EYEfi Cloud

SPARC - Remote Bushfire Monitoring and Situational Awareness

Case Study (Melbourne Water)

SPARC is used to determine the exact geo-graphical location of any object or position of interest being observed in the real-world, without the need for triangulation and in real-time.

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Case Study

Title: EYEfi SPARC for Remote Bushfire Management, Situational Awareness and Intelligence Gathering

Organisation: Melbourne Water Corporation

Location: Poley Fire Tower (O'Shannassy Catchment) and Melbourne Water offices

Industry Segment: Government and Statutory Authorities

Application: Bushfire monitoring tools enabling tower operators to work remotely on high fire danger risk days or when unsafe to work in the tower

Product: EYEfi Spatial Video Cloud Platform and SPARC capability plugin

Equipment: Axis Q8735 visual/thermal camera, weather station, lightning detection, communications and solar equipment, EYEfi router and custom software

Objective

Melbourne Water Corporation (MWC) are a statutory authority responsible for managing some of Victoria's largest and critical water catchments and associated assets. With this, MWC has direct responsibility for bushfire planning, management and the identification of bushfires within and around the water catchments, using their network of fire towers.

The key problem and use-case for the deployment of EYEfi SPARC, was MWC's need to provide continuity of surveillance, detection and monitoring activity when OH&S requirements require fire towers to be unmanned, such as:

- On high fire danger risk days
- During fire and lightning activity
- On days of moderate to high wind
- Any other time it is unsafe for the tower operator to access or work in the tower

Melbourne Water required the solution to be remotely accessible and accessible by any authorised and connected users, located anywhere. The system also had to integrate and augment existing operations and fire management processes.

Solution

EYEfi's Spatial Video platform and SPARC technology provides spatial targeting (Geo-pointing) capabilities using high specification visual spectrum cameras, thermal sensors and lightning detection; enabling key fire personnel (located remotely or in the fire tower) the ability to determine the geographical location of a fire, lightning strike (or the location of anything being observed by the camera), over wide areas, in real-time and without the need for any other frame of reference or triangulation.

Other features include reverse geo-pointing the camera to a geographical coordinates, street addresses, user camera pre-sets or by simply clicking on a map location within the user interface, automatically directing the camera to view that location.

Fire personnel using the system were able to work remote to the tower to augment their surveillance activities, and other personnel were able to access the cloud platform remotely, share the information with authorised users and perform key surveillance and monitoring activities from any location.

The system also provided for continuity of surveillance, detection and monitoring activity outside operational and/or daylight hours and with the ability to see through smoke and cloud using thermal imagery and SPARC technology.

Outcomes

"The EYEfi SPARC technology has been successfully deployed and utilised by MWC throughout the 20/21 fire season, enabling us to remotely identify the location of fires and hotspots using the EYEfi technology located at Poley Tower in the O'Shannassy Water Catchment. The technology also enabled MWC with entirely new capabilities, such as geo-targeting of fire and lightning strike events under any conditions (smoke, cloud etc) without the need for triangulation, and at any time of day; providing us with accurate and real-time results" *Joanna Mundy, Fire Tower Operator, Melbourne Water Corporation.*

With thousands of fire and lightning events occurring across Victoria's Water Catchments, EYEfi SPARC has provided significantly improved situational awareness for MWC, enabling the following key outcomes;

- EYEfi SPARC successfully met and exceeded the use-case requirements as set out in the "Objective" section of this document
- Identification of fire, hotspot and lighting locations (lat/lon/alt and grid refence) in near real-time and accurate to within +/- 75m at a 95% confidence level at 15km (SPARC targets were achieved over 40km+) and without the need for triangulation
- Enabled a single system-of-record for all events, providing organisation-wide visibility and access to all incident data and information in real-time
- Enabled MWC staff and field personnel to conduct fire surveillance and monitoring activities from anywhere with an internet connection
- Enabled seamless integration with existing fire management processes and protocols

The EYEfi platform and technology has enabled MWC personnel to become more productive, and arrive at fire location results more quickly and with greater accuracy due SPARC's geo-pointing capabilities automated workflow. Remote working enables the operator to focus on the task at hand with improved efficiency and importantly, improved safety and OH&S outcomes.

MWC management has been impressed with the results and use of EYEfi SPARC as an operational tool during the 20/21 fire season, and is supportive of the ongoing use and expansion of the system for the 21/22 fire season.

EYEfi SPARC is available for deployment on existing fire towers, communications towers and other structures.

For more information contact EYEfi @ www.eyefigroup.com

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