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5. Conclusion

In this paper we present the design, implementation and preliminary experimental evaluation of a wireless monitoring system deployed in an underground metro station. The focus is on the description of the developed energy-efficient communication and duty-cycle protocols, whereas a deep analysis of the system performance is out of the scope of this paper. The experimental evaluation shows that wireless communication and routing decisions are influenced by the dynamics of the station, e.g. passengers and trains, exhibiting higher packet loss and usage of more alternative paths when the station is operating. A deeper analysis of the system performance evaluation can surely provide a more complete understanding of characteristics, issues and potentiality of real deployments. Hence, we are now investigating more intensively on the routing approach, especially in terms of packet loss, adaptation to changing conditions and influence of other external factors. As a future work, we would like to improve the routing scheme by including additional metrics in path computation while keeping complexity and overhead low.

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