Development of a Simulation Software to Calculate Fluctuations of Strength of Radio Disturbance Wave Emitted from Railway Systems to Railway Side

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Measuring methods and emission limits for radio disturbance wave emitted from railway systems have been already established by International Electro-technical Committee (IEC). To evaluate effects of countermeasures to keep the strength of emitted radio disturbance wave within the allowable limits defined by the IEC standards, or, to know characteristics of the radiated emissions, we cannot help carrying out field measuring tests which need so much time and costs. Then, to reduce these time and costs, our institute has carried out a study to establish a method to calculate the strength of the radiated emissions from the railway systems since 2005. One basic method to calculate trends of fluctuations of the strength of the radiated emissions from a running vehicle had been worked out in 2007. We have continued the study on this matter since then, and a detailed railway antenna model has been proposed and a simulation tool for the detailed model has been developed. This paper outlines the detailed railway antenna model and the simulation tool developed by applying Richmond Moment Method. Moreover, this paper presents a future plan for further development of the method.