



**Earth System Science and Environmental Management (ESSEM)**

**Participating countries**

AT, BG, HR, CZ, FI, FR, DE, GR, HU, IL, IT, NL, NO, PT, ES, UK, LU, SI, DK

## COST Action ES1006

# Evaluation, improvement and guidance for the use of local-scale emergency prediction and response tools for airborne hazards in built environments

2011 | 2015

## Objectives

Main Objectives of the Action are

- to evaluate and substantially improve neighbourhood-scale emergency response tools for airborne hazards modelling,
- to categorize and characterize local-scale threat scenarios resulting from local-scale airborne dispersion of toxic agents,
- to identify and document limitations of local-scale emergency response methodologies by assessing the actual uncertainty of model results,
- to identify and document practical problems encountered by first responders when confronted with output from modelling tools,
- to develop and establish scientifically and practically justified means and methods for assessing performance of emergency response tools,
- to define development requirements not only for the next generation of local-scale airborne hazards models but also for improving the quality of currently applied tools.

## Main Achievements

Main achievements of the Action after the first year are

- the successful setup of organizational structures and the implementation of means for efficient information exchange and cooperation (e.g. GoogleGroup, Action website, WG rapporteurs, Editorial Board),
- the particularization, completion and adoption of the work plan,
- the publication of the first document summarizing threats, challenges and modelling approaches in local-scale airborne hazmat dispersion simulation and drafting the basics of an application-oriented model evaluation protocol (first deliverable)
- the 1<sup>st</sup> Open Workshop on Local-Scale Airborne Hazards Modelling and Emergency Response organized by the Action for immediate dissemination of the results

## Working Group 1 Threats, Models and Data Requirements

- drafting of a dedicated model inventory (involving one ESR STSM)
- drafting of a reference data inventory for model evaluation/testing (involving one ESR STSM)

## Working Group 2 Test, Evaluation and Further Development of Models

- drafting of a model evaluation protocol (involving one ESR STSM, published in 1<sup>st</sup> Document)
- adapting a framework for efficient, model-specific testing of hazmat dispersion models

## Working Group 3 Applicability, Implementation and Practical Guidance

- establishing first contacts to end-users and decision makers in the context of local-scale emergency response by means of a dedicated Stakeholder Questionnaire
- establishing contacts for non-COST country involvement (Japan, USA)
- editing of 1<sup>st</sup> Document (involving ones ESR STSM)

## Contact details

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One HazMat release, two solutions: The common Gaussian approach vs. a time-dependent, obstacle-resolving Lagrangian simulation, different threat scenarios to be dealt with.



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