



D_E.1	Common and shared list of training programs
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MEFISTO	Mediterranean Forest Fire Fighting Training Standardization
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Partners:



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[www.mefistoforestfires.eu](http://www.mefistoforestfires.eu)  
[info@mefistoforestfires.eu](mailto:info@mefistoforestfires.eu)

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## MEFISTO consortium



UNIVERSITÀ  
DEGLI STUDI  
FIRENZE  
  
DEPARTMENT OF  
AGRICULTURAL, FOOD AND  
FORESTRY SYSTEMS

**CO**

**Università degli Studi di Firenze - Dipartimento di Gestione  
delle risorse Agrarie, Alimentari e Forestali (UNIFI)**

**Italy**



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**Escola Nacional de Bombeiros (ENB)**

**Portugal**



**BE4**

**Centro de Servicios y Promoción Forestal y de su Industria  
de Castilla y León (CESEFOR)**

**Spain**



**BE3**

**Entente pour la Forêt Méditerranéenne (ENTENTE)**

**France**



**BE4**

**Regione Toscana (RT)**

**Italy**

## Common and shared list of training programs

**Coordinating lead author:**

**Artur Gomes**  
ENB Portugal

## Authors:

<b>Catarino</b> Verónica	ENB Portugal	<b>Chirici</b> Gherardo	UNIFI Italy
<b>Ferreira</b> José	ENB Portugal	<b>Salbitano</b> Fabio	UNIFI Italy
<b>Gomes</b> Artur	ENB Portugal	<b>Foderi</b> Cristiano	UNIFI Italy
<b>Reis</b> Vitor	ENB Portugal	<b>Tosello</b> Philip	Entente France
<b>Calvani</b> Gianluca	Tuscany Region	<b>Saint Germain (de)</b> Ronan	Entente France
<b>Pacini</b> Giacomo	Tuscany Region	<b>Bonfils</b> Louis	Entente France
<b>Pasquinelli</b> Paola	Tuscany Region	<b>Blanc</b> Jean-pierre	Entente France
<b>Tonarelli</b> Luca	DREAM ITALIA Italy	<b>Biscay</b> Jean-Frédéric	Entente France
<b>Marchi</b> Enrico	UNIFI Italy	<b>Viale</b> Christine	Entente France
<b>Laschi</b> Andrea	UNIFI Italy	<b>Blanco</b> Lago Elena	CESEFOR Spain
<b>Fabiano</b> Fabio	UNIFI Italy	<b>Rey</b> Van Den B. Enrique	CDF Spain
<b>Travaglini</b> Davide	UNIFI Italy	<b>Fernández</b> Huertas Víctor	CDF Spain

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## List of Acronyms

<b>BHT</b>	Helitack Team Member
<b>CFE</b>	Four Wheel Drive
<b>CP</b>	Command Post
<b>DO AIB</b>	Direttore Operazioni Antincendi Boschivi
<b>EUFO</b>	European Forest Fire Officer
<b>FdF</b>	Feux de Forêts
<b>IC</b>	Incident Commander

## Executive Summary

In this document, we intend to identify all figures involved in firefighting activities and their specific role in the four partner countries. We have performed a comparative analysis of the existing roles in each partner country, the training required for the qualification, the required prerequisites and the optional training that is available. The functions that are country specific and that correspond to very specific needs that do not exist in the other countries were also pointed out. In addition, we collected all the training programs that are provided in each country for qualifying for the performance of each function. Considering the skills, the required expertise and the training programs identified in each country, a set of common minimum training objectives and contents for the common position of responsibility recognized by all the Partners has been created. An analysis of the contents of the four different training courses for the highest position was also made. In this analysis, it was found that the admission to the qualification for the role of IC in large forest fires is achieved in two different ways: by previous qualification in lower level courses or through the academic background of the candidate. In conclusion, taking into account what has been agreed, both at the Sintra meeting (ENB) and at the meeting in León (CESEFOR), it is proposed a profile and training program for a European Forest Fire Officer (EUFO) in the field of forest fires. A pilot training course for EUFOs will be held in Valabre (France) next may.

## 1. Different roles and training for qualification

### 1.1. Portugal and France

The data collected through the different partners shows that in **Portugal** and **France**, the suppression of forest fires is a task assigned to fire brigades. So the training and prerequisites for entry into training are related to the ranks of the fire brigades members.

The training and prerequisites for the different positions in the structure of the operational organization are shown in Table 1 and 2.

**Table 1**  
**(Portugal - ENB)**

Role/Qualification	Portuguese designation	Training for qualification	Prerequisites (training or qualification)	Optional training
<b>Incident commander</b>	Comandante das operações de socorro	Command post - level 1 (50h)	Forest fires - level 5 (50h)	Operational logistics (25h)
<b>Operations section leader</b>	Oficial de operações			Communications (25h)
<b>Logistics section leader</b>	Oficial de logística			Decision making technics (25h)
<b>Planning section leader</b>	Oficial de planeamento			
<b>Aerial operations coordinator</b>	Coordenador de operações aéreas	Aerial operations - level 2 (25h)	Aerial operations - level 1 (25h)	-
<b>Sector leader</b>	Comandante de setor	Forest fires - level 5 (50h)	Forest fires - level 4 (50h)	-
<b>Group leader</b>	Chefe de grupo	Forest fires - level 4 (50h)	Be a fire officer Personal safety and fire behaviour (25h)	-
<b>Brigade leader</b>	Chefe de brigada	Forest fires - level 3 (35h)	Forest fires - level 2 (25h)	-
<b>Team leader (1truck)</b>	Chefe de equipa	Forest fires - level 2 (25h)	Forest fires - level 1 (50h)	Personal safety and fire behaviour (25h) Forest fires assessment team (35h) Drip torch operator (50+50h)
<b>Team member</b>	Bombeiro	Forest fires - level 1 (50h)	Basic fire fighter training	-
<b>Fire engine driver</b>	Motorista	CFE1 (35h)	Basic fire fighter training	-
<b>Helitack operator</b>	Brigada helitransportada	BHT1 (70h)	Basic fire fighter training	-

In **Portugal**, training ranges from 25 to 50 hours. In general, it is necessary to be qualified with the lower level in order to be admitted in the next level. The level 4 and following courses are reserved for fire officers, regardless of the rank. The **Command Post - level 1** training is specially designed to carry out roles at the command post (CP) - operations, logistics and planning - as well as the function of incident commander (IC).

**Table 2**  
**(France - ENTENTE)**

Role/Qualification	French designation	Training for qualification	Prerequisites (training or qualification)	Optional training
<b>Incident commander</b>	Commandant des opérations de secours	FdF5 (70h)	FdF4 Rank of major (Commandant)	
<b>Operations section leader</b>	Officier action/trans	FdF4 (73h)	FdF3	
<b>Logistics section leader</b>	Officier moyens/log	FdF3 (83h)	FdF2	
<b>Planning section leader</b>	Officier anticipation	FdF4 (73h)	FdF3	
<b>Sector leader</b>	Chef de colonne (more than 2 groups)	FdF4 (73h)	FdF3	
<b>Group leader</b>	Chef de groupe (max 8 trucks)	FdF3 (83h)	FdF2 Be a fire officer (Lieutenant)	
<b>Team leader</b>	Chef d'agrès	FdF2 (34h)	FdF1	
<b>Team member</b>	Chef d'équipe, équipier	FdF1 (32h)	To be a firefighter	
<b>Fire engine driver</b>	Conducteur	COD2 (40h)	FdF1	
<b>Aerial operations coordinator</b>	Officier aéro	AERO 3 (6h)	FdF3	
<b>Helitack operator</b>	Équipier de détachement d'intervention hélicopté	DIH1 (30h)	FdF1	
<b>Helitack team leader</b>	Chef de groupe d'intervention hélicopté	FdF3 (83h) DIH1 (30h)	FdF2 DIH1	

FdF = Feux de Forêts

As in **Portugal**, in **France**, it is necessary to be qualified with the lower level to be admitted in the subsequent level. The level 3 and following courses are reserved for fire officers. Level 5 is delivered to fire officers with the rank of major (commandant in French). The course is intended for the role of IC and for the function of **CP coordinator** (chef PC de site). The remaining roles at the CP only require level 3 and 4 qualifications.

## 1.2. Castilla y León and Regione Toscana

In **Castilla y León** (Spain) and **Regione Toscana** (Italy), the task corresponds to structures linked to forestry or environmental services, independent of traditional fire brigades. The access to training is restricted to forest workers, technicians and specialists graduated in the forest and environmental areas. Regarding **Castilla y León** and the **Regione Toscana**, the training information is shown in tables 3 and 4.

As previously mentioned, the organization in **Castilla y León** is based on technicians and experts related to the areas of forest and environment. It is important to highlight the difference between the qualification of those who are the first IC and those who carry out the task subsequently. The higher level training (**TEC.1**), reserved for forestry engineers, allows not only the role of IC but also the tasks connected with de sections of the CP - operations, logistics and planning – and the roles of liaison officer and sector leader, as well. Individuals qualified to be the IC at the initial attack (**AGM.1**) may also be appointed to operations section leader, sector leader, group leader and staging area manager.

In **Regione Toscana**, the operational organization involved in the suppression of forest fires is also based on forestry technicians and experts. The higher level training (48 hours) is intended to perform the role of IC and operations section leader. It is duty of the IC to coordinate the air means in the operations field.

In order to compare the composition of the CP in **Regione Toscana** with the other partners, it is verified that there is no autonomous "planning" function. On the other hand, in the operations field division, there is no role as sector commander. The group's leaders report directly to the operations section leader.

**Table 3**  
**(Castilla y León – CESEFOR)**

Role/Qualification	Spanish designation	Training for qualification	Prerequisites (training or qualification)	Optional training
<b>Incident commander</b>	Director técnico de extinción	TEC.1 (60h)	Forest engineer	TEC.2 (50h)
<b>Incident commander (first attack only)</b>	Jefe de extinción	AGM.1 (45h)	Title of senior technician in management and organization of natural or landscape resources	AGM.2 (35h) AGM.3 (24h)
<b>Operations section leader</b>	Jefe de operaciones	TEC.1 (60h)	Forest engineer	TEC.2 (50h)
		AGM.1 (45h)	Title of senior technician in management and organization of natural or landscape resources	AGM.2 (35h) AGM.3 (24h)
<b>Logistics section leader</b>	Jefe de logística	TEC.1 (60h)	Forest engineer	TEC.2 (50h)
<b>Planning section leader</b>	Jefe de planificación	TEC.1 (60h)	Forest engineer	TEC.2 (50h)
<b>Sector leader</b>	Jefe de sector	TEC.1 (60h)	Forest engineer	TEC.2 (50h)
		AGM.1 (45h)	Title of senior technician in management and organization of natural or landscape resources	AGM.2 (35h) AGM.3 (24h)
<b>Group leader</b>	Jefe de grupo	AGM.1 (45h)	Title of senior technician in management and organization of natural or landscape resources	AGM.2 (35h) AGM.3 (24h)
<b>Team leader</b>	Capataz de cuadrilla de tierra	CAP.0 (14h) Update – CAP.1 (7h)	Average or higher degree in achievement and conservation of the natural environment CUA.0 (14h)	-
<b>Team member</b>	Peón de cuadrilla de tierra	CUA.0 (14h)	Basic primary studies	-
<b>Fire engine driver</b>	Conductor de autobomba	AUT.0 (14h) Update – AUT.1 (7h)	General certificate of education/vocational education and training	-
<b>Aerial operations coordinator</b>	Coordinador de medios aéreos	TEC.7 (50h)	Forest engineer	-
<b>Helitack operator</b>	Peón de cuadrilla helitransportada	HTCUA.0 (14+7h)	Basic primary studies	-
<b>Helitack team leader</b>	Responsable de cuadrilla helitransportada	REL.1 (14h) Update - REL.2 (7h)	Forest engineer	-
<b>Helicopter pilot</b>	Piloto de helicóptero	PHT.0 (7 h)	Pilot license Qualification for the type of aircraft Agroforestal pilot certificate	-
<b>Fire watchman</b>	Vigilante de incendios	VIG.0 (6h)	Basic primary studies	-
<b>Heavy machinery driver</b>	Conductor-maquinista	MAQ.0 (14h) Update – MAQ.1 (7h)	-	-
<b>Staging area manager</b>	Jefe del área de espera	AGM.1 (45 h)	Title of senior technician in management and organization of natural or landscape resources	AGM.2 (35h) AGM.3 (24h)
<b>Fire engine assistant</b>	Peón ayudante de autobomba	AUT.0 (14h) Update – AUT.1 (7h)	Basic primary studies	-
<b>Liaison officer</b>	Oficial de enlace e información	TEC.1 (60h)	Forest engineer	TEC.2 (50h)

**Table 4**  
**(Regione Toscana)**

Role/Qualification	Italian	Training for qualification	Prerequisites (training or qualification)	Optional training
Incident commander	Direttore operazioni antincendi boschivi	DO AIB training (48h)	To be a forest technician (public employee who operates in forest sector)	Fuel management (8h) Safety for operator (8h) Driver (24h) Prescribed fire manager (24h)
Operations section leader	Assistente direttore operazioni antincendi boschivi			
Logistics section leader	Logista antincendi boschivi	Logistic man training (24h)	To be a fire fighter – 5 years' experience in forest fires fighting	Safety for operator (8h)
Group leader	Responsabile gruppo antincendi boschivi	Responsible group training (24h) Drip torch training (24h)	To be a fire fighter – 5 years' experience in forest fires fighting	Safety for operator (8h) Driver (24h)
Team leader	Caposquadra	Firefighting operator training (24h)	3 years' experience in forest fires fighting	-
Team member	Operatore Antincendi Boschivi	Firefighting operator training (24h)	To be a forest worker (public employee who operates in forest sector)	Safety for operator (8h) Driver (24h) Chainsaw (16h) (only for volunteer operator)
Fire engine driver	Autista guida in fuori strada	4x4 driver training (24h)	-	-
Fire watchman	Vedetta	Fire watchman training (16h)	-	-
Heavy machinery driver	Guidatore autobotte	Heavy machinery driver training (24h)	4x4 driver training (24h)	-
Operational room coordinator	Coordinatore operativo di sala antincendi boschivi	COS AIB training (16h)	-	DO AIB training (48h)
Operational room operator	Addetto di sala antincendi boschivi	Room operator training (16h)	-	Firefighting operator training (24h)

## 2. Role by role comparison

### 2.1. Reciprocity of roles between existing figures in different countries/regions

Comparing the training courses and prerequisites role by role, the following positions of responsibility and training courses were identified.

#### a) Incident Commander

The main information collected per each country about Incident commander training is summarized in Table 5 and 6.

**Table 5**  
**(Incident commander)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Comandante das operações de socorro	Commandant des opérations de secours	Director técnico de extinción Jefe de extinción (first attack only)	Direttore operazioni antincendi boschivi
<b>Training for qualification</b>	Command post - level 1 (50h)	FdF5 (70h)	TEC.1 (60h) AGM.1 (45h)	DO AIB training (48h)
<b>Prerequisites (training or qualification)</b>	Forest fires - level 5 (50h)	FdF4 (Major. In French, commandant)	Forest engineer Title of senior technician in management and organization of natural or landscape resources	To be a forest technician (public employee who operates in forest sector)
<b>Optional training</b>	Operational logistics (25h) Communications (25h) Decision making technics (25h)	-	TEC.2 (50h) AGM.2 (35h) AGM.3 (24h)	Fuel management (8h) Safety for operator (8h) Driver (24h) Prescribed fire manager (24h)

The number of hours required to qualify for IC is variable, depending on the partner. **Regione Toscana** presents the course with the lowest number of hours (48h), followed by **Portugal** (50h), **Castilla y León** (60h) and **France** (70h). In the case of **Castilla y León** and **Regione Toscana**, the prerequisites to be admitted in the course are related to the academic background of the candidate, since it is reserved for forestry technicians.

In **Portugal**, the prerequisite for the admission is the qualification for the previous level, not having any reference to the rank of the fire officer.

**Table 6**

**(Contents of the four higher level courses)**

<b>PORTUGAL</b>	<b>PC1</b>	<p>Aerial means and civil protection;          Analysis of the intervention zone;          Communications;          Missions in the scope of Civil Protection;          Geographic Information Systems;          Aeronautical meteorology;          Characteristics of aircrafts used in forest fires suppression;          Assessment, coordination and guidance of aircrafts;          Aerial means nucleus of operations cell, from the command post (CP).</p>
<b>FRANCE</b>	<b>FdF5</b>	<p>Taking into account the mission;          Expectations of the hierarchy and the media;          Stress management;          Field PC;          Tactical reasoning method (MRT);          Scenario.</p>
<b>CASTILLA Y LEÓN</b>	<b>TEC.1</b>	<p><b>Module I:</b> Regulation, organization and working of the regional operation; Technician Functions; Media dispatch procedures and protocol; Recognition, evaluation and planning of extinction; Fire behaviour analysis; Risk management and analysis tools; Extinguishing media and techniques: characteristics, management and coordination; Management and management of human resources; Communications.  <b>Module II:</b> Days supervised by expert extinction directors in places and dates of high risk, (visit to active and complex fires, etc.).  <b>Module III:</b> Writing an individual report on a recent fire, preferably one in which the student has participated. The report should be presented as a course paper.  <b>Module IV:</b> Final day after the summer campaign, dedicated to the review of the application of the contents to the reality lived during the campaign, exchange of experiences of the students, presentation of some of their reports for analysis and conclusions.</p>
<b>REGIONE TOSCANA</b>	<b>Fire Boss</b>	<p>Forest Ecosystem and forest fires (except graduates in forest sciences): - Forest-soil ecosystem; - Forest management; - Fire behaviour; - The effects of fire on the ecosystem; - Forests in Tuscany.          The phases of forest fire fighting – National and Regional laws – Statistics;          Competences of forest fire fighting structures – Coordination with other operative structures (firemen, Civil Protection);          Forest fire fighting organization in Tuscany - Ground and aerial organization; - Coordination structures – Operative Rooms and Director of firefighting activities;          Fire growth and propagation; Fire types and operative scenarios; Favourable conditions for forest fires and Campbell (weather conditions, topography and fuel characteristics);          The activities in charge of Fire Boss - Activation- Arrive on the fire – taking direction role; - The chain of command – responsibilities on Operators' Health and Safety and emergency;          Extinction activities, mop up and closing intervention;          Smoke columns and interface; The choose of attack technique; Ground means management; Cartography, GPS and tablet;          Exercise on forest fire fighting areas of interest (burnt areas): - Characteristics, means and resources used, operative strategy applied, restoration; - Discussion about the intervention; - Management of water refuelling; - Aerial means management – characteristics, management during operations and attack techniques;          Final phases – Mop up and fire control;          In-depth analysis on operator's health and safety (laws and rules, responsibilities, main risks in forest fire fighting, PPE and their efficiency –LACES protocol;          Classification of water points (characteristics) considering both ground and aerial means involved;          Radio communication management;          Exercises: meeting with a helicopter pilot on aerial management topics; Visit to a burnt area and cartography exercise in field; Helicopter water refuelling. Exercise on coordination during intervention;          Exercise on attack using water considering operative times and refuelling problems common in regional reality.</p>

In **France**, in addition to being qualified for the previous level, this training is intended for fire officers with the category of major (commandant, in French).

It should be noted that in Castilla y León, the first individual to perform the function of IC is a trained forestry technician with a different course (AGM.1 - 48h). When the fire progresses, it is appointed to perform the role of IC another technician with highest qualification. The technicians qualified with the TEC.1 course, can be also appointed to perform the role of liaison officer (Oficial de enlace e información).

Despite the differences in number of hours, the contents of the four higher level courses are similar and have as general objective to qualify the trainees to direct the suppression operations. Actually, the qualification for the role of IC in large forest fires is achieved in two different ways:

1. In **Portugal** and **France**, the final qualification is obtained through a specific course, but the candidate is previously qualified with a series of lower level courses. There is a build-up of knowledge and experience directly linked to successive training.
2. In **Castilla y León** and **Regione Toscana**, admission to the most advanced course depends, essentially, on the academic background of the candidate, related to the forest and environment.

Of course, the contents of the training in **Castilla y León** and **Regione Toscana** are more detailed, thus reflecting this difference.

Among all the contents can be highlighted the **operational organization, fire behaviour, tactics and techniques, means and tools, communications**, etc.

#### **b) Operations section leader**

The main information collected per each country about Operations section leader training is summarized in Table 7. In **Portugal**, **Castilla y León** and **Regione Toscana** the training that qualifies for the role of operations section leader coincides with the training for IC. In **France**, a fire officer qualified with the FdF4 course, which has as main objective the qualification for sector leader, can perform the role.

**Table 7**  
**(Operations section leader)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Oficial de operações	Officier action/trans	Jefe de operaciones	Assistente direttore operazioni antincendi boschivi
<b>Training for qualification</b>	Command post - level 1 (50h)	FdF4 (73h)	TEC.1 (60h) AGM.1 (45h)	DO AIB training (48h)
<b>Prerequisites (training or qualification)</b>	Forest fires - level 5 (50h)	FdF3	Forest engineer Title of senior technician in management and organization of natural or landscape resources	To be a forest technician (public employee who operates in forest sector)
<b>Optional training</b>	Operational logistics (25h) Communications (25h) Decision making technics (25h)	-	TEC.2 (50h) AGM.2 (35h) AGM.3 (24h)	Fuel management (8h) Safety for operator (8h) Driver (24h) Prescribed fire manager (24h)

**c) Logistics section leader**

The main information collected per each country about Logistics section leader training is summarized in Table 8. As in the case of the operations sector leader, in **Portugal** and **Castilla y León**, the training that qualifies for the role of logistics sector leader coincides with the training for IC. In **France**, a fire officer qualified with the FdF3 course, which has as main objective the qualification for group leader, can perform the role. In **Regione Toscana** there is a course specially dedicated to the role of logistics sector leader (24h).

**Table 8**  
**(Logistics section leader)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Oficial de logística	Officier moyens/log	Jefe de logística	Logista antincendi boschivi
<b>Training for qualification</b>	Command post - level 1 (50h)	FdF3 (83h)	TEC.1 (60h)	Logistic man training (24h)
<b>Prerequisites (training or qualification)</b>	Forest fires - level 5 (50h)	FdF2	Forest engineer	To be a fire fighter – 5 years' experience in forest fires fighting
<b>Optional training</b>	Operational logistics (25h) Communications (25h) Decision making technics (25h)	-	TEC.2 (50h)	Safety for operator (8h)

#### d) Planning section leader

The main information collected per each country about planning section leader training are summarized in Table 9. Once again, in **Portugal** and **Castilla y León**, the training that qualifies for the role of planning sector leader coincides with the training for IC. Similarly, in **France**, a fire officer qualified with the FdF4 course, which has as main objective the qualification for sector leader, can perform the role. As mentioned above, it can be seen that in the **Regione Toscana** the "planning" function is not autonomous from the others CP sections.

**Table 9**  
**(Planning section leader)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Oficial de planeamento	Officier anticipation	Jefe de planificación	-
<b>Training for qualification</b>	Command post - level 1 (50h)	FdF4 (73h)	TEC.1 (60h)	-
<b>Prerequisites (training or qualification)</b>	Forest fires - level 5 (50h)	FdF3	Forest engineer	-
<b>Optional training</b>	Operational logistics (25h) Communications (25h) Decision making technics (25h)	-	TEC.2 (50h)	-

#### e) Sector leader

The main information collected per each country about sector leader training are summarized in Table 10. The sector leader is responsible for **up to six groups** and/or a **specific area of the operations field**. In **Portugal** and **France** the specific training for this role lasts 50 hours (**Forest fires - level 5**) and 73 hours (**FdF4**), respectively. The prerequisite to be admitted is to be qualified with the level immediately below. In **Castilla y León**, the role of sector leader can be performed by technicians with the same qualification required for the role of IC (**TEC.1**) and initial attack IC (**AGM.1**). In the **Regione Toscana**, this specific role does not exist. The role is performed by

the **operations section leader**. This means that the operations field is not divided into sectors where groups are integrated, but the groups themselves are responsible for a certain area.

**Table 10**  
**(Sector leader)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Comandante de setor	Chef de colonne (more than 2 groups)	Jefe de sector	-
<b>Training for qualification</b>	Forest fires - level 5 (50h)	FdF4 (73h)	TEC.1 (60h) AGM.1 (45h)	-
<b>Prerequisites (training or qualification)</b>	Forest fires - level 4 (50h)	FdF3	Forest engineer Title of senior technician in management and organization of natural or landscape resources	-
<b>Optional training</b>	-	-	TEC.2 (50h) AGM.2 (35h) AGM.3 (24h)	-

#### **f) Group leader**

The main information collected per each country about Group leader training is summarized in Table 11.

The group leader is responsible for **up to eight teams/trucks**. In **Portugal**, the specific training for this role lasts 50 hours (**Forest fires - level 4**). As prerequisites to be admitted, the candidate must be a fire officer and be qualified with the Personal Safety and Fire Behaviour training course (25h). A group can be divided into brigades of 2 to 3 trucks each. The brigade leader must be a sub officer qualified with the course **Forest Fires – level 3**.

In **France**, the specific training for this role lasts 83 hours (**FdF3**). As prerequisites to be admitted, the candidate must be a fire officer (lieutenant) and be qualified with the **FdF2** course.

In **Castilla y León**, the role of group leader can be performed by technicians with the qualification required for the role of initial attack IC (**AGM.1**).

In **Regione Toscana**, as prerequisite, the candidate must be a firefighter with five years of experience in forest fires suppression. The specific training lasts 24 hours, and more 24 hours of training in **drip torch technics**.

**Table 11**  
**(Group leader)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Chefe de grupo (max 6 trucks)	Chef de groupe (max 8 trucks)	Jefe de grupo	Responsabile gruppo antincendi boschivi
<b>Training for qualification</b>	Forest fires - level 4 (50h)	FdF3 (83h)	AGM.1 (45h)	Responsible group training (24h) Drip torch training (24h)
<b>Prerequisites (training or qualification)</b>	Fire officer Personal safety and fire behaviour (25h)	FdF2 Officer	Title of senior technician in management and organization of natural or landscape resources	To be a fire fighter – 5 years' experience in forest fires fighting
<b>Optional training</b>	-	-	AGM.2 (35h) AGM.3 (24h)	Safety for operator (8h) Driver (24h)

#### **g) Team leader**

The main information collected per each country about Team leader training is summarized in Table 12.

The team leader is responsible for an **engine/truck crew** or a **hand tools team**.

In **Portugal**, the specific training for this role lasts 25 hours (**Forest fires - level 2**). As prerequisite to be admitted, the candidate must be qualified with the **Forest Fires – level 1** course.

In **France**, the specific training for this role lasts 34 hours (**FdF2**). As prerequisite to be admitted, the candidate must be qualified with the **FdF1** course.

In **Castilla y León**, the specific training for this role lasts 14 hours (**CAP.0**). As prerequisite to be admitted, the candidate must be qualified with the **CUA.0** course.

In **Regione Toscana**, as prerequisite, the candidate must be a firefighter with three years of experience in forest fires suppression. The specific training lasts 24 hours.

**Table 12**  
**(Team leader)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Chefe de equipa	Chef d'agrès	Capataz de cuadrilla de tierra	Caposquadra
<b>Training for qualification</b>	Forest fires - level 2 (25h)	FdF2 (34h)	CAP.0 (14h) Update – CAP.1 (7h)	Firefighting operator training (24h)
<b>Prerequisites (training or qualification)</b>	Forest fires - level 1 (50h)	FdF1	Average or higher degree in achievement and conservation of the natural environment CUA.0 (14h)	3 years' experience in forest fires fighting
<b>Optional training</b>	Personal safety and fire behaviour (25h) Forest fire assessment team (35h) Drip torch operator (50+50h)	-	-	-

#### **h) Team member**

The main information collected per each country about Team member training are summarized in Table 13.

In **Portugal**, the specific training for this role lasts 50 hours (**Forest fires - level 1**). As prerequisite to be admitted, the candidate must be qualified with the basic fire fighter training. It should be noted that, during basic training, all the firefighter candidates attend a specific training module on forest fires that also lasts 50 hours.

In **France**, the specific training for this role lasts 32hours (**FdF2**). The trainee must be a firefighter. However, by higher decision, this training can be incorporated into the basic firefighter training.

In **Castilla y León**, the specific training for this role lasts 14 hours (**CUA.0**). There are no specific prerequisites beyond basic school education.

In **Regione Toscana**, as prerequisite, the candidate must be a public employee who operates in forest sector. The specific training lasts 24 hours.

**Table 13**  
**(Team member)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Bombeiro	Chef d'équipe, équipier	Peón de cuadrilla de tierra	Operatore antincendi boschivi
<b>Training for qualification</b>	Forest fires - level 1 (50h)	FdF1 (32h)	CUA.0 (14h)	Firefighting operator training (24h)
<b>Prerequisites (training or qualification)</b>	Basic fire fighter training	To be a firefighter	Basic primary studies	To be a forest worker
<b>Optional training</b>	-	-	-	Safety for operator (8h) Driver (24h) Chainsaw (16h) (only for volunteer operator)

#### i) Fire engine/truck driver

The main information collected per each country about Fire engine/truck driver training is summarized in Table 14.

In **Portugal**, the specific training for this role lasts 35 hours (**CFE1**). As prerequisites to be admitted, the candidate must be qualified with the basic fire fighter training.

In **France**, the specific training for this role lasts 40 hours (**COD2**). As prerequisite to be admitted, the candidate must be qualified with the **FdF1** course.

In **Castilla y León**, the specific training for this role lasts 14 hours (**AUT.0**). There are no specific prerequisites beyond school education. In addition, there is another role connected with fire engines/trucks, designated by fire engine driver assistant. Basically, a firefighter operates, together with the driver, a single cabin fire engine. The specific training and prerequisites are the same.

In **Regione Toscana**, the specific training for this role lasts 24 hours (**4x4 driver training**). There are no specific prerequisites.

**Table 14**  
**(Fire engine/truck driver)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Motorista	Conducteur	Conductor de autobomba	Autista guida in fuori strada
<b>Training for qualification</b>	CFE1 (35h)	COD2 (40h)	AUT.0 (14h) Update – AUT.1 (7h)	4x4 driver training (24h)
<b>Prerequisites (training or qualification)</b>	Basic fire fighter training	FdF1	General certificate of education/vocational education and training	-
<b>Optional training</b>	-	-	-	-

#### j) Aerial operations coordinator

The main information collected per each country about Fire engine/truck driver training is summarized in Table 15.

In **Portugal**, the specific training for this role lasts 25 hours (**Aerial Operations – level 2**). As prerequisite to be admitted, the candidate must be qualified with the **Aerial Operations – level 1** course. To be admitted in the **Aerial Operations – level 1** course, the candidate must be qualified with the **Forest Fires – level 4**. The **Aerial Operations – level 1** course qualified to the role of **aerial operations specialist**, which is a member of the CP operations section. That is, the aerial operations specialist assists the operations sector leader and connects the CP to the **aerial operations coordinator**, which operates on board an aircraft.

In **France**, the specific training for this role lasts 16 hours (**AERO 3**). As prerequisite to be admitted, the candidate must be qualified with the **FdF4** course.

In **Castilla y León**, the specific training for this role lasts 50 hours (**TEC.7**). As prerequisite to be admitted, the candidate must be a forest engineer.

In **Regione Toscana**, the role is performed by the IC or by the operations section leader. There is no specific qualification to this role.

**Table 15**  
**(Aerial operations coordinator)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
<b>Role</b>	Coordenador de operações aéreas	Officier aéro	Coordinador de medios aéreos	-
<b>Training for qualification</b>	Aerial operations - level 2 (25h)	AERO 3 (16h)	TEC.7 (50h)	-
<b>Prerequisites (training or qualification)</b>	Aerial operations - level 1 (25h)	FdF4	Forest engineer	-
<b>Optional training</b>	-	-	-	-

#### **k) Helitack team – leader and member**

The main information collected per each country about Fire engine/truck driver training is summarized in Table 16.

In **Portugal**, the specific training for this role lasts 70 hours (**BHT1**). As prerequisite to be admitted, the candidate must be qualified with the basic fire fighter training. There is no specific course for Helitack team leader.

In **France**, there are two different kinds of training: for **Helitack team leader** and for **Helitack team member**. The team leader training consists of two courses: **FdF3** (83 h) and participation in a **DIH1** (30h) as team leader. For a team member, the training lasts 30h (DIH1). In the first case, the prerequisites are the **FdF2** and the DIH1 courses. In the second case, the candidate must be qualified with the **FdF1** course.

In **Castilla y León**, there are two kinds of training, as well: for **Helitack team leader** and for **Helitack team member**. The team leader training lasts 14 hours (**REL.1**) and the candidate must be a forest engineer. For a team member, the training lasts 21h (**HTCUA.0**), of which 7h in air operations. There are no prerequisites beyond school education for this role. There is also a course specially dedicated to **helicopter pilots** that lasts 7h (**PHT.0**). Applicants must be qualified with pilot license, qualification for the type of aircraft and agroforest pilot certificate.

In **Regione Toscana**, there are no specific courses for these two roles.

**Table 16**  
**(Helitack team – leader and member)**

	PORTUGAL	FRANCE	CASTILLA Y LEÓN	REGIONE TOSCANA
Role	-	Chef de groupe d'intervention hélicopté	Responsable de cuadrilla helitransportada	-
	Brigadas helitransportadas	Équipier de détachement d'intervention hélicopté	Peón de cuadrilla helitransportada	-
Training for qualification	-	FdF3 (83h) DIH1 (30h)	REL.1 (14h) Update - REL.2 (7h)	-
	BHT1 (70h)	DIH1 (30h)	HTCUA.0 (14+7h)	-
Prerequisites (training or qualification)	-	FdF2 DIH1	Forest engineer	-
	Basic fire fighter training	FdF1	Basic primary studies	-
Optional training	-	-	-	-

## 2.2. Other roles

In **Castilla y León** and **Regione Toscana**, there is training for the role of **fire watchman**. In the first case (vigilante de incendios), the training lasts 6 hours (**VIG.0**) and there are no prerequisites other than basic school education. In the second case (vedetta), the training lasts 4 hours (**Fire Watchman training**) and no prerequisites are identified.

Another role provided in **Castilla y León** and **Regione Toscana** is **heavy machinery driver**. In **Castilla y León** the training lasts 14 hours (**MAQ.0**) and no prerequisites were indicated. In **Regione Toscana**, the training for the role lasts 24 hours and the candidate must be qualified with the **4x4 driver course**.

**Regione Toscana** also referred the training for **operational room coordinator** (Coordinatore operativo di sala antincendi boschivi) and **operational room operator** (Addetto di sala antincendi boschivi). Each course lasts 16 hours.

### 3. Towards common figures and training standardisation in forest fire fighting at EU level

As highlighted in the previous chapters, there are different figures involved in forest fire fighting in the different countries/regions. Each figure follows different training programs. Despite some obvious differences, the main figures existing are similar in the different realities, and consequently both skills and training programs too. In this section, a description of the aims, training objective and minimum training contents the main figures operating in firefighting, have been developed. The minimum standardized skills and competences may allow improving international collaboration guaranteeing safely and efficiently join operations on fire scenarios. Moreover, the minimum contents to be developed in training courses have been defined for each main role.

#### 3.1 Incident Commander

This is a very important figure in firefighting management. In all countries, this figure exists, and this is characterized by several common skills. An **Incident Commander** should respond to a minimum standard in terms of knowledge, ability and capacities. The related standardized training program should accomplish minimum objectives guaranteeing the acquisition of minimum skills common to all IC trained in different Member Countries. These competences are required for another important figure involved in the chain of command: the **Operations Section Leader**. In fact, despite the different role of these two figures, they need to reach the same minimum skills to operate efficiently and safely in fire suppression operations.

##### 3.1.1 Minimum standardized Objectives

The IC should be able:

- to command a forest fire fighting operation requiring the implementation of a command post (CP) and its connected functions;
- to establish an action plan to extinguish a forest fire effectively;
- to be aware of all the safety measures to be applied during operations in firefighting;
- to recall the basic principles of fire behaviour and apply them to the prediction of forest fire propagation;
- to evaluate, for all fire types, the best solution, strategy and techniques for fire attack, extinction and mop up;
- to describe the main fire propagation patterns.

##### 3.1.2 Minimum standardized contents of training program for the IC

- Different figures involved in forest fire fighting in the entire chain of command, including roles, operative interactions and capacities;

- ground and aerial means commonly used;
- methods and manoeuvres for forest fire suppression and mop up: characteristics, management and coordination;
- human resources management;
- risk assessment and analysis tools;
- communication tools and techniques;
- forest fire behaviour considering the main factors of influence: wind, topography and fuel structure;
- principles of cartography;
- basic concept of health and safety in forest fire fighting operations.

### 3.2 Logistics Section Leader (LSL)

The Logistics Section Leader is the position of responsible for supervising the logistic section in order to provide facilities services and supplies in support of an incidence.

#### 3.2.1 Minimum standardized Objective

The LSL has to be able to:

- organize and manage the arrive and disengage of teams;
- provide logistics support to teams (refuelling of means, food and beverage, etc.);
- managing water supply points (fixed and mobile) and retardants.

#### 3.2.2 Minimum standardized contents of training program for the LSL

- the organization of the chain of command;
- logistics management;
- water point types and their management;
- characteristics and management of transit points.

### 3.3 Group Leader (GL)

The Group Leader have in charge the management of a group of teams, where a team is defined as an operative unit composed by a ground mean and a variable number of operators (which depends on the dimension of the ground mean). The number of teams which compose a group can vary between countries/regions, generally from a minimum of 2 to a maximum of 8 teams. The Group Leader has to be able to manage and coordinate its

group during firefighting activities, guaranteeing efficient and safe operations. Moreover, the GL communicates and refers to the other figures involved in the chain of command.

### 3.3.1 Minimum standardized Objective

The GL should be able to:

- manage the means and human resources under its responsibility;
- be aware of all the safety measures to be applied during operations in fire fighting;
- know, for all fire types, the best solution, strategy and techniques for fire attack, extinction and mop up;
- guarantee operational safety.

### 3.3.2 Minimum standardized contents of training program for the GL

- Methods and manoeuvres for forest fire suppression and mop up: characteristics, management and coordination;
- management of means and human resources;
- safety measures to be applied during operations in firefighting;
- communication tools and techniques;
- ground means characteristics, use, hose connectors and manual tools, including heavy machinery;
- aerial means characteristics and operation, including risk evaluation in interoperability between ground and aerial means;
- tactical fire as an important tool in firefighting: techniques, management, use, effects and risks.

## 3.4 Team Leader (TL)

The Team Leader needs to have the same competences of GL, even if it has in charge just one team.

### 3.4.1 Minimum standardized Objective

The TL should be able to:

- manage the means and human resources under its responsibility;
- be aware of all the safety measures to be applied during operations in firefighting;
- know, for all fire types, the best solution, strategy and techniques for fire attack, extinction and mop up;
- guarantee operational safety.

### 3.4.2 Minimum standardized contents of training program for the TL

- Methods and manoeuvres for forest fire suppression and mop up: characteristics, management and coordination;
- management of means and human resources;
- safety measures to be applied during operations in firefighting;
- communication tools and techniques;
- ground means characteristics, use, hose connectors and manual tools, including heavy machinery;
- aerial means characteristics and operation, including risk evaluation in interoperability between ground and aerial means.

### 3.5 Team Member (TM)

The Team Member is the operator that effectively operates on field against forest fires. This figure have to guarantee efficient interventions against forest fires, without compromising the safety of themselves, other operators and people in the surroundings. A well-prepared Team Member operates effectively following directions coming from the Team Leader.

#### 3.5.1 Minimum standardized Objective

The TM have to be able to operate in an efficient and safe way during firefighting activities. The Team Member should be able to:

- know strategy and techniques for fire attack, extinction and mop up;
- know basic elements of fire behaviour;
- manage ground means, including hydraulic pumps, water points, manual and motor-manual tools;
- safety measures, including proper use and maintenance of PPEs.

#### 3.5.2 Minimum standardized contents of training program for the TM

- Combustion: fire and forest fire;
- the effective use of water in forest fire fighting;
- application techniques of methods and manoeuvres for forest fire suppression and mop up;
- safety measures to be applied during operations in fire fighting;
- ground means characteristics, use, hose connectors and manual tools, including heavy machinery.

### 3.6 Comparison between national/regional training program and minimum standardized contents

Starting from the previous minimum standards identified for each main role commonly operating in firefighting, a comparison between these standards and the existing national/regional roles has been made. Differences between Portuguese and French training structure in comparison with the Spanish and Italian ones are clear. In fact, the firsts follow a hierarchic scheme, where the higher responsibility level can be reached only by attending all the previous training levels. On the contrary, in Italy and Spain, there are two different main training classes. The first one aimed to train the command levels, while the second one is oriented to train the other figures, directly involved on fire suppression and mop up. The following tables (17, 18, 19 and 20) clearly highlight these differences and highlight the training needs and the correspondence among positions identified as common at EU level and the positions already available at National/regional level. As an example: in table 17 you may see that for becoming an incident commander you should reach the FdF4 training level, i.e. to follow all the previous training activity; in table 19 you may see that in Italy you should have the position of DO AIB following the specific training course.

**Table 17**

France	Incident Commander (IC)	Operations Section Leader (OSL)	Logistics Section Leader (LSL)	Group Leader (GL)	Team Leader (TL)	Team Member (TM)
FdF1	X	X	X	X	X	X
FdF2	X	X	X	X	X	
FdF3	X	X	X	X		
FdF4	X	X				
FdF5	X					

**Table 18**

<b>Portugal</b>	<b>Incident Commander (IC)</b>	<b>Operations Section Leader (OSL)</b>	<b>Logistics Section Leader (LSL)</b>	<b>Group Leader (GL)</b>	<b>Team Leader (TL)</b>	<b>Team Member (TM)</b>
Forest fires - level 1	X	X	X	X	X	X
Forest fires - level 2	X	X	X	X	X	
Forest fires - level 3	X	X	X	X		
Forest fires - level 4	X	X	X	X		
Forest fires - level 5	X	X	X			
Command post - level 1	X	X	X			

**Table 19**

<b>Italy</b>	<b>Incident Commander (IC)</b>	<b>Operations Section Leader (OSL)</b>	<b>Logistics Section Leader (LSL)</b>	<b>Group Leader (GL)</b>	<b>Team Leader (TL)</b>	<b>Team Member (TM)</b>
Firefighting Operator			X	X	X	X
Drip Torch Training				X		
Group Responsible				X		
Logistic man			X			
Fire Boss (DO AIB)	X	X				

Table 20

Spain	Incident Commander (IC)	Operations Section Leader (OSL)	Logistics Section Leader (LSL)	Group Leader (GL)	Team Leader (TL)	Team Member (TM)
CUA.0					X	X
CAP.0					X	
AGM.1	X	X		X		
TEC.1	X	X	X			

## 4. European Forest Fire Officer (EUFO)

The goal of this deliverable is also to identify the profile and training for a figure capable of performing the following tasks:

- Liaison officer in major fires;
- External force leader in a transboundary mission;
- Added value of common knowledge (at European level) in major fires (advisory function);

Taking into account the analysis made to the different training courses presented above, it concludes in the need to build a course that aims to **develop skills for the role of EU Fire Officer in the field of forest fires (EUFO)**.

The **specific objectives** for this training should be as follows:

### Knowledge:

- Role of the EU Fire Officer in the field of major forest fires;
- Competencies and responsibilities of the EU Forest Fire Officer;
- Organization of the forest fire fighting system in each country (FR, IT, ES & PT);
- Existing cooperation agreements;

- Functioning of the European Union Mechanism;
- Host Nation Support Guidelines for operational deployments inside the EU;
- Resource types and deployment methods;
- Operational procedures for receiving assistance under cooperation agreements and through the European Union Mechanism;
- Operational Procedures for the deployment of forces in other countries;
- Documentation methods and requirements;
- Leadership and communication skills;
- Communication tools and methods used in each country;
- Training organization in the Mediterranean countries;
- Forest fire cartography and mapping in Mediterranean countries;
- Main aspects of big fire management.

#### **Skills:**

- Assume the role of liaison officer with experience on major fire;
- Interact with ICS staff and representatives of local authorities and agencies present in the forest fire;
- Conduct an operational briefing with several entities;
- Plan and ensure the welcome of detached forces;
- Guarantee the articulation between local authorities and detached forces;
- Plan and manage the demobilization process of deployed forces;
- Compose mission reports.

#### **Attitudes:**

- Communicate clearly and assertively with all stakeholders;
- Leadership attitudes.

It is proposed that the training lasts **four days** (23 hours) and **fire officers** appointed by national or regional authorities must be the target audience. As prerequisites, the trainees must be qualified with **academic and/or technical training** in the area of forest fires and recognized **professional experience** in operations management and command of forces.

The contents of the course will be:

Contents:	Hours:
Welcome briefing	0.25
European Forest Fire Officer	0.5
EU Mechanism + European Procedures	1
Forest fire fighting organisation (FR, IT, ES & PT)	4
Leadership and communication skills	0.5
Bilateral agreement and operational procedures	1
Communication tools and methods (FR, IT, ES & PT)	2
Forest fire cartography and mapping (FR, IT, ES & PT)	1
Common and shared list of training program	1
Fire management systems	1.5
Fire Behaviour in a Major Fire	1.5
International cooperation experiences	1.5
Lessons learned feedback	1
Exercise	2
Final evaluation	

On the basis of the previous information, a pilot training course will be held in **Valabre** (France) from **22 to 25 may 2018**. During the pilot training course, the number of trainees should be **12, three from each country/region of the project MEFISTO partners**.

## ANNEXES - Characteristics of the training courses in forest fire suppression in the partner countries/regions of the project MEFISTO

### 1. PORTUGAL (ENB)

CHARACTERISTICS OF THE TRAINING COURSES IN FOREST FIRE SUPPRESSION		PORTUGAL
Designation/Code	Course length (hours)	Number of trainees
Forest Fires – level 5	50	18
Objectives		Contents
<p><b>General objective:</b> Provide trainees with technical and operational skills to perform the role of geographic sector commander, involving a maximum of six (6) groups in the sector, during forest fire suppression operations.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Identify the main parameters needed to provide the logistical support to a sector;</li> <li>• List the roles of the sector commander;</li> <li>• Define the missions to the civil protection agents, in the scenario of forest fire extinguishing operations;</li> <li>• Recognize the factors with influence in the intervention zone analysis;</li> <li>• Describe the elements of the action plan for the sector.</li> <li>• Correctly analyse of the sector intervention area;</li> <li>• Suitably assessment risk situations for personnel and equipment;</li> <li>• Action plan definition for the sector, in accordance with established procedures;</li> <li>• Formulate properly the logistics plan for the sector, based on the logistic plan of the groups;</li> <li>• Choose the most suitable means for the action plan objectives;</li> <li>• Communicate clearly the action plan to group leaders;</li> <li>• Define the properly tactical reinforcement sites for the sector;</li> <li>• Inform the situation point objectively, through available radio equipment;</li> <li>• Apply properly the LACES protocol in the sector;</li> <li>• Prepare correctly the briefing of the sector.</li> <li>• Communicate with assertiveness;</li> <li>• Keep yourself physically fit for the function.</li> </ul>		<p>Aerial means and civil protection; Analysis of the intervention zone; Communications; Missions in the scope of Civil Protection; Geographic Information Systems; Aeronautical meteorology; Characteristics of aircrafts used in forest fires suppression; Assessment, coordination and guidance of aircrafts; Aerial means nucleus of operations cell, from the command post (CP).</p>
		Evaluation
		<p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 40% of the final classification and the practical assessment worth the other 60%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation will take into account the following parameters:</p> <ul style="list-style-type: none"> <li>• Analysis of the intervention zone;</li> <li>• Elaboration of mission order;</li> <li>• Aerial means commitment map.</li> </ul>

Designation/Code	Course length (hours)	Number of trainees
Forest Fires – level 4	50	16
Objectives	Contents	
<p><b>General objective:</b> Provide trainees with technical and operational skills to lead a combat or reinforcement groups in forest fire suppression operations.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Describe and format orders to perform missions in a forest fire scenario;</li> <li>• Describe and assign the missions to the reinforcement means, identify the type of available means, the readiness times of each mean and the functions of the group chief;</li> <li>• Identify and apply the sequence of procedures suitable to the groups;</li> <li>• Distinguish the various group manoeuvres that can be made during the movement to forest fires and in the operation theatres;</li> <li>• Analyse the operations theatre where suppression activities will take place, developing also operational cartography.</li> <li>• Accurate evaluation of propagation conditions and prediction of fire behaviour, ensuring that the group will be located in a safety position;</li> <li>• Respect strictly the security rules and implement the LACES protocol;</li> <li>• Apply properly the concepts and principles of the operations management system;</li> <li>• Apply correctly the orders to perform a mission in forest fire scenario;</li> <li>• Adequate execution of group manoeuvres during the movement to forest fires scenarios and also in the operations theatres;</li> <li>• Analyse the intervention zone correctly;</li> <li>• Evaluation and recognition of the area assign to the group by the incident commander (IC), according with the established procedures.</li> <li>• Communicate with assertiveness;</li> <li>• Organize and direct debriefing with the staff of the group;</li> <li>• Keep yourself physically fit for the function.</li> </ul>	<p>Logistics of the operational unit; Specific missions of civil protection agents; Operations field sectoring; Simulated practice:</p> <ul style="list-style-type: none"> <li>• Simulated practice in training context;</li> <li>• Simulated practice in evaluation context.</li> </ul>	
	Evaluation	
	<p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 30% of the final classification and the practical assessment worth the other 70%.</p> <p>The theoretical evaluation is based in a test with 20 multiple choice questions, with a quotation of 0.75 values for each question and two questions of direct response, with a quotation of 2.5 values. The practical evaluation is made when the trainees take on the role of group chief and will take into account the following parameters:</p> <ul style="list-style-type: none"> <li>• Preparatory Order (PEURACDE);</li> <li>• Movement Order (DPIF);</li> <li>• Mission Order (SOPEC);</li> <li>• Zone Analysis (area assign to the group).</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Forest Fires – level 3	35	16
Objectives	Contents	
<p><b>General objective:</b> Provide trainees with technical and operational skills to command forest fire extinguishing operations involving a maximum of six teams.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Explain the different options that the ICS has at the first phase of an operation and during the transition to the second one;</li> <li>• Recognize the different roles of team leaders taking into account the type of vehicles that they use;</li> <li>• Explain the fire behaviour, the main forms of extreme fire behaviour and the main factors that increase their occurrence;</li> <li>• Describe the methods and tactics that can be applied in forest fires suppression;</li> <li>• Specify the use of aerial means and identify the advantages and disadvantages of their use;</li> <li>• Identify the safety rules procedures during the intervention of aerial means in forest fire scenarios.</li> <li>• Describe the organization of forest fire suppression operations;</li> <li>• Recognize how the initial and the extended attack are carryout as well the mop up and surveillance operations.</li> <li>• Analyse correctly the intervention zone;</li> <li>• Evaluate the safety conditions during the development of the operation;</li> <li>• Readjust the action plan, according with the evaluation of the fire situation and available resources;</li> <li>• Apply correctly the graphic symbology in the organization of the operations theatre;</li> <li>• Clear communication of action plan to the team leaders;</li> <li>• Control of the operational activity of team leaders;</li> <li>• Transmit with objectivity situation points, through available radios equipment;</li> <li>• Prepare adequately the development of theatre organization (TO);</li> <li>• Carry out effectively the tasks assign in stage 2 and following stages of the operation.</li> <li>• Apply correctly the appropriate methods and tactics to the forest fire situation;</li> <li>• Correct use of military sheets at 1:25 000 scale as an instrument to support the initial management of the operations;</li> <li>• Correctly use of GPS as a decision support tool;</li> <li>• Receive and deliver the operation command, according to the established procedures.</li> <li>• Communicate with assertiveness;</li> <li>• Organize and direct debriefing with the team, after demobilization;</li> <li>• Keep yourself physically fit for the function.</li> </ul>	<p>Forest Fire Behaviour; Methods and tactics to combat forest fires; Aerial means; Organization procedures in forest fires suppression operations; Reading of military sheets (Topography) applied to forest fires; GPS - Global Positioning System; Assessment and recognition in forest fires; Initial management operations exercises.</p>	
	<p><b>Evaluation</b></p> <p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 40% of the final classification and the practical assessment worth the other 60%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation is continuous and will take into account the management of means equivalent to a combat group (6 teams) and the assumption of the functions of incident commander in a forest fire scenario, focusing on the following parameters:</p> <ul style="list-style-type: none"> <li>• Recognition and initial evaluation (20% of the practical classification);</li> <li>• Elaboration of graph SITAC –Tactical Situation (20% of the practical classification);</li> <li>• Operations field organization (50% of the practical classification);</li> <li>• Deliver the operation command (10% of the final classification).</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Forest Fires – level 2	25	16
Objectives	Contents	
<p><b>GENERAL OBJECTIVE:</b> Provide trainees with technical and operational skills to lead teams in forest fire extinguishing operations.</p> <p><b>SPECIFIC OBJECTIVES:</b></p> <ul style="list-style-type: none"> <li>• Differentiate forest fire from wildland fire;</li> <li>• Distinguishing the different forms of fire use;</li> <li>• Identify the different factors that can influence the fire behaviour;</li> <li>• Identify the fuel characteristics and meteorological elements that can influence the fire behaviour;</li> <li>• Identify the main topographic features that can affect the fire behaviour;</li> <li>• Identify the main physical phenomena that describe the fire behaviour;</li> <li>• Identify the main fire propagation forms through the forest fuels;</li> <li>• Describe the main propagation forms of forest fires;</li> <li>• Make a relation between smoke columns and fire behaviour;</li> <li>• Recognize the basic safety rules, the 18 Watch out situations and the 10 Standard firefighting orders;</li> <li>• Identify the safety rules procedures during the intervention of aerial means in forest fire scenarios.</li> <li>• Explain the LACES protocol;</li> <li>• Identify the methods, tactics and means that can be applied to combat forest fires;</li> <li>• Identify the different phases of forest fire suppression;</li> <li>• Describe the different situation points (POSIT) that should be given during an operation of forest fire suppression.</li> <li>• Describe the general lines of the operation management system (SGO);</li> <li>• Identify the main responsibilities of the incident commander in a starting fire;</li> <li>• Recognize the role of District Command for Relief Operations (CDOS) in supporting of operations;</li> <li>• Expose the concept of unified command;</li> <li>• Identify the radio communication procedures in the ROB and SIRESP networks.</li> <li>• Perform correctly the initial evaluation of the fire;</li> <li>• Use effectively the control and command guide;</li> <li>• Transmit clearly the situation points (POSIT);</li> <li>• Correct assessment risk for personnel and equipment;</li> <li>• Apply and ensure that are followed by the teams the standards safety rules during the fire suppression activities;</li> <li>• Correct reading and interpretation of military sheets at 1:25000 scale;</li> <li>• Define an initial action plan, suitable to the evaluation made and available resources;</li> <li>• Clear communication of the initial action plan to the team;</li> <li>• Transfer the operation control according to established procedures;</li> <li>• Lead properly the team in the development of the assigned missions;</li> <li>• Perform physical fitness exercises properly according with the trainer instructions.</li> <li>• Communicate with assertiveness;</li> <li>• Organize and direct debriefing with the team, after demobilization;</li> <li>• Keep yourself physically fit for the function.</li> </ul>	<p>Forest Fire Behaviour; Forest fires extinction operations; Communication procedures in forest fires; Personal safety during suppression operations; Introduction to military sheets reading (Topography); Forest fires suppression exercises (whit practical evaluation); Physical preparation and training.</p>	
	<p><b>Evaluation</b></p> <p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 40% of the final classification and the practical assessment worth the other 60%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation is continuous and will focus on the performance of the trainee as team leader:</p> <ul style="list-style-type: none"> <li>• Technical domain (40% of the practical classification);</li> <li>• Safety procedures (30% of the practical classification);</li> <li>• Leadership ability (15% of the practical classification);</li> <li>• Communication (15% of the practical classification).</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Forest Fires – level 1	50	16
Objectives	Contents	
<p><b>GENERAL OBJECTIVE:</b> Provide trainees with technical and operational skills to integrate first intervention teams in forest fire extinguishing operations.</p> <p><b>SPECIFIC OBJECTIVES:</b></p> <ul style="list-style-type: none"> <li>• Identify the characteristics of forest fuels, topography and meteorological elements, and their influence on the ignition and development of forest fires;</li> <li>• Describe the main fire propagation forms through the forest fuels;</li> <li>• Recognize the different risks related with firefighting activity;</li> <li>• Identify the safety rules that should be apply in forest firefighting activities, including hand tools handling, chainsaws, engines, tractors and bulldozers;</li> <li>• Identify the 18 Watch out Situations;</li> <li>• Recognize the different phases of fire suppression;</li> <li>• Differentiate extinction methods and the way of acting of the various extinguishing agents;</li> <li>• Describe the methods and manoeuvres that can be applied in forest fires suppression, as well mop up manoeuvres;</li> <li>• Identify the different type of aerial resources that can be used in forest fires suppression;</li> <li>• Identify and follow the safety rules procedures during the intervention of aerial means in forest fire scenarios.</li> <li>• Apply the safety procedures in the use of the fire shelter;</li> <li>• Apply the procedures for fire evidences preservation during fire suppression activities;</li> <li>• Correct reading and interpretation of military charts at 1:25000 scale;</li> <li>• Correct selection of the different means and equipment that can be use on forest fire extinction activities;</li> <li>• Demonstrate the correct use of manual and mechanical tools;</li> <li>• Apply the standards safety rules that should be considered during the use of chainsaws;</li> <li>• Correct use of individual protective equipment (EPI);</li> <li>• Construction of contention and safety lines with the support of manual and mechanical tools;</li> <li>• Correct use of different extinguishing agents in forest fire suppression;</li> <li>• Right operation of dorsal extinguishers and hand tools in direct attack;</li> <li>• Operation of hose lines in direct attack or to perform buildings protection;</li> <li>• Use the radio equipment according to the standards procedures;</li> <li>• Perform the actions of mop up manoeuvres and surveillance according with the correct techniques;</li> <li>• Perform the maintenance of equipment and vehicles, according to the applicable procedures;</li> <li>• Perform properly physical fitness exercises.</li> <li>• Accept promptly the operational guidelines given by the team leader;</li> <li>• Keep yourself physically fit for function.</li> </ul>	<p>Forest Fire Behaviour; Personal safety during suppression operations; Methods, manoeuvres and combat tactics; Physical preparation and training; Aerial means; Preservation of fire evidences; Topography; Extinction operations; Maintenance of vehicles, equipment and tools; Mop up and vigilance operations.</p>	
	<p><b>Evaluation</b></p> <p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 40% of the final classification and the practical assessment worth the other 60%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation will focus on the following parameters:</p> <ul style="list-style-type: none"> <li>• Safety in fire suppression;</li> <li>• Orientation with military charts;</li> <li>• Extinction, mop up and surveillance operations;</li> <li>• Maintenance of vehicles, equipment and tools.</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Aerial Operations – level 2	25	12
Objectives	Contents	
<p>Provide trainees with technical and operational skills to perform the function of aerial operations coordinator (COPAR) in forest fire suppressing operations.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Identify the basic concepts of flight physiology;</li> <li>• Recognize the survival procedures;</li> <li>• Ensure that the tactical objectives assigned to the aerial means are respected;</li> <li>• Identify the characteristics and limits of operations theatre (REVIS).</li> <li>• Guide the aerial means correctly to the discharge site;</li> <li>• Guide properly from the ground and from the air (on board of helicopter) aerial means;</li> <li>• Accurate localization of land resources on board of an aircraft and propose changes to its positioning;</li> <li>• Ensure the connection ground-air, according to established procedures;</li> <li>• Ensure adequate liaison with sector commanders, in order to validate the aerial means effectiveness;</li> <li>• Elaborate and transmit situation points (POSIT) to the air operations officer, in accordance with established procedures;</li> <li>• Ensure the adequate safety conditions in the operational missions with aircraft, in forest fire suppression activities.</li> <li>• Communicate with assertiveness.</li> </ul>	<p>Flight physiology; Safety; Mission analysis; Analysis and definition of operations field limits on board of a helicopter; Guidance of aircraft in the ground; Guidance of aircraft on board of a helicopter.</p>	
	Evaluation	
	<p>The evaluation will be based in a practical assessment and will take into account the following parameters:</p> <ul style="list-style-type: none"> <li>• Safety;</li> <li>• Mission (PEA);</li> <li>• Situation points (REVIS);</li> <li>• Aircraft guidance;</li> <li>• Downloads.</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Aerial Operations – level 1	25	16
Objectives	Contents	
<p><b>General objective:</b> Provide trainees with technical and operational skills to perform the role of air operations specialist in forest fire suppressing operations.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Identify the rules applicable to the use of aerial means in civil protection operations;</li> <li>• Distinguishing the characteristics of aircraft;</li> <li>• Explain meteorology applied to aeronautics;</li> <li>• Identify the main meteorological factors that can affect aircrafts mission;</li> <li>• Select the appropriate tools for aeronautical support;</li> <li>• Describe the missions in the scope of civil protection.</li> <li>• Ensure effectively the management of aerial means in the operations field, proposing the most appropriate solutions to the management of these means, according to the strategic action plan (PEA);</li> <li>• Plan and accurate coordination of the aerial means activity;</li> <li>• In order to the PEA, assign the appropriate tactical missions to the aerial means, applied in the fire suppression operation;</li> <li>• Transmit correctly the necessary instructions for the implementation of assigned missions;</li> <li>• Prepare and keep updated the commitment map of aerial means;</li> <li>• Ensure articulation with aerial means, in accordance with established procedures;</li> <li>• Check the effectiveness of the means, proposing changes in its mission whenever necessary;</li> <li>• Identify and alert the aerial means and / or land resources for aerial safety issues;</li> <li>• Correct use of geographic information systems in the analysis of the intervention area;</li> <li>• Ensure communications with COPAR, in accordance with established procedures.</li> <li>• Communicate with assertiveness.</li> </ul>	<p>Aerial means and civil protection; Analysis of the intervention zone; Communications; Missions in the scope of Civil Protection; Geographic Information Systems; Aeronautical meteorology; Characteristics of aircrafts used in forest fires suppression; Assessment, coordination and guidance of aircrafts; Aerial means nucleus of operations cell, from the command post.</p>	
	<p><b>Evaluation</b></p> <p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 40% of the final classification and the practical assessment worth the other 60%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation will take into account the following parameters:</p> <ul style="list-style-type: none"> <li>• Analysis of the intervention zone;</li> <li>• Elaboration of mission order;</li> <li>• Aerial means commitment map.</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Personnel Safety and Fire Behaviour	25	16
Objectives	Contents	
<p><b>General objective:</b> Provide trainees with skills to assess fire behaviour to support them in to strategies definitions, tactics and manoeuvres, assuring every moment the safety conditions of the personal, and minimizing the occurrence of accidents during the operations of forest fire suppression.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Describe the influence of topography features on fire behaviour;</li> <li>• Describe the influence of meteorological elements on fire behaviour, understand the concept and application of FWI (Fire Weather Index) and interpretation of winds charts;</li> <li>• Identify the main properties of forest fuels and their influence on fire behaviour;</li> <li>• Differentiate the diverse forest fuels models, and analysis of expected fire behaviour in each of the models presented;</li> <li>• Recognize the operational implications as result of the variation of forest fuel characteristics;</li> <li>• Classify and distinguish the main types of forest fire propagation;</li> <li>• Analyse the smoke columns and link these observations with possible fire behaviour;</li> <li>• Describe the forms of extreme fire behaviour, such as crown fires, spot fires (fire projections), eruptive fire behaviour on slopes and canyons, fire drills, fire tornado or fire vortex, and relating them to implications that we can face on the operational management in forest fire scenarios;</li> <li>• Evaluate and predict the fire behaviour, estimate speeds and propagation intensities of the fire front;</li> <li>• Recognize the basic safety principles that should be applied during fire suppression activities;</li> <li>• Recognize potentially dangerous situations that can put in risk the operational safety;</li> <li>• Describe the security LACES protocol and associated concepts, and define places that can work as safety zones;</li> <li>• Identify the main factors and common denominators that are associated to the occurrence of accidents during forest fire suppression operations.</li> <li>• Adopt correct attitudes that maximize safety in the use of vehicles, namely checking vehicle conditions, safety rules during the trip and vehicle operation in the fire scenario;</li> <li>• Define a correct locating to the ground means, in order to ensuring always the safety conditions and apply the safety procedures during the downloads of aerial means;</li> <li>• Correct evaluation of the fire behaviour taking in to account the propagation factors that exist in a given place, predicting the fire front propagation (speed, intensity and direction);</li> <li>• Use of expeditious methods and decision support tools to predict possible fire behaviour, in particular the use of CPS (Campbell Prediction System) and BehavePlus software;</li> <li>• Apply correctly the personal safety rules during fire suppression operations, including the correct use of individual protective equipment (EPI);</li> <li>• Correct implementation of the LACES security protocol;</li> <li>• Define correctly the extinction method to be applied in the different parts of the fire, based on the evaluation of the propagation conditions and in function of its effectiveness.</li> </ul>	<p>Factors that can affect the fire behaviour:</p> <ul style="list-style-type: none"> <li>• Influence of topography;</li> <li>• Meteorology applied to forest fires and FWI (Fire Weather Index);</li> <li>• Influence of fuels on fire behaviour- fuel models.</li> </ul> <p>Fire Behaviour:</p> <ul style="list-style-type: none"> <li>• Propagation forms;</li> <li>• Extreme fire behaviour;</li> <li>• Evaluation of fire behaviour and prediction of fire evolution.</li> </ul> <p>Safety during fire suppression operations:</p> <ul style="list-style-type: none"> <li>• Watch out Situations – LACES Protocol;</li> <li>• Ground means setting in fire scenarios and aerial means operation;</li> </ul> <p>Study Cases.</p> <p>Laboratory Practices - LEIF / ADAl;</p> <p>Simulated practices in the field (with practical evaluation).</p>	
	Evaluation	
	<p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 40% of the final classification and the practical assessment worth the other 60%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation will take into account the following parameters:</p> <ul style="list-style-type: none"> <li>• Propagation factors;</li> <li>• Fire Propagation;</li> <li>• LACES implementation.</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Forest Fires Assessment Team	35	16
Objectives	Contents	
<p><b>General objective:</b> Provide trainees with technical and operational skills to integrate the Forest Fires Assessment Teams (ERAS) in the context of forest fires.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Identify the roles, skills and tasks that are assign to the Recognition and Situation Evaluation Teams (ERAS) according with the Operations Management System (SGO);</li> <li>• Describe the influence of meteorological elements on fire behaviour, analysis and interpretation of meteorological charts;</li> <li>• Analyse the areas where the combat actions are taking place;</li> <li>• Recognize expeditious methods of analysis and evaluation of forest fire;</li> <li>• Distinguish and analyse the specificities of forest fires, that are spreading in the wildland-urban interface;</li> <li>• Recognize the available tools and support decision instruments, which allow the gathering of operational information in the context of forest fires.</li> <li>• Correctly collect the operational information and transmit that data to the planning section (CEPLAN);</li> <li>• Apply expedited methods to analyse and evaluate the forest fire behaviour;</li> <li>• Correctly use tools and support decision instruments such as GPS, portable weather station and computer applications;</li> <li>• Correctly use of meteorological charts to support the operation field in forest fires;</li> <li>• Correct analyse of the wildland-urban interface areas where the forest fire can spread;</li> <li>• Correct drawing of the fire perimeter and interest points with GPS support, during the recognition task of the forest fire;</li> <li>• Evaluation of forest fires, analysing sensitive points, threats, combat support infrastructures, strategic points and identifying opportunity windows.</li> <li>• Communicate with assertiveness;</li> <li>• Keep yourself physically fit for the function.</li> </ul>	<p>ERAS teams procedures; Meteorology applied to forest fires; Analysis of the intervention zone; Fire assessment in the wildland-urban interface; Tools / instruments for decision support:</p> <ul style="list-style-type: none"> <li>• GPS;</li> <li>• Computer applications.</li> <li>• Simulated practices in the field (with practical evaluation).</li> </ul>	
	Evaluation	
	<p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 30% of the final classification and the practical assessment worth the other 70%.</p> <p>The theoretical evaluation is based in a test with 20 multiple choice questions, with a quotation of 0.8 values for each question and 2 development questions, each one with a quotation of 2.0 values. The practical evaluation will take into account the following parameters:</p> <ul style="list-style-type: none"> <li>• Use of decision support tools and instruments;</li> <li>• Analysis of the intervention zone and production of operational cartography;</li> <li>• Recognition, evaluation and monitoring;</li> <li>• Transmission of collected data to CP/CEPLAN.</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Forest Fires Prevention (Drip torch operator)	50	16
Objectives		Contents
<p><b>General objective:</b> Provide trainees with skills to perform fire prevention tasks in forest areas.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Recognize the evolution of forest fires in Continental Portugal;</li> <li>• Identify the main causes of forest fires in Portugal;</li> <li>• Recognize the typology of causes of forest fires in Portugal;</li> <li>• Identify the main factors that can affect fire behaviour;</li> <li>• Recognize the vegetation classification by strata;</li> <li>• Identify the main vegetation particles properties and their influence on fire behaviour;</li> <li>• Identify the main properties of the fuel bed;</li> <li>• Describe the influence of topography elements on fire behaviour, in particular terrain relief, aspect, slope and altitude;</li> <li>• Identify the meteorological elements with influence on fire behaviour;</li> <li>• Understand the evolution of the forest in Continental Portugal, and the progress of the area occupied by different forest species;</li> <li>• Identify the main forest stands;</li> <li>• Recognize the most common species in Continental Portugal;</li> <li>• Distinguish the flammability and combustibility of different forest species, both shrubs and trees;</li> <li>• Recognize the three pillars of the Forest Fire Protection System (SDFCI);</li> <li>• Identify and describe the concepts of fuel management, cleared paths, disturbed bare-soil and fuel management strips network;</li> <li>• Distinguish basic principles of prevention, differentiating preventive forestry from forest defence networks;</li> <li>• Identify the goals of preventive forestry;</li> <li>• Recognize different types of fuel management strips;</li> <li>• Recognize the importance of water points in forest fires suppression;</li> <li>• Identify the functions, categories and classification of water points and recognize the specifications that should be applied for the construction and maintenance of water points;</li> <li>• Identify the different types of firebreaks;</li> <li>• Identify the functions (F1, F2 and F3) of the fuel management strips network;</li> <li>• Identify the fuel management strips network: primary, secondary and tertiary network;</li> <li>• Recognize the fuel management plots mosaic;</li> <li>• Define the forest road network and identify yours main functions;</li> <li>• Define divisional network by distinguishing between main firebreaks and secondary firebreaks;</li> <li>• Recognize the importance of containment lines;</li> <li>• Identify the different considerations to be taken into account for the creation of containment lines;</li> <li>• Identify the methods of manual lines construction;</li> <li>• Identify the rules of containment lines construction;</li> <li>• Identify the different ways of building lines with heavy machinery;</li> <li>• Identify the hand tools used, the specific characteristics of each one, safety procedures in use and maintenance;</li> </ul>		<p>Causes of forest fires; Factors with influence in forest fires propagation; Forest fires prevention; Fuel management; Machinery and equipment used; Burning of forest login slash; Forest surveillance; Hygiene and safety practices.</p>
		Evaluation
		<p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 60% of the final classification and the practical assessment worth the other 40%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation will take into account the following parameters:</p> <ul style="list-style-type: none"> <li>• Chainsaw use;</li> <li>• Brush cutter use.</li> </ul>

<ul style="list-style-type: none"> <li>• Describe the steps for correct use and maintenance of drip torch and its correct storage;</li> <li>• Identify the motor-manual tools used in prevention;</li> <li>• Recognize the machines and equipment used to prevent forest fires;</li> <li>• Identify the basic concepts of use, conservation and maintenance of chainsaws;</li> <li>• Identify the basic concepts of use, conservation and maintenance of the brush cutter;</li> <li>• Recognize the legislation associated with the burning of login slash;</li> <li>• Identify the concepts of burn, burning and their constraints;</li> <li>• Identify the mains constrains of fire use during the fire season critical period;</li> <li>• Describe the main procedures to perform a burn in safety conditions;</li> <li>• Identify the legislative framework for forest surveillance;</li> <li>• Recognize the main goals of surveillance and detection;</li> <li>• Identify the different types of surveillance and the importance of early detection of forest fires;</li> <li>• Know the communication procedure to the authorities with responsibilities of forest fires detection;</li> <li>• Interpret the current legislation;</li> <li>• Recognize the employer's obligations;</li> <li>• Recognize the worker's obligations;</li> <li>• Recognize the concepts associated with work safety, hygiene and health (SHST);</li> <li>• Recognize risk factors in forestry work;</li> <li>• Identify the causes and consequences associated with forestry work;</li> <li>• Describe the risks associated with the use of hand tools and measures to prevent them;</li> <li>• Recognize the importance of using individual protective equipment (EPI) and identify the different types of EPI;</li> <li>• Identify current safety signalling.</li> <li>• Perform techniques with chainsaw;</li> <li>• Execute techniques with brush cutter.</li> <li>• Keep yourself physically fit for the function.</li> </ul>	
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Designation/Code	Course length (hours)	Number of trainees
Support to Prescribed Fire (Drip torch operator)	50	16
Objectives	Contents	
<p><b>General objective:</b> Provide trainees with technical and operational skills to prepare and perform prescribed burns.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Recognize the historical context of prescribed burns;</li> <li>• Know the legal context of prescribed burns;</li> <li>• Identify the main objectives of prescribed burns;</li> <li>• Define combustion concept and identify the different phases of combustion in a forest fuel;</li> <li>• Identify and define the basic parameters that describe fire behaviour;</li> <li>• Define flame residence time;</li> <li>• Describe the different mechanisms of fire propagation and fire dynamics;</li> <li>• Identify and describe the different fire propagation forms through forest fuels;</li> <li>• Explain propagation mechanisms through wind and slope interaction;</li> <li>• Explain CPS "Campbell Prediction System";</li> <li>• Identify the main fire impacts;</li> <li>• Recognize severity, identify severity classes, and relate severity to intensity;</li> <li>• Describe the main fire effects on soil, water, air, plants and animals;</li> <li>• Identify the five steps to perform successful prescribed burns;</li> <li>• Recognize the steps needed to plan the actions;</li> <li>• Recognize the generic prescription of prescribed burns for shrubs, pines and eucalyptus stands;</li> <li>• Identify the prescribed burn plan and the operational burn plan;</li> <li>• Identify the burning team constitution as the main equipment needed in a burning action;</li> <li>• Describe the functions of each team member;</li> <li>• Recognize the procedures that should be followed before the burn;</li> <li>• Recognize the main ignition and fire conduction techniques;</li> <li>• Describe the LACES protocol;</li> <li>• Recognize methods to prepare burn plots;</li> <li>• Identify the machines and equipment that can be used in plot preparation.</li> <li>• Apply the Campbell Prediction System (CPS);</li> <li>• Perform several functions assigned to the team, namely security chief, look-out, drip torch;</li> <li>• Apply the main ignition techniques and fire conduction;</li> <li>• Comply with the established LACES protocol.</li> <li>• Accept promptly the operational guidelines of the prescribed burn technician;</li> <li>• Keep yourself physically fit for the function.</li> </ul>	<p>Use of prescribed fire; Prescription methods for fire use; Prescribed burns techniques; Theoretical evaluation.</p>	
	<p><b>Evaluation</b></p> <p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 40% of the final classification and the practical assessment worth the other 60%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation will take into account the following parameters:</p> <ul style="list-style-type: none"> <li>• Meteorological data in support of prescribed burns;</li> <li>• Prescribed burns ignition techniques;</li> <li>• Prescribed fire driving;</li> <li>• Safety procedures.</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
Helitack Team Member	70	16
Objectives	Contents	
<p><b>General objective:</b> Provide trainees with technical and operational skills to integrate a Heli-transported team or brigade on forest firefighting operations.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Identify the characteristics of forest fuels, topography and meteorological elements, and their influence on the ignition and development of forest fires;</li> <li>• Describe the mains forms of extreme fire behaviour, such as crown fires, spot fires, eruptive fire behaviour on steep slopes and canyons, and fire vortex or fire drills;</li> <li>• Identify the safety rules that should be apply in forest firefighting activities, including hand tools and chainsaws handling;</li> <li>• Identify the safety rules applicable to the approach and performance of air assets, namely in helicopter operations;</li> <li>• Differentiate extinction methods, manoeuvres, tactics, suppression means, tolls and equipment that can be applied in forest fires suppression;</li> <li>• Recognize the articulation protocols of the Heli-transport teams or brigades, with the other intervening forces.</li> <li>• Apply the safety procedures in the use of the fire shelter;</li> <li>• Apply properly all safety rules in the different operations scenarios;</li> <li>• Properly construction of containment lines and safety lines with manual and mechanical tools;</li> <li>• Carry out correctly, forest fire extinguishing manoeuvres with helicopter support;</li> <li>• Correct use of GPS and interpretation of military sheets at 1:25000 scales;</li> <li>• Apply the procedures for fire evidences preservation during fire suppression activities;</li> <li>• Apply the command signage for helicopters.</li> <li>• Accept promptly the operational guidelines emanating from the team leader;</li> <li>• Keep yourself physically fit for the function.</li> </ul>	<p>Objectives and diagnostic evaluation; Forest Fire Behaviour; Safety during suppression operations; Methods, manoeuvres and combat tactics; Preservation of fire evidences; Laboratory practices LEIF/ADAI; Aerial means; Operating procedures in the operations theatre; Topography; GPS; Simulated Practice (with evaluation):</p> <ul style="list-style-type: none"> <li>• Fire shelter;</li> <li>• Hand tools;</li> <li>• Brigade movement;</li> <li>• Contention lines construction;</li> <li>• Chainsaw operations;</li> <li>• Ground guidance;</li> <li>• Helicopter embark and landing;</li> <li>• Helicopter guidance.</li> </ul> <p>Simulated Practice with real fire (with evaluation):</p> <ul style="list-style-type: none"> <li>• Fire extinction with hand tools;</li> <li>• Fire extinction with helicopter.</li> </ul> <p>Physical preparation and training (with evaluation).</p>	
	Evaluation	
	<p>The evaluation will be based in a theoretical and practical assessment. The theoretical evaluation consists in a test that worth 30% of the final classification and the practical assessment worth the other 70%.</p> <p>The theoretical evaluation is based in a test with 40 multiple choice questions, with a quotation of 0.5 values for each question. The practical evaluation will focus on the following parameters:</p> <ul style="list-style-type: none"> <li>• Contention lines construction;</li> <li>• Direct combat in real fire scenarios with hand tools and helicopter;</li> <li>• Brigade movement and guidance;</li> <li>• Safety procedures on landing and helicopter take of;</li> <li>• Maintenance of hand tools;</li> <li>• Physical preparation.</li> </ul>	

## 2. FRANCE (ENTENTE)

CHARACTERISTICS OF THE TRAINING COURSES IN FOREST FIRE SUPPRESSION	FRANCE
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Designation/Code	Course length (hours)	Number of trainees
FdF 5	70	10
Objectives	Contents	
<ul style="list-style-type: none"> <li>• Know the joint and the functioning of a headquarter of site and its connected functions;</li> <li>• Command a relief operation forest fires requiring the implementation of a CP of site and its connected functions;</li> <li>• Adapt his behaviour according to the held functions.</li> </ul>	Taking into account the mission. Expectations of the hierarchy and the media. Stress management. Field PC. Tactical reasoning method (MRT). Scenario.	
	Evaluation	
	There is no evaluation in this unit of value.	

Designation/Code	Course length (hours)	Number of trainees
FdF 4	73	12
Objectives	Contents	
<ul style="list-style-type: none"> <li>• Know the doctrine of employment of all the means of fight against forest fires;</li> <li>• Command a relief operation to put out a fire or limit the effects by using the means which are confided to them;</li> <li>• Become integrated into a chain of command.</li> </ul>	French doctrine in forest fires. Fire kinematics. Forest fire command. Situation evaluation. Organization of communications. Aerial topography. Tactical use of aerial means. Instructions passage. Instructions passage (application). Command. Field PC.	
	Evaluation	
	The FDF 4 value unit is issued to candidates who have passed the examination of the program content and include the following tests: - written theoretical test: operational case study (duration 2h); - practical test: provide the PC intelligence functions - PC logistics and aero (duration 30 to 45 min / trainee); command of an operation as COS (duration 1h / trainee).	

Designation/Code	Course length (hours)	Number of trainees
FdF 3	83	12
Objectives	Contents	
<ul style="list-style-type: none"> <li>• Know the composition and the principles of employment of a group of intervention forest fires;</li> <li>• Command the labourers of the group within the device;</li> <li>• Adopt an attitude facilitating the conduct of the group, in the respect for the rules of employment and for safety instructions;</li> <li>• Know the parameters necessary for the elaboration and with care of an idea of labourer;</li> <li>• Command a relief operation committing(hiring) ground means lower than 3 groups of intervention, in initial attack, and average aerials;</li> <li>• Dread the responsibility of the command of an operation Forest fires;</li> <li>• Know the organization of headquarters, their functioning and the characteristics and the management of a point of transit;</li> <li>• Hold the functions piece of information and means in a headquarter</li> <li>• Become integrated into a team CP;</li> </ul> <p>Know the principles and the methods applied in dissuasive surveillance</p> <ul style="list-style-type: none"> <li>• Organize the dissuasive surveillance on a zone;</li> <li>• Adapt their behaviour to the public, in the respect for the regulations forest fires.</li> </ul>	<p>Means and staff of the group. Taking into account the mission. Manoeuvres of the group. Firefighting tactics. Chain of command. Collective safety. Topography. FDF intervention group manoeuvres. Intervention zone. Graphical tools. Command assumption. Additional order of communications. Aerial means. Tactical use of aerial means. Tactical use of helicopters. Taking into account the aerial means. Radio language. Command of operations (on simulator). Field command of operations. Tactical reasoning. Functions of the forest fires PC. Deterrent monitoring.</p>	
	Evaluation	
	<p>The FDF 3 Forest Fire Value Unit is issued to candidates who have passed the tests as defined below:</p> <ul style="list-style-type: none"> <li>- written test: operational case study (2 GIFF + aerial means of an armed air watch) (duration 1h 30);</li> <li>- practical test (duration 14 hours for all candidates): FDF group leader in charge of a forest fire operation.</li> </ul> <p>The content of the test can be adapted to the conditions of zonal implementation of terrestrial means of control.</p>	

Designation/Code	Course length (hours)	Number of trainees
FdF 2	34	16
Objectives	Contents	
<ul style="list-style-type: none"> <li>• Know labourer of apparatus;</li> <li>• Attack the disaster with the means lower than 1 group;</li> <li>• Integrate the presence of the aerial means;</li> <li>• Know the types of attacks of forest fires;</li> <li>• Arrest a tactics and apply it by integrating the average aerials;</li> <li>• Know the labourers of the group of intervention forest fires;</li> <li>• Command his sound apparatus within the framework of an operation of group;</li> <li>• Become integrated within the group of intervention.</li> </ul>	<p>Taking into account staff and CCF. Individual and collective safety rules. Manoeuvres of the isolated CCF. General march of operations. Topography. Intervention zone. Choice of the type of attack. Communications. Communication with aerial means. Inform the authority. Take into account several CCF in a tactical situation. Manoeuvres of the team in the intervention group. Active monitoring.</p>	
	Evaluation	
	<p>The unit of value FDF 2 is issued to candidates who, at the end of the internship, have passed the examination including the following tests:</p> <ul style="list-style-type: none"> <li>- theoretical test: map reading (coordinates), knowledge of equipment and manoeuvres (duration 0h30);</li> <li>- practical test of command of a manoeuvre and knowledge of the different manoeuvres (duration 0 h 30 / candidate);</li> <li>- transit test (displacement to reach a point defined by its coordinates) (0h05 / candidate).</li> </ul>	

Designation/Code	Course length (hours)	Number of trainees
FdF 1	32	16
Objectives	Contents	
<ul style="list-style-type: none"> <li>• Know the environment in which he intervenes, the materials to be served and his operational assignments;</li> <li>• Apply instructions of individual and collective safety;</li> <li>• Approach the specialty with objectivity and motivation;</li> <li>• Know the techniques of establishment and extinction;</li> <li>• Implement, in complete safety, the materials of forestage and extinction;</li> <li>• Become integrated into a group forest fires.</li> </ul>	<p>Functional organization. Forest fire fighting vehicles. Individual safety. Collective safety. Communications. Forestry equipment. Forest environment. Different types of forest fires. Different extinguishing processes. Forest fire manoeuvres. Safety when using a helicopter.</p>	
	Evaluation	
	<p>The unit of value FDF 1 is issued to candidates who have passed the certification evaluation which may take the form of a continuous assessment. The modalities of the evaluation are determined by the Chief Fire Officer.</p>	

Designation/Code	Course length (hours)	Number of trainees
<b>AERO 3</b>	16	12
Objectives	Contents	
<ul style="list-style-type: none"> <li>• Know the parameters allowing to make his mission;</li> <li>• Use the various average aerals on a disaster;</li> <li>• Behave inside the cell of an average aerial;</li> <li>• Become integrated into a device.</li> </ul>	Scenario of aero frame on helicopter.	
	Scenario of an aerial mean flight.	
	Evaluation	
	The AERO 3 value unit is subject to a formative evaluation.	

Designation/Code	Course length (hours)	Number of trainees
<b>DIH 1</b>	30	12
Objectives	Contents	
<ul style="list-style-type: none"> <li>• Know the rules of employment of the helicoptered detachment;</li> <li>• Know safety regulations with and in helicopter.</li> </ul>	Functional organization.	
	Individual and collective safety.	
	Firefighting equipment in rough terrain.	
	Safety when using a helicopter.	
	Manoeuvres in rough terrain.	
	Evaluation	
	The DIH value unit is subject to a formative evaluation.	

### 3. CASTILLA Y LEÓN

CHARACTERISTICS OF THE TRAINING COURSES IN FOREST FIRE SUPPRESSION		CASTILLA Y LEÓN
Designation/Code	Course length (hours)	Number of trainees
TEC.1	60	15-25
Objectives	Contents	
<p><b>GENERAL OBJECTIVE:</b> To train the Technicians in the procedures of planning of the extinction of forest fires and in the execution of the extinguishing works based on criteria of personal security and effectiveness.</p> <p><b>SPECIFIC OBJECTIVES:</b></p> <ul style="list-style-type: none"> <li>• To know and analyse the duties and functions of the Technical Director of Extinction in the fire, and of the "Provincial Command Centre Daily Chief" (Jefe de Jornada), and of the "DTE Assistant" in the CPM based on the current regulations;</li> <li>• To assimilate an integral approach of the security in the works of extinction of forest fires for all the operative to his position;</li> <li>• Recall the basic principles of fire behaviour and apply them to the prediction of forest fire behaviour;</li> <li>• To know the operation of the regional operation and the basic procedures of action;</li> <li>• Interpret predictions of available meteorology and fire risk;</li> <li>• Manage the characteristics, qualities, limitations and effectiveness of the means of extinction;</li> <li>• Be able to establish an action plan to extinguish a forest fire effectively.</li> </ul>	<p><b>Module I:</b></p> <ul style="list-style-type: none"> <li>• Regulation, organization and working of the regional operation.</li> <li>• Technician Functions.</li> <li>• Media dispatch procedures and protocol.</li> <li>• Recognition, evaluation and planning of extinction</li> <li>• Fire behaviour analysis.</li> <li>• Risk management and analysis tools.</li> <li>• Extinguishing media and techniques: characteristics, management and coordination.</li> <li>• Management and management of human resources</li> <li>• Communications.</li> </ul> <p><b>Module II:</b> Days supervised by expert extinction directors in places and dates of high risk, (visit to active and complex fires, etc.).</p> <p><b>Module III:</b> Writing an individual report on a recent fire, preferably one in which the student has participated. The report should be presented as a course paper.</p> <p><b>Module IV:</b> Final day after the summer campaign, dedicated to the review of the application of the contents to the reality lived during the campaign, exchange of experiences of the students, presentation of some of their reports for analysis and conclusions.</p>	
	<b>Evaluation</b>	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
TEC.2	50	15-25
Objectives	Contents	
The aim of higher education is to equip the DTE with professional skills to deal with fires which, due to their special gravity, require the intervention of extraordinary means, greater sectoring and the establishment of support sections: operations, planning and / or logistics.	At the top level are expanded contents and adapted to situations of high complexity. For example:	
	<ul style="list-style-type: none"> <li>• Establish periodic meetings to constantly reassess the achievement of strategic objectives and to adapt tactical planning, sharing relevant information that may affect incident management.</li> <li>• Analyse specifically the opportunities of suppression through indirect attacks with large-scale counter-fire and the use of heavy machinery.</li> <li>• Maintain continuous monitoring and control over the performance and location of the media, using cartography and technological support tools.</li> </ul>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
AGM.1	45	15-25
Objectives	Contents	
<p>The general objective of the course is to train the Agents (environmental agent or forest ranger) in the performance of the functions of the fire boss (incident commander in first attack) in forest fires, with special attention to the safety of the personnel of the operation under his charge. The specific objectives are as follows:</p> <ul style="list-style-type: none"> <li>• Know the functions of the Chief of extinction in the fire, as well as the rest of the agent's tasks in the extinction.</li> <li>• Review the basic principles of fire and apply them to the prediction of forest fire behaviour.</li> <li>• Manage the characteristics, qualities, limitations and effectiveness of extinguishing media as well as supervise their proper work.</li> <li>• Establish operational plans for the extinction of forest fires effectively.</li> <li>• To assimilate an integral approach of security for the workers in the extinction of forest fires.</li> <li>• Properly complete statistical data on forest fires.</li> </ul>	<p><b>Classroom:</b></p> <ul style="list-style-type: none"> <li>• Regulation and system of organization and operation of the regional operation.</li> <li>• Extinction planning.</li> <li>• Fire behaviour analysis.</li> <li>• Safety in the extinguishing works.</li> <li>• Extinguishing media: gangs, fire engines, air vehicles and heavy machinery. Distribution, characteristics, coordination. Supervision. Use of backfire. Prevention of risks and security measures.</li> <li>• Management and management of human teams.</li> <li>• Use of radio communications.</li> <li>• Reporting of fires and parts.</li> </ul> <p><b>Not presentational part:</b></p> <p>Individual exercise of each student to present in three consecutive stages that are each carried out on the correction of the previous one.</p> <p>The presentation of the exercise and its consideration of aptitude by the course coordinator are an indispensable condition to overcome the course.</p> <p>The three parts will respond to the following scheme:</p> <ul style="list-style-type: none"> <li>• Prediction of the behaviour of a fire from the situation that is exposed in classroom and auxiliary material.</li> <li>• Written exercise on Planning the extinction of the same fire taking into account the comments received.</li> <li>• Definition of organizational system in the fire and planning of the liquidation works.</li> </ul>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
AGM.2	35	15-25
Objectives	Contents	
<p>The general objective of the course is to review the Environmental Agent's own functions in relation to forest fires, applying them to the extinction of fires that cannot be controlled in a first attack and to the permanent supervision of the Operation.</p> <p>The specific objectives are:</p> <ul style="list-style-type: none"> <li>• Recall the functions and tasks of the Agent within the forest fire fighting operation, emphasizing the importance of supervision as the first element for effectiveness.</li> <li>• To know the application of the current regulations, the operation of the regional operation and the procedures of action against forest fires.</li> <li>• To improve the efficiency in the use and management of the means of extinction in a forest fire, as well as to supervise its maintenance and ordinary operation.</li> <li>• Know the risks derived from each type of fire-fighting medium, how to prevent them and the responsibilities regarding their prevention.</li> <li>• Review the characteristics and use of Personal Protective Equipment.</li> <li>• Be able to establish and implement a plan of operations in an extended attack to extinguish a complex forest fire effectively, assuming organization and control of the situation as safety factors in the extinguishing works.</li> <li>• Assume the role of command as technical management of the personnel working in the extinction.</li> <li>• Know the basic process of training work teams in the extinction of fires and the behaviours that facilitate an effective management of these.</li> <li>• Know the communication process, the existing barriers and how to overcome them.</li> <li>• Apply simple techniques of emotional self-control in situations of tension.</li> </ul>	<p>Functions of the Environmental and Forestry Agent, organization of the Regional Operation and system of management of emergencies to forest fires.</p> <p>Safety and risk prevention.</p> <p>Extinguishing media: fire engines, chain tractors, brigades and aerial means.</p> <p>Backfire. Characteristics, coordination, supervision, risk prevention and security measures.</p> <p>The command as technical management in a fire: the work of the Fire Boss as manager of personnel and their ability to command.</p> <p>Leadership and management of work teams.</p> <p>Communication in the organization and control of suppression.</p> <p>Self-control techniques in emergency situations.</p> <p>Extinction planning - recognition, evaluation and operations plan - and analysis of decision making - conflicts, group thinking and decision making failures - applied to complex emergencies.</p> <p>Practical exercise: application to a real fire of exposed work patterns.</p> <p>Practical practice in the field: field fire assumption on which planning, organization and control of suppression works are oriented towards an extended attack of a complex forest fire.</p>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
AGM.3	24	15-25
Objectives	Contents	
<p>General objective: to review the working procedures of a Forest or Environmental Agent in the extinction of forest fires of complex organization.</p> <p>Specific objectives:</p> <ul style="list-style-type: none"> <li>• Secure the working procedures of the Chief of Extinction in a fire that is not controlled in a first attack and review the auxiliary tasks of the other Agents present in the fire.</li> <li>• Include in these procedures the analysis of fire behaviour, especially in large fires.</li> <li>• Update safety and risk prevention approaches based on the findings of recent accidents.</li> <li>• Adapt the strategies and tactics of extinction to the typology of forest fire, reviewing the organization of work teams and the operations for each of them.</li> <li>• Managing emergencies involving a large number of workers, applying the organizational guidelines of the SMEIF.</li> <li>• Identify and assess threats of civil protection and take the necessary protection measures.</li> </ul>	<p><b>Part of the distance course:</b></p> <ul style="list-style-type: none"> <li>• Recognition and analysis of behaviour in extended attack.</li> <li>• Planning and organization of team operations for an advanced command post (PMA) composed of several agents.</li> <li>• Information management in the fire.</li> </ul> <p>Recommendations for the transmission of information.</p> <ul style="list-style-type: none"> <li>• Safety: Analysis of recent accidents.</li> </ul> <p>Recommendations and working procedures.</p> <ul style="list-style-type: none"> <li>• Identification of the common scenario of fatal accidents by entrapment.</li> <li>• Adoption of preventive measures at critical points of behaviour.</li> <li>• Basic guidelines for action in the event of an accident</li> <li>• Organization of work groups in suppression operations: management peculiarities, organizational aspects and safety precautions in different types of operations.</li> <li>• Rural urban interface fires: special conditions of interface fires.</li> <li>• Practical exercise on a fire in an extended attack phase.</li> </ul> <p><b>Classroom:</b></p> <ul style="list-style-type: none"> <li>• Role-playing exercises where students put their knowledge into practice.</li> </ul>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
TEC.7	50	15-25
Objectives	Contents	
<ul style="list-style-type: none"> <li>• Train the student to coordinate air traffic in forest fires involving several aircraft.</li> <li>• Homogenize procedures and protocols to favour the standardization of the functions of the air media coordinator.</li> <li>• Train the student for the development of air operations following the corresponding extinction plan.</li> </ul>	<p><b>Training module on forest fires:</b></p> <ul style="list-style-type: none"> <li>• Basic Theory of Forest Fires.</li> <li>• Civil protection incidents.</li> <li>• Extinction planning.</li> <li>• Safety in the suppression.</li> <li>• Suppression manoeuvres.</li> <li>• Support structure.</li> </ul> <p><b>Aeronautical training module:</b></p> <ul style="list-style-type: none"> <li>• Basic Aerodynamics.</li> <li>• Basic navigation.</li> <li>• Performances of the aircraft.</li> <li>• Performances in Forest Fire.</li> <li>• Strategies and tactics of the air attack.</li> <li>• Airspace.</li> <li>• Basic aviation regulations.</li> <li>• Crew regulations.</li> <li>• Communications and phraseology.</li> <li>• Aeronautical Meteorology.</li> <li>• Flight safety.</li> </ul> <p><b>Specific module:</b></p> <ul style="list-style-type: none"> <li>• Competences, structure and organization of the regional operation.</li> <li>• Organization and distribution.</li> <li>• Operating device.</li> </ul> <p><b>Practice module (optional):</b></p> <ul style="list-style-type: none"> <li>• Simulation protocols.</li> </ul> <p>Simulation of Coordination of Aerial Media.</p>	
	<b>Evaluation</b>	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
REL.1	14	15-25
Objectives	Contents	
<p>The general objective of the course is to establish the general working guidelines of the Heli transported units as first-attack means specialized in extinction.</p> <p>Specific objectives:</p> <ul style="list-style-type: none"> <li>• Understand the current operating structure of the operation at the provincial and regional level, with special attention to the role played by the helicopter units.</li> <li>• Review the functions of the technician as responsible for his unit in extinguishing tasks, particularizing in the exits with and without environmental agent.</li> <li>• Analyse the most effective techniques in first aggressive attacks with special attention to the precise security measures.</li> <li>• Master the communication protocols in forest fires with both terrestrial and aerial means.</li> </ul>	<p>Operational fight against forest fires</p> <p>ELIF's role in the operation and functions of the Helitack</p> <p>Communications procedures</p> <p>Acquired experiences.</p> <p>Coordination of aerial media.</p> <p>Analysis and prediction of fire behaviour.</p> <p>Tactical suppression planning</p> <p>Security in the suppression of forest fires.</p>	
	<b>Evaluation</b>	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
REL.2	7	15-25
Objectives	Contents	
<p>The general objective of the course is to review the working procedures of the Helitack in first attack and in extended attacks.</p> <p>Specific objectives:</p> <ul style="list-style-type: none"> <li>• Review the means of suppression and operating procedures of the operation.</li> <li>• Improve communication skills and teamwork.</li> </ul> <p>Apply organizational procedures in an extended attack .</p>	<p><b>Update on operation of the Operative and work procedures:</b></p> <ul style="list-style-type: none"> <li>• New state regulations: Basic Planning Guideline / Emergency Civil Protection Plan for Forest Fires. INFOCAL plan.</li> <li>• Suppression means.</li> <li>• Weather alert situations and associated measures.</li> <li>• Reminder of management support applications: locators and visualization applications, forecasts of METEOLOGICA and SINFO.</li> <li>• Organization in the fire, application of SMEIF to Castilla y León.</li> <li>• Security</li> <li>• Fires in interface.</li> <li>• Radio communications.</li> </ul> <p><b>Communication and teamwork:</b></p> <ul style="list-style-type: none"> <li>• Effective communication, transmission of instructions, etc.</li> <li>• Teamwork, common objective of a sector or group, conflict resolution</li> <li>• Teamwork, relationship with the hierarchical superior: support for planning and supervision, security, receipt of instructions, systematic reports.</li> </ul> <p><b>Fire analysis, security and tactics:</b></p> <ul style="list-style-type: none"> <li>• Analysis: critical points and alignment.</li> <li>• Basic safety protocol application: OACEL, preventive communication.</li> <li>• Common scenario of accidents due to entrapment.</li> <li>• Protocol of action in case of accident</li> <li>• Tasks as group and sector heads: coordination with assigned means MAER, D, C, R.</li> <li>• Execution of tactics.</li> </ul>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
CAP.0	14	15-25
Objectives	Contents	
<p>General objective: to train in the performance of the functions of the brigade foreman in forest fires suppression, seeking to optimize organization, safety and efficiency in the works.</p> <p>Specific objectives:</p> <ul style="list-style-type: none"> <li>• Understand the current operational structure of the operation at provincial and regional level.</li> <li>• Know the tasks of the foreman as responsible for his unit in the work of suppression.</li> <li>• Predict short-term fire behaviour in order to act accordingly.</li> <li>• Apply safety procedures for your personnel in suppression operations.</li> <li>• Analyse the most effective techniques in first attacks.</li> <li>• Work in coordination with other media.</li> <li>• Master the communication protocols in forest fires.</li> <li>• Assume command functions in the management of the personnel in charge, effectively managing the work team.</li> </ul>	<p>Organization and working of the regional operation, particularizing the characteristics of the silvicultural treatment crew.</p> <p>Functions of the foreman.</p> <p>Communications equipment and discipline.</p> <p>Analysis and forecast of fire behaviour.</p> <p>Tactical planning of extinction in the first attack.</p> <p>Review of the essential aspects in the different types of work.</p> <p>Coordination in work combined with other means.</p> <p>Safety applied to the tasks of intermediate controls.</p> <p>Management human resources.</p>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
CUA.0	14	15-25
Objectives	Contents	
The objective is to train the worker to perform the tasks of suppression of the forest fire with criteria of organization, safety and efficiency.	<p><b>Theoretical contents:</b></p> <ul style="list-style-type: none"> <li>• Operative of fight against forest fires in Castilla y León.</li> <li>• General concepts.</li> <li>• Fire behaviour.</li> <li>• Safety and risk prevention.</li> <li>• Tasks to be carried out.</li> </ul> <p><b>Practical content:</b></p> <ul style="list-style-type: none"> <li>• Forecast of fire behaviour.</li> <li>• Identification of risks and determination of safe areas, Protocol OACEL.</li> <li>• Working protocols and techniques for forest fire suppression.</li> <li>• Maintenance of suppression equipment and tools.</li> </ul>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
AUT.0	14	15-25
Objectives	Contents	
General objective: to improve the performance of the tasks of the pumper drivers, with special emphasis on organization, safety and effectiveness of the suppression work.	<p>The forest fire fighting operation in Castilla y León</p> <p>Concepts of forest fires. Behaviour of fire.</p> <p>Safety in forest fire suppression.</p> <p>Communications.</p> <p>Explanation in the field: characteristics of vehicles and equipment.</p> <p>Daily action protocol.</p> <p>Practice: behavioural forecasting and OACEL protocol.</p> <p>Practice: extinction and safety techniques.</p>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
VIG.0	6	15-25
Objectives	Contents	
<p>Monitor the assigned territory.</p> <ul style="list-style-type: none"> <li>Identify false alarms.</li> <li>Transmit alarms in a precise and concise manner.</li> <li>Evaluate the alarms: dangerousness, probable evolution, etc.</li> <li>Serve as a communications link.</li> <li>Take meteorological data for the calculation of hazard indexes.</li> </ul>	<p>Job profile.</p> <p>Fire watchman functions.</p> <p>The equipment of a fire watchman.</p> <p>Security in forest fire monitoring.</p> <p>Surveillance operations.</p> <p>Communications.</p> <p>Mapping and orientation concepts.</p> <p>Meteorology concepts.</p>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
MAQ.0	14	15-25
Objectives	Contents	
<p>General objective: to train the worker for the operations of suppression of forest fires with bulldozer, seeking to optimize organization, security and efficiency in the works.</p> <p>Specific objectives:</p> <ul style="list-style-type: none"> <li>Know the tasks of the engineer's job, their integration in the structure of the operation, and the guidelines to follow in the development of the tasks that are entrusted.</li> <li>Predict short-term fire behaviour in order to act accordingly.</li> <li>Carry out fire extinguishing operations with bulldozer.</li> <li>Work in coordination with other media.</li> <li>Apply personal safety procedures in extinguishing operations.</li> <li>Master the communication protocols in forest fires.</li> <li>Correct use of Personal Protective Equipment.</li> </ul>	<p>Organization of the forest fire fighting operation of the Junta de Castilla y León.</p> <p>General concepts: basic actions to extinguish fire, methods of combat, basic guidelines for the prediction of fire behaviour.</p> <p>Safety and risk prevention. Protocol OACEL.</p> <p>Characteristics of vehicles and equipment.</p> <p>Communications protocol.</p> <p>Daily action protocol.</p> <p>Field practice: fire behaviour.</p> <p>Practices of extinction techniques.</p>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

Designation/Code	Course length (hours)	Number of trainees
PHT.0	7	15-25
Objectives	Contents	
<p>General objective: to update and homogenize the work procedures of air means in the operations of fire suppression forest in Castilla y León.</p> <p>Specific objectives:</p> <ul style="list-style-type: none"> <li>Review the current operational procedures to improve efficiency in the use of air transport.</li> <li>Analyse the operating procedures of bases and aircraft.</li> <li>Analyse organizational patterns and working procedures in the fire.</li> <li>To homogenize the procedures of coordination of aerial means in the suppression.</li> </ul>	<p>Structure and organization of the operation.</p> <p>Air Media Management.</p> <p>Organization in the fire.</p> <p>Air Coordination.</p>	
	Evaluation	
	Continuous assessment. There are no exams. Exercises are performed to contrast acquired skills.	

## 4. REGIONE TOSCANA

Designation/Code	Course length (hours)	Number of trainees
Fire Boss (DO AIB)	48 or 56 (?)	12-25
Objectives	Contents	
<p><b>General and specific aims</b></p> <p>At the end of the training course the Fire Boss has to know:</p> <ul style="list-style-type: none"> <li>• How to evaluate, for all fire types, the best solution, strategy and techniques for fire attack, extinction and mop up;</li> <li>• How to manage and to coordinate all the available resources in terms of both aerial and ground means.</li> <li>• How to manage relations with the other operative figures which are not specialist in forest fires (Firemen, civil Protection), accordingly with regional laws and rules;</li> </ul> <p>How to solve specific problems (development of problem solving skill).</p>	<p>Forest Ecosystem and forest fires:</p> <ul style="list-style-type: none"> <li>- Forest-soil ecosystem;</li> <li>- Forest management;</li> <li>- Fire behaviour;</li> <li>- The effects of fire on the ecosystem;</li> <li>- Forests in Tuscany.</li> </ul> <p>The phases of forest fire fighting – National and Regional laws – Statistics</p> <p>Competences of forest fire fighting structures –</p> <p>Coordination with other operative structures (firemen, Civil Protection)</p> <p>Forest fire fighting organization in Tuscany - FIRST PART – Ground and aerial organization</p> <p>Forest fire fighting organization in Tuscany - FIRST PART – Ground and aerial organization</p> <p>Fire growth and propagation</p> <p>Fire types and operative scenarios</p> <p>Favourable conditions for forest fires and Campbell (weather conditions, topography and fuel characteristics)</p> <p>The activities in charge of Fire Boss - First part - <i>Activation- Arrive on the fire – taking direction role</i></p> <p>The activities in charge of Fire Boss - Second part – <i>The chain of command – responsibilities on Operators' Health and Safety and emergency.</i></p> <p>The activities in charge of Fire Boss - Third part -</p> <p>Extinction activities, mop up and closing intervention</p> <p>Smoke columns and interface</p> <p>The choose of attack technique</p> <p>Ground means management</p> <p>Cartography, GPS and tablet</p> <p>Exercise on forest fire fighting areas of interest (burnt areas)</p> <p>Characteristics, means and resources used, operative strategy applied, restoration</p> <p>Discussion about the intervention</p> <p>Management of water refuelling</p> <p>Aerial means management – characteristics, management during operations and attack techniques</p> <p>Final phases – Mop up and fire control</p> <p>In-depth analysis on operator's health and safety (laws and rules, responsibilities, main risks in forest fire fighting, PPE and their efficiency –LACES protocol</p> <p>Classification of water points (characteristics) considering both ground and aerial means involved</p> <p>Radio communication management</p> <p>Exercise: meeting with a helicopter pilot on aerial management topics</p> <p>Exercise: visit to a burnt area and cartography exercise in field</p>	

	Helicopter water refuelling. Exercise on coordination during intervention Exercise on attack using water considering operative times and refuelling problems common in regional reality
	<b>Evaluation</b>
	a) Satisfaction questionnaire. Compiled in anonymous form by all the attendants at the end of the training. b) Learning evaluation: a final test is submitted to all participants at the end of the course in order to evaluate learning levels.

Designation/Code	Course length (hours)	Number of trainees
Group Responsible	24	?
Objectives	Contents	
<b>General and specific aims</b> At the end of the training course the Group Responsible has to know: <ul style="list-style-type: none"> <li>• Which are its own responsibilities, and which are the responsibilities of all the other figures operating in firefighting activities;</li> <li>• How to extinguish a forest fire;</li> <li>• How to carry out an efficient mop up and hoe to secure the burnt area;</li> <li>• How to carry out the surveillance of the burning area;</li> <li>• How efficiently communicate orders to the teams: quick, clear and efficient communication. How to inform the Fire Boss about the activities;</li> <li>• How to use and manage water: how to organize an efficient attack line, how to manage water losses, refuelling;</li> <li>• How to manage the different teams in action, including the identification and the turnover of teams (origin, radio acronym, team composition and function, type and number of means and tools), including aerial means;</li> <li>• How to describe a fire and its evolution phases: actual situation and possible evolution;</li> <li>• How to communicate with the other actors and structures involved in firefighting activities.</li> </ul>	Presentation of the course. Registration. The figures under the Group Responsible, including the Logistic Man. Competences and responsibilities; Description of forest fires types and related risks; Operative conditions and related risks; Exercise as Group Responsible; Cartography; The techniques of attack; Road network and forest fires; The correct positioning of forest fire fighting means; Logistic man; Hydraulics applied to forest fire fighting; Exercise as Logistic man; How to spread out the hoses and related problems; Refuelling management; Mop up; Exercise: how to obtain a control line by the use of hand tools; Health and Safety during firefighting activities; Communication: to listen, to express clearly, personnel management.	
	<b>Evaluation</b>	
	Both learning success and appreciation of the training activities are evaluated. In detail, to evaluate the obtained results the following instruments are applied: Satisfaction questionnaire. Compiled in anonymous form by all the attendants at the end of the training. Learning evaluation: a final test is submitted to all participants at the end of the course in order to evaluate learning levels.	

Designation/Code	Course length (hours)	Number of trainees
<b>Drip Torch Training</b>	24 or 32 (?)	15
Objectives	Contents	
<ul style="list-style-type: none"> <li>Realize work sites of prescribed fire using the most suitable ignition techniques;</li> <li>Safely use fire in active firefighting interventions (backing fire and tactic fire), maximizing efficiency in order to extinguish the forest fire rapidly.</li> </ul>	Fire behaviour: ignition and propagation; Techniques of attack; Campbell prediction system; Safety (LACES); Prescribed fire; Tactic fire; Backing fire. Techniques of ignition; Torch: use and maintenance.	
	Evaluation	
	No evaluation.	

Designation/Code	Course length (hours)	Number of trainees
<b>Firefighting Operator</b>	24	20
Objectives	Contents	
<b>General and specific aims</b> <ul style="list-style-type: none"> <li>The "Forest Fire Fighter" has to be able to extinguish forest fires in ground activities, including mop up.</li> <li>This operator can operate using i) off-road vehicles equipped for firefighting activities; ii) manual and mechanical tools; iii) water tanks; iv) fire engine. This basic course does not include specific trainings on specific tools or vehicles (chainsaw, fire engine,...). Specific training courses exist and can be attended if necessary.</li> <li>At the end of the training course the operator have to know:               <ul style="list-style-type: none"> <li>which is the normative and organization context;</li> <li>what a forest fire is, and which are its characteristics, including conditions influencing propagation, behaviour and evolution;</li> <li>how to operate accordingly with the existing and coded procedures;</li> <li>how to operate accordingly with health and safety needs, reducing risks at minimum through a conscious and appropriate behaviour;</li> <li>how to correctly use the available means and tools.</li> </ul> </li> </ul>	Forest fire Fighting Regional Organization. Combustion: fire and forest fire. The elements of a forest fire. The elements influencing fire evolution. Operators' Health and Safety. Vehicles and their equipment. Manual and motor-manual tools. Regional radio frequency for forest fire fighting. Team Classification. Water use. The warning and the check. Extinction. Mop up and control.	
	Evaluation	
	Both learning success and appreciation of the training activities are evaluated. In detail, to evaluate the obtained results the following instruments are applied: <ol style="list-style-type: none"> <li>Satisfaction questionnaire. Compiled in anonymous form by all the attendants at the end of the training.</li> <li>Learning evaluation: a final test is submitted to all participants at the end of the course in order to evaluate learning levels.</li> </ol>	

Designation/Code	Course length (hours)	Number of trainees
Chainsaw (Voluntary)	16	14
Objectives	Contents	
<b>Objectives</b> How to safely use the chainsaw during forest fire fighting activities (indirect attack) and mop up.	The chainsaw: characteristics of the machine, components, protective equipment; Safe procedures for the use of the chainsaw in forest fire fighting; Safe engine start: standing up and on the ground – correct techniques; Correct techniques of cutting; Maintenance; Practical exercise: tree felling in dangerous conditions (simulation of fire event); Practical exercise in burnt area: moving inside the burnt area and mop up operations with chainsaw.	
	Evaluation	
	All the participants will be evaluated during the practical exercises by trainers, who will write a personal report for each trainee. Moreover, at the end of the course, each participant has to successfully pass a 20 questions test based on theoretical information delivered during the course.	

Designation/Code	Course length (hours)	Number of trainees
4x4 Driver	24 or 26 (?)	10
Objectives	Contents	
Each participant will understand potentials and limits of heavy trucks commonly adopted in forest fire fighting, including the correct driving techniques, both on road and off-road, for operating safely.	Basic information on available heavy vehicles equipped for efficient forest fire fighting interventions; Vehicle dimensions; vehicle control during manoeuvre; operating slope; How to face different kinds of obstacles/difficulties: rise, declivity, lateral inclination, bump, twist, culverts, Communication techniques and codes between the driver and the other fire operators; How to drive in an unknown road/context; How to recognize the different types of obstacles, and how to pass over them; Road and off-road drive; Practical exercise.	
	Evaluation	
	All the participants will be evaluated during the practical exercises by trainers, who will write a personal report for each trainee. Moreover, at the end of the course, each participant has to successfully pass a 20 questions test based on theoretical information taught during the course.	



Partners:



UNIVERSITÀ  
DEGLI STUDI  
FIRENZE



[www.mefistoforestfires.eu](http://www.mefistoforestfires.eu)  
[info@mefistoforestfires.eu](mailto:info@mefistoforestfires.eu)