RIEDEL

REMOTE OPERATIONS CENTER ROC

REMOTELY MANAGED SERVICES

REMOTE OPERATIONS CENTER

In response to the mounting technical challenges of today's sporting and entertainment events, Riedel Communications has created a powerful, one-of-a-kind communications and signal transmission hub: the Riedel Remote Operations Center (ROC).

The ROC was initially created through a partnership with the DFL Deutsche Fußball Liga (DFL), who needed a reliable infrastructure for German Bundesliga referee communications. Today, Riedel's ROC services are available to any large event or production with a requirement for professionally managed communications and remote monitoring based on the industry's most advanced intercom and signal transmission technologies. Riedel's ROC facility in Wuppertal is a communications hub that enables remote monitoring of multiple channels of video, audio, telemetry and other data, and even remote control of systems and networks. Staffed 24/7 by a knowledgeable team, and equipped with 12 workspaces boasting the latest Riedel gear, the ROC gives the flexibility to address multiple applications and to adapt quickly — even instantly — to the end user's changing needs.

SUSTAINABLE AND SCALEABLE SERVICE

The benefits are obvious: ROC means efficiency, reliability, flexibility and sustainability. Its advanced remote workflows eliminate the need for extensive travel by technicians and engineers, reducing hospitality and transportation costs — as well as the user's carbon footprint — while enabling implementation of appropriate distancing protocols. Centralized proactive monitoring and control with custom-engineered intercom technologies ensures that systems are ready to go as the match or show kicks off, and lets end users enjoy flexible, crystal clear communications wherever they are.
And with our fit for purpose operation modes, we take cost efficiency even to a higher level: From software supported automated monitoring services with standby technicians and pre-defined reaction times to seamless 24/7 remote operation services – we scale our service to fit your production requirements.

THE RIEDEL GROUP NETWORK

A CLOSER LOOK INTO THE ROC

System components within the ROC include scalable, networked solutions for reliable communications and media signal distribution and processing, all tightly integrated to ensure reliability, efficiency, and security. In addition to the main 12 screen configurable video wall with up to 9 PiPs per screen, each of the 12 workspaces is equipped with 5 screens, 3 SmartPanels and 3 intercom panels. The large ROC network has more than 10.000 available audio & video ports available for any production requirement.

AVAILABILITY, SECURITY, RELIABILITY

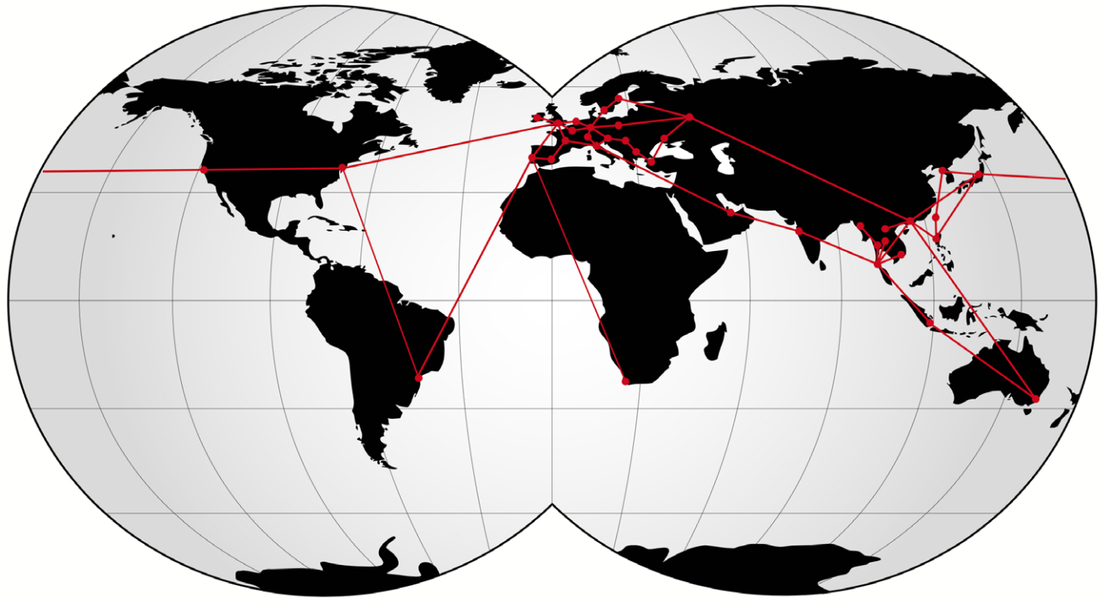
As an alliance of experts in communications, IT, broadcast production, network services and more, the Riedel Group is uniquely equipped to drive today's remote workflows with unified turnkey solutions. All our remote solutions can build on a high band backbone network (10G and more) powered by Riedel Networks, a global network service provider with more than 40 PoPs worldwide. Your ROC production won't have to rely on vulnerable clouds, with every single connection being hosted by Riedel's Tier 3 Data Center in Wuppertal for a maximum of data security. And because every component is designed with full redundancy, the ROC is well-prepared for any potential system failures. Generator backup ensures that equipment at the ROC can operate independently of the power grid, in turn enabling continuous monitoring even in the case of a major power outage.

NETWORK SERVICES

Embedded in Riedel's high-performance network, the redundant PoP in Wuppertal can deliver high bandwidths to closed networks and public internet, allowing both high-speed direct connections and flexible VPN solutions: A standard internet connection is all that is required to securely connect to the ROC via highly flexible, fast and cost-effective **VPN tunnels** and **SD WAN** solutions. If a project requires a particularly fast, secure and high-bandwidth premium connection, **direct networks** are the way to go. Here, the Riedel Group can leverage exceptional synergies with a backbone with more than 300 network partners, including links to media houses or other worldwide networks. And all this is possible not only for permanent installations, but also for temporary setups. And if your production is at a remote location lacking the infrastructure, our last mile data services got you covered.

RiLINK GLOBAL NETWORK

Riedel Networks is a global network services provider, specialized in tailor-made networks for the media and events sector. Its carrier-grade SDN backbone with more than 40 points of presence and over 300 local network partners in more than 80 countries enables the Riedel Group to deliver globally networked services



LIVE SPORTS

THE 36TH AMERICA'S CUP
REMOTE INTERCOM / VIDEO / DATA
SUPPORT, MONITORING & CONTROL

The battle for America's Cup, the oldest international sporting trophy, pits the world's most renowned yacht clubs against each other in a series of thrilling races. For the 36th America's Cup, Riedel delivered innovative camera solutions, new audio technologies, and sensor technology embedded in a comprehensive technical infrastructure as part of the joint venture circle-o.

An on-site team of 30 members managed all audio, video, communications, tracking, and data transmission systems, including signals from on-board cameras, chase boats, and helicopters. Here, the ROC served as a monitoring and engineering hub, providing remote access to the entire system setup. This way, the ROC team supported the on-site crew in optimizing the performance of the customized Riedel solutions and monitored and controlled essential parameters of the equipment aboard the racing yachts. These parameters included camera control, audio setup, GPS data transmission and battery management.

The advanced distributed ROC workflows turned the time offset between Germany and New Zealand to an advantage, enabling operators to perform maintenance, reconfiguration and adjustments to the systems from Wuppertal between race days. Now this is what we call remote engineering.

BUNDESLIGA

GERMAN FOOTBALL LEAGUE (DFL)
REMOTE INTERCOM SUPPORT, MONITORING & CONTROL

The DFL is one of the world's largest sports organizations, and its Bundesliga leagues rank among the highest-revenue-generating football clubs in the world. In 2018, the DFL partnered with Riedel to take its referee communications to the next level with a remotely controlled and monitored comms infrastructure to interconnect Bundesliga referees, their assistants on the sidelines, and the DFL's video assist center (VAC) in Cologne. Today, Riedel's ROC supports all 1st and 2nd Bundesliga games, as well as the DFB Cup, racking up a total of 57.500 minutes in game time per season!

In each of the 36 Bundesliga stadiums, three Bolero antennas provide full coverage on and beside the pitch, inside the referee locker rooms, and in the players' tunnels. Their signals converge into a Riedel Artist-32 intercom matrix, which then connects to the VAC in Cologne and to the ROC in Wuppertal via WAN VoIP. On match days, the operators in the ROC make a range of adjustments to achieve the best possible sound quality. By filtering unwanted noise (crowds, engines, etc.) from the signals and by accommodating the varying volumes of speakers' voices, intercom technicians can create the perfect audio mix in real time.

AROUND THE WORLD IN 80 MILLISECONDS
REMOTE SIGNAL MANAGEMENT, MONITORING & CONTROL

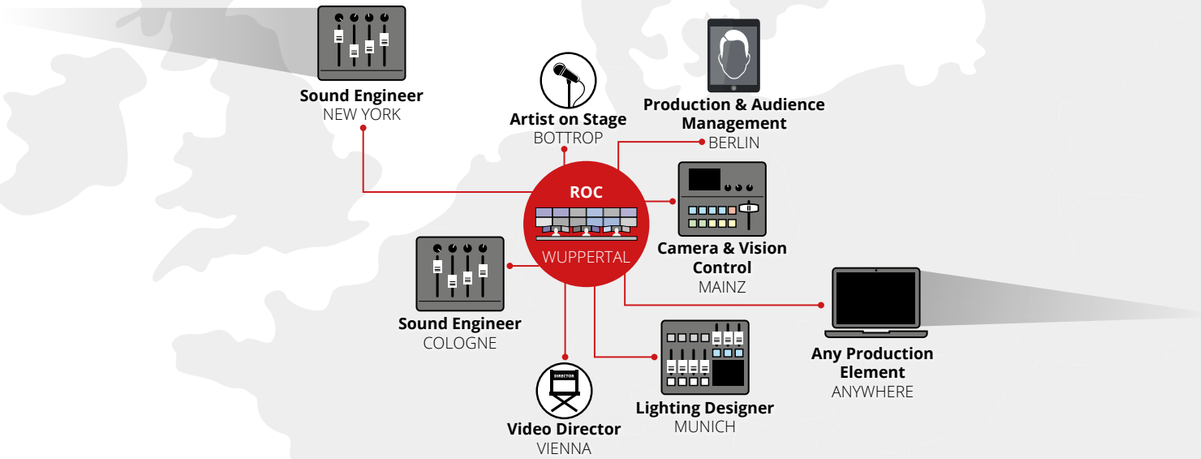
Riedel's ROC in Wuppertal was instrumental in the first-ever fully decentralized production of a live, global music event: "Around the World in 80 Milliseconds". The collaboration with Remote Recording Network (RRN) and 15 other partners brought together teams working remotely across four countries and three continents, and demonstrated the ability of all technical disciplines involved to remotely control an entire show.

The on-site production team in Bottrop worked with a minimal cast, with the director working remotely and in real time from Vienna, the lighting designer from Munich, and the lighting operator from Frankfurt. FOH and broadcast sound was mixed in Cologne, and the parallel sound recording was controlled in 5.1.4 from Valhalla Studios in New York. The TV Skyline Skycenter in Mainz acted as a hub for camera control, image mixing, and stream delivery.

The technological heart of the production was the Riedel ROC, the communications and signal control center through which all remote production connections converged. From the Riedel HQ in Wuppertal, the ROC team managed, programmed, and monitored all signals, streams and feeds. Vision mixers, audio and lighting consoles were all mirrored for remote equipment control, so whenever an operator moved faders from their remote office, the action was mimicked by the equipment in Bottrop. But some remote hands also required remote eyes, so the ROC not only handled equipment control, intercom, and audio signals, but also several video streams: The lighting operator in Frankfurt, for example, could rely on two CCTV PTZ cameras to oversee his work in Bottrop in real time.

ALL ROADS LEAD TO ROC – THE NETWORK

Even a complex remote production like this does not necessarily require a dedicated direct connection.
„Around the World in 80 Milliseconds" relied on secure VPN tunnels for the flexibility to connect any production element, anywhere, and at any time.



24/7 INTERCOM & IT SUPPORT

REMOTE SUPPORT FOR MOTORSPORTS

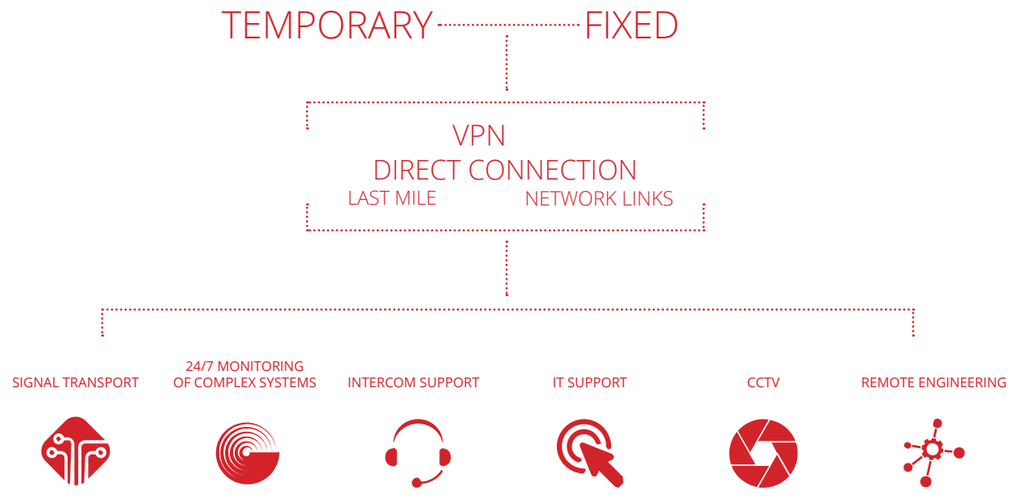
Fixed Installations: 24/7 Intercom & IT Support for 24 Hours Nürburgring
Our 24/7 intercom support enables powerful efficiencies for 24 Hours Nürburgring touring car races. Thanks to our fixed backbone installation at the Nürburgring race course, we can easily control the pitlane, paddock, and race car communication from the ROC. Remote intercom operators can perform programming & support to reduce the workload of colleagues on site, and help maintain a three-shift rotation from the Wuppertal. Event organizers can leverage powerful synergies, as the backbone network can also be used for links to other sites and broadcast centers, and save time, nerves, travel and accommodation costs. It really doesn't matter where your race is taking place; the Riedel Group can supply a customized backbone for direct connections.

Temporary Installations: 24/7 Intercom & IT Support for Formula 1
Extraordinary flexibility is required for global racing series with race tracks spread across the globe. That's why for Formula 1, ROC support runs over temporary, bundled services on a redundant connection. Here, the Remote Operations Center is part of an overall network that also includes the end customer's locations. This allows ROC operators to control and monitor both the systems at the race track and those at the customer's facilities. And we are not just talking comms here; IT specialists can remotely dial into the trackside IT infrastructure to get acess to all switches, and firewalls to proactively monitor traffic, bandwidth and server workload and provide immediate support. These advanced remote monitoring and control workflows help get the most out of any Riedel system.

„THE RIEDEL TEAM MAY NOT BE THE ONLY ONE TO OFFER SERVICES FOR TODAY'S REMOTE PRODUCTIONS. BUT THEY'RE THE ONLY ONE THAT CAN OFFER TRUE TURNKEY SOLUTIONS, AS THEY CONTROL THE ENTIRE PRODUCTION CHAIN: THEY GOT BACKBONE NETWORKS, 360 DEGREE EXPERTISE IN VIDEO, AUDIO, AND IT INFRASTRUCTURES – ALL COUPLED WITH ROC-SOLID ADVANCED REMOTE SUPPORT."

WERNER EKSLER, MANAGING DIRECTOR, CIRCLE-O

RIEDEL GROUP BACKBONE



For your inquiry and more information, please contact our sales team at sales@riedel.net // + 49 (0) 202 292 - 90

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