

Enterprise Mobile Inspection Integration

Title: Enterprise Mobile
Inspection Integration

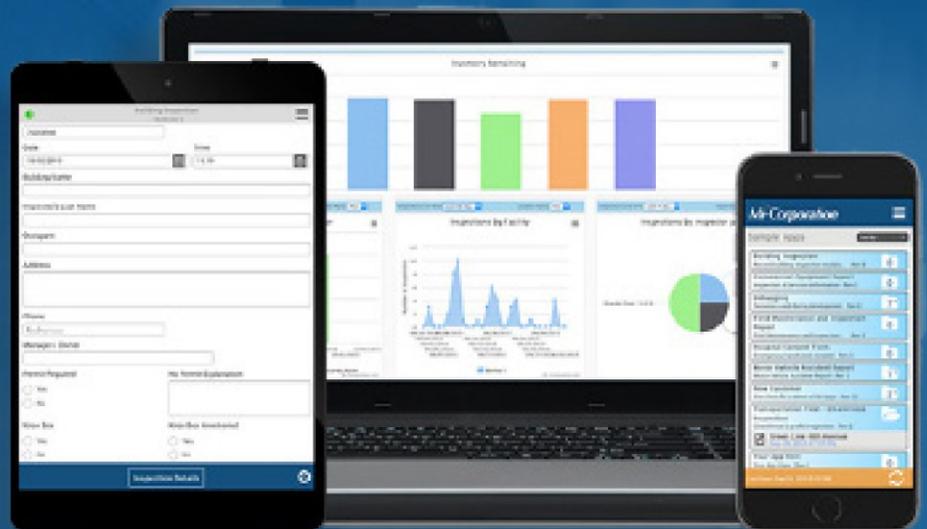
Category: Digital Services:
Government to Business

State: Connecticut

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Executive Summary

Within the State of Connecticut's enterprise licensing management solution (ELMS), over 30,000 regulatory case actions are executed annually. Over half of those case actions involve an onsite inspection or investigation visits. These onsite activities employed by the regulatory agencies involved manual paper forms and notes.

This manual documentation data was then entered into the ELMS along with scanned artifacts. This business process was positioned for a technology solution that could improve time to execute as well as the quality and quantity of valuable compliance data.

The inception ELMS enhancement program was created to update, improve, and expand the features and function of this enterprise solution. One key project within this new program was to identify, select, and implement a mobile inspection solution that integrated with the state ELMS.

The ELMS has robust functionality to manage inspections and investigation case activities. The selection and integration of a mobile Inspection solution was necessary to allow for electronic capture and automated updates of case records directly with an integrated interface.

An evaluation and analysis of the marketplace lead to the issuance of a Request for Proposal (RFP) that determined a final selection of a product for integration. The Mi-Corporation's Mobile Impact Platform (MIP) was selected as the best solution to provide for mobile services across the ELMS community.

The MIP solution highly configurable and would allow for enterprise design implementation that allowed each agency division to have a separate environment that replicated the ELMS enterprise separations and data security as required. This flexible platform was compatible with the three major device platforms IOS, Android, and Windows, providing agencies with more device options.

The implementation approach proved to be more successful than expected. Once the piloted groups were able to identify where it made sense to introduce standardization, the agency configuration and administrative functions became highly manageable. The improvement to process and product was immediately observed throughout the initial agency implementations. The MIP Mi-Apps mobile solution and the Mi-Analytics Business intelligence tools are now a major component of the State of Connecticut's regulatory compliance services.



Ongoing realized benefits

- Regulatory Staff process efficiencies
- Automation and digital capture
- Real time compliance notice and reports
- Regional area-based assignment dispatching

Concept

Definition of Inspections and activities

The Connecticut enterprise applications group was able to clearly identify opportunities to improve a manual paper based regulatory inspection and investigation process. The drivers of this effort had been a renewed directive to continue to improve the state's delivery of services through technology.

The initial steps of this effort were to clearly identify the agency regulatory business needs and frame them into an enterprise solution approach. The ELMS business community is made up of 40 state regulatory divisions across 12 agencies, of those agencies 18 divisions actively complete onsite inspections. Working closely with key stakeholders in each division where onsite activities was a critical function was the first step. The average number of onsite inspections or case investigations was over 17,000 annually.

Business needs

The business stakeholders were able to provide valuable pain points regarding their remote activities. The following initial business needs were framed in several categories that assisted in developing the approach for finding the best solution.

- Digital data capture
- Business process improvement. - Time and efficiency
- Improved data collection and Reporting
- Automation and communication
- Dispatch, assignment, volume management tools
- Better user experience

Scope of proposal

With the business needs defined, focus on the approach for finding a solution took a combination of matching the business need with enterprise best practices and technology products available. The Mobile Inspection project would now be one of the major program objectives of the ELMS Enhancement Program. The state technology investment funding source provided the resources necessary to achieve this project goal and many other enhancement efforts within the program.

- Integration with existing eLicense system
- Offline availability
- Attach notes or pictures to any inspection step
- Inspection report automated emails
- Electronic signatures
- Complex business rules and workflows
- Configurable reporting functionality
- GIS integration

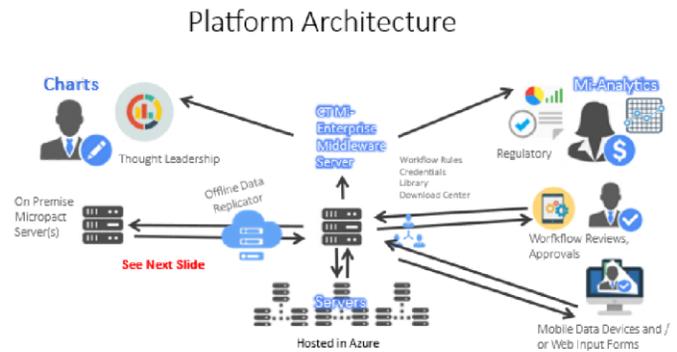
An initial decision was made to purchase an existing solution, the next steps were to gather detail requirements for each participating agency division. The project team created a comprehensive requirements document that would be the core guidance for the Request for Proposal. Standardized and prioritized requirements across all enterprise agencies were outlined in a list of mandatory requirements for the proposal. The responses to these requirements were critical in identifying the best solution.

Concept *continued*

Selection

The Mobile Impact Platform solution provided by the Mi-Corporation was selected based on the best fit for our ELMS agency needs. This solution provides a cloud-based environment that is compatible with all mobile devices the agencies are currently using or planning on using in future.

In addition to meeting all mandatory requirements, the Mi-APPS client application easily installed and worked quickly within our development and production environments. The MIP middleware portal provides for the agencies with comprehensive account administration. The MIP NextGen Designer tool was a key feature the agencies were looking for to provide form building features that met all the requirements outlined during the selection process.



Implementation

During the implementation business process needs were critical drivers to the design and configuration features.

- **Dispatch vs Ad-hoc:** The start of an inspection was designed to have two business process approaches. The Mi-Apps solution was built to provide dispatched inspection forms for prescheduled cases, as well as Ad-Hoc “start new inspections” feature remotely. This satisfied agency needs for flexibility.
- **Inspection and Investigation case types:** The ELMS inspection case functions were the primary requirement and as the solution was being developed, the agency stakeholders found additional value in being able to retrieve and load investigation complaint case data within this mobile application. This was accommodated by modifying the interface to process both types of cases.
- **Account administration and template data source definitions:** The MIP Middleware portal provided for separation of security and form administration by each agency division. Each group followed a standardized access model while having the control over users and groups as assigned to form templates and enforcement security access structure defined by the ELMS.
- **Offline functions:** Mi-Apps solution was designed to allow for off-line work while the inspectors were in areas of limited connectivity. The Sync process provided the user the ability to update the device whenever a network connection was established, where then both incoming and exported data was transferred to the interface services.

Interface

Early interface conversations occurred between our eLicense vendor Tyler Technologies and the Mi-Corp development team. This aspect of the project was important for successful delivery. The two development teams worked very well together and were able to propose, design, and implement an interface that leveraged the features of each solution while maintaining a collaborative and flexible process.

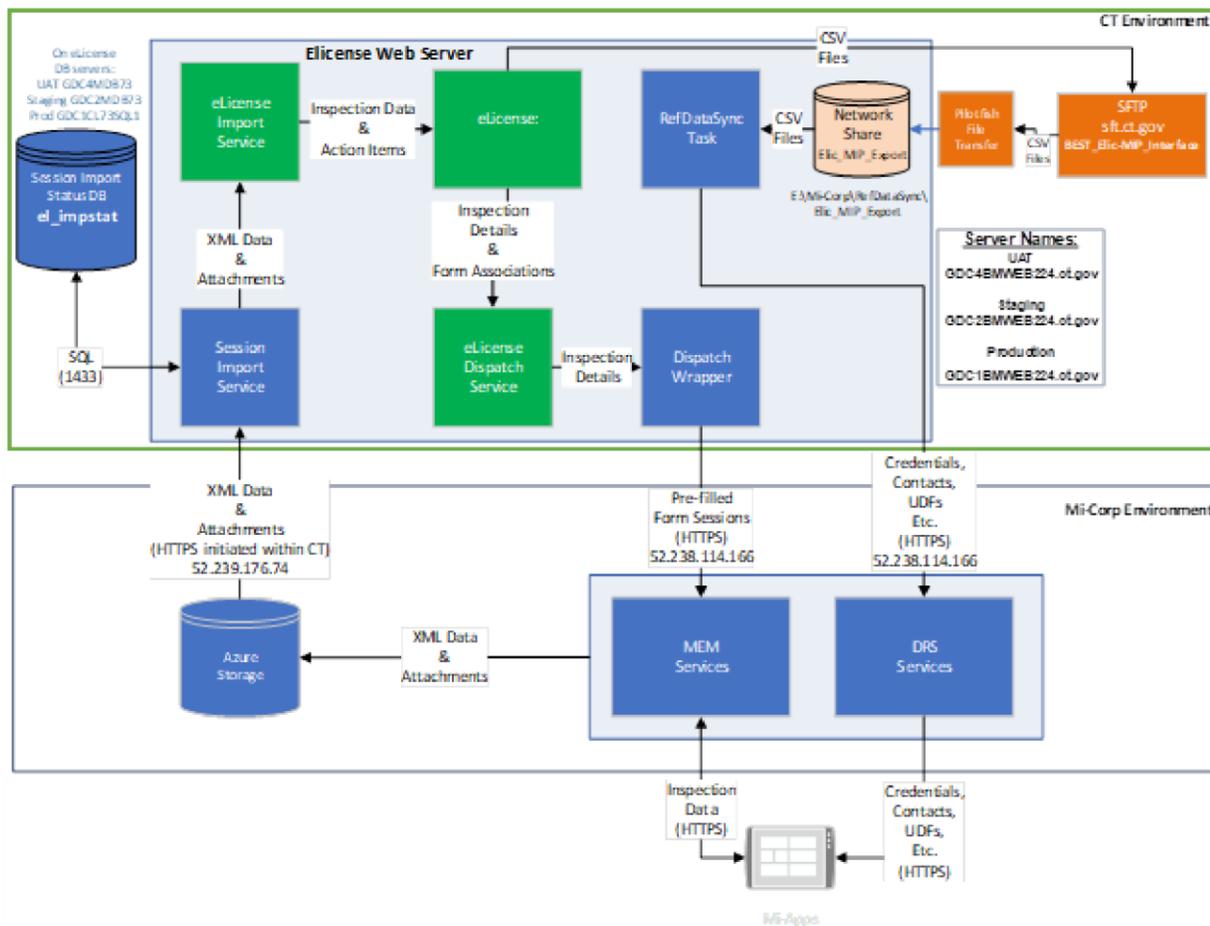
Implementation *continued*

Architecture

The solution architecture is replicated for all three (3) ELMS environments; Production, Staging, Development. Each environment interfaced between the ELMS eLicense and the Mobile Impact Platform. There are three (3) key components of the interface connection:

- 1. Data Sync Service:** Provides updated record data from the eLicense database to the MIP Data replication service (DRS) as the source for all mobile device synchronizations.
- 2. Dispatch Wrapper Service:** Provides real time dispatch of formatted inspection form loads of scheduled inspection records to each assigned individual mobile devices during device sync process.
- 3. Session Import Service:** Final submitted inspection forms are processed into the eLicense solution. Session imports include the form data, pdf reports, and attached images or documents.

Mobile Impact Platform – eLicense interface topology



Implementation *continued*

Form Building

Mi-Apps NEXTGEN DESIGNER form building feature allows the agency design staff to meet all business needs through flexible easy to use functions. Any form requirement not found in the Palette can easily be established through the validation tools or form script edits.

One important outcome of the implementation pilot identified the need for consistent across the agencies and divisions. The form solution dictated the creation of a standardized template that included all the mandatory and optional features that accommodated the eLicense interface. All form building now begins with the use of the standardization template where then form builders can add, edit, or change the form to meet specific needs.

Key features of form building

- Easy to learn and user-friendly tools
- Standardized enterprise form template
- Custom report attachments and email delivery
- Custom form logic and workflow paths based on entry selections
- Complex calculations based on form entry

The screenshot displays the 'NEXTGEN DESIGNER' interface with a 'Form Standardization' template. The interface is divided into three main sections: 'Form Fields', 'Form Standardization', and 'Properties'.

- Form Fields:** A sidebar on the left containing a list of fields under the heading 'eLicense Information'. Fields include: Required Fields Text (RequiredFieldsText), Inspection Date (InspectionDate), Inspector Fields Text (InspectorFieldsText), Inspector Name (InspectorName), Inspector Email (InspectorEmail), eLicense Fields Text (eLicenseFieldsText), Selected Credential Text (SelectedCredentialText), Formatted Credential (FormattedCredential), and Formatted Public Address (PublicAddress).
- Form Standardization:** The central workspace showing a template for 'Part A Question 1'. It includes radio buttons for 'Compliance' and 'Non-Compliance', a 'Comment' field with a 'Select an option' dropdown, and sections for 'Files' (Tap to attach files) and 'Photos' (Tap to annotate images). Below this is a 'Violation ID' field containing the number '11787' and another 'Part A Question 2' with similar radio buttons.
- Properties:** A sidebar on the right for configuring the selected field. It shows 'Field ID' as 'PartAQ1_Selection', 'Caption' as 'Part A Question 1', and various options: 'Hide Caption', 'Locked', 'Required Field', and 'Allow Multiple Selections'. It also shows 'Column Count' set to '2' and navigation buttons 'Left to Right' and 'Top to Bottom'.

Training approach

The training during implementation was integral to each agency's success. The use of multiple training tools allowed for all levels of users or administrators to learn at their own pace. Some of the highlights of the training tools include:

- Recorded online sessions
- Detailed manuals with step instructions
- Hands-on form building sessions
- Regular user group meetings
- Shared knowledge and tips between agency's users
- Teams training site with all reference materials
- Mi-Corporation vendor resource and training portal

Impact

Form Building

As a result of the Mobile inspection integration project, the state regulatory process has changed dramatically and continues as more divisional groups roll out this solution to replace legacy manual processing.

Agency benefits

- Time savings - Staff hours per inspection- time to complete
- Increased number of regulatory visits
- Quality reporting and data capture driving analytics BI
- Management resource optimization and performance metrics
- Elimination of paper and manual processing
- Real-time reporting
- Uniformity to data collection
- Consistent streamlined process - Less opportunity for error
- Single data entry execution - Elimination of duplicate data entry
- Additional quality and quantity of data captured
- Regulatory oversight capabilities improved

Regulated customer experience - respondent •

Electronic communications – Immediate detailed report form delivery

- Business impact - Less time disturbance during site visit

Enterprise Impact

- Standardized form building
- Uniform interface accommodates all existing and new agency
- Enterprise analytics
- Financial/time – cost savings



Next steps and ongoing activities

The ELMS community continues to grow and show interest in the Mi-Apps solution. We have active projects bringing these new groups into the system which help to drive form innovations and standardized features. New business needs are also driving vendor modifications that can be shared across the enterprise. The introduction of and enhanced configuration of the Mi-Analytics business intelligence solution are planned activities based on agency priorities.

Looking back on the original state of inspections throughout the state compared to our current positions is a dramatic change. We can observe throughout the enforcement activities how a mobile solution answered some of the critical roadblocks to efficiencies and quality of services. The ELMS team and the agency partners work in tandem to continue the enhancement of services on an ongoing basis. We see new opportunities each day as regulations change or new needs are defined with the confidence that there is a flexible solution to accommodate each.