

## DAFTAR PUSTAKA

- [1] Tutesa and Y. Wisman, “Permasalahan Sosial Pada Masyarakat,” *J. Pendidik. Ilmu Pengetah. Sos.*, vol. 12, no. 2, pp. 94–99, 2020, [Online]. Available: <https://e-journal.upr.ac.id/index.php/JP-IPS/article/view/1920>
- [2] N. Darmawan, “Analisa Pengembangan Jaringan Fiber Optic Site Nangka Semarang,” *Jur. Tek. Elektro Univ. Semarang*, p. 11, 2017.
- [3] S. Ridho, A. Nur Aulia Yusuf, S. Andra, D. Nikken Sulastrie Sirin, and C. Apriono, “Perancangan Jaringan Fiber to the Home (FTTH) pada Perumahan di Daerah Urban (Fiber to the Home (FTTH) Network Design at Housing in Urban Areas),” *J. Nas. Tek. Elektro dan Teknol. Inf.*, vol. 9, no. 1, pp. 94–103, 2020, doi: 10.22146/jnteti.v9i1.138.
- [4] A. R. Utami, D. Rahmayanti, and Z. Azyati, “Analisa Performansi Jaringan Telekomunikasi Fiber to the Home (FTTH) Menggunakan Metode Power Link Budget Pada Kluster Bhumi Nirwana Balikpapan Utara,” *Circuit J. Ilm. Pendidik. Tek. Elektro*, vol. 6, no. 1, p. 67, 2022, doi: 10.22373/crc.v6i1.11841.
- [5] N. C. Dollores, “Stop Vandalisme! Broadband Internet Telkom Witel Balikpapan Sudah Fiber Optik Bukan Tembaga,” *Kotaku.id*, 2020. <https://kotaku.co.id/stop-vandalisme-broadband-internet-telkom-witel-balikpapan-sudah-fiber-optik-bukan-tembaga/> (accessed Apr. 01, 2024).
- [6] Penasultra, “Sebuah Alat ODC Milik PT Telkom Indonesia Witel Sultra di Rusak Orang Tak Dikenal,” 2020. <https://penasultra.com/alat-odc-milik-pt-telkom-indonesia-di-depan-kampus-baru-uho-dirusak-otk/> (accessed Apr. 01, 2024).
- [7] R. A. Atmoko, R. Riantini, and M. K. Hasin, “IoT real time data acquisition using MQTT protocol,” *J. Phys. Conf. Ser.*, vol. 853, no. 1, 2017, doi: 10.1088/1742-6596/853/1/012003.
- [8] M. Weyrich and C. Ebert, “Reference architectures for the internet of things,” *IEEE Softw.*, vol. 33, no. 1, pp. 112–116, 2016, doi: 10.1109/MS.2016.20.

- [9] Y. Yustini, A. A. Asril, H. N. Nawir, R. Hafizt, and A. Warman, "Implementasi dan Performansi Jaringan Fiber To The Home dengan Teknologi GPON.," *J. Teknol. Elektroika*, vol. 5, no. 2, p. 59, 2021, doi: 10.31963/elekterika.v5i2.3032.
- [10] M. I. Hossain and J. I. Markendahl, "Comparison of LPWAN Technologies: Cost Structure and Scalability," *Wirel. Pers. Commun.*, vol. 121, no. 1, pp. 887–903, 2021, doi: 10.1007/s11277-021-08664-0.
- [11] I. Fahrudi *et al.*, "Pengujian Komunikasi Perangkat Lora untuk Pengiriman Data Detak Jantung Menggunakan Topologi Point to Point Berbasis LoraWAN," *J. Integr.*, vol. 15, no. 2, pp. 122–126, 2023, doi: 10.30871/ji.v15i2.6296.
- [12] Y. Triwidyastuti, "Performance Analysis of Point-to-Point LoRa End Device Communication," *Lontar Komput. J. Ilm. Teknol. Inf.*, vol. 10, no. 3, p. 140, 2019, doi: 10.24843/lkjiti.2019.v10.i03.p02.
- [13] Yosefine Triwidyastuti, Fikri Santoso Harjowinoto, Musayyanah, Pauladie Susanto, and Harianto, "Unjuk Kerja Transmisi Data LoRa pada Node yang Bergerak," *J. Comput. Electron. Telecommun.*, vol. 3, no. 1, 2022, doi: 10.52435/complete.v2i1.205.
- [14] E. D. Widiyanto, "Menggunakan Arduino Dan Lora Berbasis Jaringan Sensor Nirkabel," *No*, vol. 1, no. 1, pp. 6–14, 2020.
- [15] A. Yanziah, S. Soim, and M. M. Rose, "Analisis Jarak Jangkauan Lora Dengan Parameter Rssi Dan Packet Loss Pada Area Urban," *J. Teknol. Technoscintia*, vol. 13, no. 1, pp. 27–34, 2020.
- [16] F. N. Gustiyana, M. A. Amanaf, and D. Kurnianto, "Quality of Service Comparison of LOS and NLOS Propagation in a LoRaWAN-Based Remote Monitoring System," *J. Nas. Tek. Elektro*, vol. 10, no. 2, 2021, doi: 10.25077/jnte.v10n2.781.2021.
- [17] E. Hutajulu, W. Banurea, C. Tri, and S. Manik, "Pemanfaatan Jaringan Komunikasi Lora Berbasis Iot Dalam Sistem Deteksi Kebakaran Dini," *J. Penelit. Politek. Penerbangan Surabaya Ed. XLI*, vol. 8, no. 3, 2023.
- [18] A. Rifai, A. E. Octariano, A. Wagya, and O. R. Damas Srihantaran, "Implementasi Modul LoRa dan GPS untuk Efisiensi Pengumpulan

- Sampah,” *Spektral*, vol. 4, no. 2, pp. 207–212, 2023, doi: 10.32722/spektral.v4i2.6622.
- [19] E. Saputro, J. Marpaung, R. Ratiandi, F. Imansyah, and F. T. P. W, “Implementasi Sistem Komunikasi LoRa SX1276 Untuk Mengukur Suhu dan Kelembapan di Udara Menggunakan Drone,” *J. Electr. Eng. Energy, Inf. Technol.*, vol. 2, no. 9, pp. 6073–6078, 2023.
- [20] M. Afdhaluddin and I. Palingga, “Analisis Rancangan Sistem Monitoring Posisi Hewan Menggunakan Lora,” *J. Inf. Syst. Res.*, vol. 4, no. 4, pp. 1155–1167, 2023, doi: 10.47065/josh.v4i4.3771.
- [21] S. Ridho, A. Nur Aulia Yusuf, A. Syaniri, D. Nikken Sulastrie Sirin, and C. Apriono, “Perancangan Jaringan Fiber to the Home (FTTH) pada Perumahan di Daerah Urban,” *J. Nas. Tek. Elektro dan Teknol. Inf.*, vol. 9, no. 1, pp. 94–103, 2020.
- [22] A. Syahrin, “Perancangan Jaringan Fiber To the Home (Ftth) Pada Wilayah Kelurahan Mustikasari Rt/Rw 004/04 Menggunakan Google Earth Pro,” *J. Sain dan Tek.*, vol. 5, no. 2, pp. 111–124, 2023.
- [23] S. Tyagi and P. C. Jain, “Internet of Things using LPWAN,” no. January, 2019, [Online]. Available: [https://www.researchgate.net/publication/330352019\\_Internet\\_of\\_Things\\_using\\_LPWAN](https://www.researchgate.net/publication/330352019_Internet_of_Things_using_LPWAN)
- [24] M. Mehta, “ESP8266 : A Breakthrough in Wireless Sensor Networks and Internet of Things,” *Int. J. Electron. Commun. Eng. Technol.*, vol. 6, no. 8, pp. 7–11, 2015, [Online]. Available: [www.iaeme.com/IJECET/index.asp](http://www.iaeme.com/IJECET/index.asp)
- [25] A. J. Wixted, P. Kinnaird, H. Larijani, A. Tait, A. Ahmadinia, and N. Straxhman, “Evaluation of LoRa and LoRaWAN for Wireless Sensor Network,” *IEEE SENSORS*, vol. 3, no. May, pp. 31–48, 2016.
- [26] A. Augustin, J. Yi, T. Clausen, and W. M. Townsley, “A study of Lora: Long range & low power networks for the internet of things,” *Sensors (Switzerland)*, vol. 16, no. 9, 2016, doi: 10.3390/s16091466.
- [27] I. T. Union, “ITU-T,” vol. 641.
- [28] ITU-T, “G.1010: End-user multimedia QoS categories,” *Int. Telecommun. Union*, vol. 1010, 2001, [Online]. Available:

[http://scholar.google.com.au/scholar?hl=en&q=ITU-T+Recommendation+G.1010&btnG=&as\\_sdt=1,5&as\\_sdtp=#7](http://scholar.google.com.au/scholar?hl=en&q=ITU-T+Recommendation+G.1010&btnG=&as_sdt=1,5&as_sdtp=#7)

- [29] E. H. Wiguna and A. Subari, “Rancang Bangun Sistem Monitoring Ketinggian Air Dan Kelembaban Tanah Pada Penyiram Tanaman Otomatis Dengan Hmi (Human Machine Interface) Berbasis Raspberry Pi Menggunakan Software Node-Red,” *Gema Teknol.*, vol. 19, no. 3, p. 1, 2017, doi: 10.14710/gt.v19i3.21878.
- [30] R. Nandika and E. Amrina, “SISTEM HIDROPONIK BERBASIS INTERNET of THINGS (IoT),” *Sigma Tek.*, vol. 4, no. 1, pp. 1–8, 2021, doi: 10.33373/sigmateknika.v4i1.3253.
- [31] R. Mardiansyah, “Pembuatan Alat Pengendali Filling Water Untuk Umkm Berbasis Arduino Nano,” *J. Tek. Energi*, vol. 11, no. 2, pp. 1–6, 2023, doi: 10.35313/energi.v11i2.3897.
- [32] S. Y. Damayanti, T. Andriyanto, and A. Ristiyawan, “Sistem Monitoring Kualitas Air Tambak Ikan Koi (*Cyprinus carpio*) Berbasis Teknologi of Things (IOT),” *Semin. Nas. Inov. Teknol.*, pp. 141–147, 2021.
- [33] Semtech, “Semtech Sx1276/77/78 Datasheet,” no. September, 2013.
- [34] F. Puspasari, T. P. Satya, U. Y. Oktiawati, I. Fahrurrozi, and H. Prisyanti, “Analisis Akurasi Sistem sensor DHT22 berbasis Arduino terhadap Thermohygrometer Standar,” *J. Fis. dan Apl.*, vol. 16, no. 1, p. 40, 2020, doi: 10.12962/j24604682.v16i1.5776.
- [35] A. Security, “Magnetic Contact (MC521).” <https://alboxsecurity.com/product/magnetic-contact-mc521>