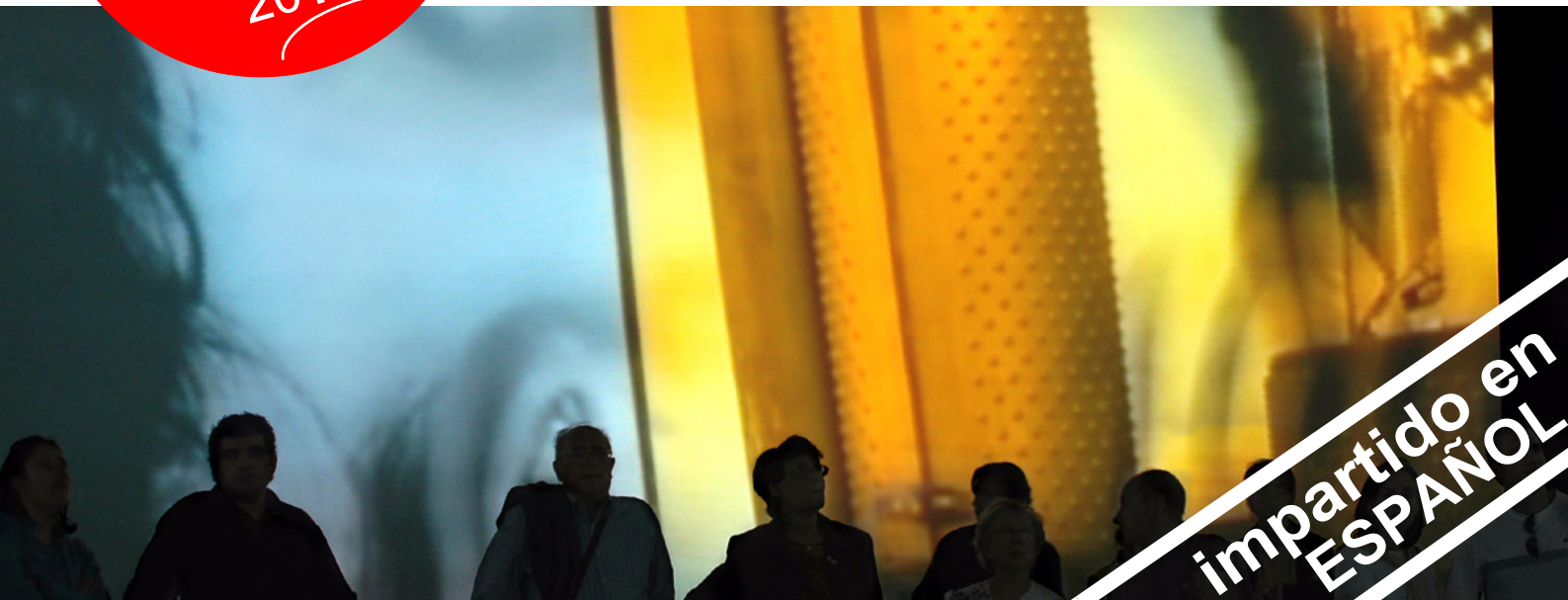




Understanding the Strategy,  
Technology, Benefits and  
Risks of Telecom

Barcelona, 27-28 of March 2012

London	Ankara	Amsterdam
Budapest	Paris	Milano
Zagreb	Singapore	Munich
Bratislava	Dubai	Beijing
Delhi	Athens	Lisbon



impartido en  
ESPAÑOL

# Next Generation Ethernet & IP

– a strategic view from industry experts on *Synchronous Ethernet and IPv6*

**Enhance your business prospects, learn about new applications and explore emerging markets for next-generation networks.**

L&M Albedo training courses are especially valuable for decision-makers, business developers, sales and marketing professionals, field engineers and those involved in the development of new telecom and datacom networks and services.

We will provide a deep technology analysis and a practical approach to the subjects covered, seeking to answer questions such as:

- *Why* is my company adopting this technology?
- What are its *benefits*?
- What do the changes *mean* for me?
- What *market trends* are there?
- What *challenges* will I face?
- How can I *install* it?
- How can I *test* it?
- How can I *maintain* it?



*the Path to Excellence*

- “We have had great Pleasure in sharing Knowledge and Experience with Neutral parties” F. Grogan, UK
- “This high level of Support will Help develop our Business” S. Haouala, Tunisia
- “Above all, the Talk was really Captivating” J. Molina, Spain
- “A valuable insight into the concept of Triple Play and related Technologies” R. Obiodu, France
- “This Training Course was far more effective than Consulting Services” C. Diakonikolaou, Greece

> **Held throughout 2012**  
in several countries across Europe,  
Middle East and Far East.

> One-day events divided into two sessions:  
a technology **training course**  
and a **hands-on session**  
using specialised test equipment.

> Why are these training courses **UNIQUE**:

- **Content**: Inside information on new technologies and high-performance networks.

- **Quality**: Industry experts will address and debate the key issues affecting the sector.

- **Opportunity**: This is your opportunity to define a smooth migration path to a network that combines legacy systems with new technologies.

#### Your Leading Experts

##### José Morales

*Managing Director L&M Data Communications.*

PhD, MS/MA ICAI

More than 25 years of experience, he has been Service Director of INFONET and high level designer of the TESYS B/X.25. Author of 35 books about data communications and multiple articles.

##### Juan L. Lázaro

*Managing Director L&M Data Communications.*

MBA, MS/MA ICAI

Senior Member of Communications Society and Institute of Electrical and Electronics Engineers (IEEE) and member of the Science Academy of New York. Author of 36 books about data communications and multiple articles

##### José M. Caballero

*General Manager Albedo Telecom.*

MBA, MS/MA in Computer

Communications. 20 years of experience in IT development, consulting and marketing. Author of articles and several books on telecommunication technologies, he is a frequent international speaker in conferences and seminars.



aims

- + **LEARN** from business models and case studies
- + **UNDERSTAND** the potential of interoperability with legacy services
- + **EXPERIENCE** specialised test equipment first hand
- + **ASSESS** different solutions for installation and maintenance

# Next Gen Ethernet & IP

This course will outline the latest developments of Ethernet including the new Synchronous family, as well as the solutions for the Aggregation, Transport and Backbone Networks focusing on the evolution of the Ethernet based Network Infrastructures, and the new MPLS technologies based on IPv4 and IPv6 datagrams for high performance networks' interconnection.



## Course Contents

### 1. REDES GIGABIT ETHERNET

- Arquitectura 1000BASE-X / 1000BASE-T
- 10 Gbps Ethernet sobre Fibra y Cobre
- Compatibilidad con SDH/SONET
- "Higher Speed Ethernet": 40 Gbps y 100 Gbps
- Ethernet sobre OTN

### 2. CONMUTACIÓN ETHERNET

- De Medios Compartidos a Medios Dedicados
- Bridging Ethernet y Operación FDX
- "Hands-on": Medidas de Prestaciones según
- RFC 2544. Medidas de Throughput. Pruebas de
- Transparencia en VLANs. Medidas en los
- Niveles Superiores TCP/IP. Captura y Análisis experto

### 3. CARRIER ETHERNET EN REDES DE TRANSPORTE

- Servicios Ethernet en MAN / WAN
- Ethernet Virtual Connections
- Multiplexado y Agrupación (Bundling)
- Alternativas de Despliegue Ethernet
- Optical Ethernet, WDM, SDH y OTN
- Escalabilidad, Resiliencia, Tolerancia a Fallos
- QoS en Redes Ethernet e IP
- Medidas de Prestaciones Extremo-a-Extremo
- OAM: Operación, Administración, Mantenimiento
- Redes Ethernet para "Mobile Backhaul"
- Servicios de Emulación de Circuitos (CES)
- "Hands-on": Certificación MEF 18 y CES

### 4. SINCRONOUS ETHERNET

- Precedentes: Sincronización IP con NTP
- PTP Detalles del Protocolo y Encapsulados
- Ethernet Síncrono: SyncE
- Ethernet Synchronization Messaging Channel
- "Hands-on": Pruebas de Sincronización

### 5. ARQUITECTURA IPv6

- Características y Estructuras del IPv6
- Arquitectura Direccionamiento
- Representación textual
- Esquemas de Direcciones IPv6
- IPv4 embebida en IPv6
- Direcciones Locales IPv6
- Direccionamiento Privado
- Direcciones MAC IEEE 802 EUI-48 y EUI-64
- Ejemplos
- Opciones: Descripción y Tipos

### 6. NUEVAS POSIBILIDADES

- Procesos y Mecanismos de Autoconfiguración
- Mensajes ICMPv6 (Routers)
- Respuesta/anuncio Router ICMPv6
- Protocolo NDP
- Autoconfiguración "Stateful" y "Stateless"
- Nuevos procesos de decisión en los Hosts
- Información manejada por los Routers
- Nuevas posibilidades del IPv6
- Seguridad

### 7. LA TRANSICIÓN DEL IPv4 AL IPv6

- Mecanismos de transición y coexistencia
- Dual stack: problemática
- Traductores/conversores IPv4/IPv6
- NATs: 64, 46, aspectos en el DNS
- Túneles
- Impacto de la transición en las TICs
- Infraestructuras de comunicaciones
- Redes y Equipos
- Aplicaciones y Servicios
- Problemática de los Operadores e ISPs
- Evolución de las estrategias de los ISPs
- Transición avanzada
- Túneles 6PE, 6vPE, ....
- Soluciones de ISPS para clientes
- "Hands-on" en la transición IPv4/IPv6

## Course Profile

- Target group: Engineers, Marketing staff
- Prerequisites: None
- Duration: 10 h - Two sessions
- Evaluation: Test (upon request)
- Price: Request a quotation
- Language: English or Spanish

## Course Kit

- Carrier Ethernet book
- Presentation slides
- 2 x Pocket Guides
- White Papers
- Hands on with real networks and devices

## 10 Reasons to Attend

1. Stay abreast of the latest technologies
2. Meet colleagues facing the same issues
3. Gain valuable insight
4. Carrier Ethernet is a must for converged networks
5. The Triple Play market is growing 250% annually
6. Evaluate a key equipment vendor
7. Learn from others who already use these technologies
8. Assess the financial viability of installing these services
9. Discuss your network and needs
10. Receive inside information never published before

## Course Kits



Participants will receive an information bag full of documents: the Course book, a collection of Application Notes, Technology Pocket Guides, and the Course slides.

Worth more than 500 EUR!

## Delegate Details

Please complete fully and clearly in CAPITAL letters fax to +34 933096768 or scan and email to info.telecom@albedo.biz

Full Name.....  
 Job Title.....  
 Department.....  
 E-mail.....  
 Address.....  
 Town/Postcode.....  
 County/Region.....  
 Phone/Mobile.....  
 Signature / Date:

## Course Prices

- Next Generation Ethernet & IPV6 ..... 1090€
- Copper Qualification ..... 995€
- LTE Networks ..... 995€
- Gigabit Ethernet ..... 995€
- Carrier Ethernet..... 995€
- Carrier Ethernet and MPLS ..... 995€
- GMPLS: the new control plane..... 450€
- Classic SDH ..... 995€
- NG SDH ..... 995€
- Full SDH (Classic, NG, Sync) ..... 1800€
- Network Synchronization..... 995€
- Triple Play ..... 1800€
- Voice over IP ..... 995€
- IPTV, VoD, PVR ..... 995€
- PDH, ISDN, Frame Relay ..... 995€
- Quadruple Play and IMS ..... 995€

## Course Kit

I would like to purchase the following kits:

- Access Network .....450€
- LTE Networks .....450€
- Gigabit Ethernet .....450€
- Carrier Ethernet .....450€
- Carrier Ethernet and MPLS.....450€
- GMPLS: the new control plane .....450€
- Classic SDH .....450€
- NG SDH .....450€
- Full SDH (Classic, NG, Sync) .....850€
- Network Synchronization .....450€
- Triple Play .....650€
- Voice over IP .....450€
- IPTV, VoD, PVR.....450€
- PDH, ISDN, Frame Relay .....450€
- Quadruple Play and IMS .....450€

## Payment

Payment must be made by:

- Bank Transfer
- Credit Card  VISA  Mastercard  Other Cardholder.....
- Card number .....
- Signature .....

Fax this page to +34 933 096 768

## terms and conditions

In the case of cancellations, L&M Albedo will refund 80% of the fee, if the cancellation is notified at least two weeks in advance. No refunds can be made for cancellations received less than one week prior to the conference. L&M ALbedo may decide to cancel or change the dates of the training course up to one week before the start date of the course. The number of participants is limited to 10 - 25. L&M ALbedo will reserve the right to choose the attendees. Participation is not free, however some participants may be eligible for free training.