HPI Colloquium
15th December 2022, 5:00 pm (CET)

Lecture Hall L-E.03
Campus Griebnitzsee, 14482 Potsdam

"Reconstructing EDSAC"

Dr. Andrew Herbert OBE, FREng

ABSTRACT

Dr Andrew Herbert OBE, FREng will give a talk describing the history and importance of EDSAC, the world's first practical stored program electronic digital computer built at Cambridge University between 1947 and 1949, and the ongoing reconstruction of a fully working replica of EDSAC at the UK National Museum of Computing.

The original EDSAC computer operated for almost 10 years, starting from its first successful program run on 6th May 1949, at the Cambridge University Mathematical Laboratory. It was developed by a team led by Sir Maurice Wilkes FRS who pioneered the concept of a mathematical computing service based on an electronic stored program digital computer. EDSAC provided four groups of Cambridge scientists the computational power needed to secure Nobel Prizes for breakthroughs in radio astronomy (Ryle, Hewish), understanding the structure of globular proteins (Kendrew, Perutz) and signalling in the nervous system (Eccles, Hodgkin, Huxley).

EDSAC was the subject of the first text book on modern computer science: The Preparation of Programs for an Electronic Digital Computer, Wilkes, Wheeler and Gill, Addison-Wesley, 1951.

Constructing a replica of EDSAC has been a challenge in forensic engineering - very few circuit schematics for the original machine have survived and so the project team has had to redesign EDSAC working from historical photographs and documents.

The replica is now substantially complete and capable of running simple diagnostic test programs. Once fully commissioned it is intended that EDSAC will be operated regularly at the museum to show our visitors what it was like to use the one of the earliest electronic computers.

SHORT BIO

Andrew's background is in distributed systems (during his PhD from 1975-1978 at Cambridge University under Maurice Wilkes and Roger Needham) before he started and build two companies in the following 16 years (acquired by Citrix Systems Inc). From 2001 to 2011 he was the Managing Director of Microsoft Research Cambridge before taking on the position at the National Museum of Computing. Rebuilding the EDSAC – one of the first computers of the late 40's of the last century – has been his focus since and he has it operational now. Andrew has worked in both academic, industry and (now) governmental positions and brings a wealth of experience bridging these areas. His current position is chairman of trustees for the National Museum of Computing at Bletchley Park.

Host: Prof. Dr. Ralf Herbrich