

# Markov-Based Reliability Assessment for Ropeway Control Systems

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## ABSTRACT

A ropeway system is combined of several sub-systems generally known as the ropeway control system. The control system ensures the safe and efficient transportation of passengers or cargo. It employs a number of components and sensors to keep track of and supervise the movement of the cabins. Reliability analysis is therefore essential to guaranteeing the ropeway system's continuous and reliable operation. Operators can lower the risk of unplanned breakdowns by making educated judgements regarding maintenance plans based on their awareness of the reliability of both the system and its individual components. In this paper, the reliability issues of a ropeway control system are analyzed and solved by the application of an analytical reliability model. To evaluate the system's reliability, the authors have created a mathematical framework based on the Markov model. This entails identifying the system's states, transition probabilities, and the mathematical equations which govern the system's behaviour.

**Keywords:** Reliability; Availability; Markov Model

## How to Cite

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