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## Heterogeneous Wireless Sensor Networks Enabled Situational Awareness Enhancement for Armed Forces Operating in an Urban Environment

### Tytuł

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**Abstract:** Situational awareness of armed forces acting in an urban environment is a key factor determining the success of military operations. In 2021 the European Defence Agency established the project on Wireless Sensor Networks for Urban Local Areas Surveillance. The main goal of the project is to assess how the situational awareness in an urban environment can be enhanced with the application of heterogeneous, autonomous and reconfigurable sensors. The paper presents a novel comprehensive approach that takes into account modelling and management of heterogeneous sensors, energy harvesting techniques, planning and management of the communication backbone, network security for data transfer and authorization for secure information exchange. The architecture of the system and the information flow are presented. The topology aspects are discussed and the sensing part is described. The paper finally highlights new essential enhancements of C2 with particular emphasis on mission planning, data fusion and

threat prediction.

Keywords: [situational awareness](#), [wireless sensor networks](#), [communications management](#), [military operation in urban terrain](#)

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