AutoCrew

Automated Crew Management System (ACMS)

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Introduction

AutoCrew, or "Automated Crew Management System (ACMS)" is an application designed to fulfill a variety of personnel tracking and reporting functions within a variety of industrial work sites, and possibly multiple sites working together.

 Being based on modern web platforms, it is lightweight from a networking standpoint and highly compatible across many user agents which include:

- PC's
- Mac's
- Tablets
- Smartphones
- Other Mobile Devices

The goal of the overall system is to provide as many automated crew tracking functions as possible. Electronic systems typically provide more accurate data management by reducing manual human data input, and also can drastically and in some cases exponentially reduce time required to otherwise perform these tracking functions manually.

System Overview

The systems abilities come from a combination of custom created software, carefully chosen hardware, and a combination of readers (Depending of specific deployment). All have their separate considerations:

Software

The software can be deployed in various configurations depending on the scope and features being activated. The software is operated by different people in different locations depending on duties. This usually encompasses admin people managing personnel, marine crew performing muster drills, safety officers tracking meetings and completed training, executives generating global reports, etc.

Features and access are granted to required individuals upon acquiring licenses.

Hardware

Whenever physical infrastructure is required in a location, certain hardware combinations are recommended in order to achieve network resiliency, or "High Availability" of the system.

This of course depends on each specific environment, scope of physical deployment, and which components of the system are being installed. In general, if readers are being installed to track real-time movements of crew, the following would be highly recommended:

- 2 Servers physically located in separate areas of the location.
- 2 Switches (4 Total) for each server, each one connected to wiring on different sides of location.
- Appropriate wiring, meaning properly shielded, or Fiber Optic for longer distances.
- Appropriate Readers based on location and environment.(Outside\Inside, Fixed\Wireless, etc.)
- Battery Backup (UPS) for servers and readers.

* Please note: Equipment requirements for physical installation are best determined by a professional site survey.

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Readers

There are a large number of possible configurations of the overall system, which could include a variety of readers carefully positioned to capture the required data. This can be a combination of readers located inside or outside, and could potentially be wireless or fixes, all depending on the use of the reader for that specific system. Readers are generally used for:

- Electronic P.O.B tracking
- Wide Area Work Site Tracking
- Muster Drill Tracking
- Emergency Station Tracking
- Safety Meeting Attendance

Electronic P.O.B Tracking

These readers would be located at the specific points of the physical location where crew enter and exit rotation. These could be inside or outside depending on the physical layout.

Wide Area Work Site Tracking

These readers would be located at the specific places where crew come and go on a daily basis to and from nearby locations. These would most likely be outside near helicopter pads or boat landings.

Muster Drill Tracking

These readers can be either inside or outside or a combination of both, depending where each muster station is located. These readers could be fixed, or also handheld and then operated by a Muster Officer at the location if that is the requirement.

Emergency Station Tracking

In the event of a drill or emergency, as well as having readers at muster points, readers could also be placed to additionally track emergency team members as they move to teams areas, and then subsequently to muster stations.

Safety Meeting Attendance

These readers could be either fixed in the location or handheld and operated by officer at the location, depending on the physical layout and requirements.

Controlled Access Readers

These readers would be fixed, and attach to electronic door locking mechanisms, as to limit access to authorized individuals.

Time and Attendance

These readers could be fixed or handheld, depending on a static or mobile work site. Readers would track the crew's arrival and departure from a location and calculate time for payroll or other tracking purposes.

Features

The application suite can be broken down into several distinct categories:

- Basic Personnel Management
- Electronic P.O.B
- Electronic Muster System
- Electronic Safety Meeting Attendance Tracking
- Multiple Job Site Tracking
- Certification Tracking and Reporting
- Exemption Management and Alerting
- Emergency Teams Generation
- Promotion Forecaster
- Enterprise Level Management

Basic Personnel Management

This is the underlying foundation of the application, and could technically be used as standalone web software, either installed on a system locally, or hosted on an internet server depending on client needs.

This would not inherently require any other hardware or other physical components be installed in any location (similar to Crew Inspector), and all users of the system would manage all data through a web interface.

Basically, personnel could be added to the web based database, be accessed anywhere in the world, and hold personnel data critical to the employing company including:

Name	Company (If Contractor)	Nationality
Passport Number	Passport Expiry	Other Travel Document Info
Vessel\Location	Manual Check-in\Out	Picture (If required)
Position	Other	

Basic reporting would be provided for things such as:

- Personnel List by Location
- Positions Report
- Passport\Other Travel Documents Expiry Reports
- P.O.B Reports Based on Manual Check-in's\Out's

Electronic P.O.B

This would extend functionality of the basic system, by providing electronic means to check personnel in and out of locations by using readers that capture fingerprint or card type identification as personnel come and go from rotations.

In some cases a site or vessel will already have Personnel on Board system. In this case we would simply interface with the existing data through an EXCEL or CSV file format.at data

* This extension of the system requires appropriate readers, network, and server technology be installed at a location.
* If multiple separate locations have systems installed, data could be managed from a central point (i.e. Head Office).

Electronic Muster System

This adds the function of performing various types of Muster Drills using electronic readers to capture personnel arrival to the Muster Point. During a drill, a Master Muster Monitor would be present on the bridge where individuals managing the drill can watch the progress in real time, and draw reports afterwards.

The amount of readers and their position are best determined through a site survey of the location first, and then the Muster System would be customized exactly to the physical location.

This means the correct amount of readers would be properly configured and labeled in the system, and Muster Monitor Screen would be properly formatted to display the number of points for that physical location.

* This extension of the system requires appropriate readers, network, and server technology be installed at a location.
* If multiple separate locations have systems installed, data could be managed from a central point (i.e. Head Office).

Electronic Safety Meeting Attendance Tracking

This adds the ability to electronically track personnel attendance to safety meetings. With a reader present at the meeting location, data is captured, and can be easily printed\exported from a computer later.

* This extension of the system requires appropriate reader(s), network, and server technology be installed at a location.
* If multiple separate locations have systems installed, data could be accessed from a central point (i.e. Head Office).

Wide Area Personnel Tracking

In some cases it may be required to track regular coming and going of personnel to and from nearby locations or job sites while on rotation.

Example 1: Accommodations Barge serving visitors to multiple nearby daily job sites.
Example 2: Land based drilling office coordinates personnel to multiple nearby drill sites.

This feature could be configured to work in more than one configuration depending on individual requirements, but would generally be one of the two following scenarios.

Scenario 1:
System is installed in the main location where personnel come and go to and from multiple locations or satellite job sites. Personnel would check in at electronic reader, and when scanned, would choose electronically which location they were headed for.

* Requires appropriate reader(s), network, and server technology be installed at the main location.

Scenario 2:
System is installed in the central location, AND in the related job sites\remote locations. Assuming internet or intranet connection between sites, personnel could be captured leaving and entering each location, for the most accurate tracking.

* Requires appropriate reader(s), network, and server technology be installed at the main location, and remote locations.
* Works best if personnel coming and going are going to and from different sites at different times.

Training Certificate Tracking and Reporting

This software component allows comprehensive tracking, managing and reporting of Training Certifications for personnel. Features of this component include:

- Having a master list of all certifications where select ones could be marked as regulatory.
- Assign which certificates are required for which positions.
- Being able to add any completed training certificate with expiry date to any personnel.
- Program automatically separates what training is required for the person's position, and will highlight which required training is missing.
- Full expiry reporting, which can be filtered by:
  - Location
  - Person
  - Position
  - Specific certificate
  - Expired
  - Close to expiring

Extensions of the Training Certificate Tracking Component

The following are further extensions that could operate when the *Training Certificate Tracking* Component is already in place, and is required for them to work.

Exemption Management and Alerting

Because some certificates are required by various governing bodies, sometimes it is necessary to have a Training Exemption in place, which outlines why the training is missing, and when it is to be completed.

This program can automatically look at all personnel, find all the regulatory training certificates each should have, then checks to see if they have training completed for that certificate, and if not, will check if exemption is already in place, and if not, will prompt to add an exemption, or could print reports.

Emergency Teams Generation

With the system already managing personnel's active completed training, an area could be activated to setup emergency teams as they apply to the specific location (i.e. Fire Team, Drill Team, Command Team, etc.)

Teams can be created, and positions added to those teams, as well as which certificates are required for each of those positions on the team.

With this initial configuration, the program can scan through personnel in each position, see if the person currently on-board is eligible to be on the team position based on the current completed training, and will find alternates to fill those position's if there are other qualified people on board.

Promotion Forecaster

This is a utility to help managers decide who would be best suited to move from their current position to the next highest position, based on the amount of completed training they would have when compared to the new position.

Basically, if there were *10 Drilling Assistants* available, and a manager need to fill the position of *Senior Driller*, in a couple of clicks they could choose the source and destination positions in the program, and the software would automatically check all the people in the starting position, and compare all their valid training to what would be required if they were in the destination position.

The resulting output shows the people involved in the search, and all the training they would be missing if they were promoted at the moment. This gives managers a simple view of who is missing the least training, and therefore could be the best choice to promote.

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Enterprise Level Management

This level of system management would allow interested parties at one or more offices to have global view and management of the system. This provides maximum system functionality by providing all data to the highest levels of the organization, eliminating the time required for personnel to report upwards.

This would supply a global or individualized view of:

- Personnel and their vitals and location.
- Personnel Training Information and Expiry
- Training Compliance Status and Exemptions
- Reports:
  - P.O.B Reports with Wide Area Tracking
  - Safety Meeting Attendance Reports
  - Muster Drill Reports
  - Current Emergency Team Assignments

Security (Controlled Access)

Security can be easily integrated with our system by means of controlling and tracking access to sensitive areas. These would have authorized people granted access through the main system, then their identity can be verified and electronically logged as they enter restricted areas.

The software would work in co-operation with electronic, network connected locks that can check crew credentials in real time, and then control the electronic locking mechanism on the door when authorized.

Time & Attendance

This extension of the system would use readers specifically to track when crew come and go from specified areas where specific time tracking is necessary, most commonly when dealing with billable time.

Data is collected in real-time, and reports can be generated for a combination of specific time period, person, location, etc.