

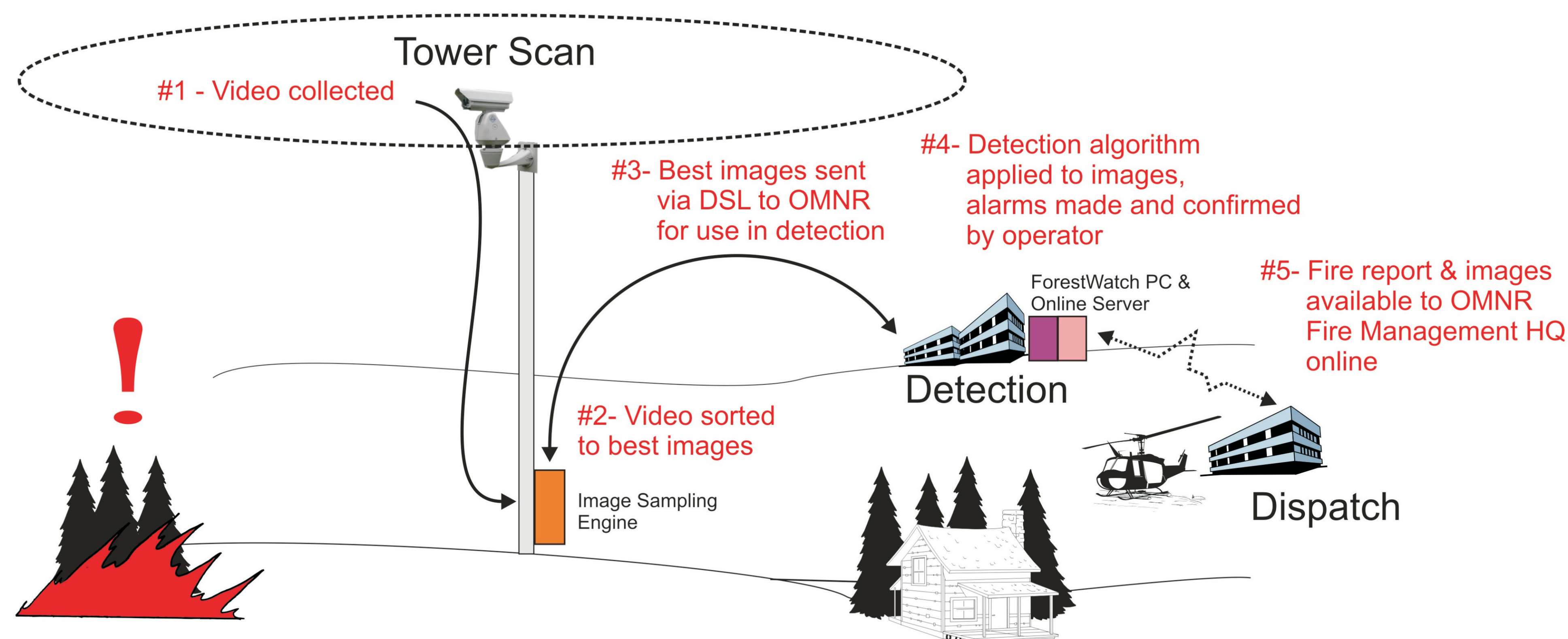
ForestWatch Automated Tower Wildfire Detection System

An OPS Ideas & Innovation Fund Project

Lookout towers have not been used for wildfire detection since the 1960's. A new system that utilizes cameras and image analysis to auto-alarm on fire smoke may breath new life into an old method.

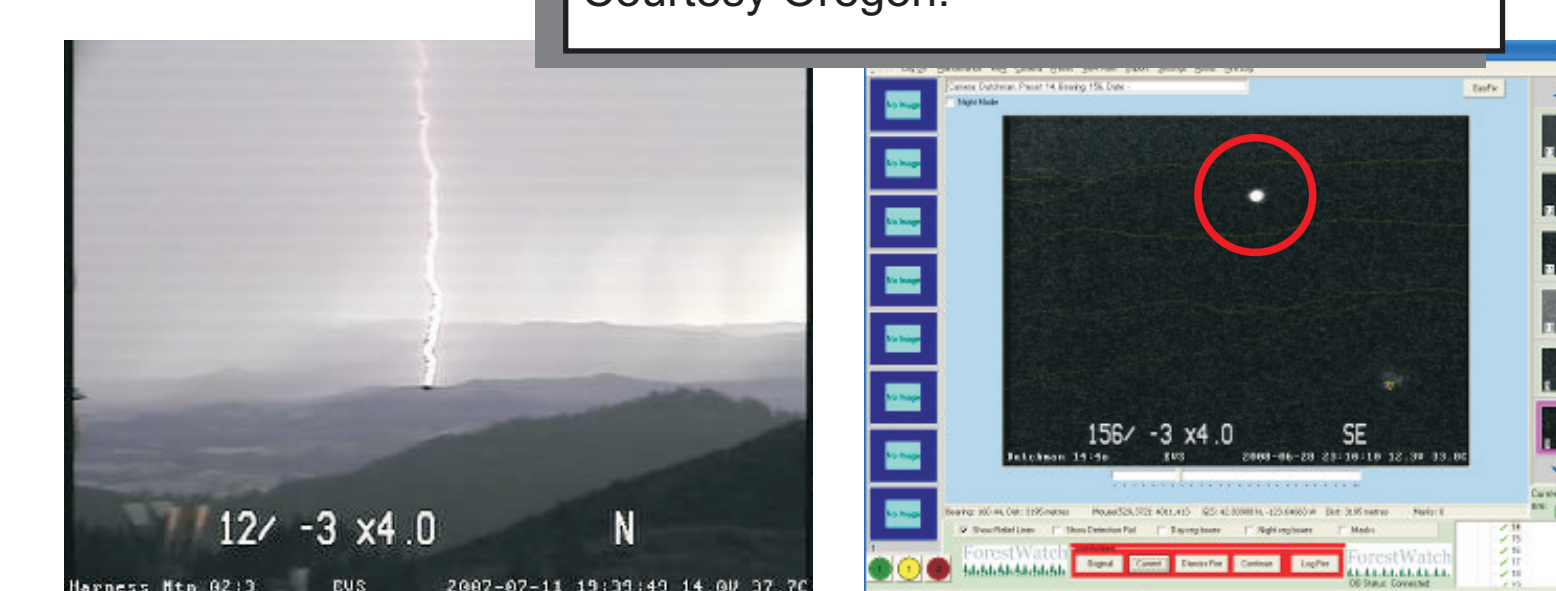
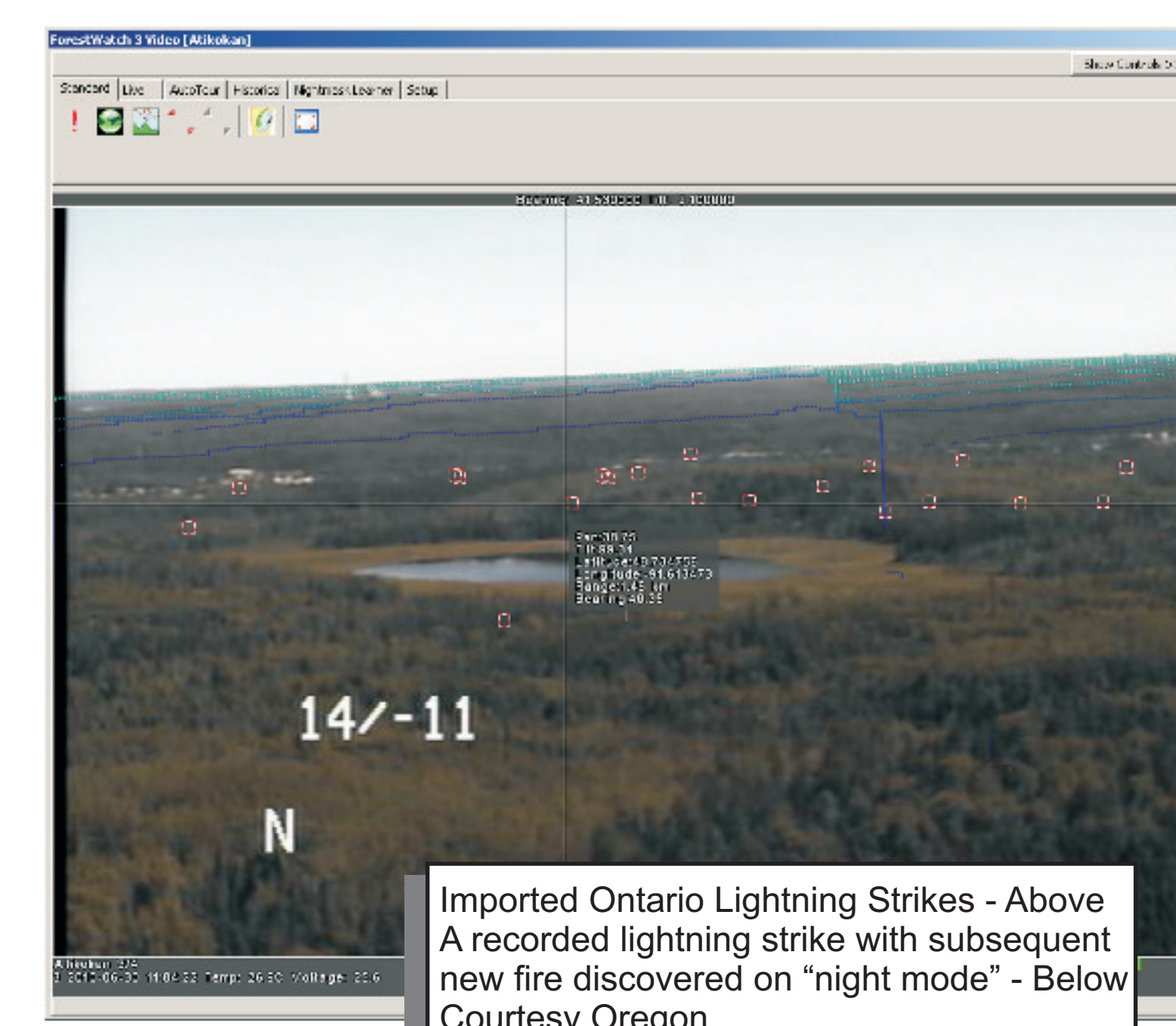
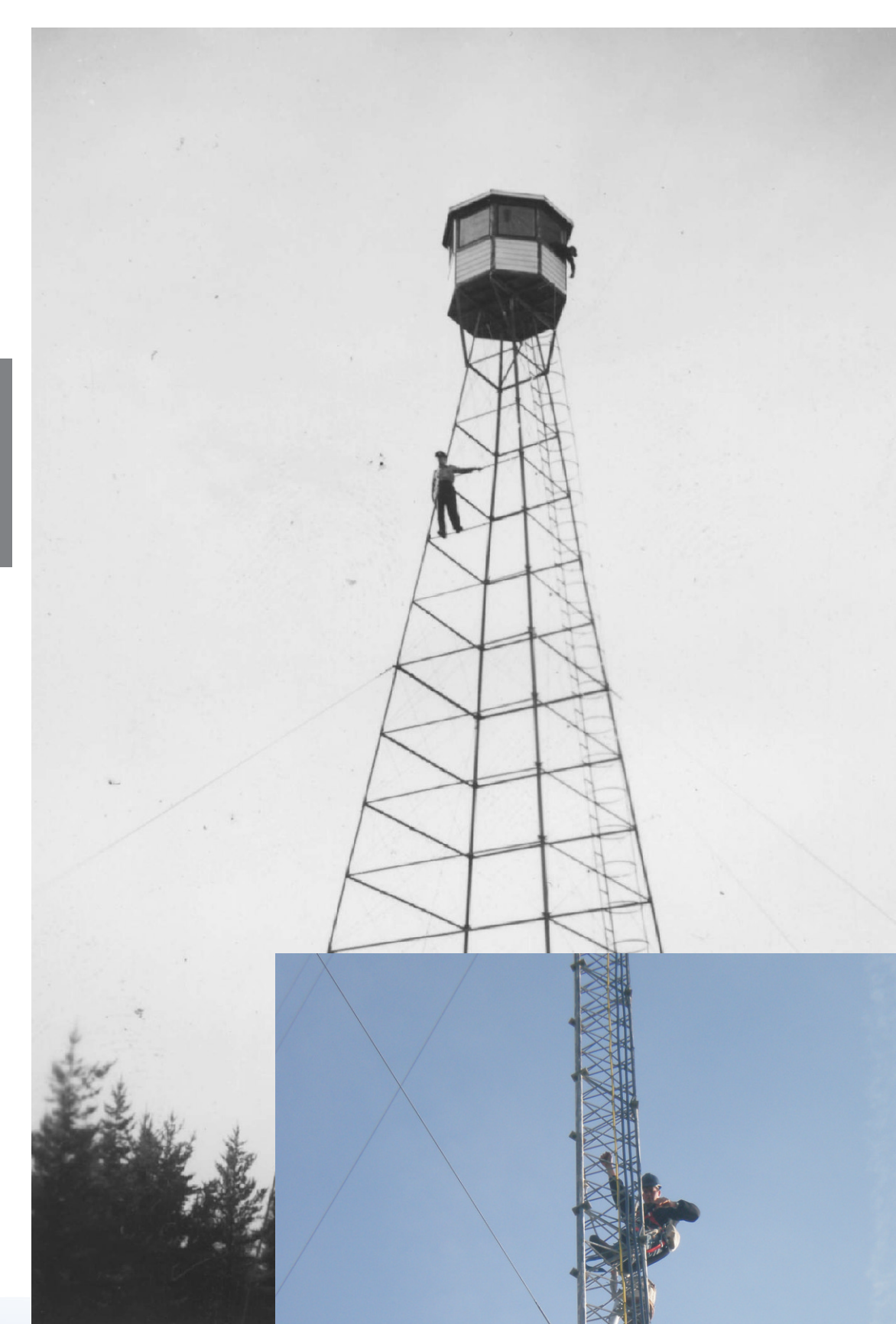
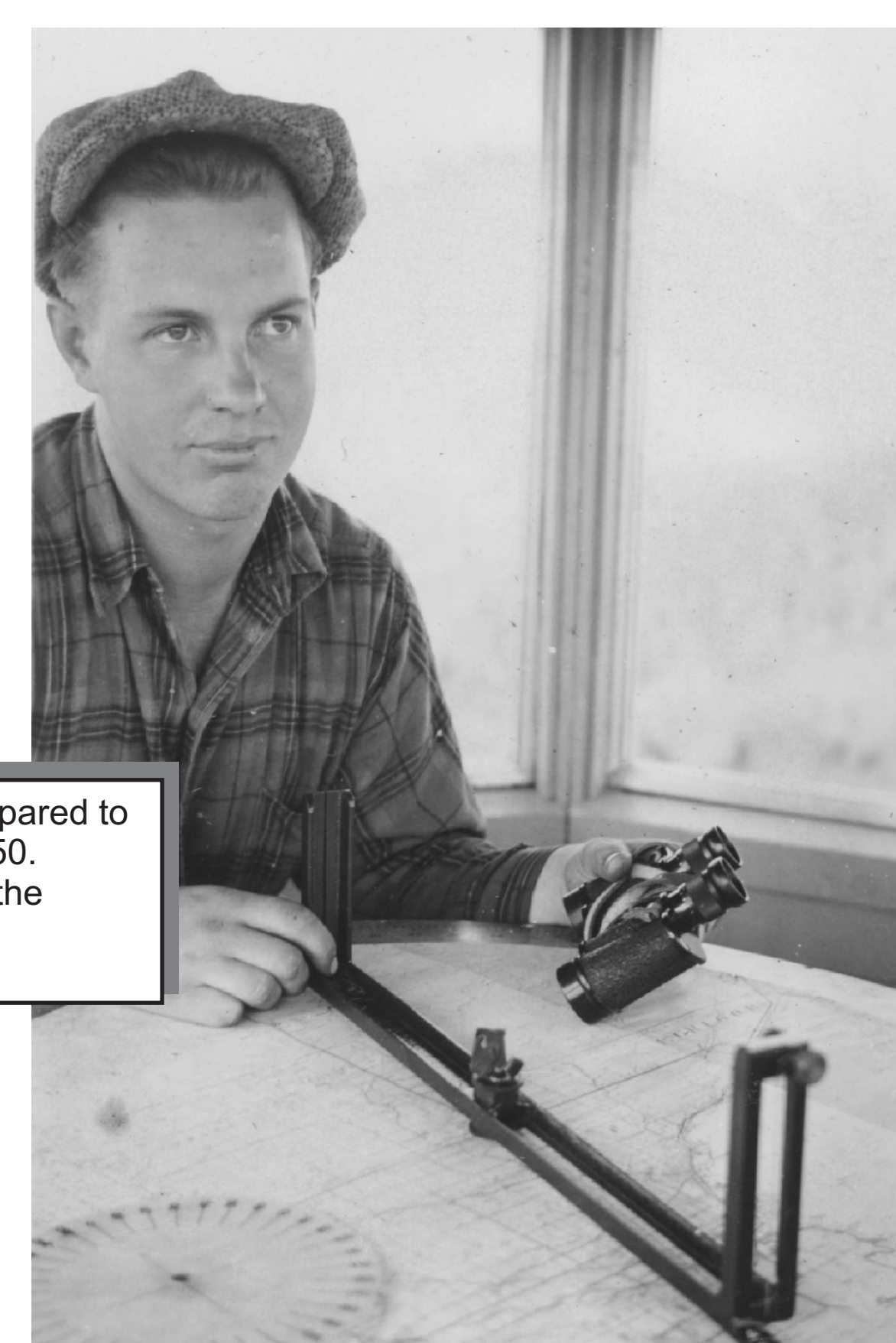
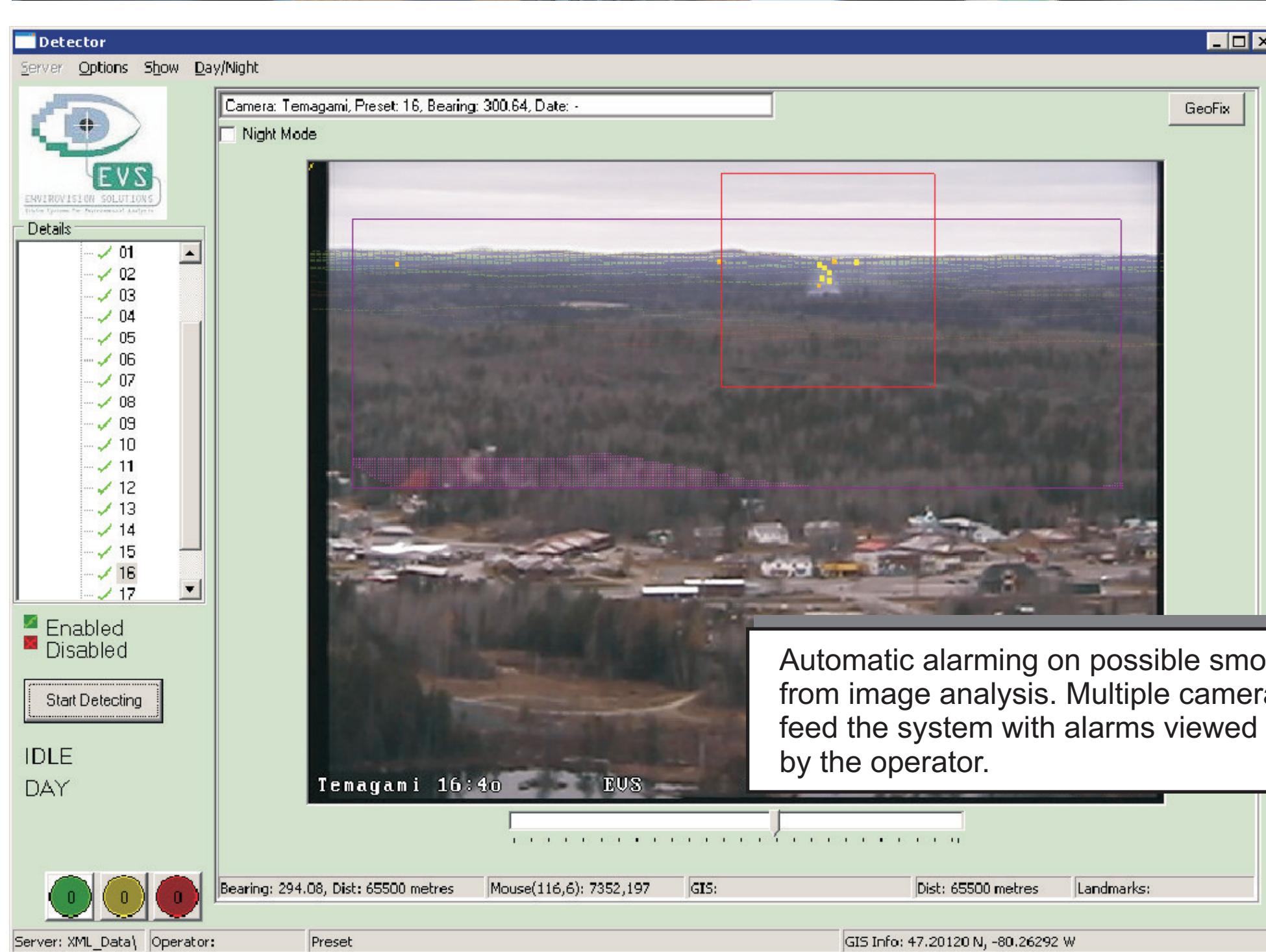
The OMNR evaluated the performance of ForestWatch through a pilot project. There are two tower locations, Atikokan and Temagami.

Sunset date - October 31 2010



FORESTWATCH II SYSTEM BASICS

- Automated alarming on smoke
- Can be Installed on any existing tower or tall structure
- Can detect a 10'x10' plume of smoke within 10km of tower
- Optimum detection range is a 19km radius, approximately 100 000 hectares
- Completes 360° scan in 18 views at 20° increments in 5 minutes
- Night time capabilities with near infrared
- One full time operator can monitor eight to sixteen cameras pending alarm rate (< 2 alarms per min)
- 1.5 GB upload per 24hrs at the tower
- 35X optical live zoom
- Recording & playback of a life cycle of a fire, 7 days of stored images.
- GIS integration capability
- Fire report export capability



Ontario Scoring Criteria

Scoring Matrix		Accuracy of fire rank		Value identification	
Accuracy of fire location		Measure	Points	Measure	Points
Measure	<1000m	Report = actual	10	All values identifiable within	Points
	1000-2000m	Report > than actual by 1 rank	8	0-1000m	10
	2000m-5000m	Report > than actual by > than 1 rank	5	0-2000m	8
	>5000m but <= 2° of camera bearing	Report < than actual by 1 rank	5	>50% values identifiable within	
	>5000m but <= 5° of camera bearing	Report < than actual by > than 1 rank	1	0-1000m	8
Accuracy of fire size		Accuracy of fuel type identification		0-2000m	5
Measure	Points	Measure	Points	Location supports values identified through maps	8
<0.5 ha	3	FBP type	2		
0.5 - 2.0 ha	2	General fuel category	1		
>2.0 ha	1				

Evaluations in Ontario - 9 simulations graded for the ability to provide quality dispatch information.

Results

Location	Rank	Values	Size	Fuel
87%	84%	86%	90%	85%

