

Preface

In 2007, the Condor project was set up as a first step to answering the question “how can we adapt the current system architecture of an electron microscope to obtain a predictable and automated system that can be used in industry?” While the question was posed with a specific type of system in mind, namely one of FEI Company’s electron microscopes, both the question and the project’s results are equally valid for other systems.

This book focuses on the main challenges of the Condor project, outlining these and summarising the research carried out across the various routes taken towards solutions. The project showed that the issue of “architectural stress” is of great importance to many industrial businesses. Turning a purpose-built precision-critical system, such as the classical FEI electron microscopes, into a system that is more flexible, predictable and more easily adapted to changing circumstances is rapidly becoming a desirable pathway to evolving new systems.

This book is the seventh in our industry-as-laboratory projects series.¹ These large 5-year projects are put together and led by the Embedded Systems Institute (ESI), in close collaboration with its industrial and academic partners.

In addition to ESI, Condor involved a consortium of industrial and academic partners. The industrial partners were FEI Company, the carrying industrial partner, and Technolution. The academic partners were the Eindhoven University of Technology, Delft University of Technology, Katholieke Universiteit Leuven and University of Antwerp.

¹ Books about earlier industry-as-laboratory projects—Falcon, Boderc, Tangram, Ideals, Trader and Darwin—can be found on ESI’s website: <http://www.esi.nl/knowledge-transfer/publications/books>.

I would like to thank all partners and individuals, researchers and managers, companies and academia alike, involved in the Condor project. Through individual efforts and splendid teamwork, they contributed to the project's success. It is now time to pass on the experience gained and results achieved to a wider industrial and academic audience.

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Coping with architectural stress in embedded systems

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