



5KM STANDOFF GAS DETECTION AND IDENTIFICATION

/ CONTEXT

This field trial aims at validating the detection capability of a gas cloud 5 km away from the Second Sight® MS. All leading military armies involved in standoff detection are considering this distance as a must-have capability to increase the chemical threat site surveillance. Being able to give an early warning with a threat at 5 km gives enough time for apply preventive measure with adequate protection.

To achieve the test, the Second Sight® has been positioned to have a line of sight view on the release point. The deployment is taking less than 5 minutes to set up out of the box and start surveillance. The Second Sight® is battery operated and equipped with a 12° lens to increase the optical sensibility. The gas used for this trial is the sulfur hexafluoride (SF6).

/ RESULTS

Simulation of 8 kg SF6 release:

- ▶ initial cloud of about 85m wide at a concentration 500ppm after 30 seconds
- ▶ cloud growing to 200m at a concentration 50ppm and then dissipating

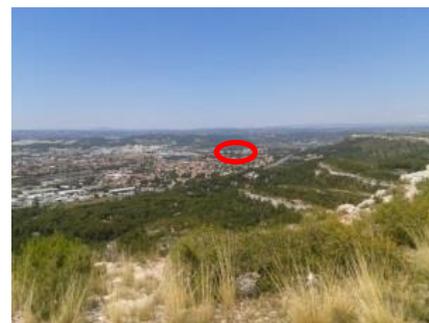
The Second Sight® has detected and identified the cloud, even with only 8kg of released gas. The detection happened on a small cloud, just above the release point. The cloud is growing up, displayed in real time with a color scale from blue to red, where red is the highest concentration. The confidence threshold is between 80 and 90%, due to the thickness of atmosphere to go through. In the bottom right corner, the GPS coordinates are written, in order to identify the contaminated area.

/ ILLUSTRATIONS

525m



• Satellite View



View from the camera.

▶ T0 = 0s

Beginning of the release of 8 kg of SF6

▶ T1 = 45s

End of the release of gas



▶ T2 = 85s

Alarm on the Second Sight



/ CONCLUSION

- Large monitored FOV and real long distance operations: Detection up to 5 km
- Low detection limit: Detection of a cloud generated by a low quantity of gas
- Easy to operate: Deployment in less than 5 minutes
- Real time detection: Immediate display of the alarm