

ORKID

Open Real-Time Kernel Interface Definition

Drafted by
The ORKID Workig Group
Software Subcommittee of VITA

Draft 1.0 for Public Comments
July 1989

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FROM THE CHAIRMAN

Before you lies the first draft of VITA's Open Real Time Interface Definition, known as ORKID. This draft is the result of the activities of a small working group under the auspices of the Software Subcommittee of the VITA Technical Committee. It represents the view of the working group and has not yet been approved.

The working group invites you to check this draft for consistency and send in any comments and/or suggestions you may have to the working group's secretary. All comments received before September 15th, 1989 will be studied by the working group, after which a final draft will be presented to the Software Subcommittee and the Technical Committee for approval.

The members of the working group are:

Reed Cardoza	Eyring Research	
Alfred Chao	Software Components	
Chris Eck	CERN	
Wayne Fischer	FORCE Computers	
John Fogelin	Wind River Systems	
Zoltan Hunor	VITA Europe	(secretary)
Kim Kempf	Microware	
Hugh Maaskant	Philips	(chairman)
Dick Vanderlin	Motorola	

I would like to thank these members for their efforts. Also I would like to thank the companies they represent for providing the time and expenses of these members. Without that support this draft would not have been possible. Furthermore I would like to thank Stuart Fairful for writing up a first version of this draft.

Eindhoven July 1989

FOREWORD

The objective of the ORKID standard is to provide a state of the art open real-time kernel interface definition that on one hand allows users to create robust and portable code, while on the other hand allowing implementors the freedom to profilate their compliant product. Borderline conditions are that the standard:

- be implementable efficiently on a wide range of microprocessors,
- imposes no unnecessary hardware or software architecture,
- be open to future developments.

Many existing kernel products have been studied to gain insight in the required functionality. As a result ORKID is, from a functional point of view, a blend of these kernels. No radical new concepts have been introduced because there would be no reasonable guarantee that these could be implemented efficiently. Also they would reduce the likelihood of acceptance in the user community. This is not to say that the functionality is meagre, on the contrary: a rich set of objects and operations has been provided.

One issue has to be addressed yet: that of MMU support. Clearly, now that new microprocessors have integrated MMUs and hence the cost and performance penalties of MMU support are diminishing, it will be needed in the near future. At this moment, however, it was felt that more experience is needed with MMUs in real-time environments to define a standard. It is foreseen that an addendum to this standard will address MMU support.