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The notions of risk and safety are closely connected, especially in the railway system context. The concept of European railway system safety whose essential element is risk and its analysis is presented in the paper. The development and improvement of safety on the railways has been described taking into consideration common assessment methods, common requirements and common safety factors. The assumptions and significance of the Safety Management System (SMS) has been outlined. Particular elements of this system have been shown as their correct functioning contributes to maintaining safety on the appropriate level by infrastructure managers and railway operators. Problems referring to the introduction of changes into the railway system and analysis of connected risk have been presented. Assessment criteria of the significance of the change have been identified. New solutions have been proposed as tools to support the implementation of the risk analysis process.

Keywords: safety, risk, risk management, change