Marking Services Incorporated

# DIGITAL COMMISSIONING TRACKING

## Case Study

**Client:** Large confidential manufacturing company

**Project:** Control System Conversion

**DCS Project Cost:** $16M

**Type:** Schedule driven with critical outage window

**Solution Savings:** 90% reduction in tracking efforts

## Introduction

Marking Services, Inc. (MSI) partnered with PCI Skanska to develop and deliver a solution for streamlining the monitoring and checkout process for a large confidential chemical and plastics client. Control system conversions at this client site had historically tracked loop checks and commissioning activities via a manually updated paper-based system.

"This project occurred during a global pandemic...the AIM Technology allowed for remote access to live data with improved processes which allowed us to keep the project moving during this challenging time."

**- Project Manager**

## The Challenge

Client expectations traditionally required observation of the functional validation of loop check by the field technician, an operator, and a process control engineer. All three parties were required to sign off on the paper loop sheets for the point to be considered functional. A project controls engineer would then collect the signed sheets, count them, and generate a report twice daily. This process had three major issues:

1. Multiple shifts and staggered resources meant inconsistency in the way the paper copies were managed, thus causing poor data integrity in the reports.
2. Manually collecting and counting the information twice daily generally meant a full-time project controls engineer was needed just for this task.
3. Failed loops or issues were inconsistently managed which meant miscommunication of the issues, improper action items, and a slow turn around for resolutions.

## The Solution

PCI Skanska and Marking Services, Inc. (MSI) partnered to provide a digital loop checking service using PCI Skanska's engineering and project management expertise with MSI's AIM Mobile Technology resulting in significant savings in manhours and real-time, accurate data reporting. The solution used MSI's AIM Mobile Technology, which tied a background I/O database to field equipment tags via QR codes. This solution meant that everyone was utilizing and providing updates to the same data set electronically, thus increasing data integrity and reducing the tracking time. The auto generated reports allowed the field or maintenance crews be promptly alerted of issues and the resolution times to be greatly reduced.

# Implementation

Utilizing MSI's AIM Digital Loop Checking, PCI Skanska achieved:

**1**

**Labor Savings**

- Reduced administrative hours for tracking data.
- Increased consistency meant shorter time needed to identify and fix issues.
- No need to manage paper documents.
- Easier transition shift to shift (less reboot time).

**2**

**Improved Accuracy**

- Less resources managing data meant less room for human errors.
- All resources working from the same data set on a consistent platform.
- QR codes tied to field devices to the data set which simplified the field resource efforts during checkout (did not have to search or guess).
- QC Process was simplified with increased data integrity (2 pt authentication).

**3**

**Real-Time Collaboration**

- Pass/fail/comment function allowed issues and trends to be identified quickly.
- Progress reports were issued faster since results were instant rather than turnover of paper copies at the end of a shift.

# Technology & Innovation

Device tags designed and manufactured by MSI included QR codes to identify the I/O points. The tags utilized different sizes and colors to denote different systems.

The commissioning process used MSI's AIM platform, with I/O information stored in the AIM cloud database that would auto populate a loop check form on the mobile devices.

The field interface allowed the user to scan the tag and see information about the loop. They could either pass or fail the loop along with comments.

The web interface gave the process control engineer the data the field technician had and like the field interface, this also provided pass, fail, and comment options. This interface allowed the user to view the status of all items in real time.

For reporting, the project controls engineer customized multiple reports and controlled the timing and frequency with automated distribution via email.

"In the past checkout has been a challenge from a management standpoint. The manual process was labor intensive and involved multiple resources on multiple shifts, so needless to say there were duplicated efforts, items missed, and poor data integrity."

**- Project Controls Engineer**

## Improved Operational Efficiency

- Various reports on things such as completed or failed loops were auto generated and distributed each shift to key resources on the projects allowing for prompt actions to keep the project on track.
- Digital tracking improved the transfer and management of data, reducing the efforts needed by the project controls team.

## Accurate & Real Time Data

- The digital platform ensured that everyone was working of the same data set, and was updating the status consistently.
- The project team could check the status of any data point in the project at any time to see if it had been checked, passed, failed or if the field team had entered any comments.
- Reports could be generated instantly, but were also configured to automatically distribute at predetermined intervals.

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