

The Strömberg of the Electrical Museum – part 2

In 1971, Lounais-Suomen Sähkösakeyhtiö began developing remote monitoring for its electricity network and hydroelectric power plants. The first decisions regarding the project had already been made in 1969, but because practically everything had to be built from scratch—including the radio connections between the facilities—the process was not a quick one.

The first major facility to be automated was the Askala power plant, following the retirement of its machine operator. Previously, a remote control system operating through a telephone cable connection had been used between the Juntola hydroelectric power plant and the Askala and Juva hydroelectric power plants.

A radio-based remote control connection between the Kustavi electricity substation and the Puotila regional office in Vehmaa was tested before the larger system was ordered. After the first phase of automation was completed in 1976, thirteen of the most important substations and three hydroelectric power plants were operated remotely from Paimio.

The Strömberg now spending its retirement at the museum served from 1975 until 1985. Although the machine was already considered partly outdated in the 1970s, it has since been praised as an advanced computer in terms of its architecture. However, the rapid arrival of cheaper, easier-to-use and more versatile computers was the final blow for the Strömberg-1000 and similar machines.

The Strömberg's software was stored on paper tape using punched-hole coding. Only a few updates were ever made to the machine. The computer had 60 megabytes of memory. By comparison, modern mobile phones may have 256 gigabytes or more of storage. The first game in the Assassin's Creed series requires 4 gigabytes of RAM.

The tasks of the Strömberg-1000 included monitoring the electricity network, producing energy and other reports, maintaining an operational log, and acting as a data communication link for certain devices. The power supply was backed up by batteries, as the operation of the system was particularly important when investigating electricity distribution failures. The machine consumed as much electricity as a couple of electrically heated detached houses and required tap water for cooling equivalent to the consumption of one hundred people. It could attract the operator's attention with light and sound signals whenever necessary.

In addition to the thirteen substations included in the first phase, remote operation was gradually expanded to smaller substations within a 70-kilometre radius. The device was an expensive investment for LSS. It paid for itself through the management of electrical faults, during the electricity strike of the late 1970s, and above all through the optimisation of power plant operations by limiting expensive peak loads.

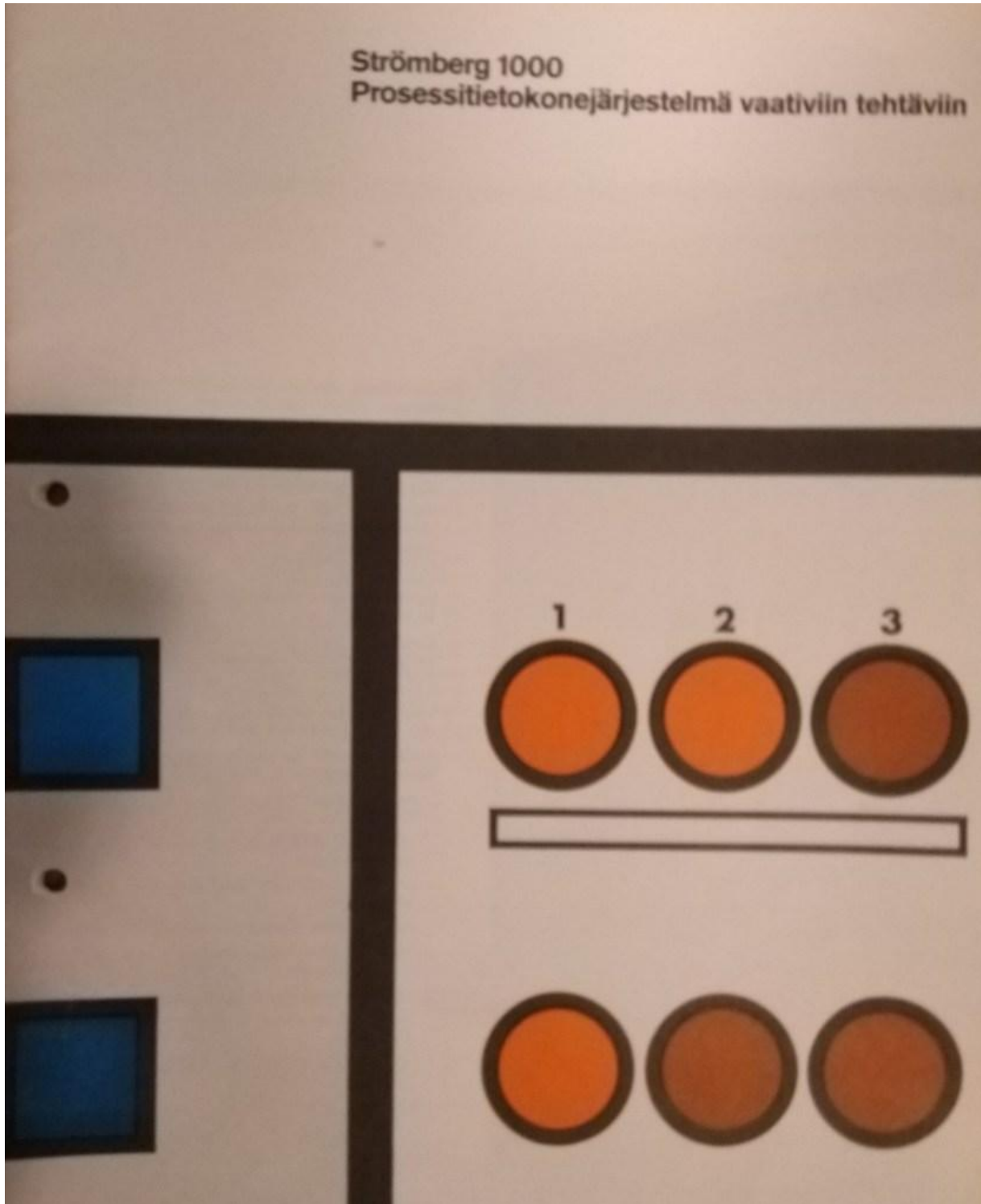
As an experiment, a game of noughts and crosses was programmed for a Strömberg at another location. However, playing it on this particular machine would have caused a major interruption in monitoring operations. Unlike modern computers, the Strömberg did not support multitasking. It was therefore not possible to secretly play games during working hours. Of course, nobody ever did such a thing anyway.

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Elsewhere, Strömberg computers were also used for experiments such as controlling robotic arms. So although the machine may look to modern eyes like a prop from a Star Wars film, it was a capable device in its own time.

Text: Jukka Salonen

The development history of the SELCO 1000 computer has also been presented in issue 3/2020 of *Skrolli* magazine in the article "Finnish Mass-Produced Computers", written by Tapani Joelsson.



Cover page of the Strömberg 1000 computer brochure