

IN CONFIDENCE

SCIENCE AND ENGINEERING RESEARCH COUNCIL  
RUTHERFORD APPLETON LABORATORY

INFORMATICS DIVISION

SOFTWARE ENGINEERING GROUP NOTE 84

END GAME DEBATE  
Have We Implemented the Yellow Book?

issued by  
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Alvey/SE/Strategy file

KEYWORDS: SEGN 84 End Game Debate - Have We Implemented the Yellow  
Book

(see next page)

## 1. INTRODUCTION

Below is a quick tour of the highlights of the Yellow Book with some questions as to whether we have achieved the objectives and successfully implemented the strategy.

It is designed to provoke!

## 2. OBJECTIVES

1. Quality
  - improvements achieved? Nothing visible.
2. Productivity
  - no evidence of change available yet.
3. ISF
  - will IPSE 2.5 deliver? Will Rob ever be satisfied with anything?

## 3. INNOVATION

### 3.1 Software Development Methods

- . Formal Specification
  - VDM, Z; not too bad
- . Verification
  - ML/LCF (not Alvey) but little else of actual substance.
- . Reusability
  - total failure so far?
- . Metrics
  - no actual technical progress?
- . Quality Assurance and Certification
  - promising start but being destroyed for non technical reasons?

### 3.2 Project Management

- . No research at all in this area?

### 3.3 IPSE Research

- . Evaluation experiments
  - still to come for Aspect/Eclipse; will they be valid/persuasive?
  - nothing available for other tools?
- . VLSI/CAD and SE/CAD Integration
  - is the divide still as wide?
  - is INMOS the only example of hope?

#### 4. INTEGRATION (IPSE)

##### 4.1 First Generation IPSE

- . Abandoned!
  - no Unix based toolkit produced
  - no evaluation of toolkits.

##### 4.2 Second Generation IPSE (Bottom Up)

- . Implemented quite well by Aspect and ECLIPSE competitors.
- . Will Aspect deliver its first year milestone?
  - what is current date for Unix tools running over Newcastle Connection?
- . What is the first deliverable from ECLIPSE?
- . Shoot-off
  - are we going to 'shoot off' Aspect and ECLIPSE as originally planned?
- . Commercial IPSE attempt a failure.

##### 4.3 Second Generation IPSE (Top Down)

- . IPSE 2.5; what we really had in mind? NO!
- . Is our Top Down strategy abandoned as a failure?

##### 4.4 Second Generation IPSE (General Points)

- . Distribution of team, workstation predictions, Unix expansion, Project not Program : these we seemed to get right (such modesty!)
- . No more IPSE projects can be started?
- . So concentrate all resources all available resources on ensuring success of our only two projects (Aspect and ECLIPSE) which stand any chance of producing anything major?
- . Encourage other projects to port tools to Aspect/ECLIPSE more strongly?

##### 4.5 Third Generation IPSE

- . Paper Study
  - AD got preparatory projects going
  - who is going to do a genuine paper design study in 87/8?
- . We were right to think of it as a paper study! Oh for a 10-year programme.

5. EXPLOITATION

- . Standard Tool Sets
  - a failure so far
  - PCTE to the rescue?
- . Measurement of Effectiveness of tools/IPSE
  - still time to do something
- . Education and Training
  - OU, Sheffield
  - SE still behind IKBS, but still time to do more?

6. NATIONAL QUALITY CERTIFICATION CENTRE

- . Disappointing progress
- . Should we make this a MAJOR end game objective?

7. SOFTWARE PRODUCTION CENTRE

- . DTI helping with NCC Tools Demonstration Centre
  - two orders of magnitude too small to do the job!
- . What else can we do to make an SEI in the UK?

8. SOFTWARE COMPONENTS BROKERAGE

- . Nothing been done on this at all
- . Should we make it a major objective of end game as a way of stimulating the Reusability research?

9. ALVEY NET

- . Total failure to achieve objective of linking all our industrial, academic and government workers - even by electronic mail.
- . Why?

10. INFRASTRUCTURE

- . Desperately in need of policy revision (to be done by SLHC's Steering Group) and decent implementation (by RAL, presumably).
- . UK Companies like ICL and GEC not exploited opportunities offered by Alvey and SERC's Common Base.

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