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GLOBAL POSITIONING SYSTEM OPENS UNLIMITED POSSIBILITIES FOR NAVIGATION

The evolution of such global concept as aviation has always involved the development of navigation systems which had to allow in a fast and stable manner to locate and navigate aircraft. It has always been a tendency for each system to possess some sort of its own advantages and disadvantages. The desire to find the system almost free from drawbacks has led to the appearance of the Global Positioning System.

The aviation community is using GPS extensively. Aviation navigators, equipped with GPS receivers, use satellites as precise reference points to trilaterate the aircraft's position anywhere on or near the earth. GPS is already providing benefits to aviation users, but relative to its potential, these benefits are just the beginning. The foreseen contributions of GPS to aviation promise to be revolutionary. GPS has proven that cooperation with other systems is also possible and can bring only benefits. Satellite navigation is being widely used by aviators worldwide to overcome many of the deficiencies in today's air traffic infrastructure. With its accurate, continuous, all-weather coverage, satellite navigation offers an initial navigation service that satisfies many user requirements worldwide. ICAO doc 9849 Global Navigation Satellite System (GNSS) describes the concepts of operation that uses the core satellite constellations and augmentation systems. It includes a basic explanation of satellite navigation technology including satellite systems, augmentations and avionics. Finally, it outlines future prospects for the evolution of GNSS. It should also be mentioned that GPS is not framed only by the aviation use, it can also be implemented in ground navigation, what is more, due to the absence of checking points in seas, GPS appears to be a valuable marine tool. We have to face the fact that a lot of what we, as people involved in aviation, are used to working with these days (VOR, DME, ADF etc.) will literally 'vanish'. They all should be replaced sooner or later to meet changing needs.

The implementation of this technology in a country or region provides the following benefits to aviation and user-preferred transportation:

- Enhanced safety of flight throughout the region
- Seamless navigation service based on a standardized navigation service and common avionics
- More efficient, optimized, flexible, route structures
- Increased system capacity
- Reduced separation minimums resulting in increased capacity and capabilities

For the above mentioned reasons, with air travel expanding throughout the 21st century, GPS can provide a cornerstone of the future air traffic management system that will maintain high levels of safety, while reducing delays and airway capacity.

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