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To further improve the capacity on the European railway network, next-generation distance-to-go signalling systems are being developed in the context of the European Train Control System (ETCS). This paper investigates the impact of track discretisation granularity on conflict detection and resolution for ETCS with onboard train integrity monitoring. The study enhances a previously developed model for fixed-block distance-to-go signalling introducing a track discretisation procedure and reformulating safe train separation constraints at switches. The assessment is performed on a junction and a corridor case study, using track discretisations with maximum section lengths from 50 to 800 metres. Though finer discretisations potentially improve the model objective, computation times quickly increase. While the results show minimum effects of the track discretisation on the conflict detection and resolution, they suggest that maximum section lengths of 200 or 400 metres may offer a good balance between solution quality and computation complexity, depending on the track layout and traffic density.