Proposal for COST Action

Integrated
Fire **E**ngineering and **R**esponse

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URL: fire.fsv.cvut.cz/IFER

Motivation

To introduce the proposed Action by

- Reasons for the Action
- Main objectives
- Deliverables
- Wider objectives
- Structure
- Organisation
- Dissemination

Aim of the Action

- To put together specialists in
  - Fire dynamics
  - Structural fire engineering
  - Active/passive fire protection
  - Environmental protection
  - Human response to disasters
- To create forum of experts from
  - Research community
  - Practitioners
  - Building control authorities
  - Fire fighting authorities

Current projects in field

- National projects (participants in 72 projects, 69 Million €)
  - Fire modelling
  - Active fire protection
  - Material properties
  - Structural fire engineering
- European projects
  - 7FW Fires in cultural heritage, 3 projects
  - RFCS Research found for steel and coal, 10 projects
- COST
  - Action 26
    Urban habitat constructions under catastrophic events

    (In preparation participated 89 experts/ 12 from C26)
  - Actions C17, C19 and C22
    knowledge of management of various extreme events
  - Action TU0601 - robust models for loading

Right for COST?

- Fire safety
  - Safety is in EU treated nationally
  - EU Construction Products Directive 89/106/EEC fire main/first exceptional loading
  - Part of culture of all countries
    - Different procedures to reach similar/high level of fire safety
    - Harmonisation chance for improvements/economy
  - European standards for fire design not for requirements/demands
  - Multidisciplinary field

Great Fire of London, 2-5 September 1666

Main objectives

- Connect **research, practice**,
  and end-users: **authorities** and **fire fitters**
- Facilitate **cooperation** between the **authorities in EU**
- Introduce the **latest research into standards**
- Encourage a **market beyond the EU borders**
- Affect of society
  by **advanced technical solutions**
- Performance-based methods
  for **existing buildings** and new buildings
- Encourage integration of
  - **active and passive fire protection systems**
  - **new materials**
  - **environmental protection**

How to reach the objectives?

- Harmonisation the **local projects** in field
- Disseminating performance-based approaches for **composite/mixed building** technology
- Main perspectives of **change of use of buildings**
- **Principles** of modern performance-based methods for **building control authorities**
- Recommendations for **improving/harmonising the national codes**
- Identification of topics for **further research needs**

Scientific focus

- **Change of use/reconstruction of buildings**
- The performance of new construction materials
- Composite construction technologies
- **Protection of the environment**
- **Fire following earthquake damage**
- **Fires following explosion damage**
- The fire protection of high-rise buildings
- **Robustness of buildings, particularly their connections in fire**
- Safety of tunels

Deliverables

Deliverables summarised in Work packages

	1st year	2nd year	3rd year	4st year	After
WP1	State-of-the-art				
WP2	Case studies				
WP3		Reports and investigations			
WP4			Benchmark studies		
WP5		Dissemination			

WP3 **Methodology for exploration** of fire brigade report and investigations

WP4 **European benchmark studies** for validation of the results of simulations

For early stage researchers

- STSM
  exchange for experimental and numerical work
- Training school
  at fire intervetion training facilities
- Support of participation at the Action Conferences
- Organising the special issue of a journal

– Till now 26 young experts contributed to the preparation of the application

Wider goals

- Gender balance
  - To be treated during all the action
  - 7 ladies offer help in MC
  - 7 early stage researchers ladies

- Spread of knowledge/best practice to European countries
  - In preparation of Action the experts from 23 EU countries
  - Goal from each country experts a researcher and a fire authority

Structure

WG1 Fire behaviour and life safety

Active measures in the built environment

WG2 Structural safety

Passive measures in the built environment

WG3 Integrated design

Across the disciplines of fire in the built environment

(Fire after earthquake, explosion, environmental issues, etc.)

WGs composed of

Reserchers, administratores, engineering practitioners

Organisation

- MC and WGs´ meetings twice a year

Activity	1st year	2nd year	3rd year	4st year	After Action
Workshop	10th month				
Conference current stage		10th month			
Training school		3rd month			
Seminars			10th month		
Conference future needs				10th month	Each two years

Dissemination

- Technical publications
  - Internet URL: fire.fsv.cvut.cz/IFER
  - State of the art report - Proceedings
  - Case studies - Booklet
  - Methodology for exploration of fire brigade report and investigations - Booklet
  - Benchmark studies - Book
  - Common Conference papers - Proceedings
- Non-technical publications
  - PR activities of Universities - Newspapers
  - PR activities of the Fire brigades - TV

Summary

- Reasons
  - Safety is in EU treated nationally
  - Multidisciplinary field
- Main objectives / how to reach
  - Connect research, practice, and end-users: authorities and fire fitters; Introduce the latest research into standards
- Deliverables / WP
  - State of the art report; Case studies
  - Methodology for exploration of investigations; Benchmark studies
- Wider objectives
  - Early stage researchers, Gender balance, Spread of knowledge
- Structure and organisation
  - WGs´: Fire behaviour and life safety, Structural safety, Integrated design
  - Workshop, Conference, Training school, Seminars, Conference
- Dissemination
  - Technical, Non-technical

Thank you for your attention

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Great National Theatre Fire,
Prague 12 Sept. 1881