



# Draka

Draka Comteq | Cable Solutions - EMEA

## Field Report



### The Commerzbank-Arena in Frankfurt/Main

Covering 26,900 square metres, almost 80,000 cubic metres of concrete, 12,000 tons of construction steel, state-of-the-art building technology - and accommodating up to 55,000 enthusiastic spectators.



Source:  
Press and Information Office of  
the City of Frankfurt am Main

## An ideal setting - fascinating and enthralling

### Crowd puller

Soccer, American football and other sporting attractions, concerts, events large and small - the Commerzbank-Arena in Frankfurt am Main offers an ideal setting for events that set the adrenaline flowing. At the same time it continues a tradition that goes way back to the building of Frankfurt's legendary Waldstadion on the same site in 1925. For many decades sportsmen and women competed here to set new records, win titles and medals, and spectacular football matches and impressive concerts were held. In 1974 some of the World Cup matches were played here, and this year once again the Frankfurt stadium is a place to make friends.

### Impressive building

In the course of its fascinating history the Waldstadion has been converted many times and now, at the beginning of the new millennium and in time for the World Cup, completely redesigned. The architects Gerkan, Marg & Partner have done everything to create a feeling of anticipation in people as soon as they see the stadium: an excitingly designed building with a "Colosseum look", covering an area of 26,900 square metres and with gross floor space of 138,000 square metres. Seven impressive storeys with all the facilities required for the successful staging of large events. The fascinating feature is the roof construction with a total area of 37,500 square metres, 9,000 square metres of which is a "convertible top" and form the world's largest interior steel cable membrane roof.

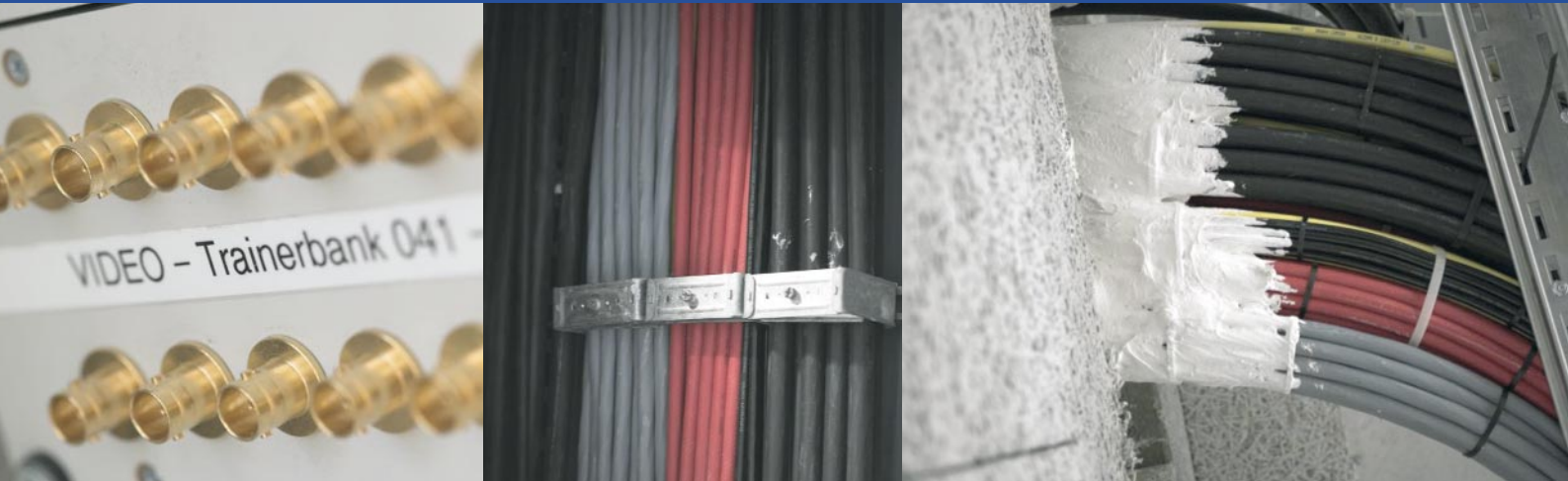
### State-of-the-art technology

Another fascinating aspect is the modern technology used inside the arena: from the computer-aided admission checks to the technically sophisticated TV studios and the 30-ton video cube suspended over the centre of the pitch, high technology is in use everywhere. Not to forget the 68,654 metres of studio cable from Draka Comteq, laid as permanent cabling in the stadium, for reliable and high-quality transmission of the television pictures.



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## Future-proof studio cables for reliable TV transmission

### From temporary to fixed

For large sports events it is quite normal to use temporary cabling for the camera and transmission technology. This means the cables are laid before the event and removed again afterwards. Nevertheless, this non-permanent cabling is not an optimal solution and involves safety risks. This was reason enough for the company operating the Commerzbank-Arena, the Stadion Frankfurt Management GmbH, to have permanent cabling installed in good time before the World Cup began. A total of 192 termination points at six locations (press conference, glass studio, commentary box, coaches' bench, East goal and West goal) were to be linked to a central TV compound.

The work not only had to comply with strict fire protection regulations, but also had to meet the specifications of the Host Broadcast Services (HBS) commissioned with the television transmission. It goes without saying that the cabling had to meet the latest technical standards and, in particular, be suitable for HDTV. Not so easy when you consider that at the high HDTV data rate, distances of up to 520 metres had to be bridged. The time frame: only three months!

### Quality and reliability

This project, important because of the TV transmission, was awarded to Elektro Ehinger GmbH ([www.elektroehinger.de](http://www.elektroehinger.de)), an old-established skilled trade company in Frankfurt with a 100-year history of success and a staff of 150. It now specializes in elec-

trical engineering and lighting, safety and network technology. Its reference list includes important office and administrative buildings, hospitals and other institutions. Its recipe for success? "We always use our own craftsmen, which enables us to meet our own high standards as regards quality and reliability", says Stefan Ehinger, great-grandson of the company's founder. At the same time, as he says, it is unusual for a craft business to put in a tender for such an important media cabling project. "It is a closed market in itself, and one to which we actually have no access."

### Specifications met

Nevertheless, Elektro Ehinger was awarded the contract in preference to other companies, some of which were very well-known industrial enterprises. "Our price was simply the most favourable", explains managing director Konrad Lichtefeld. "But trust played a part from the very beginning - also no doubt because of our high quality standards and our good references. The fact that we offered cables manufactured by Draka Comteq probably also had a positive effect."

"We already knew Draka Comteq as a competent manufacturer of cables", said Stefan Ehinger thinking back to when they started working together. "Because, however, we are strong supporters of the three-stage distribution model, the actual contact came about through the wholesale trade." The studio cables offered were, of course, carefully examined both by the planning office



Ebener & Partner responsible for the cabling, and by HBS. The result: the cables from Draka Comteq met the organizers' strict specifications.

"We were sure", adds Konrad Lichtefeld, "that Draka Comteq not only manufactures first-class cables at a favourable price, but also that it could be relied on to supply them within the tight timeframe. After all, this project had extremely high priority for us."

### Accurate fit and just in time

This trust proved to be justified. Elektro Ehinger was awarded the contract in the third calendar week of 2006. Only three weeks later Draka Comteq delivered the first consignment: 80 drums with around 44 km of different types of cables. "For the project to progress it was really good that Draka Comteq took account of our individual wishes and supplied exact cut-to-length fitting lengths - and not, as is customary, standard lengths", emphasized Michael Gehring, project manager at Elektro Ehinger. The rest of the order was delivered only two weeks later.

The Cologne company K.A.T. Mombauer GmbH was responsible for preparing the cables. This experienced cable preparer and long-standing Draka Comteq partner pre-assembled the cables

in the ZDF studio in Mainz, for example, and also reliably adapted to the tight timeframe ([www.katmombauer.de](http://www.katmombauer.de)).

### The complete spectrum

The cabling concept was designed using five different cable types (see page 4) in such a way that it was possible not only to cover the entire spectrum of possible transmission alternatives, but also to find a reliable and future-proof solution.

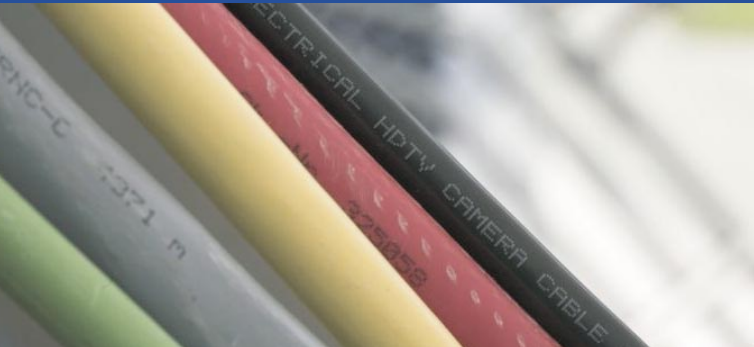
On 31<sup>st</sup> March 2006 the laying of the fixed cabling was completed, which was only ten weeks after the order was placed. "Only shortly after the project ended, the cabling was used to broadcast a German Bundesliga football match. There were no complaints", concluded Stefan Ehinger. During the World Cup too, the cable solution proved to be reliable and safe, as many millions of television viewers from around the globe will be pleased to confirm.





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## Proven know-how

The wide range of different applications reflects not only Draka Comteq's extensive application know-how, but also its decades of experience and considerable competence in the field of cables. After all, the company's roots go back to the year 1815. As a reliable partner to trading, industrial and service companies Draka Comteq offers flexible, trendsetting cabling concepts which provide a high measure of investment security. Not least responsible for this is the development department which works permanently on new solutions for the markets of tomorrow.

## Draka Comteq

### Cable competence for the global market

Draka Comteq has been developing, manufacturing and marketing innovative, high-quality studio cables for decades. These products are used worldwide in radio and television stations as well as in film and radio studios. Draka Comteq attaches particular importance to meeting the latest technical and application-specific requirements made of cable systems, so as to be able to contribute to the success of its customers.

In addition to the wide variety of products, ranging from microphone and loudspeaker cables to audio, video and triax cables as well as fibre-optic cables, quality also plays an important role: Draka products are characterized by very good transmission quality, high resistance to interference and good flame retardant properties.

### Cables for a wide range of applications

Draka Comteq is part of the international Draka Holding company with headquarters in Amsterdam. The group is one of the five largest cable manufacturers in the world. The Multimedia Cable division is engaged in a total of six spheres of activity:

- Office Communication/Industrial Ethernet (copper and glass-fibre cables for data communication in the office or in the production department),
- Domestic cabling/Basynet (cable systems for home office and multimedia applications),
- Studio cables, aerial technology/CATV (drop and trunk cables for TV transmission on network levels three and four),
- Special cables (individual, customized cable solutions),
- Central Office Switching (cables for the computing and switching centres of network carriers).

### The solution

For the fixed media cabling in the Commerzbank-Arena five different types of cables from Draka Comteq were used.

10.9 km Hybrid HDTV-camera cable 2E 9/125 + 4 x AWG 20 + 2 x AWG 24 according to SMPTE 311 M-standard.

17.3 km Triax 14 FRNC camera cable which is used in professional studio engineering for simultaneous transmission of energy and multiplexed picture signal between the camera head and the control gear.

19.2 km studio switchboard cable 755-901 FRNC-C, a low-damped and low-distortion 75 Ω coaxial cable for picture signal, synchronization and electronic locator.

6.7 km optical fibre UC2000 B 12E 9/125 FRNC, which can be used individually for any form of data transmission.

14.6 km audio cable AC10 SS 23/1 12p FRNC-C which is used for analogue and digital signal transmission in audio frequency systems.

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