
OIV Digital signals and networks
Smart system for early detection of fire.
OIV Fire Detect AI

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SMART COMMUNICATION SYSTEM FOR VIDEO SURVEILLANCE OF REMOTE LOCATIONS AND DETECTION OF FOREST FIRES IN REAL TIME, INTENDED FOR ALL PROFESSIONALS WHO PROTECT FORESTS AND RESCUE PERSONS AND PROPERTY

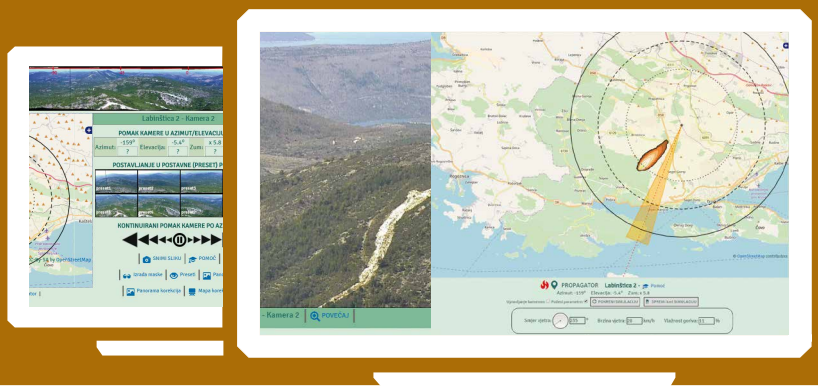
A THREE-PART SYSTEM

1. VIDEO CAMERAS ON ANTENNA TOWERS
2. OIV CLOUD DATA CENTER AND APP
3. SURVEILLANCE OPERATIONS CENTER

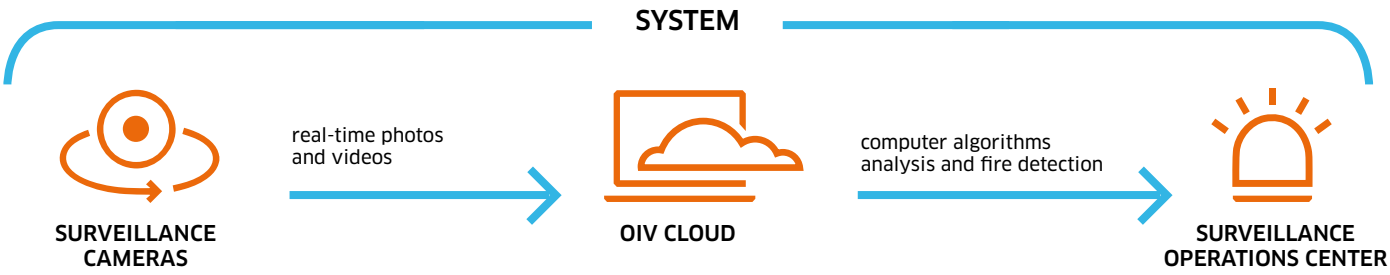
This combination of advanced technology and OIV's expertise enables early detection and around the clock remote surveillance of fires that are simultaneously spreading over inaccessible areas. Implementation of this system significantly increases safety and protects human lives and property, as well as forests. It also brings down the number of big fires, the size of burn areas, and the costs of rehabilitation and firefighting interventions.

FIRE SPREAD SIMULATION

KEY FUNCTIONS	BENEFITS
PANORAMIC FULL HD VIDEO CAMERAS	360° coverage, detect signs of fire in real time
AUTOMATIC AND MANUAL MODE	when in automatic mode, the camera can detect a fire 10 km away, and in manual mode it can detect a fire 25 km away
ANTENNA TOWERS	two cameras on each elevated tower
AI SOFTWARE FOR FIRE DETECTION	fire is detected based on the automatic image analysis, which enables early detection and prompt response
FIRE DETECTION 24/7	the system automatically recognizes smoke during daytime and fire during nighttime
EFFECTIVE SURVEILLANCE OPERATIONS CENTER	the system is exceedingly reliable due to redundancy and its uptime (one operator can monitor up to 100 000 hectares)
OIV'S KNOW-HOW	experience in communications outside urban areas
STABLE OPERATION OF THE ENTIRE SYSTEM	camera, transmission networks, DC power supply, servers, storage, possibility of eliminating interference without going into the field

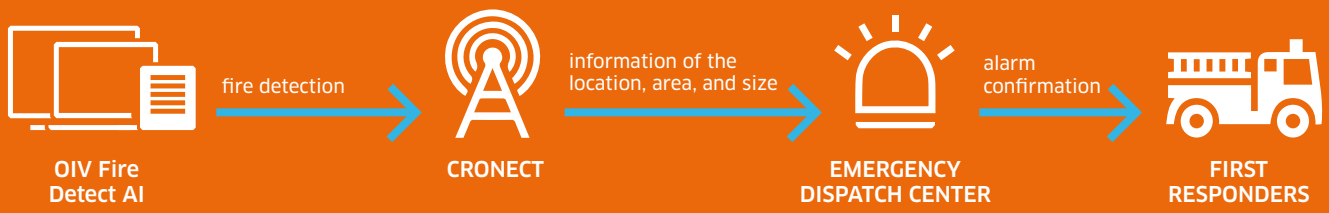


HOW DOES OIV FIRE DETECT AI WORK?



- THE CAMERAS IN THE AUTOMATIC MODE USE ADVANCED OIV AI FIRE DETECT ALGORITHM TO MONITOR THE DESIGNATED AREA
- ADVANCED DATA ANALYSIS ENABLES AUTOMATIC EARLY DETECTION OF FOREST FIRES
- DATA ON ACTUAL FIRES ARE USED TO FURTHER IMPROVE ARTIFICIAL INTELLIGENCE ALGORITHMS
- IF THE CAMERA SWITCHES TO THE MANUAL MODE, IT MEANS THE OPERATORS ARE PERFORMING ADDITIONAL CHECKS
- SOC OPERATORS' SCREENS ARE DISPLAYED ON THE FIRE CREW COMMANDERS' MOBILE PHONES

WHAT HAPPENS WHEN THE OIV FIRE DETECT AI DETECTS A FIRE?



- WHEN THE SOFTWARE DETECTS A FIRE, A RADIO COMMUNICATIONS NETWORK (CRONECT) IS ACTIVATED
- FIRE SPREAD SIMULATIONS CAN BE MADE AND THE RESULTS SENT TO THE ON-SITE CREWS
- ALARM CONFIRMATION MEANS THE OPERATORS HAVE CONFIRMED THAT THE ALGORITHM DID, IN FACT, DETECT A REAL FIRE
- ONCE THE ALARM HAS BEEN CONFIRMED, THE FIRST RESPONDERS ARE ALERTED BY THE EMERGENCY DISPATCH CENTER
- MANUAL CONTROL OVER THE CAMERAS DURING FIRE ENABLES THE FIREFIGHTERS ON THE FRONTLINE TO ASSESS THE SITUATION ON SITE

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System for early detection of fire

TECHNICAL FEATURES AND FUNCTIONALITY

SURVEILLANCE CAMERAS

- PTZ video camera employs dual technologies for daytime (colour imaging) and nighttime (black and white imaging)
- easily operated, 32x optical zoom
- designed for all types of weather
- a lens enabling a vertical viewing angle of 360° and a horizontal viewing angle of +/-110°
- integrated web server for video signal transmission

CLOUD DATA CENTER

- high level of availability enabled by a link and server redundancy system
- storage of individual videos (JPEG) recorded in the previous 24 hours
- storage of all images related to detected fire alarms, recorded during one season
- storage of camera recordings made in automatic mode

FIRE DETECT APP

- displays all current videos from all cameras in digital M-JPEG or MPEG-4 format
- automatic fire detection (smoke during daytime, fire during nighttime)
- system's alarm parameters can be set
- system components can be disabled from a remote location
- statistical evaluation of automatic detection
- system users classified by their authorization level
- remote, manual camera operation (azimuth, elevation, zoom)
- remote, manual camera setup for automatic fire detection
- camera controlled remotely through a digital map
- camera controlled remotely through a panoramic view displayed by the camera
- archival videos and fire alarms can be browsed by date and time

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EXAMPLE OF IMPLEMENTATION IN CROATIA*

OIV infrastructure covers almost the whole territory of the Republic of Croatia, and the cameras are mostly placed on sites that allow for the best optical visibility of the most vulnerable areas.

86 CAMERAS

4 SURVEILLANCE OPERATIONS CENTERS

43 SITES

51 FACILITIES IN THE SYSTEM**

* for the client Croatian Forests

** OIV, Croatian mobile network operators and fire crews

We are OIV - the main provider of national strategic infrastructure for audio and video transmissions, offering innovative solutions for preventive protection and public safety, ensuring that the users have a reliable network and platforms for digital distribution, core fibre-optic web infrastructure and designs tailored to fit their needs.

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