

应急通信中基于ANP的WSN可生存性评价指标体系研究

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摘要：

建立科学合理的可生存性评价指标体系，可以有效评价和验证应急通信中无线传感网（WSN）的可生存性，进而采取必要措施增强其可生存能力。首先，筛选出应急通信中无线传感网的可生存性评价指标集，并建立基于网络分析法（ANP）的评价模型框架。然后，通过网络分析法（ANP）确定相应指标的权重并建立生存性指标体系。最后，利用该指标体系对采用SRPC协议和RLEACH协议的WSN可生存性进行综合评价。分析和验证结果表明，提出的指标体系可以客观有效地评价WSN的可生存性。

关键词：应急通信；无线传感网；可生存性；指标体系；网络分析法

Research on Survivability Evaluation Index System Based on ANP for Wireless Sensor Network in Emergency Communications

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Abstract:

Establishing scientific and rational evaluation index system can evaluate and validate the survivability of WSN in emergency communications, and then necessary measures can be taken to enhance its survivability. First, the survivability of evaluation index set in emergency communications is screened, and the evaluation model frame based on ANP is established. And then, the index weight is determined and the survivability index system is established by the analytic network process. At last, the WSN used SRPC protocol and RLEACH protocol is synthetically evaluated by it. Analysis and validation results showed that, the index system can evaluate the survivability of WSN synthetically and efficiently.

Keywords: Emergency Communications; Wireless Sensor Network; Survivability; Index System; Analytic Network Process

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