

# Structural integrity under extreme loads

## Topic: Vulnerability

**TITLE:** Development of a methodological approach to the multidisciplinary topological optimisation of protections.

### RESEARCH BACKGROUND:

Vulnerability assessments are paramount to evaluate the response of structures to threats. Based on the results of such assessments, protections may be designed to reduce possible weak points of platforms.

### RESEARCH ACTIVITIES:

1. Bibliographic research on state-of-the-art topological optimisation techniques.
2. Development of a methodological approach to perform multidisciplinary topological optimisation including information about the platform vulnerability.
3. Testing on a realistic case study and numerical simulation of the optimised protections subjected to ballistic impact.

**METHODOLOGY:** Analytical - Numerical

**DURATION:** 6-9 months

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