

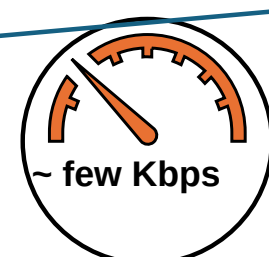
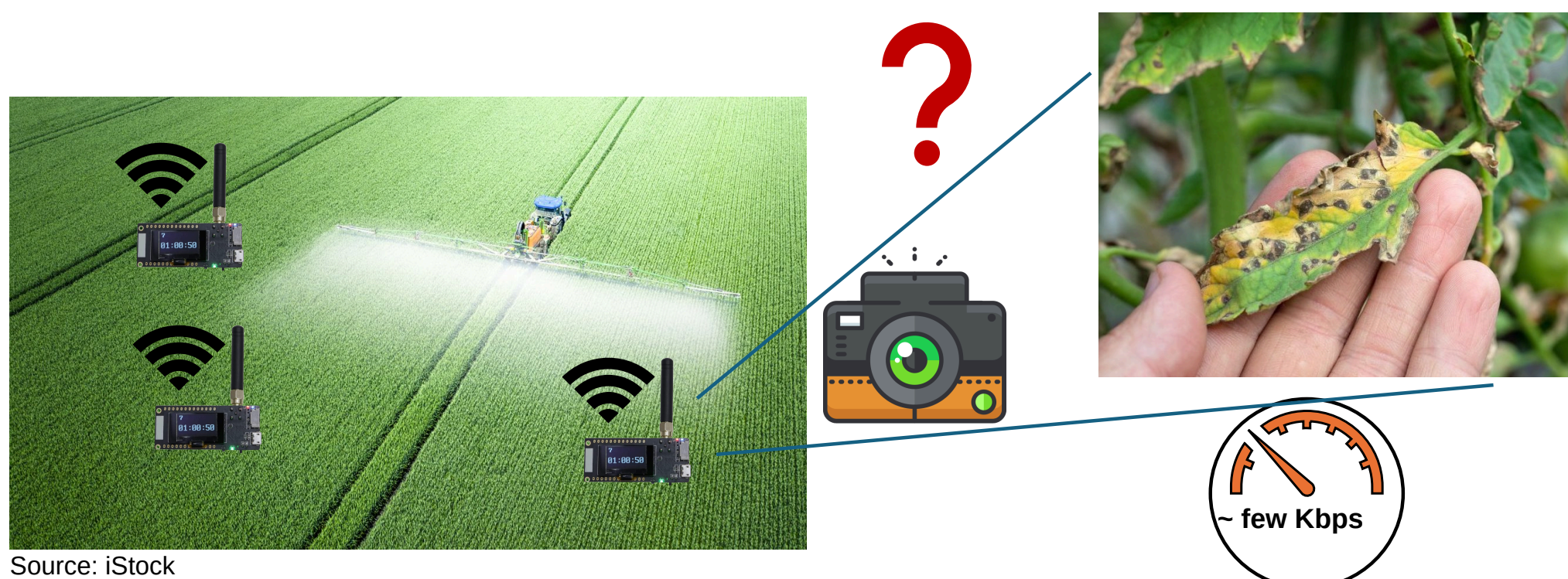
Super-LoRa: Enhancing LoRa Throughput via Payload Superposition

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LoRa is a powerful technology for sending small sensor data. However, emerging IoT applications, especially those using artificial intelligence, often need to send much larger data. For example, smart farming may need to send images of crops to detect plant diseases. Unfortunately, LoRa modulation has very low data rates, which makes it unable to support these applications effectively.



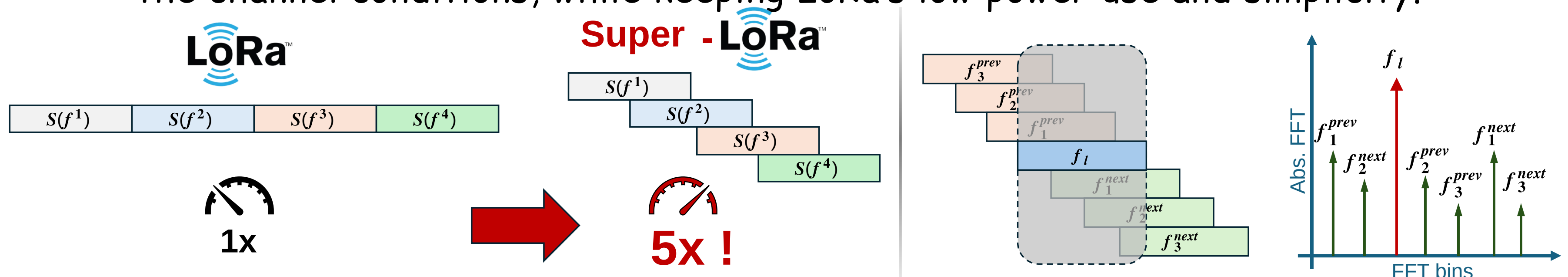
Limited
data rates!

People-oriented IoT

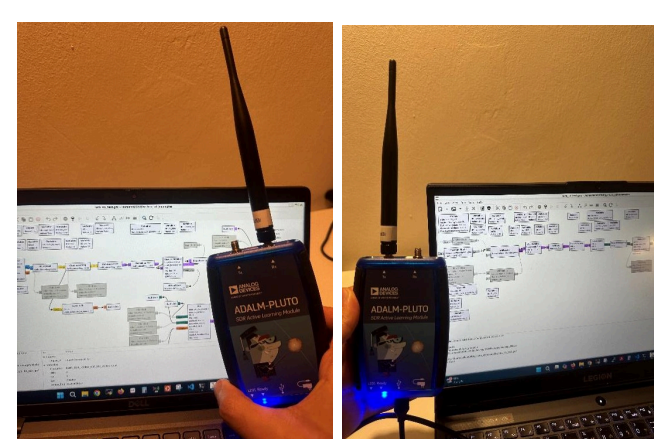
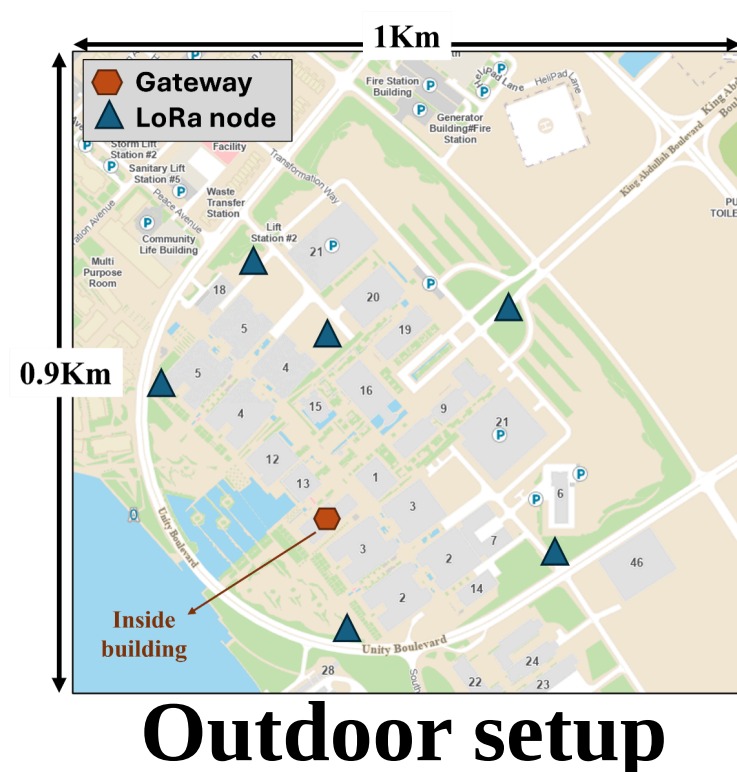
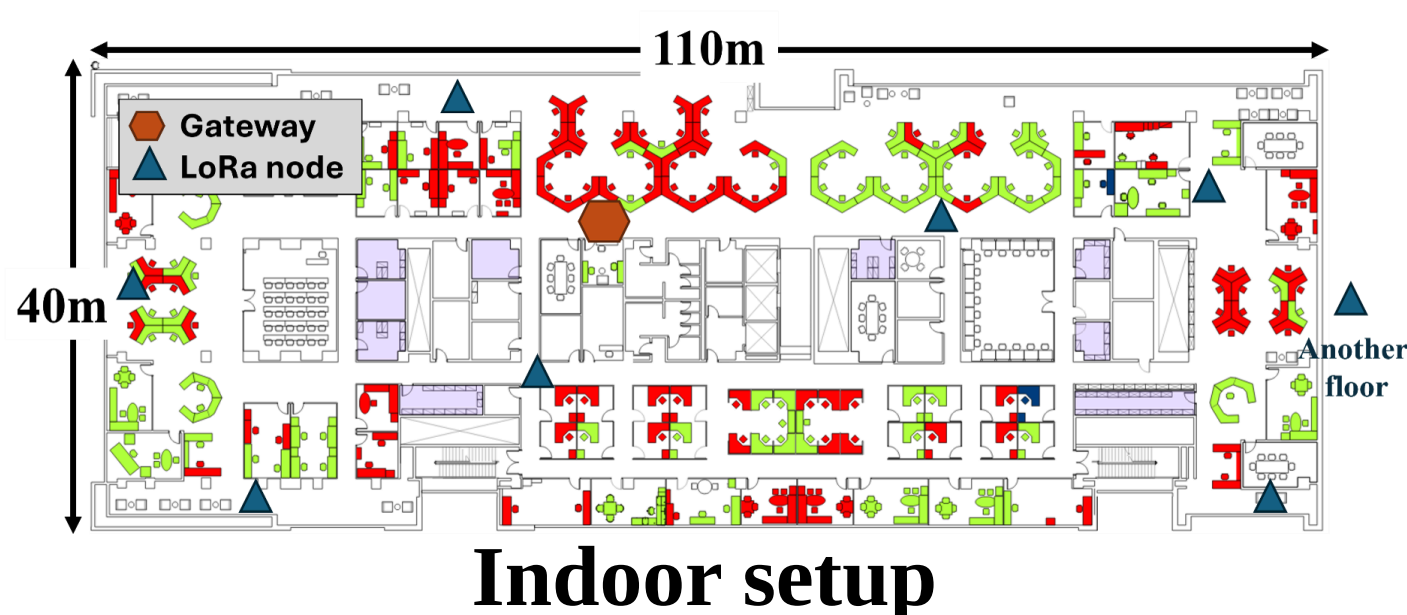
AI + IoT = AIoT

Artificial Intelligence + Internet of Things = Artificial Intelligence of Things

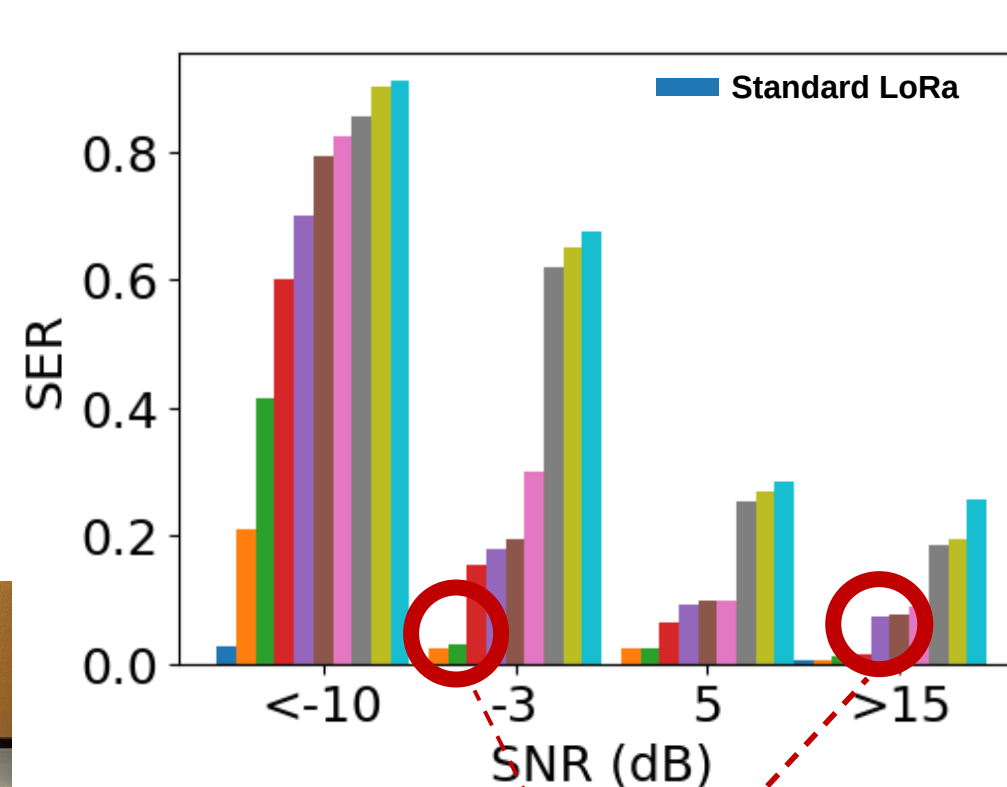
We introduce Super-LoRa, which increases LoRa data rates by up to five times. It takes advantage of LoRa's interference tolerance to superimpose multiple payloads based on the channel conditions, while keeping LoRa's low power use and simplicity.



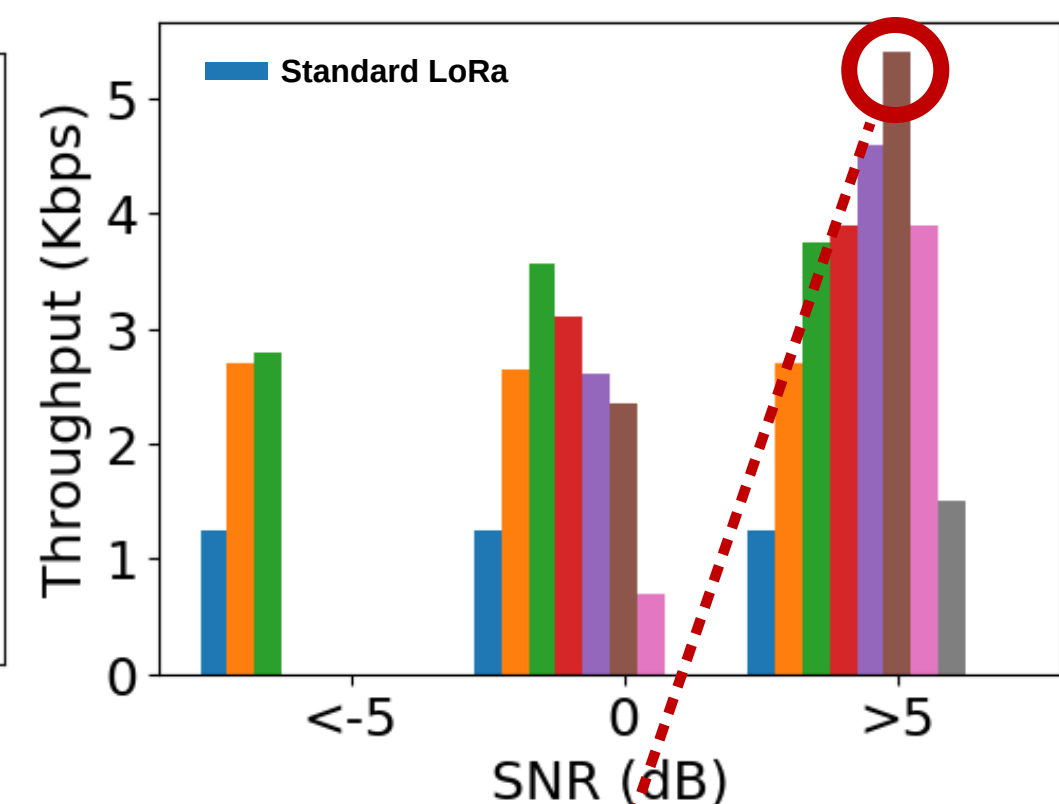
We validated the framework in real-world deployments with various channel conditions



Low-power
transmitter/receiver



>90% Success Rate!



5x Improvement!

