Case Study
Installation

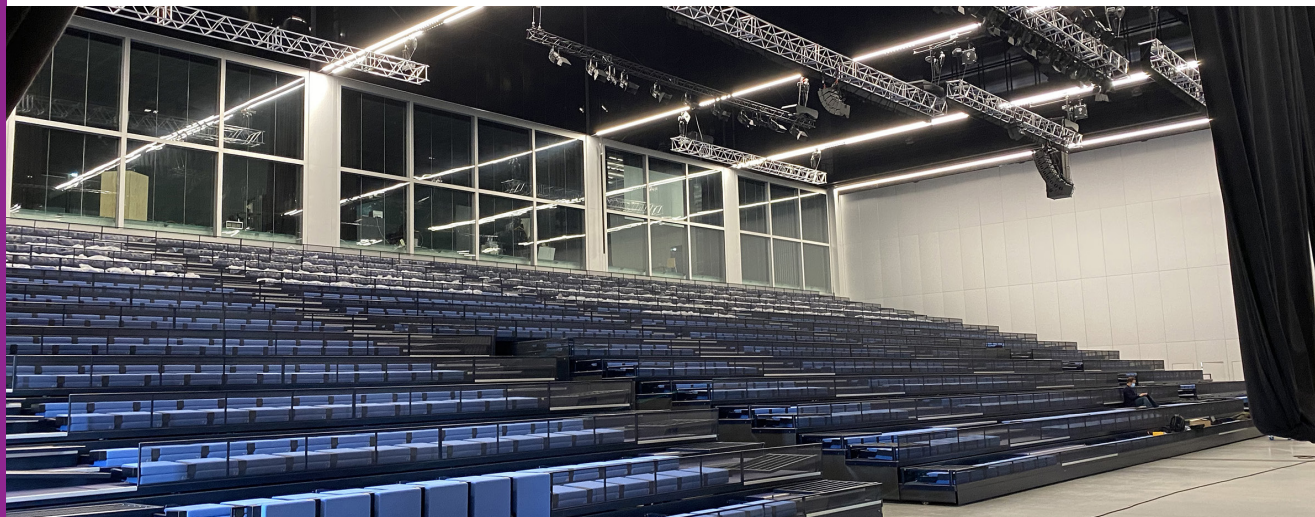
MEETT TOULOUSE EXHIBITION & CONFERENCE CENTRE
Toulouse, France

An OPTOCORE/BroaMan fiber network is at the heart of the new MEETT Toulouse Exhibition & Conference Centre. The third largest facility in France (outside Paris) it boasts a 40,000m2 modular exhibition hall, a main street that opens into an outdoor multipurpose area of 25,000m2, and has been constructed on a 155,000m2 site.

The installation was carried out by BroaMan's long-term French partner GB4D, in close collaboration with the scenography company Ducks Scèno. Gilles Bouvard's GB4D team worked alongside Grégory Aldéa, head of audiovisual projects at Ducks Scéno, on behalf of the MEETT consortium, Toulouse Métropole and GL Events.

KEY BROAMAN ADVANTAGES

- All video signals from each stagebox multiplexed into one QUAD fiber cable with distance up to 10km
- Fiber AUX port for 3rd party products connections
  e.g. 1Gbit Ethernet
- Small form factor, low power consumption, no fan in the stagebox devices.
- Two 40x40 Routers integrated into one system
- Integration with Soundcraft Mixing Console
- Flexibility with 80 Microphone Preamps and Line Outputs



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"The challenge today is to provide solutions to satisfy all user demands and transport different IP and Ethernet-based protocols. Five years ago it was complicated, but thanks to BroaMan we now have the tools. Together we develop devices to easily transport and route data streams carrying different protocols, with no bandwidth limit."

Gilles Bouvard, GB4D

SOLUTION

For the management of Convention Centre's 12 modular rooms, a Seminar Rooms node has been equipped with a BroaMan Route66 Video Router (40 in / 40 out), where 26/26 connect via CWDM multiplexer to fiber stageboxes in specific rooms, while 14 /14 allow fiber video connections between routers in Seminar Rooms Node and Convention Room.

Gilles Bouvard explains the rationale. "The CWDM video makes it possible to have two Video In and two Video Out per modular room. The 14 optical strand-to-strand video streams allows full duplex in / out with the Convention room node."

The fiber points are cabled on single-mode quad fibers, dispatched to the router by a WDM frame. The latter is supplied from a manual fiber patch which allows connection of 13 COM ports (combined main connections which carry all signals on a duplex fiber) to the router on the 39 available connection points (three per room).

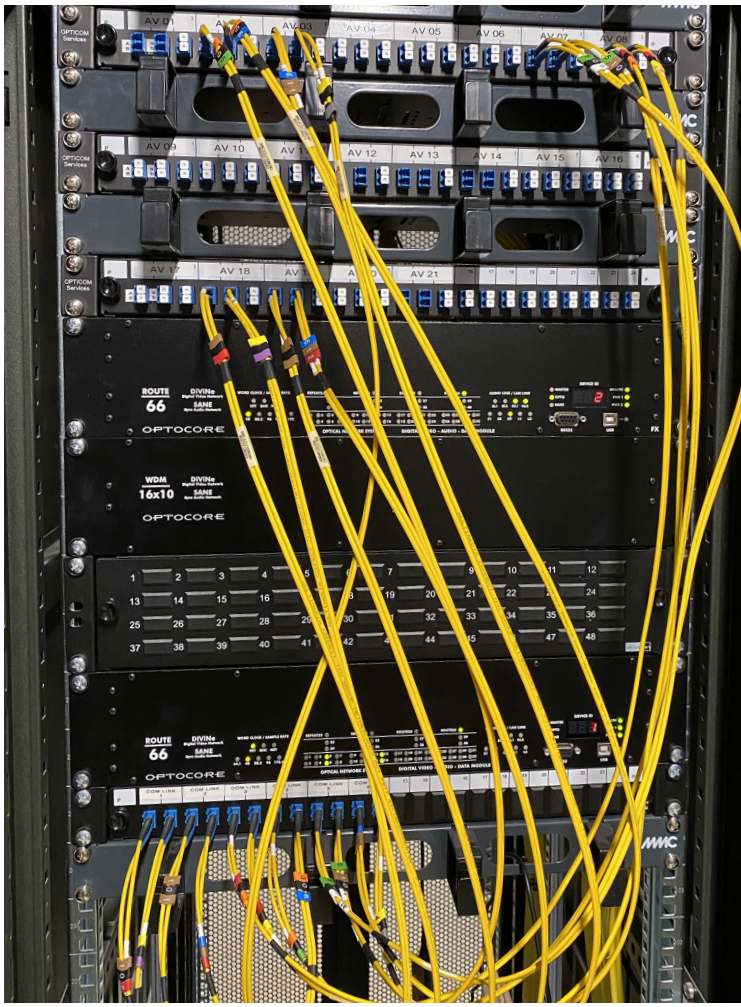
In the Convention Room, network distribution is via 24 quad fiber connection points.

In the room node a BroaMan Route66 Video Router (38 in / 38 out) provides 24in / 24out CWDM video for fiber stageboxes and the 14 full duplex in / out SDI fiber video share streams with the Seminar Rooms node, with a WDM frame facilitating various connection points.

Each node is additionally equipped with an OPTOCORE AutoRouter15 for the seminar rooms and an OPTOCORE AutoRouter10 for the Convention Hall to complete the OPTOCORE loop.

The OPTOCORE AutoRouter functions as an intelligent patch bay, creating a redundant 'star' out of the ring topology.It works by automatically discovering the presence of mobile devices and adding them to the OPTOCORE loop.When such a device is later disconnected, or powered down, AutoRouter automatically closes the loop with the remaining devices. Redundancy is established automatically, without any user action necessary.

In order to function in all the different spaces, 10 mobile racks have each been plugged with a BroaMan Mux22-IVT/MADI 4 SDI in / 4 SDI out, with 4 MADI fiber ports for audio and OPTOCORE X6R-TP-8MI/8LO (two ports of 16AES, four DMX RS422 port, LAN Base 10/100). Each rack can be connected by a quad fiber to any connection point in the building.



VIDEO DISTRIBUTION SYSTEM

13x STAGEBOX

MUX22 MADI
2x SDI IN, 2x SDI OUT, 4x DUPLEX MADI FIBER
4x DMX, 3x LAN

X6R-TP-8LI/8LO
8x Line In, 8x Line Out

SALLES DE REUNION

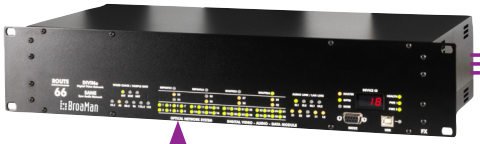
SEMINAR ROOMS NODE

Singlemode QUAD Fiber Connection
Singlemode BroaMan PatchCables
Singlemode Optocore Patch Cables
CAT5 SANE Optocore Connection

FIBER PATCHBAY

WDM FRAME
13x CWDM Module

ROUTE66
40 x 40 Video Router



OPTOCORE AUTOROUTER

14x FIBER SDI I/O

ROUTE66
38 x 38 Video Router

OPTOCORE AUTOROUTER

WDM FRAME
6x CWDM Module

CONVENTION ROOM NODE

FIBER PATCHBAY

BroaMan

GRANDE HALL

MUX22 MADI
4x SDI IN, 4x SDI OUT, 4x DUPLEX MADI FIBER
4x DMX, 3x LAN

X6R-TP-8LI/8LO
8x Line In, 8x Line Out

6x STAGEBOX

The OPTOCORE and BroaMan backbones for fiber routing were necessary to avoid latency issues, according to Bouvard. “This fantastic system allows you to have any audio control surface in the network. Given its complexity, I challenge anyone to set up an Ethernet-based or IP network as easy and fast as ours to operate, without having to be a computer scientist!”

Sound reinforcement is an L Acoustics KARA system, while the installed mixing consoles are Soundcraft Vi1000s with MADI cards. All sound consoles can be connected to the network and most can control the 80 available OPTOCORE preamps directly from the desk.

SYSTEM REQUIREMENTS

- Stagebox fiber-based system
- Transport of multiple 3G-SDI video, audio, lighting control data, Ethernet based data (IP)
- Flexible fiber network allowing for fast and simple setup for 12 modular rooms
- Low latency for video as well as audio transport
- Open protocol for integration with 3rd party control system
- Savings on power consumption

SYSTEM COMPONENTS

BROAMAN Device	Localization	Functions
GRAND HALL		
Route66	GRAND HALL	40 x 40 Video Router (Including 14x I/O to Salles de Reunion)
OPTOCORE AUTOROUTER	GRAND HALL	15 x Dual Duplex Optocore Locations
WDM FRAME	GRAND HALL	8 x 12 Channel CWDM Module for Multi/Demulti-plexing remote video channels
6x GRAND HALL STAGEBOX:		
MUX22 IVT/MADI (6x)	FORUM BALLROOM **A**	4 x 3G-SDI IN, 4 x 3G-SDI OUT, 4 x DUPLEX FIBER MADI SC, 1 x 1310nm AUX
OPTOCORE X6R-TP (6x)	FORUM BALLROOM **B**	8 x Microphone Input, 8 x Line Output, 3x LAN, WC I/O
SALLES DE REUNION		
Route66	SALLES DE REUNION	40 x 40 Video Router (Including 14x I/O to Grand Hall)
OPTOCORE AUTOROUTER	SALLES DE REUNION	15 x Dual Duplex Optocore Locations
WDM FRAME	SALLES DE REUNION	8 x 8 Channel CWDM Module for Multi/Demulti-plexing
10x SALLES DE REUNION STAGEBOX:		
MUX22 IVT/MADI (10x)	SALLES DE REUNION	2 x 3G-SDI IN, 2 x 3G-SDI OUT, 4 x DUPLEX FIBER MADI SC, 1 x 1310nm AUX
OPTOCORE X6R-TP (10x)	SALLES DE REUNION	8 x Microphone Input, 8 x Line Output, 3x LAN, WC I/O

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