

# grandMA

## Case Study

In the Evening at Koi Pond – Expo.05



■ grandMA – total control

# Aichi World Expo 05

## Nagoya Japan

grandMA multimedia consoles solve the most complex networking tasks at the Aichi World Expo 2005 in Japan – Robert Wilson's "In the evening at Koi Pond"



Renowned theatre director and artist Robert Wilson created and staged the official evening program at the Aichi World Expo 2005 in Nagoya, Japan. Under the title "In the Evening at Koi Pond", the event celebrates the close relationship between human beings and nature as a multimedia, experimental theatre performance. The lighting design by AJ Weissbard was composed of projections, sophisticated lighting, and fascinating stage effects synchronized to music and punctuated with spoken language.

#### Requirements and prerequisites

There were stringent technical requirements specified by the lighting designer AJ Weissbard in conjunction with the production company Change Performing Arts, Milano.

The lighting control system had to integrate control for the following systems:

1. The entire video content system consisting of four media servers with 6 layers and 320 DMX channels each; all controlled via ArtNet.
2. The fog system
3. The water-screen with its pumps
4. All hydraulically operated planet platforms
5. The wireless lighting equipment of the boats
6. Control for automated lighting, conventional lighting, and LEDs
7. SMPTE and MIDI time code abilities

Furthermore, the following criteria were essential for AJ Weissbard's choice of the control console:

- The need for speed in programming the different technologies onsite
- Multiple user sessions with different user rights (allows several operators to work online or offline simultaneously in order to meet deadlines)
- To employ decentralized channel processing and distribution without performance degradation across the entire network
- To run multiple protocols over a copper and fiber optic network and support distribution of all 33 DMX Universes

#### The grandMA network solution

In view of these requirements, only MA Lighting's grandMA system was able to effectively meet all of these requirements.

The lighting system to be controlled covered an area of almost 40,000 square meters. Localized DMX output was needed on lighting towers, in the projection booths, on the monkey platform, the control room, and in the utility room – which housed the controls for the water screen and

short, were used. Each of these NSPs process part of the show's data in real time which remain fully synchronised, and can directly output up to four independent DMX lines each. Thus, in most locations it was possible to do without the DMX boosters that would have been necessary otherwise. The lighting system to be controlled covered an area of almost 40,000 square meters .

A total of nine of these NSPs were connected via an extensive network consisting of ten decentralised switches and more than 1,500 meters of Cat6 and fibre-optic network wiring. Fibre optic technology was selected and installed in duplicate, not only due to the length of connections needed, but also to provide for sufficient bandwidth for data traffic and create a mechanically and electrically safe network solution. With the grandMA multimedia consoles, the media servers for the projectors could be controlled directly via network.

For controlling the lighting on the boats, a wireless LAN system was developed. Finally, six wireless access points were installed to provide secure WLAN coverage for the entire pond area. The 802.11b received signal was transferred to DMX using an Artistic License. Net-Lynx ArtNet node installed on each boat to control the LED fixtures.

During the programming phase, two grandMA full-size consoles and one grandMA onPC were configured in multi-user mode for "lighting" and "video" applications respectively, so that the operators were able to work on their own part of the show, without interfering with each other's work and so that the lighting designer could observe live programming in progress. Nevertheless, the resulting lighting and video settings could be called up by either console, because both were configured as mutual back-up systems at all times. When the installation was handed over to the Japanese staff of operators provided by the company Heart-S, both consoles were combined in "full-tracking-backup" mode to serve as main and backup systems for controlling the show.

In case of a serious technical malfunction the entire show could also be controlled locally without any interruption in the performance, thanks to a grandMA replay unit that was installed in the utility room and served as an additional show controller.

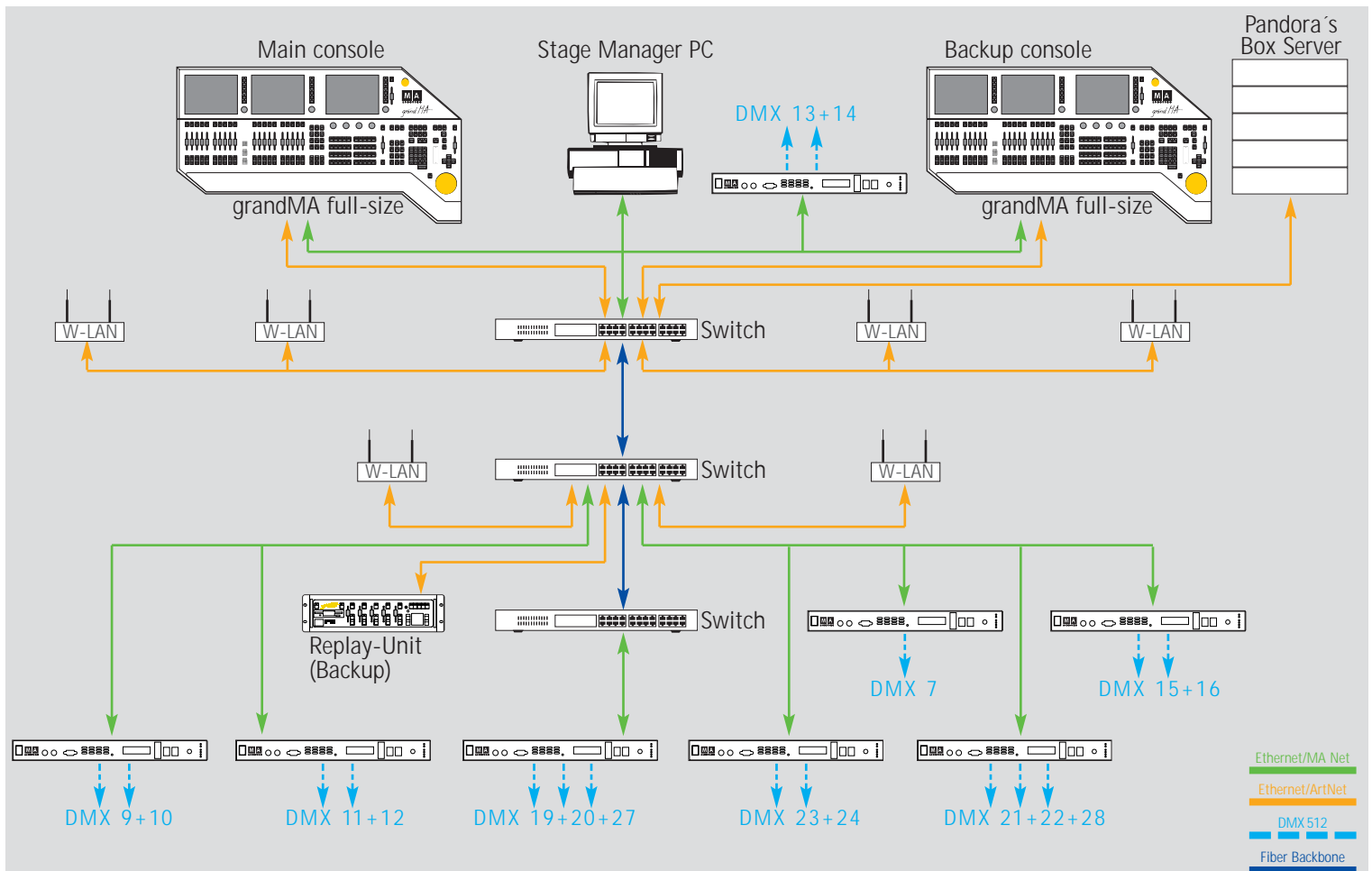
Ever since its premiere, this unique network-based control system has performed flawlessly and the show has enthralled and delighted a nightly audience of almost 5,000 international visitors.



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# Project Team

Director	Robert Wilson	Visual Design	Keita Shimizu
Lighting Design	AJ Weissbard	Video Design	Canio Salandra Andrea Bianchi Matteo Massocco
Music	Hal Willner		
Producer	Change Performing Arts Franco Laera Izumi Arakawa Dentsu, Meitetsu	Lighting Equipment	Procon Hamburg Michael Sasse Kurt Müller
Agency	Dentsu Tec	Laser, Projectors & Waterscreen	Oracle Productions, Singapore Chris Sifton
Project Design	Christophe Martin		
Architect	Valentina Tescari	Show Control & Network Design	E <sup>3</sup> Engineering, Ulrich Kunkel

## Company Profile

■ MA Lighting International, based in Paderborn, Germany, is the dedicated sales, support and service entity for the renowned grandMA control systems, digital dimming systems, networking tools and media servers of MA Lighting Technology, based near Wuerzburg (GER). The product range offers cutting-edge solutions for control and dimming and contains the award-winning grandMA consoles, the renowned Light- & Scancommander, but also the reliable digital dimmer racks and packs. With its media server grandMA video MA bridges the lighting and video worlds and integrates media servers like a fixture into lighting control.

Today, MA Lighting is well known for its technical know-how and has achieved a unique international reputation for its operational philosophy. The company looks back with 25 years experience. MA Lighting strictly follows a professional user-centric approach and is getting as close as possible to the market via its own international offices as well as competence and support centres in the UK, North America, Latin America, the Middle East/India and Asia Pacific – supported by an world-wide distribution and service network.



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