

Cyber Security Situation Awareness and Impact Assessment: Issues, Models and Applications

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Abstract

Cyber attacks committed against IT assets and services have profound impact both on the ongoing and future missions, whose operations are based on these assets and services. The attacks, by exploiting the vulnerabilities of the software assets can push their impact through Cyber Terrain – a dependency network of structural, spatial, functional and other domain-specific dependencies that exist among software assets and services, and reach the missions. In this presentation we will introduce a novel approach of assessing impact of cyber attacks on missions (business processes) and describe the basic models and algorithms of the approach.

Bio of Dr. Jakobson

Dr. Gabriel Jakobson is the VP and Chief Scientist at Altusys Corp., a consulting firm specializing in the development of intelligent situation management technologies for defence and cyber security applications. During his more than 20 years tenure at Verizon he had increasing responsibilities of leading advanced database, expert systems, artificial intelligence, and telecommunication network management programs. He has authored (and co-authored) more than 100 technical papers and is principal author of 5 US patents in situation management and event correlation. He received PhD degree in Computer Science from the Institute of Cybernetics, Estonia. Dr. Jakobson holds an honorary degree of Doctor Honoris Causa from the Tallinn Technical University, Estonia, and is Distinguished IEEE Lecturer. Dr. Jakobson is co-chair of the Tactical Communications and Operations Technical Committee of IEEE ComSoc, chair of the IEEE ComSoc Subcommittee on Situation Management, Chair of the IEEE Conference of Cognitive Methods in Situation Awareness and Decision Support 2011-2012 and TPC Co-Chair of the International Conference on Cyber Conflict (CyCon) 2012