VI. DATA AND COMPUTER PROGRAM AVAILABILITY

The resource link for code and data from this research is accessible on the following internet address https://github.com/wianoski/geolocation-using-rssi-with-Trilateration-and-kalman-filter.

ACKNOWLEDGMENT

Thank you to the Internet of Things Studio, Telkom University which has become a place for researchers to develop this journal research. Hopefully, this research can make a major contribution to the advancement of technology in Indonesia

REFERENCES

- U. Raza, P. Kulkarni and M. Sooriyabandara, (2017), "Low Power Wide Area Networks: An Overview," in IEEE Communications Surveys & Tutorials, vol. 19, no. 2, pp. 855-873.
- D. Croce, M. Gucciardo, S. Mangione, G. Santaromita and I. Tinnirello, (2018), "Impact of LoRa Imperfect Orthogonality: Analysis of Link-Level Performance," in IEEE Communications Letters, vol. 22, no. 4, pp. 796-799.
- I. W. K. Bima, V. Suryani, and A. A. Wardana,(2020), "A Performance Analysis of General Packet Radio Service (GPRS) and Narrowband Internet of Things (NB-IoT) in Indonesia," Kinetik: Game Technology, Information System, Computer Network, Computing, Electronics, and Control, vol. 5, no. 1.
- R. Oliveira, L. Guardalben and S. Sargento, (2017), "Long range communications in urban and rural environments," 2017 IEEE Symposium on Computers and Communications (ISCC), Heraklion,pp. 810-817
- H. Lee and K. Ke,(2018), "Monitoring of Large-Area IoT Sensors Using a LoRa Wireless Mesh Network System: Design and Evaluation," in IEEE Transactions on Instrumentation and Measurement, vol. 67, no. 9, pp. 2177-2187.
- M. Turmudzi, A. Rakhmatsyah and A. A. Wardana, (2019),"Analysis of Spreading Factor Variations on LoRa in Rural Areas," 2019 International Conference on ICT for Smart Society (ICISS), Bandung, Indonesia, pp. 1-4.
- L. J. V. Uffelen, B. M. Howe, E. Nosal, G. S. Carter, P. F. Worcester and M. A. Dzieciuch, (2016), "Localization and Subsurface Position Error Estimation of Gliders Using Broadband Acoustic Signals at Long Range," in IEEE Journal of Oceanic Engineering, vol. 41, no. 3, pp. 501-508.
- K. Lam, C. Cheung and W. Lee, (2017), "LoRa-based localization systems for noisy outdoor environment," 2017 IEEE 13th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Rome, pp. 278-284.
- B. C. Fargas and M. N. Petersen, (2017), "GPS-free geolocation using LoRa in low-power WANs," 2017 Global Internet of Things Summit (GIoTS), Geneva, pp. 1-6.
- G. A. Naik, M. P. Khedekar, M. Krishnamoorthy, S. D. Patil and R. N. Deshmukh, (2012), "Comparison of RSSI techniques in Wireless Indoor Geolocation," 2012 NATIONAL CONFERENCE ON COMPUTING AND COMMUNICATION SYSTEMS, Durgapur, pp. 1-5.

- É. Morin, M. Maman, R. Guizzetti and A. Duda, (2017), "Comparison of the Device Lifetime in Wireless Networks for the Internet of Things," in IEEE Access, vol. 5, pp. 7097-7114.
- K. Lam, C. Cheung and W. Lee, (2018), "New RSSI-Based LoRa Localization Algorithms for Very Noisy Outdoor Environment," 2018 IEEE 42nd Annual Computer Software and Applications Conference (COMPSAC), Tokyo, pp. 794-799.
- M. Md. Din, N. Jamil and N. F. Nik Ahmad Aziz, (2018), "Adopting Centroid and Amended Trilateration for better accuracy of range-based non-GPS localization," 2018 4th International Conference on Computer and Information Sciences (ICCOINS), Kuala Lumpur, pp. 1-6.
- N. A. Azmi, S. Samsul, Y. Yamada, M. F. Mohd Yakub, M. I. Mohd Ismail and R. A. Dziyauddin, (2018), "A Survey of Localization using RSSI and TDoA Techniques in Wireless Sensor Network: System Architecture," 2018 2nd International Conference on Telematics and Future Generation Networks (TAFGEN), Kuching, pp. 131-136.
- L. Yi, L. Tao and S. Jun,(2017), "RSSI localization method for mine underground based on RSSI hybrid filtering algorithm," 2017 IEEE 9th International Conference on Communication Software and Networks (ICCSN), Guangzhou, pp. 327-332.
- A. Mackey and P. Spachos, (2019), "LoRa-based Localization System for Emergency Services in GPS-less Environments," IEEE INFOCOM 2019 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS), Paris, France, pp. 939-944.
- Goldoni, E, Prando, L, Vizziello, A, Savazzi, P, Gamba, P. (2019), "Experimental data set analysis of RSSI-based indoor and outdoor localization in LoRa networks". Internet Technology Letters 2019.
- K. Lee, A. Oka, E. Pollakis and L. Lampe, (2010),"A comparison between Unscented Kalman Filtering and particle filtering for RSSI-based tracking," 2010 7th Workshop on Positioning, Navigation and Communication, Dresden, pp. 157-163.
- W. Bulten, A. C. V. Rossum and W. F. G. Haselager, (2016), "Human SLAM, Indoor Localisation of Devices and Users," 2016 IEEE First International Conference on Internet-of-Things Design and Implementation (IoTDI), Berlin, pp. 211-222.
- G. Li, E. Geng, Z. Ye, Y. Xu, J. Lin, and Y. Pang, (2018), "Indoor Positioning Algorithm Based on the Improved RSSI Distance Model," Sensors, vol. 18, no. 9, p. 2820.
- M. E. Rusli, M. Ali, N. Jamil and M. M. Din, "An Improved Indoor Positioning Algorithm Based on RSSI-Trilateration Technique for Internet of Things (IOT)," 2016 International Conference on Computer and Communication Engineering (ICCCE), Kuala Lumpur, 2016, pp. 72-77.
- A. Awad, T. Frunzke and F. Dressler, (2007),"Adaptive Distance Estimation and Localization in WSN using RSSI Measures," 10th Euromicro Conference on Digital System Design Architectures, Methods and Tools (DSD 2007), Lubeck, pp. 471-478.
- Gerdan, George & Deakin, Rod. (1999). Transforming cartesian coordinates X, Y, Z to geographical coordinates ?, ?, h. Australian Surveyor. 44.
- Jinze Du, Jean-François Diouris, Yide Wang. (2017). A RSSI based parameter tracking strategy for constrained position localization. EURASIP Journal on Advances in Signal Processing, SpringerOpen, 77 (1), pp.JSIG-D-17-00215R1. ff10.1186/s13634-017-0512-xff. ffhal-01626027f