

## **VII System Operational Evaluation**

18. The new surveillance capabilities provided by this modification should then be evaluated in terms of operational performance. This type of test and evaluation would be carried out either as part of the in-flight acceptance testing or under a dedicated project (as it would normally encompass a more indepth scope than the initial flight testing for airworthiness). Detailed test procedures would be prepared for in-flight testing. For surveillance sensors, testing must be carried out under suitable conditions ie. large outdoor ranges. Targets must be designed and built for system resolution testing ie. bar targets for cameras, 4-bar thermal targets for thermal imagers, and corner reflectors for SAR. In-flight performance may vary from the in-laboratory performance and such deltas should be documented and incorporated into the aircraft operating instructions for this equipment.

## **VIII Open Skies: The Modification Process**

19. This process can be completed in minimal time provided the project priority is assigned accordingly. All steps must be followed as far as proving the design and installing the equipment since airworthiness and flight safety are the highest concerns.

20. All modifications whether minor or major must follow this process. If the sensor suite was designed as a removeable, semi-permanent package, transportable between aircraft of similar type (ie. the aircraft are wired for-but-not-with the sensors), the aircraft configuration both with and without the sensors must be tested for airworthiness. If more than one type of aircraft is to be used, the complete aircraft engineering change process must be carried out for each.

21. Once the modification has been accepted for use, any change to it would require further airworthiness testing. Such an example would be the requirement for sensor covers (it sounds trivial, but aerodynamics of the aircraft could be affected). Since these covers must be removeable from the aircraft exterior, they pose flight safety concerns ie. foreign object damage (especially for jet aircraft).