# eogogicsinc

| Course ID | Course Title |
|---|---|
| **BHAUL-BRIEF** | **Mobile Backhaul Business and Technology Briefing™** |
| Course Duration | |
| **1 day** | |

**Related Courses**
- Mobile Backhaul Market Briefing (BHAUL-MKT, 1 day)
- Mobile Backhaul Application Case Studies (BHAUL-APP, 1+ days)
- Mobile Backhaul Architecture and Implementation (BHAUL-AI, 3-4 days)
- Mobile Backhaul Standards and Protocols (BHAUL-STND, 2-3 days)
- Mobile Backhaul Security (BHAUL-SEC, 1 day)
- Mobile Backhaul End-to-End (BHAUL-E2E, 1 day)

**Aimed At**

This briefing is suitable for all audiences.

**Group Size**

5-25

**Prerequisites**

There are no prerequisites for this course.

**Course in a Nutshell**

Backhaul is the bridge between the cellular client device and the Internet cloud. There is no single piece of the end-to-end connection that more directly or profoundly impacts the Quality of Service or Quality of Experience of the mobile multimedia user, regardless of his/her application. This Business and Technology Briefing™ will provide the market and financial background as well as correlating technology options to provide a full picture of the state of the market and state of the technology for mobile backhaul.

**Customize It!**

This briefing can be scheduled as a full-day standalone course, the first day of a multiday course, or as six one-hour modules for delivery over the web. Selected modules may also be combined and scheduled for World Wide Web delivery. The course can be optionally taught as a hands-on workshop at no added cost.

**Learn How To**
- Build a compelling case for which Mobile Backhaul option to choose
- Describe and differentiate Terrestrial TDM/SONET/SDH Backhaul, Wireless TDM/SONET/SDH Backhaul, Wireless RF Native Ethernet Backhaul, and Wireless Optical Native Ethernet Backhaul
- Plan the major steps of implementation of Mobile Backhaul
- Apply the primary standards and protocols of Mobile Backhaul
- Secure computing services delivered via Mobile Backhaul
- Describe end-to-end connections and major components of the four main Mobile Backhaul delivery models

**Course Outline**

**Introduction (15 minutes)**

*A high level overview of the topic and the briefing.*

**Module 1: Market (1 hour)**

*Mobile Backhaul is an essential piece of the wireless connectivity puzzle. There are subtleties of implementation and technology choice which differentiate carriers and the services they provide. This Module describes the market for Mobile Backhaul.*

- Mobile Backhaul Market and Segmentation
  - o Terrestrial TDM/SONET/SDH Backhaul
  - o Wireless TDM/SONET/SDH Backhaul
  - o Wireless RF Native Ethernet Backhaul
  - o Wireless Optical Native Ethernet Backhaul

- Description / Demographics

- Market Entry Strategies
  - o Buy vs Build
  - o Buy then Build

- Dominant Competitors

- Market Performance

- Historical

- Current

- Projected

- Outlook / Projections

## Module 2: Application Case Studies (1 hour)

*There are four generic case studies available for Mobile Backhaul. They cover terrestrial TDM/SONET/SDH backhaul, wireless TDM/SONET/SDH backhaul, wireless RF native Ethernet backhaul, and wireless optical native Ethernet backhaul. Each module is available as a one hour session or as a 15 minute summary module allowing all three to be delivered in an hour. Ask your Eogogics training consultant about industry specific case studies or about commissioning your own custom application case study. All case studies cover the following topics.*

- **Background:** History and case study subject business and market overview.

- **Drivers:** Why did the case study subject make the decisions they made.

- **Architecture:** What is the system design for the case study application?

- **Procurement and Implementation:** How did the case study subject obtain and implement their application?

- **Migration and Training:** How did the case study company move from their old system to their new system and how was training accomplished?

- **Operations:** What are the ongoing operational issues of the case study

application?

- **Return On Investment (ROI):** How does the case study company calculate their return on the investment of time and money that they made and how does that match real returns?

- **Total Cost of Ownership (TCO):** Taking into account all possible elements, how much does the application cost?

- **Expectations and Lessons Learned:** What were the expectations at the beginning of the project and what lessons were learned during the project?

- **Looking Ahead:** What are the case study subject's future plans?

## Module 3: Architecture and Implementation (1 hour)

*There are four predominant models for delivering mobile backhaul to the marketplace. All four of them are covered in this module in the context of the over-arching mobile backhaul architecture. This module also discusses implementation of mobile backhaul.*

- Basic Carrier Ethernet Concepts

- Metro and WAN Ethernet Requirements and Services
  - Resiliency
  - Reliability
  - Redundancy
  - Interoperability
  - Quality of Service/SLA Support
  - Security
  - Multicast Support

- Services
  - VPN Services
  - TDM/CES Support
  - Triple Play Services
  - Service Management

- E-Line and E-LAN Services
  - Architecture
  - Physical View
  - Logical View
  - Implementation View (Example)

- Reliability and Survivability

- The Role of MPLS in Backhaul Networks
  - Centralized Mobile Networks
  - Flat Mobile Networks
  - Generic Requirements for MPLS Backhaul Transport Networks

- SLAs and SLA Compliance

## Module 4: Standards and Protocols (1 hour)

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*The underlying protocols, message formats and exchanges are what make the architectures work. This section will review the predominant protocols, their standards and operation.*

- Standardization Landscape
  - Metro Ethernet Forum MEF 22
  - Foundation: MEF 6.1, 10.2, 13 and 20
  - Standardized Reference Points
  - Service Requirements
  - Synchronization Recommendations
  - IP/MPLS Forum 20.0.0
  - Description
  - Applicability

## Module 5: Security (1 hour)

*Backhaul security includes the physical and L2 security of the links carrying the backhaul traffic. The major elements of backhaul security are covered in this overview.*

- Physical Link Security
  - Terrestrial
  - Wireless
  - Encryption

- L2 Security
  - Policy
  - Access
  - Encryption

- Higher Level Security

## Module 6: End-to-End (1 hour)

*An example of end-to-end communications of the same application four times with four different backhaul implementations for purposes of comparison, highlighting the role of various components.*

- Terrestrial TDM/SONET/SDH Backhaul

- Wireless TDM/SONET/SDH Backhaul

- Wireless RF Native Ethernet Backhaul

- Wireless Optical Native Ethernet Backhaul

## Review and Summary (15 Minutes)

*A review of the briefing topics and summary of the program.*

*Revised 2Jl-f*