

THE NEXT STEP TOWARDS OPERATIONALIZING RESILIENCE: THE MEASUREMENT OF SELF- SYNCHRONIZATION

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Abstract

The concept of resilience is becoming widely used by many industries where safety and security is crucial for success. At the last REA we've presented a definition of resilience that can be used in CD&E experiments regarding socio-technical systems. Self-synchronization was identified to play an important role.

Methods: The approach chosen towards diagnosing self-synchronization was inspired by the methods used in psychiatry to diagnose psychiatric diseases as utilized in the "Diagnostic and Statistical Manual of Mental Disorders" (DSM 5) and the International Classification of Diseases (ICD 10). This approach was chosen because it allows to diagnose certain conditions based solely on the presence or absence of easily observable and assessable conditions and observations. We introduced two categories of indicators. The first category constitutes of five factors (mandate, autonomy, communication, coordination, cooperation) and was named "threshold conditions". These conditions are necessary for self-synchronization to occur but are not sufficient to determine if self-synchronization occurred. The second category was named "value added observations" and consists of seven factors (situational awareness, self-awareness, negotiation, dependability, motivation, sub-networks, distributed decision making). These observations are used to quantify the level of self-synchronization reached.

Results: The model was applied in two different settings of war games, performed during the Multinational Capability Development Campaign (MCDC) "Info-age C2" campaign. It was possible to diagnose the level of self-synchronization reached in the exercises. Based on these results, the model was further simplified and transferred into a checklist-format that allows for real-time self-synchronization diagnosis during exercises and real-live missions.

Conclusion: In this paper, we will present our experience with a newly developed diagnostic model of self-synchronization. A high-fidelity research-version will be presented together with an operational version that can be applied for the assessment of self-synchronization during real world missions.

Keywords: Self-synchronization, Model, Diagnose, Resilience, Questionnaire, Research, Practice