Projet_VAE_Nice\gateway_lora.h

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// Passerelle LoRa vers WiFi pour le système NurseCall
#ifndef GATEWAY_LORA_H
#define GATEWAY_LORA_H

#include <Arduino.h>
#include <LoRa.h>
#include <WiFi.h>
#include <WiFiClient.h>
#include <HTTPClient.h>
#include <ArduinoJson.h>
#include <vector>

struct ReceivedMessage {
  LoraMessage loraData;
  int8_t rssi;
  float snr;
  unsigned long receiveTime;
};

class LoRaGateway {
public:
  LoRaGateway(const char* ssid, const char* password,
              const char* serverUrl);
  void begin();
  void loop();

private:
  // Réseau
  const char* wifiSSID;
  const char* wifiPassword;
  const char* apiServerUrl;
  WiFiClient wifiClient;

  // Messages
  std::vector<ReceivedMessage> messageQueue;
  const int MAX_QUEUE_SIZE = 50;

  // Méthodes
  void connectWiFi();
  bool sendToServer(const ReceivedMessage& msg);
  void processLoRaPacket();
  void sendLoRaAck(uint16_t terminalId);
  void saveToSDCard(const ReceivedMessage& msg);  // Optionnel
  void displayStatus();  // Sur écran intégré

  // Stats
  unsigned long messagesReceived = 0;
  unsigned long messagesForwarded = 0;
  unsigned long lastStatusUpdate = 0;
};

```

```
52 #endif
53
```