



The solution of choice at Swiss Television | **opticam**SWITCH



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**NEUTRIK®**

## Neutrik opticamSWITCH is the solution of choice at Swiss Television

### Latest fiber optic technology in use at the Swiss National Council elections 2011

An investment in expensive HD and 3D equipment can be optimized by dint of a well-conceived, flexible system architecture, paired with a fiber optic camera switch solution.

Swiss Television carefully considered how best to deploy its existing HD and 3D equipment within an expansion of its studio infrastructure. tpc ag (technology and production center, Switzerland ag) – an independent subsidiary of SRG SSR – considered various new ideas and opted for a future-proof concept. Neutrik's opticamSWITCH flexibly connects tpc ag's existing cameras and control rooms to one other. Furthermore, as they come online, two planned new control rooms and studios will be easily integrated into the system.

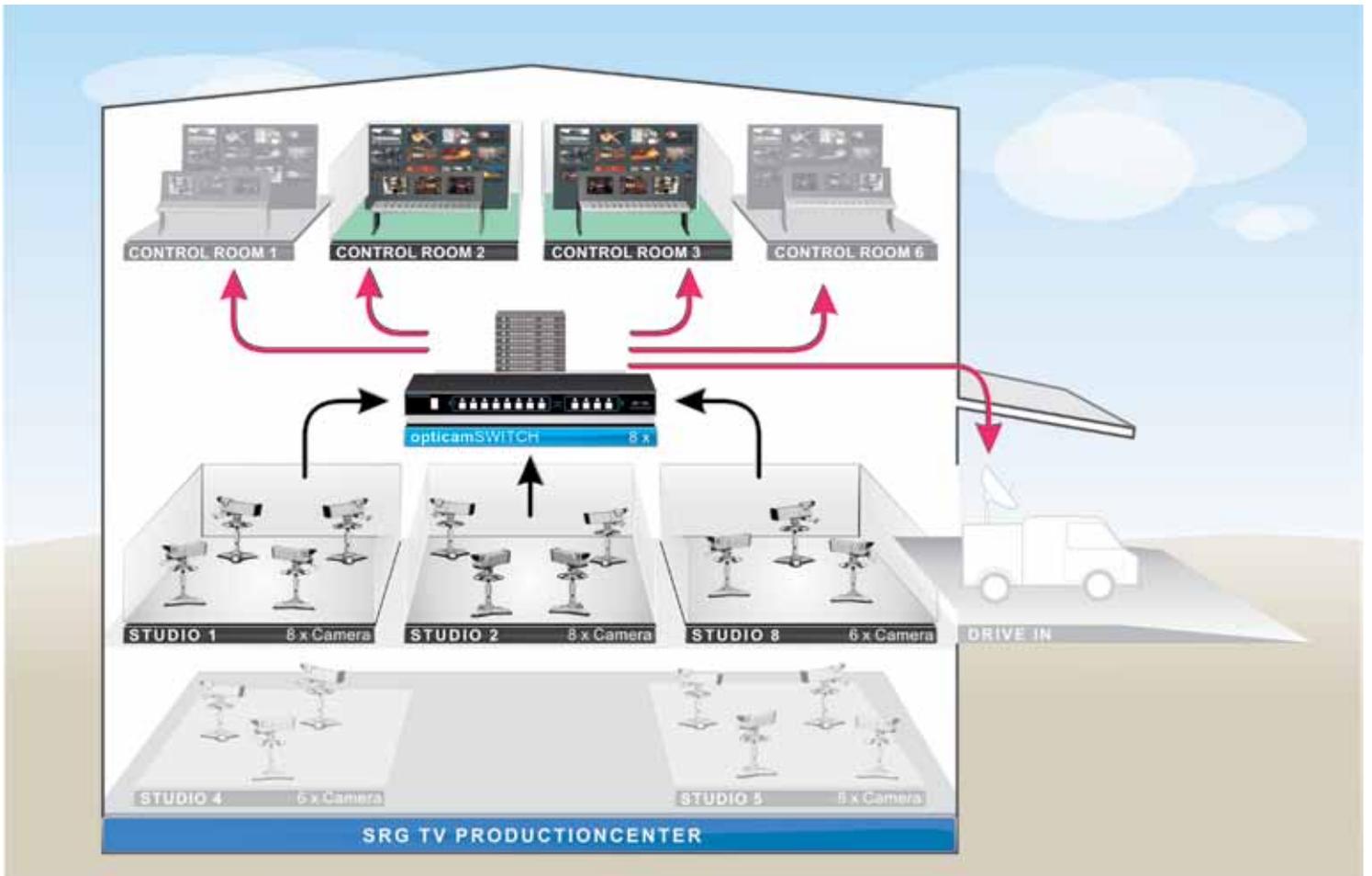
Since opticamSWITCH is a fiber optic camera switching system, mechanical wear, costly maintenance, and possible mechanical failure are eliminated, resulting in a robust, reliable solution. Integration into existing control systems, with control via software, enables automation and allows for real-time control over complex wiring structures. This increase in efficiency – with significant reduction of potential errors – led tpc to employ the opticamSWITCH concept in its "BigSwitch" project. After some trial and smaller productions, the system was put into use on a grand scale at the live production "Decision 11 – Swiss National Council elections."



The Swiss Parliament, also called the Federal Assembly, is the supreme legislative authority at the federal level. Since 1848 the Federal Assembly has consisted of two mutually equivalent chambers: the National Council, consisting of 200 delegates of the people, and the Senate, which includes 46 delegates of the cantons. Every four years, the Swiss people elect the parliament. On October 23, 2011 it happened again. The media's reporting on Swiss television was realized by tpc using Neutrik's latest fiber optic technology, opticamSWITCH.

## Products in use





## **Gerard Koch, project director video technology, tpc ag, delivers insight behind the scenes of the production for the Swiss National Council elections 2011.**

### **How many cameras were used at the national election?**

There were eight Sony HDC 1400R cameras for SRF (Swiss Radio and Television) in use, which all ran over the new Neutrik opticamSWITCH; for TSR (Télévision Suisse Romande) and RSI (Radiotelevisione Svizzera) another 3 pieces each, but those went directly into the OB.

### **How many people were involved in the production?**

From tpc alone there were 120 technicians working in the studio in Zurich. Then there was the SRF program. In whole Switzerland there were about 870 radio and TV people working for the elections 2011.

### **How many hours of live reporting were there?**

The live coverage was 12 hours.

### **How many studios and control rooms were used?**

Studio 1, with an area of 1,000 m<sup>2</sup>, was converted into the election studio. 10 tons of material were used for that. In the smaller Studio 2, all of the radio stations were quartered. Several other rooms were available for the print media. 26 remote outposts were coordinated for control room 2. The election in 2011 was produced from the main control room 2 with support from control room 3.

### **tpc ag is one of the technological leaders in Europe when it comes to the use of modern technology. When did tpc adopt fiber-optic technology?**

In 1995 tpc, at that time under SF DRS / PZ (production center), first used fiber optic cables with Cantus audio mixing consoles. Fiber was then boosted further in outdoor production. In 2002, the fiber-optic technology was further strengthened with test trials and used effectively for the World Ski Championships in St. Moritz 2003. In the studios, we introduced fiber optics about 8 years ago.

The HD conversion has led us to implement a great deal of fiber. In the project "BigSwitch," the production studios, including extra rooms, were additionally equipped with fiber connectors (about 1,200 positions). These connections paid off in the 2011 elections. Thus, special occasions require less effort and shorter set-up and change-over times.

### **How did you become aware of Neutrik? What convinced you to choose the opticalCON connection system as a standard in your infrastructure?**

We have had a very good, very cooperative relationship with Neutrik for a long time. Neutrik has always been open to the wishes of tpc and supported us. In 2008 we received the order from network T&I to unify the Swiss stadium cabling and connection systems. In the specification phase the tpc team, consisting of Bruno Keller, Peter Flückiger and me, defined the requirements for the fiber optic infrastructure. The idea of being even more efficient and not having to lay two fiber cables with DUO opticalCON connectors for the main and backup device (both have RX + TX) was discussed with Neutrik, and we specified together a 4-fold connector solution.

Neutrik's opticalCON QUAD system was the technically competent implementation and response to all of our requests. On December 11, 2008 these connectors were introduced nationally into our UES, and the application for standardization was handed in at T&I. Although the connector was not produced yet, we at tpc planned our studios and station to use it. Today, opticalCON QUAD systems are successfully in use with us.

### **What arguments have convinced you to use the new camera switch opticamSWITCH?**

I actually would have to go back a little further, but in short form:

In the project "BigSwitch" the basic idea of my work colleague Alfio Di Fazio and me was to plan the three new HD control rooms (including sports control room and DrivIn for RW) to be freely switchable to the five major production studios. Thus utilization, efficiency, and higher capacity utilization of the equipment would be guaranteed. When I started to plan all the cameras of the studios (ten cameras per studio) and control rooms with the existing method of mechanical "patching" of the cameras via a patch panel, it took us to a confusing dimension. It would have resulted in a patch panel of 50 x 50 camera positions. Immediately, I had concerns about large mechanical wear and thus high error rates, patch errors, contamination of the fiber, long distances to the patch panel, etc. These limitations are simply impossible in today's technological world. Therefore I gave thought to another solution.

Starting with simple drawings and calculations, an intense discussion started. My idea to patch via software, i.e. click with the mouse pointer on the camera in studio X and connect it to the particular control room (or rather be able to switch via BFE at a particular studio choice), was pretty demanding. At the same time, the talks with Neutrik regarding the opticalCON QUAD connector took place, and I explained the requirements and ideas to Neutrik's highly competent product manager Christian Ganahl. After some discussions with Neutrik's research and development department, I received a phone call with the positive message that Neutrik had already been working on a concept of a camera switch. After this encouraging message, I informed our project team "BigSwitch" that the innovative concept can be implemented soon.

During the installation of the "BigSwitch" project, everything was already prepared, making the installation of the planned camera-switch possible subsequently. After an intensive development phase, the opticamSWITCH was finally ready for use. As the tpc ag counts on modern, innovative technology, we were the first to use Neutrik's opticamSWITCH.



Gerard Koch (tpc ag)



Christian Ganahl (Neutrik AG)

**Was there not a risk to use this new device for the first time for such an important production like the national election?**

No, there was no risk to use the opticamSWITCH in the elections. Together with Neutrik, we performed several tests, in real environments with the associated cameras, in advance. In addition, we carried out, in advance, various smaller productions with the opticamSWITCH. For the “worst case” we would have been prepared with a manual patch solution using opticalCON couplers, which Neutrik generously made available to use. Thus, we were able to look forward calmly to the elections.

**Were the installation of the system and the test phase consuming?**

Since we still had productions ongoing, and the time frame was very small, the planning was somewhat more complex to win a little more time for the installation and to have a plan B in case of upcoming problems.

During installation, we were actively supported by Neutrik. The fiber optic cables to the studios had to be assembled on site. With the support of Neutrik, which brought the whole assembly infrastructure including assembly specialists to our studio, the cabling was, together with our tpc employee Martin Sturzenegger, connected to the opticamSWITCH in a very short time. Right after that, the first test took place. All studios and cameras were connected and switched in all combinations. Right away, the system ran without any major mistakes.

I must say, on the installation day, when the first major cables were cut, I felt a little uncomfortable. The pressure of the upcoming elections, with the possibility of problems and too short cables, weighed upon me. But this bad feeling disappeared very quickly. Christian Ganahl, product manager at Neutrik, had on his side, just as I did on mine, planned the preparations to the last detail. The work has gone quiet and very professional. The collaboration between the Neutrik and tpc ag was just perfect.



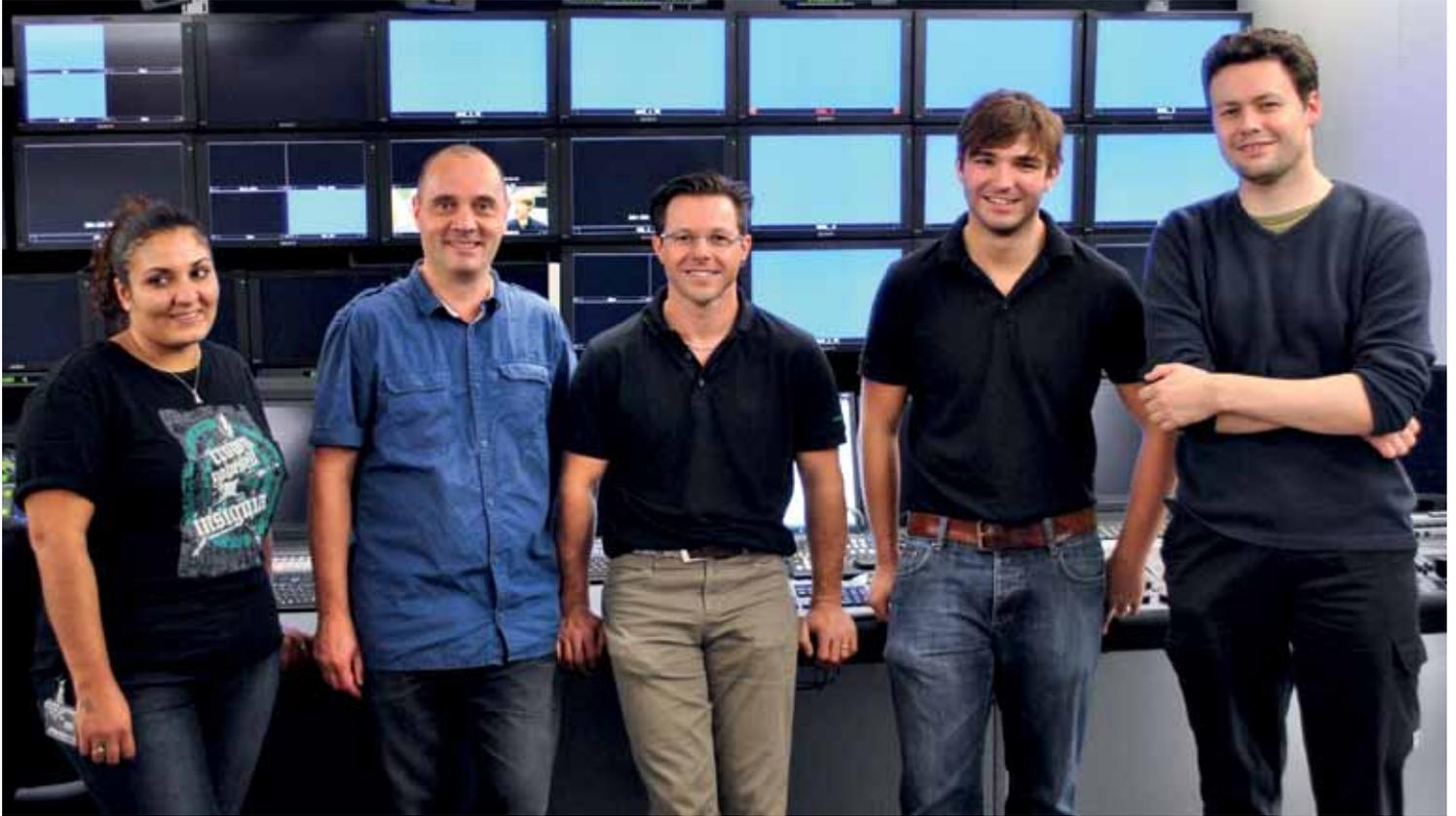
**tpc is a company of SRG SSR**

tpc is responsible for production and technology of television, radio and multimedia for SRF (Swiss Radio and Television) and implements broadcast solutions for its customers.

As a future-oriented technology company the 1,000 employees of tpc support SRG SSR in achieving the public service. Always ready for technological innovation and thanks to the cooperation with partners, the SRG SSR subsidiary tpc is the market leader in Switzerland for broadcast & beyond products.

Whether classic television in HD/SD, ICT, radio or online media – tpc develops and produces solutions and innovative services for domestic and foreign broadcast providers as well as for companies from industry, services and the public sector.





The project team: Kara Evrim (Neutrik AG), Gerard Koch (tpc ag), Christian Ganahl (Neutrik AG), Frank Studer (Neutrik AG), Bernhard Sager (tpc ag)



### Neutrik's opticamSWITCH

opticamSWITCH is the ultimate solution for fiber optic camera routing within broadcast studios. The device allows switching of unlimited camera positions between several studios and control rooms, eliminating the need for high-maintenance, risky matrix patch fields using SMPTE patch cables.

The camera switch works on trendsetting, silica-based PLC (planar lightwave circuits) equipped with TO (thermo-optic) switches. The innovative and patent-pending design guarantees rugged and safe non-blocking fiber plus camera power switching without any moving parts. The LAN-based remote control software simplifies work, shows switching and camera status, and enables broadcast production automation.

#### Features & Benefits

- Robust switching of unlimited camera positions between several studios and control rooms
- Non-blocking, PLC-based (planar lightwave circuits) fiber plus camera power routing
- Convenient handling with the up-to-date LAN-based, remote control software

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