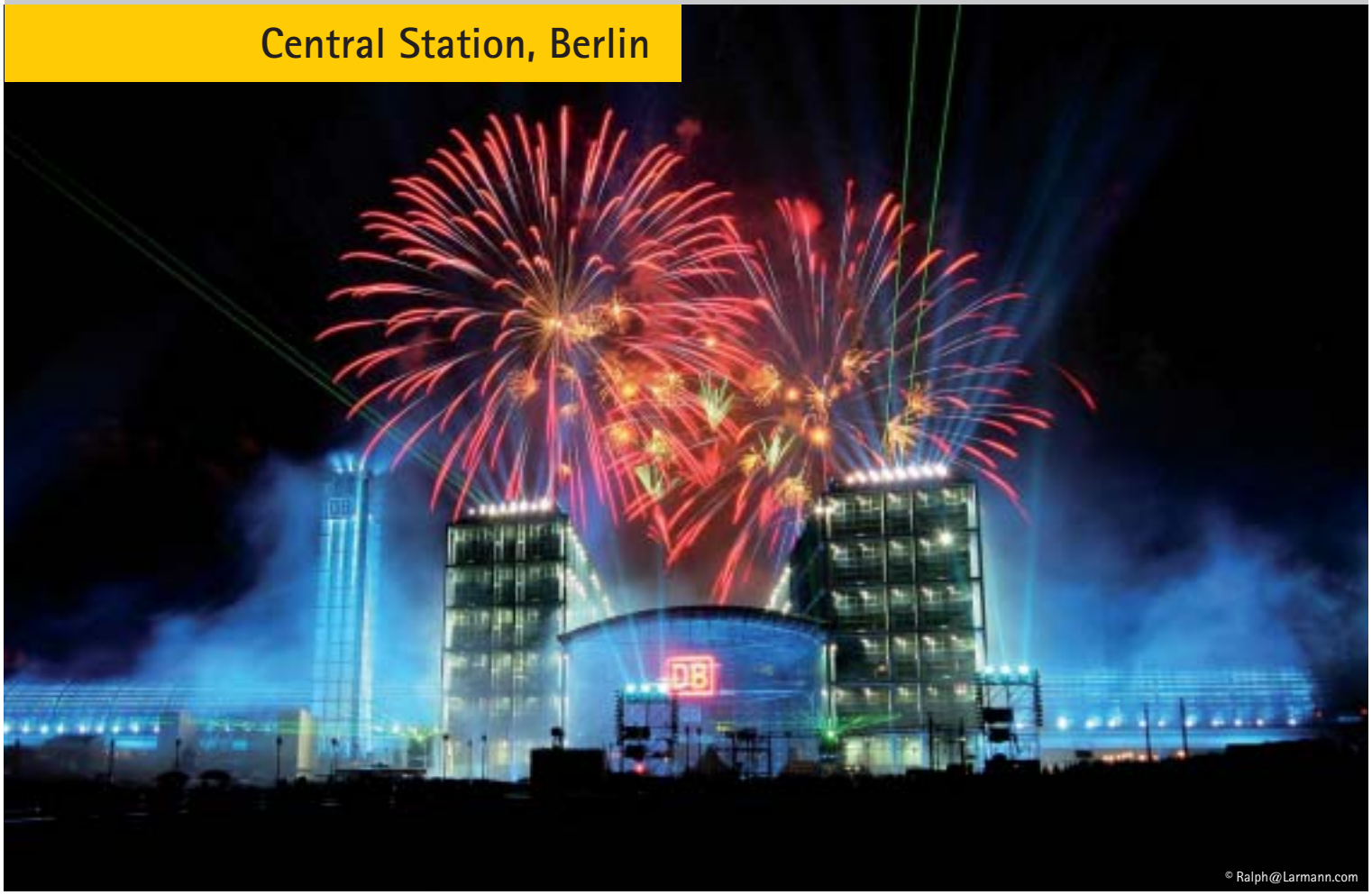
MA LIGHTING

grandMA Case Study

Central Station, Berlin

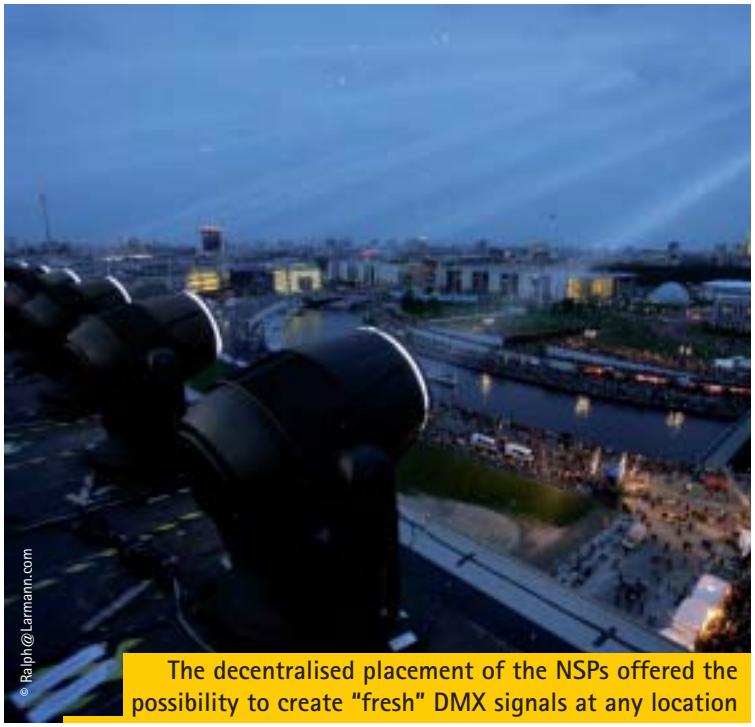


grandMA – total control

Central Station Berlin

Opening 2006

– MA control network ensured an extremly safe show with a powerful backup solution



The decentralised placement of the NSPs offered the possibility to create "fresh" DMX signals at any location

grandMA consoles were installed as backup on the two trains in case of a radio communication failure

Deutsche Bahn (German Railways) celebrated the opening of its new central station in the heart of Berlin by putting on a show "Lichtsinfonie" (light symphony). The control network, designed to assure effectiveness and safety, included three grandMA full-size, one grandMA light and 17 MA NSPs.

The idea

Nearly 930 conventionals and a majority of moving lights should be controlled during the show which was to fully triggered by a time-code signal. The resulting 9,000 channels had to be spread over 22 lines of DMX. The task was to build up a network, that was efficient enough to distribute the necessary data over the large show area and that would be extremely reliable. Another special task was the implementation of 16 Space Cannons Ireos PRO 7kW. They had to be driven on two trains alongside the bank of the river Spree during the show without any way to run them on a "wired" control signal.

Realisation

Altogether 17 NSPs calculated the necessary channels for the live show. "The de-centralised placement of the NSPs offered the huge advantage to create 'fresh' DMX-signals near the moving lights. We used eight NSPs for the DMX-distribution in the show, additionally one on both trains to control the Space Cannons, while the remaining seven were used in a rack near the lighting control position to handle the number of channels required," explained network supervisor Ulrich Kunkel. Instead of having additional NSPs as spare, all of them were active parts of the network. In case of a failure they could be instantly used as backup. "Besides every NSPs provided its computing power to the network. Because of this each grandMA console works without time lag, even during big shows."

Alongside the main grandMA full-size an additional grandMA full-size was added to the network as backup. By parting operation and administration of the show on one side (consoles) and the sheer calculation of showdata and the output of DMX on the other side (NSPs) an extremely safe system was constructed.

For the first time an Optocore-System was used in an installation of this size. It was a fiber optics network for audio-, video- and Ethernet-data. By this not only lighting control and DMX-distribution could be integrated into the system. Also sound mixing as well as all signals for the video wall could be distributed by the same network. For programming an additional grandMA was ready on site. It could be used, thanks to the huge network, nearby the moving

lights e.g. on the platform of the railway station.

To control the Space Cannons an Ethernet-WLAN radio communication was set up for each train. This enabled a wireless communication from the platform in the centre of the railway station to both trains also when they were moving. On both trains NSPs were installed to provide local DMX-signals for the Space Cannons. A simple assembly of both networks would have resulted in a data overflow of the radio communication to the trains. To avoid this a so called "Layer-3" Ethernet switch was connected upstream of the communication. It refined the network protocol of the Ethernet protocol layer and made it possible, that only packets with needed DMX-data were distributed via the WLAN to the trains. Additionally a grandMA console was installed on each train as backup. They assured a dataflow even in a case of a radio communication failure.

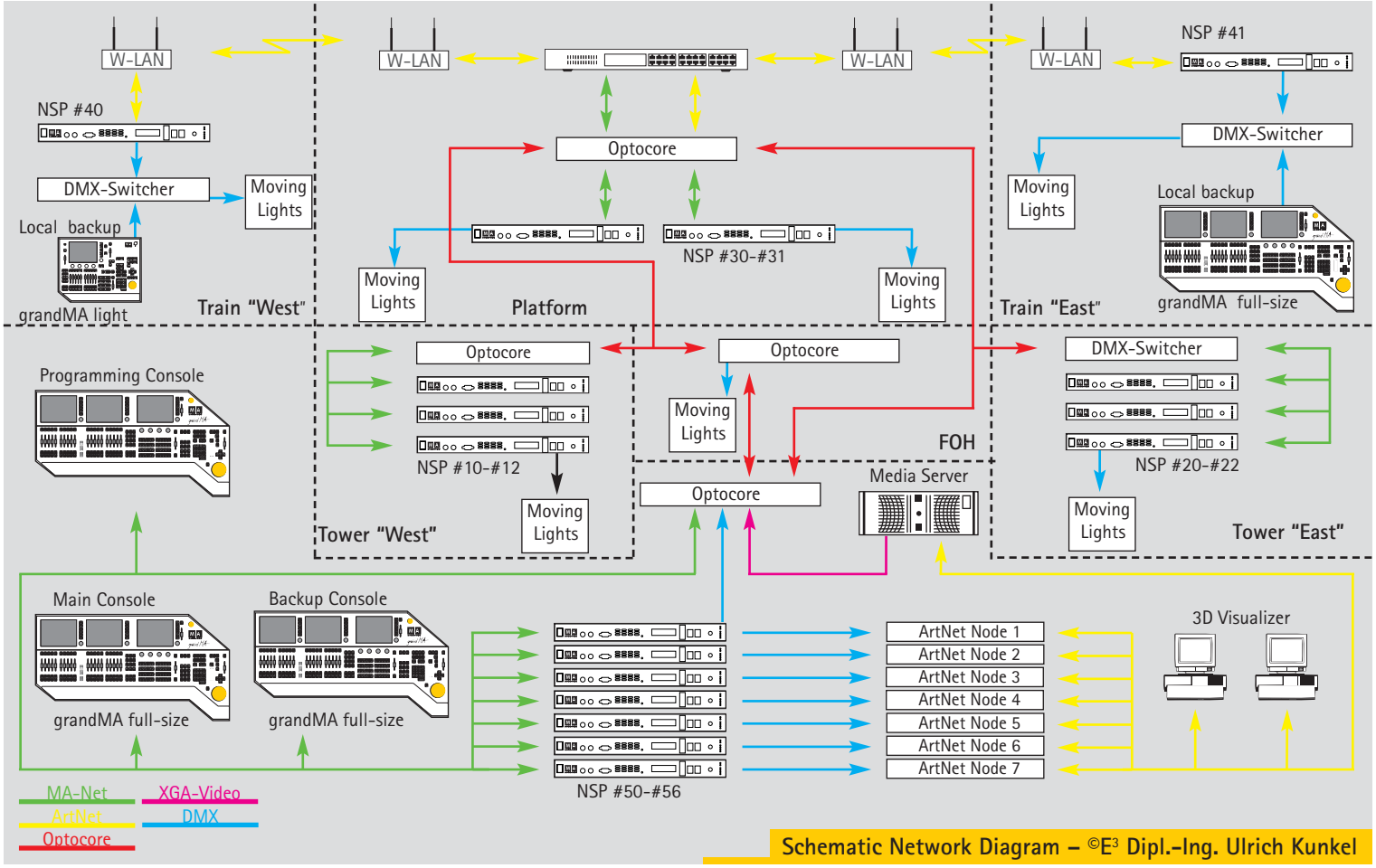
This radio communication failure actually happened during the show. The reason was a temporarily used radio communication system for a camera of a German TV station. It was turned on shortly before the show and interfered with the radio communication to one of the trains. Thanks to the additional grandMA on this train the beginning of the show was not disturbed. The Timecode of all the consoles could be launched synchronous. The train with the failure worked autonomous but frame-synchronous to the rest of the system.

Project team

Realisation:	360 Grad GmbH
Lighting designer:	Jerry Appelt
Operators:	Thomas Giegerich, Klaus Rupprath, Sascha Matthes
Head of lighting:	Matthias Rau
Assistant head of lighting:	Simon Kayser
Network supervisor:	Ulrich Kunkel

An additional grandMA was ready on-site to program the moving lights on the platform of the railway station

The final result: A true "light symphony"



Schematic Network Diagram – ©E³ Dipl.-Ing. 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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