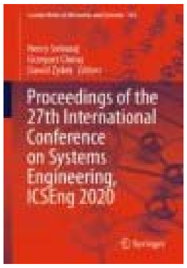

International Conference On Systems Engineering
ICSEng 2020: **Proceedings of the 27th International Conference on Systems Engineering, ICSEng 2020** pp 34–48Cite as

A Prototype Telepresence Robot for Use in the Investigation of Ebola and Lassa Virus Threatened Villages in Nigeria

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- Conference paper
- First Online: 07 January 2021

Part of the Lecture Notes in Networks and Systems book series (LNNS,volume 182)

Abstract

The article investigates the idea of low-cost, telepresence-based mobile robots for eventual use within villages and rural areas in Nigeria, where diseases such as the Ebola Virus Disease (EVD) and Lassa Haemorrhagic Fever (LHF) are common, yet human intervention is constrained due to the great risk of transmission through bodily fluids. To illustrate the concept and practical issues arising, a systems design approach is taken to identify some of the engineering requirements; and, in the focus of this article, a prototype has been developed at Lancaster University. The robotic device is semi-humanoid in that the upper half features two 7-DOF manipulators, designed in part to resemble human operation, while the lower half consists of a four-wheeled base, prioritising ease of operation and reliability over the flexibility offered by a leg-based system.

Keywords

- **Telepresence**
- **First-Person Viewer**
- **Kinect**
- **Unsafe environment**
- **Ebola**

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Acknowledgements

This work is supported in the UK by the EPSRC project EP/R02572X/1.

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Cite this paper

Monk, S.D. *et al.* (2021). A Prototype Telepresence Robot for Use in the Investigation of Ebola and Lassa Virus Threatened Villages in Nigeria. In: Selvaraj, H., Chmaj, G., Zydek, D. (eds) Proceedings of the 27th International Conference on Systems Engineering, ICSEng 2020. ICSEng 2020. Lecture Notes in Networks and Systems, vol 182. Springer, Cham. https://doi.org/10.1007/978-3-030-65796-3_4

Download citation

- .RIS
- .ENW
- .BIB

- DOIhttps://doi.org/10.1007/978-3-030-65796-3_4
- Published07 January 2021
- Publisher NameSpringer, Cham
- Print ISBN978-3-030-65795-6
- Online ISBN978-3-030-65796-3

- eBook PackagesIntelligent Technologies and RoboticsIntelligent Technologies and Robotics (R0)