

# Case Study

## Centralizing Control of Time Recorders in Remote Offices

### Industry

Time & Attendance



### Partners

Limton Group  
Pakistan State Oil

### Hardware

ATR Systems HandPunch (Biometric Timeclocks)  
Tibbo DS100 (Serial-to-Ethernet Converter)

### Organization

Limton deals with system integration and value-added-resale work for time & attendance, access control, security and surveillance, and other AIDC (Auto Identification and Data Capture) systems.

Pakistan State Oil is a Pakistan's oil market leader which represents 82% of the country's storage.

### Challenges

When Pakistan State Oil needed a distributed Time and Attendance system for over 23 locations country-wide, they turned to Limton for assistance.

Limton implemented a biometric time and attendance system utilizing hand geometry terminals. The devices work well, but they feature only an RS232 port with no built-in network connectivity. Initially, data collection and report generation were done individually at each location. This was error-prone and virtually impossible to verify.

The customer decided to try collecting machine data from all locations to their head office via email and process it centrally, but once again ran into unmanageable issues due to dependencies on email and manual labor.

### Solution

The ultimate solution to Pakistan State Oil's problem was to somehow establish connectivity directly from each terminal to the central office. The terminals were each connected to serial-over-IP converters from Tibbo Technology. Now "all" that remained was to find a way to connect them over the network to the main office. The "standard" solution of using real IP addresses was not economical at this scale.

Enter AggreGate. Using AggreGate, each terminal only has to initiate an outgoing network connection to one centrally accessible location – AggreGate’s LinkServer (the central server). This server then collects all data and offers powerful tools for device configuration and data analysis.

The system works well and will grow to over 80 branches in the future.



## Benefits

- Saved manual labor and errors in transferring data manually from each terminal (hundreds of man-hours per year).
- Saved purchasing 80 real IP addresses or a dedicated PC with a VPN connection for each location.
- Gained complete data processing and export facilities, advanced device management capabilities and real-time device monitoring, so as soon as something goes wrong, the proper contacts are automatically notified.

## About Tibbo

Located in Taipei, Taiwan, Tibbo Technology Inc. brings simplicity to the embedded world defined by enormous complexity of operating systems, programming languages, and design tools. Tibbo’s hardware, Tibbo-BASIC programming language with its Tibbo IDE software and the AggreGate Platform offer a complete solution for delivering robust, distributed automation and monitoring systems.

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