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Report on the reconstruction of the main organ console from Nuremberg St. Lorenz Church (2012-2015)

The history

With the construction of the new organs in St. Lozenz at Nuremberg (Germany) in 2003, the original main console (built in 1937 by the Steinmeyer company) was also replaced by a new one. This console has been rescued by Dr. Sixtus Lampl and brought into the culture and organ center Valley (Germany) in 2007

Figure 1: company plate on the main console

Figure 2: The main console, already set up in Valley

One of the original organs in St. Lorenz, the Laurentius organ, which was newly built in 1962 after destruction in the 2nd World War, has been overhauled with the assistance of Dr. Sixtus Lampl and installed in the Church of St. Magnus at Marktoberdorf (Germany). Since then this instrument is reliably doing its service, played from its original console from Nuremberg.

Figure 4: The Lorenz organ in the church of St. Magnus in Marktoberdorf

Figure 5: The console of the Lorenz organ in Marktoberdorf

The idea

Since the imposing main console should not disappear in the depot of the organ center, but should be presented as a cultural and technology monument to the public, the following idea has been devised:

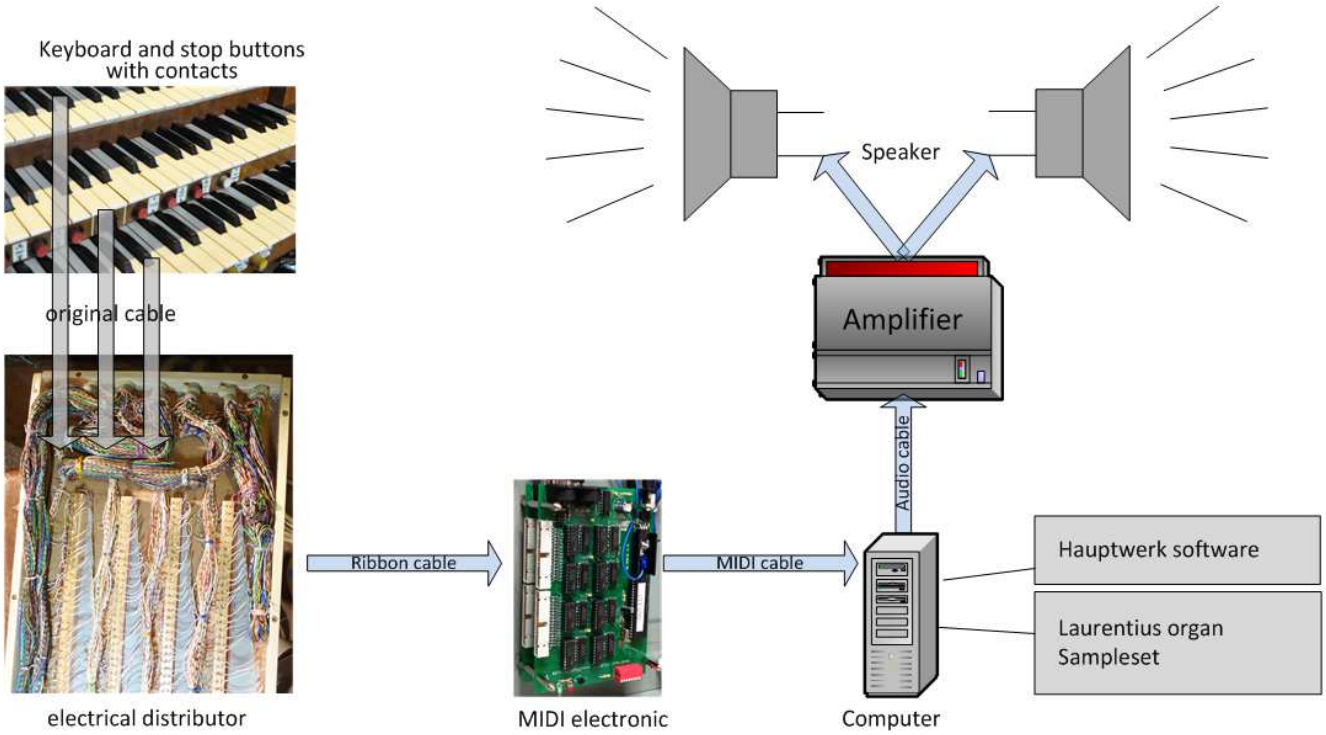
From the now silent second largest historic organ console of Germany an organ shall be playable again and music making shall again be possible.

The problem: The pipework which was formerly controlled by this console no longer exists or is now located in Marktoberdorf.

So the following idea was born: The Laurentius organ should be playable as a virtual pipe organ system from the historic main console.

In a project lasting more than 4 years this has now been achieved.

The implementation



Installation of a MIDI System

To connect a computer system to the console, this must first be equipped with MIDI technology. This technology makes it possible to electronically capture every move of a keyboard key or a stop and transmit this information to a computer. These signals control the virtual organ software on the computer to create the organ sound, which is then send to a speaker system.

The fact that the console in its original construction from 1937 was already equipped with electrical key and stop action was of great benefit to this project. The keyboards, the pedal, and many other items were therefore already equipped with electrical contacts. These contacts were of such good quality that no major repairs were needed. In 1978-1980 also the world's first electronic setter system was incorporated into the console. The original stop tabs were then replaced with touch buttons with signal lamps. This circumstance was also ideal for the installation of the new technology because the currently active tabs will be seen through the lighted touch buttons.

Unfortunately there was no electrical wiring diagram for the console. When dismantling the organ the connecting cable to the organ and the setter system had been cut. So contacts had to be identified from several hundred electrical wires by researching and measuring at the console. The clear and logical setup of the console by the Steinmeyer company was of great help in this process as well.

Figure 6: Left and right of the console, the thick connection cables can be seen.

These wires have now been connected via specially made electrical distribution boards to ribbon cables for connecting to the MIDI electronics.

Figure 7: Finished distribution.
The ribbon cable is facing towards the bottom.

Figure 8: One of the 3 electrical distribution boards with the cables from the console

After the ribbon cables were connected, the console was transferred from the depot into the Zollinger Hall, the large concert hall of the organ center.

The MIDI electronics, consisting of self-made as well as purchased components, has been installed in a separate metal housing, which later will be placed in the free space below the console.

The MIDI electronics is connected via two MIDI-cables to the computer.

The computer running the virtual pipe organ software is connected to the speaker system already installed in the hall.

With these steps the hardware setup of the project has been completed

Figure 9: Left side in black housing: the computer for the virtual organ system. In the center: the MIDI electronics in gray housing. Right: the console with the new connection cables.

The virtual Laurentius Organ

With the hardware being completed, two further project steps are necessary:

- On the one hand a sample set of the original Laurentius organ from Marktoberdorf is required,
- on the other hand the software "Hauptwerk", which will be used to load and play the virtual organ.

1. Creation of sample sets of Laurentius organ by Pipeloops

A sample set of a pipe organ requires individual recordings of each of the thousands of organ pipes. It is not difficult to imagine how much time and effort is required to produce such a set.
For this task we were able to get support from Dr. Reiner Suikat from Pipeloops, one of only three producers of hauptwerk sample sets in Germany. Mr. Suikat already has a lot of experience in the production of sample sets of pipe organs and agreed to produce the Laurentius organ for the project free of charge. In return, Pipeloops will market the sample set commercially, thus making it available to users worldwide.

At the same time the approval of the recordings could be obtained from the parish in Marktoberdorf.

In July 2015 the recordings were performed in the church of St. Magnus in Marktoberdorf. To prevent noise on the recordings, the recordings took place mainly at night.

After about 4 weeks of processing the samples a first version of the virtual organ became available for testing.

This first version allowed to make first tests in the concert hall, and also is the basis for careful checking of each individual sample to fix issues arising from the recordings or from the pipework itself (noises in the recordings, poor pipe speech, etc.) Here additional support was obtained from the organist Mr. Korbinian Maier.

Figure 10: Recording setup in the Church

This first version could already be played on the console in Valley. Thus the key question could be answered, how the virtual organ would sound in another room, the Zollinger Hall.

2. Procurement of Hauptwerk Software

The computer software "Hauptwerk" (from Milan Digital Audio LLC) is required to be able to play the virtual pipe organ. This software simulates a pipe organ with all its features, playing back each individual pipe sound as needed. The software is controlled via MIDI signals coming from the organ console, thereby making it possible to play the virtual organ exactly like the real thing.

The user license for public use of this software would have been a significant cost factor for the project. Fortunately, the manufacturers of the system (Milan Digital Audio in the US) could be interested in the project and they provided the license free of charge in September 2015.

The Premiere

On November, 15th 2015, the project will be presented to the public.

In a matinee at 11:00 the project will be presented from an art historical and technical point of view.

At 15:00 an organ concert with Prof. Hermann Harrassowitz takes place, the former organist at this console in St. Lorenz-Nuremberg. Of course he also plays at the other organs of Zollinger Hall.

From that date the console will be played during guided tours and in concerts and presented by the cultural and organ center in Valley.

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Mr. Korbinian Maier, Munich	www.korbinian-maier-orgelmusik.de

Gregor Dworzak
September 2015

Johannes Mehl hat mich erdacht,
Steinmeyer und Strebel hat mich gemacht,
Mein Kleid ist Bruder Miller's Werk.
Herr Gott in uns den Glauben stärk,
Dein Lehr halt rein, die Kirche treu!
Dein Lob ich singe täglich neu.
A.D. 1936

(Inscription on the southern end of the organ case of the 1936-1937 built main organ in St. Lorenz, Nuremberg)