University of Helsinki Electronic Music Studio – Founding and Early Development

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Abstract

The University of Helsinki Electronic Music Studio is one of the oldest studios of its kind in the Nordic countries and celebrated its fiftieth anniversary in 2012. This essay presents a short history of the studio, concentrating in particular on its first two decades of operation. From the beginning until the early 1970s, the studio was associated with the work of its designer Erkki Kurenniemi. Kurenniemi’s electronic musical instruments have been described in previous publications. The focus of this essay is on Kurenniemi’s studio design work. After Kurenniemi, the studio was maintained for several years by Jukka Ruohomäki.

Early Years

The electronic music studio at the University of Helsinki was founded in the early 1960s. The original idea to found the studio under the auspices of the Department of Musicology came from Professor Erik Tawaststjerna. He was convinced that, if the Department of Musicology was to keep up with the modern trends in music research, it should have an electronic music studio in its premises. Throughout its history the development of the studio has been self-supported by the Department of Musicology, hence the budget has been modest compared with the main studios in Europe.

The studio started off just with three Telefunken M24 reel-to-reel tape-recorders placed in the corner of the Department’s office. More effective planning and design started during the 1961–1962 semester, when Tawaststjerna asked Erkki Kurenniemi to build a “sound technical laboratory” for the Department. The Department provided funding for the equipment, but Kurenniemi worked without pay. In the annual reports of the University in the 1960s Kurenniemi is called a “voluntary assistant”.

The first decade of planning and development of the studio relied on Kurenniemi’s vision. At that time Kurenniemi (b. 1941) was an undergraduate student in the Department of Physics, which was financially in a better situation than the Department of Musicology and was equipped with an analogue computer. A radio-amateur from a young age and very interested in electronics, Kurenniemi
was eager to programme the computer. This early programming experience had a profound effect on Kurenniemi’s thoughts on the future of electronics – as he stated: “These experiences showed me that the future is digital” (Kurenniemi 2004). This also had a great influence on Kurenniemi’s studio and instrument design plans.

**Kurenniemi’s Studio Design Philosophy**

Kurenniemi never visited any of the leading European studios, such as WDR in Cologne or RTF in Paris. Neither did he follow the idea of voltage-controlled analogue circuits, although he was aware of Robert Moog’s ideas. On the contrary, he based his studio plans on a digital logic, influenced more by the example of the RCA synthesiser (see Olson 1967: 414–426) than by the common classic tape music studio. Also the electronic component catalogues played an important role in Kurenniemi’s instrument design. He liberally applied new components in his inventions for electronic musical instruments. Thus his studio and instrument design can be seen as studies for the application of new technological innovations. Kurenniemi’s vision has always been far ahead of what could be done with contemporary technology, and most of his studio design inventions were never realised as initially planned.

Between the early 1960s and the mid-1970s the studio was developed in three stages. In 1963, according to Salmenhaara (1963: 55), it was equipped with some oscillators (built from kits by Kurenniemi), a ring modulator, a spring reverb, a filter unit and a Studer C37 tape-recorder, in addition to the early Telefunken recorders. After building the basic studio facility with this conventional equipment, Kurenniemi began his ambitious studio plans. He envisioned a digitally controlled system, which would give the composer full control of all the studio equipment through a single interface. At this second stage (from 1964 on) the studio was built around the so-called “Integrated Synthesiser”, consisting of three units: a tone generator, a filter and a mixer. The most interesting unit of the Integrated Synthesiser was the tone generator, which consisted of both voltage-controlled and simple digital circuits, such as pulse width modulators and different sequencing modules. Using the tone generator, the composer could produce melodic sequences with its 10 × 10 point patch bay matrix. Kurenniemi also had plans to connect all the studio’s tape-recorders to the Integrated Synthesiser, enabling centralised control of parameters such as tape speed. The Integrated Synthesiser has not been in working condition for more than thirty years, so it is impossible to know how it really worked.