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**Title**    *Ray Propagation Modeling inside Aircraft Cabin with Multiple Sources and Receivers: Application towards WELS*

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**Abstract**

*Wireless Emergency Lighting System (WELS) is an important airplane safety equipment. In this document, high-frequency ray-tracing technique has been employed to analyze the radio-frequency (RF) environment in the presence of WELS. Towards this, multiple sources and receiving points are considered and the ray tracing is carried out for ray-path data generation. A generic passenger aircraft in-cabin is modeled by an end-capped elliptical cylinder, and the ray casting is done within the closed cavity for simulation. Four transmitters and five receivers are placed inside the aircraft cabin w.r.t. the WELS modeling arrangement. The cumulative ray-path details are generated for RF field computation. The ray tracing is visualized both in Matlab and Boeing AGPS.*