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RESEARCH ON INTEROPERABILITY FEATURES OF SATELLITE-BASED AUGMENTATION SYSTEM

Abstract

As the emerging of navigation satellite systems and developing of positioning and timing technology, the positioning accuracy of navigation satellite system has been continously improved as core competiviveness. Some high-accuracy users, especially aeronautic users, have put forward higher requirement to GNSS integrity. Therefore, Satellite-based Augmentation System (SBAS) emerges as the times require. What's more, the seamless connection between different SBAS attracts more and more attention.

On the basis of SBAS architecture and technical feature analysis at home and abroad. The paper researched on SBAS interoperability and its key techniques from three aspects: frequency selection, navigation message design , and ranging code performance.

At current, Beidou navigation satellite system is experimenting to propagate four kinks of differential corrections: satellite clock correction, satellite trajectory connection, grid ionospheric correction and regionalization comprehensive correction. Then, the positioning accuracy can be improved further, laying a foundation for Beidou Satellite-based Augmention System (BDSBAS). Therefore, the paper also preliminarily designed the interoperability message for BDSBAS according to the RTCA standard, and put forward some constructive suggestions for the BDSBAS development.