

# **EMERGENCY AERIAL INTELLIGENCE**

**Mike Waters**<sup>1</sup>.

1 Fire & Emergency Services Authority of Western Australia, PO Box P1174, Perth WA, 6844,  
mike.waters@fesa.wa.gov.au Tel: 0417237228

## **AIM**

Improve emergency incident response through aerial emergency management by incorporating aerial video and mapping technologies into FESA air operations. To provide a fast and reliable service by which information from an Air Intelligence helicopter can be transferred to the Incident Management Team, Communications Centre and Regional or State Coordination Centres.

## **THE PAST**

- Fire maps were hand drawn on Topographical Maps by Air Observers.
- Fire intelligence data (hardcopies) were delivered by helicopter & hand carried to Air Intelligence Officers
- Fires were mapped from greater than 2000ft AGL
- Fire shape maps were forwarded on by fax from an IMT

## **ISSUES**

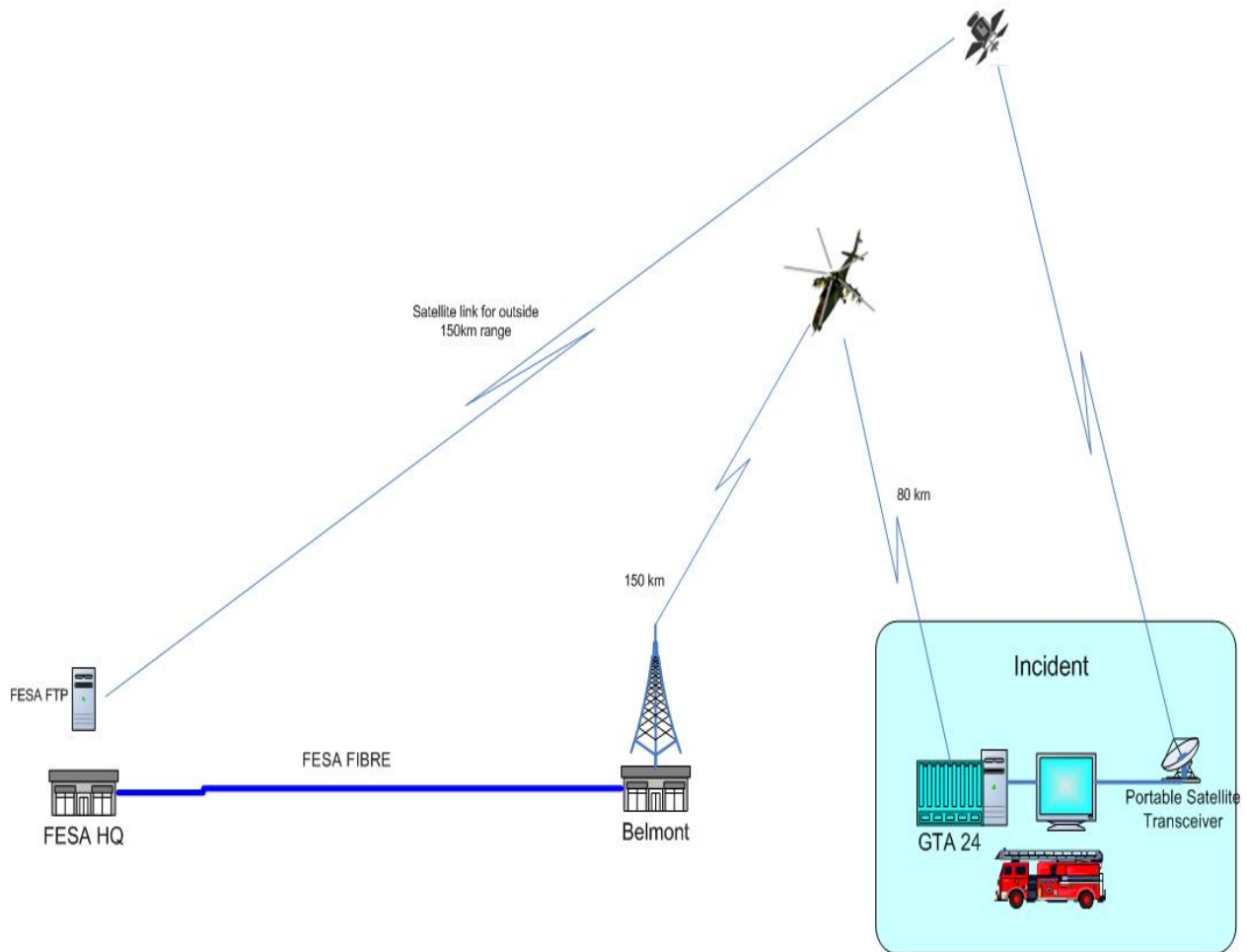
- Limited fire shape accuracy.
- Time delays in delivery of fire shapes
- Poor resolution offered by faxed hardcopy fire maps.
- Heavy smoke limiting fire edge visibility and the ability to view head fire activity and spotting.
- Difficulty in identifying and locating smouldering hotspots.
- Low level flying required
- Delays in the receiving and processing of collected digital data on the incident ground
- Ground staff too busy on other fire related tasks
- Limited GIS capability, hardware and software incompatibility.
- Computer processors & some electronic equipment often overheated in temperatures above 40 degrees C

## **THE SOLUTION**

In 2005-06 a new aerial intelligence contract was let and awarded for the acquisition of state of the art aerial intelligence equipment and systems. The system was introduced into FESA Air operations for the 2006/7 fire season.

The new system provides real time fire mapping, Forward Looking Infra Red (FLIR), near broadcast quality video and the ability to transmit via microwave direct from the helicopter to the Incident Management Team on the ground within 80 kms radius as well as to the State Coordination Centre via microwave within 150 kms radius or via satellite for distances beyond the microwave radius.

## Air Intelligence Data Transfer



### **BENEFITS**

- SELF CONTAINED – Equipment & Operators with the Helicopter
- INCREASED SAFETY – (Ability to stand off & operate from greater altitudes)
- ABLE TO TRANSMIT TO SCC / COMCEN AS WELL AS INCIDENT GROUND
- INSTANT STREAM OF REAL TIME DATA (Live feed)
- HIGH QUALITY IMAGE RESOLUTION
- OPERATE IN ISOLATED AREAS (BGAN Satellite & Power Supply)
- IMPROVED MAPPING SYSTEM (Lasered waypoints)
- ABLE TO RECORD & STORE ALL DATA ON BOARD AS WELL AS GROUND RECEIVE & FESA SCC

The provision of this information has greatly enhanced the ability of incident management teams to receive real time data in the field and at FESA Headquarters for all types of emergency incidents. This allows for early community warnings to occur and more effective protection of community assets.

### **THE FUTURE**

The mapping, video & infrared system will significantly expand FESA's ability to provide real time accurate information for:

- Fire
- Hazmat

- Flood
- Storm
- Rescue

The potential for enhanced and timely public safety information has yet to be fully realised.

**Key Words**

Agency Initiative; Innovation; Emerging Technology and Applications.