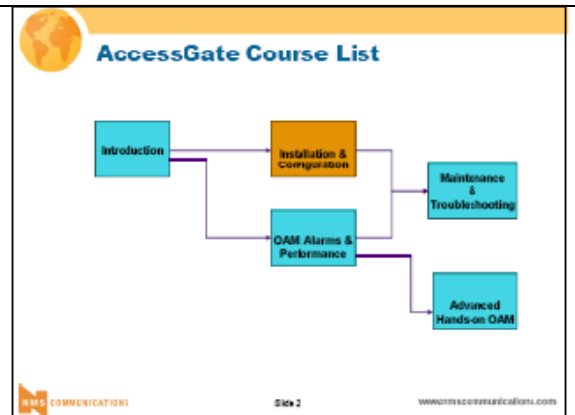


Anexos

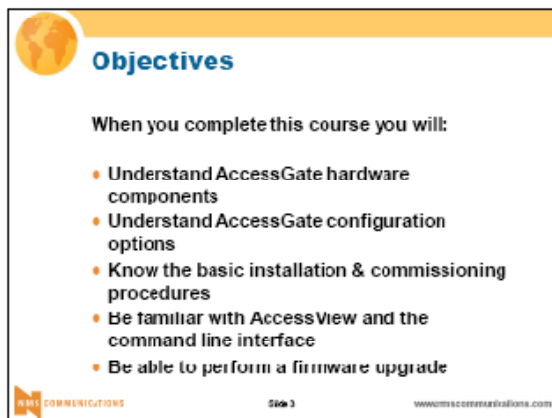
Anexo 1.



Configuración, instalación de hardware, AccesView.



AccessGate. Lista de curso.



Objetivos.

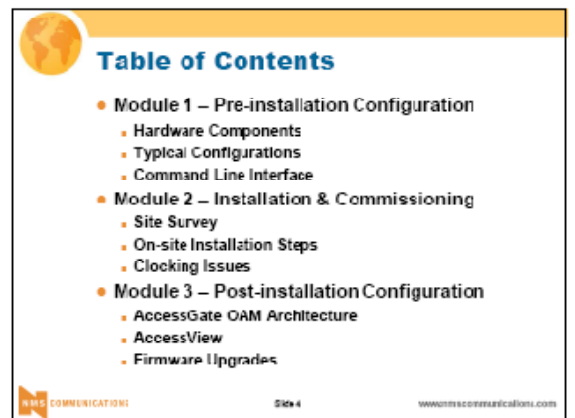
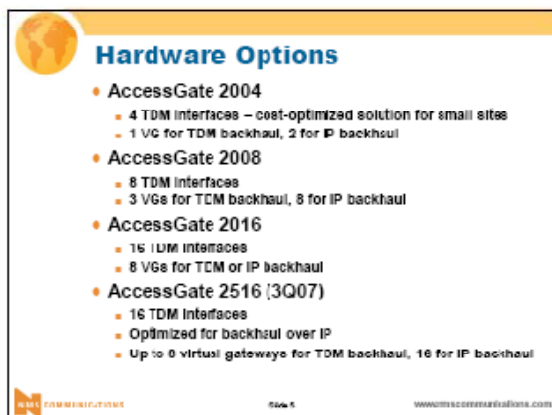
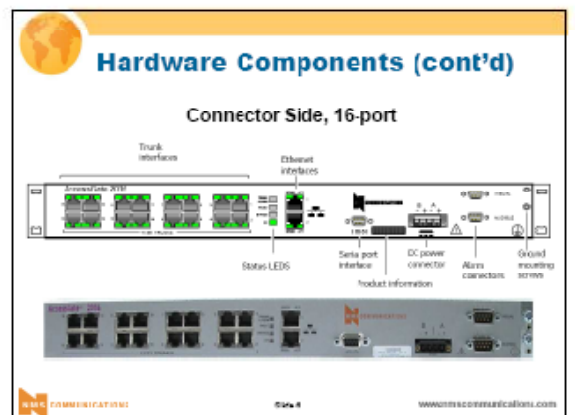


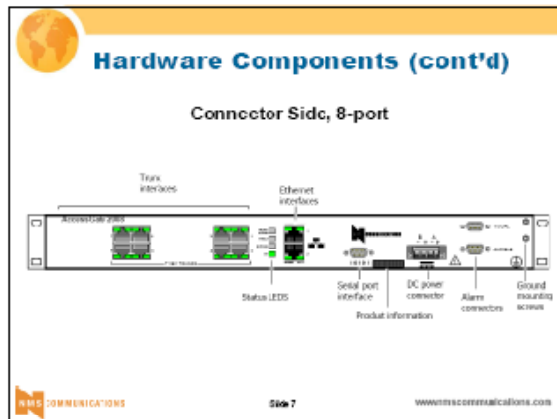
Tabla de contenidos.



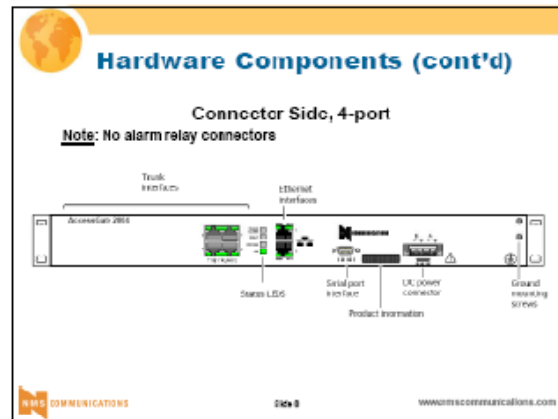
Opciones de hardware.



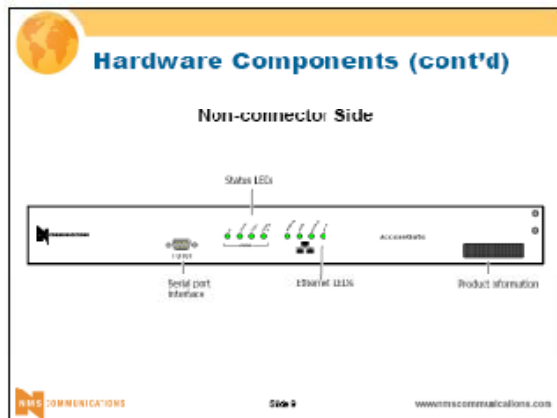
Componentes de hardware.



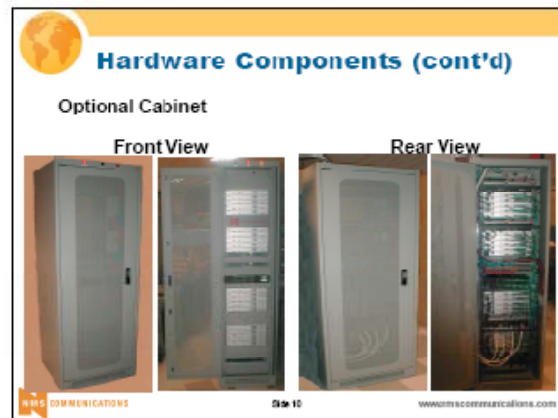
Componentes de hardware(cont.)



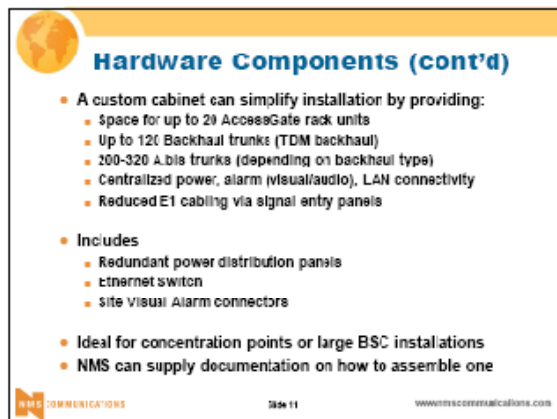
Componentes de hardware(cont.)



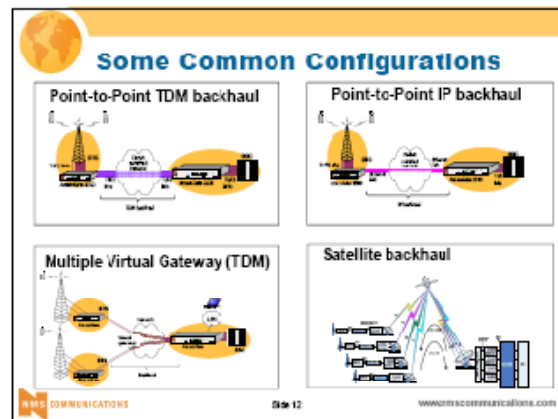
Componentes de hardware(cont.)



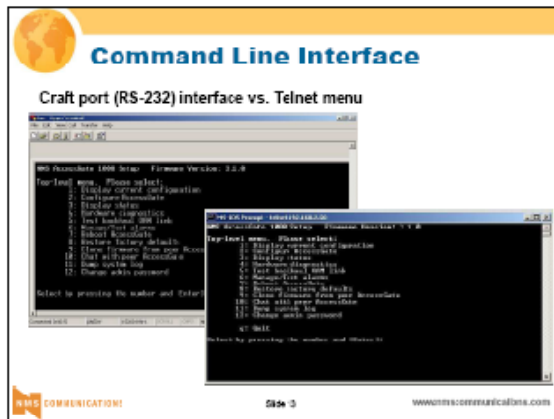
Componentes de hardware(cont.)



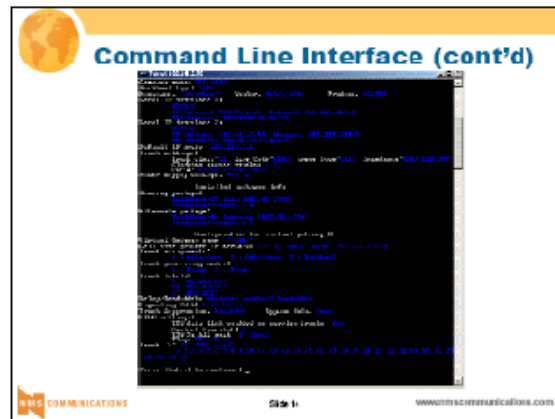
Componentes de hardware(cont.)



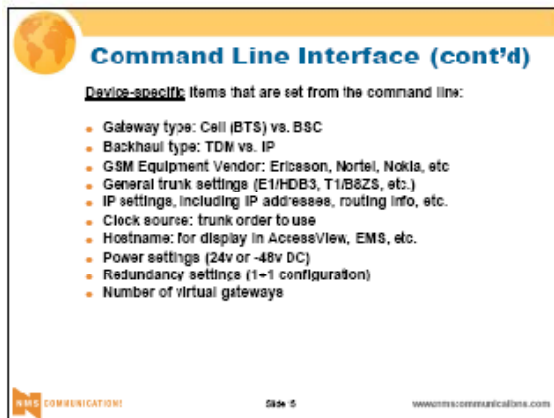
Algunas configuraciones comunes.



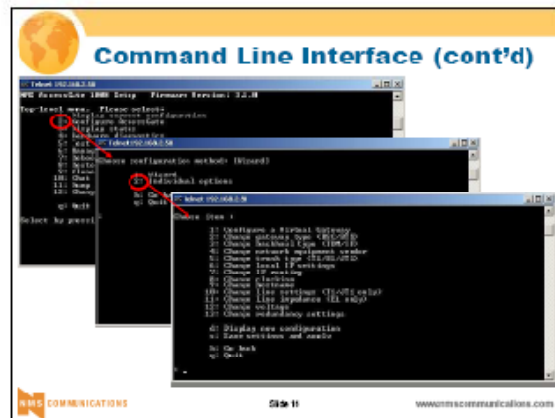
Líneas de comando de la interfaz.



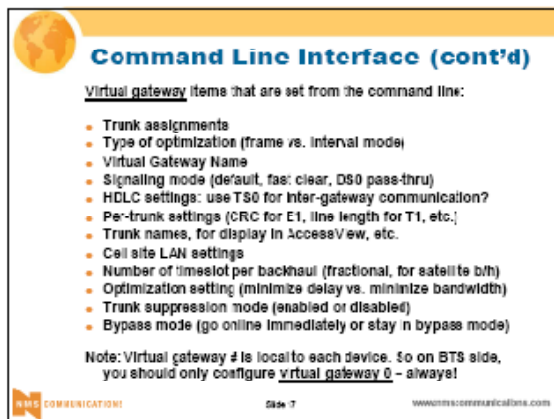
Líneas de comando de la interfaz. (cont.)



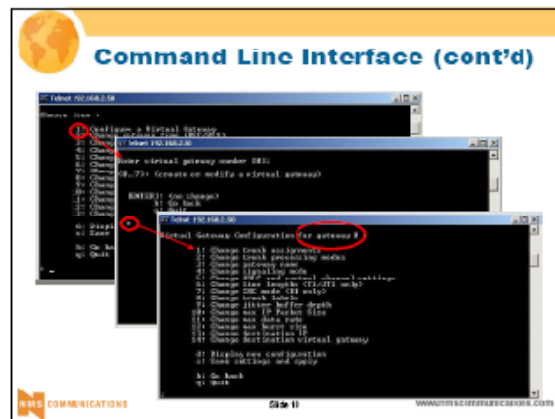
Líneas de comando de la interfaz. (cont.)



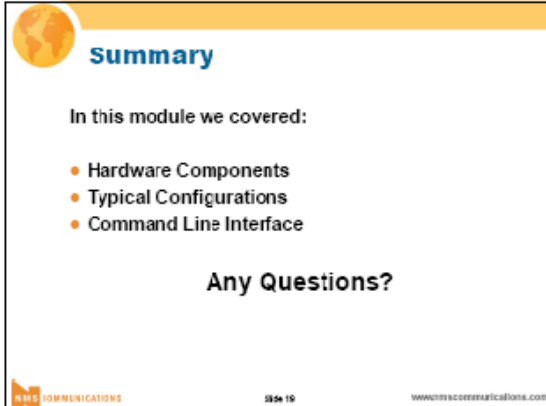
Líneas de comando de la interfaz. (cont.)



Líneas de comando de la interfaz. (cont.)



Líneas de comando de la interfaz. (cont.)



Summary

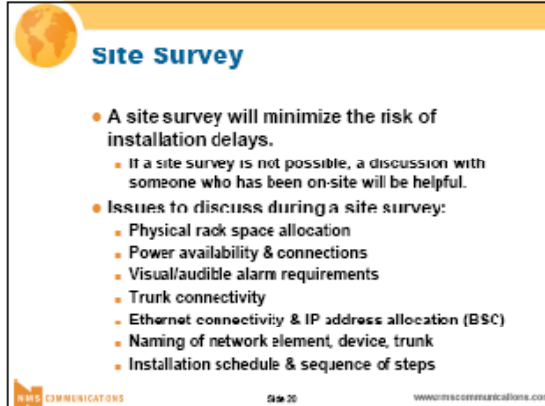
In this module we covered:

- Hardware Components
- Typical Configurations
- Command Line Interface

Any Questions?

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Resumen.

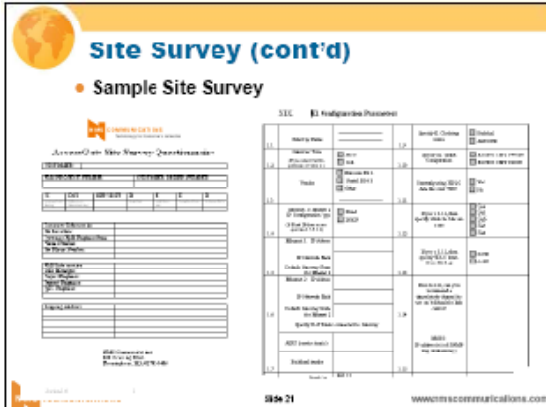


Site Survey

- A site survey will minimize the risk of installation delays.
 - If a site survey is not possible, a discussion with someone who has been on-site will be helpful.
- Issues to discuss during a site survey:
 - Physical rack space allocation
 - Power availability & connections
 - Visual/audible alarm requirements
 - Trunk connectivity
 - Ethernet connectivity & IP address allocation (BSC)
 - Naming of network element, device, trunk
 - Installation schedule & sequence of steps

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Test de sitio.



Site Survey (cont'd)

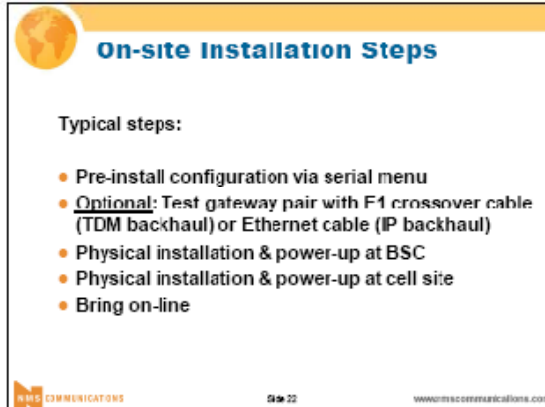
- Sample Site Survey

AccessGate Site Survey Questionnaire

SEC	Installation Parameters
1.1	Gateway Name: [] Serial C. Control: []
1.2	Gateway IP: [] Gateway IP: []
1.3	Trunk: [] Gateway IP: []
1.4	Gateway IP: [] Gateway IP: []
1.5	Gateway IP: [] Gateway IP: []
1.6	Gateway IP: [] Gateway IP: []
1.7	Gateway IP: [] Gateway IP: []
1.8	Gateway IP: [] Gateway IP: []
1.9	Gateway IP: [] Gateway IP: []
1.10	Gateway IP: [] Gateway IP: []
1.11	Gateway IP: [] Gateway IP: []
1.12	Gateway IP: [] Gateway IP: []
1.13	Gateway IP: [] Gateway IP: []
1.14	Gateway IP: [] Gateway IP: []
1.15	Gateway IP: [] Gateway IP: []
1.16	Gateway IP: [] Gateway IP: []
1.17	Gateway IP: [] Gateway IP: []
1.18	Gateway IP: [] Gateway IP: []
1.19	Gateway IP: [] Gateway IP: []
1.20	Gateway IP: [] Gateway IP: []
1.21	Gateway IP: [] Gateway IP: []
1.22	Gateway IP: [] Gateway IP: []
1.23	Gateway IP: [] Gateway IP: []
1.24	Gateway IP: [] Gateway IP: []
1.25	Gateway IP: [] Gateway IP: []
1.26	Gateway IP: [] Gateway IP: []
1.27	Gateway IP: [] Gateway IP: []
1.28	Gateway IP: [] Gateway IP: []
1.29	Gateway IP: [] Gateway IP: []
1.30	Gateway IP: [] Gateway IP: []
1.31	Gateway IP: [] Gateway IP: []
1.32	Gateway IP: [] Gateway IP: []
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1.40	Gateway IP: [] Gateway IP: []
1.41	Gateway IP: [] Gateway IP: []
1.42	Gateway IP: [] Gateway IP: []
1.43	Gateway IP: [] Gateway IP: []
1.44	Gateway IP: [] Gateway IP: []
1.45	Gateway IP: [] Gateway IP: []
1.46	Gateway IP: [] Gateway IP: []
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1.69	Gateway IP: [] Gateway IP: []
1.70	Gateway IP: [] Gateway IP: []
1.71	Gateway IP: [] Gateway IP: []
1.72	Gateway IP: [] Gateway IP: []
1.73	Gateway IP: [] Gateway IP: []
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1.91	Gateway IP: [] Gateway IP: []
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1.94	Gateway IP: [] Gateway IP: []
1.95	Gateway IP: [] Gateway IP: []
1.96	Gateway IP: [] Gateway IP: []
1.97	Gateway IP: [] Gateway IP: []
1.98	Gateway IP: [] Gateway IP: []
1.99	Gateway IP: [] Gateway IP: []
1.100	Gateway IP: [] Gateway IP: []

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Test de sitio (cont.)



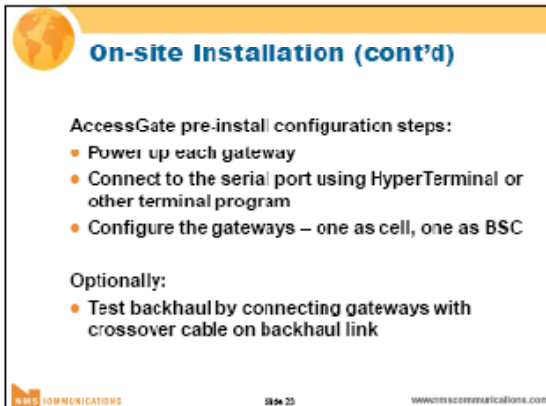
On-site Installation Steps

Typical steps:

- Pre-install configuration via serial menu
- **Optional:** Test gateway pair with F1 crossover cable (TDM backhaul) or Ethernet cable (IP backhaul)
- Physical installation & power-up at BSC
- Physical installation & power-up at cell site
- Bring on-line

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Guía de instalación en sitio.



On-site Installation (cont'd)

AccessGate pre-install configuration steps:

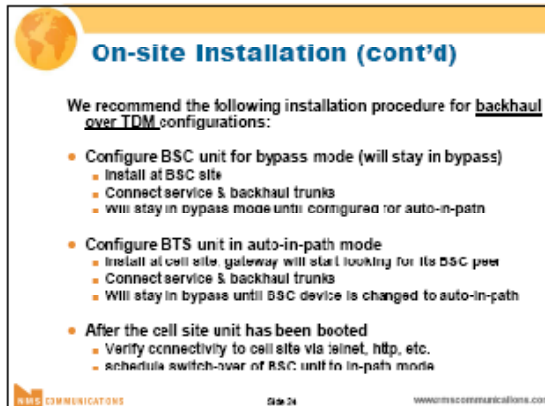
- Power up each gateway
- Connect to the serial port using HyperTerminal or other terminal program
- Configure the gateways – one as cell, one as BSC

Optionally:

- Test backhaul by connecting gateways with crossover cable on backhaul link

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Guía de instalación (cont.)



On-site Installation (cont'd)

We recommend the following installation procedure for **backhaul over TDM** configurations:

- Configure BSC unit for bypass mode (will stay in bypass)
 - Install at BSC site
 - Connect service & backhaul trunks
 - Will stay in bypass mode until configured for auto-in-path
- Configure BTS unit in auto-in-path mode
 - Install at cell site, gateway will start looking for its BSC peer
 - Connect service & backhaul trunks
 - Will stay in bypass until BSC device is changed to auto-in-path
- After the cell site unit has been booted
 - Verify connectivity to cell site via telnet, http, etc.
 - schedule switch-over of BSC unit to in-path mode

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Guía de instalación (cont.)

On-site Installation (cont'd)

We recommend the following installation procedure for **backhaul over IP** configurations

Note that there is no bypass mode in this case.

- Bring up the IP network at both ends & verify connectivity to remote IP subnet
- Connect both AccessGate devices (backhaul on **first** Ethernet) & make sure they go in-path with no sequence errors
 - Reset statistics before checking for sequence errors
- If AccessGate clocking at cell site is connected already, measure jitter & set jitter buffer length
- Cut over Abis trunks
- If jitter buffer wasn't set earlier, measure jitter & set it now

Slide 25

Guía de instalación (cont.)

On-site Installation (cont'd)

Slide 26

Guía de instalación (cont.)

On-site Installation (cont'd)

Slide 27

Guía de instalación (cont.)

Clocking Issues

- With backhaul over IP, separate primary reference clock (PRC) source is needed at cell site
- Options are:
 - Local GPS clock with framed output
 - Clock source from IP equipment (if it uses ML-PPP over operator's T1/E1 interfaces)
 - Local BTS, if BTS has stable clock, such as GPS PRC or Internal clock with sufficient accuracy
- First two options require extra port on AccessGate
- Measure jitter **only after** clock has been provided

Slide 28

Acerca del reloj.

Clocking Issues (cont'd)

Slide 29

Acerca del reloj (cont.)

Clocking Issues (cont'd)

If no clock source is available, AccessGate will use its local oscillator.

Note: Local oscillator is not accurate enough for a BTS!

Slide 30

Acerca del reloj (cont.)

Summary

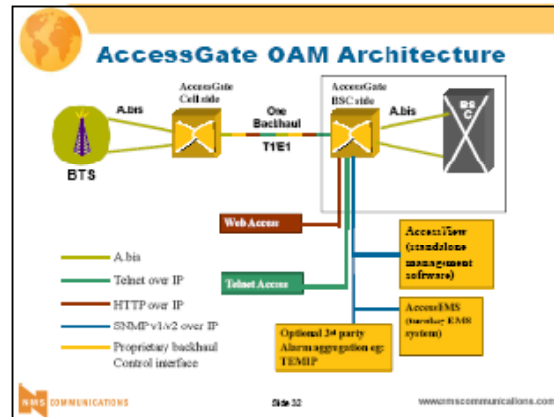
In this module we covered:

- Site Survey
- On-site Installation Steps
- Clocking Issues

Any Questions?

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Resumen.



AccessGate. Arquitectura OAM.

OAM Architecture (cont'd)

- **AccessView**
 - Java application using SNMP to manage AccessGate
 - Ideal for trials and small deployment
 - Limited access/security rights
 - Available for free
 - Used by EMS's for configuration
- **AccessEMS**
 - Client/server element management system
 - Based on Sun/SPARC platform
 - Available as turnkey or software only
 - Scalable; supports a network of AccessGate devices
 - Ideal for medium to large scale deployment
 - Available for a little bit of \$\$\$

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AccessGate. Arquitectura (cont.)

OAM Architecture (cont'd)

- **Web Interface**
 - No access/security rights
 - For monitoring only (exception: upgrades)
 - Access to BTS gateways via special port number
- **Telnet Command Line Interface**
 - For simple configuration changes
 - Access to BTS gateways via special port number
- **Craft Port Command Line Interface**
 - For Initial configuration
 - For cases when cell site connectivity is lost

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AccessGate. Arquitectura (cont.)

OAM Architecture (cont'd)

- You reach the BTS AccessGate devices by using port 60XY, where:
 - X = virtual gateway number (zero-based)
 - Y = protocol:
 - 0 for ftp
 - 1 for telnet
 - 2 for http
 - 6 for telnet to spare BTS
 - 7 for telnet to protected BTS

Example 1: To telnet to virtual gateway #0, BTS side:
`telnet <IP address> 6001`

Example 2: To access BTS virtual gateway #3 via http:
`http://<IP address>:6032`

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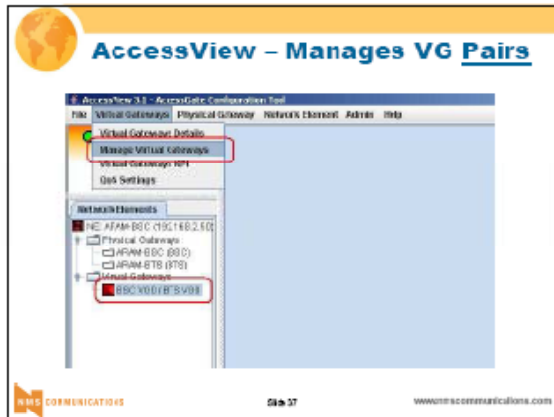
AccessGate. Arquitectura (cont.)

AccessView 3.1

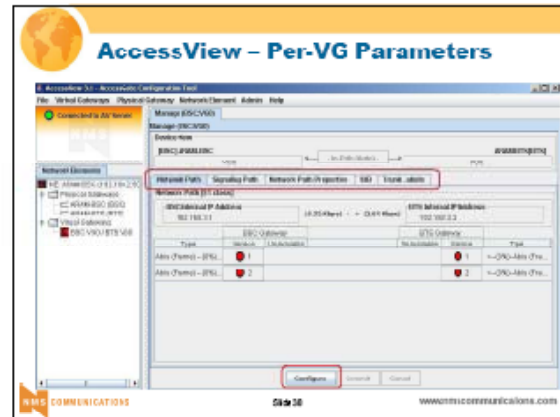
- Client/server application written in Java
 - AccessEMS can be the server
- Allows remote access to the AccessGate systems to perform the following:
 - Configuration changes
 - Done simultaneously for both sides
 - Basic consistency checking
 - Real-time performance monitoring
 - Batch firmware upgrade
 - Alarm monitoring
 - Setting trap destinations
- Up to 15 clients can connect to a server at one time
- Multiple levels of access rights

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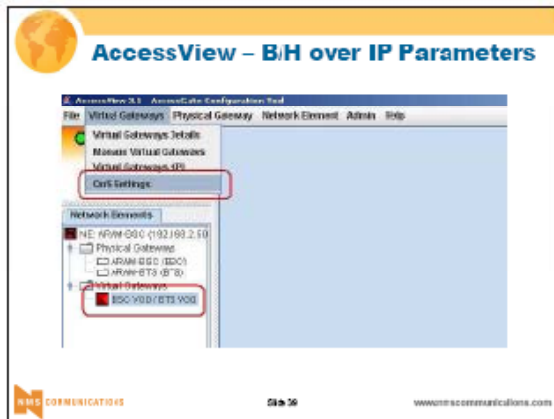
AccessView 3.1



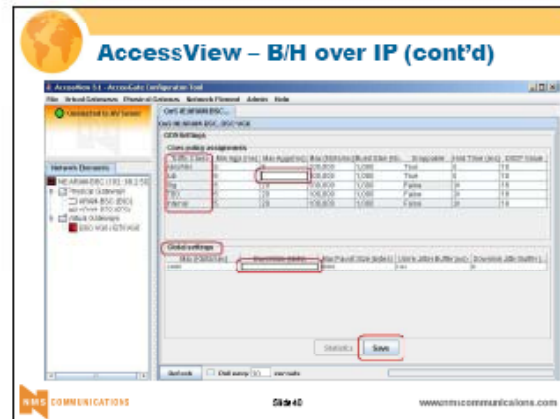
AccessView. Admon. de pares VG.



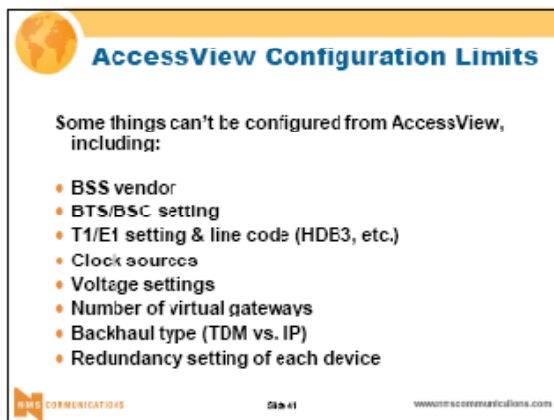
AccessView. Admon. de pares VG.



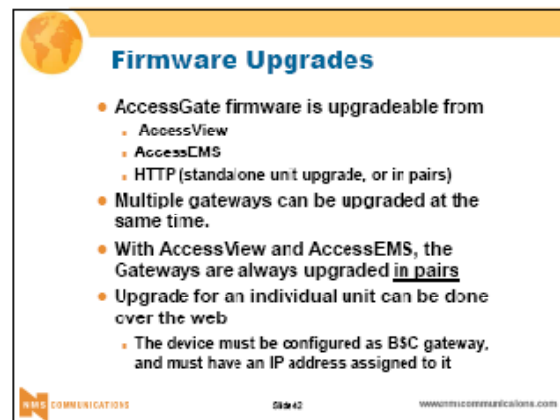
AccessView. B/H sobre IP.



AccessView. B/H sobre IP (cont.)



AccessView. Límites de configuración.



Actualizaciones.

Firmware Upgrades (cont'd)

- Each gateway has 2 flash banks, storing the current software and one previous version.
- Upgrade manager uses multi-step process:
 - Copy the image (via HTTP over IP) to BSC gateway
 - Copy (over backhaul link) to cell gateway
 - Install into backup flash bank on both gateways
 - Reboot, swapping active and backup flash banks
- Web server required, for example:
 - AccessEMS
 - AccessView server
 - Apache, etc.

Slide 43

Actualizaciones (cont.)

Firmware Upgrade steps

- Copy the firmware image to web server
 - If using AccessView, place it in C:\Program Files\MNS Communications\AccessView\ver->upgrade
- If using AccessView:
 - Select the Network Element
 - From the "Network Element" pulldown, select "Upgrade"
 - In-select the "Show Release Packages Only" button
 - Select the image name to be downloaded & click Download
 - When images have been downloaded, click "Install"
- If using the web:
 - Point web browser to BSC AccessGate
 - Fill in URL where download image is located
 - Select if this is upgrade of all units in NE or just this device
 - Enter admin password of AccessGate & click Download

Slide 44

Actualización.. Instrucciones.

Upgrade Example 1 From 3.0.2 to 3.1.0, using AccessView

Slide 45

Ejemplo 1 de actualización.

Upgrade Example 1 (cont'd)

Slide 45

Ejemplo 1 (cont.)

Upgrade Example 1 (cont'd)

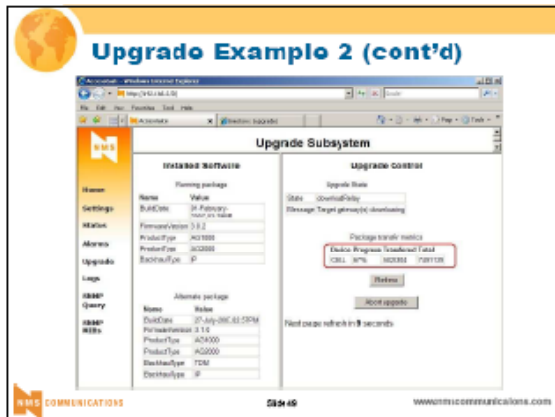
Slide 47

Ejemplo 1 (cont.)

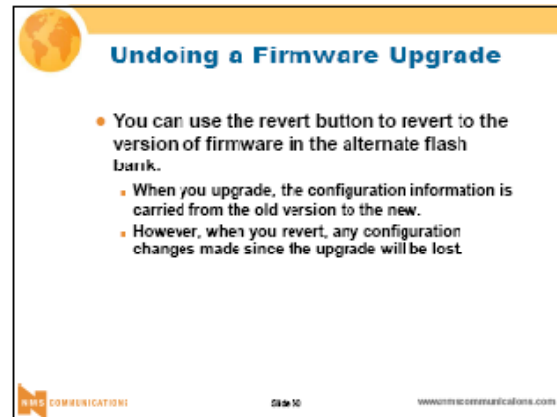
Upgrade Example 2 From 3.0.2 to 3.1.0, using web interface

Slide 46

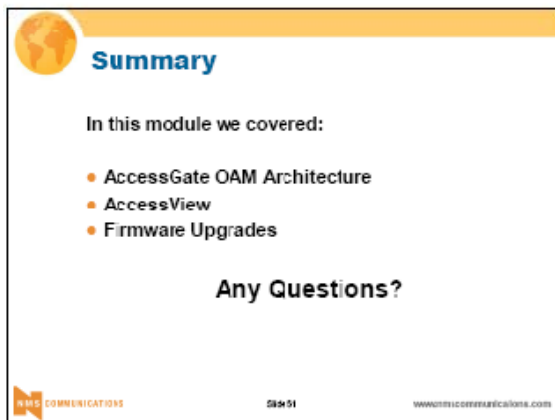
Ejemplo 2 de actualización.



Ejemplo 2 (cont.)



Deshaciendo la actualización.



Resumen.

Anexo 2

Características de equipos TELLABS.



Tellabs 8606



Tellabs 8605/8607



Tellabs 8660



Tellabs 8620



Tellabs 8630

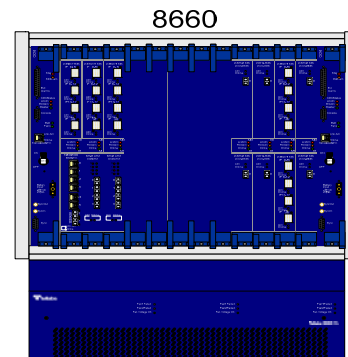
Feature	8660	8630	8620	8605 8607	8606
Forwarding Cap. (Gbps)	42	14	3.5	0.3	4.4
IFMs (Modules)	24	8	2	N/A	N/A
Element Height	14U	5U	2U	1U	1U
19" Mechanics	Yes	Yes	Yes	Yes	Yes
1+1 48V DC Power	Yes	Yes	Yes	Yes	Yes
1+1 Control Card	Yes	Yes	No	No	No
Switch (forwarding) protection	Yes	Yes	No	No	No

Sitios RNC (Agregador)

- **Basado en equipos Tellabs 8660**
- **Reciben el siguiente tipo tráfico/conexiones**
 - > Iub de los Nodos B con interfaces nxE1/VC12s IMA
 - > MLPPP proveniente de Sitios BSC/VC12s (nxE1)
 - > Otras interfaces del RNC (IuPS, IuCS, Mur)

- **8660**
 - > 14 I/O Slots
 - > 2 CPUs
 - > 24xE1
 - > 4xSTM-1 ATM
 - > 4xchSTM-1 (126 VC12s)
 - > GiE/FE y FE

- **AccessGate**
 - > Tráfico hacia BSC en sitio RNC



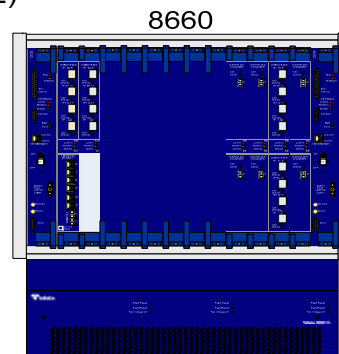
Tellabs

Sitios BSC (Concentrador)

- **Basado en equipos Tellabs 8660**
 - > 2 8630
- **Reciben el siguiente tipo tráfico/conexiones**
 - > Iub de los Nodos B con interfaces nxE1/VC12 IMA
 - > MLPPP proveniente de Sitios RAN-O (nxE1/VC12)
 - > MLPPP hacia Sitio RNC

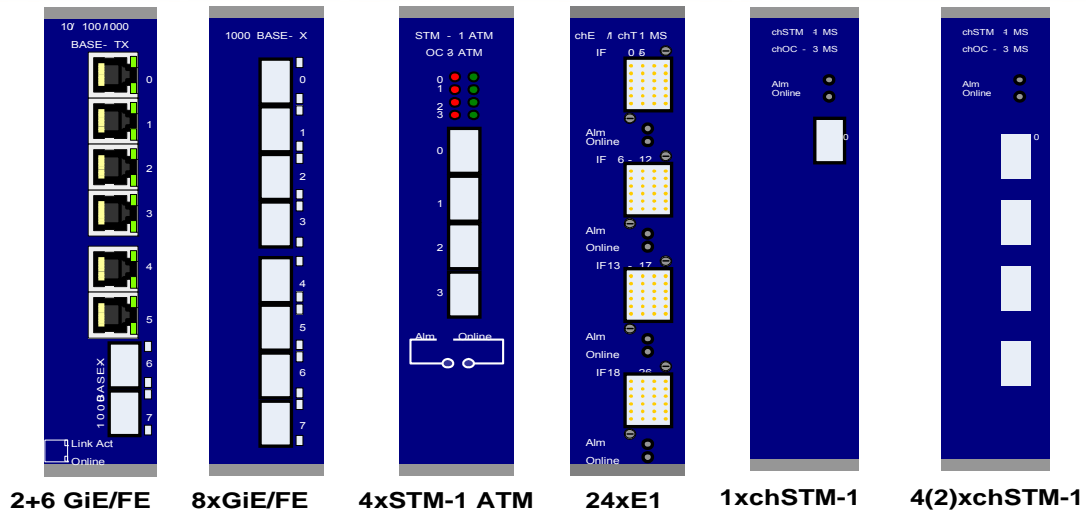
- **8660**
 - > 14 I/O Slots
 - > 2 CPUs
 - > 24xE1
 - > 4xchSTM-1 (126 VC12s)
 - > FE

- **AccessGate**
 - > Tráfico hacia BSC



Tellabs

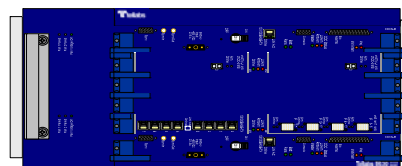
IFMs Utilizados



Tellabs

Sitios RAN-O

- Basado en equipos Tellabs 8630 y 8605
- Reciben el siguiente tipo tráfico/conexiones
 - > Iub de los Nodos B con interfaces nxE1 IMA
 - > MLPPP hacia Sitio RNC o BSC
- **8630**
 - > 4 I/O Slots
 - > 2 CPUs
 - > 24xE1
 - > 4xchSTM-1 (126 VC12s)
 - > FE
- **8605**
 - > Built-in 16xE1
- **AccessGate**
 - > Tráfico hacia BSC



Tellabs

AccessGate

- Usados temporalmente para recibir/entregar tráfico 2G desde hacia las BSCs
- 2 Modelos
 - > 2008
 - 8 puertos E1
 - > 2016
 - 16 puertos E1
- Conectados a los 8600 vía puerto FE

