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Minutes

Kick-Off Meeting 21 – 23 October 2009 at the Guttasjön International Competence Centre and the main Fire Station in Borås, Sweden

Participants: see ANNEX 1 and separate montage of group photos

Agenda and documentation: Each participant received a Memory Stick with sufficient capacity for gathering all Power Point presentations and other documentation related to the FIREFIGHT II Project. The content at this stage is listed in ANNEX 2.

Opening Session

Bo Andersson opened the Kick-Off Meeting.

Kjell Wahlbäck, the Chief of the Södra Älvsborg Fire & Rescue Services, welcomed the Participants to Borås and presented the Södra Älvsborg Fire & Rescue Services.

Bo Andersson/Ulf Bjurman gave a general overview of the FIREFIGHT II Project. In the following discussion, there was general agreement that the objective of FIREFIGHT II is to supplement FIREFIGHT I, which has produced e-learning and training for firemen, with a Cutting Extinguishing Concept (CEC) vocational education and training package for fire officers, fire intervention commanders and fire chiefs. The definitions indicated in the overview of Strategic Goals for FIREFIGHT II, Strategy for Contingency Planning and Tactics were accepted for the purpose of focusing and facilitating the work in the Project.

A representative of each Partner presented the Partner's organization and each participant presented him-/herself.

Session on organizational matters

Christina Jansson from the International Programme Office and the Project Officer informed about the Leonardo da Vinci Programme, Vocational Education and Training (VET), and the administrative and financial provisions related to the Project.

In the following discussion, information was provided about the Partner Agreement, which will be disseminated to each Partner for signature together with a copy of the Grant Agreement between the Programme Office (PROGRAMKONTORET) and MSB. The Meeting was informed that Sofie Andersson will provide supplementary information on relevant administrative and financial matters. A timetable for Reporting and follow up of the working days/half days was presented and adopted by the Meeting.

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The importance of the obligation of the Project to conduct dissemination, i.e. spreading successively information about the Project and its results, was underlined by the Project Officer. It was noted that one such action had already taken place at the French Congrès national 2009 for firefighters in Saint Étienne 15 – 17 October, where the CEC was demonstrated great numbers of persons using both a heavy truck/fire engine and first response units and information was provided about FIREFIGHT I and II. The Meeting decided to elaborate a Communication Plan for the Project and welcomed the initiative to establish a website for the Project www.eufirefight.com which will also offer means for internal communication. A short Power Point Presentation of the FIREFIGHT II Project will be compiled for dissemination purposes and disseminated to all participants for use, as appropriate.

Session for presentation of the FIREFIGHT I Project results

Bo Andersson presented the FIREFIGHT I e-learning package.

Miguel Seguí presented and demonstrated the fire simulations elaborated in FIREFIGHT I.

Petr Kupka presented the practical training for firefighters conducted at the Brno Fire Protection and Training Centre during FIREFIGHT I

In the following discussion, it was recognized that these results are already available for education and training purposes and provide a basis for the work in FIREFIGHT II. The final results of both Projects will form a coherent education and training system on the Cutting Extinguishing Concept (CEC). In the course of FIREFIGHT II the results of FIREFIGHT I will, as necessary, be up-dated and adjusted to fit into a consolidated system for education and training of the fire and rescue personnel, taking into account also practical experiences gained.

Session with discussion of FIREFIGHT II target groups and scenarios

- Jose Luis Legido (Pepe) introduced a discussion on the target group for the Project, i.e. the fire officer, intervention team leader and fire chief level and the focus for the Project on matters related to strategy, tactics and methodology.
- Bo Andersson introduced a discussion on basic scenarios for the Project divided into:
 - ❖ dwelling houses i.e. terraced houses (row houses) and blocks of flats/apartment blocks
 - ❖ factory buildings of different types, larger than 500 sq.m. and smaller than 500 sq m.
 - ❖ meeting halls, shopping centres and stores, with more than 150 persons and with less than 150 persons

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The following discussion showed general support for the approaches presented. It was however clarified that the purpose was not to review the command and control systems in general but focus on the CEC strategic and tactical aspects. In respect to the basic scenarios, these could serve as a general platform for the work, taking into account that building and construction differs from one country to another which may lead to a need to review or supplement these scenarios in the course of the Project. The importance of also taking into account practical experiences from interventions was underlined. It was also mentioned that contacts had been taken with the Unit for Learning from Accidents/Incidents in MSB regarding the possibilities for establishing a databank on experiences from interventions when the CEC has been implemented. Further discussion of this matter could take place at the next Meeting.

The Meeting expressed its appreciation to Bo Nystrand for the high quality of the photographs in the presentations and their usefulness for this education and training Project, as they are based on his very long experience as a senior operational fire officer.

Session on planning of the Work Packages

Stefan Bengtsson and Krister Palmkvist introduced WP 2 Strategy and tactics (efficiency and early response)

Darren Dovey and Phil Pells introduced WP 3 Safe working environment and minimize environmental consequences

Jose Luis Legido (Pepe) introduced WP 4 Surveillance/assessment/decision support (buildings' fire conditions)

Luc de la Durantaye introduced WP 5 E-learning

Petr Kupka introduced WP 6 Exercises and drills

The introduction of WP 2 was supported by a Power Point Presentation and the introductions were oral presentations. Abstracts of the introductions to WPs 3 – 6 will be provided by the Work Package Leaders of each WP.

Practical demonstrations conducted by Södra Älvsborgs Fire & Rescue Services

All participants studied the practical demonstrations, some participated actively in these. Some of the actions during the demonstration are presented in the Power Point Presentations How to Employ the FIREFIGHT Model (CEC) and Within 20 Seconds, which form part of these Minutes.

After the demonstrations, Bo Andersson/Ulf Bjurman presented the GELFEU Methodology which is an innovative system under development and testing (testing of the implementation of this methodology in forest fires was conducted during trials in the North of Sweden and

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testing in urban conditions will soon be carried out at Guttasjön). The methodology is expected to minimize environmental consequences of fighting and extinguishing fires in forests and urban areas more effectively than with present means and to enhance protection and prevention by retarding fires. An application for a project to introduce the implementation of this methodology using inter alia CEC is now under consideration.

Concluding discussion of the Work Packages

In the discussion of the work packages, the suggestions presented in the introductions were received favourably. It was recognized that there was a need for close collaboration between different workpackages for instance WP 2 Strategy and tactics and WP 4 Surveillance/assessment/decision support and also WP 5 E-learning and WP 6 Exercises and drills, in which the participating Colleges and Training Centres need to be fully involved. The establishment of this collaboration is under the responsibility of the Work Package Leaders and can be achieved through direct contacts for instance through e-mail, in connection with the meetings and seminars and at a later stage in the Project through possible small working group meetings with specific tasks. The need for supplementing the first CEC education and training with refresher training (at least one country requires such training every five years to maintain certification) was identified and has to be considered in the course of the Project. There was support for a proposal to develop performance indicators to measure results and establish a baseline. In the further deliberations within the Project, the importance of not only providing education and training but also changing the thinking/mentality of the fire officers to use the CEC as a natural methodology should be addressed. In this context the dissemination and different outreach actions for instance to relevant organisations within the Communication Plan were stressed again.

Finalisation of the planning of the work and concluding discussion

The Meeting found it necessary, taking into account that so much progress has been made at the Kick-Off Meeting that it is now necessary to maintain momentum, to move forward one meeting to March 2010 to be held in Spain, tentatively Madrid, and to plan the seminar on workers health and safety aspects to be held in May/June 2010 to be held in the United Kingdom. The planning of the seminar will take place in London at the Office of the UNION on Monday 14th December. The dates of the next meeting and the seminar will be fixed as soon as possible, and before the end of 2009. The Exercise will consequently also serve as the Final Meeting of the Project and will tentatively be organized at ENSOSP in Aix-en-Provence in September 2011. The time and venues of the Mid Term Meeting and the second seminar will be decided on at the Meeting in Spain. Possible small designated working group meetings will be decided on later, as needed.

It was recognized that it was now up to each Work Package Leader to consider and initiate further action. Progress Reports are to be submitted at the meeting in Spain.

Finally, the question of interpretation was discussed and there were found to be solutions for making the results of the Project available in English, the working language of the Project,

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French, Spanish, Czech and Swedish. The translation into Finnish and Estonian needs to be considered further.

Closure of the Kick-Off Meeting

The Meeting expressed its gratitude to Södra Älvsborg Fire & Rescue Service for hosting this Kick-Off Meeting in such an excellent way and creating the very best conditions for a constructive and fruitful start of the FIREFIGHT II Project. Also the ambitious practical demonstration provided a good platform for all the coming work. The participation of the Mayor of Borås and Chairman of this regional Fire and Rescue Service Ulrik Nilsson during the demonstration but also as host of the common dinner was much appreciated.

ANNEX 1

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Presentations

- General Overview of the FIREFIGHT II Project
- International Programme Office presentation
- The FIREFIGHT I e-learning package demonstrated
- The simulations demonstrated
- ASELF presentation on Decision Support
- Presentation of basic scenarios
- SERF introduction of WP 2
- Description of the Training Centre of Fire Protection in Brno

Documentation

- Kick-Off Meeting Agenda
- Participants
- Practical information
- First draft of Template for FIREFIGHT II Partner Agreement
- Template for FIREFIGHT II documents
- Timetable for reporting and follow up of the working days/half days

Minutes

FIREFIGHT II Meeting Wednesday 17 – Friday 19 March 2010 in Madrid

Participants: see ANNEX 1

Agenda: see ANNEX 2

Documentation for the Meeting:

- draft Agenda
- draft Plan for Dissemination
- compiled extracts from the application and contract regarding the objectives of the FIREFIGHT II Project
- an introductory PPP presentation of the main theme and aim of the Meeting
- a PPP presentation with Financial Information concerning the Project
- SERF/SPs Report the Cutting Extinguishing Concept (CEC) – practical and operational use
- ASELFs PPP presentation on Decision Support in Fire Fighting Operations
- NFRSs PPP presentation of the Fire Fight Decision Making Model
- SERFs PPP introduction to implementing the simulation programme <http://www.digitalcombustion.com>
- Each Work Package Leader was provided with introductory PPPs incl. aims and deliverables for the respective working groups

In the afternoon on Monday 15 March the Meeting was planned in detail by Bo Andersson, Ulf Bjurman and Jose Luis Legido, together with Krister Palmkvist and Stefan Bengtsson.

During Tuesday 16 March WP 2 and WP 4 conducted in collaboration a test of the use of IR technology for scanning various arranged fires within a furnished building using a number of IR cameras located around the building, combined with cameras for documenting simultaneously visual observations. Thereby comparisons can be made of the IR data with the observations of the various arranged fires within the furnished building. The input from the IR cameras formed a basis, as part of an information and decision support system, for assessing the situation and testing different strategies and tactics as well as different methodologies and combinations of these for fighting the various fires inside the building.

Wednesday 17 March

Due to the participants arriving successively from the evening of Tuesday 16 March and in the course of Wednesday 17 March, it was found most appropriate to have a flexible approach of the Meeting starting with WPs 2 and 4, in order to make the best possible use of the time available. All participants were up-dated on their arrival.

WP 2 Strategy and tactics and WP 4 Surveillance/assessment/decision support

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Jose Luis Legido made a presentation (supported by a PPP) on Decision Support in Fire Fighting Operations under the titles Activation, Intervention, Reestablishing Normal and Evaluation/Post Intervention.

The Activation is initiated as a result of the initial information on the incident, the basic information leads to an early activation of response units and the complementary information covers the needs for the intervention. Gathering information concerning the fire through scanning and supplementary critical information for setting priorities and searching sources of information is the main goal for enabling an analysis and setting priorities and strategies to take the operational decisions. An action plan is made for initial, after and at last clarifying applications/setting priorities with available resources and necessary safety conditions, including accepted risks, and assignation of tasks. The plan has to be adaptable to the evolution of the incident through continuous evaluation and monitoring of the tasks and environmental consequences and control of the information and reporting. The incident commander has to ensure the functioning of the response organization and general coordination as well as coordination with other stakeholders. The operation will also consist of measures for the recovery of infrastructures and control of secondary damage as well as in the post intervention phase evaluation and lessons learned.

Danny Moore presented (supported by a PPP) the Fire Fight Decision Making Model provided by the UK Government to the fire and rescue services, which is a decision making model that can be applied to the Incident Command and individual tasks/events throughout the incident and will through continuous application ensure quality decisions based on all available information and the resulting outcomes, that can be effectively controlled. NFRS is adapting the model to its implementation of the CEC. The Incident Commander's role consists of two main activities, namely deciding, i.e. gathering and assessing all available information, identifying appropriate objectives, defining a plan and evaluating results, and acting, i.e. communicating the objectives and plan, controlling the activity and evaluating the outcome of the plan. Application of the model to an incident gives the incident Commander a structured approach to achieving the required outcome through Safe Systems of Work.

Information about the incident and the premises is received en route and on arrival. Once the relevant information, which can refer to the incident as a whole or an individual task/event, has been gathered and considered, the Incident Commander should identify and set the objectives. The Incident Commander should be aware of the importance to balance time spent gathering information with that of delaying any necessary action. The objectives need to be prioritised, especially in the early stages of an incident, possibly even before all the required resources are in attendance. The Incident Commander's objectives will be based upon the following:

- Saving life
- Minimising fire spread
- Extinguish fire

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- Control damage
- Protect environment

In setting detailed objectives, the primary concern is the reduction of risk to people. Objectives that provide resolution to a static situation but expose members of the public or Fire Service to unnecessary risk would not therefore be acceptable. When new information is received, the Incident Commander will need to consider whether the objectives set, and their prioritisation, are still appropriate. It is likely that the objectives and prioritisation will change during the course of an incident as each objective is achieved, or as new information is received.

After setting and prioritising objectives the strategy and tactics are planned. An essential element in the implementation of the plan is the need to ensure effective communication from and to the Incident Commander. The Fire Fight Decision Making Model identifies the need for quality and timely information and instructions to be passed to the officers, personnel and other agencies that need to know it. Doing this effectively will facilitate them in performing their part in the Incident Commander's plan and will keep them up to date with developments and progress in bringing the incident to a satisfactory conclusion. It is important to confirm that the communication has been received and understood. Often the easiest way to make sure that the recipient has accurately understood what is expected of them is to have them repeat it back. It will be necessary to ensure that resources are allocated appropriately, and that the actions taken comply with the plan, and Safe Systems of Work are put in place. Responsibility for certain areas may be delegated to make sure control is maintained over the whole incident and to enable individuals to carry out tasks effectively. The Dynamic risk assessment should be continually reviewed during the implementation of the plan - if the risks are not proportionate to the benefits of taking the action, additional control measures should be introduced. All information received during the incident can be used to assist the Incident Commander in evaluating, reviewing and modifying the plan. It is the responsibility of the Incident Commander to ensure that all persons in the chain of command are kept regularly informed of subsequent changes to the plan, the situation, the risk assessment and the progress being made.

On each occasion that new information, from any source, is introduced, the Incident Commander will use the Decision Making Model to evaluate the objectives, plan and control structure in light of this information. This will ensure that Safe Systems of Work are being maintained and resources are being used to best effect. It must be stressed that the use of the Decision Making Model should be continuous throughout the incident or event. In the early dynamic stages, it may be used many times and as the incident or event becomes more controlled and less dynamic the model may be used less frequently.

The Report the Cutting Extinguishing Concept (CEC) – practical and operational use –, which Södra Älvsborg Fire & Rescue Service (SERF), in collaboration with the SP Technical Research Institute of Sweden, has elaborated and submitted to the Swedish Civil

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Contingencies Agency (MSB) was presented. The Report presents the results of the scientific studies on the basis of reported and documented experiences from almost ten years practical implementation of the Cutting Extinguishing Concept (CEC) or methodology for fighting fires indoors without the firefighters entering into the burning building or compartment. SERF has since 1993 been working successfully with development of methodology for fighting fires indoors and gaining considerable experience of modern firefighting methodologies.

Krister Palmkvist introduced the possibilities for implementing the simulation programme <http://www.digitalcombustion.com> on the FIREFIGHT II scenarios in the development of the strategies and tactics. NFRS also had good practical experiences from using this programme.

In the following discussion, it was recognized that the presentations demonstrated that the Partners had in general a common approach to the strategy and tactics for fire fighting interventions, which could be seen in the scope of setting operational objectives and establishing plans. There was agreement to continue work to establish a common structure or model, based on the presentations under the leadership of SERF and ASELF, which could serve as an input to the elaboration of the education and training on Strategy and tactics and Surveillance/assessment/decision support. The need for taking into account the practical experiences from the implementation of the CEC in fire fighting interventions was underlined. The work undertaken by MSB to create a databank on such experiences and lessons learned was welcomed.

Jose Luis Legido, Miguel Seguí and Sol de la Quadra-Salcedo presented the test of the use of IR technology for scanning various arranged fires within a furnished building using a number of IR cameras located around a building, combined with cameras for documenting simultaneous visual observations. The results of the scanning and IR data with the observations of the heat from various arranged fires within the furnished building were demonstrated as well as how the input from the IR cameras formed a basis, as part of an information and decision support system, for assessing the situation and testing different strategies and tactics. Different methodologies and combinations of these for fighting the various fires inside the building were tested.

In the following discussion, it was concluded that these results should be coordinated with and presented in a similar way as the simulations developed in FIREFIGHT. This work is being undertaken by ASELF, i.e. Jose Luis Legido, Miguel Seguí and Sol de la Quadra-Salcedo.

Thursday 18 March

Bo Andersson/Ulf Bjurman made a presentation (supported by a PPP) of the main theme and aim of the Meeting.

Bo Andersson/Ulf Bjurman also provided (supported by a PPP) Financial Information concerning the Project. In the following discussion it was found necessary have more precise

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information on the reporting Excel format and how fill it in, to be provided by Partners every third month, containing information on working days and costs.

The participants split into two working groups, WP 3 Safe working environment and minimize environmental consequences and WP 5 E-learning and WP 6 Exercises and drills (education and training), lead by NFRS in collaboration with UNION and ENSOSP/Brno respectively.

Safe working environment and minimize environmental consequences

In the discussions of the group, it became clear that the main objective was to exercise influence on to the work on strategies and tactics and ensure that these provided a safe working environment for the firefighters. This influence should be exercised before the intervention with inputs from human sources and IR camera scanning, during the intervention when choosing between conventional means inside the burning building, external extinguishing with COBRA, the use of PPV in an attack or from outside the compartment and monitoring the evolution of the fire and changes in the environment and finally after the intervention with natural or forced ventilation combined with checks conducted using an IR camera. Measure to minimize the environmental consequences are a natural integrated part of this process. It was recognized that close cooperation between this group and the group dealing with WPs 2 and 4 was needed to achieve the main objective.

FIREFIGHT II should also establish a dialogue with inter alia the health and safety and environment protection stakeholders to reach the overall aims of the Project and for this purpose an open seminar is planned to be organized. The seminar also serves the purpose of disseminating the Project's results. The working group was aware of the importance of the seminar and therefore found that it was necessary to have more time than anticipated for preparing the seminar but also being able to present concrete results at it. The seminar will be aimed at gathering key persons involved in matters related to a safe working environment for firefighters and minimize environmental consequences of the firefighting which means that the quality of it must be high. In consequence the seminar should be postponed until the end of this year or the beginning of next year.

E-learning and WP 6 Exercises and drills (education and training)

The group considered how the e-learning and practical training could be integrated with the training of intervention commanders and fire chiefs. Due to EDUC not being able to participate in the Meeting because of unforeseeable events that occurred shortly before the Meeting, it found it difficult at this stage to define the requirements for the development of the education and training of the target group for FIREFIGHT II. It was recognized that the intervention commanders need to have knowledge of the basic training of firefighters in the CEC, and vice versa the firemen should also be given a general understanding in the area strategy and tactics.

Friday 23 October

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Concluding discussion

Strategy and tactics and decision support: The strategy and tactics for fire fighting interventions should be seen in the scope of setting operational objectives and establishing plans. Work will continue to establish a common structure or model based on the presentations and discussions at this Meeting. This will serve as an input to the elaboration of the education and training. There is a need for taking into account the practical experiences from the implementation of the CEC in fire fighting interventions. The results of the test of the use of IR technology for scanning various arranged fires within a furnished building using a number of IR cameras located around a building, combined with cameras for documenting simultaneous visual observations will be presented shortly. These results will be coordinated with and presented in a similar way as the simulations developed in FIREFIGHT. There is a need for pursuing the work in relation to all the different FIREFIGHT II scenarios.

Safe working environment and minimized damage: An objective of the Project is to exercise influence through the strategies and tactics to ensure that a safe working environment is provided for the firefighters. This influence should be exercised before the intervention, during the intervention and after the intervention. To minimize the environmental consequences is also an integrated part of the strategies and tactics. FIREFIGHT II will establish a dialogue with inter alia the health and safety and environment protection stakeholders to reach the overall aims of the Project, and for this purpose an open seminar will be organized. The seminar also serves the purpose of disseminating the Project's results. The seminar will be aimed at gathering key persons involved in matters related to a safe working environment for firefighters and minimize environmental consequences of the firefighting and therefore the quality must be high. In consequence the seminar will be postponed until the end of this year or the beginning of next year.

Education and training: The FIREFIGHT e-learning and practical training will be integrated with the training of intervention commanders and fire chiefs and the requirements for the development of the education and training of the target group for FIREFIGHT II are to be defined. The intervention commanders need to have knowledge of the basic training of firefighters in the CEC, and vice versa the firemen need to have a general understanding in the area strategy and tactics. Further planning of this work is needed.

Review of the time schedule for the Project

It was found premature to make major changes in the schedule at this stage without further reflections, with the exception of the postponement of the seminar. A need for limited technical working group meetings between meetings of all Partners has been anticipated from the start of the Project. At present the planning of such technical working group meetings, in the areas strategy and tactics and decision support and education and training, is being considered by the Project Coordinator.

Closure of the Meeting

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The Meeting expressed its gratitude to ASELF for hosting the Meeting in such an excellent way.

ANNEX 1

Participants in the Meeting

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Invited to the WP 2 and 4 preparation and testing: Lars G Larsson, Cold Cut Systems, together with his guest Mr. Zhang from China

ANNEX 2

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FIREFIGHT II Meeting Wednesday 17 – Friday 19 March 2010 in Madrid

Draft Agenda Rev 1

(notifications of arrivals: the evening Tuesday 16 and the morning Wednesday 17)

Wednesday 17 March

09.30 – 12.30 Planning work in Work Package Groups

One groups will be established for this work:

- ❖ WP 2 Strategy and tactics and WP 4 Surveillance/assessment/decision support, consisting primarily of SERF and ASELF, in the lead of the WPs respectively (preparation starting already on Monday afternoon 15 March but a Work Package Group will start work Wednesday 17 morning with those present for best use of time)

12.30 – 14.30 *Lunch*

14.30 – 18.30 Planning work in Work Package Groups (continued)

Two groups will be established for this work:

- ❖ WP 3 Safe working environment and minimize environmental consequences, consisting primarily of NFRS in collaboration with UNION, in the lead, and EPSA, Somme and OVAKO (At the session in London at the Office of the UNION on Monday 14th December 2009 for planning of the seminar in the UK, it was found most appropriate to postpone the seminar until the second half of September 2010).
- ❖ WP 5 E-learning and WP 6 Exercises and drills, consisting primarily of EDUC and ENSOSP/Brno in the lead of the WPs respectively, and SERF, EPSA and ESC (The Kick-off Meeting found that in the further deliberations within the Project, the importance of not only providing education and training but also changing the thinking/mentality of the fire officers to use the CEC as a natural methodology should be addressed).

Further participation in the groups than indicated will depend on availability of participants at the Meeting, i.e. Partners should not have more than one participant in each group

Tasks of each group, defined on the basis of the application/contract, target group and scenarios:

- create a network and means/procedures for the collaboration within each WP
- set more precise targets for each WP
- consider how to proceed from the results of the FIREFIGHT Project

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- gather experiences from existing training/exercises and CEC firefighting (good/bad) including fighting fires where CEC was not used but could have been of significant importance
- present a timetable adapted to the overall Project planning and set deliverables

Discussion

Thursday 18 March

09.00 – 10.00 *Opening Session*

- Welcome address by ASELF
- Any new participants present themselves
- General overview of development in the FIREFIGHT II Project by Bo Andersson/Ulf Bjurman
- Information concerning administrative matters (Marie Norrby)

10.00 - 10.30 *Coffee*

10.30 – 11.30 *Session on the work in the Work Packages*

- Presentation of the general results of the work regarding WP 2 Strategy and tactics and WP 4 Surveillance/assessment/decision support and of consideration of the tasks for each WP
- Discussion

11.30 - 12.30

- Presentation of the general results of the work regarding WP 3 Safe working environment and minimize environmental consequences and of the consideration of the tasks for this WP
- Discussion

12.30 - 14.00 *Lunch*

14.00 – 15.00 *Continued Session on the work in the Work Packages*

- Presentation of the general results of the work regarding WP 5 E-learning and WP 6 Exercises and drills and of consideration of the tasks for each WP
- Discussion

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15.00 – 15.30 *Coffee*

15.30 – 16.30 *Presentation of practical demonstration (audiovisual)*

- Discussion

16.30 – 17.30 *Issues raised at the Kick-off Meeting*

- Databank on experiences from interventions: The importance of also taking into account practical experiences from interventions was underlined. It was also mentioned that contacts had been taken with the Unit for Learning from Accidents/Incidents in MSB regarding the possibilities for establishing a databank on experiences from interventions when the CEC has been implemented. Further discussion of this matter could take place at the next Meeting.
- Performance indicators: There was support for a proposal to develop performance indicators to measure results and establish a baseline.
- The importance of dissemination and different outreach actions for instance to relevant organisations within the Communication Plan was stressed.

Friday 23 October

09.00 – 09.30 *Concluding discussion on the WPs*

09.30 – 10.00 *Review of the time schedule for the Project*

In order to maintain momentum, a new meeting could possibly be planned in place of the seminar in June. The seminar could be followed directly by the Mid Term Meeting back-to-back. There is also reason to consider further the second seminar. At the Kick-off Meeting there was a proposal that the Exercise should also serve as the Final Meeting of the Project and tentatively be organized at ENSOSP in Aix-en-Provence in September 2011. Possible small designated working group meetings are to be decided on, as needed. Subject to the decision of the Meeting, the adjusted time schedule for FIREFIGHT II could be as follows:

Kick-off Meeting	Borås	October 2009
Meeting	Madrid	March 2010
Tentative Meeting	Venue?	June 2010?
Seminar/Mid Term Meeting)	UK	September 2010
Seminar	Venue?	March 2011?
Exercise/Final Project Meeting	Aix-en-Provence?	September 2011

When considering the time schedule, attention should be given to how much each Partner can allocate of the available amount in the budget for the estimated participation of one – two persons (traveling costs, accommodation, etc. Generally, extra participation must be covered by the Partner outside the budget).

10.00 – 10.30 *Coffee*

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10.30 – 11.00 Any other business and closure of the Meeting

12.30 Lunch

Departures of participants

Minutes

FIREFIGHT II Mid-term Meeting Wednesday 24 – Friday 26 November 2010 in Prague

Participants: see ANNEX 1

Agenda: see ANNEX 2

Meeting Place: Wednesday - Thursday in the MI-FRS CR DG residence (Kloknerova 26, Prague 4), and Friday in the Lysina villa (Na Lysine 4, Prague 4).

Documentation for the Meeting:

- draft Agenda
- draft Schedule for the Meeting
- draft Plan for Dissemination
- PPP of the Flow Chart for the FIREFIGHT II e-learning package
- PPP of the ambition with role-games
- PPP of the chain between general goals, strategy, tactics and methodology
- PPP of a role game model for a fire incident in terraced houses
- PPP of the use and capacity of the latest IR camera technology
- PPP on the environmental consequences of the firefighting
- Presentation of the practical comparison tests of IR data with visual observations
- PPP on E-learning: an alternative to traditional!
- PPP on Assessment Of Fire Suppression Capabilities Of Water Mist - Fighting Compartment Fires with the Cutting Extinguisher
- PPP on the new ENSOSP training and education establishment and the table-top/practical exercise
- PPP on Brno training and exchange of experience

Wednesday 24 November

Opening Session

Alois Sellner, Deputy Director General of the General Directorate for the Fire Rescue Service of the Czech Republic in the Ministry of Interior welcomed the participants to the Meeting.

Bo Andersson, coordinator of the FIREFIGHT II Project, opened the Mid-term Meeting and presented with a PPP the flow chart for the FIREFIGHT II e-learning package, encompassing the chain between the general goal, strategy, tactics and methodology and ending with role games conducted with different scenarios and full-scale CEC operational exercises. He supplemented with a more general PPP presentation of the ambition with role games, i.e. to create a realistic background to the strategic and tactical assessment/decision-making, allowing consideration of the most appropriate methodology and technology to use, and to improve the ability and enhance creative thinking for implementing the Cutting Extinguishing Concept (CEC) in firefighting. The role games also aim at giving sufficient

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knowledge to decide on the adequate strategy and apply the correct tactics. They provide a dynamic development of the incident, which will require monitoring and successive evaluation as a basis for adapting the strategies and tactics to the changing situation. Incident commanders will furthermore through role games gain capability to take appropriate decisions on strategy and tactics and to coordinate the committed units in order to achieve the set targets. These are for instance to protect people and mitigate the impact of fires, ensure a good working environment for the firefighters as well as minimize damage to property and prevent environmental consequences of the fire and the firefighting operation.

The Agenda was adopted

Partners and participants presented their organizations and themselves and recent development in their countries in respect to the implementation of the Cutting Extinguishing Concept.

WP 2 Strategy and tactics (efficiency and early response) – SERF

Stefan Bengtsson and Krister Palmkvist presented more in detail with the support of a PPP the elements of the chain between the general goal, strategy, tactics and methodology. These elements consist of the general goal of the fire and rescue service, the general strategies of the fire and rescue service and the tactical decision making. With the aid of a PPP presentation, Stefan Bengtsson and Krister Palmkvist conducted a table top exercise involving the participants in the Meeting and implementing a role game model of a fire in terraced houses. The intention is to elaborate role game models for the other adopted scenarios for the work in the FIREFIGHT II Project. The models can in each game be adapted to other scenarios and fire conditions as well as available resources in a fire incident. Finally, Krister Palmkvist presented with a PPP and an IR camera the use and capacity of the latest IR camera technology as part of the decision support.

In the general discussion, there was general support for using role games as a basis for training but also demonstrating the CEC and changing the mindset or thinking in the fire and rescue services regarding fire extinguishing. The role game type of exercises is already implemented in the UK fire and rescue services in respect to two operational levels of ambition. It is important to see these games as models or examples as the conditions in fire incidents differ considerably from one incident to another. The questions and their relation to expected and anticipated as well as unexpected results of actions decided on in the game and consequences of wrong answers/decisions have to be considered in the creation of the role games and visual tools used. How to integrate IR scanning data and visualization with videos was discussed. The participants in the role game need to be kept involved with different stimulations and there is a tendency that videos to make them “lazy” which needs to be taken into account. The e-learning also needs to be blended with the existing general education and training in strategy and tactics.

In conclusion, the role games for developing the capability of incident commanders in respect to strategy, tactics and methodology for fighting fires will form a part of the e-learning package. Based on the present model, NFRS undertook to elaborate an example covering the

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factory building scenario and ENSOSP to elaborate an example covering one of the remaining scenarios, for instance a block of flats, a meeting hall, shopping centre or store. This continued work will be coordinated with EDUC's development of the e-learning.

WP 3 Safe working environment/minimized environmental consequences – UNION/NFRS (Seminar)

Danny Moore made a presentation with the support of a PPP on the environmental consequences of the firefighting which can be dependent on the type of buildings and their size and what they contain, for instance hazardous substances in factories. The amount of water needed and used to extinguish the fire is important in the consideration of how a safer environment can be achieved. The tactical and methodological approaches for reducing amount of water needed in buildings of different sizes and physical conditions should be developed. The scientific knowledge and experience of fires in large compartments in the form of bibliographic inputs is however limited. Strategies and tactics for an early response and the implementation of the CEC, which can give significant effects on the ways for achieving a better environment including acceptable working environment, should be elaborated further and more systematically. Generic figures for the reduction of water used for extinguishing the fire in buildings, even if this will also depend on the conditions in each building and incident, would be of considerable benefit to have access to. Danny Moore informed that NFRS has established contact with ARGUS for further development of the implementation of IR scanning for risk analysis and assessment.

The discussion focused on the tactical options in particular in large fire compartments and if there are possibilities within FIREFIGH II to conduct more advanced research and testing for instance at the Kuopio College, where there is a large testing hall. Some tests in larger compartments have already been carried out in Kuopio, Oslo and at SP in Borås, but the tactical decision-making in fire interventions in larger buildings or compartments is at present mostly based on practical experiences. One example of this is the arson fire in the large industrial hotel on Trandaredsgatan in Borås in which it was found necessary to use six COBRA cutting extinguishers to extinguish the fire, combined with pressurization of the adjacent compartments. It however not possible to scale up the results from tests in small fire compartments and achieve useful results for the fire behaviour and effects of the firefighting in large compartments on fire.

Rob Miguel introduced the planning aspects related to the seminar. The common view at the Meeting was that the previously defined target group and objectives are to be maintained. It was however found that the e-learning package needs to be close to its finalization and its presentation should form an important part of seminar. The time for holding the seminar should therefore be after next summer and, to be able to use one of the existing education and training facilities when they are available after the normal courses and therefore can be provided at lower costs, the best time would be the first week of December 2011. This

requires that a prolongation of the Project to the end of 2011 is requested. It was estimated that there could be around 100 participants in the seminar.

In conclusion, work should be continued under the lead of NFRS on the tactical and methodological approaches for achieving a reduction of the amount of water used for extinguishing fires in buildings. Even if the conditions in each fire will differ and in many cases quite considerably, it was felt that some different general models could be elaborated. The possibilities for conducting further tests within FIREFIGHT II are limited and therefore use must be made of studies conducted and earlier tests and practical experiences. SERF for instance has experiences gathered from about 1000 fire interventions and can assist in this work together with MSB. The planning of the seminar will continued by UNITE primarily in collaboration with NFRS on the lines presented above.

WP 4 Surveillance/assessment/decision support – ASELF

Miguel Segui showed a presentation of the practical comparison tests, which were made in connection with the Madrid Meeting, of IR data of various arranged fires within a furnished building with visual observations documented with cameras. Different tactical approaches for responding to the fires were conducted in these tests. The results of these tests form a basis for assessing the risks and monitoring the situation as well as implementing different strategies and tactics and methodologies, also combinations of these, for fighting the various fires in the building. As recognized at the Madrid Meeting, the results should be coordinated with, and presented in a similar way as the simulations developed in FIREFIGHT I. This material can form an input in the development of the e-learning, which can be achieved under the lead of ASELF and in collaboration with SERF. In this context the further improvement and use of IR cameras presented at the Meeting will also have a significant role to play together with results from the collaboration between NFRS and ARGUS.

WP 5 E-learning – EDUC

Daniel Cadorette presented “E-learning: an alternative to traditional!” with the support of a PPP and also examples of different e-learning solutions provided by EDUC to fire and rescue services. The production process for an e-learning module is built with and will consist of the elements raw content – flow chart – validation – production – validation – deployment. For reaching success in this e-learning production process, texts and scenarios, images and validation must be integrated well together which in the FIREFIGHT II context means that the different WP Leaders and other Partners collaborate closely with EDUC and provide the necessary inputs for the integration to be conducted under the lead of EDUC. For this purpose and to facilitate communication and dialogue, Daniel Cadorette will immediately on his return to EDUC establish a forum.

Thursday 25 November

Presentation of the Thesis on Assessment Of Fire Suppression Capabilities Of Water Mist - Fighting Compartment Fires with the Cutting Extinguisher

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The presentation was made by in collaboration between Stephane Huriet, the Haut-Rhin Fire Department and in charge of the technical development there, which includes the on-going education for and testing of the CEC, and Julien Gsell who has written the thesis for the Pg. Dip. Msc. Fire Safety Engineering in the Academic year 2009/2010 at the University of Ulster at Jordanstown, Belfast, Northern Ireland. Stephane Huriet demonstrated the different trials that have already been conducted with the support of video films and Julien Gsell gave an account with the support of a PPP of the thesis, including the results of his research. The participants appreciated very much and were impressed by these presentations. Julien Gsell was congratulated for his excellent work and the significant results reached. The following is an abstract and a short presentation of the issues addressed in the thesis.

Abstract

The introduction of water mist used as an extinguishing agent by fire fighters and operated from outside of the enclosed fire room is a revolution that started the last decade. More than a complement to traditional fire fighting, the only hand held lance capable of such results is named Cutting Extinguisher.

Its recent development raised the interest of rescue services and fire engineers, conducting researchers to the first studies of the nozzle characteristics. However, many points regarding the abilities of the Cutting Extinguisher remains unexplored yet. Some experiments were conducted for water mist measurement, fire tackling time and structural member drilling effectiveness, but there are still a number of unexplored parts in the literature, especially about the behaviour of water mist within the involved volume, and the variations of its capabilities related to the type, geometry and ventilation factor of the fire.

This report has been written in the aim of answering a part of these remaining questions, as well as studying further on some induced effects of the introduction of water mist in an enclosure. It is based on the analysis of a series of full scale experiences, carried out in a compartment of 60 m³.

Over a period of three weeks, 25 tests were conducted, in a situation without fire, and 8 real burnings were achieved, involving the variation of both fire and extinguishing scenarios on the basis of three main parameters which were: the change of fuel surface, opening area, and

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water flow rate. The cold trials concerned the recording of water amount distribution per unit time, regarding to the position of the mouthpiece, and visible behaviour of the mist, thanks to visual and video observation. The fire measurements were conducted thanks to an instrumentation of the studied compartment by a volumetric meshing of 99 thermocouples, combined with heat flux, pressure and video recording. The data analysis presents the results of findings in terms of water mist calibration, spray pattern, shaping and volumetric displacement, as well as concerning the flame blowing ability, cooling effectiveness, dependence to the studied parameters and induced consequences of the extinguishing.

Issues addressed in the study:

- Characteristics of water mist cold sprayed
 - * Cone angle, splitting distance, density of water mist
 - * Global velocity, water content, volumetric flow rate
- Volumetric mist behaviour
- Fire suppression capabilities of water mist
 - * Temperature analysis: Single point, 2 dimensions, 3D...
 - * Post-spraying fire behaviour
- Safety concerns
 - * Life safety: consequences of spraying a water mist for a potential victim
 - * Property safety: Pressure effects and water damage

The complete document is expected to be published shortly.

WP 6 Exercises and drills – ENSOP/MICR

René Spies gave an account using a PPP of the now completed construction of the ENSOSP High Level Fire Officer Education and Training establishment in Aix-en-Provence. He also presented the plans for the exercises and drills Meeting, which will most probably have the form of a table top exercise and perhaps some practical demonstrations linked to this exercise. At the meeting also the on-going work in the Project in general will be followed-up and considered. The venue for the Meeting will be decided by ENSOSP in collaboration with the other Partner colleges and the Somme and Haut Rhine Fire Departments. The content of the Meeting when it has finally been defined and further consideration of where the practical demonstration parts can be carried out in a satisfactory way will influence the choice of the venue. In the discussions regarding this Meeting, it was found appropriate to have the Meeting in the second half of May or in June.

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Study visit

The participants made a study to the Prague Fire Station 6 and there studied four different versions of fire engines equipped with the CEC and other special equipment for more resource requiring interventions.

Friday 26 November

Concluding discussion on the WPs

Bo Andersson lead the concluding discussion by going through the Flow Chart Contents:

1. Presentation of the chain between the general goal, strategy, tactics and methodology – it was recognized that the chain will form the backbone to the e-learning production process coordinated by EDUC and the forum to be established for the purpose of facilitating the process.
2. Outline of the normal building constructions in the EU – ASELF will have a leading role in relation to creating the outline based on the established scenarios for the Project and creating model role games which are flexible can be adapted to different conditions and available resources for the interventions
3. Immediate analysis of the basic operational conditions and risks – SERF will continue its work in support to meeting the e-learning requirements related to the analysis and assessment for decision making in respect to strategy, tactics and methodology
4. Methods used for risk analysis – ASELF has the responsible for risk analysis as a basic instrument for the operational decision making within WP 4 Surveillance/assessment/decision support and in this respect provide inputs to the e-learning development process
5. Ability of the cutting extinguisher – NFRS is responsible for WP 3 Safe working environment/minimized environmental consequences in which the reduction of water used for extinguishing the fire in buildings is a major issue due to its importance for reaching the objectives of FIREFIGHT II.
6. Ability of the PPV method – SERF is responsible for decision making in respect to strategy, tactics and methodology in which the pressurization is an important component
7. Examples of firefighting interventions implementing the CEC – MSB has undertaken to consider possibilities of introducing a databank on practical CEC experiences and will investigate how learning lessons from incidents can be integrated into the e-learning package.
8. Role games conducted with different scenarios - the role games for developing the capability of incident commanders in respect to strategy, tactics and methodology for fighting fires are to form a part of the e-learning package. Based on the present model focused on terraced houses, NFRS undertook to elaborate an example covering the factory building scenario and ENSOSP undertook to elaborate an example covering one of the remaining

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scenarios, for instance a block of flats, a meeting hall, shopping centre or store. This continued work will be coordinated with EDUC.

9. Full-scale CEC Operational Exercise – it was recognized that the table-top form of exercises can be used both on a regular basis in the fire and rescue service and in CEC courses. These may end with an operational equipment exercise also being conducted to follow up the role game carried out during the table-top exercise. This matter will be considered further by ENSOSP in the preparations for the next Meeting.

(To finalize a CEC Command and Control Course or as one of the regular exercises of a fire and rescue service a full-scale CEC Operational Exercise is conducted and will cover the normal elements of a more complex fire intervention, i.e. risk assessment to have sufficient situation awareness and monitoring the development of the incident, strategic and tactical decision making and coordination of resources. The operational exercise is preceded by a table-top role-game exercise using the same scenario and will be concluded by a common debriefing)

Dissemination and valorisation – MSB

The communication plan was adopted.

Review of the time schedule for the Project

At the Kick-off Meeting there was a proposal that the Project Exercise should also serve as the Final Meeting of the Project and tentatively be organized at ENSOSP in Aix-en-Provence in September 2011. At this Meeting, it was found necessary to postpone the seminar to tentatively the first week in December 2011, subject to a decision to extend the duration of the Project to the end of 2011. The seminar will then also be the Final Meeting of the Project. The Exercise combined with a regular Meeting of the Project is now proposed to be organized by ENSOSP in the second half of May or June 2011. The adjusted time schedule for FIREFIGHT II will then be as follows:

Kick-off Meeting	Borås	October 2009
Meeting	Madrid	March 2010
Mid Term Meeting	Prague	November 2010
Exercise/Project Meeting	Aix-en-Provence?	May/June 2011
Seminar	UK	December 2011

When considering the time schedule, attention should be given to how much each Partner can allocate of the available amount in the budget for the estimated participation of one – two persons (traveling costs, accommodation, etc. Generally, extra participation must be covered by the Partner outside the budget).

Any other business and closure of the Meeting

Issues raised at the Kick-off Meeting:

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- Databank on experiences from interventions: The importance of also taking into account practical experiences from interventions was underlined. It was mentioned that contacts had been taken with the Unit for Learning from Accidents/Incidents in MSB regarding the possibilities for establishing a databank on experiences from interventions when the CEC has been implemented. Petr Kupka made an intervention supported by a PPP underlining the importance of creating this mechanism for exchange of experiences of implementing the CEC in fire extinguishing interventions. Petr Kupka was invited to elaborate a proposal including a reporting format in collaboration with MSB and SERF for further discussion of this matter at the next Meeting. Krister Palmkvist informed about some 1000 reports from CEC interventions which have been gathered. He made video and PPP presentations regarding a successful intervention both in a block of flats and to combat a fire in a silo with the CEC, Also a traditional intervention against a fire in a two storey building which was a complete failure was presented by him. NFRS informed about a recent complex silo fire which was very difficult to tackle with the CEC.
- Performance indicators: There was support at the Kick-off Meeting for a proposal to develop performance indicators to measure results and establish a baseline. It was now recognized in the discussion that no real progress on this issue had been made so far, but there was still a strong interest in this issue and NFRS which raised the issue was asked to consider possible initiatives leading to progress in the last year of the Project..
- The importance of dissemination and different outreach actions for instance to relevant organisations within the Communication Plan was stressed. A number of important actions had been taken to disseminate information about the CEC both a major international events and nationally. Pamphlets are now available for distribution by all Partners and Roll-ups can provided for use in different types of events. The Project also has access to a larger exhibition screen which is quite easy to transport and can used. There is however a need for new photo material at present for this purpose.

Participants:

ANNEX 1

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Agenda

ANNEX 2

FIREFIGHT II Mid-term Meeting Wednesday 24 – Friday 26 November 2010 in Prague

Draft Agenda

Wednesday 24 November

Meeting Place: Wednesday in the MI-FRS CR DG residence (Kloknerova 26, Prague 4), and Thursday - Friday in the Lysina villa (Na Lysine 4, Prague 4).

09.00 – 10.30

Opening Session

- Welcome address by a representative of the General Directorate for the Fire Rescue Service of the Czech Republic in the Ministry of Interior (tbc)
- General overview by Bo Andersson/Ulf Bjurman of the FIREFIGHT II Project leading to a complete training system for firefighters and the ambition to elaborate a flow chart for the FIREFIGHT II e-learning package, building on a chain between the general goal, strategy, tactics and methodology and resulting in scenario based applicational role games/table-top exercises supplemented by practical exercises.

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- Partners and participants present their organizations and themselves and recent development in their countries in respect to the implementation of the Cutting Extinguishing Concept.
- Adoption of the Agenda

10.30 – 11.00 *Coffee*

11.00 – 12.30 **WP 2 Strategy and tactics (efficiency and early response) - SERF**

WP 2 aims at addressing the strategy and tactics within the VET of intervention team commanders. It will develop a study module for CEC strategy and tactics as a basis for the e-learning, forming an essential part of a tool for a self-tuition course, and the programme for drills and exercises for intervention team commanders. The module will be tested through drills and exercises in the course of the Project.

Deliverable: A module on strategy and tactics for VET of intervention team commanders in CEC firefighting (month 11).

At the Madrid Meeting, the conclusion was that the strategy and tactics for fire fighting interventions should be seen in the scope of setting operational objectives and establishing plans on the basis of risk assessments exercised before the intervention, during the intervention and after the intervention. The presentations at the Meeting demonstrated that the Partners had in general a common approach to the strategy and tactics for fire fighting interventions. Work will continue to establish a common structure or model which will serve as an input to the elaboration of the education and training. There is a need for taking into account the practical experiences from the implementation of the CEC in fire fighting interventions. The results of the test of the use of IR technology for scanning combined with cameras for documenting simultaneous visual observations indicated that this is important for assessing and monitoring the fire in the course of the intervention. These results will be coordinated with and presented in a similar way as the simulations developed in FIREFIGHT. There is a need for pursuing the work in relation to all the different FIREFIGHT II scenarios and one possibility could be implementing existing simulation programmes on these scenarios, such as <http://www.digitalcombustion.com>, on the FIREFIGHT II scenarios in the development of the strategies and tactics.

12.30 – 13.30 *Lunch*

13.30 – 15.00 **WP 3 Safe working environment/minimized environmental consequences – UNION/NFRS (Seminar)**

WP 3 aims at addressing the ambition to achieve a safe working environment for the firefighters and to use methodology and technology which will limit secondary damage from water and smoke and minimize environmental consequences of the response as a part of fundamental importance within the VET of intervention team commanders. The supplementary development of the e-learning system for the CEC in FIREFIGHT II will address this matter and develop a study module for the CEC strategy for fighting fires in

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buildings which accepts only a safe working environment for the firefighters and to use methodology and technology which will limit secondary damage from water and smoke and minimize environmental consequences of the response. The study module will contribute to the e-learning package, forming an essential part of a tool for a self-tuition course, and the programme for drills and exercises for intervention team commanders. The module will be tested through drills and exercises in the course of the Project. **Deliverables:** D3.2 Seminar report (month 8) – Seminar postponed to the beginning of 2011 – and D3.3 Module on a safe working environment and minimized environmental consequences for VET of intervention team commanders in CEC firefighting (month 11).

At the Madrid Meeting the discussions made it clear that the main objective was to exercise influence on to the work on strategies and tactics and ensure that these provided a safe working environment for the firefighters. This influence should be exercised during the risks assessment and planning before the intervention with inputs from human sources and IR camera scanning, during the intervention when choosing between conventional means inside the burning building, external extinguishing with COBRA, the use of PPV in an attack or from outside the compartment and monitoring the evolution of the fire and changes in the environment and finally after the intervention with natural or forced ventilation combined with monitoring and checks conducted using an IR camera. Measure to minimize the environmental consequences are a natural integrated part of this process.

Regarding the seminar the Madrid Meeting found that a dialogue necessary with inter alia the health and safety and environment protection stakeholders to reach the overall aims of the Project and for this purpose that an open seminar should be organized. The seminar also serves the purpose of disseminating the Project's results. It was found necessary to have more time than anticipated for preparing the seminar but also being able to present concrete results at it. The seminar will be aimed at gathering key persons involved in matters related to a safe working environment for firefighters and minimize environmental consequences of the firefighting which means that the quality of it must be high.

15.00 - 15.30 *Coffee*

15.30 – 17.00 **WP 4 Surveillance/assessment/decision support – ASELF**

WP 4 aims at addressing the need for intervention team commanders including fire chiefs to be capable of implementing sensors and other instruments including means of communication for surveillance and together with databases and other sources of information for assessment of for instance buildings' fire conditions providing decision support as part of making decisions, issuing orders and taking actions, in a consolidated process for establishing a complete and coherent Cutting Extinguishing Concept (CEC) for fighting fires in completely new way. These issues are of very great importance in the VET of intervention team commanders. The supplementary development of the e-learning system for the CEC in FIREFIGHT II will address these issues and develop a study module for the e-learning package, forming an essential part of a tool for a self-tuition course and the programme for drills and exercises for intervention team commanders. The module will be tested through

This project has been funded with support from the European Commission

drills and exercises in the course of the Project.
Deliverable: D4.2 Module on implementing sensors and other instruments including means of communication for surveillance and together with databases and other sources of information for assessment of for instance buildings' fire conditions and providing decision support for VET of intervention team commanders in CEC firefighting (month 11)

In connection with the Madrid Meeting practical comparison tests were made of IR data with visual observations documented with cameras of various arranged fires within a furnished building. The results were aimed at forming a basis for assessing and monitoring for the risk assessment of the situation and testing different strategies and tactics as well as different methodologies and combinations of these for fighting the various fires inside the building. The results of the scanning and IR data with the observations were demonstrated as well as how the input from the IR cameras formed a basis, as part of an information and decision support system. It was concluded that these results should be coordinated with, and presented in a similar way as, the simulations developed in FIREFIGHT.

18.30 *Departure for dinner*

Thursday 25 November

09.00 – 10.00 **Round table discussion of the work in WPs 2, 3 and 4**

10.00 – 10.30 *Coffee*

10.30 – 12.30 **Work in appointed working groups**

12.30 – 13.30 *Lunch*

13.30 – 15.00 **WP 5 E-learning – EDUC**

FIREFIGHT II has the aim of supplementing the FIREFIGHT training for firemen which has the form of e-learning and a short practical training and addresses the intervention team commander level, including fire chiefs. FIREFIGHT II is planned to result in an e-learning package and programmes for drills or exercises conducted with modern technology for instance web based vocational training tools. The aim is thus to elaborate a life long career learning VET that can serve as an instrument for improved skills and competence and also improve the conditions for introducing a safe working environment for firefighters and in this context the e-learning part of the VET is of significant importance.
Deliverables: D5.1 - 3 Progress reports on the e-learning package (months 12, 18 and 22 respectively)

15.00 – 15.30 *Coffee*

15.30 **Study visit**

19.00 *Departure for dinner*

This project has been funded with support from the European Commission

Friday 26 November

09.00 – 10.00 WP 6 Exercises and drills – ENSOP/MICR

The practical part of the VET for intervention team commanders including fire chiefs will have the form of programmes for drills or exercises conducted with modern technology for instance a web based vocational training tool. This will facilitate the introduction of the new concept widely and make it easily accessible and used by firefighting intervention team commanders and fire chiefs in the EU. The aim is to conduct the drills as table top exercises and to have one designated exercise to test the whole VET package.

10.00 – 10.30 Concluding discussion on the WPs

10.30 – 11.00 *Coffee*

11.00 – 11.30 WP 8 Dissemination and valorization – MSB

A draft communication plan has been distributed.

11.30 – 12.00 Review of the time schedule for the Project

12.00 – 12.30 Any other business and closure of the Meeting

Issues raised at the Kick-off Meeting:

- Databank on experiences from interventions: The importance of also taking into account practical experiences from interventions was underlined. It was also mentioned that contacts had been taken with the Unit for Learning from Accidents/Incidents in MSB regarding the possibilities for establishing a databank on experiences from interventions when the CEC has been implemented. Further discussion of this matter could take place at the next Meeting. – not resolved issue.
- Performance indicators: There was support for a proposal to develop performance indicators to measure results and establish a baseline.
- The importance of dissemination and different outreach actions for instance to relevant organisations within the Communication Plan was stressed.

12.30 *Lunch*

Departures of participants

Minutes

FIREFIGHT II Northampton Meeting

Wednesday 29 June – Friday 1 July 2011

Participants: see ANNEX 1

Agenda: see ANNEX 2

Meeting Place: Highgate House, Creaton, Northampton, UK

Objective

The objective of the meeting was to ensure that, by the time of the Seminar in London, there will be a workable e-learning package to present.

Wednesday 29 June

Opening Session

Bo Andersson opened the Meeting and informed about the progress made at the small working group meeting held in May 2011 in Borås with the specific task of preparing the e-learning package. A considerable amount of work had since the Mid-term Meeting also been carried out with the help of e-mail and telephone calls.

The discussion that followed came to the following general conclusions:

The final result of FIREFIGHT II will be a blended e-learning programme based on the “FIREFIGHT II Decision Making Model”. This programme will be generic and achievable for practical use in education and training of incident commanders. It will have an inter-active character which will draw the user to each element of the course and will illustrate or compare the use and effects of the different cutting extinguishing concept components. Reference resources plans (4 – 5 plans) and table-top exercises will be blended into the programme. The aim is to have the final product ready in November.

E-learning package

Daniel Cadorette and Danny Moore presented and demonstrated the e-learning package in its present form. The proposed package was also discussed in the course of the presentation:

It is important to recognize that e-learning is an educational tool and something else than just a matter of providing information, which is more like studying a book. Each section of the learning programme is created as a separate unit with case studies information, etc. and every step in the learning programme should take the pupil through the course in a logical way. The theoretical knowledge needs to be blended with practical exercises to illustrate and as guidance on what is positive and what is negative. Reading, listening and viewing together in a learning situation makes the learning more effective.

There is a need for measuring of the progress in reading the course and, to make the learning more effective, validating the theoretical knowledge prior to studying the practical part in which use is made of different scenarios. A glossary will be filled in and through this form of

reporting, validation and auditing can be made of how the content of the programme is used. The exam results of the pupil are presented in the package and can be seen section by section. A tutor is assigned to every learning group as part of the feed-back system. The tutor can follow every individual in the group and provide comments and answers to questions regarding the simulations which are part of the system.

The content of the e-learning package or platform is broken down in the following chapters:

1. **Introduction** - the FIREFIGHT II package in the form of an interactive course, building on small blocks or sections and a well-defined methodology
2. **Presentation of the Cutting Extinguisher Concept (CEC)** - IR or thermo image camera, the cutting and fire extinguisher tool (Cobra) and the PPV ventilation
3. **Decision Making Model (DMM)** - a similar processes for different incidents with continual inputs of basic information and new information successively, for instance from the 360 degrees survey for prioritizing action
4. **Decision Making Scenarios (DMS)** - following the structure of DMM
5. **Computer generated inter-active simulations** - assisting the incident manager
6. **Appendix** - information and supporting documentation, real action references, a bibliography, studies, videos, etc.
7. **Evaluation** – information on reviews, evaluation of how learning needs are addressed, follow-up of progress, etc.

It was recognized that there is more work to be done, i.e. to fill all the gaps in the package, but there was general appreciation and support for the proposal. There is also a need for some more thinking about how to make the appendix more practical and easy to use. More subtitles and perhaps a division into one part which is open to everybody and another part for instructors and tutors which requires a password to enter could be considered. It was felt necessary to find a solution for how it could be made possible for each partner to add information through a standard format to for instance the appendix. There is deemed to be no major problem in making the e-learning package accessible in different languages, as both French and English are being used already.

Thursday 30 June

Continued discussion of the e-learning package

In the discussion, it was suggested that the library should contain a training section with details such as case studies, practical exercises with different components and highlighting different aspects, guidance on making the training user friendly and adaptable and relevant to local conditions and needs. Basic knowledge required, presentation of different CEC components and units for different purposes and best practices related to lesson one, two, three, etc. could be matters for further consideration in the continued work to complete the package.

Case Studies - finalised studies for the e-learning package

Krister Palmkvist presented results of case studies including a list of contents of the practical training as a template for the training programme. It was recognized that it was up to each country and organisation to define what capability requirements that are to be implemented for employing the personnel in the fire and rescue service. How exchanges of experiences could be provided need further consideration. Finally, it was recognized that there is very strong development of the IR technology for outdoor thermo scanning under way. Collaboration in this development has already been established between MSB and FLIR and also NFRS and ARGUS, which needs to be followed-up.

The Seminar/Conference

Rob Miguel presented the open Conference on 2 November 2011 combined with the final FIREFIGHT II Meeting on 1 November and 3 November (including follow-up of the Conference and study visits) being planned by UNION and NFRS at Esher in Surrey. Arrival of FIREFIGHT II participants for the whole seminar will be on 31 October and departure on 4 November.

The main elements of the Conference are:

- High level Key note speech
- Presentation of the Project
- Presentation of the e-learning package
- Presentation of the CEC in practice
- UK experiences of the CEC
- Research results
- Practical demonstration
- Questions and answers panel

The maximum amount of participants in the Conference is 120 persons.

This allows for 2 – 3 high ranking officers per participating country (each partner is responsible for the invitation of their Conference participants) and the regular participation of partners (normally not more than three per partner). Any extra places will be filled by interested UK participants

50 rooms for accommodation are available 31 October – 4 November (in general 3 rooms per partner + 1 additional guest and open to families during the stay)

Partners must inform about the participation by 20 August at the latest

An invitation to be used will be elaborated and provided.

Exchange of Information

NFRS now has 12 operational Cobra units and will within a period of 4 – 5 years have their whole fleet of 28 fire engines equipped with IR cameras, Cobras and PPVs. In the course of the Meeting, a successful extinguishing of a fire in the attics of a house was conducted in Northampton - two Cobras were used and shot from the floor below the attics. Bo Nystrand will provide photos from the intervention. A cobra unit was also dispatched to assist in extinguishing of a complex fire in stored vehicle tires in Wales.

Amiens reported that their new training establishment will be ready for use in the autumn but the introduction of the Cobra in France continues quite slowly, due to the final decision not having been taken yet by the Ministry of Interior to have CEC as a standard methodology.

MICR informed that the teachers from the fire school will serve for three weeks during the summer in the five fire and rescue services which are equipped with Cobras.

Martin Arne Sørensen, DEMA, presented a practical and simple system, introduced by the Academy and involving the six fire departments implementing Cobra, for exchange of experiences of the use of the Cobra. The results of the system are good.

Ulf Bjurman presented (PPP) the possible use of First Response Units in both full time and part time/voluntary fire services.

Administration

Marie Norrby informed about some urgent administrative matters. At this stage of the project it is necessary to review the budget and allocate finally the budget lines. All relevant documentation must be submitted immediately for making the reallocation of budget lines and between partners possible to be done. Otherwise it will not be possible to reimburse partners for their costs or even make use of all the funding provided for the project.

Action plan from now until October

The small working group lead by EDUC and NFRS will continue its intensive work to have the final e-learning package ready in November.

Friday 1 July 2011

Departures and visit of remaining participants to the NFRS Head Quarters for presentation of new Cutting Extinguishing applications and discussions with Martin Emberson, Chief Fire Officer NFRS, took place in the morning.

ANNEX 1

Participants

Northamptonshire Fire and Rescue Service (NFRS)

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Martyn Emberson, Chief Fire Officer of NFRS

Unite the UNION (UNION)

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EducExpert France (EDUC)

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Nordex Agentur s.r.o., Czech Republic, invited by the MICR

Petr Zat'ko	info@nordexagentur.cz
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Note: The Public Service Academy, Rescue College under the Ministry of Interior (RCE), Emergency Service College Kuopio (ESCK), Spanish Fire Fighting Association (ASELF), High Academy of French Fire-fighters Officers (ENSOSP) and Ovako Bar AB (OVAKO) could for different reasons not participate in this Meeting.

ANNEX 2

Draft Agenda

Wednesday 29 June

09.00-10.30	Opening session
10.30-11.00	Coffee
11.00-12.30	Scenarios based on the Decision Making Model for the e-learning package - NFRS
12.30-13.30	Lunch
13.30-15.00	Case Studies- Finalised studies for the e-learning package - SÄRF
15.00-15.30	Coffee
15.30-17.00	Presentation of the Test “dummy” E-learning package - ED
18.30	Dinner

Thursday 30 June

09.00-10.30 Cobra Deployment Simulation and Videos - ASELF

10.30-11.00 Coffee



FIREFIGHT II

11.00-12.30 Training and exercises – Based on the e-learning package – MICR/ASELF

12.30-13.30 Lunch

13.30-15.00 Seminar in London – UNION/NFRS

15.00-15.30 Coffee

15.30-17.00 Action plan from now until October

18.30 Dinner

Friday 1 July

09.00-10.30 Action plan from now until October

10.30-11.00 Coffee

11.00-12.30 Closure of the meeting

12.30 Lunch

FIREFIGHT II Conference and Final Project Meeting

Tuesday 1 – Friday 4 November 2011

Participants in the Final Project Meeting: see ANNEX 1

Agenda for the Final Meeting and the Conference: see ANNEX 2

Meeting Place: Esher Place, Esher, Surrey, UK

Objective

Too many fire fighters are killed or injured when responding to fires inside burning buildings. The firefighting policy therefore needs to be changed urgently and a complete new training system introduced, in which only a safe working environment for firefighters is accepted. The training must be focused on fighting the fire from the outside of the building with the new Cutting and Extinguishing Concept (CEC) methodology and technology (IR camera, COBRA and PPV). This methodology also limits secondary damage from water and smoke and minimizes negative environmental consequences. FIREFIGHT II will be targeted on education and training of the intervention team commander level, including fire chiefs, also in their role of training the teams in implementing the CEC. The training will be a supplementary e-learning system to the one for firefighters developed in FIREFIGHT I and address strategic and tactical aspects not in the least during the initial and final phases of a fire intervention. The practical part of the education will have the form of programmes for drills or exercises conducted with modern technology, for instance a web based vocational training tool for role game scenario based exercises. This will lead to a tangible and practical outcome and integrated vocational education and training, which will facilitate the introduction of the new concept widely and make it easily accessible and used by firefighting team commanders and fire chiefs anywhere in the EU. It will meet the different needs of the individuals in respect to supplementary or refresher training of present personnel on the one side and the fundamental education and training on the other, but also to achieve a better balance between men and women in the services, i.e. aim at providing equal professional education and training to all relevant personnel, men and women.

31 October

Arrival at Esher Place for the Final Meeting

1 November

Final Meeting (Partner Meeting)

- Reporting and discussion of results of work in the WP:s since the previous Meeting in particular on the e-learning package:

The e-learning package was demonstrated (some minor parts were not completely ready) and can be described in accordance with the following abstract:

This interactive course addresses the methodology inherent to a different way of looking at the firefighting intervention methodology called the Cutting Extinguishing Concept, and explores its application to incident management. With textual and high quality visual presentations, animations and concrete activities addressing key elements of the concept, simulated interactions with some technological devices involved and various scenarios of increasing complexity in different relevant operational contexts, the course aims at developing multiple aspects related to the role of fire intervention commanders on the field.

The major purpose of this course is to provide learners with theoretical and practical tools allowing to protect first the health and safety of firefighters whilst limiting personal injury, damage caused by fire, fire gases and water, as well as preserving as much as possible the natural environment. To help them achieve these objectives, in addition to standard firefighting equipment and tactics, the use of three devices are put forward, that is, the thermal imaging camera, the cutting extinguisher and the positive pressure ventilation fan.

The course also provides a structured decision-making framework that is suitable for changing and dynamic environments so as to assist incident commanders in any tasks or events that can occur on the ground. This decision-making model results in quality decisions based upon all available information with the resultant actions being effectively controlled.

At the end of the course the learner has a basic knowledge and understanding of incident management using the cutting extinguishing concept methodology. Knowledge on situations where it is appropriate to make use of the Cutting Extinguishing concept is also acquired, as well as the ability to take better strategic, tactical and methodological decisions, not to mention to use resources in an efficient and effective way.

Information was provided about the Swedish Work Environment (AML) provisions and recommendations on BA operations (a free translation into English and a PPP), a PPP of the Swedish Civil Contingencies Agency's CEC training and a PPP of the MSBs first response unit concept, which can be found on www.eufirefight.com.

Swedish Work Environment Authority (AML) Provisions and Recommendations on BA operations

The Swedish Work Environment Authority issues Provisions and General Recommendations (AFS) specifying the requirements to be met by the work environment. The Swedish working environment provisions on BA operations (smoke and chemical contaminated air) have the objective to prevent ill health and accidents at work. Risk assessments must be made of the whole area of operational responsibility and on arrival on site of a fire by the work supervisor before an intervention is started. BA operations are considered to primarily be life-saving interventions and their need can be reduced as a result of modern methodology. BA operations in smoke and chemical contaminated air are the most dangerous type of work permitted in Sweden.

Presentation of the Swedish Civil Contingencies Agency's CEC training

The presentation gives an overview of the fire extinguishing methodology training for fire and rescue service personnel conducted by MSB. Besides this, there are product delivery instructions and training for the Cutting Extinguisher Cobra provided by the producer CCS.

The responsibility for ensuring that the intervention personnel has sufficient qualifications for using the CEC in fire interventions and handling and servicing the equipment rests on each employer.

MSBs First Response Unit Concept

The First Response Unit will have capacity for responding to fires, traffic accidents, acute illness and water rescue. By strategic positioning of the units within the area of operational responsibility, more rapid action, which is critical for saving lives and property, will be possible. Faster interventions with a small full-time force that can cope with most emergencies, or about 85% of these, will be made possible in cities without the unit being reinforced. Spreading out of part-time First Response teams consisting of only 2-3 part time firefighters to more locations within the area of operational responsibility can enable significantly shorter response times even in sparsely populated, by providing more financially feasible solutions for quick and efficient emergency response interventions.

- Final preparation of the Conference

The Meeting reviewed the preparations and made adjustments to the Programme for the Conference.

2 November

The Conference (Chaired by Rob Miguel, Unite the Union, and about 65 participants)



Opening speaker: Mike McCartney, National Officer, Education, Unite the Union, welcomed the participants to the Conference.

- Key note speaker: Paul Fuller, UK Chief Fire Officer Association, Vice President Elect, the interest of the Association in new methodologies and the safety of the firefighters.
- Project overview: Bo Andersson, Swedish Civil Contingency Agency, Senior Expert – See PPP on www.eufirefight.com
- Training package: Luc de la Durantaye, CEO, EDUC Expert, and Daniel Cadorette, Head of production EDUC Expert - See PPP on www.eufirefight.com
- CEC implementation case studies: Stefan Bengtsson, Senior Fire Officer, SERF, and Pavel Pečený, MICR - See PPPs on www.eufirefight.com
- UK and NFRS experiences: Martin Emberson, Chief fire officer NFRS - See PPP on www.eufirefight.com
- Research: Julian Gsell, Researcher and Fire Officer, Assessment of Fire Suppression Capabilities of Water Mist Fighting Compartment Fires with the Cutting Extinguisher - See PPP on www.eufirefight.com
- Practical demonstration: NFRS Fire fighters
- Question & Answer Panel: Project team / Experts



(Lars G. Larsson, the COBRA inventor, Bo Andersson, Rob Miguel, Martin Emberson, Danny Moore, NFRS, Daniel Cadorette and Julian Gsell)

The Panel discussion demonstrated that there was a clear appreciation of the result of the FIREFIGHT II Project among the Conference participants.



3rd November

Final Meeting continued (Partner Meeting)

- The Partner Meeting made an evaluation and concluded what adjustments that should be made in the e-learning package as a result of the presentations and discussions during the Conference
- A review was made of remaining work that remained to be done in the Project including finalisation of the administrative and financial matters
- A site visit was made to the Olympic Park where the clean up and reconstruction of the Park and surrounding areas as well as the preparations for the events including safety measures were presented

4th November

Final Meeting continued (Partner Meeting)

- Dissemination measures were discussed
- The remaining work was identified
- An action plan was adopted

The Action Plan

- For validation purposes regarding of the e-learning package and interactive course, a questionnaire and check list should be elaborated and tested with selected people involved
- A simple and understandable or workable instruction and guidance for use of the e-learning package and interactive course should be elaborated on the basis of this validation
- An implementation and dissemination plan shall be elaborated for the promotion and administration of the use of the e-learning package and interactive course
- EDUC will provide an abstract as well as a short video for presentation of the e-learning package and interactive course to be made available on the FIRFIGHT II website
- A strategy for the dissemination and implementation will be established and this strategy must encompass training of trainers and education managers, guidelines for conducting the training, forming a “training academy” and defining clearly the responsibilities for each country or institution participating in this system for the e-learning and interactive course
- The rules and conditions for application of the project results will be clarified and EDUC will present its requirements for servicing the e-learning generally and for individual participants indicating a specified period for this as well as possibilities for translation that can be offered and estimated costs for these services
- Each partner nominates an administrator for contacts and participation in the e-learning and EDUC and the FIREFIGHT II Coordinator will propose how a network between these is to be established, including how and under what conditions others than the FIREFIGHT II partners can be included in the network
- As there will be no library included in the e-learning package, a system with availability through links to relevant data or information will be established and made available on proposal by the FIREFIGHT II Coordinator and EDUC in collaboration
- EDUC will consider and make a proposal on how the FIREFIGHT I e-learning could be transformed into the same format as the FIREFIGHT II e-learning package and be made available together with this and how it can be achieved including the estimated costs for this

Departures of participants after the final morning session

ANNEX 1

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Toronto Fire Services, Canada

William Stewart, Fire Chief

Note: The Spanish Firefighter Association (ASELF) could not participate

ANNEX 2

Draft Agenda for the Final Meeting and the Conference

31 October

Arrival at Esher Place for the Final Meeting

1 November

Final Meeting (Partner Meeting)

- Reporting and discussion of results of work in the WP:s since the previous Meeting in particular on the e-learning package
- Final preparation of the Conference

2 November

The Conference (Chaired by Rob Miguel, Unite the Union)

Opening speaker: Jim Mowatt, Director of Education Unite the Union

Key note speaker: Paul Fuller, UK Chief Fire Officer Association Vice President Elect

Project overview: Bo Andersson, Swedish Civil Contingency Agency, Senior Expert

Training package: Luc de la Durantaye, CEO, EDUC Expert, and Daniel Cadorette, Head of production EDUC Expert

CEC implementation case studies: Stefan Bengtsson, Senior Fire Officer, SERF, and Pavel Pečený, Fire Officer, MICR

UK and NFRS experiences: Martin Emberson, Chief fire officer NFRS

Research: Julian Gsell, Researcher and Fire Officer

Practical demonstration: NFRS Fire fighters

Question & Answer Panel: Project team / Experts

3rd November

Final Meeting continued (Partner Meeting)

- Evaluation and Conclusions from the Conference
- Review of remaining work to be done
- Site visit to the Olympic Park and presentation of preparations incl. safety measures

4th November

Final Meeting continued (Partner Meeting)

- Discussion of dissemination measures
- Conclusion on remaining work
- Adoption of an action plan

Depart after the final morning session.