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SCIENCE AND ENGINEERING RESEARCH COUNCIL  
RUTHERFORD APPLETON LABORATORY

INFORMATICS DIVISION

SOFTWARE ENGINEERING GROUP NOTE 82

END GAME DEBATE  
Some Questions

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Alvey/SE/Strategy file

KEYWORDS: SEGN 82 End Game Debate - Some Questions

(see next page)

1. "Has Software Engineering and Engineers Changed Because of Alvey?"

This note is intended to be a checklist of a few questions we might ask ourselves during the 'End Game' exercise. It is based on any anonymous note I found in a file.

2. In General

- . is software of a higher quality being produced?
- . has the view of software production changed and is it now seen not as a craft but an engineering science?
- . has an increase taken place in the knowledge base and understanding of software and the process of its creation?
- . are different life cycle models understood and used?
- . has knowledge increased on the costs associated with various stages of the software life cycle?
- . are different ways of working used with different tools (IPSE)?
- . is more machine power now available and used?
- . is there more emphasis on standards, and are there improved standards?

3. From the Metrics Programme

- . is there a greater understanding of programs and programming via quantified data?
- . are improved metrics now known and used?

4. From the Reliability Programme

- . is there an increased understanding of what constitutes a reliable system?
- . are there improved techniques to ensure reliability?
- . is the industry working to standards for reliability?

5. From the Formal Methods Programme

- . are mature methods being used for system construction?
- . are promising methods undergoing practical trials?
- . are formal methods being used for 'rigorous' system construction?

6. From the Tools Programme

- . are tools available and in use for all the above?
- . have tool sets been integrated?
- . are intelligent tools starting to appear?

7. From the IPSE Programme

- . is project level thinking commonplace?
- . have tools and methods been integrated?
- . is greater attention paid to MMI aspects of systems?
- . is greater machine power being used?

8. General/Management Awareness

- . are the Quality issues appreciated?
- . is the whole life cycle approach recognised?
- . is the shift towards capital-intensive working appreciated?
- . is more effort going into the front end of the life cycle?
- . is the promise and role of formal methods appreciated?
- . is the potential for IKBS-based SE tools and techniques appreciated?
- . is there a greater awareness of the need for improved metrics and measurement activity?
- . is the shift from 'programming' to 'project' approach appreciated?
- . do people know what an IPSE is?
- . is the 'Bespoke' v 'Components' v 'Package' market separation and development appreciated?
- . is the need for the 'Systems' approach (ie integrate VLSI/CAD with SE/CAD) appreciated?
- . is the crucial role of Reusability appreciated?
- . is the concept of Quality Certification understood?
- . is the threat to public safety from faulty software appreciated?

9. Summary

Is today's software engineer working in an improved environment with the will, knowledge and facilities available to produce higher quality software?

seg2/lv