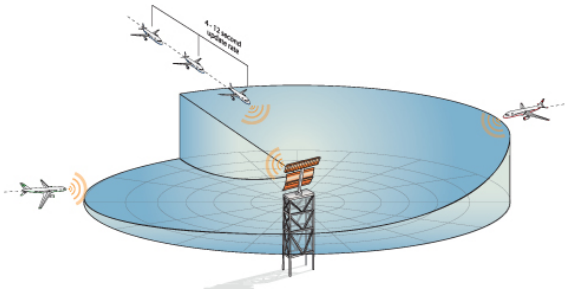
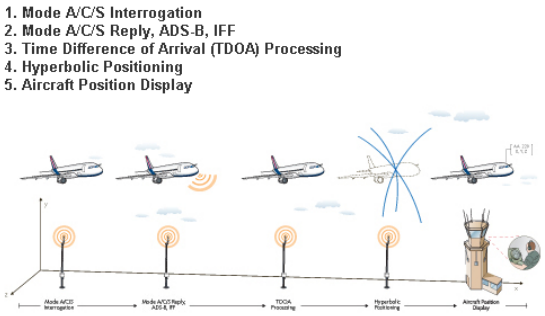
Since the 1940's, air traffic controllers have relied on radar (RAdio Detection And Ranging) for aircraft surveillance. Radar has been upgraded through the years, but is still relatively expensive and has limitations, including line-of-site only surveillance and accuracy decreases with distance. The terminal radar at Logan International Airport (BOS) is the closest to Hanscom Field (BED) and provides the best surveillance due to its proximity. While this radar has clear site lines to aircraft operating into and out of Logan, it cannot see the aircraft operating at BED nearly as well. The precision of the radar is reduced due to the distance from the Logan radar to Hanscom and the fact that the radar beam must travel over the hills in Arlington, which causes a radar shadow that limits low-level coverage in the area around BED.



Typical Airport Surveillance Radar

In order to increase the coverage and precision of the flight tracking in the areas around Logan and Hanscom for the noise and operations monitoring system (NOMS), Massport decided to install a state-of-the-art passive multilateration (MLAT) system from Exelis Inc.(Rannoch) The multilateration system listens to the radio responses from aircraft and determines the aircraft's range by using a method known as Time Difference of Arrival (TDOA). Multilateration has the added benefit of being able to capture the aircraft's unique identification code from its transmitted signal, provided the aircraft is equipped with a modern mode S transponder found on all commercial aircraft and some private aircraft. The MLAT system is more accurate than radar, provides improved coverage, and has a higher update rate, providing

one position report per second, compared to radar's one report per five seconds.




*MLAT ground stations receive replies from all transponder-equipped aircraft, including legacy radar and ADS-B avionics, and determine aircraft position based on the time difference of arrival (TDOA) of the replies.*

Passive MLAT also has some limitations. It relies on other aircraft or ground-based radars to cause the airborne aircraft to transmit, so at very low altitudes or times of reduced activity, there may not be a reliable source interrogation and the aircraft cannot be tracked by the passive sensors if it is not transmitting. Also, at least three MLAT receivers must have line-of-sight to the aircraft in order to determine its location, which can be an issue with small aircraft. Large aircraft generally have two antennae, one located on the belly of the plane and the other on top of the fuselage, through which they receive interrogations and respond. This insures that no matter what the angle of the aircraft to the ground, it can still have line-of-sight from one of its two antennae to the MLAT receivers. Smaller aircraft are equipped with only one antenna on their belly, which becomes shielded by the wings or body when the aircraft is in a tight turn, causing a temporary loss of surveillance. The MLAT surveillance will initiate again once the aircraft returns to level flight. Smaller aircraft also tend to have older mode A/C transponders, which allow the aircraft to be tracked, but do not provide identification data like Mode S transponders.

The future of aircraft tracking holds many improvements that will help provide better surveillance for the FAA and airports. By 2020, all aircraft operating in controlled airspace will be required by the FAA to

have a new tracking technology called ADS-B. This upgrade to the existing radio system allows the aircraft to determine its own location via on-board GPS and to transmit that location to the ground, once per second. The ADS-B tracking is very accurate, updates frequently, provides identification data for every aircraft, and allows tracking to the airport surface. About 10% of the aircraft operating in the US today are already equipped with ADS-B technology and the current MLAT system is already capturing this data. The FAA is currently deploying its own nationwide system to receive these ADS-B signals, which should be completed by 2014, and ADS-B will replace radar as the primary source of surveillance for air traffic control in the U.S. by 2020.

The Exelis WebScene Public Portal utilizes the same multilateration surveillance data as the Massport noise and operations monitoring system. Both historic and 15-minute delayed flight track data (the delay is for security purposes) can be displayed in the Public Portal through the WebScene interactive map. WebScene provides best available information on each flight path as well as the flight identification, if available. Despite the infrastructure in place, issues with aircraft transponders, antenna placement, and available flight plan data can limit what is shown for any given flight. The tracking and identification data provided by the passive MLAT system will continue to improve as all aircraft modernize their transponders to comply with the FAA requirement for ADS-B equipage.