

Coil Matrix Pro

Advanced Data Acquisition System - Real-time Sensor Monitoring for Coiled Tubing Operations

PROJECT OVERVIEW

Coil Matrix Pro adalah aplikasi desktop profesional yang dibangun dengan WinUI 3, dirancang khusus untuk operasi coiled tubing di industri oil & gas. Aplikasi ini menyediakan solusi komprehensif untuk monitoring sensor real-time, recording data, visualisasi chart (Gauge & Line), serta export laporan dalam format Excel dan PDF. Sistem terintegrasi dengan hardware **Opto 22 SNAP UP1 ADS** untuk akuisisi data sensor dengan berbagai tipe sinyal (Digital Encoder ABC, Analog Standard, Digital Magnetic Pickup) dan dilengkapi dengan sistem lisensi berbasis Hardware ID untuk keamanan maksimal.

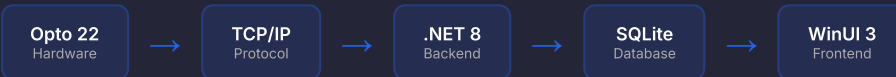
KEY FEATURES

- Real-time Monitoring**
Polling sensor via Opto 22 SNAP
- Data Recording**
Record & playback dengan SQLite
- Chart Visualization**
Gauge & Line chart dengan LiveCharts
- Export Reports**
Excel (ClosedXML) & PDF (QuestPDF)

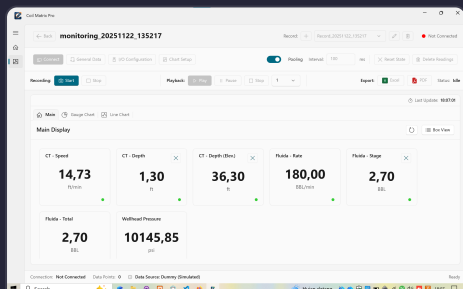
TECH STACK

- .NET 8 Framework
- WinUI 3 UI
- SQLite Database
- LiveCharts Charts
- ClosedXML Excel
- QuestPDF PDF
- MSIX Packaging
- Opto 22 Hardware
- C# Language

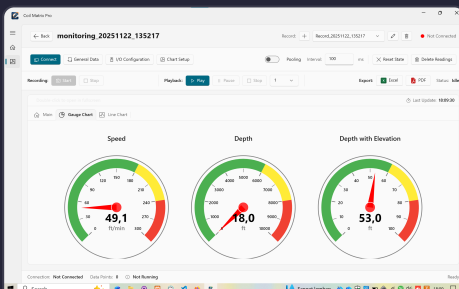
SYSTEM ARCHITECTURE



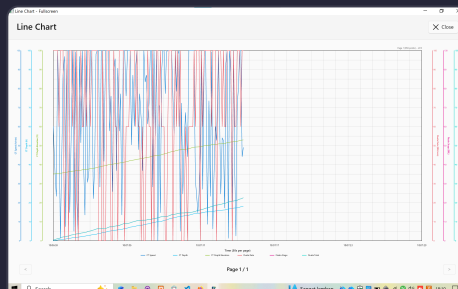
SCREENSHOTS



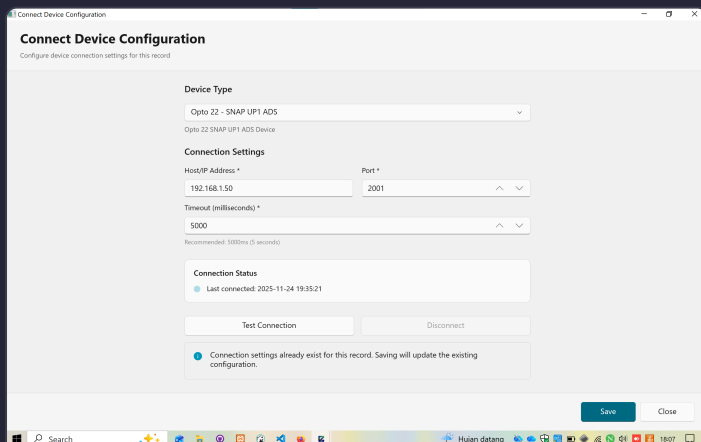
Main Monitoring



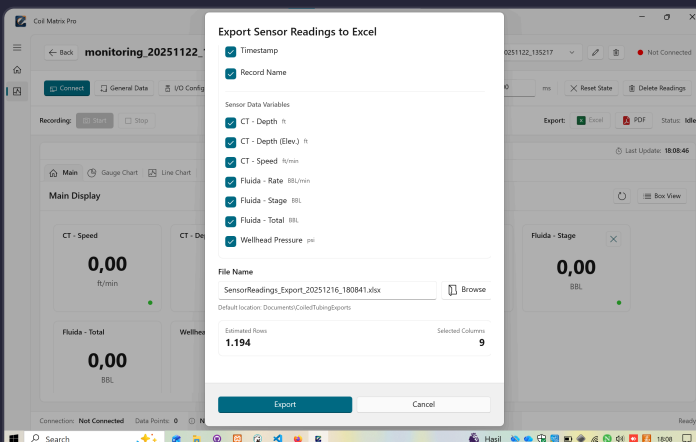
Gauge Chart View



Line Chart View



Device Configuration



Export Reports