

Wrote self test software for 15 GHz microwave sweep generator/ sawtooth oscillator & analyser. Developed self test software working across 2 80286 processors via a VRTX real time kernel, using Microsoft C Version 4, Hitex ICE Emulator, Eprom'able code. Programmable adjustment of tunable filters & YIG/ YAG components to minimal/ maximal power consumption tests. Control & compensation of analogue/ digital interfaces. Run time evaluation of impedance networks using Kirchoff's laws. Model names SWM & ZAM. 1 Year project.

COMS. PACKAGE DEVELOPMENT: Siemens, EWSD Munich Hofmann Strasse 1986.09-1987.10

- Designed and implemented an overlay package to add task interleaving and multiple priority facilities to existing VAX Unix V7 'FTSinix' to BS2000 (IBM) file transfer program. Implemented with German functionality, and documentation.
- Ported package above to also run on a PDP 11/70 running Unix Version 6, with RJE (Remote Job Entry).
- Development study for control system for telephone exchange development documentation dept.

CONSULTANT: Siemens Perlach Munich, Sinix Development Dept., Unix Release Engineer 1985.07-1986.06

- **Production & automation of Unix** Sinix Software for 8 European languages & 2 CPU families (NSC-32x32 & I-80x86): developed & documented tools; cooperated with source code control personnel; produced earliest languages; trained personnel, guided & supervised personnel for later language production.
- Developed parallel multiple language simultaneous compilation capability.
- Top Makefile written to compile Sinix & all packages in 1 language. Shell to produce 7 sequential multiple language versions of Sinix through a weekend.
- C compiler & Yacc improved, to select correct language library.
- Wrote Makefiles for libraries, delivery tree production, etc.
- Improved & extended countless existing Makefiles.
- Produced a standard Siemens style product floppy, to convert a Sinix system to a Sinix production/(compilation) system.
- Wrote program to check & duplicate product floppies.
- Specified & supervised a production support program. (A Zilog style `upkeep`).
- Made floppy production tools faster & network independent.
- Production logins secured.
- Documentation of automation work and recommendations for future work.

ASSISTANT EXECUTIVE ENGINEER, British Telecom International, London, England 1980.07-1985.06

- **Unix System Administrator** + Computer Centre & Network Support: Assessed, purchased & installed hardware & software packages, Established automatic system integrity and user data security package & procedures. Optimised system configurations (disk layouts & networks). Provided user technical support. Managed Ethernet + associated peripherals + technicians. Installed operating system & package upgrades. Interfaced computer systems and peripherals. Supervised student projects.
- Manned BT International Exchange during service crisis. (Using PTT 3.4 KHz * 12 * 5 * 13~15 Frequency modulation system, including upper/ lower sideband, pilot levels, carrier regeneration etc).
- Installed Unix C to Z80 Cross Compiler, developed stack frame compatible IO routines, + down loader for target Z80. Beta testing of replacement compiler. Developed base for a table controlled terminal emulator.
- Unix Administrator: developed system, trained colleagues & successor.
- Specified 70 Screen 2 Gbyte high reliability database.
- Designed and implemented hardware and software for a Z80 SIO device driver on a Mostek micro development system (in Z80 Assembler for MK3884-7).
- Automated calculation of (a) noise, and (b) pulse voltages, induced in many miles of telecommunications lines from vaguely adjacent (a) electricity power supply grid during short circuit surges, and (b) railway lines with train power pickup conductors sparking; to evaluate EMI, with respect to (a) requirements for gas discharge tubes for human protection, (b) noise induced affecting signal/ noise ratio. (Program written in Algol).

UNIVERSITY PROJECTS Canterbury, Kent, England 1977.10-1980.06

- Designed, built & tested plotter/ printer mechanics, power electronics, & software (in PLF, like PL/M).
- Implemented parallel & serial port interrupt components for a floppy disk file system (in PLF for M-6800).
- Developed multi input data logging micro system (in PLF for M-6800).
- Wrote multiple function plotting program, with automatic floating point self scaler and offset (in Basic).

ASSISTANT EXECUTIVE ENGINEER, British Telecom International, London, England 1975.02-1977.09

- International Packet Switching System: profitability costing, systems planning, installation, configuration, testing, linking to American Telenet System. 'Prime' computer hardware.
- Time Multiplexed 50 Kbit/s Satellite Link: Experimental viability testing of Canadian Link, Cascaded multiplexers ({ 50 Kbit/s > 24 * 2.4 Kbit/s } + { 2.4 Kbit/s > 50, 100, 110, 200 & 300 bit/s }). Testing experimental FIFO buffer to compensate for varying satellite propagation loop delay (due to both shorter term atmospheric perturbations & longer term satellite path drift).
- Testing of experimental 50Kbit/s time multiplexed satellite connection to Italy. via COMSAT SPADE. (COMSAT = **C**ommunications **S**atellite Corporation, USA; SPADE = **S**ingle channel per carrier, **P**ulse code modulated, multiple **A**ccess, **D**emand assigned, **E**quipment).
- Implementation planning 4.8 Kbit/s commercial time multiplexed service to Canada.
- Designed & produced extra PCBs for Hasler M150 telegraph message switcher.
- Costed and designed a telegraph speed and code converter. 5/7 Unit, 50/2400 baud etc.

TEST TECHNICIAN, Time Electronics & Feedback Instruments, Kent, England 1974.08-1975.01

- Oxygen analyser and extremely high precision voltmeter.

VARIOUS OTHER COMPUTER EXPERIENCE