Autonomous multimodal robotic perception system for intelligent wildfire detection and monitoring

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**MOTIVATION:** Wildfires have dire impacts on communities on social, cultural, environmental and economic levels. Since, fire events are becoming more frequent and severe, fire detection systems are crucial to identify fire ignitions in an early stage.

**PROJECT GOAL:**
This application aims to develop perception solutions to be used onboard aerial robotic platforms e.g. multi-rotor or fixed-wing drones or high-altitude balloons, which can be deployed in situations of increased fire risk.

**Multi-modal sensors** leverage different perception capabilities e.g. thermal, visible or synthetic aperture radar, to handle adverse weather conditions as overexposure to sunlight, clouds, or smoke.

**IMPACTS:** this solution can be integrated in a decision support system, to maximize the area monitored and optimize resource allocation in firefighting and civil protection operations.

**DELIVERABLE:**
- perception algorithms based on multi-modal sensors for autonomous fire detection and monitoring