



**CITY OF CORPUS CHRISTI
WIRELESS APPLICATIONS**

AERIAL VIDEO SURVEILLANCE

SUMMARY OF BUSINESS PROCESS

The ability to put an “eye in the sky”, to fly a video camera over a fire, police incident, or for routine surveillance, can be invaluable to many public safety agencies. To be able to do this without the capital and operating expense of flying a manned aircraft brings this capability to many situations where it could not otherwise be used. The RotoMotion SR100 is a Wi-Fi controlled, unmanned helicopter, that can use the Corpus Christi Wi-Fi network to transmit live, aerial video images from anywhere in the city-wide coverage area.

SERVICE IMPROVEMENT OPPORTUNITIES

Imagine a fire commander being able to see an aerial view of a major fire incident, with live video images directly transmitted to his command and control laptop. Or a SWAT team commander with the ability to see an instant, real-time overview of a dangerous situation. Or the ability to monitor crowds at a sporting event or civil gathering from the air. All of these situations have previously required extremely expensive manned air support. At a capital cost of less than \$40,000, the RotoMotion UAV becomes an easy-to-use, economical alternative, delivering enhanced situational awareness and improved productivity in many public safety situations.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

To be operationally effective, such a device must be safe, easy to operate, and inexpensive. The RotoMotion SR100 is capable of carrying an inexpensive digital video surveillance camera and transmitting live video images back to ground using a standard Wi-Fi data link through the Corpus Mesh network, thus completely leveraging the City’s investment in that wireless infrastructure.

Video data transmitted from the helicopter can be captured using the same digital video recording capability as the City’s other fixed and mobile video cameras, and can therefore be incorporated into the evidence chain, if required. The device also needs to be operable by standard (trained) public safety personnel, rather than relying on specialists.

SUMMARY OF TECHNOLOGY REQUIREMENTS

At less than 5 feet long and weighing less than 60lbs fully loaded, the UAV can be easily transported to an incident site. The device is easy to fly, and can be remotely controlled, flown totally automatically based on pre-programmed way points, or controlled by transmitting commands from a ground computer. Operator training is minimal and can be completed in days.

The Series 100 UAV is capable of fully autonomous flight with a safety operator to perform takeoff and landing and to engage and disengage the autonomous flight control system (AFCS). The AFCS utilizes an advanced stable-hover (Patent Pending) control system. The helicopter has several modes of operation:

- **Velocity Command mode (VC-Mode):** the helicopter position is commanded by the safety operator using proportional velocity commands. The stick commands the helicopter to move in the commanded direction at a speed proportional to the amount of stick movement on the transmitter
- **Way point route plan mode (WAY-Mode):** helicopter flies a preprogrammed series of way points (coordinates, heading, altitude, speed and other way point attributes)
- **Command mode (CMD-Mode):** the helicopter is commanded in an ad-hoc fashion by sending it guidance commands from another computer. These commands can be given by a human operator or by another computer system.

The helicopter carries a standard video camera, mounted in a remote-controlled turret that uses Wi-Fi to transmit live video back to the operator through the Wi-Fi mesh network.

DEPLOYMENT AND USAGE LEVEL

Currently the system is in an evaluation and proof-of-concept phase. The objective is to be able to demonstrate the usability of the RotoMotion aerial surveillance system working in conjunction with the Corpus Christi wireless mesh network.

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AUTOMATED METER READING WITH WIFI DATA BACKHAUL

Five-year program to upgrade the city's water and gas meters to state-of-the-art Automated Meter Reading (AMR) system.

SUMMARY OF BUSINESS PROCESS

Legacy 'system' was a manual program with twenty-four meter readers visiting each customer premise every month to gather current reading for billing purposes. Four supervisors, 28 trucks, assorted clerical staff and management burden, fuel, insurance and vehicle maintenance all added to the high cost of this labor-intensive operation. Customer bills were generated monthly. Calls to the Customer Service Department were high due to reading inaccuracies and high percentage of estimated reads. Billing questions and out-of-cycle reads required a costly individual trip to the premise to verify the reading.

SERVICE IMPROVEMENT OPPORTUNITIES

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Key opportunities to improve the metering, meter reading and customer service operations include:

1. Reading accuracy to 99.95% for billing purposes.
2. Meter reading data availability for customer service representatives no older than twelve hours with a minimum of two reads per day from each meter. (Programmable to 256 reads per day for key accounts.)
3. Meter reading data available to customers via city web portal.
4. No premise trips for out-of cycle reads.
5. Replacing about 60% of the meters as part of the overall project improves system metering accuracy and overall billings.
6. Data analytics for leak detection and system management.
7. Upgrading meter pits, lids and field infrastructure as part of the total project as required to ensure the long-term value of the metering assets.

SUMMARY OF TECHNOLOGY REQUIREMENTS

- 146,000 meters total to be replaced/retrofitted with electronic registers and RF transmitters.
- 100 Data Collector Units (DCU) on a grid throughout the city.
- DCU's tied via Ethernet port to Tropos WiFi nodes or transmitting on WiFi frequency to transport data.
- Data Server for meter reading database with operating software for the Hexagram STAR[®] database and system analytics tools.
- Integration to the city's billing system.
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DEPLOYMENT AND USAGE LEVEL

The program is designed for a 100% deployment over five years in equal increments with year two nearing completion. Approximately 40,000 meters have been converted to date. Deployment and material costs are within program expectations and the program is on budget. Cost savings from automated operations are starting to be realized as meter readers are transferred to other positions.

CUSTOMER SATISFACTION LEVELS

Customers with upgraded meters and infrastructure are very pleased with the improved accuracy, reduction of estimated reads and responsiveness to inquiries to customer service representatives. Good data answers questions quickly and accurately.

CONTACT

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AUTOMATED VEHICLE LOCATION

SUMMARY OF BUSINESS PROCESS

The City currently uses Automated Vehicle Location (AVL) in all front line public safety service vehicles. AVL uses global positioning satellites (GPS) to pin point location, elevation, and velocity. Using this technology for public safety greatly enhances job performance, personnel safety, situational awareness, and can aid in time critical scenarios. MetroCom uses AVL to track the position of all public safety vehicles on a map located at each dispatching station. The Fire department uses it to dynamically recommend Fire and EMS vehicles depending on their location to be dispatched to an event because seconds can save a life or put out a fire.

SERVICE IMPROVEMENT OPPORTUNITIES

Traditional AVL data transmission and hardware requirements made the deployment of tracking devices to all City vehicles cost prohibitive. With the advent of WiFi and new GPS technologies, the City plans to expand its AVL services to all departments. AVL can be used to analyze routes, save on rising fuel costs, make road construction more efficient, and track the speed city vehicles.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

- Deploy AVL to all City departments
- Track vehicles for analysis of fuel costs, vehicle maintenance
- Enhance public safety for the public and sworn personnel

SUMMARY OF TECHNOLOGY REQUIREMENTS

- WAAS enabled GPS receiver
- Portable computer the GPS receiver can connect to and send the GPS data back to a central location to be read and displayed for viewing
- Wireless communication to send GPS data

DEPLOYMENT AND USAGE LEVEL

- 140 police vehicles
- 50 Fire/EMS vehicles
- Used 24/7/365 for public safety

CONTACT

Wesley Nelson, Technical Specialist, 361-826-2931
Commander Brian Uhler, 361-886-2619

POINT TO MULTIPOINT FOR ACCESS AND BACKHAUL

SUMMARY OF BUSINESS PROCESS

Although city owned fiber has been available for access and backhaul in the core of the City of Corpus Christi, broadband access and backhaul in the rest of the city is costly (recurring monthly charges) or not available. Driven by the deployment of the citywide WiFi network, cost-effective backhaul throughout the entire city became crucial to enable the deployment and upkeep of this citywide WiFi network affordably.

Currently, a WiMAX-class Point to Multipoint wireless broadband solution from Alvarion provides for citywide coverage for backhaul capacity injection of the WiFi network, direct access to buildings and connectivity to video cameras. Through elimination or avoidance of recurring monthly leased line charges, typical ROI for such deployment is 12 months or less.

SERVICE IMPROVEMENT OPPORTUNITIES

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

The main goal for the Point to Multipoint solution was to implement a reliable fiber extension solution for a fraction of the cost of fiber, with the advantage to provide equal or better reliability and throughput compared to leased lines, without recurring costs.

Reliability, throughput and coverage were all proven during the initial proof of concept. Return on investment was proven within 12 months, as targeted. Applications include backhaul to the WiFi network, access to buildings and connectivity to video cameras.

SUMMARY OF TECHNOLOGY REQUIREMENTS

- The proof of concept project provided for only one primary Alvarion base station location to provide connectivity in the Padre Island area of the city.
- The network expanded to three primary base station location and additional connectivity for the Airport.
- Key technical requirements included use of multiple frequency bands (5.3 & 5.8 GHz), WiMAX-class product specifications (OFDM-based solution for non-line-of-sight connectivity, high throughput (30+Mbps), QoS, etc.).

DEPLOYMENT AND USAGE LEVEL

- Complete citywide coverage with only three primary base station locations, leveraging existing government structures, such as radio and water towers
- Used to provide backhaul to WiFi nodes, buildings and cameras

CONTACT

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RESULTING BUILDING INSPECTIONS IN THE FIELD WITH WIFI

SUMMARY OF BUSINESS PROCESS

Permits are used to regulate construction and are designed to ensure that all construction in the city meet minimum standards. City building inspectors conduct and result field inspections for residential and commercial construction. Contractors obtain inspection results and move forward to complete projects or modify construction to meet code requirements. Access and timeliness of scheduling and getting results of inspections are important economic factors.

WiFi enables inspectors to complete on-site data entry of inspection results and contractors to have real-time access to those results while they are also on job sites.

SERVICE IMPROVEMENT OPPORTUNITIES

Initial Process Improvement Goals, All Accomplished

Transition from:

TO:

Data entry of inspection results at the end of the work day	on-site data entry of inspection results with portable, wireless device
Client access to results not available until end of day or next day	real-time access to inspection results
Client must leave work site to call at the end of the day for inspection results	client can access inspection results at work site through portable, wireless device
Client left phone mail message requesting inspection, with no confirmation of schedule	client requests inspection online and receives confirmation of electronically scheduled inspection
Inspections were overbooked, with perception by clients that their inspection was delayed	system schedules 20 inspections per inspector per day, then schedules for next day

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Training Goals, All Accomplished

- Coach contractors to utilize online and IVR applications for scheduling inspections and reviewing results
- Train inspectors on portable devices and wireless access for data entry in field. Conducted “train the trainer,” with one-hour session for inspectors and ongoing process for new hires

Building Inspections Proof of Concept Project Goals

- Reduce cycle time for construction of single family residences by five to six days. Cycle time has been reduced from 180 days to 175 days.

- Residential permit process completed within two days. Has been accomplished.
- Commercial permit process completed within 30 days. Has been accomplished.
- Inspection turnaround in 24 hours. Has been accomplished.
- Reduce gasoline usage by 30 percent. To be determined.
- Increase percentage of time inspectors spend in field by 15 percent. Not accomplished yet.

Customer Satisfaction Levels

- Conduct survey and focus group of contractors. Not completed yet.

Digital Inclusion

- Computer station at Development Services' front counter for contractors to utilize
- Kiosk on first floor at City Hall
- Free Internet service at all public libraries (100+ computers)
- IVR application for multi-channel options.

SUMMARY OF TECHNOLOGY REQUIREMENTS

- The proof of concept project was initiated with the distribution of portable devices for inspectors. The inspectors tried three types of portable devices: Axiom, notebooks and tablets. Their preference has been the tablet, as the Axiom did not work for them and the notebook was bulky for mobility. A problem inspectors experienced in the beginning of the project was disrupted wireless service, so they would utilize their phones. As many inspections are in new development areas of the city, Sprint cards have been added to the tablets, so that seamless access would be available during the build-out of the wifi network.
- Both web-based and telephone Interactive Voice Response applications are utilized by contractors to schedule inspections and obtain results. These SunGard HTE Click2Gov web and phone applications are interfaced with the backend HTE building inspection system.

DEPLOYMENT AND USAGE LEVEL

- 14 inspectors are utilizing tablets and wifi in the field
- > 50 percent of inspections are scheduled and results accessed through web or IVR by contractors

CONTACT

Susan Cable, Director of E-Government Services – 361.826.4091

CODE ENFORCEMENT / NEIGHBORHOOD IMPROVEMENT

SUMMARY OF BUSINESS PROCESS

- Investigate and enforce the City Building & Housing Standards Code, City Code of Ordinances, City Zoning Ordinances, City Solid Waste Ordinances and State Legislation in accordance with health, safety, and welfare of the general public
- Respond to citizen complaints and patrol a specifically assigned area to proactively identify violations
- Educate the general public concerning property maintenance and proper disposal of solid waste within the City limits
- Generate written and photographic documentation of violations to attain civil abatement and provide evidence in criminal proceedings against violators when there is failure to comply

SERVICE IMPROVEMENT OPPORTUNITIES

The ability to gather and report data from a field vehicle results in rapid response, investigation and enforcement while reducing case backlog. Field officers can complete more cases since a trip back to their office to enter data is no longer necessary.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

WiFi connectivity enables code enforcement officers to complete on-site data entry of inspection results and retrieval of previously entered case data as well as real-time connection to research tools such as HTE's Utility Billing System, GIS, NCAD, Microsoft Location Finder, e-mail and other internet applications. Valuable data including plat maps, property addresses, zoning information, land dimensions, property owner and tenant information is readily available from a field location.

SUMMARY OF TECHNOLOGY REQUIREMENTS

The primary sources of information needed by a Code Enforcement Officer can be obtained from the City's enterprise web-based applications utilizing Internet Explorer and Java Runtime, allowing them to be accessed from any PC, tablet, notebook or PDA with these capabilities. Field users connect to these applications and other City data sources using the City's WiFi network and a secure VPN client.

DEPLOYMENT AND USAGE LEVEL

The City's 14 Code enforcement officers are equipped with wireless enabled laptops with optional docking stations in the field vehicle.

CONTACT

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DOCUMENT MANAGEMENT AND IMAGING SYSTEM

SUMMARY OF BUSINESS PROCESS

Officers are assigned to different beats throughout the City. Officers issue Criminal Trespass Warnings which are not entered into the police department's records management system. Without a way to share the information, officers were not aware if a warning had previously been issued when responding to a call. There was an attempt to send emails with lists and spreadsheets, but this was an impossible task to keep lists up-to-date.

Now all criminal trespass warnings are submitted to Criminal Investigation Division (CID) where the warnings are scanned into Visiflow. VisiWeb can be accessed via the Mobile Data Computers (MDCs) where the officer can search for any warnings or authority notices. Authority Notices give the officer permission to issue warnings without the owner of the property being present.

SERVICE IMPROVEMENT OPPORTUNITIES

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

1. Officers have access to all warnings, not just their own. The sharing of data is very beneficial to all officers and detectives.
2. Install the VisiWeb tool in the patrol cars and dispatch
3. Free up physical storage space for the Police Department by scanning and archiving documents.

SUMMARY OF TECHNOLOGY REQUIREMENTS

Visiflow is the adopted imaging and workflow application of the City. Therefore, the initial investment in servers and operating systems had already been made and the cost to run the web server is minimal.

The only requirement for the Police officers in the field is the ability to access the City's Intranet through the MDC and type in the URL to access the web server.

DEPLOYMENT AND USAGE LEVEL

Deployed to 140 MDC's in patrol cars and created 200 additional user accounts for officers on patrol to access Criminal Trespass Warnings in the Patrol Car.

CONTACT

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CCISD PARTNERSHIP WITH CITY OF CORPUS CHRISTI WiFi

SUMMARY OF BUSINESS PROCESS

Legal Department ensures that all FERPA policy is followed and security and integrity of the network is maintained. District personnel provide state of the art service and maintenance to schools via LAN Network which houses all intranet activity. Contractors move forward to complete installation of WiFi Units on campus sites. Access and timeliness of scheduling as well as Stakeholder support are important factors in completing the project.

SERVICE IMPROVEMENT OPPORTUNITIES

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Transition from:

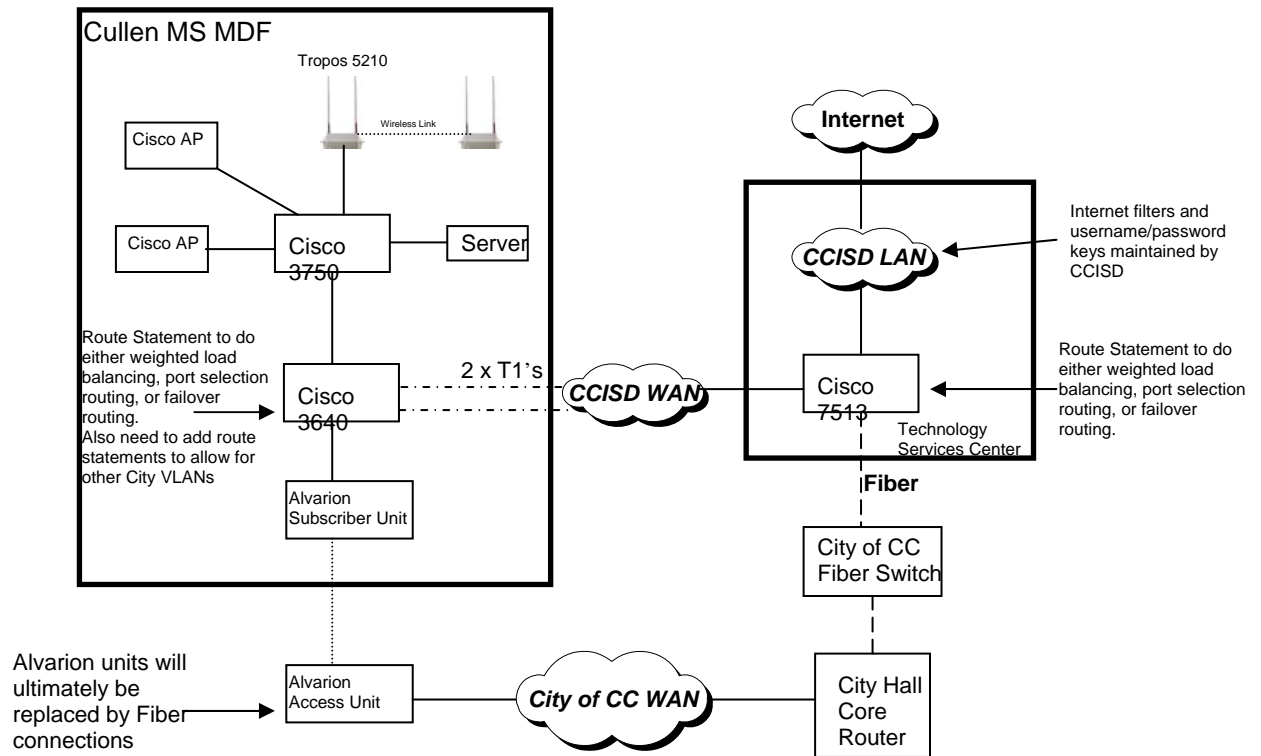
TO:

Slow internet access.	Portable, wireless devices which allow anytime access.
Communication gaps between community and schools.	Real-time access to information that helps get parents and children positively involved in the community.
Independent networks.	Redundant networks.
Paperwork shuffle.	Real-time access to up to date and pertinent information that helps children and families in the community.
"Working harder not smarter"	Systematic data that gets directly to the source in real-time.

SUMMARY OF TECHNOLOGY REQUIREMENTS

- The CCISD technology department initiated wireless, portable devices for teachers and students to gain more access to technology in schools. There are currently schools with wireless capabilities which utilize wireless networks. A problem experienced is sluggish network speed, and inconsistent wireless service resulting in technology not being utilized to its full potential to instruct students and perform daily tasks. As more wireless access points go up seamless access would be available within the community and during outages the wifi network could be maintained.
- Both web-based and telephone applications are utilized by stakeholders to sustain communication between schools and the community. These web and phone applications are interfaced with the

Proposed network design using Tropos and Cisco APs for Cullen Middle School



DEPLOYMENT AND USAGE LEVEL

- Redesign CCISD Website to include Student and Parent corner
 - Interim Progress Reports
 - Student Grades
 - Report Cards
 - Student Schedules
 - Homework Assignments
- Juvenile County Court Access
 - Developed the Judges' Data Viewer
 - Instant Web access to student information
 - Beneficial tool during adjudication

CONTACT

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EMERGENCY DISASTER RESPONSE

SUMMARY OF BUSINESS PROCESS

Self-contained, portable mounting and power infrastructure allows tactical communications in the event of civil or natural emergency. A small number of “towers on wheels”, complete with solar panels and generators, provides the ability to rapidly extend the Corpus fixed mesh network, and/or create entirely new tactical hot zones, around any area where it is needed – at a sporting event, around a major accident or fire, or for hurricane recovery. The towers also act as mounting assets for surveillance cameras and facilitate video, voice and data communications.

SERVICE IMPROVEMENT OPPORTUNITIES

Communications quickly become a critical component in any response to a major emergency. Unfortunately, most communications systems are dependent on the availability of power and physical infrastructure. Several Emergency Disaster Response Trailers, rapidly deployed to an incident site, can replace damaged infrastructure or temporarily create new networks in a matter of minutes, establishing or re-establishing command and control and dramatically enhancing situational awareness. The trailer-mounted mesh infrastructure enhances both the city-wide mesh network and mobile communications from fire, police and EMS vehicles.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

To provide and maintain critical communications infrastructure during an emergency, through periods of inconsistent power availability and in areas with damaged or no infrastructure.

SUMMARY OF TECHNOLOGY REQUIREMENTS

The solution needs to be self-contained and rapidly deployable. Mobile trailers with self-contained power that can run for weeks unattended fulfill that requirement. Standards-based mesh networks are ideal for this kind of communications infrastructure, fully leveraging the self-configuring, self-healing attributes of the mesh. When equipped with a Tropos 5210 mesh router, the Hoss Emergency Disaster Response Trailer can create or augment a local mesh network, while interfacing with the existing city-wide Corpus network. The utilization of IP-based, Wi-Fi technology allows simple integration with IP video surveillance cameras, existing first responder MDTs, hand-held PDAs, and emergency VoIP phones. Because the same equipment is used for both the fixed and mobile network, the mobile towers simply create extensions to the City’s overall public safety system.

DEPLOYMENT AND USAGE LEVEL

Currently the system is in an evaluation and proof-of-concept phase. The objective is to be able to demonstrate the creation of temporary, tactical networks and surveillance systems that work in conjunction with the Corpus Christi wireless mesh network.

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EMERGENCY MEDICAL SERVICES

SUMMARY OF BUSINESS PROCESS

Fire and EMS are a large part of the cities public safety forces. The EMS division receives on average 93 calls per day; 650 calls per week; 2,604 calls per month; and total of 31,248 per year; and that's just EMS calls alone. This application has the ability of aiding the medics with delivery of treatments, medication, suggested alternatives for allergies and provides medics with a connection to hospitals and other medical resources at the touch of a pen through a seamless Wi-Fi Connection.

Safetypad also allows for our billing process to be more accurate and provide statistical information by running a plethora of reports both provided and created.

SERVICE IMPROVEMENT OPPORTUNITIES

Safetypad has the ability of storing information on repeat patients. This information is recorder at the time of treatment through an ambulance patient report (APR). Once the report has been filed, the system then analyzes the call frequency, and if the set criteria is met, then that individual's information is added to a fast pull list. When a medic arrives at the seen of an emergency and enters the patient's name, all of the previous medical history will be populated and that allows the medics to treat the patient. The previous medical history, allow medics to know the patients allergies, reasons for last call, past treatment and much more.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Reporting to the State will be simplified due to the fact that all APRs are going into a searchable database in digital format. There will be no need to enter a paper report into a spreadsheet that can have second hand errors by data entry. APR legibility will be a thing of the past. Safetypad takes handwritten reports and digitizes them to provide an accurate easy to read report. Safetypad also provides many usable reports to aide in QA and QI, which also lead to better training.

SUMMARY OF TECHNOLOGY REQUIREMENTS

The Safetypad application runs on computers with Windows Tablet PC with digitizer technology. This technology allows for the medics to write directly on the screen and converts their handwriting to digital text. For this project, the Panasonic Tough Books (CF-18) was chosen because of its ruggedness, functionality and ease of use.

The CF-18 contains a 60 gigabyte Hard drive, 512 Megs of Ram, digitizer swivel screen (with up to 1024 x 768 screen resolution), two PCMCIA PC card slots, one SD card reader, two USB ports, one Ethernet port, one modem port, one standard built in speaker, built-in Wi-Fi, and locking bay doors for easy maintenance.

This system is utilizing PadCom's Total-roam to maintain a connection to the cities network and provide additional security through wireless connections.

Minimum Sever Configuration (not used by CCFD)

Window 2000/2003 Server (Linux and Unix supported for Oracle Database) • IIS 5.0 or greater
• Pentium III or better • 1GB RAM or greater • 1GB hard drive space free • CD-ROM drive •
16-bit sound system (recommended) • RAID5 or better • Tape or other backup media system
• VGA or better display (resolution of 1024x768 or greater recommended) • MS SQL Server
2000 or Oracle 9i • 1 or more modems (33.6 minimum) • 10/100 MB Ethernet card (if network
connectivity required) • TCP/IP network (recommended) • 1 Serial and/or USB port

DEPLOYMENT AND USAGE LEVEL

The Safetypad tablets will be deployed on eight front line units plus one licensed reserve unit.
Three reserve tablets will be assigned to the EMS field supervisor in the event of a technical
issue with any of the tables.

CONTACT

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EMERGENCY NOTIFICATION

SUMMARY OF BUSINESS PROCESS

City staff needs to communicate information about various events (weather, emergency, public works) to specific groups using a wide variety of devices (pagers, email, cell phones, land lines). Each event and group (citizens, staff, business owners, refineries) has specific requirements about notification methods, severity and delivery mechanisms. Events don't always follow the expected response plan and notifications need to be sent as the event progresses. City staff may need to dedicate resources to monitoring the situation when automated mechanisms are available (e.g. watch weather channel versus National Weather Service Hurricane Storm Alerts). Additionally, city staff needs to ensure delivery and acknowledgement of these notifications.

OurSecurityNet enables multi-mode delivery and acknowledgement of events to citizens, city staff, and first responders containing multimedia and geographic information specific to the event and recipient based on a profile.

SERVICE IMPROVEMENT OPPORTUNITIES

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Initial Process Improvement Goals, in process

Transition from:

TO:

Manual entry of fixed, serial dial-out notification System using dedicated phone lines	Electronic entry of events, groups, and triggers from existing information sources using geographic and other profile information over VOIP, internet and dedicated phone lines.
Manual monitoring and notification of events	Event based automatic notification to affected groups based on geographic/specified profiles
Serial notification and message generation for each device web, cell phone, pager	Real-time conversion of message to multiple formats (web, email, text to voice) to simultaneous delivery to multiple devices (cell phone, land lines, pagers, email, road signs)
No acknowledgment of receipt of message, nor additional updates	Automatic receipt acknowledgement with additional information requests if needed
Discrete notifications for each message	Complete event lifecycle management of entire notification process

Training Goals, All Accomplished

- Train staff on system operation- system profiles, message notification and delivery, information source interfaces. Conducted "train the trainer," with one-hour session for system and group administrators.
- Conduct demonstration of system capabilities to both administrators and staff.

OurSecurityNet Proof of Concept Project Goals

- User registration process validation
- Test message validation
- Multi-channel user communication validation
- Calendaring use validation
- Group and user content validation
- User survey
- Statistic generation of event numbers and durations
- Interface with work order system (Maximo)

Customer Satisfaction Levels

- Conduct survey and focus group of staff and users. Not completed yet.

Digital Inclusion

- Hosted managed service using VOIP data center
- City Web site Internet service at all public libraries (100+ computers)
- Multiple Internet data sources (National Weather Service, etc).

SUMMARY OF TECHNOLOGY REQUIREMENTS

- The proof of concept project was initiated with the creation of several groups, city staff, business owners association, and local emergency notification system. City staff is creating test plans for message notification by multiple city departments.

DEPLOYMENT AND USAGE LEVEL

- 20 user accounts created
- 10 internet notification services including Maximo work order system

CONTACT

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HEALTH-E-CITIES / EMERGENCY MEDICAL SERVICES

SUMMARY OF BUSINESS PROCESS

Fire and EMS are a large part of the cities public safety forces. The EMS division receives an average 93 calls per day; 650 calls per week; 2,604 calls per month; and total of 31,248 per year; and that's just EMS calls alone. Currently, information such as treatments, medication, and suggested alternatives for allergies is recorded manually and then later entered into an excel spreadsheet or access database for state reporting.

SERVICE IMPROVEMENT OPPORTUNITIES

The first area of improvement is the introduction of an electronic data capture system. The SafetyPad system will allow medics to know a previous patients allergies, reasons for last call, past treatment and much more. An electronic system will also provide the medics with a connection to hospitals and other medical resources at the touch of a pen through a seamless Wi-Fi Connection.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

- Implement a system to electronically capture and store patient information.
- Simplify process of reporting data to the State of Texas.
- Eliminate potential of secondary data entry mistakes.
- Gather performance metrics.
- Deliver better quality of service to citizens.
- Save more lives.

SUMMARY OF TECHNOLOGY REQUIREMENTS

The Safetypad application runs on computers with Windows Tablet PC with digitizer technology. This technology allows for the medics to write directly on the screen and converts their handwriting to digital text. For this project, the Panasonic Tough Books (CF-18) was chosen because of its ruggedness, functionality and ease of use.

The CF-18 contains a 60 gigabyte Hard drive, 512 Megs of Ram, digitizer swivel screen (with up to 1024 x 768 screen resolution), two PCMCIA PC card slots, one SD card reader, two USB ports, one Ethernet port, one modem port, one standard built in speaker, built-in Wi-Fi, and locking bay doors for easy maintenance. This system is utilizing PadCom's Total-roam to maintain a connection to the cities network and provide additional security through wireless connections.

DEPLOYMENT AND USAGE LEVEL

The Safetypad tablets will be deployed on eight front line units plus one licensed reserve unit. Three reserve tablets will be assigned to the EMS field supervisor in the event of a technical issue with any of the tables.

CONTACT

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John Murray, EMS Director, 361-880-3942

IN CAR VIDEO POLICING

SUMMARY OF BUSINESS PROCESS

The City of Corpus Christi currently uses analog cameras in police vehicles to adhere to the state racial profiling requirements.

SERVICE IMPROVEMENT OPPORTUNITIES

Storage and maintenance of the VCR tapes has become cumbersome and space intensive. Retrieval of necessary data has also become problematic as tapes age and are exposed to the elements. Following a recent emergency incident the City identified the need to have access to streaming video from the police cars.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

- Adhere to racial profiling requirements
- Eliminate need to archive and store VCR tapes
- Provide ability to mark or tag video for specific court cases
- Establish mobile and real time video streaming for emergency response

SUMMARY OF TECHNOLOGY REQUIREMENTS

With the Insight Video net solution we have the ability to record video at high quality using minimal digital storage space, and stream video to many other locations using Wi-Fi. Insight Video Net has developed exceptional solutions for the City's most demanding communication and information needs. These solutions have been aimed toward **mobile digital video, fixed building solutions, and portable battery powered** solutions.

The Insight v1500-E series is the IP video server that is being used in the PD vehicles. These servers provide a cost effective solution for applications where a high concentration of cameras are terminated within the same area. They deliver high-quality, MPEG-4-based, low bandwidth video over 10/100Base-T networks using cat 5, fiber optic, and wireless media. The servers can easily be extended over local and wide area networks (LANs and WANs) or the Internet using ISDN, PSTN, or xDSL routers. Their compact design enables dual-stream video inputs within a 1U, 4" depth enclosure. Multiple units can be rack-mounted on one or both sides of a standard 19" cabinet. The video servers come in four versions: a video encoder (v1704-E) with four analog video input at 30 frames per second (fps) each; a video encoder (v1708-E) with eight analog video inputs at 30 fps each, the v1712-E with twelve inputs and the v1724 with twenty-four inputs. The configuration and management of these servers are made easy with the user-friendly interface provided by Insight's Video Net distributed video management and storage software.

DEPLOYMENT AND USAGE LEVEL

Deployment will occur with receipt of grant funding.

CONTACT

Julius Cavazos, Application Coordinator, 361-826-3964

MOBILE DATA COMPUTERS

SUMMARY OF BUSINESS PROCESS

The City of Corpus Christi PD, FD, and EMS front line service vehicles are all equipped with mobile data computers (MDC). The computers are ruggedized, hardened, and damage resistant. The City has been using Data911 M5 computers for all its public safety vehicles for over three years now. The computers allow public safety personnel to access sensitive key information at a moments notice allowing them to do their jobs better and faster. Use of a 900 MHz radio system for data transmission restricts the amount of data and types of data that can be transmitted, whereby restricting the software applications that can be utilized in the field.

SERVICE IMPROVEMENT OPPORTUNITIES

The City's new wireless network has provided the bandwidth needed to run high bandwidth applications such as: in-car streaming video, car-to-car messaging, accessing network resources, sex offender databases, automated vehicle location, crime analysis capabilities, CAD-dispatching, websites, mugshots, records management, wireless field reporting, viewing satellite imagery and Pictometry. With the completion of the City's wireless network, we were able to provide a plethora of tools to public safety personnel allowing them to do their jobs more efficiently. The City's wireless network provides the conduit to make all the communications possible.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

- Use the wireless network to access the high bandwidth applications
- Wireless Field Reporting allows for paperless reporting and faster entry into the system which means more information for historical queries
- Access to Pictometry and satellite imagery for SWAT scenarios to plan building raids
- Video streaming from the vehicle to command station or vehicle providing first hand video of an emergency scenario
- Access to mugshots and sex offender database to positively identify an offender in the field without having to arrest and transport prisoner to station for identification
- Access to websites such as current weather conditions, external shared criminal information databases, current traffic and road closures, Google Maps
- Access to Crimeview Web, a crime analysis tool
- Access to VisiFlow, a document imaging tool to view police reports, citations, etc.

SUMMARY OF TECHNOLOGY REQUIREMENTS

- Data911 M5 ruggedized computer
 - 700Mhz Processor
 - 256MB RAM
 - 20GB Hard drive
 - 800x600 monitor resolution, with touch screen
- A VPU(video processing unit) to digitize the video and send to the MDC
- Dash mounted camera

- Cisco 350 Series Aironet WiFi card
- Sprint Merlin 720 EVDO wireless card
- Padcom's TotalRoam software to manage the two connections providing a secure FIPS-140 tunnel to network resources

DEPLOYMENT AND USAGE LEVEL

- 140 police vehicles
- 50 fire department/EMS vehicles
- Used 24/7/365 by all public safety personnel

CONTACT

Wesley Nelson, Technical Specialist, 361-826-2931

MOBILE EMERGENCY OPERATIONS WEBEOC

SUMMARY OF BUSINESS PROCESS

A breakthrough application of web-based technology from Emergency Services Integrators (ESI) puts integrated information management in the arsenal of the emergency operations center. This technology was developed for the federal government and has been redefined for the cities use. On the starting edge of this product, the purchase of a PC with a modem and an overhead display device, and a minimal investment in software allows the city to harness the power of the Internet for emergency management. This results in secure, real-time access to state and national weather trends, satellite images, mapping information, details of operations in other jurisdictions, local, regional and even national resource status and other data vital to the efficient management of any contingency (even if the jurisdiction hasn't invested in any of the sources of these data).

SERVICE IMPROVEMENT OPPORTUNITIES

WebEOC allows for a secure transfer of information and orders amongst agencies. WebEOC also provides us with a communication to the outside world in the event of traditional communication outages.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

The use of this application during any emergency and documentation of all activities during that emergency, allows us to better train for future events. This application provides us with a database full of local scenarios of which our EOC director and staff can create better plans and easily report to the state.

SUMMARY OF TECHNOLOGY REQUIREMENTS

WebEOC is a web based application that requires Microsoft's IIS server and a web portal (URL) to function. The minimal requirements are Window 2000/2003 Server • IIS 5.0 or greater • Pentium III or better • 1GB RAM or greater • 1GB hard drive space free • CD-ROM drive • 16-bit sound system (recommended) • RAID5 or better • Tape or other backup media system • VGA or better display (resolution of 1024x768 or greater recommended) • MS SQL Server 2000 or Oracle 9i • 1 or more modems (33.6 minimum) • 10/100 MB Ethernet card (if network connectivity required) • TCP/IP network (recommended) • 1 Serial and/or USB port

Client Requirements

PC 133Mhz processor 128mb ram, Windows ME, Internet Explorer 5-6 (IE7 not stable) , Java plug-in

Internet Connection

Currently this system is primarily supported by the city's network info-structure and can be accessed from outside our city network. As a contingency plan we also have a satellite Internet

connection that can be activated within three hours, in the event that we lose traditional communication.

DEPLOYMENT AND USAGE LEVEL

City wide deployment, all departments have representatives assigned to the EOC and can access the WebEOC application providing internet access.

CONTACT

Julius Cavazos, Application Coordinator MIS – 361-826-3964

ASSISTED GPS ASSET MOBILE TRACKING FROM SPRINT NEXTEL & APPLICATION DEVELOPMENT PARTNER OMNILINK

This solution provides a superior performance wireless location service and devices for mobile resources and personnel.

SUMMARY OF BUSINESS PROCESS

Omnilink, using Sprint Nextel's wireless networks and devices, provides a proven technology that works to prevent crime by tracking people, vehicles, and other assets.

SERVICE IMPROVEMENT OPPORTUNITIES

Omnilink, together with the Sprint Nextel wireless networks and devices, works to prevent crime, maintain offender compliance, and increase the effectiveness and efficiency of offender management and asset tracking for first responders and other security personnel.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Key opportunities for first responders and other security personnel include:

8. Using Omnilink's ability to track specialized wireless devices and all Sprint Nextel GPS cell phones, officers can participate in a responder network to alert them when an offender violates an exclusion zone. The officers can see all the responders that can be dispatched to the situation.
9. Omnilink provides the only device that works in most impaired environments like inside vehicles, buildings, subways, etc.
10. This solution provides the most accurate location in the industry, using proprietary precision engine algorithms.
11. Omnilink technology, together with Sprint Nextel, dramatically increases the efficiency of monitoring officers through the reduced amount of work required to manage assets and offenders.

SUMMARY OF TECHNOLOGY REQUIREMENTS

- Omnilink software
- Sprint Nextel GPS equipped cell phones
- Specialized wireless devices from Omnilink
- Sprint Nextel Wireless Networks

DEPLOYMENT AND USAGE LEVEL

Evaluation of the usefulness of the tool and documenting efficiencies are currently underway. Cost savings from operations would be realized immediately upon implementation.

CONTACT

Patti McKenna, Sprint Account Manager, 361-906-3100

Steve Hudson, Omnilink Vice President of Business Development, 678-624-5916

Valerie Webster, Sprint Programs & Solutions Manager, 703-433-4335

Robert Mandel, Sprint Partner Executive, 703-433-4806

MOBILE WORK ORDER MANAGEMENT

SUMMARY OF BUSINESS PROCESS

The Maximo Enterprise System (MXES) is used by the Water, Wastewater, Storm Water, Gas, Streets, Parks departments as well as the Customer Call Center and GIS Technicians to record and maintain assets, labor, training and service level agreements in alignment with department goals. MXES consists of six key systems enabling the City of Corpus Christi to manage assets, including production equipment, facilities and transportation assets throughout their entire life cycle. Work Management supports both planned and unplanned maintenance activities, from initial service request and work order generation, through completion and recording of actuals.

SERVICE IMPROVEMENT OPPORTUNITIES

Work planners can match job tasks to available resources, estimate and obtain approval of costs, establish priorities and initiate maintenance activities across the enterprise.

- Allow for detailed analysis of resource, materials, and equipment usage and cost.
- Enable the City to decrease labor and materials costs.
- Optimize maintenance schedules and labor utilization by ensuring that the right person, with the right skill, is assigned to the right job.
- Preventive maintenance (PM) schedules can be put into place, reducing unplanned downtime and reactive maintenance.
- Maximize productivity and extend asset life.
- Track and monitor work costs by location.
- Enable proactive maintenance practices. Decrease unplanned downtime.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Department metrics are established for customer service response, resolution and completion of work projects. These metrics are tracked in MXES and displayed in graphic format as Key Performance Indicators (KPIs) on the 'home page' or Start Center when the user logs in.

SUMMARY OF TECHNOLOGY REQUIREMENTS

MXES is a web-based application utilizing Internet Explorer and Java Runtime, allowing it to be accessed from any PC, tablet, notebook or PDA with these capabilities. Field users of MXES connect to the application using the City's wireless network and a secure VPN client.

The application server is Windows 2003 with a WebLogic 8.1 web server which connects using JDBC to Oracle 9i Real Application Cluster (RAC) databases residing on Linux servers.

DEPLOYMENT AND USAGE LEVEL

Street signal technicians and Gas field technicians are using laptop computers to retrieve and input MXES data from their service vehicles.

CONTACT

Lani Trotter, Application Coordinator MIS – 361-826-3788

TROPOS METROMESH TECHNOLOGY

SUMMARY OF BUSINESS PROCESS

Tropos Networks, Inc is the market leader in delivering metro-scale Wi-Fi mesh network systems. Tropos systems have been selected to unwire more major league cities than all competitors combined. Tropos MetroMesh[®] networks offer municipalities a new, economically compelling alternative for providing broadband access to mobile municipal workers, residents and small businesses.

SERVICE IMPROVEMENT OPPORTUNITIES

MetroMesh networks deliver economical broadband access to homes, small businesses and nomadic users. They support mission-critical mobile broadband applications for public safety, such as mobile database access, video surveillance, and GIS inquiries. Finally, they are enabling new in-field applications for municipalities and enterprises such as automated meter reading and automated vehicle tracking.

Municipal police, fire and EMS departments have been among the first to adopt metro-scale Wi-Fi mesh networks. High-speed, in-field data access dramatically improves public safety officer effectiveness and efficiency by getting critical information to where it is needed – in the hands of the officer on the street. For example, the ability to deliver live video feeds to responding patrol officers from, say, a bank robbery in process has been described as potentially life saving technology.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Tropos MetroMesh solutions are in use in more than 450 deployments around the world. Whether it is consumers enjoying an afternoon at the park, live database access for municipal workers, or improved situational awareness for police officers on the beat, metro-scale Wi-Fi mesh networks deliver reliable broadband data connections to mobile users, homes and businesses. And it delivers this at a fraction of the capital and operating cost of alternatives.

Factor in the emerging location-based services such as targeted searches and social applications (think MySpace with a "find me" option), and metro Wi-Fi represents a fundamental shift in the way people access their data.

SUMMARY OF TECHNOLOGY REQUIREMENTS

The Corpus Christi Municipal wireless network uses the market-leading Wi-Fi mesh technology from Tropos Networks. Specifically designed for metro-scale applications, Tropos MetroMesh utilizes sophisticated wireless routing, channel and power management to create a city-wide IP infrastructure that can be accessed by standard Wi-Fi clients throughout the coverage area. The Tropos patented routing and management protocols deliver a network that constantly self-optimizes its performance, creating the most efficient and cost-effective metro-scale infrastructure.

Totally weatherproof (hurricane-proof!), shoe-box sized radios are attached to light poles throughout the city, extending the City's fiber network. These Wi-Fi "shoeboxes" deliver true broadband Internet and system access to homes, businesses, city workers, water meters, police cars, fire trucks and ambulances. This allows mobile workers, for example, to have the same Internet experience they have in their offices, and has enough capacity to deliver live video feeds from traffic cameras, police cars, and even bomb-disposal robots. All with absolute security to protect against unauthorized access.

MetroMesh maximizes return on investment by allowing one physical network to be separated into multiple, totally secure virtual segments for use by different user groups. MetroMesh's adaptive connectivity compensates for the wide variety of Wi-Fi clients used to access metro-scale mesh networks, providing the foundation for an outstanding user experience. MetroMesh also provides the software tools required for centralized visibility, analysis and control of the network, minimizing operating expenses.

DEPLOYMENT AND USAGE LEVEL

Corpus Christi has built the world's largest multi-purpose Wi-Fi network. The system is enabled by the Tropos MetroMesh Wi-Fi networking system.

Initially begun to create a cost-effective and efficient automated meter reading (AMR) system for gas and water services, the wireless broadband network now supports a multitude of cost saving applications in all city departments as well as community broadband wireless services for its residents and businesses. These include vehicle equipped laptops for police, fire and other public safety officers, mobile desktops for field supervisors and managers, and open access for residents, businesses, and visitors to city resources. The metro-scale Wi-Fi network provides coverage to 90% of the city's population of about 277,000 residents across more than 100 square miles of the city.

CONTACT

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"Metro Scale Mesh Networking Defined"

MOBILE EMERGENCY OPERATIONS CENTER PICTOMETRY - ELECTRONIC FIELD STUDY

SUMMARY OF BUSINESS PROCESS

The cities departments utilize maps and pictures to complete tasks associated with police, fire, engineering, etc... For instance police requires pictures and maps to work on crime scenes and drug control. For Police, at crime scenes, building and home access points, distances and area measurements are requirements. The Fire Department currently familiarizes itself with buildings and homes by utilizing maps. An emergency vehicle currently only has maps to look up locations. Other departments are requiring information such as measurements of areas, distances, and heights but are currently having to wait for maps and pictures to be printed.

Electronic Field Study (EFS) enables departments such as Police and Fire to view actual images of a location before they arrive. By having this information emergency vehicles are able to make logistical decisions. This efficiency will help them save lives and help them control a situation in a shorter amount of time.

Electronic Field Study (EFS), from Pictometry, is software that is used to view and work with aerial high resolution digital images that are located in a Pictometry Image Library. The EFS software works with oblique images from 4 different directions and ortho images from two different heights. EFS has the ability to measure heights, distances, areas and has the ability to search for specific locations via an address search or coordinates search.

SERVICE IMPROVEMENT OPPORTUNITIES

Currently most city departments utilize maps and a few pictures to help with police work. The fire department currently only utilizes maps to look at locations.

The abilities of EFS give city services such as police, fire, engineering, and utilities another resource which will speed up the evaluation of a home, building, roadway or area of town. The software will give them pictures of the location without having to take pictures or survey a location. The software will speed up the process for police and fire where evaluating accesses, areas, and distances are very important for the completion of a task, evaluation, and safety of citizens and city employees.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Our goal is to implement and train city services to utilize EFS as an everyday tool to accomplishing their daily tasks. This software will give city services another resource that will speed up the decision making process.

SUMMARY OF TECHNOLOGY REQUIREMENTS

Requirements for the Pictometry Viewer are:
Microsoft Windows 2000 or higher
128 MB Ram

A Network Server, if you plan on installing your data on a network
50MB of disk storage space for the EFS application

DEPLOYMENT AND USAGE LEVEL

As EFS is developed to target certain users, the value of the software will increase. Currently Police and Fire do not have access to EFS software. EFS is scheduled to be installed at the Police department and on emergency vehicles before the end of the year.

CONTACT

David Lopez / Functional Analyst / Wireless Group / 361-826-1692

ANDROS F6-A BOMB ROBOT VIDEO SURVEILLANCE

SUMMARY OF BUSINESS PROCESS

The Corpus Christi Police Department's bomb robot is the same robot used by military forces all over the world. The CCPD services any agency within the 23 surrounding counties that requests assistance for handling explosive or suspicious devices. The bomb robot is also used to serve the local Navy and Army bases. On average, it is called to duty twice per month and used in an all day training exercise once a month.

SERVICE IMPROVEMENT OPPORTUNITIES

Supervisors and command staff have a need to monitor emergency situations that require the use of the robot. The control station used for controlling and maneuvering the robot is equipped with a remote monitor connection. A live video feed from the robot would allow the police department to mitigate the risk of injury to officers. The streaming video feed can be viewed from any workstation on the network including the mobile data computers in each patrol car.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

- Allow command staff to remotely monitor a live video feed from the robot.

SUMMARY OF TECHNOLOGY REQUIREMENTS

- A high-end laptop with ample processing power and wireless card to transmit video
- A VPU(video processing unit) to digitize the video and send to the laptop

DEPLOYMENT AND USAGE LEVEL

- One Andros F6-A Robot with remote video streaming capability
- Client software to view the video from the robot

CONTACT

Wesley Nelson, Technical Specialist, 361-826-2931
Commander Brian Uhler, 361-886-2619

SYSTEM CONTROL AND DATA ACQUISITION (SCADA)

SUMMARY OF BUSINESS PROCESS

Currently, operations and maintenance personnel are only able to obtain information regarding the Water system's operation through one of the workstations installed at one of the City's water treatment plants. Critical monitoring of pressure, flow volumes, health of equipment and chemical usage is essential to a safe and reliable water delivery system. Access to these monitoring points allows an operator in the Plant control room to obtain data and make adjustments where necessary. The SCADA system's data gathering process provides the information needed by the Water Department for their regulatory reporting requirements.

SERVICE IMPROVEMENT OPPORTUNITIES

Arranging for wireless support allows field service personnel to access remote readings of the equipment during service and maintenance activities without requiring support from additional personnel. This allows for increases in the efficiency operations and advance anticipation of developing problems and conditions before they become acute.

GOALS FOR CUSTOMERS USERS AND OPERATIONAL EFFICIENCIES

Mobilizing the SCADA system provides opportunity for Water Department personnel to perform maintenance and operational operations more efficiently. The quality and reliability of water delivery to the citizens of Corpus Christi as well as our industrial users is enhanced by the ability to control and gather data as soon as possible from any of the Water Department's plants, pump stations or pipelines.

SUMMARY OF TECHNOLOGY REQUIREMENTS

Access to the information requires operation of a controlled access WEB enabled system attached to a water treatment plant SCADA system. The information required is resident in the existing SCADA system, and requires controlled access and formatting for external display. Minimal operations require a computer at the plant available to the internet, and a JAVA compliant client computer to display the information.

DEPLOYMENT AND USAGE LEVEL

The City is currently evaluating support possibilities and fielding an initial pilot system. Currently, generalized access is available through the internal City network.

CONTACT

Mucio Garza, P.E. - Process Optimizer, 361-826-1809
David Dudley - Functional Analyst, MIS, 361-826-1265

SMALL BUSINESS ECONOMIC DEVELOPMENT HOSTING E-COMMERCE ON WIFI

SUMMARY OF BUSINESS PROCESS

A large percentage of sales revenues across the nation are expended with E-commerce vendors that provide ease of shopping and purchasing. Very few Corpus Christi merchants currently use Web sites for customers to access their businesses to get information, browse their inventory and purchase goods. With the advent of the WiFi, it is very convenient for merchants and customers to take advantage of the Internet. Hosting local merchants on a community portal will draw local and regional customers to the Corpus Christi WiFi to transact business.

SERVICE IMPROVEMENT OPPORTUNITIES

There is currently no centralized directory specifically dedicated to merchants in the Corpus Christi Area. Through the WiFi portal, it would be easier to locate those local merchants that choose to be a part of the WiFi.

Many local merchants do not have an e-commerce site. The use of the WiFi will be a vehicle for those that are interested in taking the steps towards e-commerce to do so.

Many small shops located in the area rely on word of mouth or similar advertisement due to cost of other advertisement methods. WiFi would provide them with an affordable means to place their business on an even playing field with other larger businesses.

E-commerce is a growing preference for many customers. Merchants in the WiFi area will be able to make their goods available to those who prefer to shop at home.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Goals for Local Merchants

Increase sales by using the WiFi E-Commerce facilities to host an E-Commerce Website
Improve their relationship with customers by making information readily available
Enhance the availability of products by allowing customers to shop around the clock

Goals for Customers

Purchase goods via the WiFi to avoid having to drive to a retail establishment
Shop during hours of convenience for customers
Purchase goods from local vendors via the WiFi to support the local economy

SUMMARY OF TECHNOLOGY REQUIREMENTS:

Each merchant is going to have to have access to the WiFi to update site, monitor inventory, complete verification of orders, and have contact with customer base.

Merchants are also going to need an authorization method for credit cards such as authorize.net or other method to handle the process for them.

Merchants will have to establish an account with a shipper that can be used with their site to provide their customers with shipping prices automatically.

Merchants must have an email address from their ISP.

DEPLOYMENT AND USAGE LEVEL

Eventually all local merchants will be enrolled in the WiFi.

Customers that wish to access local businesses will have a common portal. Once customers are aware of this service usage will increase.

CONTACT:

Texas A&M University – Corpus Christi Students (Tom Dockery, Jason Hurley, Mike Dirks, and Jonathon Lyons) built the Website for El Zocalo Imports as part of the Senior Capstone Course. Dr. John Fernandez is the professor for this course and he can be reached at john.fernandez@tamucc.edu or 361-825-3622

VIDEO CONFERENCING/COMMUNICATIONS

SUMMARY OF BUSINESS PROCESS

Citizens would like access to agendas along with viewing of live and archived City Council meetings through Internet, especially businesses in some areas without cable television access. The Police and Fire Chiefs want to communicate with their staff at numerous stations spread throughout the city. Many City departments, such as Human Resources and Legal, would like a more efficient approach to provide communications and training to all City employees, including those at remote facilities.

Granicus' web-based legislative management system provides the tools needed for live and archived video streaming and the WiFi network provides the required technology for access from all city locations.

SERVICE IMPROVEMENT OPPORTUNITIES

For a number of years, the City of Corpus Christi has provided basic video streaming services on the City web site for live and archived City Council meetings, and video replay for public communications about major projects, public service announcements, and information on City services. A new, enhanced system enables multiple types of video stream for meetings, communications and training, both for external and internal uses. The WiFi network allows individual City staff, and groups at remote locations to access important meetings, training, and communications. The Police and Fire Chiefs can communicate as needed to staff at stations scattered throughout the City. Human Resources frequently holds required employee meetings and training for which staff at remote locations must travel to City Hall. With the Granicus system and the WiFi network, significant efficiencies can be accomplished, as multiple meetings and travel time are not required. The City is able to webcast and deliver rich media to all constituents, as well as employees. They can have access from anywhere or at anytime.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

- Provide integrated live and archived video stream and document viewing, with search and jump-to functions
- Provide live and archived video stream for multiple purposes to multiple facilities, including City Council, Police, Fire, Human Resources and Legal
- Achieve efficiencies through automated archiving, meeting minutes, and other processes
- Increase access to live and archived video and documents through the WiFi network

SUMMARY OF TECHNOLOGY REQUIREMENTS

- The Granicus MediaManager Enterprise Module is proprietary web-based software that allows for unlimited access and use of a full featured software application to access, archive, keyword search, index, and integrate rich-media such as documents and slides into webcasts. This software, along with an OutCast™ Encoder allows the City to schedule live events, automatically publish to the web, index in real-time, present slides,

include closed captioning, and automatically archive and transfer files to distribution servers.

- For better management of external bandwidth requirements Granicus provides StreamReplicator™, MediaVault™ and MediaCenter™ software to replicate and redistribute live streaming webcasts to large audiences inside the City network without incurring tremendous bandwidth costs; ensure the City is maximizing existing network infrastructure, audio/video archive storage, management and delivery; and optimizing file management and distribution with redundant connections.
- **Granicus MediaCenter™** provides optimized file management and distribution with redundant connections.

DEPLOYMENT AND USAGE LEVEL

- Hardware and software for the City Council chambers is installed and configured.
- Go live date for live broadcast is the City Council meeting on December 12, 2006

CONTACT

Susan Cable, Director of E-Government Services – 361.826.4091

DUAL MODE WIFI/CELLULAR SMART DEVICE

This Smart Device is a Windows Mobile 5.0 capable handset that can be deployed amongst mobile workers. This portable PC is loaded with business and personal productivity tools to increase the efficiency of a City-wide workforce.

SUMMARY OF BUSINESS PROCESS

Wi-Fi technology provides a connection between the handset and nearby Wi-Fi locations. It roams seamlessly, offering anywhere access to email and various applications. For significantly less than the cost of a laptop, employees can transmit data and run applications remotely, increasing productivity.

SERVICE IMPROVEMENT OPPORTUNITIES

Built in 1.3 megapixel camera, camcorder, and Bluetooth capable features offer the ability to capture remote events, such as emergency situations, and transmit them back to involved organizations, such as police stations, health care facilities, etc.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

Key Operational Efficiencies include:

12. Mobile Broadband Capability-receive broadband-like speeds averaging up to 400-700 kbps and peak speeds of up to 2.0 Mbps when accessing select device services
13. Remote email capability
14. 1.3 Megapixel Camera & Camcorder ability to capture events and transmit them instantaneously
15. Depending on the individual Wi-Fi network configuration, VOIP applications can be loaded onto the device
16. Packed with business & productivity tools that allow for easy access to wireless email, digital media, government systems and applications while on-the-go.

SUMMARY OF TECHNOLOGY REQUIREMENTS

- Memory-64 MB RAM; 128 MB Flash ROM
- Intel PXA270 416 MHz Processor
- Sliding QWERTY Keyboard
- Windows Mobile 5.0
- Sprint 1x-EVDO and 1xRTT;Wi-Fi
- Up to 4.7 hours in digital talk time
- 2.8" 240X320 Pixel TFT Touch Screen
- Integration of systems & applications

DEPLOYMENT AND USAGE LEVEL

The device was distributed to several key City employees. Evaluation of the usefulness of the tool and documenting efficiencies are currently underway. Cost savings from remote operations would be realized immediately upon implementation.

CONTACT

Patti McKenna, Sprint Account Manager,
361-906-3100

Valerie Webster, Sprint Programs & Solutions Manager, 703-433-4335

Robert Mandel, Sprint Partner Executive,
703-433-4806

WIRELESS KIOSK

SUMMARY OF BUSINESS PROCESS

Kiosks provide the opportunity to ensure digital inclusion and to provide services and information to citizens closer to their home or business through the web not only in government facilities, but in places where they conduct business, such as grocery stores or shopping malls.

SERVICE IMPROVEMENT OPPORTUNITIES

Kiosks allow quick and convenient access to information on the web, as well as business services. The use of online applications can result in fewer phone calls and walk-ins, thus improving productivity levels of city staff.

GOALS FOR CUSTOMERS/USERS AND OPERATIONAL EFFICIENCIES

- Improve customer service to citizens by eliminating wait time to obtain information, complete forms, and transact business.
- To provide access to City web services for citizens who do not have computers or internet access.

SUMMARY OF TECHNOLOGY REQUIREMENTS

Kiosks utilize a standard computer and display screen at stand alone, ADA compliant, stations at designated locations in the city. The kiosk computers must be configured to prevent users from accessing certain system functions. Kiosk software is also needed to disable the user's ability to access internet pages or programs that are not applicable for the intended use of the kiosk.

DEPLOYMENT AND USAGE LEVEL

One kiosk has been launched on the first floor at City Hall outside E-Government Services Department, which includes the City's Customer Call Center. This location is across from Central Cashiering where utility customers pay their bills. In addition, six stations are located on the second floor at City Hall in the Human Resources Department to assist citizens in applying for jobs, a process which is paperless and 100 percent online. City libraries located throughout the city provide public access to free internet on 100+ computer stations.

CONTACT

Susan Cable, Director of E-Government Services – 361.826.4091