

# **A little history on air travel and how we got here . . .**

In the early days of aviation pilots would file a 'communications out' flight plan describing their route and time of arrival, still part of the process today. Later, radios were added along with Air Traffic Control (ATC) and the system evolved. So, pilots would file a flight plan, make position reports and these procedures allowed more aircraft in the same airspace using ATC to safely separate them. The National Airspace System, (NAS) was forming.

## **Aircraft where separated and moving safely**

Next came 'RADAR' and the NAS evolved again. ATC began to observe and control air traffic on raw RADAR scopes. Today's 'scopes' are sophisticated, full of aircraft on lines moving across the ATC scope. ATC uses this method to keep aircraft separated and moving safely.

## **Massive delays costing billions of dollars**

U.S. Air traffic doubles about every ten years, constantly filling the ATC scopes. Now add in changing weather conditions at airports and in airspace. The result is the ATC scopes are reaching capacity early and often. When this happens the Federal Aviation Administration (FAA) restricts flights by resorting to the 'Slot Administration'. For decades this method of ATC has become a mind set. Natural growth in the NAS is resulting in huge delays costing \$billions.

## **The ATC scope is crowded not the airspace**

The FAA went to Congress in 2003 with this problem and developed a plan called the 'Next Generation Air Transportation System' (NextGen). New Satellite technology is part of NextGen but ATC operates the NAS as if everyone is 'communication-out...' The NAS did not evolve with the new technology. The ATC scope is still crowded but not the airspace.

## **Transition the NAS to 'Dynamic Integrated Observation and Presence'**

The operational potential of the NAS will increase when the system evolves with today's modern satellite digital communication technology. To understand, think how you use a Smart Phone and the related interactions... Now notch it up to a communication system like the military uses like 'Link16'. What is Link16? Answer; 'standardized communications system between network participants providing multiple, simultaneous communication paths through different nets. FAA needs to move beyond 'Observation and Control'. The integration of this technology requires new procedures and training for pilots and controllers. This new process will transition the NAS to 'Dynamic Integrated Observation and Presence'.

## **Whole new markets will emerge driven by the passengers**

Dynamic Integrated Observation and Presence is a system which integrates pilots, controllers, aircraft, airports and runways. It's an integrated, comprehensive technological approach called a 'Smart System'. The Smart System integrates newly trained pilots and controllers with a higher level of interaction and operations with the new 'Smart Aircraft' and 'Smart Airports'. This level of sophisticated interaction eliminates over-crowded ATC scopes. This system also places the passenger at the top of the competitive service chain driving NAS growth while maximizing profits and service. This system lowers ticket prices and operational costs while increasing safety and security. Whole new markets will emerge driven by the passengers.

## **Unlimited growth in the NAS**

This evolution of the NAS will spread throughout the world adding trillions of dollars of growth to the US economy. This Smart Airport evolution will transform the NAS and introduce a new version of 'Smart Roads'... Smart Airports are the building blocks of a Smart System, they will unite global transportation systems and cause unimaginable levels of growth in U.S. GDP.