

digital recording, as well as the capability to downlink a digital data stream to a ground-based receiving station. In other words, the operator on the aircraft can see immediately an image of what the SAR sees. The data can also be transmitted to a ground station or recorded on tape for further processing.

Development, Acquisition or Production, and Stockpiling

The use of synthetic radar imagery for the detection of the development, acquisition, production or stockpiling of biological weapons is constrained by the relatively poor spatial resolution of the sensor. Current SAR systems with capabilities to acquire imagery in "spotlight" mode are able to discern objects approximately one meter in size. Such features as buildings, vehicles and general storage areas could be imaged, but the operational characteristics of SARs in imaging the microwave reflective patterns of objects would make positive interpretation of objects difficult.

SAR systems could be useful in providing broad area coverage of particular sites. The detection and recognition of main transportation routes, secure perimeter fences and power lines could be accomplished using SARs. Figure 3 is a SAR image of an airbase. Note the presence of vehicles (presumably aircraft), buildings and perimeter fences in the image. In areas of concern where weather is poor, the use of SAR systems would not be preempted by clouds or darkness.

Digital SAR systems could collect imagery in real-time and downlink it electronically to a ground receiving station if immediate data were required. The oblique viewing characteristics of side looking radar (approximately 25 kilometres) would provide a stand-off position from the site of interest.