteAAA Hotlining module supports redirection of subscribers that have exceeded usage or credit limit and need to pay before continuing usage. It helps prevent excessive & fraudulent service usage.

**Charging Gateway**

Elite Charging Gateway provided the interface to transfer charging information collected to the Billing System. It also acts as storage buffer for real-time CDR collection and to perform consolidation of CDRs and pre-processing of CDR fields before sending to Billing system

**WiMAX Forum NWG Compliance**

- WiMAX Forum Network Architecture - Stage 3 Detailed Protocols and Procedures Release 1.0.0
- WiMAX Forum Network Architecture - Stage 3 Detailed Protocols and Procedures - Release 1, Version 1.2
- WiMAX Forum Network Architecture - Stage 3 - Annex: Prepaid Accounting - Release 1, Version 1.2

**RESULTS**

**Benefits to BSNL**

- Significant Reduction in CAPEX, OPEX
  - Leveraging existing infrastructure for WiMAX
- Faster Rollout of services
  - Leveraging on existing operations & management teams
- Centralize AAA activities, Policy Management and Resource Management for offering prepaid and postpaid models for the following services:
  - MPLS Virtual Private Dial Network (VPDN)
  - MPLS Virtual Private Network (VPN)
  - Dial-up and ISDN
  - Broadband
  - WiMAX
  - Wifi
- Reducing Subscriber Churn & Disputes
  - Manage Single interface Window to Customer
- No Single Vendor Lock-In
  - Open Standard based Vendor/Network Agnostic IT infrastructure
- Ensured high availability and load-balancing of services to cut down the risk of single point failure and improved system performance on busy networks

**About Elitecore Technologies Ltd.**

Elitecore Technologies is the provider of CRESTEL - Billing Revenue Management & EliteAAA - Core Network Session Control Software to enable Next Generation Voice, Video & Data Services offered by Tier-1 to Tier 3 Telecom operators / service providers over Wireline or Wireless Networks offered directly and through distribution channels. Elitecore serves customers across the globe with presence in more than 75 countries and is a Carlyle invested company-The Carlyle Group is a global private equity firm with USD 84.5 billion under its management. For more information, visit Elitecore Technologies Ltd. at [www.elitecore.com](http://www.elitecore.com)



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