

IoT Network Event Documentation – Sample Dataset

1. Device Inventory Overview

Device: TempSensor_108

- Type: Industrial Temperature Sensor
- Firmware: v3.2.1
- Connectivity: LoRaWAN Class A
- Normal Transmission Interval: 30 seconds
- Battery: Lithium 2400mAh
- Location: Zone B – Boiler Section

Device: SmartMeter_42

- Type: Smart Energy Meter
- Firmware: v2.9.7
- Connectivity: Wi-Fi (WPA2 Enterprise)
- Power Source: AC Line
- Location: Zone A – Distribution Board

2. Recent Network Events

Event 01 – High Packet Loss

- Device: TempSensor_108
- Timestamp: 2025-02-10 14:21:44
- RSSI: -88 dBm
- SNR: 4.2 dB
- Uplink Errors: 231/min
- Downlink Ack Failure Rate: 64%
- Gateway: GW-7-East

Event 02 – Sudden Battery Drop

- Device: TempSensor_108
- Timestamp: 2025-02-10 15:02:11
- Battery Drop: 12% → 2%
- Reboots: 2
- Disconnections: 9

Event 03 – Authentication Failure

- Device: SmartMeter_42
- Timestamp: 2025-02-11 09:15:38
- Failed Attempts: 14
- Error: AUTH_INVALID_SIGNATURE
- Wi-Fi Signal Strength: -71 dBm

3. Threshold Rules

- Packet Loss Threshold: >40%
- Battery Critical Level: <10%
- Authentication Retry Limit: 6

4. Historical Known Issues

- BLE interference in Zone B
- SmartMeter TLS handshake bug in firmware v2.9.*
- Gateway GW-7-East packet forwarding instability

5. Troubleshooting Recommendations

Packet Loss:

- Check antenna alignment

- Inspect RF interference
- Replace battery if below 15%

Authentication:

- Sync device clock
- Renew authentication token
- Validate Wi-Fi controller certificate

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