

SCENARIO #5

NEW AIR TRAFFIC CONTROL (ATC) TECHNOLOGY

More efficient and precise air traffic control (ATC) technology can be used to improve capacity in bad weather and reduce aircraft separations to improve efficiency.



How It Works

How ATC Improvements Can Increase Airport Capacity

- ♦ **Reduce required aircraft separations**
 - Wake Vortex Advisory System (WVAS)
 - Airport Surface Detection Equipment (ASDE-X)
- ♦ **Increase precision of aircraft tracking**
 - Required Navigational Performance (RNP)
- ♦ **Increase precision of ATC spacing of aircraft**
 - Center-TRACON Automation System (CTAS)
- ♦ **Extend the weather envelope when procedures can be used**
 - Enhanced Simultaneous Offset Instrument Approach (SOIA)
 - Cockpit Display of Traffic Information Assisted Visual Separation (CAVS)
 - IFR Paired Approaches



ATC Technology Initiatives with Potential Capacity Benefits at All Bay Area Airports

- 2020**
 - ♦ **Center-TRACON Automation System (CTAS)**
 - Reduce approach separation variations
 - ♦ **Airport Surface Detection Equipment (ASDE-X)**
 - Enhance taxiway flows and reduce runway conflicts under non-visual conditions
 - ♦ **Required Navigational Performance (RNP)**
 - Permit more flexible and efficient arrival/departure routes. Increase departure airspace capacity.
- 2035**
 - ♦ **Cockpit Display of Traffic Information Assisted Visual Separation (CAVS)**
 - Reduce aircraft separations in non-visual conditions
 - Significantly reduce the problems caused by IFR weather today
 - ♦ **Wake Vortex Advisory System (WVAS)**
 - Reduce wake vortex separations under certain wind conditions



Advantages

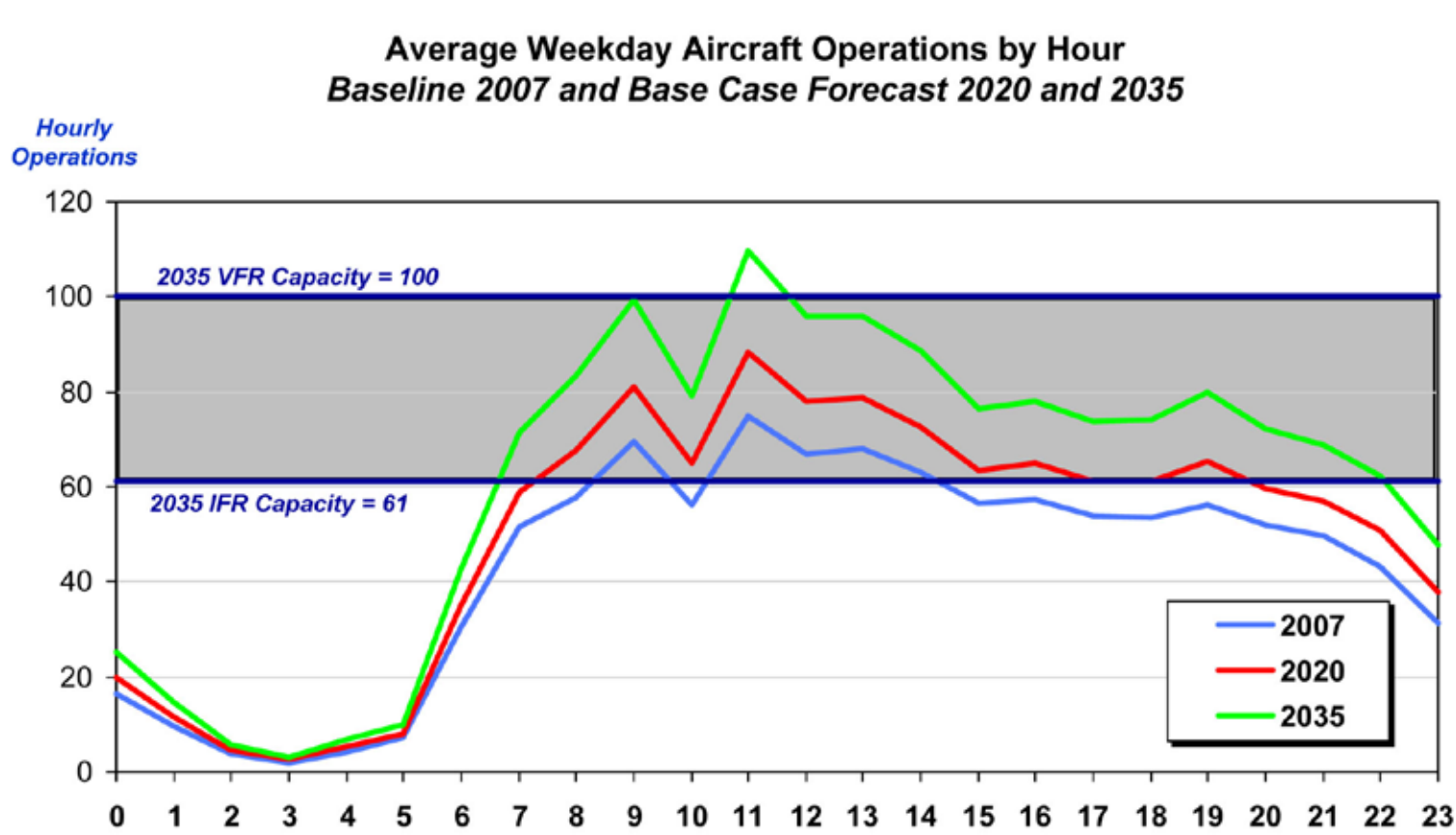
ATC Technology Initiatives with Specific Capacity Benefits at SFO and OAK

- 2020 - SFO**
 - ♦ **Enhanced Simultaneous Offset Instrument Approaches (SOIA)**
 - Reduce minimum ceiling to 1,600 ft from 2,100 ft today
 - Will enable SOIA operations to be conducted more frequently increasing arrivals during marginal weather conditions
- 2035 - SFO**
 - ♦ **Development of Paired Approach Instrument Procedures**
 - Use of Automated Dependent Surveillance – Broadcast (ADS-B) coupled to aircraft flight management systems and Cockpit Display of Traffic Information (CDTI) to allow paired approaches to continue under instrument weather conditions
- 2020 - OAK**
 - ♦ **Remove Instrument Landing System hold point on Runway 11**
 - Move ILS antenna or use RNP to reduce the existing large separations between landings and takeoffs under non-visual conditions during Southeast Plan operations
 - Should dramatically reduce the excessive delays that occur today under IFR conditions when landing from west to east



Results

SFO: Baseline and Forecast Average Weekday Operating Profile



Notes: 2007 capacities = 95 VFR and 56 IFR. 2020 capacities = 99 VFR and 61 IFR.



Benefits

- Reduce required aircraft separations
- Increase precision of aircraft tracking
- Extend the weather envelope