

Table 1 describes how each of these systems could be utilized as tools in support to peacekeeping forces.

Synthetic Aperture Radar (SAR)

Imaging radar systems are unique in their capability to provide useful information under conditions when other sensors are rendered useless because of adverse weather or absence of light. Microwave radar systems are considered active sensors, in that they illuminate the terrain by a series of carefully timed microwave pulses of pre-set length. The reflection of these microwave pulses from the terrain is recorded on the aircraft. It is the reflection capabilities of specific targets on the ground that determine radar imagery characteristics.

There are two types of Side Looking Radar Systems (SLAR) commonly used for remote sensing purposes, Real Aperture Radars (RAR) and Synthetic Aperture Radars (SAR). Each system has basic differences which directly influence data quality. As the name suggests, SLAR systems operate by illuminating the terrain to the side of the aircraft, at significant stand-off ranges of 25-100 km away from the target. The earliest airborne radar surveillance systems used unfocused Side Looking Airborne Radar techniques known as Real Aperture Radars (RAR). Resolution of RAR systems are determined by the length of the antenna which transmits and receives the microwave pulses.

In RAR's the antenna length, is limited by the ability of an aircraft to support and carry it. Hence, most RAR antennas are not less than 6 m in length, limiting the overall ability of the system to resolve objects not less than 20 m in size.

Synthetic Aperture Radars (SARs) were developed to overcome the serious resolution limitations of RARs as a result of restrictive antenna lengths. By performing computations on the