

Technical Proposal – Cover Sheet

Detroit EASE Mobile App

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5) Applicant:
Department of Elections
City of Detroit
2978 W. Grand Blvd
Detroit, MI 48202

Subcontractor: Konnech Inc.
CAGE Code: [REDACTED] and DUNs Number: [REDACTED]

6) Technical contact:
Kelly Neuder
Konnech Inc.
4211 Okemos, Okemos, MI 48864
(517) 381-1830
Fax: (877) 301-0793
Kelly@konnech.com

7) Administrative/ business contact:
Gina C. Avery
(313) 876-0221
FAX: (313) 876-0053
averyg@detroitmi.gov

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Technical Proposal

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1. Executive Summary

We, the City of Detroit, Department of Elections, want to test an Electronic Absentee System for Election (EASE) Mobile App solution from Konnech Inc. for the coming 2012 elections. Konnech is one of our current vendors providing us Poll Location Management and Poll Worker Management Solutions since 2008. In addition to being a Certified Partner of Microsoft for past 7 years, Konnech is an iPhone Development Partner of Apple and expert of Google Android application. Konnech has developed both the iPhone and Android version of Add-ons, iPAMS and iPollCall, for our warehouse and call center solution using Smartphone. As a 2010 FVAP Electronic Voting System Wizard (EVSZ) winner, Konnech understands the challenges of absentee voting, which includes UOCAVA voting. They have developed the lab-testing version of a smart phone Mobile App, which they demonstrated to the FVAP in Arlington, Virginia on May 2, 2011. It has the following features, which enhance the EASE online voter access dramatically:

- Use the mobile phone screen as the signature pad so voters do not need to print and then scan to email the document.
- The Mobile App creates a secured storage space so personal data can be reused for FPCA, FWAB and ballot submission for coming election(s).

Many more unique features of the Mobile App are discussed within our proposal.

There will be 142.8 million smart phone users in the USA and 449 million globally by the end of 2011. Owners use their smart phones 4.6 hours a day on average. Most US uniformed personnel have a smart phone in their hands. The total downloads from mobile app stores will reach 17.7 billion in 2011. We believe that Konnech's Mobile App for EASE could improve UOCAVA voter access and ballot return dramatically. If used by all States, hundreds of thousands more UOCAVA ballots would be counted for each of the coming elections in 2012.

- It gets the right ballots to and from the voters quicker than any other previous method.
- Once the risks are well-assessed and well-tested, more jurisdictions will adopt it. It will open the flood gate of ballot requests from UOCAVA voters.
- The effectiveness and low cost will assist States to change laws to comply with the MOVE Act.

Security is our main concern in using the mobile device to conduct elections. Extensive and exhaustive testing and risk analysis by both internal and an expert team are needed. We ask for FVAP funding to do the following:

- Build up our city testing environment for EASE Mobile App
- Run a Mock Election with up to 1,000 overseas US citizens
- Conduct Risk Analysis
 - Server hardware and software NIST FIPS compliance test
 - Mobile User Interface (UI) security and personal data safety tests
 - To assist a third party to conduct the Risk Assessment Test

To have better control of grant funding and a security firewall between internal and external testing, we are submitting 3 grants. One is for the EASE electronic voting system. The second is this grant for the EASE Mobile App. The third is for Risk Assessment. The first and second grants will be subcontracted with Konnech Inc. The last one will be with the University of South Alabama.

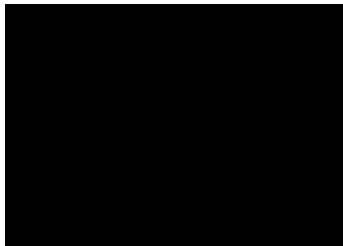
2. Goals and objectives

The following 7 pages contain Konnech Inc. proprietary information. Please contact Konnech for permission if any disclosure is requested.

2.1. Establish and Operate As a Successful Electronic Tool

Fast advances in Smartphone technologies and market share make it possible to use Smartphone as an election tool. We propose to use the Smartphone as an alternative voter access interface in addition to our Electronic Absentee System for Election (EASE) online access. We have designed a Mobile App to be downloaded from Apple Store, Google MarketPlace or directly from the city's website and installed into iPhone/iPad or Google Android powered phone set or devices by voters. It is designed only for the voters. The city staff will use the EASE administrator interface to manage both the online and mobile traffic. In addition to EASE online access, the Mobile App presents many advantages as a voting access terminal.

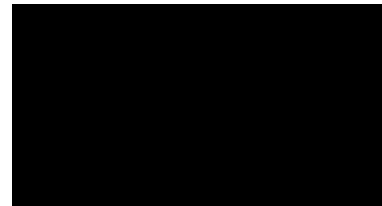
2.1.1. Mobile Phone Screen Used as the Signature Pad



Few computers are touch screen enabled. Smart phones use a touch screen as the key board. We have programmed it into an interactive signature pad. States still ask for the voter's signature as part of the returned ballot package. The signature requirement has caused challenges that sometimes stymie the voting efforts of our Service Members in the battlefield and our

jurisdiction staff in the election offices.

- A. The voters may not have a printer at hand.
- B. Our warriors may have difficulty scanning the signed forms, and attaching them to their email submissions.
- C. For many of the voters, the time required to go through all the steps is a major concern. If the voters are not able to access the ballot, vote, print, sign, scan and email/fax/mail the marked ballot package within 15 minutes, it may prevent them from voting at all.
- D. For many UOCAVA returned ballots, the jurisdiction staff has complained about the poor quality of the emailed/faxed ballots. In some cases, the imaging formats routinely used in some countries are not commonly used in the US. Therefore, there is no software for the staff to use to open and view the images. This can prevent some of these returned ballots from being counted.



The Mobile App can solve these challenges by presenting itself as a signature pad, standard PDF form generator and an email server in addition to acting as the EASE. Therefore, it can streamline the whole voting process down to less than 10 minutes.

2.1.2. Your Mobile Phone Allows Your Personal Data to Be Re-Used Safely

For security reasons, the current EASEs operated from PCs will not retain voter data. Therefore, voters need to re-enter their personal verification data each time to gain access. Voters usually access the EASE several times for one ballot submission. Additional accesses are necessary because a new FPCA must be filed at the State each year. In addition to ballot access, the qualification process from the States asks for annual submission of FPCA. Because the Mobile App operates from the voter's own phone, it can retain his or her info securely so they don't have to re-enter it each time they access the EASE. It provides a simplified solution of a one-time entry with a benefit of continuing submission of FPCA, FWAB and full ballot submission every year without re-entering of the same personal information again and again.



2.1.3. Mobile Phone Provides Better Language Support

Mobile devices typically integrate the user's most comfortable language into the phone, unlike standard computers. Once changed into the owner's own language setting, the mobile phone translates the language of the key board and the voice responses, which can be easily copied over into the Mobile App. Therefore, mobile phone set is more individual configuration sensitive and friendly.

2.1.4. Voice Recognition and Text-to-Speech

The smart phone presents local voice processing capacity as well as seamless integrated functions like Google Voice from Google. It provides the API (application programming interface) functions, which cost millions of dollars to obtain in the past. Now, it all can be integrated almost free of charge to the end users.

2.1.5. More Extensive & Reliable Mobile Network Internationally

Unlike in the States, globally the mobile network is much more extensive and advanced than the phone and cable network. Therefore, it is much easier worldwide to access the Internet using a mobile phone than a computer. In addition, the mobile network is maintained with higher priority than Internet networks within many countries.

2.1.6. Popularity of Smart Phones among Young Service Members

Most Smartphones are sold to the 18-34 age group (<http://www.marketingcharts.com/wp/wp-content/uploads/2010/11/nielsen-smartphone-android-age-q3-nov10.gif>). Most of our UOCVA voters are within this age group.

2.1.7. The New Culture of App Downloads

Huge growth in mobile app download is predicted. Total downloads from mobile app stores will reach 17.7 billion in 2011, according to analyst Gartner. The forecast represents a predicted increase in mobile app downloads of 117 per cent, up from 8.2 billion downloads in 2010



(<http://www.silicon.com/technology/mobile/2011/01/26/mobile-app-downloads-set-to-skyrocket-in-2011-39746868/>). Users will download 44 billion mobile apps by 2016 (<http://techcrunch.com/2011/04/28/users-will-download-44-billion-mobile-apps-by-2016/>). Both Apple Store and Google MarketPlace will have our Mobile App, which will be free to download for UOCAVA voters. Even voters from outside Detroit can still benefit by using it to submit FPCA or FWAB. We will include State sensitive interfaces to tailor the needs to each State's voters.

2.1.8. A Perfect Self Learning Tool

It also serves as a self learning tool so it reduces the reliance on Voting Assistance Officers. There is a tutorial feature with the Mobile App to help the voter become familiar with the application and its features. The tutorial reduces the need for extensive voter education.

2.2.5. Voter Centered System

The Mobile App provides a ballot and state specific instructions to the voter. The system enables on-screen marking, warns of under-voting, and prevents over-voting. When the voter has finished the ballot, instructions appear for preparing and returning the vote in the manner specified by the Michigan. Then the voter has the opportunity to fill out a voluntary survey.

Once the Mobile App is installed, it acts like the voter has become the commander of the voting center. All information is well-tailored to this voter's needs and presented at the right time and in the right amount. It also links to helpful sites like the FVAP website. Helpful links can help reduce the roadblocks to voting.

- It alerts the voter as soon as the re-submission of their FPCA is needed to ensure that the voter understands to need for early action.
- It informs the voter of how much time is left for them to submit their vote. It counts down the remaining days and hours.
- It automatically presents the availability of the Federal Write-in Absentee Ballot (FWAB) so at least the portions of the federal and state ballot are submitted on time.
- Once approved for full ballot access, instant access through the Mobile App is possible for the voters of the participating States.

2.1.9. Benefit Other UOCAVA Voters

Smartphone provides contact folder to facilitate the communications using social networks and group messaging. If the voter wants to, the link of Mobile App can be forwarded easily to all contacts in the voter's contact folder. Besides the military personnel, it is also a perfect tool to reach underperforming populations like military spouses & voting age dependents.

2.1.10. Resolve the Bottleneck Issues

The Mobile App scores the highest where voting failure occurs. It will create the greatest impact by coordinating with the 45-day prior election delivery of a blank ballot. The ballot must be requested (if the voter's not already on the jurisdiction's UOCAVA list),

received, voted, signed, and returned within that 45-day time period. The Mobile App allows the voter to retrieve the FPCA, FWAB or even ballot, sign their signature and get the marked ballot turned in via email all from the voter's phone set (some states still ask the ballot for mail back only). The universal FWAB form will always be submitted on time just in case the full ballot is not delivered to the voter on time.

2.1.11. Fastest Tool to Vote

It guarantees the streamlining of voting processes and the voter has the voting process done within 15 minutes. It can automatically populate the FWAB Candidate Data. For manual entering, the tools of voice recognition and the multiple language tools can improve the data quality.

2.1.12. Voter Initiative Platform

It will become the great voter initiative platform. It will be much easier for the FVAP and local jurisdictions to conduct outreach communications, build up partnerships with voter interest groups, and conduct mobile voting training.

2.1.13. Voter Disability and Accessibility Assistant Tool

It also provides the best tool for meeting the disabilities and voting assistance requirements with the following advantages over EASE online marking.

- Vote by voice using voice recognition for vision impaired
- Smaller and more portable than desk or lap top computers
- Easier to access the internet and more stable than Wifi or wired access

The conclusion is that the mobile device can be established as one of the emerging election tools for UOCAVA voter access, and can rapidly become the most successful election tool in US election history with this critical FVAP funding.

2.2. Establish and Operate Sustainable Electronic Tool

Once the fear of security risks has been addressed firmly, the mobile phone device can be quickly established as a sustainable election tool. The trend of smart phones is unstoppable. As a new sustainable trend, it will quickly change the landscape of the US voting industry. It is important to discover the risk factors involved with the implementation of the Mobile App quickly so most of the risks can be prevented. In the end, the establishment and operation of the mobile device as a sustainable election tool can be achieved.

2.3. Establish and Operate Affordable Electronic Tool

The Mobile App will become one of the most affordable electronic tools to manage our elections for the following reasons:

2.3.1. Reduce the Web Server Work Load and Traffic

The voters download the Mobile App from Apple Store or Google MarketPlace to their mobile devices and run it as a local application. Mobile App will reduce the workload of the web server dramatically.

The local Mobile App inside the Smartphone processes most information. It compiles user and voting data into FPCA, FWAB and/or a marked ballot sheet in the format of the

PDF forms inside the phone set. Therefore, it dramatically reduces the needs of remote access to a server for the data. It will reduce the bandwidth usage for the cellular data plan at the same time. It is faster and more secured to vote with.

2.3.2. Less Software Delivery Cost

Apple and Google have built up a very low cost Application (App) delivery system. Smartphone owners get used to downloading apps from the App Store for iPhone/iPad or from MarketPlace for Google Android OS devices, and use social networks like FaceBook to promote and share the App. We can use the same system to deliver packaged Mobile Apps without any additional cost.

Social media friendly interfaces mesh nicely with the Smartphone's built in functions which make the awareness campaign much easier. This project calls for 1,000 oversea US citizens to act as the testing users for our Mobile App. With the social networking and online communication strategies, it can be done with a reasonable cost.

2.3.3. Financial Incentives for the Jurisdiction

- A. Less labor hours to contact, approve, and tabulate the result since the returned forms and ballot markings are crystal clear through Mobile App.
- B. No extra cost to deal with a dramatic surge in voter participation
- C. Less Web Server Overload in the Election Days. Therefore, less hardware and software investments are required for more traffic.

2.4. An Estimation of the Reduction of the Failure Rates

Based on FVAP (www.nist.gov/itl/vote/upload/FVAP-2010-initiatives.ppt), there are higher rates of failure for Military Voters. Once EASE with Mobile App is implemented, we expect that the failure rates will be close to or even lower than the general population. The end result would be close to 300,000 more military ballots counted in each of the coming 2012 elections if it were used for every jurisdiction in US.

2008 General Election Results – Military Voters			If Used Mobile App In 2012 Elections	
Stage of voting process	Number of additional failures over general voting population	% of total failure	Estimated Future Failure Rate	Improvement Ratio
Registration Failure	3,936	1.4%	1%	29%
Ballot Delivery Failure	20,064	6.9%	1%	86%
Ballot Return Failure	213,779	74.0%	1%	99%
Ballot Casting Failure	51,283	17.7%	1%	94%

2.4.1. Improve Voter Registration & Ballot Request

According to a study by The Pew Center on The States, Michigan is one of 16 states that doesn't give residents who are overseas in the military enough time to vote (<https://military.overseasvotefoundation.org/overseas/cms.htm?uri=%2Fhot-topics-complete-listing>). Based on an article titled “Michigan Considers E-Mailing Absentee Ballots Overseas” published by The Detroit News on October 15, 2009, “Chances of getting their votes counted are so slim for U.S. military personnel overseas, many servicemen and women don't bother to vote, according to testimony today on a bill to allow e-ballots in the state.”

The FVAP grant will give us a chance to change our image and the operations of ballot delivery and return dramatically. The convenience, speed, and new perception that their ballots will be counted in time will lead to more UOCAVA voters registering via the EASE Mobile App.

The convenience, speed, and changed perception that their ballots will be counted in time will also lead to more UOCAVA voters registering via the EASE Mobile App. In the 2008 general election, we had 1,250 overseas military voters registered as absentee voters out of total 81,396 citywide. Once implementing the EASE with Mobile App, we are confident we'll increase our UOCAVA voter registration 100%. Therefore, we will have over one thousand more UOCAVA voters.

2.4.2. Reduction of Ballot Delivery & Return Failure

The EASE Mobile App will enhance further the delivery of ballot by making it much easier for us to deliver the blank ballot, and for voters to access, sign and return. We are confident that the failure rate of blank ballot delivery can be reduced as low as the rate of the general population.

2.4.3. Reduction of Ballot Cast Failure

The EASE Mobile App will enhance further the quality of ballot by making it much harder to make a mistake and to submit an uncountable ballot. That's because there are much fewer mistakes with on-screen marking and unified return format than when using EASE alone. The EASE users without Smartphone have to print, sign, scan and email. The voter has to use local resources to scan the image. Many of these foreign formats are not usable for USA jurisdictions. The Mobile App helps voters to sign and email using the smart phone without the need of a scanner (for some state like Michigan asking for mailed ballot only, the printing and scanning step can be done through email to a place with the capacity to do these steps). Therefore, the Mobile App can further reduce the failure rate of ballot returned or returned ballot to a level like the general population.

2.5. Mobile App Benefits Other Jurisdictions

Most jurisdictions want to wait until Detroit has tested the Mobile App. This grant applicant is submitted by us with our focus on the setting up of the right testing environment so the contractor and the Rick Analysis Group can do their field testing and risk analysis, which will provide the following benefits for other jurisdictions beside us:

1. Provide Others a Road Map For Mobile Ballot Delivery
2. Generate Overseas' User Data Looking for System Improvement
3. Prevent Most Risks Due To Our Internal & External Studies

Based on www.dodlive.mil, most Service Members have their smart phones in their hands now (<http://science.dodlive.mil/2011/03/01/army-smartphone-evaluation-could-change-how-soldiers-learn/>). It has laid a good foundation for dramatic improvement of mobile voting.

2.6. Security Measures to Protect Users' Data

We will install the following security measures to protect personal data:

1. Alert If Phone Set is Shared

People still share their phone sets with others. The good news is that it is not so often shared as a computer. It can be a perfect place to store personal information like a credit card number. Some companies like Google, are working on wireless payment capacity by accessing the very personal and secured information stored in the mobile phone. However, an alert message will be presented if it senses a different user using the phone set.

2. Lock Mobile App

Our Mobile App's first screen is a Lock Key Pad so the user will lose all personal information for the prior entered information in the Mobile App if the PIN is reset.

3. Clearable Personal Data in the Setting

The personal data can be intentionally cleared in the Mobile App settings for someone who wants to share or give up his or her phone.

4. Encrypted Data Both at Servers or the Phone Set

Even if someone has lost his or her phone set, the data is fully encrypted or protected. The encryption is in compliance with the NIST FIPS certification. Therefore, it is safe without the user's Mobile App password.

2.7. Security Measures to Protect Transmitted Election Material

Using EASE with Mobile App, we will install the following security measures to protect any transmitted election material.

1. Internal Firewall
2. External Firewall
3. Encryptions at Both Server and In Transmission (SSL)
4. NIST's FIPS Compliance
5. Jurisdiction Password Access Control
6. Log All Activities and Searchable Events

The above 7 pages include Konnech Inc.'s proprietary information. Please contact Konnech for permission if any disclosure is requested.

3. Schedule and Milestones:

3.1. Summary of the Schedule

We plan to start the project as soon as the contract was awarded, and to finish it within 314 working days.

Task	Duration	Start	Finish
FVAP Mobile App Project	314 days	9/1/11	11/13/12
Project Initial Planning	2.88 days	9/1/11	9/5/11
Meet Initial Requirements	16.5 days	9/5/11	9/28/11
Research, Design	17 days	9/28/11	10/21/11
Development	30 days	10/11/11	11/22/11
Field Test & Risk Assessment	34 days	11/22/11	1/9/12
Documentation	26 days	1/9/12	2/14/12
2012 Primary Election 1	64 days	1/3/12	3/6/12
2012 Primary Election 2	91 days	6/1/12	8/31/12
2012 General Election	87 days	9/4/12	12/31/12

3.2. The Intervals in Which Milestones Are Assessed for Progress

- a. EASE Mobile App Initial Planning 2.88 Working Days 9/1/11-- 9/5/11
We will determine project final scope, and organize project teams with focus in 3 areas; worldwide field test, security analysis, and risk assessment. The preliminary resources will be further reviewed and secured. An FVAP Post-Award Conference will be conducted before September 5th.

- b. Team Requirements 16.5 days 9/5/11-- 9/28/11
We will have our final project management plan not later than (NLT) Sept 12, and final Worldwide Tester Recruiting Plan completed NLT August 15. A campaign plan of awareness and solicitation of testing service from the overseas mobile users, who are US citizen, is finalized, approved and executed. The target testing size is 1,000. Survey will be sent in the last stage of testing to have the testers' feedback about the usability, reliability, security and accessibility. We will also build up web space so this group of testers can still communicate with us or among themselves related to the development of mobile voting in general through a public domain.

Any good feedback will be incorporated into the software plans once reviewed and approved by the FVAP. A more detailed delivery timeline may also be developed with the FVAP.

- c. Design & Redesign 9/28/11--10/21/11
Based on the feedback from the field testing and risk assessments, the preliminary software specifications and functional specifications will be further developed. The prototype based on functional specifications will be programmed. Demo to FVAP and other interested parties will be conducted before October 21, 2011.

- d. Development 10/11/11--11/22/11
We will further review the functional specifications based on the feedback from the field and initial testing from the testing staffs. There will be a continuing process of identifying modular/tiered design parameters, adjusting development staff workload, further developing and testing code (primary debugging). We plan to start the programming as soon as possible with the modification of our existing tools and to finish the programming before November 22, 2011.

- e. Internal and Field Test, Risk Assessment 11/22/11 Tue 1/9/12
Internal and field tests will start as soon as the team is in place. As soon as the field test finishes, the Mobile App will be loaded to Apple Store and Google MarketPlace for public to download. Email alert will be sent to all volunteers, who are US citizen overseas, who had signed up to test our Mobile App. We will also assist the external test team from a US university to conduct the Risk Assessment Test at the same time period with the real-time data. Based on the field feedback, we will modify the program so we can have it ready for the coming Primary Election on February 28, 2012.

- f. Documentation 01/09/11-- 02/14/12
We will finalize Users and Operations Manuals before February 14, 2011.

- g. Primary Election 1 01/03/12-- 06/06/12
Michigan anticipates a Feb 28, 2012 primary for presidential race, and August 7 for the rest. We will make our mobile app available on January 14, so voters will have 45 days to access their full ballots via Mobile App.

- h. Primary Election 2 06/01/12-- 08/31/12
We will make our mobile app available on June 1, so voters will have more than 45 days to access their Mobile App. We will try to make full ballot available on June 23 so it is 45 calendar days in advance of election

- i. General Election 09/04/11-- 12/31/12
The Election Day is on November 6, 2012. We will make our Mobile App available to download continuously from the Primary Election for voters' submission of FPCA and FWAB in September 1. On September 26th, full blank ballot will be online. Therefore, our UOCAVA voters will have 45calendar days to access their full ballot via Mobile App.

We will closely communicate with the FVAP and wait for an approval if there are any planned change(s) in the above schedule.

4. Reports:

We will provide the following live, weekly, month and closing reports. Some of these reports will be combined with our EASE reports to give a full picture view of our projects.

4.1. Live On-demand Reports and Statistics

- Number of new requests for ballots pending
- Number of requests for ballots that have so far been approved
- Number of requests for ballots that have been rejected
- Total Number of requests for ballots that have been received, approved, rejected, or pending.
- Number of voters on the UOCAVA lists
- Voter Request Events
- Voter Access Ballot Events
- Voter Download Ballot Events
- Number of entrees on the UOCAVA list

From the voluntary voter Satisfaction Survey:

- Number of Satisfaction Surveys Submitted
- Number and percentage of survey responders who reply that they are casting an absentee ballot for the first time
- Number and percentage of survey responders who reply that they found it convenient to obtain their ballots online
- Number and percentage of survey responders who reply that they would or would not like to obtain their ballots online in the future
- Number and percentage of survey responders who reply that this method of absentee voting was Very Satisfactory, OK, Somewhat Satisfactory, or Not Satisfactory

4.2. Weekly Report

Weekly report of Traffic Analytics related to Site Usage, Bounce Rate, Page Views, Direct Traffic, Referring Sites, Search Engines, Pages per visit, Average Time on site, New Visits, Countries (name & number and percentage of users), Average Time on Page, Exit percentage.

4.3. Monthly Report

Each month, the Project Managers will prepare a programmatic and financial progress report. Within two weeks after the end of the reporting period, the report will be delivered in hard copy or electronically by email. The report will be substantially in the following format:

- (1) Executive Summary
- (2) Project plan status and variance
- (3) Budget status and variance
- (4) Issues/risks identifying concerns that could impact completion of significant tasks or which might have material budget or timeline implications for any issues/risks identified, recommendations to resolve or mitigate the concern will be presented

Each month, the Project Managers will also prepare a status report. The status report will be delivered in hard copy or electronically by email. The report will be substantially in the following format:

- (1) Executive Summary
- (2) Summary of accomplishments from the preceding period
- (3) Summary of activity planned for the upcoming period
- (4) Issues/risks identifying concerns that could impact completion of significant tasks or which might have material budget or timeline implications for any issues/risks identified, recommendations to resolve or mitigate the concern will be presented

4.4. Final Report at Completion

- Total number of ballots requested on-line
- Total Help-desk requests
- Countries accessed
- Satisfaction levels
- Voter status
- Voter types
- Ballots mailed
- Ballots faxed
- Ballots emailed
- Ballots approved
- Ballots returned

5. MANAGEMENT APPROACH

We, the Department of Elections, City of Detroit, have decided to work with our contractor, Konnech Inc., to develop a Smartphone solution for our UOCAVA voters. Since it is so new and so critical, we want to ensure that the wireless component will not add risk into our voting process. Therefore, more research, study or assessment of risk involved is the focus of this grant application, and we will not seek other jurisdictions as partners until the Risk Assessment is finished. Since it is involved with many cutting edge technologies, and large issues beyond the city's resources, an expertise group will be founded to conduct the in-depth risk analysis about this mobile add-on to our Electronic Absentee System for Elections (EASE). In order to build up a firewall between the contractor and Risk Assessment Team, we will submit a separate grant for the Risk Assessment Team. Therefore, there will be 3 separate grants submitted by us; an application for the Konnech EASE program, another for the EASE Mobile Add-On, and another for Risk Assessment. This grant will depend on our grant funding for the EASE application. If our application for the EASE program should not be granted, this proposed Mobile Voting App project would not be started.

5.1. Definition and Formalization of Our Strategic Goals

As the largest city in Michigan, our strategic goal is to use the Mobile App to change the image of Detroit's UOCAVA voter service. The existing image with our UOCAVA voters is that the delays in ballot delivery and return cause most UOCAVA ballots to go uncounted. Many of our UOCAVA voters are not trying to register and to apply for ballot due to the poor image of Michigan and Detroit with late ballot delivery and with many uncounted ballots due to the missing of the deadline.

Using the technologies of EASE Mobile App, we aim to increase our registration and ballot requests (FPCAs) as well as our Federal Write-in Ballots by 100%. These goals are targeted for the 2012 General Election. We also aim to reduce both our ballot delivery and return failure rates 50% if the Michigan State law allows for online blank ballot delivery or even marked ballot return by voters' personal email accounts later on.

We design our goal with these facts in mind. The first is the high percentage of our UOCAVA voters with the iPhone or Android phone. The initial stage funding from FVAP will help us to make the Mobile App secure and reliable with one year testing period. In the second stage, we will use it in the 2012 elections, and also present our testing results and findings to the national conference so all jurisdictions can benefit. Once all jurisdictions see the results or facts from Detroit, more jurisdictions will use the Mobile App. Once there are a group of Mobile App jurisdictions and UOCAVA users, there will be an unstoppable trend to improve UOCAVA voting by using Mobile App.

5.2. Analysis and Measurement of Current Processes;

5.2.1. Detroit's Change from Low Tech to High Tech

The poor image is due to many factors and years of lack of participation from UOCAVA voters. We have to overcome the image issues one by one within the boundary of state laws and regulations. The new technologies have been presented by an innovative local company with a long term affordable price. We want to join the trend of cutting cost while improving our service by using advanced technologies. The end measurement of this image change will be increased participation and overall improvement of UOCAVA voters and election staff satisfaction.

5.2.2. Provide Easier Way to Request Full Ballot

It is our intention to provide additional ballot-request avenues for our UOCAVA voters. In addition to current mail or fax, our Mobile App will enable our voters to submit the FPCA online or even using their Mobile App. The measurable improvement will be many minutes saved by our UOCAVA voters and our staff processing time for each ballot. We project over 100% of time saving minimum for our voters and 30% time saving for our staffs. Our voters can submit both their FPCA and FWAB within 15 minutes. Our staff will receive a crystal clear image of the FPCA and FWAB every time. Now, many mailed and faxed images are hard to read. For some emailed images, some of them are hard to open due to the incompatible imaging format.

5.2.3. Track Voters' Paper Ballot Request/Delivery

Our UOCAVA voters can log in to their Mobile App to check the status of their ballot request and the shipping status of their full paper ballot. This could not be done before. Therefore, it is total brand new services.

5.2.4. Provide Better Way to Deliver Blank Ballot

Michigan allows only our UOCAVA voters to receive ballots online. The qualified voters will log onto their Mobile App to mark their full ballot, sign, print and mail their marked ballot back. It is never been done before. Therefore, the EASE and EASE Mobile App make it total brand new services.

5.2.5. Test the Technologies of Mobile Voting

Michigan currently does not allow the marked ballot returned by the email. However, it is important to have these capacities tested in terms of security and reliability. Without a pilot test with monitored mock election and Risk Assessment from an expert team, there will not be compelling evidence for us to back up our request for changes.

Our strategic goals are to find the industry expert in EASE and Mobile App business with an approved track record with the city, and experience in the election industry. Konnech, one of our current vendors, provided the EASE service to 3 states in 2010, and election logistic management for Detroit for the past 3 years with iPhone/iPad and Android applications, like iPAMS and iPollCall, as add-ons for the PollChief Election Management Tool Suite.

Currently, most States allow blank ballot online delivery. Many States allow the marked ballot returned by the voters' personal email address. Therefore, our final measurements for this project are these pilot project results and reports, which are critical for most states in US.

5.3. Identification of Each Process and the Related Elements

5.3.1. Easy Ballot Request or FPCA & FWAB Submission

Most of the entered information is the same in both FPCA and FWAB. Voters are required to submit their FPCA each year to be qualified as the UOCAVA voters. FWAB can be also submitted for the coming election with their federal and state write-in candidates. Michigan's new election law allows the voters to submit their name, resident address and signature online to apply their absentee ballot. The Mobile App with the signature pad feature makes it perfect for Michigan residences. It is lower fruit hanging on the tree, which is easy to achieve.

5.3.2. Mobile Ballot Request & Mail Tracking

The processing transparency will enhance the voters' participation. In addition to EASE online version, the voters can also check the following information:

- My Ballot Application Status
- My Paper Ballot Delivery Status
- My Polling Location
- My Help Contacts

5.3.3. Mobile Voting

There are three main components of mobile voting, which are blank ballot delivery, marked ballot return, and marked result tabulation.

Since there are a lot of working procedures and security issues involved within a limited time, we will focus on the blank ballot delivery and marked ballot return first. The tabulation portion of the test will depend on the availability of time for this project in the middle of 2012.

5.4. Identification of Potential Risks and Mitigating Strategies;

Mobile App presents its unique set of risks, which should be analyzed extensively with the assistance of this grant. It is a main purpose of this grant to do more studies by us and by a third party who has extensive testing experience specialized in election systems.

5.4.1. Mobile FPCA & FWAB Submission

5.4.1.1. Application Software Hack Prevention

Hackers could try to attack the Mobile App server to insert coding for voters information mining, contact information changing, and candidate name fixing within the FWAB write-in form and virus injection. A successful attack would cause major damage to our election.

The attack to Mobile App should happen differently than to EASE. The EASE web interfaces are dynamically presented through web browser in addition to the user data between the server database and web browser. The Mobile App is marking compiling into file format like PDF, and is emailed out ballot purely at the handset. Since there is no a centralized server to attack in the Election Days, and it is almost impossible for hacker to attack each individual phone set during the Election Days, the effective attack must happen before the Election Days at the Mobile App.

We can prevent these attacks with the version control before its formal release and its verification after release. One sample of after release verification is to create a secured mother copy at a separated and more secured server. Constantly comparing of the copy of Mobil App at the web server with its mother is one of ways to alert the authorities that there is an attack happened.

5.4.1.2. Cloned Mobile App Prevention

The attacker can have the voters to download their Mobile App from the cloned site with a modified application. Just like SSL secured web site verification and certification, our vendor has presented a Brand Name certification system with a brand verification server to secure the Mobile App just from our vendor.

5.4.1.3. Data Breach Prevention

Beside the application software hack prevention, SSL is used to protect data while it is in transmission. In addition, the encryption of data in transmission and in the servers is also important. The encryption has to be in compliance with NIST FIPS certification.

5.4.2. Attack the Tracking Interfaces of Voter Status

Since it is only a status report interfaces, it is less a valuable target for hacker to attack. Comparing with EASE online tracking, Mobile App interfaces are installed at local phone set. The exchange between server and user is mainly the tracked data. Therefore, it

is less to be attacked with. However, pay attention the holes of the application layer design, use SSL with more than 128 bit security key, and FIPS compliant encryption are needed in place to prevent any data leaking.

5.4.3. The Risks of Mobile Voting and Their Prevention

5.4.3.1. Protect Voter Privacy Issue

Just like EASE, we will provide a key to the voter's jurisdiction, which can access the voters' total voting result. There are only one key with the system ballot master, which is able to see the association of a voter with his or her ballot markings or the candidate selection. There is only one back-end system to manage both the data flow from online EASE or Mobile App. Therefore, the risks are exact the same as the EASE for the voter privacy protection issue.

5.4.3.2. Prevent Breached Ballot Delivery and Return

Just like EASE, the ballot database at server, the ballot information in transmission, and the ballot information presented at the user-end have to be protected. For Mobile App, the verification or certification is possible at the user or voter handset since there is prior installed software. Therefore, it may be able to provide additional security.

5.4.3.3. Prevent Breached Tabulation

The portions of tabulation source code and marked ballot return have to be tested, and certified before the real in use for election. Our proposed plan is to do some initial field testing and risk analysis if the time and budget allow in the middle of 2012. This proposal will focus on the communications with voters, ballot request, ballot delivery, and return assistance.

5.4.4. Risk Factors of Mobile App vs EASE Online

Voters can vote either using EASE online wizard, or Mobile App. There are most of similar risk factors like encryption on the servers and in transmission. There are few different risk factors.

5.4.4.1. Use of Different Data Networks

It is our assumption that the cellular networks used may be harder to hack than wireless network. A cellular network is just like a company (AT&, Spirit, or Verizon) internal network with millions users. Their hardware and software is integrated with their network. Breach will happen for any network. It is only our assumption that one company is to take in charge and to fix the problem quicker than the computer network, which involves usually many different routers and switches, which are made and owned by many different operating companies.

5.4.4.2. *Mobile Application Is Harder to Attack*

Since there is no centralized database to attack after its release, it is harder to be attacked. For example, EASE provides on-screen marking capacity. Although it is not an online election system, the EASE server still has to remember the ballot markings so it can produce the PDF file in the end with the marking result. Even if it is only stored temporally on the server and is immediately cleared out after user finishes the ballot submission, a strong protection of server from the hack is necessary.

For Mobile App users, they can fully use the phone set's resources once the permission to install the Mobile App was granted. The Mobile App can remember the ballot-markings, generate all PDF forms with personal information and signature also inserted locally and securely without the data exchange with the centralized servers. Therefore, there is one less critical element in the server to be attacked at.

However, further study will be needed to confirm this assumption, to discover any missing risk factor(s).

5.5. Formalization of Performance Indicators

5.5.1. Ballot Application Increase Rate

We have General Election in past 3 years with the following UOCAVA requests.

	2010	2009	2008
Military	84	7	1,250
Overseas Civilian	<u>38</u>	<u>3</u>	<u>586</u>
Total	122	10	1,836

Our goal is to increase the UOCAVA voter ballot application to 100%, which means that there will be 1,836 more potential voters for the 2012 General Elections.

5.5.2. Marked Ballot Return Rate

We have the history data of total absentee ballot mailed and returned by deadline for our general population.

	2010	2009	2008
Total Absentee Ballot Issued	49,117	46,544	81,396
Ballot Returned by Deadline	<u>44,739</u>	<u>41,829</u>	<u>78,563</u>
Return Ratio	91.1%	89.9%	96.5%

We currently do not collect the information just for UOCAVA voters for their returned ballot. The grant funding will allow us to collect the UOCAVA return data and to improve our tracking and service of our UOCAVA voters.

5.6. Justification for the Modification

Detroit is an American bench-mark city with the hope of recovery in its local economic. With the grant supported improvement in election technologies, our department should be able to show our UOCAVA voters that we listen to their concerns and needs. We should be able to provide as good as service as our colleague in the country. This Mobile App presents us one of these opportunities. If Detroit can do it, you can do it.

5.7. Projections of the Effectiveness of Modifications

5.7.1. UOCAVA Voters' Satisfaction

We will design, deliver and collect a satisfaction survey for our Mobile App users, and want to improve our UOCAVA voters' satisfaction over years.

5.7.2. Election Staffs' Performance Improvement

Due to the city budget issue, we could not increase our staffs to deal with more absentee voters in general. Therefore, the technologies are our solution to improve staffs' productivity while maintaining their job satisfaction level.

5.7.3. Real Time UOCAVA Management and Better Reporting

In the past, we could not separate the UOCAVA ballot return, delivery failure rate from the general population. By this project, we should be able to collect the data in real-time based. More detail reports can be generated in few clicks of a mouse button.

5.8. Measurements of Performance

The measurements of our performance can be the higher voter registration and ballot request. We anticipate the Mobile App should increase our ballot request in 2012 General Election to 100% over 2008 General Election level, which will be at least 1,836 UOCAVA more voters.

We will tune up the state configuration for all States in US. Therefore, any voter can download from Apple Store and Google MarketPlace to use our Mobile App to apply for their ballot through FPCA and FWAB.

6. Current and Pending Project Proposal Submissions:

(Not included in page limitations)

6.1. Related or Complementary Proposal Submission 1

6.1.1. Title of Proposal and Summary;

Title: *Detroit Electronic Absentee System for Elections (EASE)*

Summary:

This is an application for fund to build an Electronic Absentee System for Elections (EASE) for the City of Detroit UOCAVA voters, based on the electronic voting support wizard (EVSU) pioneered by FVAP in 2010.

The contractor will be Konnech, Inc. This company successfully provides Detroit with their PollChief's poll worker and poll location management modules for the past 3 years, and last year had successfully provided the EVSU for New Jersey, Montana and Nevada. We have confidence in Konnech as a technology partner.

Michigan may have more ballot delivery and return challenges for our UOCAVA voters than other States. Many of our overseas voters are giving up trying to apply for their ballot since most of their past effort failed due to their impression with the election service of Michigan. Now, Michigan has moved the Election Day tentatively from August to February 28, 2012. The earlier election will bring additional challenges to our department. Additional communications with our UOCAVA voters are urgently needed.

The EASE will help us to generate additional interest from our UOCAVA voters. Our qualified voters can use EASE to confirm their registration, apply for their ballots using FPCA and submit their write-in ballot using FWAB, which can be downloaded from EASE. They will also be able to check their application and full ballot delivery status using EASE. By using EASE, Detroit will be able to deliver the blank ballot online which will be a first in Michigan elections. We anticipate that our applications from UOCAVA voters for 2012 will increase 50% or more than 2008 elections, which can be near 1,000 more UOCAVA voters for the City of Detroit alone.

Currently, we are using a Microsoft Excel spreadsheet to keep track of UOCAVA voters. There is no system to communicate with our thousands of UOCAVA voters effectively. Our UOCAVA voters cannot check if their application was received, their paper ballot was sent, or if their marked ballot was successfully recorded. The new EASE will dramatically improve our internal operation, and our voter service for our UOCAVA voters.

Since Michigan requests our UOCAVA voters to have their signatures on all of their submissions, the voters still have to print the web downloaded forms, signed them, scan them, and mail or email them back. For most of our UOCAVA voters, this is one of the major challenges. Detroit plans to use the EASE add-on of Konnech's Mobile

App to overcome this problem. Our proposed Mobile App will allow voters who have a Smartphone like an iPhone or Android powered phone, to mark, sign, and return the ballot on their Smartphone instead of using EASE voter interfaces through their computers. Our city staff will use the same EASE login to manage these Smartphone users as well as the online users. Since the Mobile App is an addition to our EASE application, we separated our Mobile App into a separate grant application. If there is not enough funding from FVAP, we at least hope that we will be funded for our EASE project.

- source and amount of funding (annual direct costs; provide contract and/or grant numbers for current contracts/grants); *Another grant proposal submitted to FVAP (BAA number: HQ0034-FVAP-11-BAA-0001) (pending)*
- percentage effort devoted to each project; *100%*
- identity of prime applicant and complete list of subcontractors, if applicable;
Primary Applicant: *City of Detroit*
Subcontractor: *Konnech Inc.*
- technical contact (name, address, phone/fax, and email address);
Kelly Neuder
4211 Okemos Road, Suite 3 & 4
Okemos, MI 48864
517.381.1830
Fax: 877.301.0793
Kelly@konnech.com
- period of performance;
From September 1 to November 31, 2011
- proposed project and all other projects or activities requiring a portion of time of the senior personnel must be included, even if they receive no salary from the project(s);
5% Kimberly Wallace
- award period and amount including indirect costs as well as the number of person-months or labor hours that are to be devoted to the project(s), regardless of support; and
Award Period: September 1 to November 31, 2011
Grant Proposed Amount: \$276,775
- how projects are related to the proposed effort and indicate the degree of overlap.

This grant is to build up the EASE system, which will be accessed by both the city administrators and voters. Another related grant is to build up the Mobile App so the Smartphone users can access the voter's interfaces in addition to the online web interfaces. There is no overlap for the city administrator database and control console since these portions of the EASE will be purely

supported by this grant. The Mobile App will build overlap voter access so the voter has both options to access their voting system, online through web or on their Smartphone through cellular network.

6.2. Related or Complementary Proposal Submission 2 (pending)

- Title of Proposal and Summary;

Title: *Electronic Absentee Voting Risk Assessment: Comparing Mail-in to Online Plus Mobile Device Balloting*

Summary:

Electronic alternatives, including online voting and voting with mobile devices, are now available that promise to make absentee voting more efficient and effective. Electronic voting alternatives are particularly attractive for overseas citizens and military personnel that have no other choice than by mail. Electronic voting system components, including support for online voting and voting with mobile add-ons, are currently under consideration for use in Detroit, Michigan. These electronic alternatives offer potential to enfranchise Military and Overseas voters in Detroit and across the United States. With any change, however, comes risk.

Electronic absentee system components, while clearly advantageous in terms of the ability to deliver the vote in a more timely way, and with fewer ballots lost or arriving late, nevertheless introduces new threats. Electronic voting systems are subject to cyber attacks, malware intrusions, technical failures, and user error. Some electronic voting alternatives, particularly precinct-based optical scanners and direct record electronic machines, have been used for a number of years, and the risks are well understood. Other technology alternatives, such as web-based online voting, and voting with mobile devices, are much newer and pose a variety of risks. An understanding of these risks is a necessary and important part of the process of new technology evaluation.

In this project, we propose to apply novel risk management methods to perform a comparative risk assessment of absentee voting alternatives for the City of Detroit using a risk assessment process created for the United States Election Assistance Commission (EAC). Our approach relies on the skills of independent experts and a spreadsheet-based simulation tool to compare election operations risks for the current absentee vote-by-mail system against the electronic options under consideration.

- source and amount of funding (annual direct costs; provide contract and/or grant numbers for current contracts/grants); **Another grant proposal submitted to FVAP (BAA number: HQ0034-FVAP-11-BAA-0001) (pending)**
- percentage effort devoted to each project; **100%**
- identity of prime applicant and complete list of subcontractors, if applicable;
Primary Applicant: City of Detroit
Subcontractor: University of South Alabama
- technical contact (name, address, phone/fax, and email address);

Dr. Jeff Landry
University of South Alabama
307 University Blvd, North

*Mobile, Alabama 36688
jlandry@usouthal.edu
251.461.1596*

- period of performance;
September 1, 2011 through September 30, 2012
- proposed project and all other projects or activities requiring a portion of time of the senior personnel must be included, even if they receive no salary from the project(s);
5% Kimberly Wallace
- award period and amount including indirect costs as well as the number of person-months or labor hours that are to be devoted to the project(s), regardless of support; and
Award Period: September 1, 2011 through September 30, 2012

Grant Proposed Amount: \$119,070.00

- how projects are related to the proposed effort and indicate the degree of overlap.
Risks of wireless voting system are not well-known in the election industry. This pilot project will be a good learning process for the industry as whole. It is to protect the health growth of the wireless voting technology to secure the voting process and to speed up the process of digital voting, which will overcome these key bottleneck issues like ballot delivery and return securely and reliably.

This project is based on our other grant application. One is to build up the hardware and software testing environment. Another is to design our Mobile App and to have a field test. Based on the testing setting and data generated by the field test, we should be able to conduct the Risk Assessment, which is for this grant application.

7. Qualifications

Qualifications of Our Key Personnel for This Project

Kimberly Wallace, City Project Manager, obtained both Master of Science (Computer Information System) and Bachelor of Science (Computer Information System) degrees from University of Detroit Mercy, Detroit, Michigan in 1999 and in 1996. Since then, she is certified with the followings:

- Microsoft Office User Specialist: 2003, XP, 2000, 97
- Microsoft Certified Technology Specialist – SQL Server
- Microsoft Certified Professional
- CompTIA Network+ Certified Professional
- CompTIA A+ Certified Service Professional
- International Business Administration
- UNIX O/S & C Programming
- EDUCATION AND TRAINING

Currently, she is the Computer Systems Support Manager for the Department of Elections, City of Detroit. She supervise, plan and direct the various activities of data processing, network and telecommunications, which include all computer operations, programming and systems development. Coordinate the various data processing and communication needs in the most efficient and timely manner. Work is of a complex technical nature, involving a great deal of creativity, perception and initiative as well as a high level of independent judgment. She is a computer Professional with over thirteen years experience providing technical training and assistance to business professionals and students, demonstrated ability to integrate computer skills, customer support experience, project management and related education to exceed technical, business, and customer requirements, and is skilled at troubleshooting and fixing problems while, minimizing customer stress levels.

Eugene Yu, our project manager, obtained his MBA degree in 1988 from the Babcock Graduate School of Management of Wake Forest University, and his BS degree from Zhejiang University, P.R. China in 1982, one of the best engineering schools in China. He was a member of BICSI with extensive experience in server room design, installation and web hosting service as a Microsoft Hosting Service Partners' technical contact for Konnech. He completed the IT project management course at Lansing Community College in 2008. He has led the team to finish several large online web application suites for the election industry and in school districts, including the EASE project with FVAP for 3 States in 2010. From his 20 years experience in technology and management, he is well-qualified to lead his team to successfully accomplish this FVAP Data Migration Tool mission.

Anne Wang is our Technical Manager with a Master Degree in Information Science from the University of South Florida, Tampa, FL and Associate Degree of Computer Support from Lansing Community College, Lansing, Michigan. She is certified with Microsoft Application Software Training, CompTIA A+ Certificate Training. Since

2005, she has organized her programmer team to finish a number of large projects in the election and educational industries for Konnech.

Heather Zeng, Documentation Manager, has a Master Degree of Computer Science from the HuaZhong University of Science and Technology, Wuhan, P.R. China, and taken the C# and SQL programming courses in Lansing Community College in 2005. She develops training material, prepares user manuals, and upgrades test manuals for ABVote state and county users and PollChief® city and county users.

Kelly Neuder, Support Manager, has her Bachelor of Arts in Communication from Michigan State University. Since 2008, she has been working at Konnech providing customer service and support to the Department of Elections, City of Detroit and Leon County, Florida starting in 2009, and the ES&S project in 2010. She has managed project planning, overseen website production, ensured quality control, conducted alpha testing, managed beta testing, operated three database systems, interfaced between users and product engineers, created page designs using Hypersnap 6 and Visio, trained users, provided help desk support, demonstrated help desk, written instruction documents. She will lead the FVAP project if we are awarded this contract.

Laura Potter, Business Development Manager/Account Manager, has extensive customer service experience. She researches and analyzes election industry activities, coordinates election demonstration projects and oversees marketing. She successfully completed our PollChief project with Leon County, Florida in 2009, and our last project with the FVAP by coordinating all activities with the FVAP, BTA, states, counties, and voting equipment vendors smoothly in addition to the activities with ES&S and jurisdictions in 2010. She has the expertise in communications needed to have our project well-planned and coordinated with outside parties.

Resume - Kimberly Wallace



SUMMARY

Computer Professional with over thirteen years experience providing technical training and assistance to business professionals and students. Demonstrated ability to integrate computer skills, customer support experience, project management and related education to exceed technical, business, and customer requirements. Skilled at troubleshooting and fixing problems while, minimizing customer stress levels. Professionally certified by CompTIA and Microsoft.

SKILLS

- | | | |
|---|--|--|
| <input type="checkbox"/> Technical Training | <input type="checkbox"/> Help Desk
Operations | <input type="checkbox"/> Project
Management |
| <input type="checkbox"/> Desktop Systems | <input type="checkbox"/> Customer Service | <input type="checkbox"/> Preventative
Maintenance |
| <input type="checkbox"/> System Tuning | <input type="checkbox"/> Analysis | <input type="checkbox"/> Component Repair |
| <input type="checkbox"/> Microsoft
Windows | <input type="checkbox"/> Microsoft Office | <input type="checkbox"/> Microsoft
Networking |

EXPERIENCE

CITY OF DETROIT/DEPT OF ELECTIONS, Detroit, MI

2007 - Present

Computer Systems Support - Manager

Supervise, plan and direct the various activities of data processing, network and telecommunications, which include all computer/PBX operations, programming and systems development. Coordinate the various data processing and communication needs in the most efficient and timely manner. Work is of a complex technical nature, involving a great deal of creativity, perception and initiative as well as a high level of independent judgment.

- Program Local Municipal Elections
- Perform Diagnostic on various election equipment
- Update and maintain the Dept of Election website
- Participate in the selection of new colleagues.
- Train, develop and evaluate colleagues.
- Develop overall strategy related to the design, implementation, operation, and security of computers, networks and telecommunication systems.
- Direct colleagues in the planning of work schedules and maintenance of operations.
- Establish and maintain work standards, methods and procedures.
- Assist in the selection of hardware and software for information, network and communication systems.
- Report to management on progress of developments.
- Direct establishment of user training in relation to computer/communication systems.
- Ensure implementation of and adherence to local security procedures.
- Regular contact with others outside the work group to coordinate computer, network, and communication system needs.

WAYNE COUNTY COMMUNITY COLLGE DISTRICT, Detroit, MI

2007 - Present

Distance Learning Instructor

Developed and delivered online training to prepare students for a degree/career in Computer Information Systems via Blackboard. Rendered instructions on a diverse range of Information Technology subject matters including:

- Internet Business
- Site Development
- Network Technology

Part-time Instructor

Lecture students to cultivate skills to create, present, and collaborate on professional presentations by using Microsoft PowerPoint software, as a visual communication tool, to create remarkable presentations with enhanced multimedia capabilities.

LEAD P.C. Technician Instructor

Managed instructors, teacher assistants and students enrolled in P.C. Technology courses. Assisted system administrator with hardware and software problems, provided troubleshooting, and owned desktop and network issues to resolution. Perform maintenance of computer lab PC's and peripheral equipment. Identify problems and provide appropriate solutions. Install operating systems and applications and facilitated new hire classes, technical training demonstrations as well as corporate training.

- Built, maintained, and repaired computer systems to improve speed, reliability, and efficiency of operation.
- Prototyped system upgrades to identify potential problems and learned to operate and troubleshoot new systems.
- Analyzed frequent problems or potential conflicts and consulted with Training Staff and System Administrator to design and implement a solution in order to address the concerns.
- Demonstrated high quality, results-driven, prompt, and professional technical service and support to instill confidence in technical advice and directions.
- Reduced stress levels of management by adopting a cooperative attitude and positive approach to every task and assignment.
- Manage projects for fundraising efforts and student exposure for possible internship opportunities
- Organize Monthly Mentor group between students and Ford Motor Company professional
 - Earned recognition from CompTIA for leading an entire class to 100% CompTIA A+ Certified.

Technical Consultant (Lead Deployment Specialist)

Lead a diverse group in the deployment of a new Desktop launch for St. John Hospital and its subsidiaries. Required the evaluation of current hardware and upgrade, retire or acquire new hardware to meet clients and system specifications.

- Loaded the 2000 core desktop image for several end-users
- Performed BIOS flash after hardware installations
 - Executed quality testing

- Confirm user log-ins, drive mappings and accessibility of resource

AIRTOUCH WIRELESS COMMUNICATIONS, Southfield, MI

1998 - 1999

Network Analysis

Maintain the integrity of the cellular network for the Great lake region and Northern Ohio. Used several different applications and ran customized scripts to manipulate the imported data from several switches throughout the network.

- Analyzed the data from multiple switches to determine the performance of the cellular network
- Created queries to evaluate data imported from switches for possible problems.
- Liaised between customer operations and engineering group to disseminate technical information and customer concerns
- Facilitated technical/informative meetings for departmental and regional managers
- Trained marketing team and sales reps on the usage of new handset equipment

Technical Knowledge

Operating Systems: Windows2003, Windows XP Pro, Windows2000, NT Server, Windows 95&98, Novell 5.1, Novell ZEN, MS DOS 6.X, UNIX SCO.

Computer Languages: Visual C++, HTML, Perl, Pascal, COBOL, FORTRAN, and UNIX Shell Scripts.

Utilities/Application: Virtual Machine, Norton Ghost, Norton Anti-Virus, MS Office, Fox Pro, NetG, Corel Suite, Rbase 4.0, Exchange 5.5, Lotus Notes, Outlook.

Hardware Installations: Hard Drives, CD-ROMs, Network Cards, RAM, Floppy drives, SCSI controllers, Sound Cards, Printers, and Modems, USB devices.

EDUCATION AND TRAINING

University of Detroit Mercy, Detroit, Michigan

Master of Science (Computer Information System), 1999

University of Detroit Mercy, Detroit, Michigan

Bachelor of Science (Computer Information System), 1996

Wayne County Community College, Detroit, Michigan

Associate of Applied Science (Computer Information System), 1994

CERTIFICATIONS

Microsoft Office User Specialist: 2003, XP, 2000, 97

Microsoft Certified Technology Specialist

Microsoft Certified Professional

CompTIA Network+ Certified Professional

CompTIA A+ Certified Service Professional

International Business Administration

UNIX O/S & C Programming

**Volume 2 - Budget Proposal
Detroit EASE Mobile App Project**

1) Catalog of Federal Domestic Assistance Number: 12.217

2) BAA number: HQ0034-FVAP-11-BAA-0001

3) Title of Proposal: Detroit EASE Mobile App

4) CAGE Code: [REDACTED] and DUNS Number: [REDACTED]

5) Applicant:

City of Detroit, Department of Elections and
Department of Elections, City of Detroit
2978 W. Grand Blvd
Detroit, MI 48202

Subcontractor: Konnech Inc.

CAGE Code: [REDACTED] and DUNS Number: [REDACTED]

6) Technical contact:

Kelly Neuder
Konnech Inc.
4211 Okemos, Okemos, MI 48864
(517) 381-1830
Fax: (877) 301-0793
Kelly@konnech.com

7) Administrative/ business contact:

Gina C. Avery
(313) 876-0221
FAX: (313) 876-0053
averyg@detroitmi.gov

8) Proposed period of performance

From September 1, 2011 to November 31, 2012

II. Budget Proposal

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1. Itemized Budget:

The itemized budget will contain a detailed list of the following:

1.1. Direct Labor:

None

1.2. Administrative and clerical labor:

<u>Labor Categories</u>	<u>Hours</u>	<u>FBL Rate</u>
City Project Manager	267 hrs	\$217.00

1.3. Fringe Benefits and Indirect Costs (F&A, Overhead, G&A, etc.):

None

1.4. Travel:

None

1.5. Subcontracts/sub awards:

Subcontract detail is attached below.

1.5.1. Contractor Direct Labor:

<u>Contracted Labor Categories</u>	<u>Rate</u>	<u>Hours</u>
Co-Project Manager	\$195	103
Technical Manager	\$175	136
Documentation Manager	\$150	208
Developer 1	\$150	208
Developer 2	\$150	320
Tester 1	\$125	272
Tester 2	\$125	232
Project Coordinator	\$75	416

1.5.2. Contractor Administrative and clerical labor:

None

1.5.3. Contractor Fringe Benefits and Indirect Costs (F&A, Overhead, G&A, etc.):

<u>Labor Categories</u>	<u>TOTAL WAGES</u>	<u>FICA (7.65%)</u>	<u>MESC (2.4%)</u>	<u>WORKERS' COMP (1%)</u>	<u>TOTAL</u>
City Project Manager	52,065	3,983	1,250	521	\$57,818
Co-Project Manager	20,085	1,537	482	201	\$22,304
Technical Manager	23,800	1,821	571	238	\$26,430
Documentation Manager	31,200	2,387	749	312	\$34,648
Developer 1	31,200	2,387	749	312	\$34,648
Developer 2	48,000	3,672	1,152	480	\$53,304
Tester 1	34,000	2,601	816	340	\$37,757

Tester 2	29,000	2,219	696	290	\$32,205
Project Coordinator	31,200	2,387	749	312	\$34,648
Total Program Expenditures	\$300,550	\$22,992	\$7,213	\$3,006	\$333,761

1.5.4. Contractor Travel:

<u>Item Name</u>	<u>Detail</u>	<u>Total</u>
Staffs Mileage	100 mi x .51/mile x 15 mo	\$765
Webinar & Conference	57 mo x 15	\$855
Air fare & Taxi	900 (1 trips and 2 staffs)	\$1,800
Meals & Lodging (2 staff)	\$182/day x 2 nights x 2 staffs	\$728
Meals on travel days	53.25/day x 4 days	<u>\$213</u>
		\$4,361

Webinar and online conference calls are the main tools to reduce the travel cost. However, we have to plan trips to our leased telecomm data center in Lansing Michigan by car, and 1 trip for 2 people to Arlington Virginia for reporting and a physical demonstration of our final product and service before the closing of this grant. The Mobile App is a product which is difficult to demo over the phone or using a webinar.

1.5.5. Contractor Subcontracts/sub awards:

None

1.5.6. Contractor Consultants:

Unless separately identified in the prime contractor's proposal, provide a breakdown of the consultant's hours, the hourly rate proposed, and any other proposed consultant costs, a copy of the signed Consulting Agreement or other documentation supporting the proposed consultant rate/cost, and a copy of the consultant's proposed statement of work.
None

1.5.7. Contractor Materials and Supplies:

Provide an itemized list of all proposed materials and supplies including quantities, unit prices, proposed vendors (if known), and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).

<u>Item Name</u>	<u>Detail</u>	<u>Total</u>
Envelopes, Pens, Paper, Folders, etc.	250/month x 15 months	\$3,750
Postage	150/month x 15 months	<u>\$2,250</u>
		\$6,000

We anticipate that some of the payments for our 1,000 overseas testers will be paid by check. Some of the checks have to be sent to overseas addresses.

1.5.8. Contractor Other Direct Costs:

Provide an itemized list of all other proposed other direct costs such as contractors, equipment rental/user fees, report and publication costs, and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).

The key part of this grant proposal is to test the security and reliability of the Mobile App. When we demonstrated to FVAP in May 2, 2011, we were suggested to organize some field-test by the overseas' US citizens. Working with the University of South Alabama and Michigan universities, we should be able to recruit US college student to do the testing while they are overseas in addition to other overseas US citizens. In addition, we will post our recruiting news at the FVAP, OVF and some reputable social media sites to recruit additional testers. Since it is a Mobile App, we will also post our testing application at the Apple Store and Google MarketPlace. By doing that, the total cost of recruiting these qualified testers will be substantially lower.

In order to encourage our testers to do an extensive test on the Mobile App and to provide us with useful feedback, we still budget \$25 per tester with \$6.25 per tester as our overhead. The testing sample size is 1,000 so the data should provide enough coverage for most countries related to local issues like mobile network reliability, service quality, smart phone set brand, language support, remote FPCA and FWAB submission speed, and much more.

<u>Item Name</u>	<u>Detail</u>	<u>Total</u>
Telecomm Data Center Space Rent	\$2000/mo x 15% x 15 months	\$4,500
Facilities utilities	\$500 mo x 15% x 15	\$900
Facilities insurance	\$100 mo x 15% x 15	\$180
Facilities Cable & Internet	\$150 mo * 15% x 15	\$270
Verizon Wireless	3 Units x 35/mo x 15 mo x 80%	\$1,008
Other Staff Development	60*3	\$180
Total In-Kind for Whole Project	2% of Total Project Cost	\$7,766
Payment of 1,000 Overseas Testers	1,000 x \$25 x 1.25	<u>\$31,250</u>
		\$46,643

1.6. Consultants:

Unless separately identified in the prime contractor's proposal, provide a breakdown of the consultant's hours, the hourly rate proposed, and any other proposed consultant costs, a copy of the signed Consulting Agreement or other documentation supporting the proposed consultant rate/cost, and a copy of the consultant's proposed statement of work.

None

1.7. Materials and Supplies:

Provide an itemized list of all proposed materials and supplies including quantities, unit prices, proposed vendors (if known), and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).

None

1.8. Other Direct Costs:

Provide an itemized list of all other proposed other direct costs such as contractors, equipment rental/user fees, report and publication costs, and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).

None

2. The Return on Investment (ROI) Analysis

2.1. ROI Analysis Related to Information Inquiries

Detroit currently does not keep record of any inquiries related to the UOCAVA only. This grant will help us to establish a tool to track the inquiries closely in real-time fashion.

2.2. ROI Analysis Related to Additional Registrations

We are confident that the new tool will help us to double our current UOCAVA voter registration. Currently, we do not have a tool to separate the UOCAVA voters from the others. This tool will offer us the opportunity to do so.

2.3. ROI Analysis Related to Absentee Ballot Applications

In 2008 General Election, we had 1,836 UOCAVA ballot applications. We plan to at least increase our application by 100%, which would be 1,836 more applications.

2.4. ROI Analysis Related to Ballot Transmissions

We currently do not keep track of the transmission of our ballot. There is no tool for the voters to report that they never received the mailed paper ballot. The new tool will help us to build up web based status of registration, ballot request, and city ballot delivery. If the paper ballot is not sent on-time or the online ballot was not downloadable, the new too will make it much easier to contact us. Therefore, any human failure of ballot transmissions can be eliminated.

2.5. ROI Analysis Related to Ballot Markings

Online marking is not available currently to our voters. This new tool will make it possible. This funding will help us to solve this bottleneck problem and should help us to increase the UOCAVA ballot quality dramatically so more returned ballots will be counted.

2.6. ROI Analysis Related to Ballot Returns

The ballot return failure is the most problematic issue for us. Since we do not have a system to track all the steps above, the failure rate of the ballot returning is unknown. We can assume that it is high and should be dramatically improved by our new EASE. It can be further improved if the Mobile App can solve the ballot signature and email back issues on one device, a Smartphone.

We think that we are piloting a project for our nation. The EASE with Mobile App is an innovative idea at the right time and place. Let us assume that there are 6 million overseas US citizens qualified as UOCAVA voters. Currently, there may be less than 2% of these voters voting. The potential for a Smartphone to push their participation to 10% is achievable within a few years, which would be 500,000 more voters voting.