Traditionally, concurrency is usually considered an advanced and difficult topic. As a result, it is all too often neglected in the engineering of software. A premise underlying this conference is that it should not be neglected in either tuition or use, and need not be difficult, given the right model. Concurrency forms a vital part of the natural abstraction of the world around us, where autonomous agents continually interact at all levels of granularity. It is simply too important to ignore. Security (against error) in concurrent systems is a major element in the conference theme for two reasons. First, concurrency extends the scope for error. Second, applications are now commonly distributed, highly interactive, and intolerant of error. The development of new methods, or adaptation of old methods, for the engineering of such systems forms another important focus. Specific interests include (but are by no means limited to):

- theoretical support (CSP, π-calculus, ASP, …)
- verification and model-checking (FDR, SPIN, …)
- methods and tools (β, BSP, SPARK, …)
- programming languages (occam, Handel-C, Honeysuckle, …)
- program environments (JCSP , CCSP , CTJ, …)
- theoretical support (CSP, π-calculus, ASP, …)
- programming languages (occam, Handel-C, Honeysuckle, …)
- program environments (JCSP, CCSP, CTJ, …)
- distributed application environments (GRID, clusters, web services, …)
- machine architecture (multiprocessor chips, VLIW, instruction set design for multi-threading, h/w scheduling, link and router design, …)
- illustrative applications (scientific, embedded, real-time, safety-critical, mobile, …).

**Conference theme**

Communicating Process Architectures (CPA) describes a process-oriented approach to system abstraction and design, in which concurrency is natural and normal. The aim of the conference is to stimulate ideas and discussion relevant to the engineering of such systems, and in particular to the achievement of scalibility (in both function and performance) and integrity (reliability, dependability, and security against error).

The origin for the inspiration of the CPA series of conferences, which began as the OUG-X, and later WoTUG-X series, is the Theory of Communicating Sequential Processes (CSP) of C A R Hoare. This gave rise to the design of the ocam programming language and the Transputer – an entire computer on a single chip that could be constructed with others to construct scalable systems.

The combination of new theory, programming language, and system architecture, represented an unprecedented opportunity and challenge to systems engineering methodology. The OUG-WoTUG/CPA conferences have sought to answer that challenge and help meet the opportunity. The proceedings of the last seventeen have been published by IOS Press, as part of their Concurrent Systems Engineering Series. They have fostered an extended international research and development community over the years, and have significantly contributed to many successful commercial applications.

CSP embodies many ideas, all whole-heartedly endorsed by the CPA community. These include the pursuit of simplicity and security (against error), and the overriding importance of clear, precise, and consistent, abstraction.

**History and inspiration**

**Outline organization**

Paper submission 16 May 2004
Paper acceptance 13 June 2004
CPA submission 27 June 2004

Registration fee is £330, non-refundable, and includes breakfast, lunch, dinner and refreshments. Single rooms are available at a cost of £30 per night. A very limited number of double rooms are available at a cost of £45 per night. A limited number of student registrations are available at the discounted rate of £190, at the discretion of the organizing committee. A signed letter from either supervisor or department head must accompany the registration form verifying status.

**Programme**

This will comprise two full day, one half day, and two evening sessions. Each day will begin with a keynote talk. A. W. Roscoe, Professor and Head of Department at Oxford University Computing Laboratory and author of The Theory and Practice of Concurrency, and Dr. Michael Goldsmith, Managing Director of Formal Systems (Europe) Ltd, have agreed to speak.

Details of how to submit a paper for the conference can be found at: http://cms.brookes.ac.uk/computing/cpa2004

**Three ways to book**

Post the completed booking form to:
Hollie Noonan, Centre for Continuing Education, Oxford Brookes University, Harcourt Hill Campus, Oxford OX2 9AT.

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