[Improved First Responder Ensembles Against CBRN Terrorism]

www.ifreact.eu

Aim

- Developing an advanced protective ensemble that will enhance the chemical, biological and radiological protection of European first responders in a CBRN crisis.

- terrorist attacks +

  non-intentional incidents

PEOPLE

F·R·E·A·C·T

Who are we?

- IFREACT is a consortium of CBRN manufacturers, subject-matter experts and end-users from all over Europe

Current PPE - Far from ideal

As stated in the European Security Research Innovation Forum (ESRIF) final report of December 2009, Personal Protective Equipment (PPE) is:

- Heavy and bulky
- A physiological burden that interferes with the operational duties of first responders.
- There is a concern that current PPE is not standardised or universal.

Goals of IFREACT

- To develop a PPE system that:
  - addresses the real protection needs of conventional users;
  - provides adequate protection while keeping the burden of the system as low as possible;
  - includes solutions for respiratory protection and hand and foot protection;
  - allows end-users to best select the PPE system needed for the mission and the expected threat via digital selection tool.

PPE Selection Tool

- A software tool that will allow responders and procurement officers to select the optimal equipment for the performance of their tasks based on:
  - Real Threat Scenario Analyses
  - User Requirements
  - Concepts of Use
- Both Standard and Advanced version will distinguish between:

General requirements:

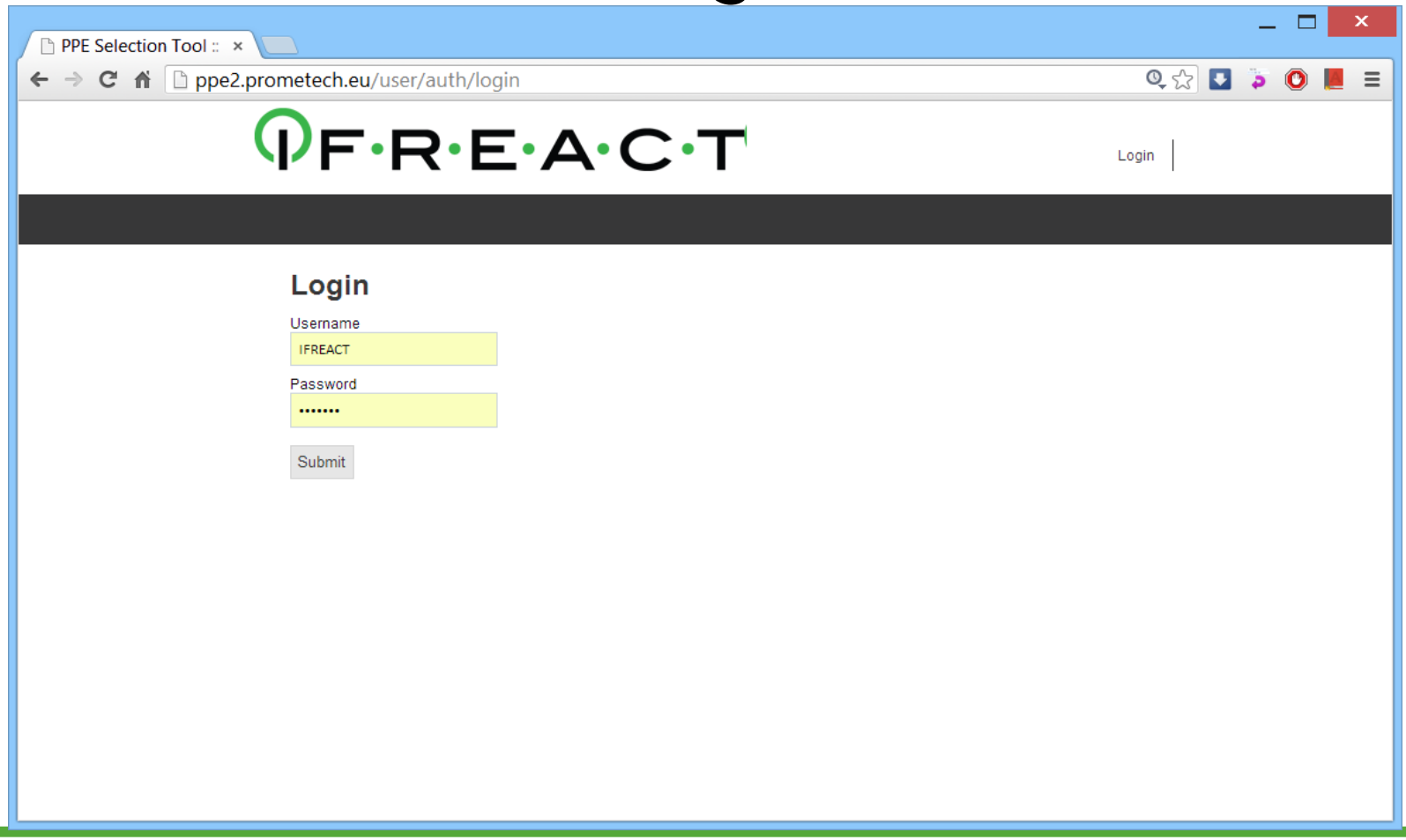
- Manual dexterity
- General dexterity
- Hearing and speech requirements
- Vision requirements
- Physiological burden control requirements

Protection requirements:

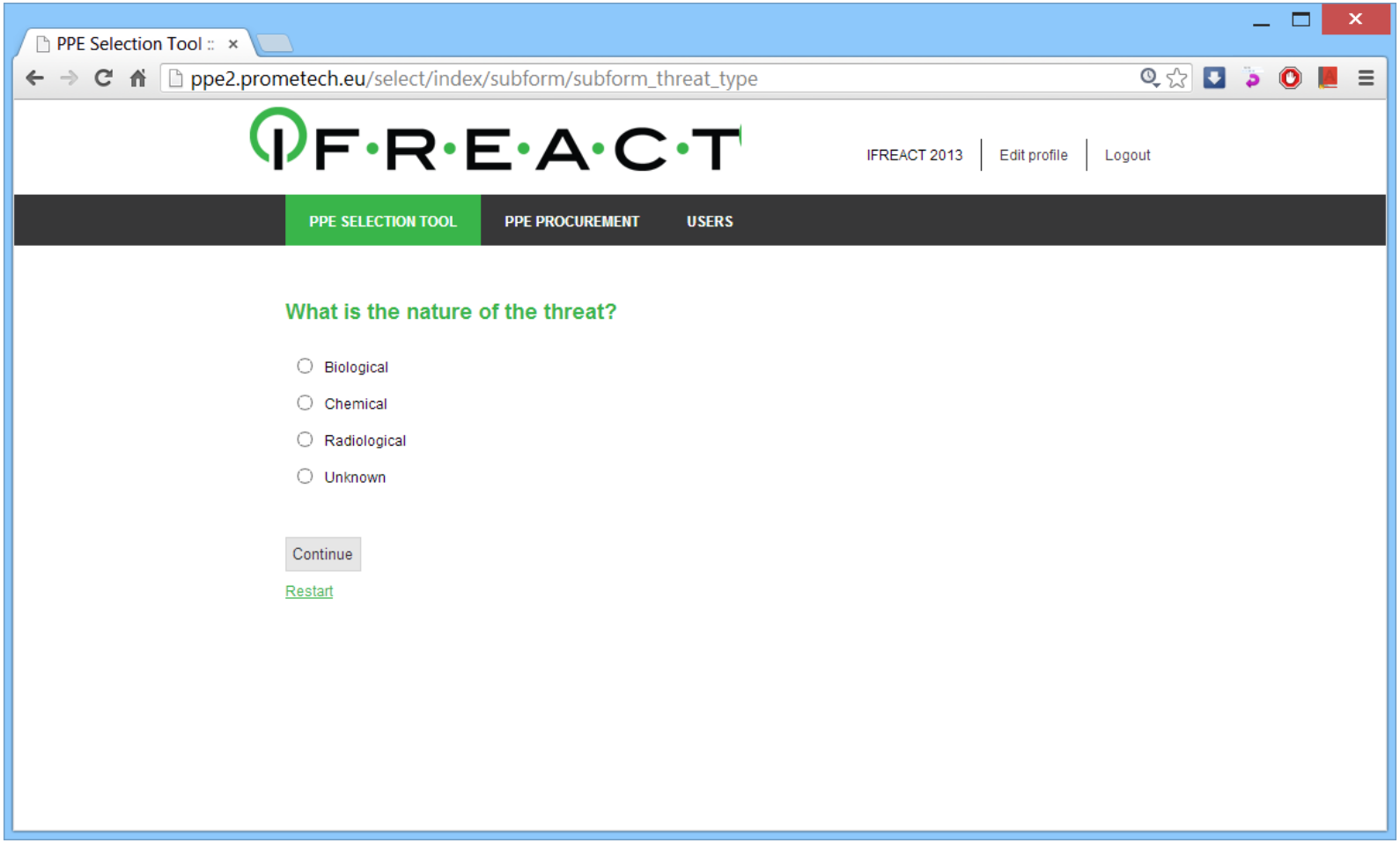
Respiratory vapour protection
Respiratory particle protection
Dermal liquid and vapour protection

Tool Overview

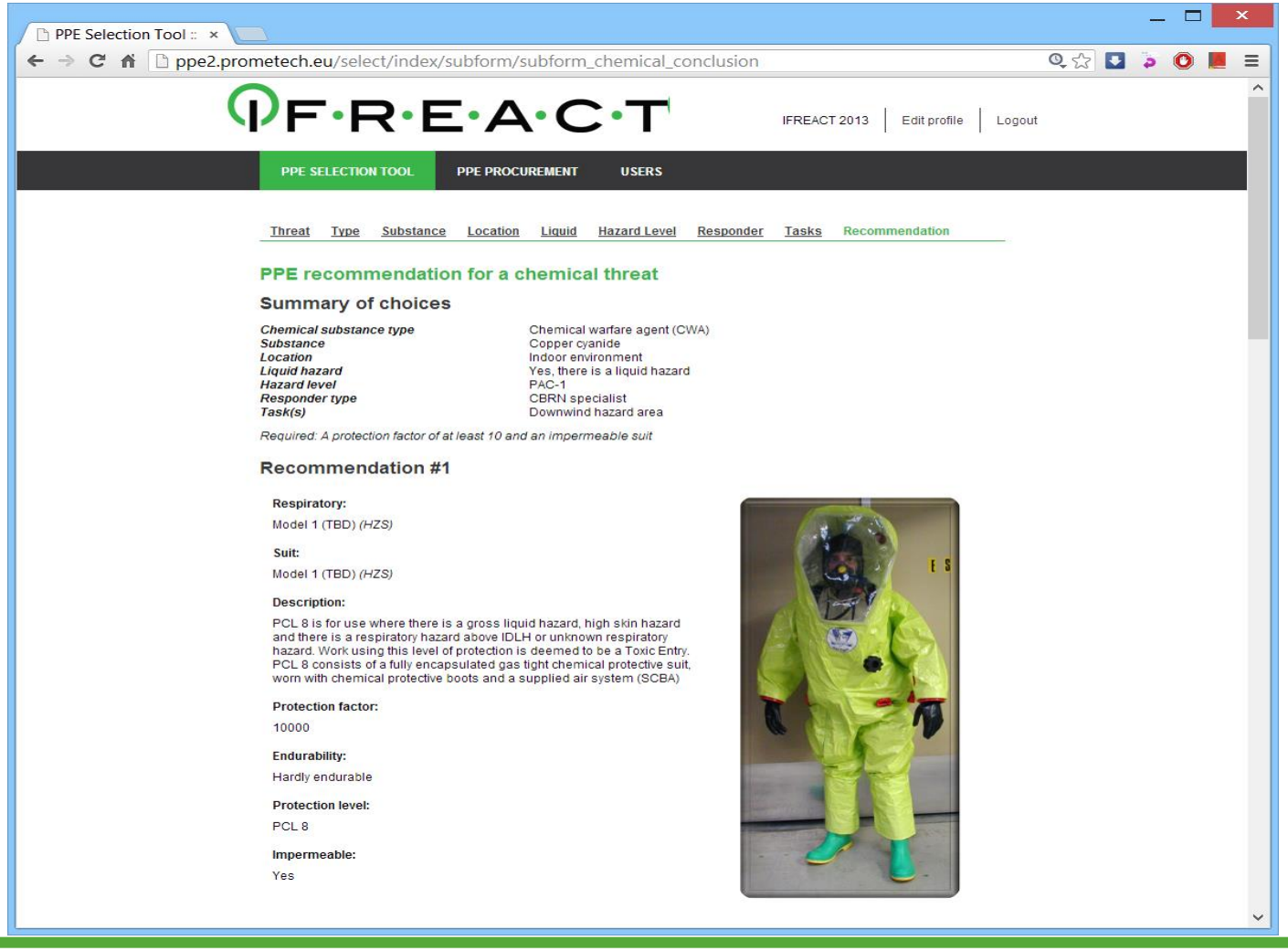
- Accessing the tool -



- Using the selection tool -



- Recommendations -



IFREACT will go beyond the state-of-the-art

For the 1st time, skin protection (suit) performance will be based on the assessment of:

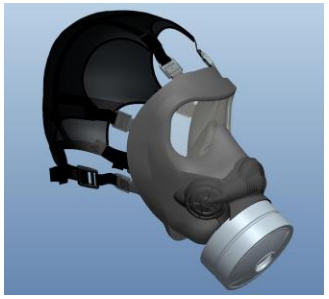
- realistic CBRN incident scenarios;
- available human toxicology data regarding the involved agents and exposures;
- real life First Responder operational needs.

Expected outcome:

- adequate protection (re. threat & user needs),
- lowest possible burden on the wearer,
- simple to use, to maintain and to store,
- optimally compatible with other PPE used by the wearer,
- 'low lifecycle cost', incl. costs of acquisition, use, storage & maintenance,
- individually optimised to address specific user group needs (vapour protection, liquid protection, flame & fire retardancy)

IFREACT will go beyond the state-of-the-art

- **Overpressure hood**
  - Innovation of the **respiratory protection** envisaged is the use of textile materials for which the construction will insure, in addition to the function of protection, also the functions of directing the air flow.
  - Overpressure of clean air => very high protection factor. Cooling the head of the wearer. Demisting…
  - Over pressure maintained by blower system worn on body
- **Gas mask**
  - **Hood adapted onto the gas mask** : the principle consists in developing a textile hood to protect the head. This hood should fit with the gas mask. This equipment should be also compatible with a helmet.
  - **Gas mask alone:** can be used with a blower or a canister and is compatible with a hood attached the suit.



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- **Bio-dosimeter**
  - Individual aerosol collectors integrated into clothing
  - Small, portable and robust
  - Gives access to the biological dose absorbed by the individual
  - Periodic reading of these aerosol collectors can provide evidence of biological incidents

- **Head Up display (HUD)**
  - Provides relevant and timely information required for the task
  - The responder sees information on his environment, in his environment

- **Add-ons**
  - Audio/voice communications
  - GPS
  - Miniaturized video cameras
  - Physiological monitoring

What Next?

- testing and evaluating the existing PPE, in the laboratory and during exercises
- first prototypes
- integration of different components in one set of systems
- dissemination of project results

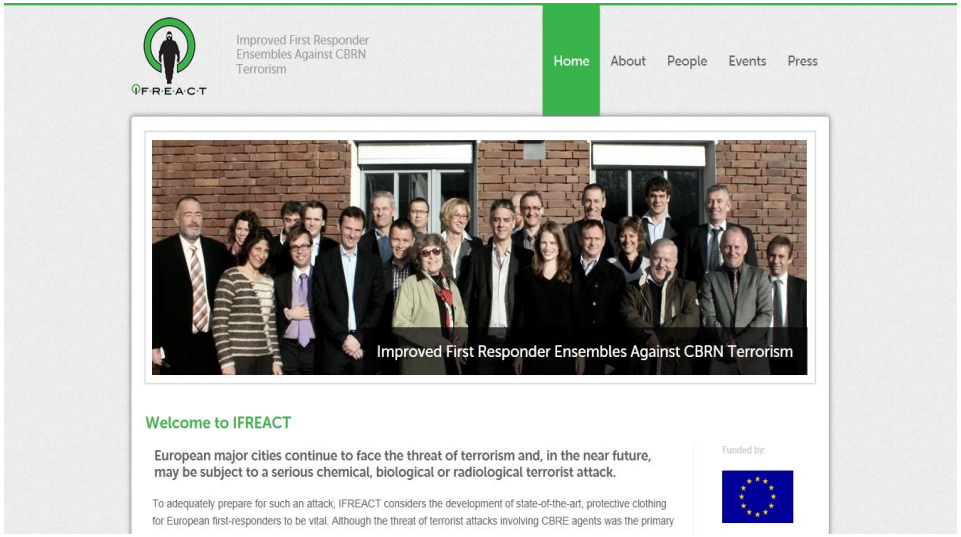
Workshops

- **Paris**
- **Split**
- **Prague**

Dissemination

- **Website - ifreact.eu**

- conferences, workshops, presentations
- **Brochure** - 4 page brochure - out
- 16 page brochure - June 2013
- 32 page brochure for December 2014
- **Magazines articles** – Interviews and articles in a wide variety of media – CBRNe World, The Parliament, Journal of Emergency Medicine, Wired etc…



Questions