sameva
Progressive Business Solutions

CASE STUDY

Pole Inspection Management System (PIMS)

Company profile

The client has been a leading manufacturer and distributor of treated outdoor wood products for the residential, commercial, industrial and utility markets. This family-owned and operated company produces a variety of quality wood products—from decks, fences and framing to utility poles, docks, retaining walls and other specialty items. Included on the South Caroline list of the 100 largest privately held companies for 2010, the client operates 14 manufacturing facilities and 5 distribution yards and employs more than 400 people in 10 states.

Business Situation

Electric wooden poles need regular inspection and scheduled maintenance activities. Electricity distribution companies procure poles from various vendors and install them as per the requirements. Each pole may carry multiple devices (like capacitors, insulators, etc.). All the poles on a regular basis need to be monitored for any defects to the pole or devices mounted on them due to ageing or weather conditions. These electricity distribution companies employ inspectors to do this task and generate reports of defects in poles. This report is then converted into work orders and assigned to maintenance division.

Once the repair is done they report back to inspection division to check the completeness of the work. The inspector needs to go back to that particular pole and inspect it again and report back. There is lot of information that needs to be managed. Inspection route planning plays an important role as far as efficiency of the inspector is concerned.

Technical Challenge

Electric poles that are to be inspected are situated at different geographical locations. Each pole's configuration might be different in terms of the equipment mounted. The condition and the severity of damage might vary and in some cases it may need emergency attention. The identification of a particular pole is also difficult. The location of the pole might or might not have any data network coverage. This becomes an important factor for architecting a solution.

Solution

Sameva along with technological partner, a leading RFID and inventory management solution provider, came up with an approach of developing a custom inspection reporting solution on a windows mobile device Intermec CN3, which would be backed by a server side module to control the data. The Intermec CN3 device is an RFID capable device with cellular network connectivity. This device also comes with a detachable RFID reader module and built in GPS module. This device was chosen as it had all the required features that were required for the product.

It was planned that the data on the CN3 device would be synced with the server at the start of the day and all the work orders for that day for that inspector would get populated in the device. The inspector would then select a particular work order and start inspecting the equipment without the need of the network connection. Once the inspection is completed, the inspector can sync back the data to the server when the data connection is available. The inspector will also get to see all assets' location on Google map so that he can plan which pole to inspect next depending on his present location. If the severity of a particular pole or its equipment is seriously damaged then the device would automatically send a message to the concerned person who is mapped to that severity issue. This action can be controlled through server side decision based prompt system on the server side.

RFID tags would be embedded into the poles and Tag IDs assigned at the procurement stage. This would help the inspector to identify the exact pole to be inspected by scanning the RFID tag thru his handheld reader.

Benefits

Since the entire solution was reporting back to a centrally located server, it was very easy for the client to monitor the repair logs as well to prioritize the work. It also greatly improved the performance of the inspectors as they were able to record their observation more accurately with visual indications of the defects and explain the same to the repair staff without having to go to the physical location. The ambiguity in locating specific pole that needs maintenance was also eliminated since all the equipment were tagged with unique RFID tags and each work order would execute only after scanning the tags. If the wrong asset was scanned, then the activity would not proceed.