



FIREURISK - DEVELOPING A HOLISTIC, RISK-WISE STRATEGY FOR EUROPEAN WILDFIRE MANAGEMENT

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RIA

D1.2 Geodatabases and Danger products in the GIS project platform



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D 1.2 – Geodatabases and Danger products in the GIS project platform

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1. Introduction

This document contains a list of the datasets and databases that have been compiled during activity T1.1. The main goal of this task was to produce all meteorological and danger variables, models, and methodological schemes required for state-of-the-art risk assessment in current conditions, at different temporal (daily-D, seasonal-S) and spatial scales (from 1 km to sub-metric). This activity has been carried out by the teams involved in each of the in each of the WP1 tasks and it has produced a set of database products.

These databases are currently available on the satways platform at <https://fireurisk.satways.net/> and are available as georeferenced rasters in Geotiff format. All data available on the platform contain the appropriate metadata and a description on the acquisition and generation process. More information on the platform, usage, organisation, management, data formats and metadata can be found on the deliverable **D4.3 - Internal cooperative platform of models, data and knowledge**.

2. Live Fuel Moisture Field Measurements

Provider	Species	Time Period	Description	Contact
CNR	Shrubs	From 2007 onwards	Measurements of shrub live fuel moisture gathered from January to December (on average 2 measurements per months) in a site near Capo Caccia, NW Sardinia.	valentina.bacciu@ibe.cnr.it grazia.pellizzaro@ibe.cnr.it
JHI	Scots pine & other timber trees	2019, 2021	Fine live green fuel MC collected hourly on 6 different days at the Glensaugh farm in Scotland. FMC prior to burns at Glensaugh farm taken in 2 days in 2021 Spring.	Zisis.Gagkas@hutton.ac.uk , Andy.Taylor@hutton.ac.uk
IPMA	Shrubs Unspecified species	Unspecified	LFMC measurements around Portugal for a number of pine species and shrubland.	celia.gouveia@ipma.pt

IRD	A range of tree covers	2018-today	Fuel moisture measurements in the DA11 Puechabon under a range of various tree cover from open to close canopy.	florent.mouillot@ird.fr
ADAI-CEIF	Pinus pinaster Eucalyptus globulus Calluna vulgaris Chamaespartium tridentatum	1996-today	30 years of field data collected in the Lousa site in Portugal. The measurements are gathered 5 times a week during the main season and twice a week during the low season.	luis.mario@adai.pt
TUD	<i>Fagus sylvatica</i> , <i>Picea abies</i> , Grassland	2022	Measurements collected in Tharandt, Saxony, DE, 8 visits April-September (forest site and grassland site)	Christopher.marrs@tu-dresden.de

3. Dead Fuel Moisture Field Measurements

Provider	Dead Fuel Class	Time Period	Timescale	Number of Samples	Description	Contact
CNR	10-hour	From 2018 onwards	Half-hourly	From ~10'000 to ~120'000 measurements depending on the site.	10-h dead fuel moisture on 13 different sites in Sardinia	valentina.bacciu@ibe.cnr.it grazia.pellizzaro@ibe.cnr.it
JHI	1-hour	2019-2021	Hourly	~100	Fine suspended dead fuel moisture measurements taken in the Glensaugh farm in Scotland.	Zisis.Gagkas@hutton.ac.uk , Andy.Taylor@hutton.ac.uk
IRD	100-hour	From 2018 onwards	Unspecified	Unspecified	Dead fuel moisture content of standing tree trunks.	florent.mouillot@ird.fr

TUD	1hr/10hr Surface 1hr/10hr suspended	April 2022 – September 2022	monthly	72	Mixed dead vegetation: Tree cover, needle-leaved, evergreen, closed. Tharandt, Saxony, DE	Christopher.marrs@tu-dresden.de
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4. Fire Weather Index and Threshold Calibration of Existing Danger Indices

Provider	Description	Spatial Coverage	Resolution	On Internal Platform	Contact
JHI	Data for FWI thresholds, e.g. FFMC vs ISI, produced using EFFIS grids for broad fuel types: shrublands, grasslands, bogs/peatlands in Scotland.	Glensaugh Farm	~	No	Zisis.Gagkas@hutton.ac.uk , Andy.Taylor@hutton.ac.uk
REEFMC	Spatial temporal fire history and other data.	DA15 (Chernobyl Exclusion Zone)	~	No	ulabnit@gmail.com (Vadym Bogomolov)
IPMA	Fire Risk Map	Mediterranean Europe	3 km	No (Link)	celia.gouveia@ipma.pt
IPMA	SEVIRI-based FRP Archive	SEVIRI Imaging Disk	SEVIRI native resolution	No (Link)	celia.gouveia@ipma.pt

5. Live Fuel Moisture Content Products

Provider	Description	Spatial Coverage	Resolution	On Internal Platform	Contact
TUD	Long-term coarse-scale estimates of live-fuel moisture content derived from integrating passive microwave	ET	0.25°	Yes	luisa.schmidt1@tu-dresden.de

	satellite observations of vegetation optical depth with in-situ measurements				
SIA	RTM-based LFMC product based on the Sentinel-3 Synergy surface reflectance product.	PS1, PS2, PS3, PS4, PS5, DA5, DA15	300 m	Yes	valerio.pampanoni@uniroma1.it t giovanni.laneve@uniroma1.it
UdL	Machine-learning LFMC product based on MODIS thermal and optical imagery.	PS4	500 m	No (on Zenodo)	v.rescodedios@gmail.com

6. Dead Fuel Moisture Content Products

Provider	Description	Spatial Coverage	Resolution	On Internal Platform	Contact
FMI	Historical hourly dead fuel moisture content data for days when large forest fires occurred somewhere in Europe in recent years.	ET	0.25°	Yes	Evgeny.Kadantsev@fmi.fi
MTG	Percentiles 5 and 95 of historical hourly dead fuel moisture content data for days when large forest fires occurred somewhere in Europe in recent years.	ET	1 km	Yes	luis@meteogrid.com

7. Fire Weather Danger Rating Indices

Provider	Description	Spatial Coverage	Resolution	On Internal Platform	Contact
SIA	Daily Fire Danger Index (DFDI): The product uses meteorological data and satellite imagery to discriminate the amount of live and dead vegetation and to estimate their	PS1, PS2, PS3, PS4, PS5, DA5, DA15	300 m	Soon	valerio.pampanoni@uniroma1.it t

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	moisture content. This allows to provide an estimate of the fire danger on a daily basis.				giovanni.laneve@uniroma1.it
UdL	A novel fire danger metric that couples surface and profile meteorology (different types of atmospheric stability), with dead and live fuel moisture status.	PS4	500 m	No	v.rescodedios@gmail.com
REEFMC	Ukrainian Daily Fire Hazard Index (UDFHI). Fire danger index classification for Chernobyl Exclusion Zone.	DA15	500 m	Yes	ulabnit@gmail.com (Vadym Bogomolov)
FMI	Fire danger indexes at European scale for days when large forest fires occurred somewhere in Europe in recent years.	ET	0.2°	Soon	Evgeny.Kadantsev@fmi.fi

8. Meteorological Data

Provider	Description	Spatial Coverage	Resolution	On Internal Platform	Contact
FMI	Historical hourly weather data for days when large forest fires occurred somewhere in Europe in recent years.	ET	0.25°	Soon	Evgeny.Kadantsev@fmi.fi
MTG	Historical hourly weather data for days when large forest fires occurred somewhere in Europe in recent years.	ET	1 km	Yes	luis@meteogrid.com
FMI	Baseline meteorological parameters -ERA5 Rean. Baseline meteorological parameters -CESM Model	Global	0.25° hourly 1.0° daily	Soon	Evgeny.Kadantsev@fmi.fi
FMI	Regional Fire Danger Indices (KBDI, SDI, grass fire danger, Canadian Fire Weather) ERA5 Reanalysis Regional Fire Danger Indices – CESM climate model	Global	0.5° daily 1.0° daily	Soon	Evgeny.Kadantsev@fmi.fi
FMI	Operational meteorological data. Hourly data updated daily. Available at http://silam.fmi.fi and at Fireurisk Platform.	ET	0.1° hourly	Yes	Evgeny.Kadantsev@fmi.fi

MTG	Operational meteorological data. Hourly data updated daily. Available at FirEURisk Platform during Pilot demonstration .	PS1, PS2, PS3, PS4, PS5	100 m	Yes	luis@meteogrid.com
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9. Satellite-derived Data

Provider	Scale	Resolution	Description	Timescale	Resolution	Contact
SIA	PS (All pilot sites)	300 m	Can be generated on demand from October 2018 (beginning of Sentinel-3 Synergy availability)	Daily	NDVI, Relative Greenness, GVMi, ...	valerio.pampanoni@uniroma1.it t giovanni.laneve@uniroma1.it

10. Lightning Data

Provider	Scale	Description	Timescale	Resolution	Contact
FMI	ET	Dead Fuel Moisture (ERA5-EU Meteorological data)	2000 – 2021	0.25° hourly	Evgeny.Kadantsev@fmi.fi
FMI	Global	Lightning flash density (ECMWF IFS data)	2018 – 2021	0.5° hourly	Evgeny.Kadantsev@fmi.fi
FMI	Global	FRP predictions	1979 – 2021	0.5° hourly	Evgeny.Kadantsev@fmi.fi
FMI	Global	Smoke predictions (ERA5-EU data) Smoke predictions (ERA5-EU data)	1979 – 2022 1979 – 2022	0.5° hourly 2.0° hourly	Evgeny.Kadantsev@fmi.fi

11. Human Ignition Data

Provider	Description	Spatial Coverage	Resolution	On Internal Platform	Contact
UAH	Probability of ignition (human components)	Europe	1 km	Yes	Clara Ochoa

12. Fuel Models Data

Provider	Description	Spatial Coverage	Resolution	On Internal Platform	Contact
CNR	Fuel sampling and classification approaches	Mediterranean		Yes	valentina.bacciu@ibe.cnr.it grazia.pellizzaro@ibe.cnr.it
AUTH	PS-05-EL Fuel Mapping Methodology	PS5	20 m	Yes	Dimitris Stavrakoudis
AUTH	PS-05-EL Fuel Model Map 2022 [Version 1]	PS5	20 m	Yes	Dimitris Stavrakoudis
AUTH	PS-05-EL Fuel Type Map 2022 [Version 1]	PS5	20 m	Yes	Dimitris Stavrakoudis
AUTH	PS-05-EL Fuel Model Map 2020 [Version 1]	PS5	20 m	Yes	Dimitris Stavrakoudis
AUTH	PS-05-EL Fuel Type Map 2020 [Version 1]	PS5	20 m	Yes	Dimitris Stavrakoudis
ADAI	PS3 Fuel type map (Central Portugal)	PS3	100 m	Yes	Luis Mario Ribeiro
FESB	PS fuel maps by (Bugarić, Gelabert, Alcasena) - Greece, Portugal, Sweden, Spain, CEU	PS1, PS2, PS3, PS4, PS5	100 m	Yes	Marin Bugarić

UAH	Europe_Fuel_map	ET	1 km	Yes	Maria Lucrecia Pettinari
ARB	Canopy_fuel_and_Terrain_layers	Sweden	100 – 25 m	Yes	Alejandro Barrios Becerra

13. Fire Propagation Potential

Provider	Description	Spatial Coverage	Resolution	On Internal Platform	Contact
FESB	Past fire database - fires larger or equal to 1ha	PS1, PS2, PS4, PS5		Yes	Marin Bugarić
FESB	Fire danger indexes (crown fraction burned, crown fire activity class, fireline intensity, flame length, heat unit area, rate of spread)	PS1, PS2, PS4, PS5	20 – 100 m	Yes	Marin Bugarić
FESB	burn probability fire perimeters	PS1, PS2, PS4, PS5	100 m	Yes	Marin Bugarić
FESB	Fire danger indexes (fireline intensity, flame length, rate of spread, reaction intensity)	ET	1 km	Yes	Marin Bugarić
UAVR	Fire emission potential	PS3, PS4	100 m	Yes	Ana Miranda
UAVR	Smoke potential	PS3, PS4	100 m	Yes	Ana Miranda
UAVR	Maps of fire exposure metrics	PS3, PS4	100 m	Yes	Ana Miranda