

**KENWOOD**

**NEXEDGE®**  
KENWOOD DIGITAL SYSTEMS

Case Studies

## NEXEDGE® Digital Communications System for the National Stadium in Poland

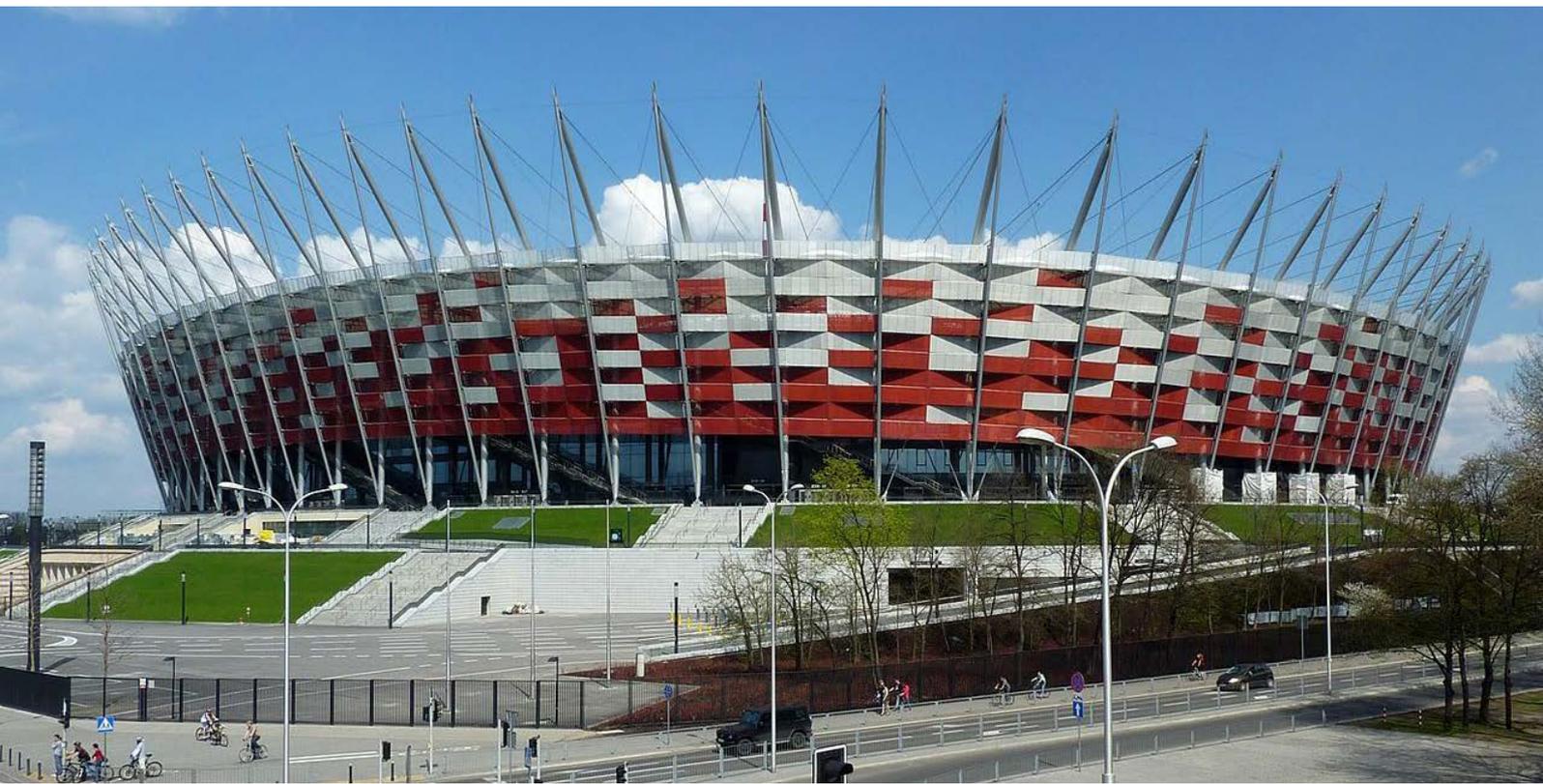




Photo: Mateusz Włodarczyk

## Managing safety and facilities at one of Europe's most modern and striking stadiums.



Photo: Piotr Drabik

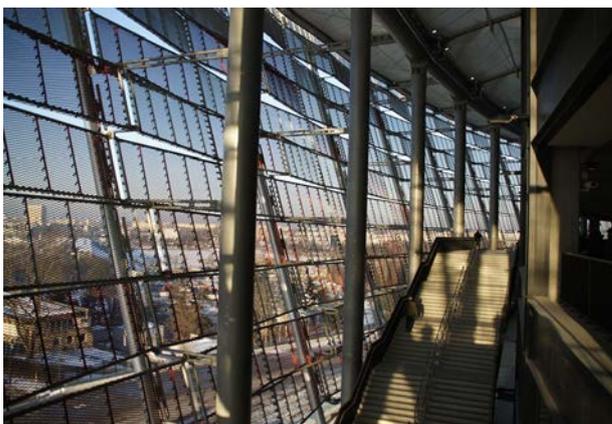


Photo: Mateusz Włodarczyk

Situated across the Vistula River from the meticulously rebuilt and beautiful Old Town in Warsaw is the stunning Stadion Narodowy, the national stadium for Poland: the most popular place in the country, the biggest multifunctional arena.

The Stadium was designed by the German-Polish consortium of Gerkan, Marg and Partners, J.S.K Architekci Sp.z.o.o. and Schlaich Bergermann und Partner and constructed by the German-Austrian-Polish consortium led by Alpine Bau and comprising Alpine Bau Deutschland, Alpine Construction Poland, PBG SA and Hydrobudowa Poland SA.

It has a total volume (without roof) of more than 1,000,000m<sup>3</sup> and a total area of 204,000m<sup>2</sup> which with its seating capacity of 58,145 makes it the largest sport, music, entertainment and culture arena in Poland.

The Stadium was completed on 19th January 2012 to perform its duties as a principal venue for the UEFA EURO 2012 and will host the 2014–15 UEFA Europa League final.



Photo: Tadeusz Rudski



Photo: Przemyslaw Jahr

One of the most outstanding features of the stadium is its translucent retractable roof housed in a 'nest' suspended 100m above the centre of the pitch. Made from a Teflon coated fiberglass membrane resistant to rain and heat, it can withstand a loading of up to 18 cm of wet snow.

The total weight of the steel-cables supporting the roof structure is 1,200 tons and the 'nest' features four LED display screens, each with an area over 50m<sup>2</sup>.

### More than just a stadium

Today, along with proving a home to the Poland national football team, the Stadium is also a multi-sports and leisure venue staging a variety of music concerts and major events including playing host to Coldplay, Madonna, the Orange Warsaw Festival. In addition, it incorporates the largest conference center in Warsaw, commercial office space, restaurants, a pub, sixty nine luxury 'skyboxes' and an underground car park and attracts some 1000 to 3000 visitors every day as a tourist attraction even when there is no event being staged.

## With up to 59,500 people attending sell-out events, a totally reliable communications system is critical to public safety.

PL.2012+ is the operator of the Stadium and on a recent visit to Warsaw, we met with Michał Błażewicz, the company's IT & Communications Director to learn more about their Kenwood NEXEDGE® digital two-way radio system.

Michał is no stranger to the world of communications having spent 8 years with T-Mobile and 4 years with the team planning IT & communications around Euro 2012. He comments: "Stadion Narodowy is the largest enclosed venue in Poland and with up to 59,500 people attending a sell-out event, it's vital that our safety, security and event management teams can communicate with each other and in groups instantly, anywhere on site - whether that's four levels underground or eight levels up". The selection of the radio system followed a tender process where three competing systems - NEXEDGE NXDN, TETRA and DMR - were tested for three, two-week periods.

The test results showed that the NEXEDGE® was able to provide the coverage, clarity and flexibility to deliver the performance required. Michał continues: "The previous system, installed when the Stadium first opened didn't provide the quality we needed, so the decision was made that we must purchase a future-proofed and flexible communications platform. This was especially important as the Stadium not only stages events on site, but also around the Stadium, for example, the Warsaw Marathon which starts outside and finishes on the Stadium pitch".



A condition of the tender was that the new system had to be operational by 27th December 2012 ready for a full schedule of events in 2013. The testing schedule lasted into the winter months with trials taking place in temperatures of -20°C.

Jacek Łapszo, Managing Director of Elektrit Sp. z o.o., Kenwood's distributor for its communications equipment and solutions in Poland picks up the story: "Having designed and installed a number of large systems with NEXEDGE® we had no doubts about its capability to exceed the client's requirements, and while we were delighted to have won the tender for such a high profile and prestigious site, we knew the building itself would pose a few challenges, not least achieving 100% effective coverage four levels below ground". He continued: "It's a great responsibility knowing the radio system would have to perform when the Stadium is hosting close to 60,000 spectators, event participants, VIPs and their vehicles, in ensuring the safe entry and exit from the site and providing the core communications capability to allow the event to run smoothly and efficiently, linking all the departments involved, from security to safety, medics, caterers, management and so on - and have the capacity to cope should an incident occur".

The system features one main antenna on the roof feeding through a duplexer and couplers to 17 more antennas within the building placed at different levels. The system itself is configured as a 6 channel trunked NEXEDGE® digital network with a control channel and five operational channels, linked by Kenwood's KAS-10 dispatch and logging software and monitored by a TRX voice recorder all housed in the purpose-built, temperature controlled communications room.



The main control and operations center where all event related dispatch communications originates from looks like the bridge of the Starship Enterprise with its commanding view over the Stadium and banks of high technology equipment.



Mateusz Dąbrowski, one of Michael's team of ten IT and Communications Specialists reports: "We currently have 220 NEXEDGE® NX-320E hand-portables and a couple of mobile radios, both used as base stations and of course the NEXEDGE® repeaters. On a big event, for example a concert, we could have up to twenty five user groups on the NEXEDGE® system, and while we have some core groups, the others are configured by us for each event, so it was important that this could be carried out quickly and easily. The training given by Elektrit and their on call support has proved invaluable".

Michał Błażewicz concludes:



**"With the Stadium acting as the venue for the forthcoming Cop 19 United Nations Climate Change Conference, the system will provide the backbone not only of the Stadium team's communications but also the hub for state and local security services and those of the visiting dignitaries and participating VIPs. The Kenwood NEXEDGE® system does everything we ask of it and I'm more than satisfied that it can accommodate our needs into the future as demand grows for the Stadion Narodowy as a world class venue".**



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