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### Recent Developments and Needs for Wildfire Fighting on the Ground: Tactics and Technologies

A Video Conference organized by

Global Fire Monitoring Center (GFMC) (Conference Chair)

Field Analytical Chemistry and Technology Unit/ National Technical University  
of Athens (FIACTU / NTUA)

European Center for Forest Fires (ECFF)

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### DEVELOPMENT OF A NEW WILDFIRE TRAINING RESOURCE FOR EUROPE

## Competency Based Training & Qualification System



### EuroFire 1: A pilot project (2007-2009)

EuroFire has been developed to support:

- Fire-fighters
- Pilots
- The rural and land-based sector
- Sectoral organisations
- Education and training institutions



### EuroFire Aims

Produce training material at a basic level to support:

- Fire prevention
- Fire management
- Fire suppression



**EuroFire**

Limitations of “normal” fire service equipment





**EuroFire**

EuroFire Objectives


- Research and review competency-based wildfire training systems
- Identify best practice from Europe and around the world
- Inform the production of competency-based basic training
- Provide a basic level competency-based training resource that industry can use to update their knowledge, learn new skills and / or increase their understanding of wildfire management techniques



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European Qualifications Framework (EQF)


- Reference tool to compare qualification levels across national systems
- National qualification systems must be related to EQF by 2009, especially the “Levels”
- All “Europass” documents related to EQF by 2011



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European Qualifications Framework (EQF)


- Describe national qualifications using a “*learning outcomes*” approach.
- Enables industries, like fire management, that are common to all EU countries to work towards common standards & qualifications
- “*Subsidiarity*” applies, i.e. the EQF will be interpreted through National Qualification Frameworks in each country



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Uses in Fire Management


- Supports “mutual assistance” between regions and countries based on agreed competency standards & qualifications
- Supports process of matching employers needs with qualifications across Europe
- Can create a flexible framework that supports both core and elective competencies to allow different “fire regime” area, country and organisational needs to be taken into account.



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Key Definitions


<b>Learning Outcome</b>	Statement of what a learner knows, understands and is able to do on completion of a learning process, defined in terms of knowledge, skills and competence
<b>Knowledge</b>	Body of facts, principles, theories and practises that is related to a field of study or work. Can be theoretical or factual.
<b>Skills</b>	Ability to apply knowledge & know-how to complete tasks & solve problems. Can be cognitive or practical.
<b>Competence</b>	Proven ability to use knowledge, skills & personal abilities. Described in terms of responsibility & autonomy (level descriptors)



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Key Definitions


- Competency standards are:
  - Description of performance, knowledge, skill and range (scope) for a work activity at a level
- Called different names in different countries
  - National Occupational Standard (UK)
  - Unit Standard (New Zealand)
  - Units of Competency (Australia)



**EuroFire**

Results: EuroFire Training Support

- Website information portal for international resources [www.euro-fire.eu](http://www.euro-fire.eu)
- Competency / training standards for core vegetation fire activity
- Training materials, downloadable or on CD Rom / pen drive (public domain)



**EuroFire**

Results: Standards and Training Modules




The screenshot shows a web browser displaying the EuroFire website. The main content area features a document titled "Introduction to EuroFire". The document text is partially visible, mentioning the development of a common set of standards and training modules for wildfire fighting. The website header includes the EuroFire logo and navigation tabs for "Home", "About", "Partners", "Activities", and "Links".



**EuroFire**

Results: Standards and Training Modules

- Unit EF1:** Ensure that your actions in the vegetation fire workplace reduce the risks to yourself and others
- Unit EF2:** Apply techniques and tactics to control vegetation fire
- Unit EF3:** Communicate within a team and with supervisors at vegetation fires
- Unit EF4:** Apply hand tools to control vegetation fires
- Unit EF5:** Control vegetation fires using pumped water
- Unit EF6:** Apply vegetation ignition techniques



**EuroFire**

Results: Standards and Training Modules



The diagrams illustrate wildfire fire behavior and firefighting tactics. The top diagram shows a fire's shape with labels for "POINT OF ORIGIN", "HEEL", "FLANKS", "FINGER", "SPOT FIRE", "HEAD FIRE", and "FINGER". The bottom diagram shows a fire line with labels for "WINDY PULL", "IGNITION PUL", "CONTROL USE", "BACK SCRAM", "COUNTER PUL", "HEAD DIRECTION", "MARK FIRE", "CHECKING", "OPEN LEADER", "Crews clearing the line", and "WIND DIRECTION OF LINE".



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Outline of a Qualification System


- Levels
- Competency standards
- Assessment of learning outcomes
- Training
- Qualifications
- Quality assurance



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Proposed Levels 1-5 (simplified)

1	Introduction	Assist
2	Basic	Do / Support
3	Advanced	Supervise
4	Commander	Manage
5	Director	Decide




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Learning outcomes

**Assessment of learning outcomes – generating evidence of competence**


- Performance evidence
- Knowledge evidence
- Accreditation of Prior Learning



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The Assessors' Role

- Assessors collect evidence to judge whether a candidate has reached the competency standard.
- 3 potential judgements: competent, partially / not yet competent, or insufficient information.
- The process often starts with an interview to identify a candidates current competence and the training needed to reach the standard




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Progression of Learning

- Induction
- Learning
- Development
- Competent practice
- Excellence / professionalism

*-----Assessment-----*



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Vocational Qualifications (VQ's)

- Regulated by national authorities.
- Delivered by an awarding body
- Through an Assessment Centre
- By an Assessor



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Quality Assurance


- Competency standards designed by industry – to be fit for purpose
- Assessors and trainers are qualified, to their competency standards & subject qualification
- Internal and external verification and moderation of qualifications (balancing)



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Conclusions from EuroFire 1

- Competency based training, standards & qualifications are part of a balanced system.
- The context of the organisations working together to create standards is important
- Language, definitions and translation will be key issues affecting success!



**EuroFire**

Conclusions from EuroFire 1

**First experiences: Multinational training course in Georgia – in Russian language (June 2009)**



Курс обучения управлению пожарами – Южно-Кавказский регион  
Проводится в рамках проекта ЦПТМ / ИБОС  
«Усиление национальных возможностей по управлению пожарами и снижению риска их возникновения на Южном Кавказе»  
Боржомский национальный парк, Грузия, 24-26 июня 2009 г.



**EuroFire**

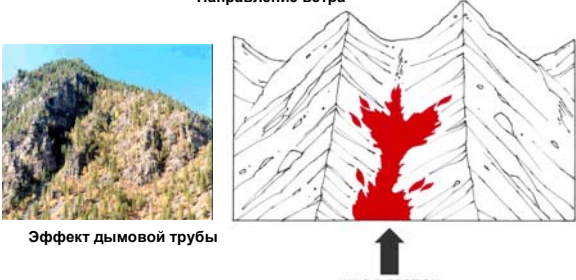
Conclusions from EuroFire 1

**First experiences: Multinational training course in Georgia – in Russian language (June 2009)**





Направление ветра



Эффект дымовой трубы

WIND DIRECTION

В узких крутых долинах тепловая конвекция, склон и ветер могут объединиться и создать чрезвычайное поведение пожара - эффект дымовой трубы (самотяга) с большими скоростями распространения и увеличением пятнистого возгорания.

Пожарные могут оказаться в ловушке.

**Персональная защитная экипировка должна защитить от:**

- Физической травмы
- Воздействия высокой температуры
- Накопления метаболического тепла

**Одежда для борьбы с огнем:**

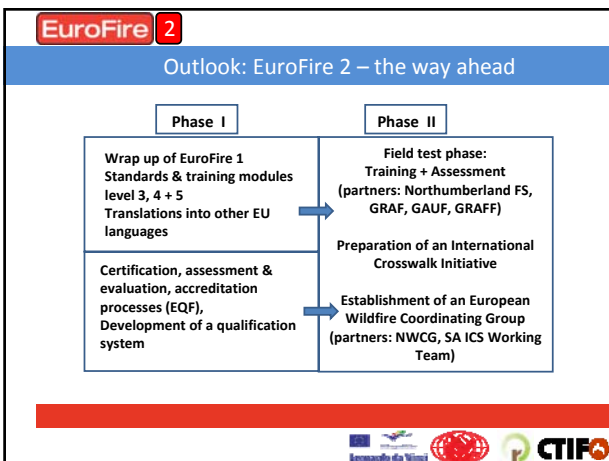
- Безопасный шлем и одежда
- Толстая рубашка и длинные брюки из толстой ткани или противопожарный комбинезон
- Ботинки с шерстяными носками
- Шерстяное и хлопчатобумажное нательное белье

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Отряд монгольских пожарных в защитной экипировке, 2008 г.



**EuroFire**





**EuroFire 2**

Thanks to the EuroFire Partners



- EU Leonardo
- GFMC Team, UN / Germany
- Firebreak Services, UK
- Rural Development Initiatives, UK
- GRAF, Spain
- Fire Paradox Project, EU

