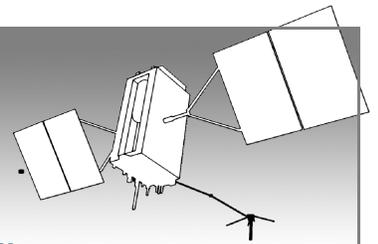


# GPS

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Information for Policymakers from the National Coordination Office  
for Space-Based Positioning, Navigation, and Timing (PNT)

June 2010

## NextGen Plan Requires Satellite Navigation Equipage for All Aircraft by 2020



On May 26, FAA announced its performance requirements for aircraft tracking equipment that will be required under NextGen. Known as “ADS-B,” the new technology uses GPS signals along with aircraft avionics to transmit the aircraft’s location to ground receivers, which re-transmit that information to controllers and pilots. ADS-B allows pilots

to see what controllers see: other aircraft in the sky around them. Pilots can also see and avoid bad weather and terrain, and receive flight information such as temporary flight restrictions. Airlines, private jet operators, and other aircraft owners are now obligated to equip all planes with ADS-B by January 2020. To learn more, visit <http://www.faa.gov/news/updates/?newsId=60877>.

## SASC Requests \$10M Study of Mini-GPS Satellites

In their fiscal year 2011 defense authorization bill (S. 3454), the Senate Armed Services Committee recommended that \$10 million go toward studying the use of “mini-GPS satellites” to augment the GPS constellation. The authorizers believe a mix of 24 GPS satellites and 6 or more small satellites could provide additional coverage in areas where it is difficult to acquire a GPS signal, such as urban and mountainous areas. The mini-GPS approach is consistent with ideas advocated by the National Space-Based PNT Advisory Board, which has proposed simplified satellites with all fundamental GPS capabilities but without the size, weight, and power use of additional payloads. S. 3454 awaits floor consideration. To learn more, visit <http://pnt.gov/policy/legislation/funding/2011.shtml>.

## SASC Pushes for Military GPS Equipment Upgrades

The Senate Armed Services Committee included a provision in their defense bill (S. 3454) prohibiting the Department of Defense from purchasing GPS user equipment after 2017 unless it is capable of receiving the new military signal known as M Code. The new signal greatly improves war fighting capabilities by providing a more robust and secure navigation service to U.S. and Allied forces. The restriction does not apply to items such as cars and other commercial vehicles that come equipped with GPS.

## Application Spotlight: Mining

*GPS has become an essential tool in the U.S. mining industry. The technology offers valuable tools for material identification, mine planning, engineering, surveying, mineral grade control, and production monitoring.*

*Machine guidance systems combine GPS with machine-mounted components, wireless communications, and software to give operators real-time productivity information. This maximizes the efficiency of the machines. For example, high precision GPS guidance is used to ensure accurate and efficient drilling, contributing to increased production and reducing wear on expensive machinery.*



*GPS also helps make mining sites safer. Operators of earth-movers and other heavy equipment rely on GPS-enabled proximity warning systems to inform them of nearby equipment and obstacles when navigating busy sites. Moreover, mining companies use GPS to help track and direct all on-site assets, greatly reducing accidents.*



SPACE-BASED POSITIONING  
NAVIGATION & TIMING  
NATIONAL COORDINATION OFFICE

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