Piërre van de Laar, Jan Tretmans, Michael Borth (Eds.)

Situation Awareness with Systems of Systems

- Discusses data processing techniques for situation awareness, applicable in domains such as air traffic control, chemical plant surveillance, emergency response and maritime safety and security
- Addresses the dynamics of systems-of-systems in situation awareness, such as security, integration, testing, diagnosis, and the connection to additional systems
- Describes a demonstrator that integrates many of the developed techniques in the domain of maritime safety and security

This book discusses various aspects, challenges, and solutions for developing systems-of-systems for situation awareness, using applications in the domain of maritime safety and security. Topics include advanced, multi-objective visualization methods for situation awareness, stochastic outlier selection, rule-based anomaly detection, an ontology-based event model for semantic reasoning, new methods for semi-automatic generation of adapters bridging communication gaps, security policies for systems-of-systems, trust assessment, and methods to deal with the dynamics of systems-of-systems in run-time monitoring, testing, and diagnosis. Architectural considerations for designing information-centric systems-of-systems such as situation awareness systems, and an integrated demonstrator implementing many of the investigated aspects, complete the book.

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