

POPLOG

A SELECTION OF APPLICATIONS

INCLUDING

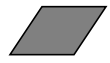
CAD/CAM, PROCESS INDUSTRY,

ON-LINE MONITORING, FINANCE,

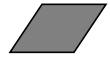
SOFTWARE ENGINEERING AND

IMAGE PROCESSING

POPLOG Applications



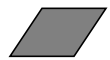
Avionics simulation (*Avonicom*)



**Remote sensing / satellite image interpretation
(*NERC*)**



Traffic information management (*TRRL*)



Helical spring design (*Smiths Industries*)



Intelligent program prover (*Program Validation*)



ICAD/ICAM (*GEC Electrical Projects*)



System design for testability (*RAF*)



Air traffic control (*CAA*)

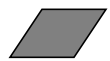


Image analysis (*BP*)



Real-time process monitoring/control (*COGSYS*)



Currency prediction (*HP/BZW (/Logica)*)

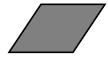


Image processing tools (*Reading University*)

FAUST



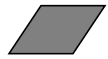
Real-time fault diagnosis of electricity supply systems



ECRC / SEB (EMEB) / Thames Polytechnic



Operators have to deduce faults from telemetry



**High fault rates can swamp operators
(e.g. storm, October 1987 - 400 faults/min)**

FAUST



Object representation of grid (*POP-11 flavours*)



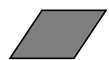
Reads live telemetry (*C*), stores on blackboards (*Prolog*)



Hypothesises possible faults, uses simulator to predict confirmatory telemetry



Can cope with absent/partial data



Sophisticated graphical interface (*PWM*)

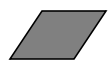


Nov. 1989 : live pilot operation in EMEB control room, Nottingham

JAY



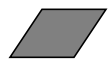
CASE tool developed by RGIT



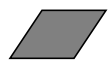
Supports SSADM plus extensions



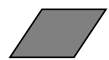
Data Flow Diagram tool



Entity Relationship tool



Intelligent consistency checking/reporting



**Currently prototype
- expected as product Q3 1990**

Design to Product



Alvey large-scale IKBS demonstrator



**Application of AI to all stages of
manufacturing process**



**GEC Electrical Projects, Lucas CAV,
Loughborough Uni., Edinburgh Uni.**



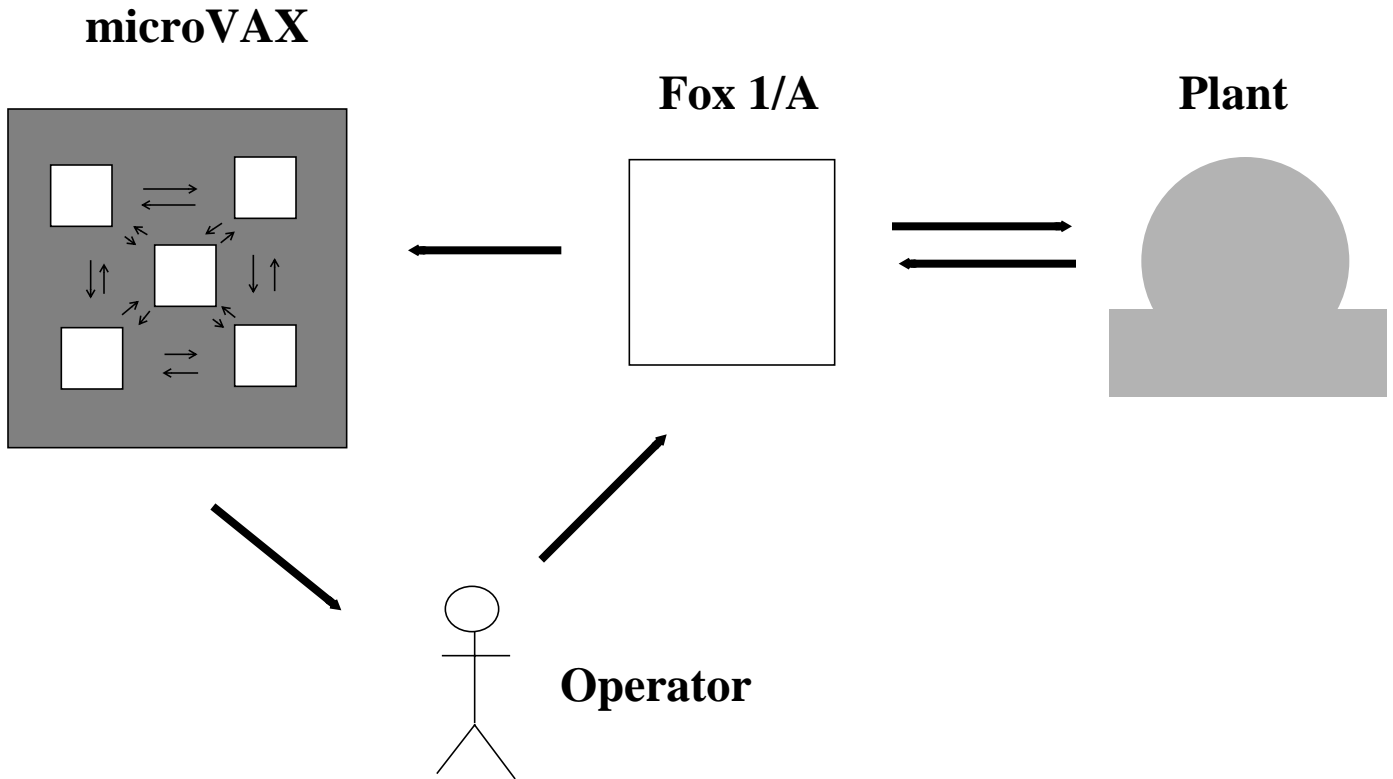
Parts implemented in Prolog, Lisp, POP-11



**Data sharing through multi-user object-oriented
database ("IMS")**

- implemented using KERIS "Rocks"

RESCU



Real-time Expert Systems Club of Users



Live on ICI ethoxylates plant

COGSYS



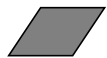
Commercial follow on to RESCU



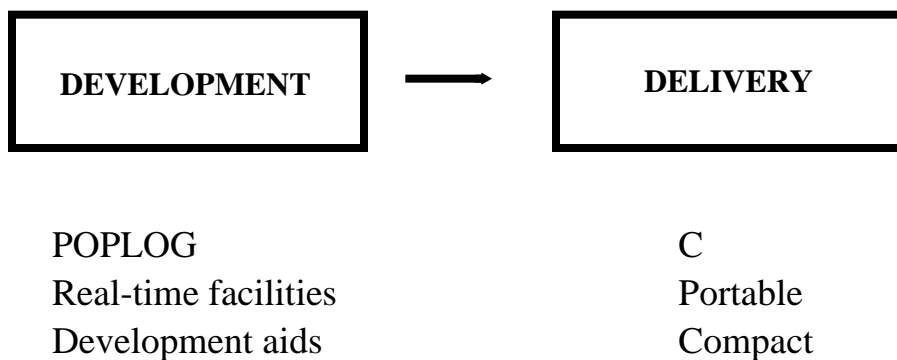
Consortium of leading industrials



First delivery of generic system end '89

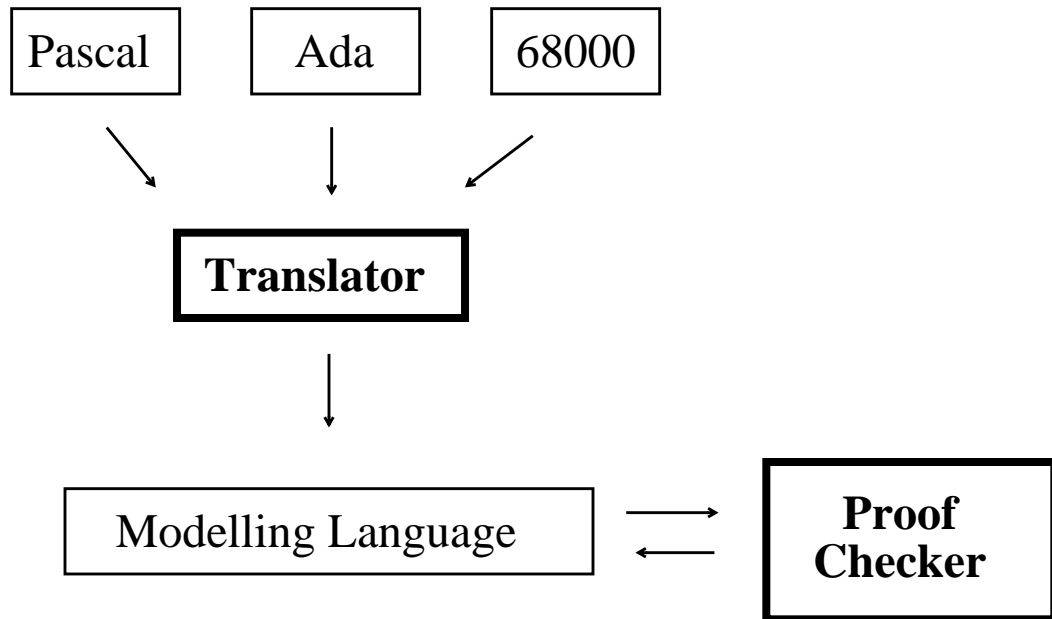


Two components:



Program Checker/Validator

Program Validation Ltd.



Sold as commercial product



Users include :

**Aquila, Admiral, BAe, GCHQ, GEC Avionics
SD, AWRE, Rolls Royce**

EDWIN



Currency Prediction by Chartism



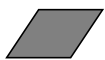
Hewlett Packard, BZW



Outperformed experts in difficult situations



Graphical (X-Windows) interface



Flagship for HP/Logica Finance collaboration

Design for Testability



SD-Scicon/RAF (Procurement Executive)



Problem :

- **High fault-rate in commissioned electronic components**



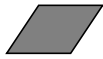
Solution :

- **Expert system to advise on optimising for testability at design stage**

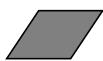


Works in cooperation with CAD tools

Design for Testability



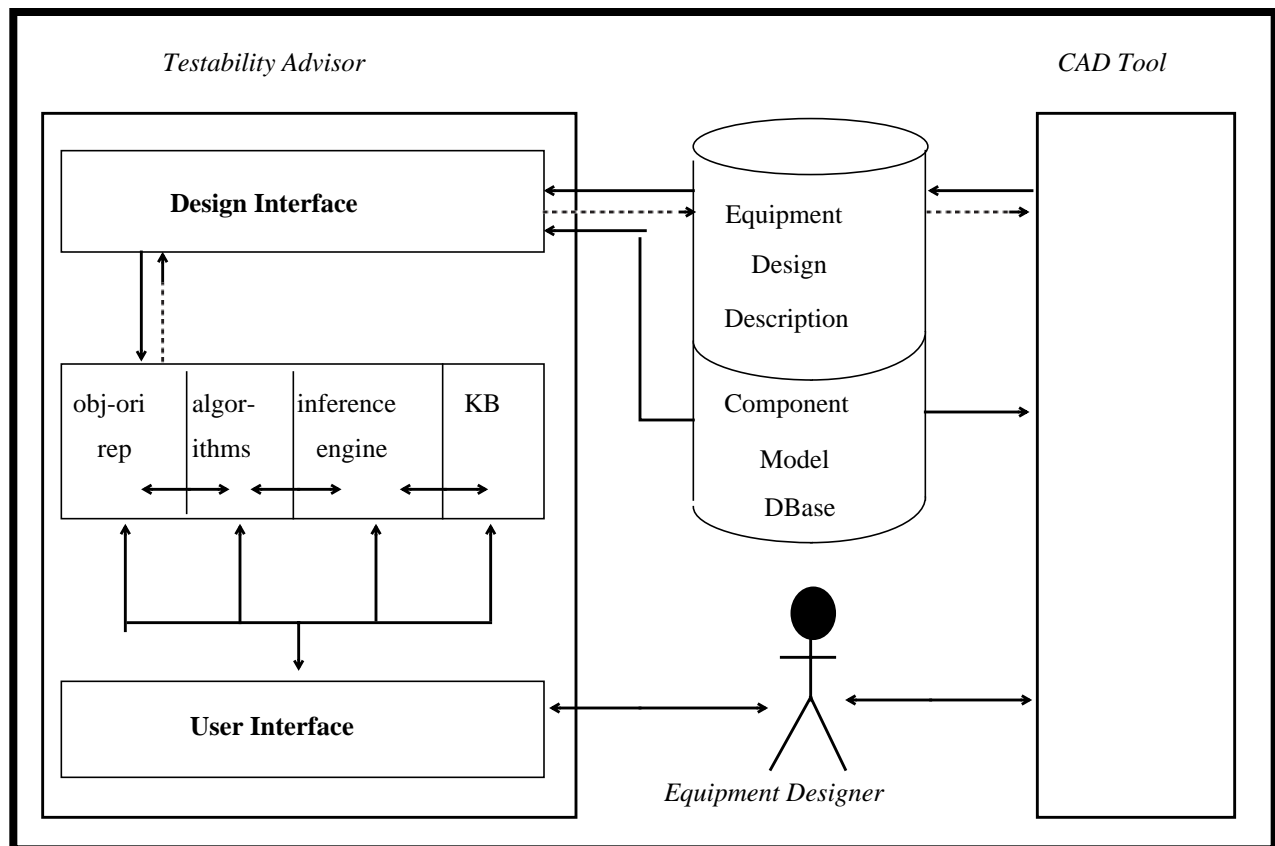
Object Representation of classes/instances of components



Relationship models of connectivity



Rules operate at schematic and physical levels



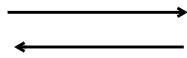
EXCAP



CAD/CAM - machinable components



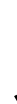
UMIST



Plan manufacturing process

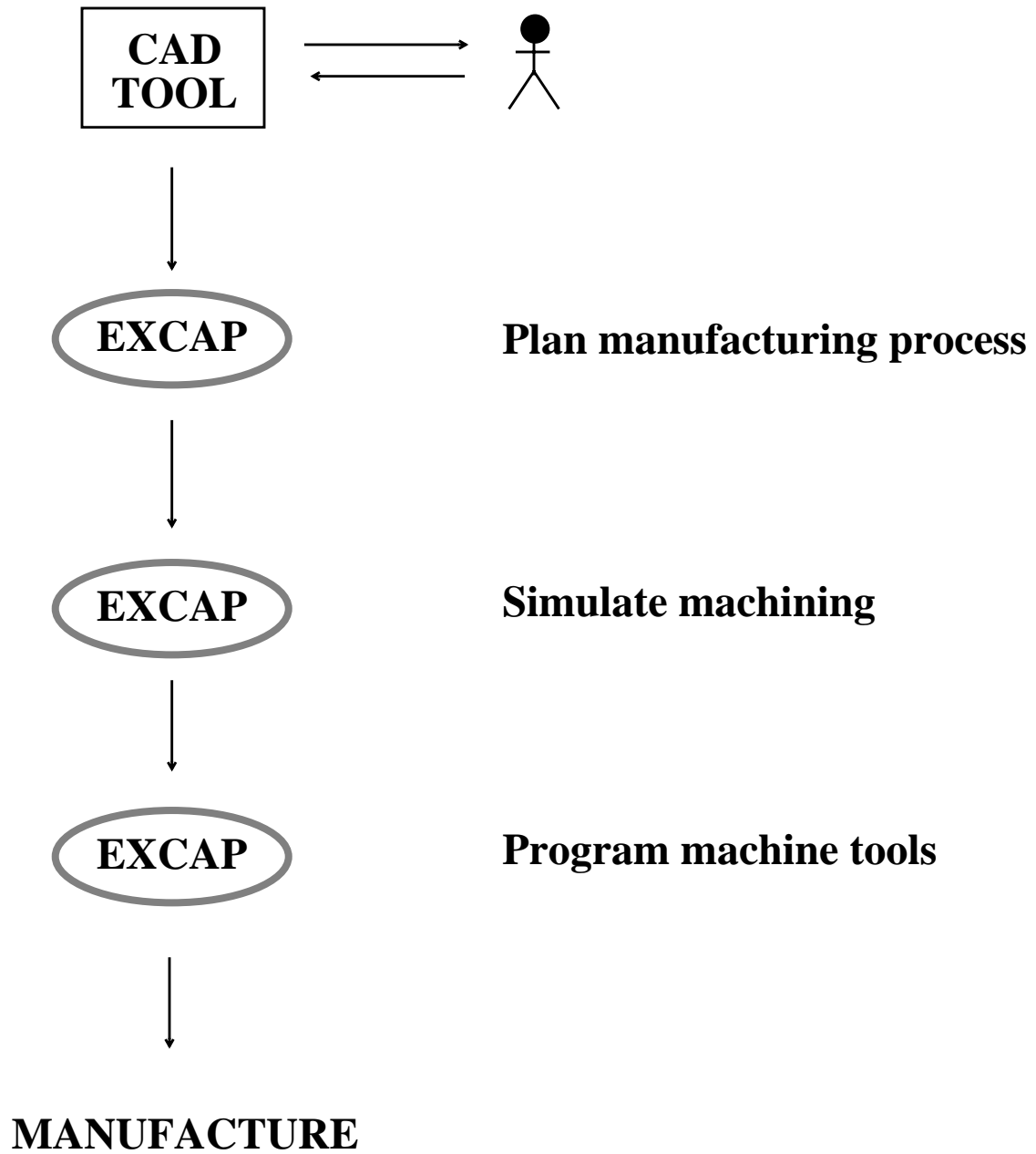


Program machine tools



MANUFACTURE

EXCAP



Interactive Vision Environment (IVE)



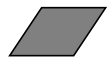
Developed by University of Reading



Reduces effort required to find best algorithms and parameters for image processing



Allows experimentation on sub-regions of images



Object-oriented implementation (*POP-11 Flavours*)



Links to routines in Fortran, C etc.



Sophisticated browsing facilities