BE S²ECURE
Built Environment Safer in Slow and Emergency Conditions through behavioUral assessed/designed Resilient solutions
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WP4–Human factors simulation in BETs and definition of a related behavioral-based (B-based) resilience metric

T4.2 Simulators application to selected BETs in their current state and by applying current SUOD/SLOD standards mitigation strategies. Interferences assessment between selected SUOD/SLOD through simulation-based approach, with possible overlap of effects and related amplifications. Definition of a set of KPIs for overall resilience evaluation of BE and criteria for their correlation

D4.2.1 – Report on simulation results

ABSTRACT. Risk and resilience assessment can take advantages of the definition of recurring conditions of the Built Environment, through the identification of Built Environment Typologies (BETs), on which simulation tools can be applied to identify the main issues in emergency conditions. On these bases, the current deliverable traces the results of the application of agent-based simulation model developed by D4.1.1 on the BETs identified by D3.2.1, depending on the exposure conditions in D3.2.3. Current scenario conditions are assumed, by thus representing the BET as it is defined in the typological representation. Simulations are organized in two main groups: 1) Slow Onset Disasters (SLODs - heatwaves and pollution implying the permanence of users in the outdoor BET) are assessed by themselves through simplified models relying on the relation between users and the BET conditions; 2) SLOD are then considered as input scenarios for Sudden Onset Disasters (SUODs) implying evacuation in (earthquake) or from (terrorist act) the BET. The basic key metrics (e.g. evacuation times for SUODs; exposure time for SLODs) defined in D4.1.1 are then used to trace preliminary results from the BETs application, in view of a more extensive assessment through next actions concerning behavioural-based Key Performance Indicators (KPIs) and metrics development. Results for the different BETs are also compared to understand them and point out the main characterizing issues for users' safety in the BETs.