A Survey of Coverage Issues in UAV networks

Zhijia Li *, Yonghang Yan **, Xuewen Xia *, Lun Xia*, Dan Meng*, Chen Chen*

*School of Computer Science and Information Engineering, Henan University, KaiFeng, China **School of Computer Science and Information Engineering, Henan University, KaiFeng, China, **corresponding author

lizhijialzj@gmail.com, yanyonghang@henu.edu.cn,xiaxuewena@gmail.com, x1786254792@gmail.com, mengdantxt@gmail.com, littletomchenchen@gmail.com

Abstract—UAVs have been widely applied in military, public and civil applications based on their main characteristics of small volume, muscular mobility, flexibility, adaptive altitude and low communication overhead. One of the most active areas of research in UAV networks is that of area coverage problem, which is usually defined as a problem of how well the UAV networks can monitor the given space and how well the UAVs are inside a network can cooperate with each other. In this paper, we take a representative survey of the current work that has been done about this problem and made a general review of the coverage problems of UAVs so that we can give some inspiration to related researchers.

Keyword—UAV network, Area coverage, Airborne base stations, Cooperation, FANET



Zhijia Li, born in 1998, graduate student of computer technology, School of computer science and information engineering, Henan University, from 2020 to 2023, the main research directions include mobile ad hoc network, UAV network



Yonghang Yan, born in 1981, Ph.D., is an associate professor at Henan University. His research interests include Internet Architecture, Mobile Ad hoc Networks, Cybersecurity, Internet of Things, Blockchain.



Xuewen Xia, born in 1998, graduate student of computer technology, School of computer science and information engineering, Henan University, from 2020 to 2023, the main research directions include UAV network, wireless sensor networks.



Lun Xia, born in 1996, graduate student of computer technology, School of computer science and information engineering, Henan University, from 2019 to 2022, the main research directions include mobile ad hoc networks, wireless sensor networks.



Dan Meng, born in 1995, graduate student of computer technology, School of computer science and information engineering, Henan University, from 2019 to 2022, the main research directions include mobile ad hoc networks, wireless sensor networks.



Chen Chen, born in 1997, graduate student of computer technology, School of computer science and information engineering, Henan University, from 2021 to 2024, the main research directions include mobile ad hoc network, UAV network, wireless sensor networks.