FOREWORD

We are proud to bring you the first System Analysis and Studies (SAS) issue of the NATO STO Review – the peer reviewed Journal of the NATO Science and Technology Organization. This special edition contains a selection of the papers that were presented at the 16th NATO Operations Research & Analysis (OR&A) conference held at Frederiks Palace in Copenhagen, Denmark on 17-18 October 2022, including the one that was awarded the best paper distinction.

This event brought together (physically and virtually) 200 participants of the NATO OR&A community from NATO commands and agencies, national defence analysis and research organisations, centres of excellence, academia, and industry to discuss the conference theme "OR&A: new ideas, old realities". The conference decidedly showed that while OR&A has actively supported defence decision making since at least the 1930's it continues to evolve and remains highly relevant today. Conference speakers had the opportunity to submit long papers or short papers, all of which were peer-reviewed. Those long papers that were deemed of highest quality and that are releasable to the public were selected for this special edition. The other long papers, along with all short ones, were published in the conference proceedings. This special issue contains the following three long papers:

The best paper award **"Using Reinforcement Learning to provide decision support in multi-domain mass evacuation operations"** by Mark Rempel and Nicholi Shiell. This paper clearly shows "new ideas and old realities" being combined in the best manner to address a security challenge. In particular, it demonstrates the use of Artificial Intelligence to evaluate candidate policies and provide decision support in multi-domain operations.

In **"Zero-shot Multimodal Deep Learning Models for Military Vehicle Detection – An Analysis"** Philipp J. Rösch, Fabian Deuser, Konrad Habel and Norbert Oswald build on lessons from Russia's war of aggression against Ukraine to explore Artificial Intelligence's ability to improve detection of military vehicles and increase NATO's Information superiority.

Finally, **"Towards defence supply chain resilience – A prestudy of the Swedish defence sector"**, by Thomas Ekström uses classical OR&A methods (the Delphi technique and surveys) to identify feasible approaches for improving supply chain resiliency.

In our view, these three long papers provide an excellent sample of the outstanding OR&A being performed and of the broad scope of its value added to military operations.

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