

CIRFI 2019: Indication of Critical Infrastructure Resilience Failure

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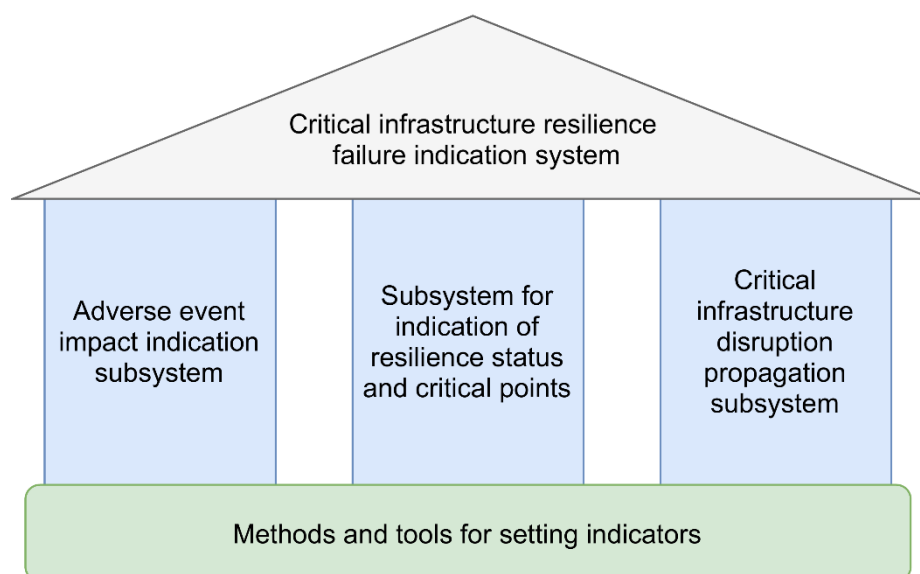
VSB – Technical University of Ostrava, Faculty of Safety Engineering

Project annotation

The subject of the project is excellent research in the field of critical infrastructure resilience. The project will determine the selected sectors of technical critical infrastructure (ie energy, transport and information and communication technologies) resilience failure indicators and will create a tool for their timely identification and assessment of the suitability of these indicators for specific infrastructure subsystems.

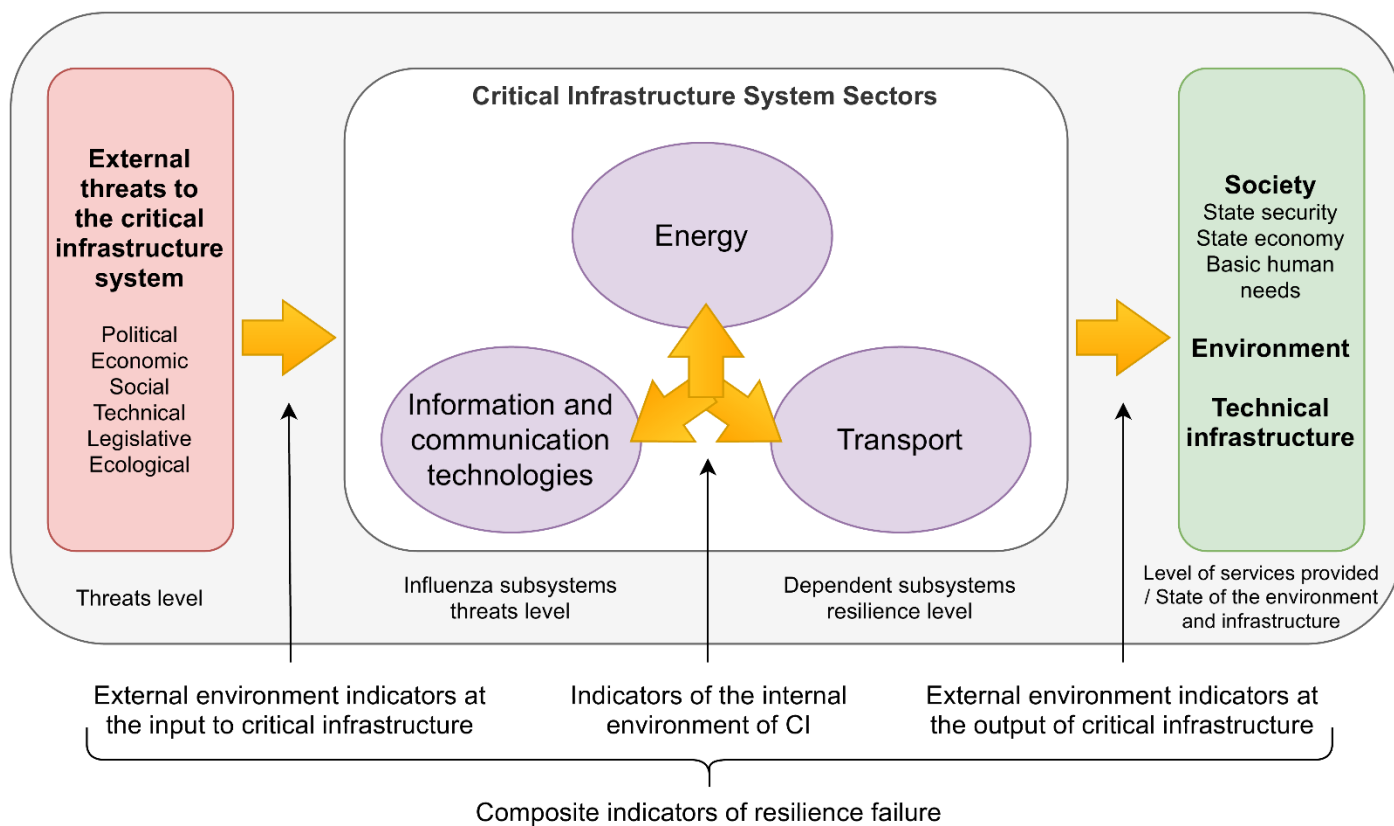
The aim of the project and its characteristics

The project is focused on the issue of indicating the critical infrastructure (CI) subsystems resilience failure due to the effects of internal and external threats. To this end, the main objective of the project was determined, which is to determine the indicators of critical infrastructure subsystems (i.e. sectors, subsectors and elements) resilience failure and to develop a tool to identify these indicators and assess their suitability for specific critical infrastructure subsystems. (CIRFI – Critical Infrastructure Resilience Failure Indicators).



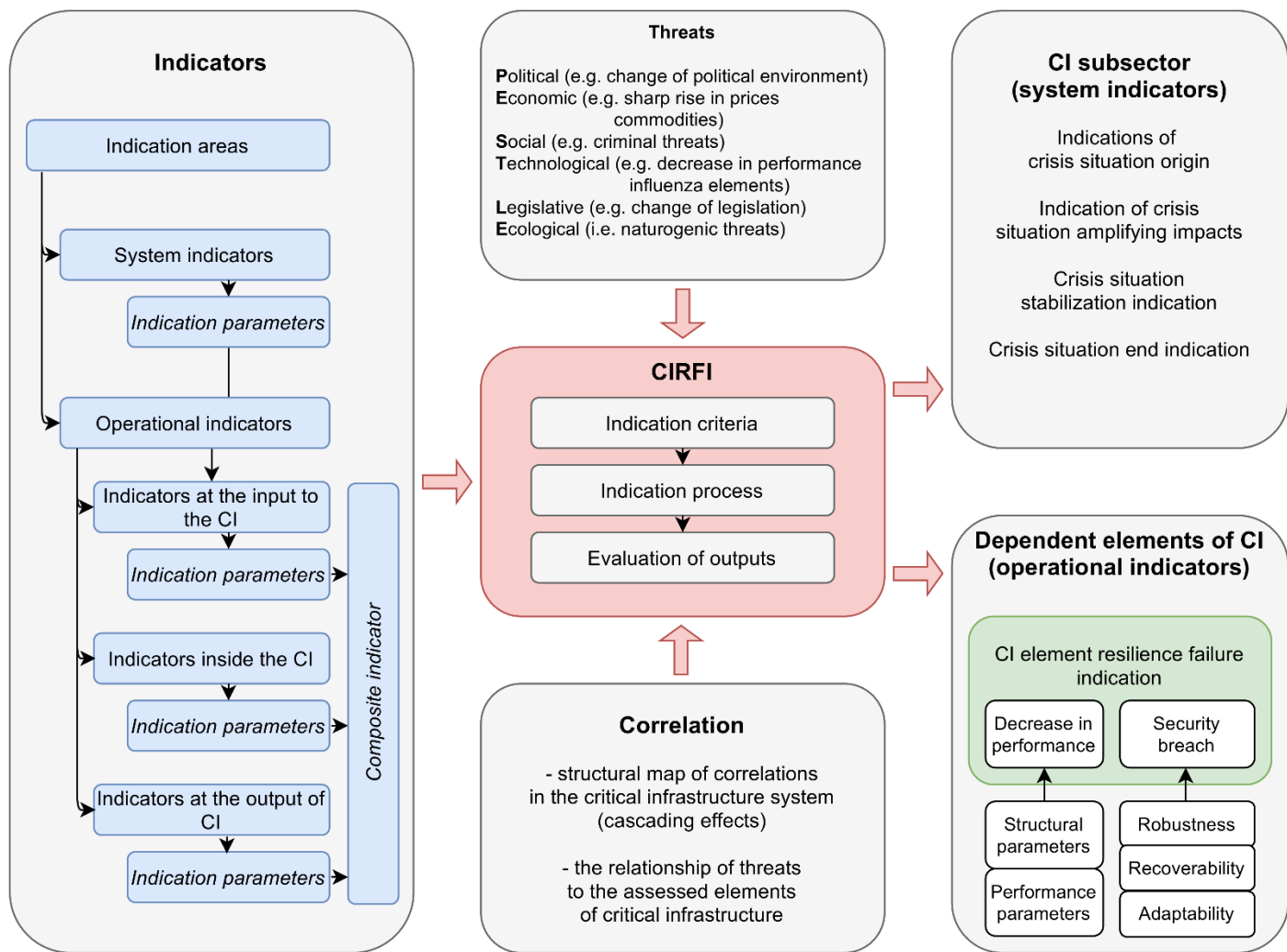
A number of indicators are currently used to manage the operation and safety/security of critical infrastructure elements. However, these indicators have not yet been relevantly identified and used for the purpose of assessing infrastructure resilience. Therefore, in the course of the research, significant indicators of subsystem resilience failure will be determined in selected and closely interconnected sectors of technical critical infrastructure (i.e. energy, transport and information and communication technologies). These indicators will be determined for all levels of the critical infrastructure system, which are elementary, subsector,

sectoral and system. At each level, these indicators will be determined in individual areas in which there may be external and internal threats adversely affecting the resilience of critical infrastructure subsystems. Specifically, it is a political, economic, social, technological, legislative and environmental area.



Project results and their users

The main results of the project will be "Methodology for identification of critical infrastructure resilience failure indicators", "Specialized public database of critical infrastructure resilience failure indicators" and "CIRFI Software Tool", which will serve to facilitate practical application of the methodology and indicators in the database. The results will be intended primarily for critical infrastructure entities for the purpose of early indication of their element resilience failure. As a result, the security of these elements will be increased and, in the event of their failure, the impacts on dependent sectors will be minimized.



The results of the project will also be usable for state administration bodies (especially the Ministry of the Interior - General Directorate of the Fire and Rescue Service of the Czech Republic, the Ministry of Industry and Trade of the Czech Republic and the Ministry of Transport), local authorities (Municipalities) and research organizations universities and research centres). Using the above results, these users can create, for example, a map of the vulnerability of individual elements and then determine the most probable scenario of the spread of cascading and synergistic effects within their department or territorial scope.

The achieved results of the project are continuously published on:



Project provider: **Ministry of the Interior of the Czech Republic, Security Research Program of the Czech Republic 2015-2022**

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Project solution time: **1/2020 – 12/2022**



MINISTRY OF THE INTERIOR
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