



FORÇA ESPECIAL DE PROTEÇÃO CIVIL

"Per Angusta ad Augusta"



Earth Observation Products for Wildfires Monitoring and Forecast 2022

Meteorological and satellite data applied to fire Monitoring and fire management services in Portugal





The **National Emergency and Civil Protection Authority (ANEPC)** is the national authority in terms of emergency and civil protection in Portugal. It is a central service of direct state administration, with administrative and financial autonomy and its own patrimony.



The **Special Civil Protection Force (FEPC)** has its own Command and structure, and it depends on the National Command of Emergency and Civil Protection.

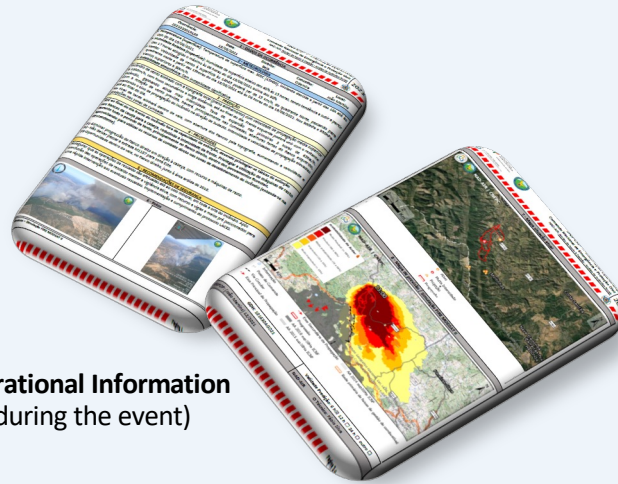


The **Use of Fire and Analysis Group (GAUF)** is a group made up of 29 members of the Special Civil Protection Force, that are specialists in analysis and in the use of fire. All members are trained in prescribed burns and fire suppression.

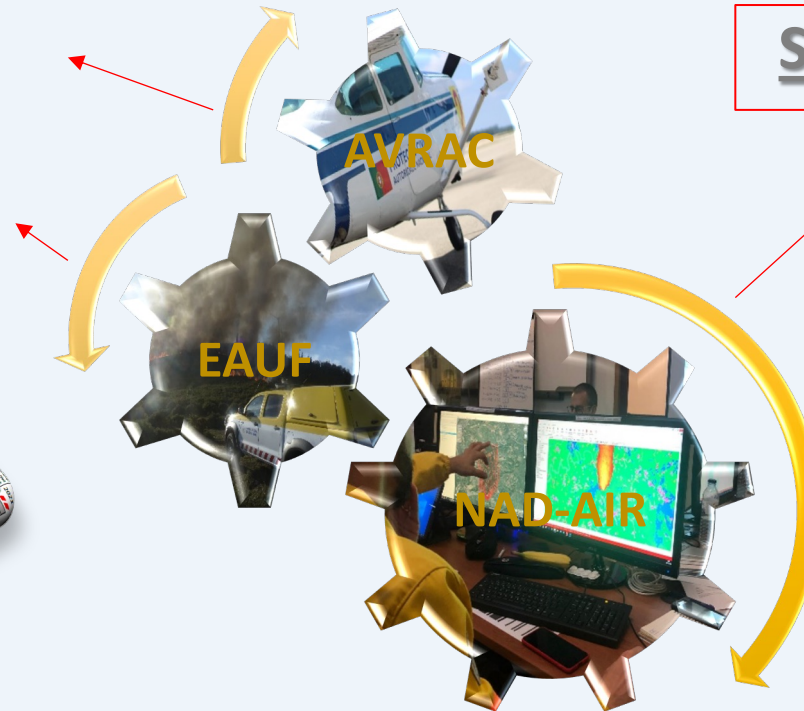




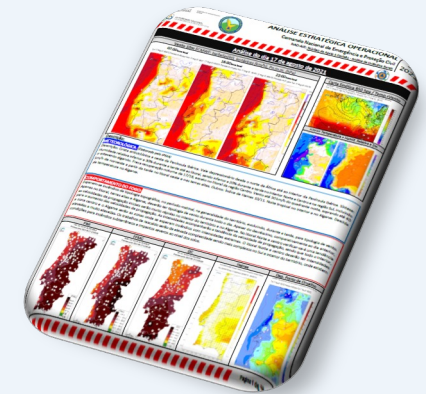
Tactical Analysis Field intervention



Operational Information
(during the event)



Strategical Analysis



Strategic Operational Analysis
(before the event)

DECISION SUPPORT CELL - ANALYSIS OF RURAL FIRES – FEPC 2018 to 2022

number of documents sent per year	2018	2019	2020	2021	2022
Strategical Operational analyzes	36	66	34	51	53
Tactical Information (sent to Incident Commander)	40	42	53	25	48



Daily briefing at the National Command

CONCEPT



Decision support tools

Fire management platform for the entire country (**FEB Monitorização**)

Prescribed Burn platform

Contribution to the web platform of pyro-meteorology (**Multisites**)

Public tutorials (videos) on decision support tools

(<https://www.youtube.com/c/FEPCGAUF>)

Contribution to the development of a **fire simulator (research)**

Fire energy monitoring application

Fire analysis products

Strategic Operational Analysis

Types of **meteorological products** in articulation with the IPMA

Operational Information Model for the Incident Commander

Daily presentation at the National Relief Operations Command regarding the wildfires of the last few days and the fire potential for the next few days

Co-creation with of **risk maps and new prediction parameters (research)**

Operational dynamics

Researcher working in the analysis cell

Use of surveillance cameras for decision support

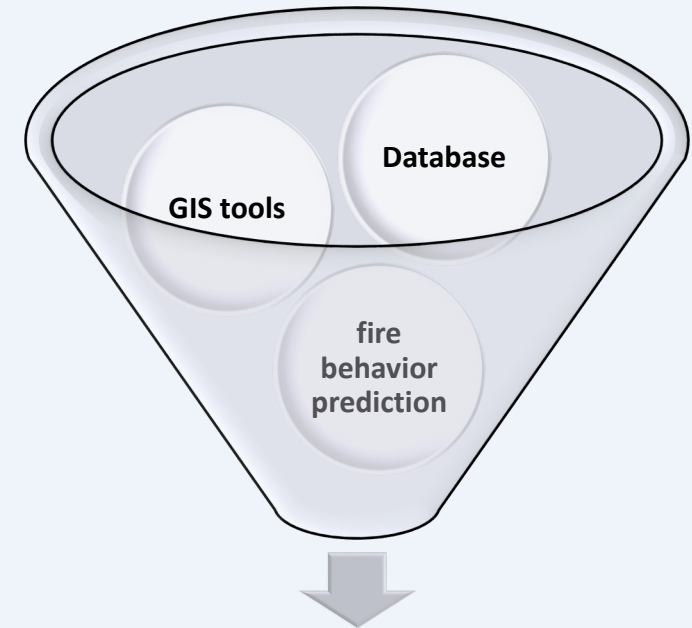
Monitoring aircrafts

Operational instructions for all agents (case studies, use of operational tools, fire analysis, etc)

Prescribed Burn with firefighters

Operational exercises

Exchange of experiences during wildfires with other international teams



Operational dynamics





DONE

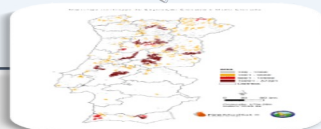
• FEB MONITORIZAÇÃO

- Common platform for wildfire analysis and management.



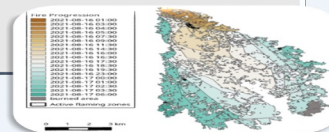
• The probability of Fire recurrence.

45 Year history of burnt areas (1975 - 2022).



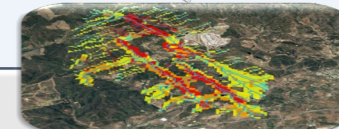
• Fire spread database

- Since 2015, with more than 81 large fires



• Simulation Report

- Prediction report to incident Commander



• Energy released during wildfires

- Through MSG (hotspots)





Areas in need of development

Free access to all weather data

Extend periods with satellite coverage

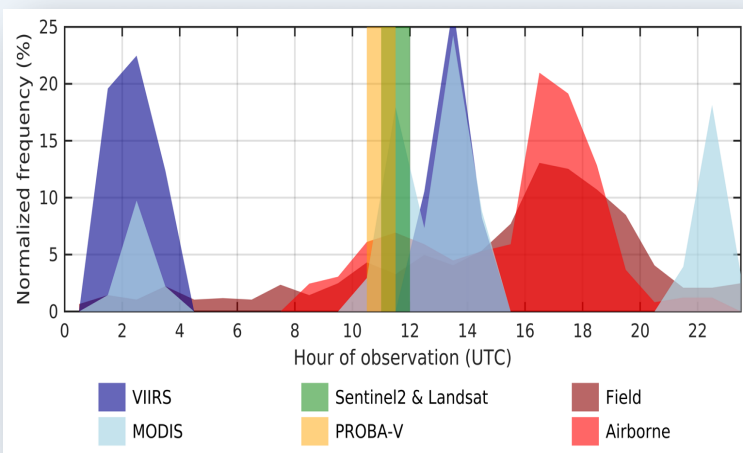
Reduce the limitation caused by persistent cloud cover

Easy access to data in near real time

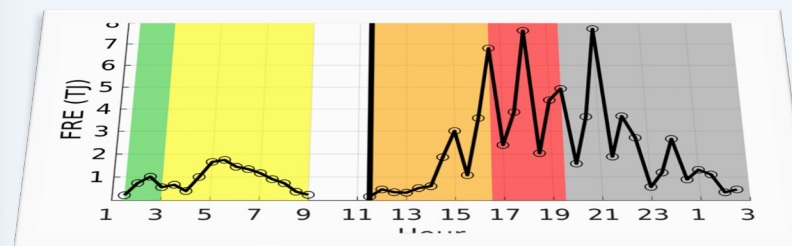
Increase resolution for hotspot data

Collaborative European Platform

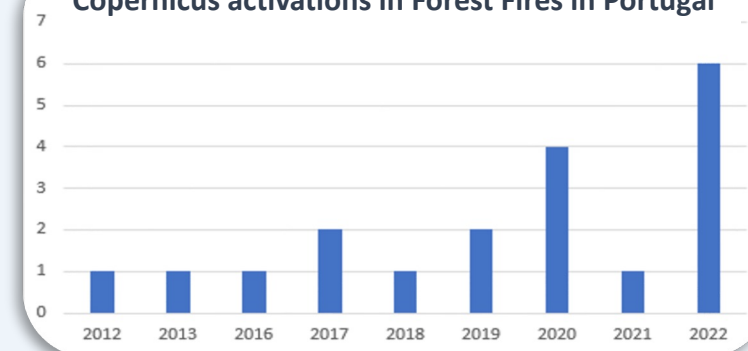
Coverage of the different data sources used



Energy released during wildfires

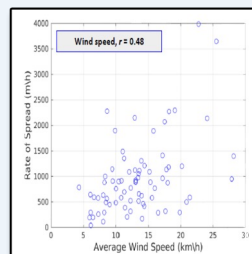


Copernicus activations in Forest Fires in Portugal



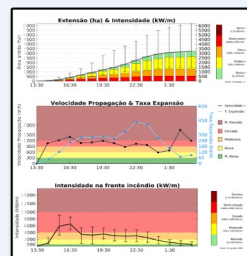


UNDER DEVELOPMENT



Use Artificial Intelligence to define new fire behavior indexes;

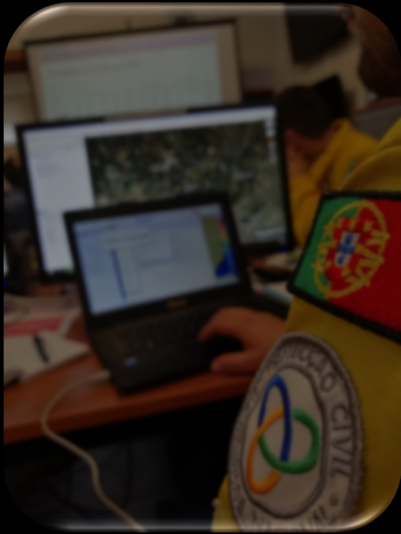
Through automatic simulation, create a platform to prioritize wildfires;



Build operational meteorology platform.



Translate complex information into operational language



Thank you for your attention

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