

MODERN SYSTEMS 2025

International Conference of Modern Systems Engineering Solutions

October 26th - 30th, 2025

Barcelona, Spain

MODERN SYSTEMS 2025 Editors

Alan Martin Redmond, Sophia Antiplois (CSTB), France

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2025) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed with permission by Curran Associates, Inc. (2026)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

A Framework for Adaptability, re-use and Deconstruction of Buildings, Aligned with the Principles of Circular Economy 1
Alan Martin Redmond

Rethinking the Role of Department of Defense Architecture Framework in System-of-Systems Architecture Design 9
Zhemei Fang, Yuxuan Liu, and Jianbo Wang

An Interference-Aware vCPU Scheduling Framework for Paravirtualized Real-Time Industrial Control Systems 16
Jessica Muller, Steven Dietrich, and Michael Massoth

Q-Learning Performance on the CartPole Environment Under Observation Noise and Reward Variants 23
Steven Ren, Taieba Tasnim, Berkeley Wu, Mohammad Rahman, and Fan Wu

Development of a WebRTC-Based Video Calling Application to Predict Quality of Service Patterns Using an Artificial Neural Network 29
Carlos Moreno, Ezequiel Frias, Vinod Kumar Verma, and Eric Gamess