## **REFERENCES**

- [1] D. Davcev, K. Mitreski, S. Trajkovic, V. Nikolovski and N. Kotel, "lot agriculture system based on Lora WAN," 2018 14th IEEE International Workshop on Factory Communication Systems (WFCS), imperia, 2018, pp. 1-4, Doi: 10.1109/WFCS20I8.8402368
- [2] Santosh Kumar and Uday Kumar R.Y, "Development of WSN system for precision agriculture," in 2015 International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS), Mar. 2015, pp. 1–5, Doi: 10.1109/ICIIECS.2015.7192904.
- [3] A. Lavric and V Popa, "Internet of Things and LoRa™ Low-Power Wide-Area Networks: A survey," 2017 International Symposium on Signals, Circuits and Systems (ISSCS), Iasi, 2017, pp. 1-5, Doi: 10.1 I 09/ISSCS.2017.80349 I5.
- [4] S. C. Gaddam and M K. Rai, "A Comparative Study on Various LPWAN and Cellular Communication Technologies for IoT Based Smart Applications," 2018 International Conference on Emerging Trends and Innovations in Engineering and Technological Research (ICETIETR), Ernakulam, 2018, pp. 1-8.doi: 10.1109/ICETIETR.2018.8529060.
- [5] M Saari, A. M bin Baharudin, P. Si/Iberg, S. Hyrynsalmi and W Yan, "LoRa -A sullley of recent research trends," 2018 41st International Convention on Information and Communication Technology, Electronics and Microelectronics (Opatija, 2018, pp. 0872-0877, Doi: 10.23919/MJPRO.2018.8400161.
- [6] C Bouras, A. Gkamas, V Kokkinos, and N. Papachristos, "Using LoRa Technology for lot Monitoring Systems," 2019 10th International Conference on Networks of the Future (NoF), Rome, Italy, 2019, pp. 134-137, Doi: 10.1109/NoF47743.2019.9014994.
- [7] Hanggoro, M. A. Putra, R. Reynaldo, and R. F. Sari, "Greenhouse monitoring and controlling using Android mobile application," in 2013 International Conference on QiR, Jun. 2013, pp. 79–85, Doi: 10.1109/QiR.2013.6632541.

- [8] P. Gangurde and M. Bhende, "A Novel Approach for Precision Agriculture Using Wireless Sensor Network," p. 8, 2015
- [9] I. Sacaleanu, R. Popescu, I. P. Manciu, and L. A. Perisoara, "Data Compression in Wireless Sensor Nodes with LoRa," in 2018 10th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), Jun. 2018, pp. 1–4, Doi: 10.1109/ECAI.2018.8679003.
- [10] Francesco Gregoretti and Maksudjon Usmonov "Design and implementation of a LoRa based wireless control for drip irrigation systems" IEEE explore, February 2018
- [11] Wenjo Zhao, Shengwie Lie, Jiwen Han, Rongtao Xu, Lu Hao "Design and Implementation of Smart Irrigation System Based on LoRa" 2017 IEEE Globecom Workshops (GC Workshops).
- [12] K. Zheng, S. Zhao, and Z. Yang, "Design and Implementation of LPWA- Based Air Quality Monitoring System," IEEE Access, vol. 4, pp. 3238- 3245, June 2016.
- [13] L Atzori "LoRa from the City to the Mountains: Exploration of Hardware and Environmental Factors", International Conference on Embedded Wireless Systems and Networks (EWSN), pp. 317- 322, 2017.
- [14] S Manimurugan, "A Smart farming using Arduino based Technology", International Journal of Advanced research –Block and ideas and Innovations In Technology,2018
- [15] Poonam Jakhotiya, Dr. N. N. Kasat, Dr. A. D. Gawande, "Sensor Data Management of Lora wan Technology" International Research Journal of Modernization in Engineering Technology and Science (IRJMETS) Volume :03/Issue:06/June-2021
- [16] M. R. Seye, B. Gueye, and M. Diallo, "An evaluation of LoRa coverage in Dakar Peninsula," in 8th IEEE Annual Information Technology, Electronics and Mobile Communication Conference, IEMCON 2017, 2017, pp. 478–482

- [17] S. Y. Wang et al., "Performance of LoRa-based IoT Applications on Campus," in IEEE Vehicular Technology Conference, 2018, vol. 2017–Septe, pp. 1–6.
- [18] J. Ren, and Q. Zhu, "On the application of LoRa LPWAN technology in Sailing Monitoring System," in 2017 13th Annual Conference on Wireless On-Demand Network Systems and Services, WONS 2017 - Proceedings, 2017, pp. 77–80
- [19] Brouwer, A. Goffeau, and M. Heibloem, "Irrigation Water Management: Training Manual No. 1—Introduction to Irrigation", http://www.fao.org/docrep/r4082e/r4082e00.html, [Accessed 30/4/2019].
- [20] Gutiérrez, S. Gutiérrez, J. A. Becerril, and F. Rodríguez, "Low-Cost Prototype for Monitoring and Remote Control in Greenhouse for Homes," in 2018 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC 2018), 2018.
- [21] Shengwei Lin and Z. Yang, "Design and Implementation of LPWABased Air Quality Monitoring System," IEEE Access, vol. 4, pp. 3238- 3245, June 2016
- [22] C Yoon et al [22] IoT-based agriculture system has been proposed to provide automatic irrigation service". 2018 International Conference on Inventive Research in Computing Applications (ICIRCA), Coimbatore, India, Page(s):1052 1056.
- [23] Marco Centenaro "LoRa Network Performance Comparison between Open AR and Tree Farm based on PHY factors". 2018 IEEE, Sensors Applications Symposium (SAS).
- [24] Pritesh Y Shukla, "The Indian smart village: Foundation for growing India," International Journal of Applied Research 2016; 2(3): 72-74
- [25] Kunwar P Singh, "A study of lora low power and wide area network technology," in Advanced Technologies for Signal and Image Processing (ATSIP), 2017 International Conference on. IEEE,2017

- [26] M. Monica Subashini, Sreethul Das, Soumil Heble, Utkarsh Raj and R Karthik, "Internet of Things Based Wireless Plant Sensor for Smart Farming", Indonesian Journal of Electrical Engineering and Computer Science, Vol. 10, No. 2, May 2018, pp. 456-468, ISSN: 2502-4752, DOI: 10.11591/ijeecs. v10.i2. pp456-468.
- [27] F Ganz "Design and Implementation of Smart Irrigation System Based on LoRa". 2017 IEEE Globecom Workshops (GC Wkshps), Singapore, Singapore.
- [28] Ravi Kishore Kodali and I. Netto, and A. L. H. Tran, "Precision agriculture using remote monitoring systems in Brazil," in 2017 IEEE Global Humanitarian Technology Conference (GHTC), Oct 2017.
- [29] Kansara, K.; Zaveri, V. Slash, S.; Delwadkar, S.; Jani, K. Sensor based automated irrigation system with IOT: A technical review. Int. J. Computer. Sci. Inf. Technol. 2015, 6, 5331–5333.
- [30] C M. Devika and Rachuri Ajay Kumar, "Smart Farming using IOT," International Journal of Innovative Research in Technology, vol. 8, no. 1, pp. 791-796, 2021.
- [31] Andreev, Semtech, "SX1272/3/6/7/8 LoRa Modem Design Guide, AN1200.13, Revision 1", July 2013.
- [32] Galinina, A. Pyattaev, M. Gerasimenko, T. Tirronen, J. Torsner, J. Sachs, M. Dohler, Y. Koucheryavy. "Understanding the IoT connectivity landscape: a contemporary M2M radio technology roadmap", IEEE Com. Mag., vol. 53, issue 9, pp. 32 40, Sept. 2015
- [33] Z. Rasin, H. Hamzah and M. S. Mohd Aras," Application and evaluation of high power Zigbee based wireless sensor network in water irrigation control monitoring system," 2009 IEEE Symposium on Industrial Electronics & Applications, Kuala Lumpur, 2009.
- [34] H. Van "Proposal for the design of monitoring and operating irrigation networks based on IoT, cloud computing and free hardware technologies," Sensors, vol. 19, no. 10, pp. 2318, 2019

[35] V. Popa, "Internet of things and LoRa TM low-power wide-area networks: A survey," in Int. Symp. on Signals, Circuits and Systems, New York, US, IEEE, pp. 1–5, 2017.