# Game, Set, Match

with Nico Lewis
& Jon Ridel



Sports events such as the Super Bowl, the Winter Games in Sochi and the Wimbledon Championships are among the most prestigious jobs for broadcast companies. The larger the event, the more viewers it reaches – and consequentially, the more complicated and important the communication system becomes. Without communications any sports coverage will grind to a halt. A reliable, non-blocking, high performance system is therefore essential when planning the broadcast of a sport event. To understand the communication challenges faced by broadcast companies during sport events, we had a look at three esteemed events and examined how intercom solution designers and manufacturer RTS rise to the occasion.

## Wimbledon

When it comes to broadcast, communication is everything. Heads of production need to be able to speak with their crew, directors with their cameramen, OB trucks with their head offices. "In broadcasting, nothing can happen unless everyone can talk and communicate with each other", explains Nico Lewis, Senior Sales Manager RTS Intercoms. A case in point is the annual broadcast of the Wimbledon Championships. For years, NEP Visions has provided the faculties for regular client ESPN. 2014 however will see a novelty with NEP Visions supplying the faculties for the host and domestic coverage of BBC. "Even though you can never

be content with compromise on any production, Wimbledon is especially exacting. Everyone involved – not just the players, but the broadcasters, technicians and service personnel – are stretched to their utmost", says Paul Fournier, Head of Sound at NEP Visions. For years, NEP Visions has therefore relied on equipment from RTS to secure communications.

Broadcast companies such as NEP Visions place high expectations in the intercom systems they use. "The broadcast market needs state-of-the-art, robust and reliable digital technology that gives the right return on investment, a guarantee that it works non-blocking 24/7, is easy and intuitive to operate and industry standard", says Nico Lewis, Senior Sales Manager RTS Intercoms. "Integration with other systems such as commentator systems, audio desks, telephone, IP, virtual and integrated wireless are also trends we are experiencing."

Key for Lewis' colleague Jon Ridel, Sales Manager UK & Ireland, is the reliability of an intercom system: "It is our responsibility to provide reliable solutions that will give mission critical infrastructures for the users on a long-term basis that can be relied on." RTS therefore delivers fully redundant matrix systems and offers the possibility to connect systems redundant over IP, copper or fibreglass cables. However third-party elements can still influence the system. "Our control is therefore managed from

the digital matrix", explains Lewis. "If the computer system stops, the RTS intercom continues none blocking. A multi-use of computers to eliminate this is also possible. The new ADAM technology for example offers full redundant master controller, redundant digital multi channel MADI, OMNEO via TCPIP with RSTP redundant protocol. Over Ethernet, RTS can trunk up to 255 systems fully redundantly."

A communication system's flexibility is just as indispensable when it comes to broadcasting sports events. Changes to the configuration of the system or its possible extension need to be kept in mind. Through the modular set-up of its systems, RTS allows for alterations of its intercom solutions on the fly: "Our systems allow for very easy expansion of further ports

or keypanels", says Jon Ridel. "Our analogue cards provide both audio 4 wire and keypanel connectivity, our software provides useful and time-saving tools such as copy and paste as well as find and replace. By allowing software pre-configuration beforehand, once a new keypanel is added to a live system, it will work instantly." Implementing RTS software provides users complete control over intercom systems from any standard Windows computer. Users can configure keypanel settings, assign user rights and even link matrices together without needing to reset the matrix system. At the same time, individual users can configure their keypanel settings remotely. Via the matrix, altered keypanel settings are sent to the computer directly, ensuring that the set-up visible on the computer screen is always up to date. Jon Ridel: "Using OMNEO enabled keypanels, standard network devices and cables can be used, ensuring that the customer does not need to provide dedicated cables to areas for additional keypanels."

In April 2013, RTS introduced its first OMNEO-compatible intercom matrix products. The new RTS ADAM OMNEO interface cards transform the RTS ADAM intercom system into a flexible, IP-based intercom network. OMNEO media networking architecture goes beyond traditional AVB solutions by incorporating both industry standard Open Control Architecture (OCA) control, as well as IP-based programme transport using Audinate's Dante, ensuring future interconnectivity with a growing number of devices.

RTS ADAM OMNEO products open the door to deploy ADAM intercom systems over any standard IP-based network. Most importantly, with OMNEO users are not "locked in" to other vendors' proprietary backbone infrastructure. This makes RTS the leading IP open network solution for professional production intercoms. With RTS + OMNEO, such essential tasks as deploying intercom user stations, linking via trunking and interfacing to third party devices is now easier and more flexible. The addition of RTS ADAM OMNEO cards to any compatible RTS ADAM system means even existing installations can be networked over standard IP hardware with high quality, ultra-low-latency audio.

"In sport broadcasts mostly use large multi-camera systems installed in OB trucks. For the production companies, it is important that the build-up goes fast and easy to save time and therefore keep the cost down. Additionally, OMNEO systems enable better quality due to its extremely low latency", says Nico Lewis. "Users can utilise OMNEO over existing LAN, in many cases this is already provided. If not, it is easy to set up."

## Super Bowl

This year's Super Bowl was the first large-scale remote broadcast event to utilize an intercom system incorporating OMNEO. The primary provider of mobile production facilities was Game Creek Video of Hudson, New Hampshire, which had four trucks working for Fox at MetLife Stadium as well as a further truck at Times Square in New York City.

The hub of the Super Bowl communications system was the Comms Cabin at MetLife Stadium, where one full-size ADAM and one mid-size ADAM-M were merged into a single system using a TBX-Tribus fibre card. The ADAM frames were loaded with OMNEO, RVON, and MADI cards, from which connections were made to ADAM frames in the local trucks as well as to a huge array of keypanels in and around the stadium, such as the executive viewing area, green rooms, and edit/operations areas. Fox LA was connected via both RVON and TIF, and RVON was used at Times Square for local connections within the set and to/from the facilities at the Millennial Hotel where temporary editing rooms were established. In all the system included 680 end-points.

The 64 paths of trunking that linked the two production compounds together were handled exclusively by OMNEO, with RVON backup in place but not needed. "The connection from our MetLife and Times Square OMNEO networks to the fibre access point was copper Ethernet," Mike Gilman, CTO of Gilman Technologies, says. "The connectivity company took those feeds and multiplexed them into

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the communications portion of the fibre bridge between the sites. The result was that we had less than 1.6 milliseconds of delay over a 17-mile link. Within the MetLife compound itself we used the fibre connections available on the OMNEO cards which can theoretically achieve latencies as low as 0.15 milliseconds." "The quality was excellent and the latency was very low," Jason Taubman, Game Creek's VP of design and new technology, agrees. "For the users it was just like everyone was on one central intercom, right there in the same building. So by taking on the lead role for the connection across the river OMNEO came in and kind of saved the day."

"We have a legacy investment in RTS gear, it works well, and it's well understood by all of our clients," Taubman says. "And then we have situations like the Super Bowl, where something comes up that requires us to think outside the box, and we are able to do it with new technology that is still completely compatible with our existing system. We have a lot of tricks that we can pull from within the RTS product line, and OMNEO represents the latest cutting edge example of that. It really was the thing that enabled success on this particular project."

According to Lewis, clients choose RTS for a number of reasons. "RTS has been a world leader in the intercom business for many years. The combination of having the largest install base worldwide and being part of a large multinational company like Bosch is important for prestigious broadcast companies such as our long-term customer NBC", says Lewis, "because companies of this size need

### Nico Lewis, SENIOR SALES MANAGER RTS INTERCOMS, ON THE WINTER GAMES IN SOCHI

**RTS was a key player during the Winter Games in Sochi: What was your involvement?**

There were a number of facilities at the Winter Games that used RTS intercoms. These included the Arena Fischt where the opening and closing ceremonies of both the Olympic and Paralympics Games took place, the Iceberg, Adler and Ice Cube Arenas as well as two training centres.

Additionally, the International Broadcast Centre (IBC) in Sochi was managed by OBS, the Olympic Broadcasting Systems, who used a multi-frame with TBX redundant fibre connection and full RVON IP infrastructure. Other international companies and OB trucks were connected with the IBC through 4 wire. Additionally, NBC used the latest RTS RP1000 high-res display keypanels.

**What was the configuration?**

The systems were based on the RTS digital matrix technology and classic RTS keypanels. Depending on the distance between the users, we used embedded fibre technology to overcome long distances. The connection

between the facilities and the IBC was based on 4 wire.

**Was there a test phase?**

The companies that did the installation always had to agree on a final end test before handing over the systems. Because the RTS intercom systems are easy to setup and control, we did not have to support the final test phase. It was setup, test – and the system worked. That simple!

**Did the systems have to be compatible with other systems? If so, how was this achieved?**

We managed to integrate some systems intelligently with other third party systems, but the majority of the systems were using 4 wires to bring intercom in and out between individual broadcasters and the IBC.

**What feedback did you receive?**

We received many happy and positive reactions on Facebook and Twitter from operators and engineers on the spot. Additionally, we received great feedback from the IBC that these games were again a great success thanks to good and reliable intercom.

to relay in a trustworthy technology partner for a long time period. Additionally, all our products are backward-compatible, which means that our users' investment is protected as our latest developments can be implemented through updates."

New technologies such as OMNEO will have a vast effect on broadcasting, Jon Ridel predicts: "It will mean more operators in remote areas can have intelligent communication via a keypanel because standard network devices and cabling can be used whereas in the past this may have been a problem due to running extra specialist cabling. OMNEO allows for a network connection to be provided to

a remote area, and then subsequent keypanels can be daisy-chained from each other to provide up to a total of 20 in an area without the need for running 20 individual cables back to the matrix. The other network connections can be used to connect third party network devices such as laptops in remote areas to configure the system with the software, which previously would have been a challenge for our customers." "The future looks bright with OMNEO", agrees Nico Lewis. "With this new technology, RTS will win the hearts of the existing RTS users and the newcomers in this world because it is the future of digital intercom."