



CONNECTS

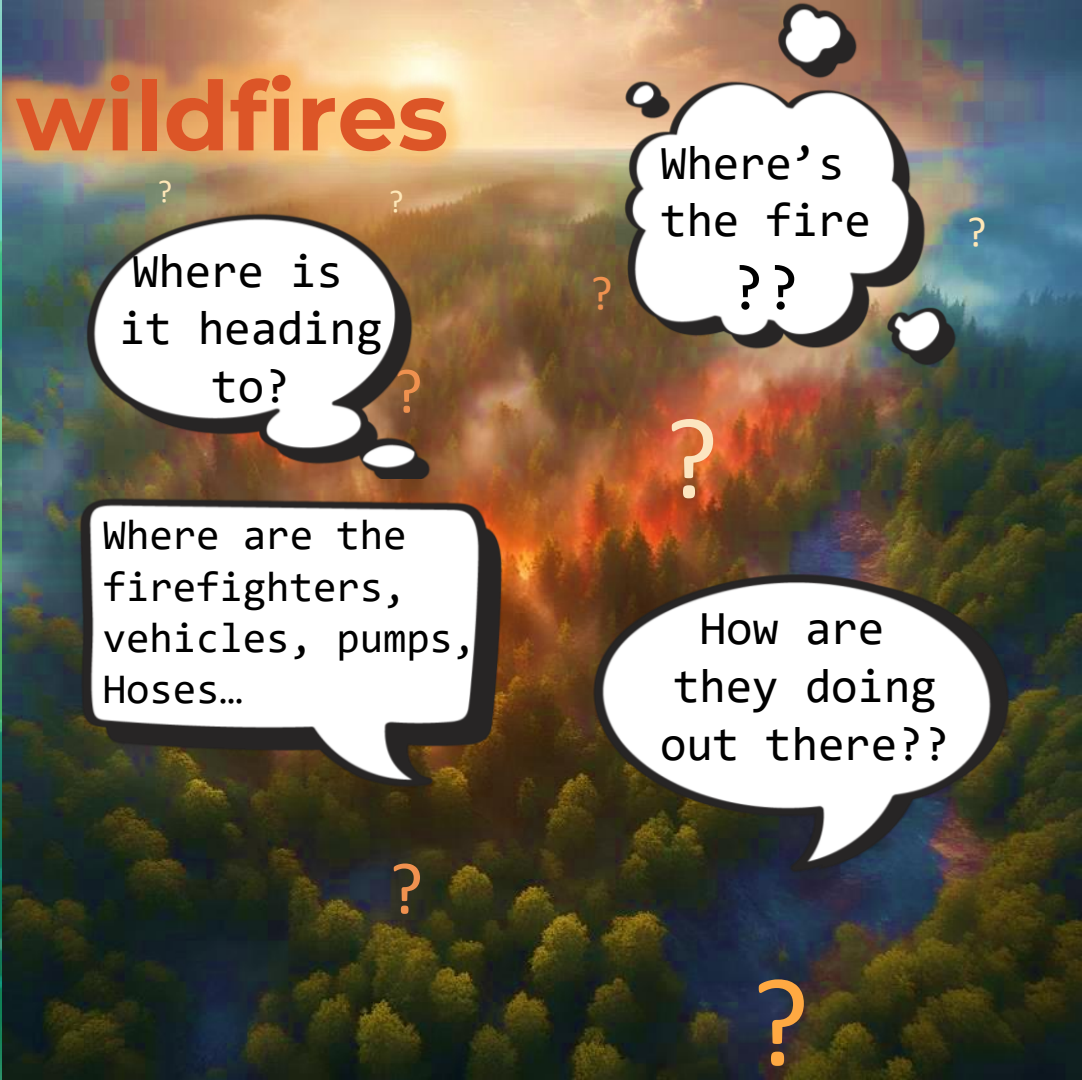
T4.2 Public Protection and
Disaster Relief (PPDR)

Situational Awareness Center for forest fire rescue and extinguishing operations

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Challenges with wildfires

- Problematic access & logistics
- Large operational area
- Outdated information
- Big number of staff, mostly volunteer firefighters
- Uncontrolled and fragmented team communication



Technical needs for wildfire data collection

What do we need for better incident management?

Low-power & lightweight technologies for

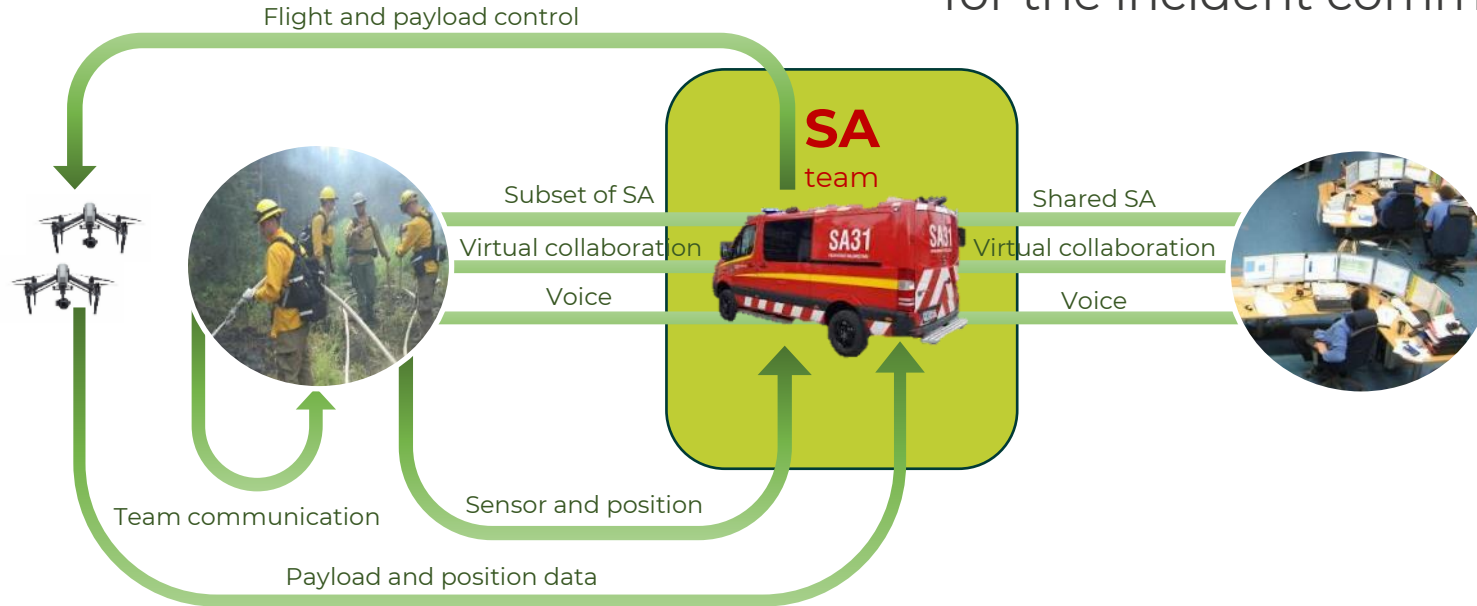
- Novel on-board / wearable perception tools
→ collection of data right where the fire is
- On-board data processing
→ reduction of energy & bandwidth
- Efficient communication
→ functional in forest environments

map resources about digital terrain models, vegetation, fuel, fire risk related data, firefighting resources, weather forecasts etc.

→ Matches to the outputs of heterogeneous integration

High-level organization

On-demand situational awareness team can produce timely data for the incident command



Remote Situational Awareness Center

a pivotal hub for real-time monitoring and coordination

Centralized platform for supporting decision-making and resource deployment.

Easy access to critical information:

- real-time situation map with positioned drone data
- location of vehicles, personnel and firefighting equipment
- fire spread models results, staff condition etc.

Drone use strategy

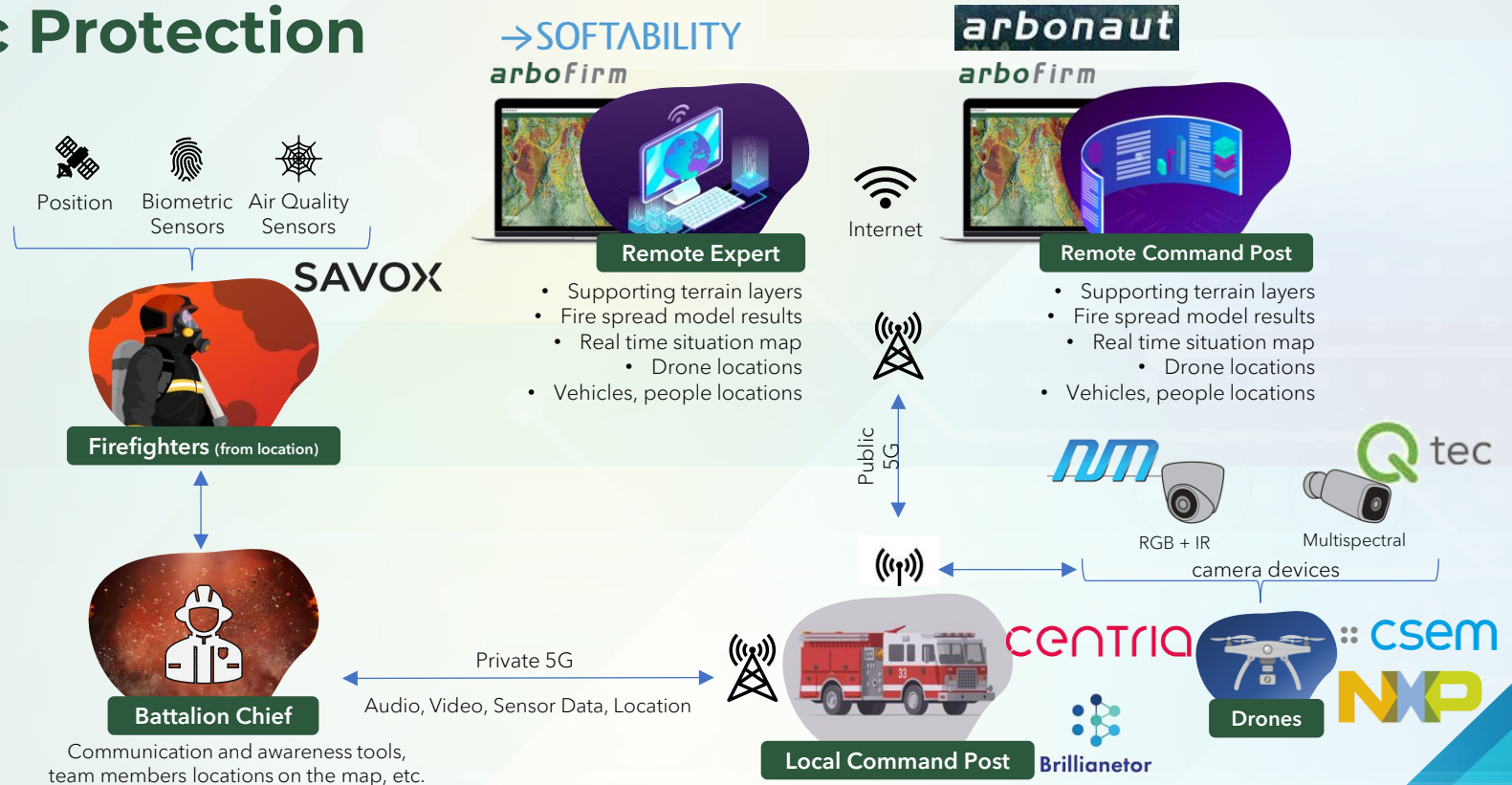


Two specialized drone roles

- A. Scans, positions and vectorizes the fire areas
-RGB + IR
- B. Measures the coming fire area moisture etc.
Properties
-multispectral camera

(semi)autonomous mission control, on-board pre-processing → optimized data transfer to the ground

WP4/T4.2 Disaster Relief & Public Protection



Information layers

Base information

- Terrain background maps & aerial images
- Vehicle mobility
- Tree height

Fuel mapping from NLS LiDAR

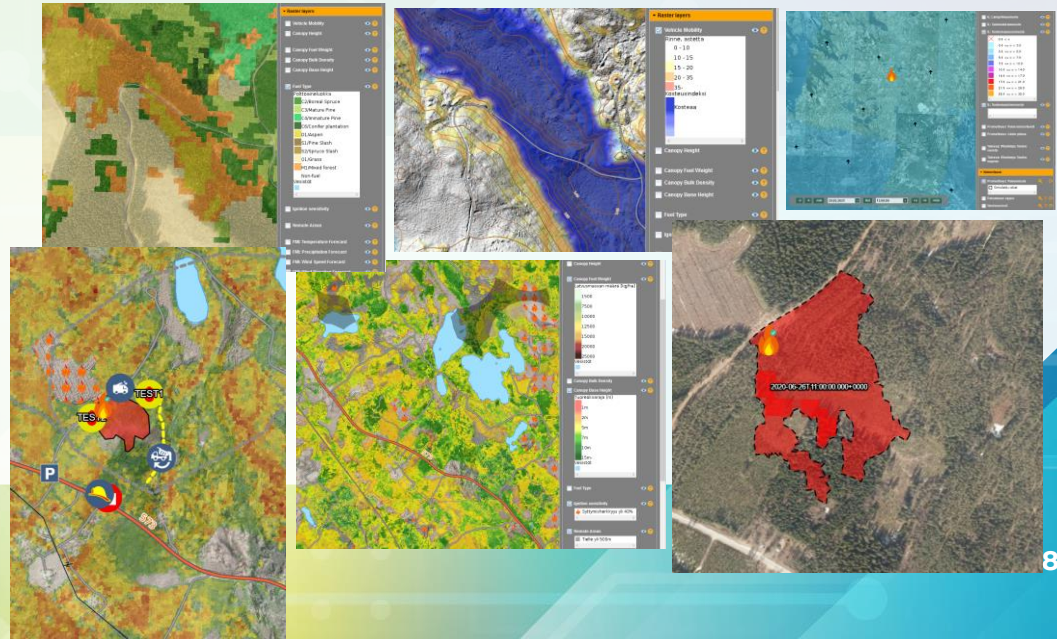
- Canopy fuel weight (kg/ha)
- Canopy bulk density (kg/m³)
- Canopy base height
- Fuel classification
- Ignition sensitivity

Fire incident situational awareness response layers

Meteorological data

Arbofirm

Demonstrative images of data layers as implemented in earlier projects – these will be further complemented by this project data from drones and sensors (work in progress)



Q&A

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