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INCREASING CIVIL CAPABILITIES IN THE MODERNIZED GPS ERA

Abstract

Since the launch of its first satellite over thirty years ago, the Global Positioning System has transformed the use of satellite navigation and precise timing for all users worldwide. While GPS is designed, built and deployed by the US Department of Defense, the role of civil users in both sustaining and modernizing GPS capabilities should not be underestimated. The dual-use nature of GPS – military and civil – has enabled three decades of sustained stable funding, helping to ensure that existing capabilities are maintained and new capabilities are developed for all users. The US Department of Defense places great importance in the role of civil users and agencies in GPS, as evidenced by the semi-annual PNT Executive Committee forum, which is co-chaired by the Deputy Secretary of Defense and the Deputy Secretary of Transportation. In addition, the US Department of Defense, through the US Air Force, has actively reached out to civil and commercial interests through its Interface Control Working Group process. The US Air Force has also published its commitments to civil users in its Standard Position Service Performance Standard, which establishes the standard for other emerging Global Navigation Satellite Systems.

The ongoing GPS modernization effort will actually deliver as many new capabilities for civil users as for our military users. The US Government has added three modernized signals to GPS specifically for civil users. The GPS constellation has already begun to transmit two of those modernized civil signals, L2C and L5, and will transmit the third signal, L1C, beginning with the first GPS IIIA satellite. This paper will outline some of the many efforts GPS has undertaken over the years to reach out to civil users, and also describe how the features of these modernized GPS signals will usher in a new era of improved civil performance.