

then processed after the aircraft has returned to base to provide the actual interpretable product.

A thermal infrared linescanner such as the one shown in Figure 16 would cost approximately \$500,000 to purchase.¹ However, a service to acquire and produce the required imagery could also be contracted from commercial remote sensing firms for about \$8,000 to \$9,000 per day.²

2.3 Radar systems

Radar, an acronym for radio detection and ranging, is an "active sensor" which transmits short pulses of microwave energy and then records the echoes received back in their order of arrival. Airborne radars are called side-looking airborne radars (SLAR). SLARs produce continuous strips of imagery of the terrain adjacent to the flight path of the aircraft (Figure 17).

There are two main types of SLAR. Real aperture, or "brute force," radars (RAR) require a physically-large antenna to achieve any reasonable amount of spatial detail in the resulting images. Synthetic aperture radars (SAR) achieve better spatial detail without having to use a large antennae by using the forward motion of the aircraft to create the effect of an antenna hundreds of metres long.

Radar systems can acquire imagery through almost any atmospheric conditions: haze, smoke, cloud cover, or even light rain and snow. The ability of imaging radars to operate under just about any weather conditions suitable for flying means that coverage at a particular time, such as to monitor a military exercise, or of areas which are perpetually cloud covered can be relied upon with more

¹ Ibid.

² Ibid.