Kent Academic Repository

Full text document (pdf)

Citation for published version

Derrick, John and Boiten, Eerke Albert (2014) Refinement in Z and Object-Z: Foundations and Advanced Applications (2nd revised edition). Springer, London Heidelberg New York Dordrecht, 510 pp. ISBN 978-1-4471-5354-2.

DOI

https://doi.org/10.1007/978-1-4471-5355-9

Link to record in KAR

http://kar.kent.ac.uk/37392/

Document Version

Supplemental Material

Copyright & reuse

Content in the Kent Academic Repository is made available for research purposes. Unless otherwise stated all content is protected by copyright and in the absence of an open licence (eg Creative Commons), permissions for further reuse of content should be sought from the publisher, author or other copyright holder.

Versions of research

The version in the Kent Academic Repository may differ from the final published version.

Users are advised to check http://kar.kent.ac.uk for the status of the paper. Users should always cite the published version of record.

Enquiries

For any further enquiries regarding the licence status of this document, please contact: researchsupport@kent.ac.uk

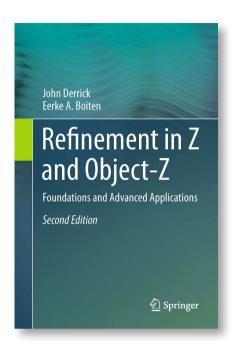
If you believe this document infringes copyright then please contact the KAR admin team with the take-down information provided at http://kar.kent.ac.uk/contact.html







springer.com



2nd ed. 2014, XVIII, 492 p. 49 illus.



Hardcover

- ▶ 94,99 € | £85.95 | \$129.00
- ► *101,64 € (D) | 104,49 € (A) | CHF 126.50



Available from your library or

► springer.com/shop



Printed eBook for just

- ▶ € | \$ 24.99
- springer.com/mycopy

J. Derrick, University of Sheffield, Sheffield, United Kingdom; **E.A. Boiten**, University of Kent, Canterbury, United Kingdom

Refinement in Z and Object-Z

Foundations and Advanced Applications

- ► The most comprehensive text on refinement in state based systems
- ► Includes detailed explanations and a wide range of illustrative examples, perfect for use as an advanced Under-Graduate or Masters textbook
- With extensive bibliographical notes, now updated to 2013 state of the art

Refinement is one of the cornerstones of the formal approach to software engineering, and its use in various domains has led to research on new applications and generalisation. This book brings together this important research in one volume, with the addition of examples drawn from different application areas. It covers four main themes:

- Data refinement and its application to Z
- Generalisations of refinement that change the interface and atomicity of operations
- Refinement in Object-Z
- Modelling state and behaviour by combining Object-Z with CSP

Refinement in Z and Object-Z: Foundations and Advanced Applications provides an invaluable overview of recent research for academic and industrial researchers, lecturers teaching formal specification and development, industrial practitioners using formal methods in their work, and postgraduate and advanced undergraduate students.

This second edition is a comprehensive update to the first and includes the following new material:

- Early chapters have been extended to also include trace refinement, based directly on partial relations rather than through totalisation
- Provides an updated discussion on divergence, non-atomic refinements and approximate refinement
- Includes a discussion of the differing semantics of operations and outputs and how they affect the abstraction of models written using Object-Z and CSP
- Presents a fuller account of the relationship between relational refinement and various models of refinement in CSP
- Bibliographic notes at the end of each chapter have been extended with the most up to date citations and research



Order online at springer.com ➤ or for the Americas call (toll free) 1-800-SPRINGER ➤ or email us at: orders-ny@springer.com. ➤ For outside the Americas call +49 (0) 6221-345-4301 ➤ or email us at: orders-hd-individuals@springer.com.

The first \in price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with * include VAT for books; the \in (D) includes 7% for Germany, the \in (A) includes 10% for Austria. Prices indicated with ** include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted.