



European Technology Platform on

# Industrial Safety

Safety for Sustainable European Industry Growth

## FG3

# Human & Organisational Factors

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# 5 macro areas of research

1. Human Factors in Organisational and Managerial Safety;
2. Human-Centred Design;
3. Integrated Risk Assessment and Management;
4. Human Performance & Technology Usability;
5. H&OF in Emergency and Crisis Management.



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## **Human Factors in Organisational and Managerial Safety**

# 5 Subtopics are identified

- 1.1 Resilience Engineering
- 1.2 Feedback experience (OR learning from experience ???)
- 1.3 Integration of HF into Safety Management Systems
- 1.4 The Transaction Costs approach to choosing the amount of resources to allocate to prevention
- 1.5 Accounting Control Systems and Reports vs. Social Reports on Safety Management



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## **Human-Centred Design**

# 3 Subtopics are identified

- 2.1 Virtual Reality Applications for Real-Time & Human-Centred Design
- 2.2 Inclusive design for sensitive workers (like disabled people, pregnant women, older workers)
- 2.3 Impacts of new technological devices directly affect work practices



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## **Integrated Risk Assessment and Management**

# 3 Subtopics are identified

- 3.1 Integrating Human & Organisational Factors into Quantitative Risk Analysis (QRA)
- 3.2 Operator Cognitive Models
- 3.3 Human factors in Task Management



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## **Human Performance & Technology Usability**

# 14 Subtopics are identified

- 4.1 Decision making and handling of conflicting objectives
- 4.2 Human Performance in Virtual Environments
- 4.3 Effective Knowledge Transfer to Improving Human Performance
- 4.4 Team-working
- 4.5 Alarms Handling & Design
- 4.6 Human centred design of tools and machines (to move to the previous area)

# 14 Subtopics are identified

- 4.7 Human-Virtual Environment Interfaces
- 4.8 Development of integrated systems to implement intelligent capabilities in the Personal Protective Equipment (artificial vision, speech recognition, haptic interfaces, sensors for environmental perception, etc)
- 4.9 Biomechanics and anthropometric requirements integration in PPE design

# 14 Subtopics are identified

- 4.10 Rehabilitative and assistive systems: intelligent machines to enhance the abilities of disabled or elderly people
- 4.11 Research in emotion-based interfaces
- 4.12 Improvement of usability testing for developing effective Human-Technology Interfaces
- 4.13 Human-Technology Interfaces design for sensitive collectives at work (Disabled people, pregnant women, young and older workers)

# 14 Subtopics are identified

4.14 Human-Technology Interfaces design for sensitive collectives at work (Disabled people, pregnant women, young and older workers)



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## **Human Factors in Emergency and Crisis Management**

# 0 Subtopics are identified

5.1 none at present



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## **Remaining issues**

# 7 areas of research

- 6 Risk perception & Risk Communication
- 7 Safety Culture & Safety Climate
- 8 Human Factors Knowledge Engineering & Management
- 9 Health & Social Issues
- 10 SMEs-related issues
- 11 Data Retrieval
- 12 Safety & Quality: Could they be merged, do they match ?



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## **Risk perception & Risk Communication**

# 2 subtopics are identified

6.1 Laws, regulation, procedures: impacts on actual safety

6.2 Design of regulation and laws: what to take into account?



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## **Safety Culture & Safety Climate**

# 3 subtopics are identified

- 7.1 Safety Culture of SMEs with regard to Safety Expenditures
- 7.2 Communicate with greater clarity what are the main elements of safety culture in the process industries (**maybe FG4**)
- 7.3 Impact of HF Knowledge throughout organisations



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## **Human Factors Knowledge Engineering & Management**

# 5 (or 3) subtopics are identified

- 8.1 Effective Knowledge Transfer to SMEs  
(maybe FG4)
- 8.2 Effective (International) Risk  
Communication (maybe FG4)
- 8.3 Human factors in the knowledge based  
creation and evaluation of man-machine  
interfaces
- 8.4 Understanding and diffusion of HF  
knowledge

5 (or 3) subtopics are identified

8.5 Teaching of Human Factors



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## **Health & Social Issues**

# 4 subtopics are identified

- 9.1 Health-related issues in Virtual Environments
- 9.2 Health-related issues in highly intensified control systems
- 9.3 Musculoskeletal load at the workplace
- 9.4 Social Implications of the use of Virtual Environments



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## **SMEs-related issues**

# 2 subtopics are identified

- 10.1 Organisational forms & Managerial Practice to preventing accidents and managing risk in SMEs
- 10.2 Manufacturing of tools and instruments and equipment



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## **Data Retrieval**

**(maybe to incorporate in area 3)**

# 2 subtopics are identified

11.1 Reliable Data for Human Reliability Assessment

11.2 Data Manipulation & Use



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**Safety & Quality: Could they be merged, do they match ?**

0 subtopics are identified

None at present