DAFTAR PUSTAKA

[1] O. Brown, N. Power, and S. M. Conchie, "Communication and coordination across event phases: A multi-team system emergency response," *J. Occup. Organ. Psychol.*, vol. 94, no. 3, pp. 591–615, Sep. 2021, doi: 10.1111/joop.12349.

[2] T. Inoue, A. Ito, K. Nakamura, and T. Matsukawa, "Impact of Facility Factors on Robustness of Communication Networks under Natural Disasters," *IEEE Communications Magazine*, vol. 63, no. 1, pp. 138–144, 2025, doi: 10.1109/MCOM.001.2300741.

[3] L. Sciullo, A. Trotta, and M. Di Felice, "Design and performance evaluation of a LoRa-based mobile emergency management system (LOCATE)," *Ad Hoc Networks*, vol. 96, Jan. 2020, doi: 10.1016/j.adhoc.2019.101993.

[4] C. Demeslay, P. Rostaing, and R. Gautier, "Theoretical Performance of LoRa System in Multi-Path and Interference Channels," Jan. 2022, doi: 10.1109/JIOT.2021.3114439.

[5] A. Verma, Savita, and S. Kumar, "Routing Protocols in Delay Tolerant Networks: Comparative and Empirical Analysis," May 01, 2021, *Springer*. doi: 10.1007/s11277-020-08032-4.

[6] D. Schmidt, F. Kuntke, M. Bauer, and L. Baumgartner, "BPoL: A Disruption-Tolerant LoRa Network for Disaster Communication," in *2023 IEEE Global Humanitarian Technology Conference, GHTC 2023*, Institute of Electrical and Electronics Engineers Inc., 2023, pp. 440–447. doi: 10.1109/GHTC56179.2023.10354717.

[7] P. Kietzmann, J. Alamos, D. Kutscher, T. C. Schmidt, and M. Wahlisch, "Rethinking LoRa for the IoT: An InformationCentric Approach," *IEEE Communications Magazine*, vol. 62, no. 1, pp. 34–39, Jan. 2024, doi: 10.1109/MCOM.001.2300379.

[8] I. Prasetyaningrum, A. Fariza, and N. D. Falah, "Two-Phase Fuzzy System for Multiple Hydro-Meteorological Spatial Risk Mapping in Surabaya, Indonesia," in *Journal of Physics: Conference Series*, IOP Publishing Ltd, Feb. 2021. doi: 10.1088/1742-6596/1803/1/012010.

[9] Nurwatik, A. B. Cahyono, and A. O. Rachmandafitri, "Integrating GIS and Analytical Hierarchy Process to Determine Flood Vulnerability Level in Surabaya, Indonesia," in *IOP Conference Series: Earth and Environmental Science*, IOP Publishing Ltd, Dec. 2021. doi: 10.1088/1755-1315/936/1/012036.

[10] F. T. O., "Simultaneous Analytical View of Frequency Modulation (FM) Radio Signal Strength and Climatological Parameters in Radio Communication," *International Journal of Scientific and Research*

Publications, vol. 15, no. 2, pp. 36–57, Feb. 2025, doi: 10.29322/ijsrp.15.02.2025.p15806.

[11] M. Shabeer, M. Rafi, M. Behjati, and A. S. Rafsanjani, "Reliable and Cost-Efficient IoT Connectivity for Smart Agriculture: A Comparative Study of LPWAN, 5G, and Hybrid Connectivity Models."

[12] J. Höchst *et al.*, "Mobile Device-to-Device Communication for Crisis Scenarios Using Low-Cost LoRa Modems," in *Public Administration and Information Technology*, vol. 40, Springer, 2023, pp. 235–268. doi: 10.1007/978-3-031-20939-0_12.

[13] J. Zobel, T. Tim¨ohlenschläger, B. Scheuermann, and T. T. Tim¨ohlenschläger, "A native DTN-based Communication System for ESP32 Microcontroller. DTN7-ESP: A native DTN-based Communication System for ESP32 Microcontroller," 2025. [Online]. Available: https://github.com/dtn7/bp7-rs

[14] L. Baumgärtner, P. Lieser, J. Zobel, B. Bloessl, R. Steinmetz, and M. Mezini, "LoRAgent: A DTN-based Location-aware Communication System using LoRa," 2020. doi: 10.1109/GHTC46280.2020.9342886.

[15] F. Kuntke, L. Baumgärtner, and C. Reuter, "Rural Communication in Outage Scenarios: Disruption-Tolerant Networking via LoRaWAN Setups," 2024. doi: https://doi.org/10.1007/978-3-658-44157-9_13.

[16] M. Jouhari, N. Saeed, M.-S. Alouini, and E. M. Amhoud, "A Survey on Scalable LoRaWAN for Massive IoT: Recent Advances, Potentials, and Challenges," May 2023, doi: 10.1109/COMST.2023.3274934.

[17] A. Sharma, D. S. Kapoor, A. Nayyar, B. Qureshi, K. J. Singh, and K. Thakur, "Exploration of IoT Nodes Communication Using LoRaWAN in Forest Environment," *Computers, Materials and Continua*, vol. 71, no. 2, pp. 6240–6256, 2022, doi: 10.32604/cmc.2022.024639.

[18] L. Prade, J. Moraes, E. de Albuquerque, D. Rosário, and C. B. Both, "Multi-radio and multi-hop LoRa communication architecture for large scale IoT deployment," *Computers and Electrical Engineering*, vol. 102, Sep. 2022, doi: 10.1016/j.compeleceng.2022.108242.

[19] G. Kaur, V. Balyan, and S. H. Gupta, "Experimental analysis of low-duty cycle campus deployed IoT network using LoRa technology," *Results in Engineering*, vol. 23, Sep. 2024, doi: 10.1016/j.rineng.2024.102844.

[20] Y. T. Ting and K. Y. Chan, "Optimising performances of LoRa based IoT enabled wireless sensor network for smart agriculture," *J. Agric. Food Res.*, vol. 16, Jun. 2024, doi: 10.1016/j.jafr.2024.101093.

[21] I. I. J. Manzil, R. A. Khalil, and N. Saeed, "LoRa for multihop communication in internet of underground things under fading environments," *Internet of Things and Cyber-Physical Systems*, vol. 5, pp. 87–94, Jan. 2025, doi: 10.1016/j.iotcps.2025.05.001.

[22] M. Quiñones-Cuenca, E. Briceño-Sánchez, H. Jiménez-Salcedo, S. Quiñones-Cuenca, L. E. Castro Eras, and C. Carrión Betancourt, "Architecture for Automated Real-Time Bidirectional Data Handling in LoRaWAN Gateways," *Automation*, vol. 6, no. 3, p. 38, Aug. 2025, doi: 10.3390/automation6030038.

[23] W. I. S. Bine and L. B. R. Aylon, "Design of a Low-Cost Gateway with LoRa Technology Serving Multiple Devices," *Sensors*, vol. 25, no. 16, Aug. 2025, doi: 10.3390/s25164948.

[24] Y. Dalpathadu, T. Showry, V. Kuppusamy, and A. Förster, "Disseminating Data using LoRa and Epidemic Forwarding in Disaster Rescue Operations," 2021, doi: 10.1145/3462203.

[25] B. Arratia, E. Rosas, C. T. Calafate, J. C. Cano, J. M. Cecilia, and P. Manzoni, "AlLoRa: Empowering environmental intelligence through an advanced LoRa-based IoT solution," *Comput. Commun.*, vol. 218, pp. 44–58, Mar. 2024, doi: 10.1016/j.comcom.2024.02.014.

[26] M. Marin-de-Yzaguirre, O. Fuste, and J. A. Ruiz-de-Azua, "Study to integrate Delay-Tolerant Network protocols in IoT LEO constellations for flood prevention," *Acta Astronaut.*, vol. 225, pp. 968–977, Dec. 2024, doi: 10.1016/j.actaastro.2024.09.004.

[27] M. Javaid, A. Haleem, R. P. Singh, R. Suman, S. Khan, and S. Rab, "Adoption of Internet of Things for smart city-enabled smart hospitals," *Intelligent Hospital*, p. 100011, Jul. 2025, doi: 10.1016/j.inhs.2025.100011.

[28] V. Tsaoussidis, V. Demiroglou, M. Martinis, and D. Florou, "IoT Data Collection Over Dynamic Networks: A Performance Comparison of NDN, DTN and NoD," 2023. doi: 10.1109/WF-IoT58464.2023.10539564.

[29] S. Singh, V. Anand, and P. K. Bera, "A Delay-Tolerant low-duty cycle scheme in wireless sensor networks for IoT applications," *International Journal of Cognitive Computing in Engineering*, vol. 4, pp. 194–204, Jun. 2023, doi: 10.1016/j.ijcce.2023.04.005.

[30] E. L. M. Sammou, "Impact of Renewable Energy Resources on the Performance of DTN Networks in the Context of Hierarchical Routing Tree Topology (HRTT)," in *Procedia Computer Science*, Elsevier B.V., 2024, pp. 185–193. doi: 10.1016/j.procs.2024.05.020.

[31] E. A. Abdellaoui Alaoui, S. C. Koumetio Tekouabou, A. Gallais, and S. Agoujil, "DTN Routing Hierarchical Topology for the Internet of Things," in *Procedia Computer Science*, Elsevier B.V., 2020, pp. 490–497. doi: 10.1016/j.procs.2020.03.107.

[32] G. Koukis, K. Safouri, and V. Tsaoussidis, "All about Delay-Tolerant Networking (DTN) Contributions to Future Internet," Apr. 01, 2024, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/fi16040129.

[33] A. Castillo, C. Juiz, and B. Bermejo, “Delay and Disruption Tolerant Networking for Terrestrial and TCP/IP Applications: A Systematic Literature Review,” Sep. 01, 2024, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/network4030012.

[34] J. A. Fraire, S. Burleigh, F. Walter, and M. Feldmann, “The Architectural Refinement of {\mu}D3TN: Toward a Software-Defined DTN Protocol Stack The Architectural Refinement of µD3TN: Toward a Software-Defined DTN Protocol Stack,” 2024, doi: 10.48550/arXiv.2407.17166.

[35] X. Liu and S. Fujita, “Reliable Low-Latency Multicasting in MANET: A DTN7-Driven Pub/Sub Framework Optimizing Delivery Rate and Throughput,” *Information (Switzerland)*, vol. 16, no. 6, Jun. 2025, doi: 10.3390/info16060508.

[36] E. M. Sammou, “Intelligent Routing Agent Based on Q-Learning and Markov Decision Processes for Routing Optimization in DTN Networks,” *International Journal of Intelligent Networks*, Jul. 2025, doi: 10.1016/j.ijin.2025.07.001.

[37] H. M. Elhalafawy, A. A. Ali, E. M. G. Younis, K. elBahnasy, and M. Medhat Mokhtar, “Evaluation of delay tolerant network routing protocols for data streaming through LEO constellation,” *Egyptian Journal of Remote Sensing and Space Science*, vol. 26, no. 3, pp. 557–561, Dec. 2023, doi: 10.1016/j.ejrs.2023.06.005.

[38] C. J. Lowe, R. A. Clark, C. N. McGrath, and M. Macdonald, “A delay-tolerant network approach to satellite pickup and delivery scheduling,” *Ad Hoc Networks*, vol. 151, Dec. 2023, doi: 10.1016/j.adhoc.2023.103289.

[39] M. Reichstein *et al.*, “Early warning of complex climate risk with integrated artificial intelligence,” *Nature Communications* , vol. 16, no. 1, Dec. 2025, doi: 10.1038/s41467-025-57640-w.

[40] A. Shrestha, A. McCrone, J. Láng-Ritter, S. Gautam, M. Taka, and O. Varis, “Bridging gaps, saving lives: Integrating communities’ voices and impact mapping into flood early warning systems in rural Nepal,” *International Journal of Disaster Risk Reduction*, vol. 118, Feb. 2025, doi: 10.1016/j.ijdrr.2025.105238.

[41] M. Esposito, L. Palma, A. Belli, L. Sabbatini, and P. Pierleoni, “Recent Advances in Internet of Things Solutions for Early Warning Systems: A Review,” Mar. 01, 2022, *MDPI*. doi: 10.3390/s22062124.

[42] M. J. Henao Salgado, L. Alfonso, and J. J. Vélez Upegui, “Towards integrating community and institutional flood early warning systems: A framework applied to an Andean tropical case,” *International Journal of Disaster Risk Reduction*, vol. 116, Jan. 2025, doi: 10.1016/j.ijdrr.2024.105126.

[43] Y. Zang, Y. Meng, X. Guan, H. Lv, and D. Yan, “Study on urban flood early warning system considering flood loss,” *International Journal of Disaster Risk Reduction*, vol. 77, Jul. 2022, doi: 10.1016/j.ijdrr.2022.103042.

[44] G. Indra Swari, “Analysis of Network Design and Management Using PPDIOO At SMA Labschool Unesa 1.”

[45] A. Purwanto and B. Soewito, “Optimization problem of computer network using ppdioo,” *ICIC Express Letters*, vol. 15, no. 7, pp. 769–777, Jul. 2021, doi: 10.24507/icicel.15.07.769.

[46] LILYGO®, “T3 LoRa32 V1.6.1.” Accessed: Oct. 22, 2025. [Online]. Available: https://lilygo.cc/products/lora3

[47] Menteri Dalam Negeri Republik Indonesia, “Peraturan Menteri Dalam Negeri Republik Indonesia Nomor 72 Tahun 2019,” Jakarta, 2019. Accessed: Nov. 17, 2025. [Online]. Available: https://peraturan.bpk.go.id/Details/137530/permendagri-no-72-tahun-2019

[48] Menteri Dalam Negeri Republik Indonesia, “Keputusan Menteri Dalam Negeri Republik Indonesia Nomor 300.2.2-2138,” Jakarta, 2025. Accessed: Nov. 12, 2025. [Online]. Available: https://upload.wikimedia.org/wikipedia/commons/5/51/Keputusan_Menteri_Dalam_Negeri_Nomor_300.2.2-2138_Tahun_2025.pdf

[49] T. S. R. Pereira, T. P. de Carvalho, T. A. Mendes, and K. T. M. Formiga, “Evaluation of Water Level in Flowing Channels Using Ultrasonic Sensors,” *Sustainability (Switzerland)*, vol. 14, no. 9, May 2022, doi: 10.3390/su14095512.

[50] J. R. Gray and S. K. Grove, *Burns & Grove’s The Practice of Nursing Research: Appraisal, Synthesis, and Generation of Evidence*, 9th Edition. Elsevier, 2020.

[51] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. 2023.

[52] FDTS - Transport for Surabaya, “Surabaya Transportation Map.” Accessed: Oct. 22, 2025. [Online]. Available: https://linktr.ee/tfsurabaya