

## **Augmentation of Automatic Selective Door Operation systems with UWB positioning**

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**Abstract :** Automatic Selective Door Operation (ASDO) systems are increasingly used in railways to provide Correct Side Door Enable (CSDE) protection as well as to protect passenger doors opening off the platform where the train is longer than the platform, or in overshoot or undershoot scenarios. Such ASDO systems typically utilise trackside-installed RFID beacons, such as Eurobalises for odometry positioning purposes. Installing such trackside infrastructure may not be desirable or possible due to various factors such as conflict with existing infrastructure, potential damage from track tamping and jurisdiction constraints. Ultra-wideband (UWB) positioning technology could enable ASDO positioning requirements to be met without requiring installation of equipment directly on track since UWB technology can be installed on adjacent infrastructure such as on platforms. This paper will explore the feasibility of upgrading existing ASDO systems with UWB positioning technology, the feasibility of retrofitting UWB-enabled ASDO systems onto unfitted trains, and any other considerations relating to the use of UWB positioning for ASDO applications.

**Keywords :** UWB, ASDO, automatic selective door operations, CSDE, correct side door enable

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