INL Resilience Optimization Center
A national center for systems resilience and risk management

With impacts from natural disasters and human-caused incidents on the rise, resiliency — the ability to withstand impacts and rapidly recover from different degrees of disruption — has become a top priority.

U.S. disaster declarations between 2005 and 2014 rose 35% compared to the previous decade, with costs nearly tripling to $106 billion in federal assistance, according to the Federal Emergency Management Agency. Concurrently, in 2017, the American Society of Civil Engineers rated U.S. infrastructure a D+.

Cyberattacks — more than half of which are preventable — cost global organizations an estimated $400 billion annually, and only 5% of U.S. companies have business continuity, cyber security and physical security plans. In short, threats are increasing, vulnerabilities are growing and risks are multiplying.

Idaho National Laboratory established the INL Resilience Optimization Center (IROC) as an innovation center for system resilience and risk management. The center draws from INL’s extensive track record as a world leader in critical infrastructure systems analysis and security, as well as its unique, large-scale test ranges.

National defense, economic prosperity and quality of life have long depended on critical infrastructures such as energy, water, transportation and telecommunications. The rapid proliferation of connected systems has created new dimensions of vulnerability and risk to every organization. INL has long focused on this situation in exceptional ways, and the IROC is the lab’s commitment to offer resilience solutions.

Why the IROC is needed
There is no one-size-fits-all approach to resiliency. National resilience requires asset owners, especially owners of lifeline systems, to consider the infrastructure within their direct control and be conscious of dependence upon infrastructure out of their direct control. Resilience planning should be scaled and bound to an operation’s criticality, risk profile and budget.

Forming a plan to enhance the resilience of critical infrastructures requires owners/operators to determine the ability of the system to withstand specific threats and then return to normal operations following degradation. Thus, a resilience methodology requires comprehensive consideration of all parts of critical infrastructure systems — from threats to consequences. The methodology must generate reproducible results that can support decision-making in risk management, disaster response and business continuity.

What the IROC does
The IROC can organize multi-disciplinary teams and labwide
existing expertise, tools, test infrastructures and other partner capabilities, the IROC can comprehensively analyze the state of stakeholder resilience and provide optimized solutions that will yield observable results.

Who the IROC serves
With the ability to provide personal attention to individual challenges posed by resilience gaps, the IROC can optimize a broad range of solutions to fit distinctive situations for federal agencies and private companies.

For more information
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The IROC leverages capabilities in cyber systems, full-scale infrastructure testing, integrated energy solutions, modeling and simulation, scientific computing, and cyber-physical-dependencies analysis.