

Low-Power Wireless Sensing Camera System for Cargo Ships

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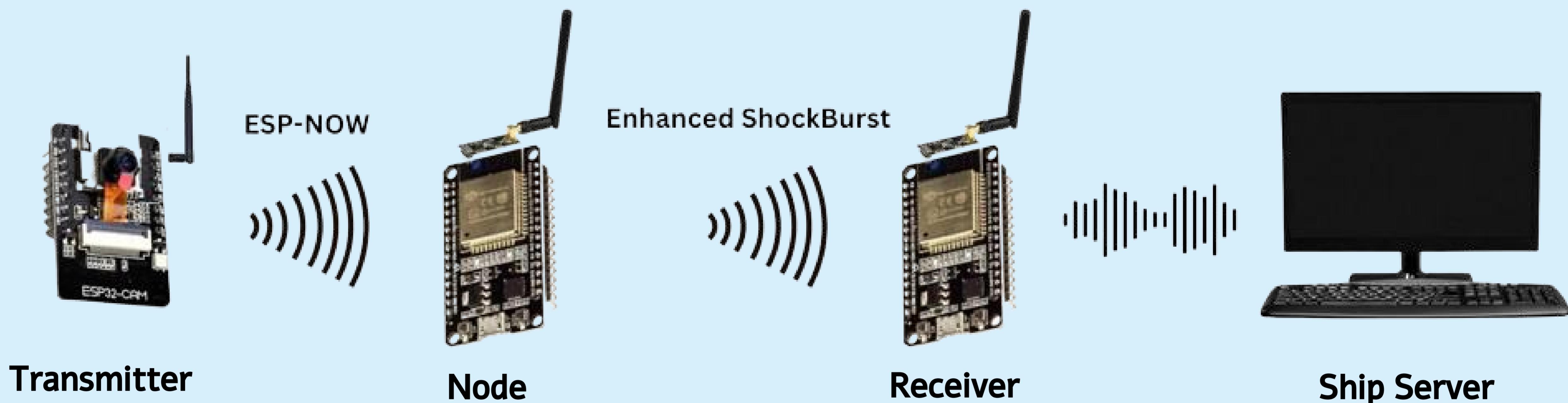
Requirements

- Operating for 4-6 months on batteries
- Triggered in its 10 meters FOV radius with at least 60° view angle
- Communication range: > 200 meters
- Transfer time: 2-3 seconds for 2-5 images

Background

Installing CCTV cameras in order to monitor security state at distant locations on a cargo ship necessitates extensive cabling (for power and Ethernet), making installation complex and costly

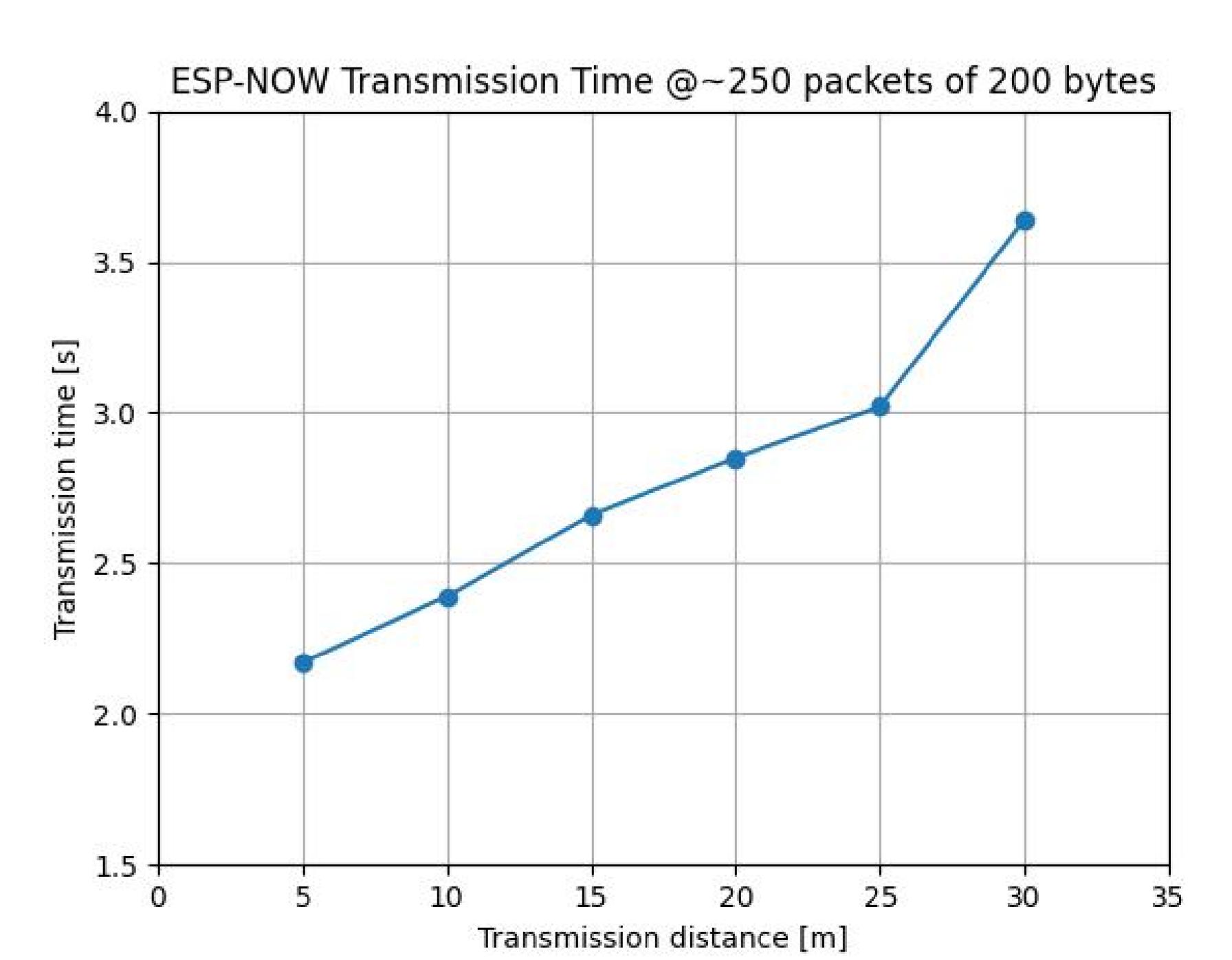
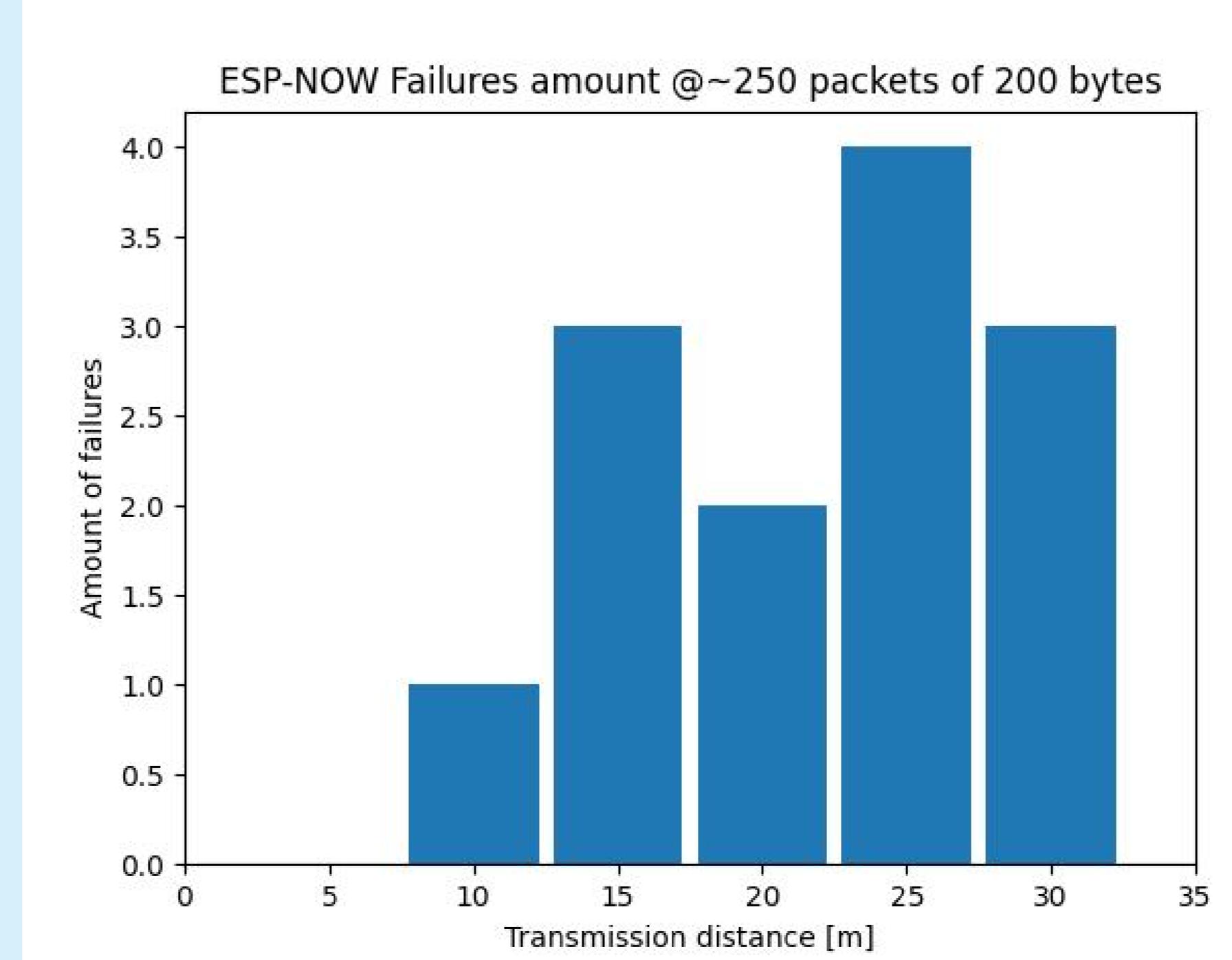
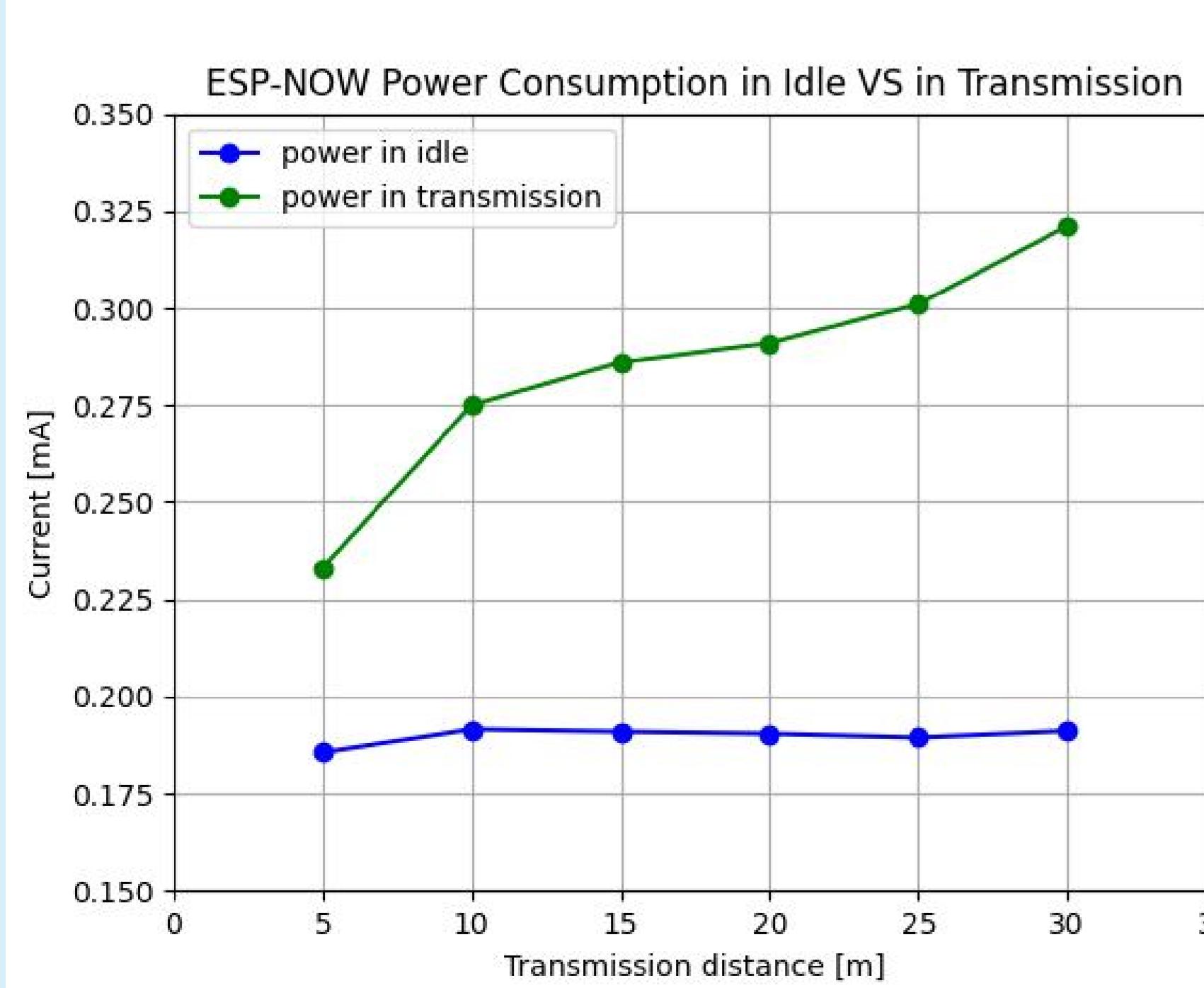
System & Method



Three point system – Transmitter, Node and Receiver:

- Transmitter is triggered by PIR sensor and sends images to the Node (via ESP-NOW protocol)
- Node saves images and transmits to the Receiver (via Enhanced ShockBurst protocol)
- Receiver transmits images to the main server (via WiFi/wired connection)

Preliminary Results



The image size used is ~50kB (about 250 packets per image using packages of 200B)