

**SUBCONTRACT PROPOSAL FOR SCIENTIFIC SERVICES PROGRAM TASK CONTROL  
NUMBER <redacted>**

**DOCUMENT 1 – TECHNICAL PROPOSAL**

<recipient redacted>

Dear <recipient redacted>,

We are please to present our technical proposal for this effort. Our cost proposal will be submitted under separate cover.

Thank you!

Regards,



Wayne B. Norris, CEO / Principal Investigator

1. TITLE. <proposal title redacted>
2. GENERAL.

Currently, information from U.S. Army vehicles is sent to separate, non-communicating data repositories or data silos. The different silos including the Operating and Support Management Information System (OSMIS), Army Logistics Integrated Database (LIDB), Integrated Logistics Analysis Program (ILAP), Logistics Information Warehouse (LIW), Fielded Vehicle Performance Data System (FVPDS), Army Total Asset Visibility (ATAV), Sample Data Collection (SDC), Logistics Intelligence File (LIF), Army Master Data Filed (AMDF), WEB Visual Logistics Information and Processing System (WEB VLIPS), Customer Account Tracking System (WebCATS), Radio Frequency In-Transit Visibility (RF-ITV), and Army Electronic Product Support (AEPS), use different platforms, languages, and data formats which do not connect to a centralized location. This slows down the ordering process since parts must be manually ordered and does not allow optimized predictive ordering. Therefore, a system needs to be developed to solve the problem of disparate and incompatible data silos. This new system needs to provide an interface that translates the data collected from the Radio Frequency Identification (RFID) and Unique Identification (UID) devices and different data silos into a format that can read the different platforms, languages, data format, and transmission modes at a centralized location. This application will provide an increase in critical asset availability to improve mission effectiveness. This will improve logistical support to operations in the theater or field. Furthermore, operational costs will be reduced through automation, theater risks will be reduced through highly efficient repair and maintenance, and component life expectancy and maintenance data will be optimally leveraged to reduce the overall lifecycle costs for parts and supplies. The collected data and information will allow the development of predictive capabilities for just-in-time ordering, management, delivery, maintenance scheduling, and reliability studies.

We propose to provide the services of a group of systems analysts, software architects, and logistics engineers, with technical and operational support, to create the design for a system to solve the problem of disparate and incompatibility of data silos used to retrieve and organize RFID, UID, and data silos such as, but not limited to:

- a. Operating and Support Management Information System (OSMIS)

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- b. Army Logistics Integrated Database (LIDB)
  - c. Integrated Logistics Analysis Program (ILAP)
  - d. Logistics Information Warehouse (LIW)
  - e. Fielded Vehicle Performance Data System (FVPDS)
  - f. Army Total Asset Visibility (ATAV)
  - g. Sample Data Collection (SDC)
  - h. Logistics Intelligence File (LIF)
  - i. Army Master Data Filed (AMDF)
  - j. WEB Visual Logistics Information and Processing System (WEB VLIPS)
  - k. Customer Account Tracking System (WebCATS)
  - l. Radio Frequency In-Transit Visibility (RF-ITV), and
  - m. Army Electronic Product Support (AEPS)
3. **OBJECTIVE.** The objective of this effort is to create the design and to build a prototype for a system to solve the problem of disparity and incompatibility of data silos used to retrieve and organize RFID, UID and data silos including the Operating and Support Management Information System (OSMIS), Army Logistics Integrated Database (LIDB), Integrated Logistics Analysis Program (ILAP), Logistics Information Warehouse (LIW), Fielded Vehicle Performance Data System (FVPDS), Army Total Asset Visibility (ATAV), Sample Data Collection (SDC), Logistics Intelligence File (LIF), Army Master Data Filed (AMDF), WEB Visual Logistics Information and Processing System (WEB VLIPS), Customer Account Tracking System (WebCATS), Radio Frequency In-Transit Visibility (RF-ITV), and Army Electronic Product Support (AEPS). This new system will provide an interface that translates data collected from RFID and UID devices and data silos into a format that can read the different platforms, languages, data format, and transmissions at one location. The collected data and information will allow the development of predictive capabilities for just-in-time ordering, management, delivery, maintenance scheduling, and reliability studies. The development of this application will improve Performance-based Logistics (PBL) and send and respond logistics (S&RL).
4. **TECHNICAL APPROACH / SPECIFIC TASKS.** We propose to perform the following tasks independent of Government supervision, direction, or control:
- a. Investigate the different platforms, languages and data format, requirements, transmission modes and data silos that are currently being used by the U.S. Army in regard to data collected from Radio Frequency Identification (RFID), Unique Identification (UID) and data silos including the:
    - Operating and Support Management Information System (OSMIS)
    - Army Logistics Integrated Database (LIDB)
    - Integrated Logistics Analysis Program (ILAP)
    - Logistics Information Warehouse (LIW)
    - Fielded Vehicle Performance Data System (FVPDS)
    - Army Total Asset Visibility (ATAV)

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- Sample Data Collection (SDC)
  - Logistics Intelligence File (LIF)
  - Army Master Data Filed (AMDF)
  - WEB Visual Logistics Information and Processing System (WEB VLIPS)
  - Customer Account Tracking System (WebCATS)
  - Radio Frequency In-Transit Visibility (RF-ITV), and
  - Army Electronic Product Support (AEPS)
- i. Conduct an inventory of these data silos and catalog them to include the data path, including all platforms, operating systems, interfaces, connection modes, data structures and software nodes with information on speed, formats, security, software module descriptions, and current practices associated with each.
  - ii. Investigate and characterize the current Data Silos. The investigation and characterization shall include all the different platforms, operating systems, interfaces, connection and transmission modes, data structures and software nodes with information on speed, formats, security, software module descriptions, software languages and data format, requirements, and current practices associated with each. Furthermore, the report shall include characterizations of current Data Silos, system descriptions, and operating systems of mainframe or other systems using the data.
  - iii. Investigate what data is in each of the Data Silos.
  - iv. Investigate the current users of the system and define who are using each and for what purposes.
  - v. Investigate the Marine Corps' MERIT system to determine whether MERIT is applicable to these data silos and whether the MERIT system can benefit the ILIMBS development.
- b. Do a tradeoff analysis to define the best design goal for consolidating the data from the different data silos into a single location. The analysis shall include supply chain integration analysis for Maintenance Scheduling and Part Reordering, rule based identification and analysis, report requirements identification and analysis, including Flash snapshots with costing, workflow identification and analysis, historical database interface requirements identification and analysis, RFID chip identification, and data silo data analysis. Furthermore, the analysis shall also include historical data which will allow the development of predictive capabilities for just-in-time ordering, inventory, management, delivery, maintenance scheduling, and reliability studies.
    - i. Investigate data silo, RFID, and UID software identification, field data cache design elements, software interface definitions, data transmission protocols, security requirements, events, and processes.
    - ii. Identify bottlenecks and critical paths in the current system.
    - iii. Create and run a simulation to detect vulnerabilities such as single-points-of-failure.
    - iv. Create an ideal system design and identify strategies to reach this design.
  - c. We propose to use COTS software components whenever possible. We propose to design and build a prototype interface that connects to and transmits information from

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the UID, RFID, and data silos including the OSMIS, LIDB, ILAP, LIW, FVPDS, ATAV, SDC, LIF, AMDF, WEB VLIPS, WebCATS, RF-ITV, and AEPS. The primary purpose of the prototype will be to demonstrate the functionality of the software, based on the Baseline Technology Report and the Tradeoff Analysis Report. The prototype shall contain combinations of simulated and real functionality, plus illustrative examples of how the actual software will look and function. The software shall be open architecture that is highly scalable so that other databases can be added onto the system later in the future. We propose to develop a server application that provides a centralized point of access control, providing the ability to enter various components authorized by the user's level of permission. We propose to develop an automation system that allows users to update the information in real-time. We propose to demonstrate a case study using the designed system to the COR and stakeholders.

- i. We propose to use COTS software components or/and software developed by the contractor to translate the various data silos through an Application Program Interface (API) which means it shall have a set of routines, protocols, and tools for building software applications that has common interfaces to interact, transmit, transfer, and communicate with other software programs and languages. The API shall have open architecture for integrating different languages and formats. It shall be scalable and provide interoperability via protocol management and data translation. It shall allow integration of data with both demand and supply channels.
- ii. The software shall have a user-friendly interface that allows for the creation of ad hoc reporting which means that the software shall have a system that allows users to customize a data query from a database in real-time, as opposed to one that limits them to pre-created reports. For instance, the reporting system may allow a person to select the fields to be returned as well as the limiting criteria for the records to be returned. The software shall also have comprehensive report in both template and ad hoc formats as output.
- iii. We propose to develop software that will create and dispatch workflow requests to the user communities, including part requisition, repair and maintenance.
- iv. We propose to develop an application that will collect historical data to allow the development of predictive capabilities for just-in-time ordering, inventory, management, delivery, maintenance scheduling, and reliability studies.
- v. We propose to develop an application that has role- and permission-based access that will ensure security for the various user communities such as procurement or inventory management. Furthermore, the application must be able to update the information the instant a user inputs the data into the computer so other people can access it. The application shall have an automatic information request that can be sent to individuals involved in the workflow for an event, such as requisition, thus allowing for efficient synchronization.
- vi. The application shall have web-based interface. The application shall have the capability to view or execute existing reports and create new reports. It shall also have a What You See Is What You Get (WYSIWYG) report designer. WYSIWYG is an application that enables the user to see on the display screen exactly what will appear when the document is printed. The software or application shall have the capability to add/update reports, manage the reports' properties, deploy them to the server, and manage server configuration.

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- vii. We propose to develop an application that will include performance-based logistics to improve operational capability while reducing costs.
- viii. We propose to develop an application that will include sense and respond logistics (S&RL) which will allow the user to accurately observe, decide and act based on the available data.
- ix. We propose to demonstrate a case study using the designed system to the COR and personnel at <command redacted>. The case study shall include the following:
  - How many vehicles (i.e. High Mobility Multipurpose Wheeled Vehicle (HMMWV), Stryker, Bradley, Abrams, etc.) are in the fleet?
  - For the HMMWV M1114 fleet, how many vehicles are in service per day, per week, and per month?
  - For the HMMWV M1114 fleet:
    - Why were the vehicles out of service?
    - List the five most commonly repaired parts.
    - How long (average) does it take to get these vehicles' parts fixed or replaced?
    - How many days (average) were they out of service?
    - For the five parts, how often (average) do they need to be repaired or replaced?

## 5. REPORTING REQUIREMENTS.

- a. A Start of Work meeting shall be held at the contractor's facility within 10 days after contract award. At this meeting, we will present our planned approach to complete the contract effort. We will coordinate with the COR to schedule a specific date and time.
- b. Provide the following to the Contracting Officer Representative (COR):
  - i. A Baseline Technology Report on the current system, interfaces and users in regard to data collected from Radio Frequency Identification (RFID), Unique Identification (UID) and, and data silos including the OSMIS, LIDB, ILAP, LIW, FVPDS, ATAV, SDC, LIF, AMDF, WEB VLIPS, WebCATS, RF-ITV, and AEPS . The report shall include an inventory of the data path, including all platforms, operating systems, interfaces, connection modes, data structures and software nodes with information on speed, formats, security, software module descriptions, software languages and data format, requirements, and current practices associated with each. Furthermore, the report shall include characterizations of current Data Silos, system descriptions, operating systems of mainframe or other systems using the data, and a report of the current users of the system, such as who is using them and for what purpose. We propose to deliver this report within six (6) months after contract award.
  - ii. We propose to prepare and deliver by 15 October 2006 an Interim Version of the Baseline Technology Report to reflect progress to date.
  - iii. A Tradeoff Analysis Report, including a definition of the best design goal for consolidating the data from the different data silos into a single location. The analysis shall include supply chain integration analysis for Maintenance Scheduling

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and Part Reordering, rule based identification and analysis, report requirements identification and analysis, including Flash snapshots with costing, workflow identification and analysis, historical database interface requirements identification and analysis, RFID chip identification, and data silo analysis. The analysis shall also include historical data which will allow the development of predictive capabilities for just-in-time ordering, inventory, management, delivery, maintenance scheduling, and reliability studies. We propose to deliver this report within eight (8) months after contract award. We propose to submit the report in accordance with DI-MISC-80711A

- iv. We propose to prepare and deliver by 15 October 2006 an Interim Version of the Tradeoff Analysis Report to reflect progress to date.
- v. A Prototype of the proposed system, including the case study (4.3g), based on the best design goal. The prototype shall include the software developed by the contractor. We propose to deliver the software within twelve (12) months after contract award.
- vi. Monthly Contractor's Progress, Status, and Management Report. We propose to submit progress reports in accordance with DI-MGMT-80227
- c. A final briefing will be held at <facility redacted> within 30 days of contract completion describing all of the work done under this effort. We propose to also deliver a final report describing all of the work performed and results and conclusions derived under this effort

## 6. QUALIFICATION REQUIREMENTS.

- a. The systems analysts, software architects, and logistics engineers selected for the performance of this statement of work have specific experience in logistics and supply chain management, business operations analysis, military operations, and software architecture and design.
- b. Resumes of the proposed Principal Investigators are included in the Appendix. Due to the uncertainty in the timing of the start of the contract, other staff have not been designated as of this writing. Such other staff will be drawn from our current employees or from new hires as the need for their services is identified. Resumes of those individuals paid more than \$35/hour will be supplied as they are selected, and prior to being engaged on the contract.
- c. We are proposing to award a sole source subcontract for portions of this work to <contractor name and address redacted>. <corporate partner name redacted> has extensive, unique experience in precisely the areas of this effort, due to their performance as a subcontractor in a very similar effort conducted for the <service name redacted> approximately <duration redacted> years ago. We believe that their experience is so unique that it will save significant cost for the Government, and that upon that basis, we should award them a sole source contract.
- d. Our proposed Labor Categories are characterized and described as follows:
  - i. SENIOR MANAGER
    - (1) EDUCATION: Bachelor's Degree, Physics, Mathematics, Chemistry, Engineering, or Computer Science [or equivalent]
    - (2) EXPERIENCE: 15+ years of management; 15+ years of technical experience. Up to 5 years of management and technical work may be concurrent.
  - ii. ENGINEER/ANALYST I

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- (1) EDUCATION: Bachelor's Degree, Physics, Mathematics, Chemistry, Engineering, or Computer Science [or equivalent]
- (2) EXPERIENCE: 20+ years of technical experience with Bachelor's Degree or 15+ years with Master's or Doctoral Degree

iii. ENGINEER/ANALYST V

EDUCATION: Bachelor's Degree, Physics, Mathematics, Chemistry, Engineering, or Computer Science [or equivalent]; or less than a Bachelor's degree with experience [see below].

- EXPERIENCE: 7+ years of technical experience with Bachelor's Degree or 5+ years with Master's or Doctoral Degree or 13+ years with less than a Bachelor's Degree

- SUPPORT STAFF

EDUCATION: High School Degree [or equivalent]

- EXPERIENCE: 7+ years of related industry experience with High School Degree or 5+ years with Associate Degree; or 3+ years with Bachelor's Degree; Military or Vocational school may be accepted in lieu of degrees on a case-by-case basis.

iv.

- e. Our Request for Proposal and their responsive Proposal are appended to this Proposal and are incorporated by reference.

7. PLACE AND PERIOD OF PERFORMANCE, WORK DAYS AND TRAVEL.

- a. Place of Performance: Except for the travel listed in paragraph 7.d. below, the primary performance shall be at the Performer's facilities.
- b. Period of Performance: The performance period shall be 1 year, beginning on the award date of the contract.
- c. Work Days: An estimate of 730 working days will be divided among the combination of a Systems Analyst, Software Architect, and Logistics Engineer and/or their support staff, on a cost-equivalency schedule.
- d. Travel: Visits to Army staff, including Subject Matter Experts [SMEs], user community members, and stakeholders will also be required. Trips will be planned as the research and discovery process continues. Travel will stay within the allotted budget.

8. RESTRICTIONS. There are no known existing or potential conflicts of interest associated with this task.

9. SECURITY CLEARANCE. None required; the effort is unclassified.

10. HUMAN SUBJECTS. No human subjects are required.

11. CONTRACTING OFFICER'S REPRESENTATIVE (COR).

Name:.....<COR name redacted>  
Command:.....<command redacted>  
Agency: .....<agency redacted>  
Address (Include Office Symbol):.....<address redacted>  
Phone: (DSN); (Commercial) .....<phone redacted>  
E-Mail: .....<email redacted>

12. ADMINISTRATIVE POINT OF CONTACT.

Name:.....<COR name redacted>  
Command:.....<command redacted>  
Agency: .....<agency redacted>

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Address (Include Office Symbol):.....<address redacted>  
Phone: (DSN); (Commercial) .....<phone redacted>  
E-Mail: .....<email redacted>

13. RECOMMENDED SOURCE.

Name:.....Wayne B. Norris, CEO  
Institution/Company Name:.....<entity name redacted>  
Address:.....<address redacted>  
Phone:.....<phone redacted>  
E-Mail: .....<email redacted>

14. RELEVANCE. This work will support <command redacted>'s mission in target identification.

15. CAPABILITY STATEMENT: <command redacted> relates that it does not have the necessary in-house capability to perform the work specified in the statement of work.

16. GOVERNMENT FURNISHED EQUIPMENT (NONE PROPOSED)

Certification

This proposal is made in behalf of <entity name redacted>



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Wayne B. Norris, CEO  
<entity name redacted>

17 August 2006



**APPENDIX 1**  
**Request for Proposal, <entity redacted> to <entity redacted>**

17 August 2006

VIA ELECTRONIC MAIL

<entity redacted>

Attention: <name redacted>

<address redacted>

<city / state redacted>

Re: Request for Quotation

Main Document: "<effort name redacted> Design, Development and Deployment Support"

Dear Ms. Edwards:

<entity redacted> requests a Cost Plus Fixed Fee (CPFF) proposal from <entity redacted> Incorporated for the work requirements of Appendix 1.

- Please bid a fee of 9.5%.
- The anticipated period of performance is one year.
- Please bid a level of effort reflecting a total cost of approximately \$240,000.
- Please indicate labor categories and fully burdened rates, and provide sufficient detail on any travel proposed to allow determination of reasonableness.

It is requested that you submit this information to myself no later than today, 17 August 2006. If you have any questions concerning this effort, please do not hesitate to contact me at (805) 962-7703. Thank you for your attention to this matter.

Sincerely,



Wayne B. Norris, CEO

## APPENDIX 2

### CV of <entity redacted> Principal [<entity redacted> Principals are listed in their proposal]

Wayne B. Norris, Principal Investigator, <entity redacted>

#### SUMMARY

Wayne B. Norris, Chief Executive Officer of <entity redacted>, has 37 years of experience in scientific research, engineering, software development, corporate management, finance, accounting, and sales/marketing.

Mr. Norris has served as a research physicist, infrared systems engineer, software systems analyst, and engineering, sales, and management consultant with Rockwell, General Research Corporation, Raytheon, GM Delco, ITT /Vandenberg AFT, Control Data Corporation, McDonnell Douglas, Edwards AFB, AlliedSignal, the Ballistic Missile Defense Advanced Technology Center in Huntsville, AL, and the Strategic Defense Initiative Office [SDIO] in Washington, DC, among others. His projects include analysis of moon rocks from Apollos 11 and 12, microwave remote sensing satellites, nuclear radiation effects and hardening, counterterrorism research and planning, physical security perimeter detection systems, the Minuteman ICBM, Titan launch vehicle, and Peacekeeper ICBM systems, the M-1 Abrams tank, the AN/SLQ-32 fire control system, the International Space Station, and numerous others. He is a graduate of the Defense Industrial Security Clearance Office [DISCO] Industrial Security Management school, was the DOD security manager for a defense contractor, and was a counterespionage consultant. He has published papers on the chemistry of gaseous explosions and on cosmic background microwave measurements.

Mr. Norris also has extensive experience in the oil and gas industry, serving as a consultant to Chevron, Unocal, Phillips, and Texaco, in addition to independent operators of oil production and transportation facilities. Mr. Norris is trained as an SEC-reporting accountant and has served in that capacity with several firms. He has served as an expert witness in State and Federal Court in technology, patent, corporate governance, and intellectual property issues, including *Microsoft Corporation v. Commissioner of Internal Revenue*, where he acted as the government's chief expert on software development issues. Mr. Norris has acted as a senior manager and board member in numerous firms, and has a lifetime total of \$17 million in sales of technology products and services. He has made technical and sales presentations to more than 100 audiences, including numerous appearances on radio and TV, including CNN's Anderson Cooper 360°

Mr. Norris holds a bachelor's degree in Physics from the University of California, Santa Barbara, with postgraduate work in Physics, Mathematics, and Accounting. He is a member of the Institute of Electrical and Electronics Engineers [IEEE] and the Association of Old Crows [AOC], the electronic warfare professional organization.

#### **EMPLOYMENT HISTORY**

##### **Chief Executive Officer of <entity redacted>; Chief Scientist of <entity redacted> 2005 - Current**

<entity redacted> is a technology provider specializing in multiple systems for major US and international firms and the US military community. Along with <entity redacted>, <entity redacted> is a subsidiary company of the <entity redacted> family of companies, delivering broad spectrum technology solutions to government and industry. <entity redacted> is a

<corporate logo redacted>

subsidiary firm that provides security systems, including hardware, software, and management solutions, to private industry, the Federal Government, and international business.

**Duties:** I do strategic positioning, technology management of US Government contracts, customer relationship management, security solution engineering, and representation of the company to government, industry, and the media. I am the inventor and program manager of a patent pending Improvised Explosive Device [IED] detect/defeat system using Thermal Neutron Activation Analysis [TNA].

**President and Chief Financial Officer, Offshore Creations, Inc., Santa Barbara, CA, 2003 - 2005**

I served as President and Chief Financial Officer of this publicly-traded 130-person software engineering company with management and financial offices in the United States and engineering campuses in Ukraine, Russia, and Czechoslovakia. My responsibilities at the US office included technical management of multiple software development efforts, software development sales and marketing, public relations, customer relationship management, financial reporting and analysis, investor relations, regulatory agency relations, and strategic planning. My responsibilities at our European offices include senior technical management and strategic planning.

**Management Consultant, Several Established and Startup Firms, 2001-2003**

I worked with several established and startup firms, providing software engineering management consulting, finance and accounting consulting, business plan development, and promotional assistance. The established firms were in the laundry services and medical device sectors, and the startup firms were in the local telephone service, medical imaging, electronic cash register and point-of-sale, and nuclear waste management sectors.

**Expert Witness, 1995 - Current**

On a time permitting basis, I provide occasional expert witness services in cases in state and federal courts involving management, technology, intellectual property, and computer issues. My current work is limited to Constitutional issues or issues involving the social implications of technology. Examples of prior cases include

- *Microsoft v Commissioner of Internal Revenue* [I represented the IRS side in this \$1.7 billion case against the world's largest 48 software companies]
- *Mitchell v Kasem et al* [computer intrusion; forensic reconstruction, \$1 million]
- *Wilmar v Mastech* [software development non-performance, \$1.25 million]
- *Microsoft v OptInRealBig.com, Richter, et al* [economic damages of spam; \$7 million]
- *O'Keefe vs Lynch, et al.* [Trade secret misappropriation; violation of fiduciary duty by a corporate officer, \$1 million]
- *Sequent v Carreon & Cowan* [Trade secret misappropriation, \$1.5 million]
- *Jordan Jacobs v. Microsoft Corporation, Logitech, Inc., Electro Source, LLC* through its division known as Pelican Accessories and Analog Devices, Inc. [Patent infringement, \$1.2 million]
- *Watts v Synolakis and University of Southern California* [Scientific paper publishing standards; scientific defamation, \$2 million]
- *Life Alert Emergency Response, Inc. vs ConsumerAffairs.com, Inc.* [Misappropriation of copyrighted and trademarked property; \$1 million]
- *Norton v Norton* [Intellectual content of software in divorce proceedings; \$65 million]

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- Feltman v Otalvaro [Overbilling of software development expenses amounting to diversion in a bankruptcy; \$1.25 million]
- People of the United States v Joan Huang [Criminal software piracy; conspiracy]

**Senior Product Manager, 3DStockCharts.com, Inc., Santa Barbara, CA, 2000 - 2001**

The company (<http://www.3dstockcharts.com/>) produces real-time 3-D renderings of zero-delay full-book bid/asked prices for stocks on the world's major Electronic Communication Networks [ECNs] including Archipelago, Island, Instinet, Redibook, and Brute, using ultra-thin client-side browsers. The company has 75,000 subscribers, over 50,000 daily hits, and in use by major stock brokerages around the world. I was responsible for determining product and engineering content, creating software development life cycle procedures, qualifying and managing outsourcing and distributed development resources, and coordinating engineering standards.

**Research & Development Manager, Biopac Systems, Inc, Goleta, CA, 1999 - 2000**

Biopac Systems (<http://www.biopac.com>) manufactures a line of medical instruments for research and education. Biopac's product line includes equipment to monitor and record over 40 electrophysiologic channels including heartbeat, EEG, EKG, EMG, plethysomgraph, and numerous others. In this position, I managed a group of 11 engineers and others developing and testing software and hardware. I was also responsible for launching the company Intranet, establishing the Quality Assurance department, handling the company's first recall effort, developing software development life cycle procedures, including ISO 9001 procedures, establishing a company Internship program, introducing Version Control to our ISO 9001 system, and determining compensation strategies, bonus award practices, and related HR policies.

**Vice President, Emulation Systems, Inc. of Santa Maria, CA, 1998**

The company built simulators for aircraft and trucks, for use in the training and entertainment markets. Our products included FAA certificated simulators for Cessna 172 and 182 aircraft, plus realistic simulators for the F-18, Cessna 210, and Beech 19 series of aircraft, the Hughes 500 series helicopters, as well as truck-mounted spray-boom applicators. All simulators had full-featured, high-resolution terrain graphics and full control loading, as well as full Jeppeson navaid and terminal databases. I was in charge of Engineering, R&D, Manufacturing, and Customer Support.

**Independent Software Development Consultant, Santa Barbara, CA, 1997 - 1998**

I created software systems for numerous customers, including:

- **Kinko's, Inc. Corporate Headquarters, Ventura, CA**  
I developed Visual Basic and ACCESS database tools for analysis of payroll and compensation issues related to corporate mergers and restructuring.
- **Lawyer's Support Systems, Santa Barbara, CA**  
I developed TAPI-2 voice response systems in C and Visual Basic.
- **Allied Signal Corporation, El Segundo, CA**  
I designed and wrote an automated requirements traceability matrix tool for NASA's International Space Station Alpha engineering support. The tool featured a parser and database engine, and was developed in ACCESS and VBA.
- **Infogenesis Corporation, Goleta, CA**  
I developed a range of software to support electronic cash registers for the restaurant and hospitality industry, including IBM 4680 Store Systems, PCs, and AS-400s. Applications include database, systems, installation configuration management, exception handling.

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**Vice President of Science & Technology and Chief Technical Officer, Typhoon Software, Inc., Santa Barbara, CA, St. Petersburg, Russia, and Agana, Guam, 1992 - 1997**

I managed 55 Russian computer scientists and managers and 15 other staff in St. Petersburg, Russia, Santa Barbara, CA, and Agana, Guam, performing 57 software development projects for 41 U.S. customers, including 7 Fortune 500 companies. I personally marketed and sold every original project Typhoon ever produced, and assumed primary management responsibility for all of them.

Typhoon at the time was the world's largest outsourcer of Russian software and engineering talent. Environments included Windows 3.x, 95, and NT, OS/2, UNIX, AS400, DOS, Macintosh OS, and embedded systems. Languages included SQL Server, Oracle, VB/Crystal Reports, VBA, Access, Delphi, C/C++, RPG400, and assembler for embedded micro-processors. Projects included MRP systems, database systems for the banking, medical, legal, printing, automotive, law enforcement, and retail communities, Internet applications, speech recognition, multimedia, device drivers, telephony, screen savers, porting between systems and languages, algorithm development, and educational software. Retail products included: IBM ViaVoice add-ins for Word, Word Perfect, and GroupWise; *Always With You*, a custom screen saver; and a PLM to C porting tool.

A major project at Typhoon was the design and delivery to Xerox Business Systems of an MRP system for the printing industry, including Internet submission of print jobs, error-checking, and workflow tracking thru the factory. Tie-in was provided to the HR system [for machine-qualified employees, vacation and overtime, etc.], to the Inventory system, to the timekeeping system, the fixed assets system [for machine downtime], and to the General Ledger. Automatic backward scheduling was provided, with remote login for sales staff. Automated project bidding was provided, with document archival. Supervisor alarm conditions were provided for critical conditions. The system was installed and previewed for the LA Unified School System, Microsoft, and numerous other clients. As a part of the effort, I conducted a self-assessment and program launch for an SEI CMM Level 3 management structure.

My largest single project was managing 35 engineers in a multi-year effort in support of Harris Digital Telephone Systems projects. Our work included a white-box development to build a turnkey prepaid telephone credit card system for MCI that was installed in Istanbul, Turkey, Dohar, Qatar, Beijing, China, and Toronto, Canada. I also managed the development of the world's most successful PLM-to-C translator, a European ISDN teletext, and more than 10 additional projects.

Another major project at Typhoon was a successful proposal for a \$7.5 million rewrite of the entire Guam government software environment, including a substantial data mining and document management component, with both to-date and date-forward efforts. This involved a team of 8 people hand-picked and managed by myself over a 4-month period.

**Division Director, Federal Systems, ExperTelligence, Inc., Santa Barbara, CA, 1990 - 1992**

I managed the most ambitious object-oriented hypertext software development project ever written, Dynamic Documents™, for the U.S. Government. I had 6 employees and a budget of \$500,000 per year. We delivered a prototype, and then negotiated a follow-on contract for \$1 million over two years. My responsibilities included management, business, and programming - I wrote the word processor.

**Senior Scientist, Morton Associates, Inc., Santa Barbara, CA, 1988 - 1990**

I wrote Oil Spill Emergency and Contingency Plans (OSCEPs) and related documents. I was the Senior Scientist and Principal Author of the OSCEPs for 8 offshore oil platforms operated by

<corporate logo redacted>

Chevron. I did process-plant risk analyses and wrote oil spill emergency response software and training multimedia presentations on Macintoshes and PCs using Macromind Director. I authored the *Commercial Fisheries Handbook for Proposed Exploratory Drilling Operations, Cavern Point Unit*, and was a contributing scientist in related documents. I also performed asset evaluation for oil leases offered for sale.

**Member of the Technical Staff, General Research Corporation, Santa Barbara, CA, Hollister, CA, McLean, VA, and Alexandria, VA [Management duties], 1986 - 1988**

I performed the duties of a staff physicist, as well as performing management and marketing functions. I was asked to improve software operations at a GRC subsidiary, Semifab, Inc., of Hollister, CA. I reorganized procedures, created a Software Department, purchased additional hardware and software, and produced their first operations manual. I hired the staff and stayed until the department was operational.

I did marketing, especially to the Defense and National Security communities. I conducted seminars in new research findings for potential customers throughout the U.S., and coordinated numerous proposal efforts.

I performed the duties of a staff physicist, as well as performing management and marketing functions [*discussed earlier under MANAGEMENT EXPERIENCE*].

- Analysis of Soviet nuclear and conventional land/air threats and NATO and SDIO responses.
- Signal detection analysis. Research on the system dynamics of the formation of dissident, terrorist, and criminal groups, based on management science and critical systems approaches.
- Computer simulation of heat flow, magnetic fields, electromagnetic scattering, and neutron transport.
- Numeric-based AI analysis of polygraph data and other observable human signals, including facial microgestures and voice spectral and discourse content.

I also conducted classes in counter-espionage and security awareness.

**President and Chief Pilot, Norris Airways, Santa Barbara, CA, 1978 - 1981**

I created and operated an aircraft fixed base operation ("FBO") with 14 employees, including 9 pilots, 3 departments, and 11 single- and twin-engine aircraft. We offered aircraft instruction and rental, air taxi service under Federal Aviation Regulation Part 135, and were an authorized Cessna Aircraft dealership.

**President, Gasohol, Incorporated, Santa Barbara, CA, 1978 - 1980**

I organized the first modern gasohol company west of the Mississippi, with 8 investors and 10 employees at 2 sites, including a retail station, a wholesale terminal, and a delivery tanker. Wholesale customers included the U.S. Naval Weapons Center, Pt. Mugu, CA.

**Independent Consultant, Santa Barbara, CA, 1976 – 1978; 1981 – 1986**

- I wrote INSP, an air quality regulatory compliance Management Information System [Unocal, Inc., Orcutt, CA]
- I wrote the computer program, ECNA, Enhanced Criminal Network Analysis. ECNA is used by over 10,000 law enforcement personnel worldwide. [Anacapa Sciences, Inc., Santa Barbara, CA]
- Systems analysis of missile range safety software for Vandenberg AFB [Control Data Corp.]

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- Software development for an optical measurement system [Nanometrics, Inc.]
- Hardware/software engineering for infrared detector testing [Santa Barbara Research Corp.]
- Software development for a color touch screen computer [Santa Barbara Laboratories]
- Deterministic simulation of fire control system for the M-1 tank [Delco Systems, Goleta]
- Simulation of power characteristics for the Lycoming O-235 aircraft engine [Santa Barbara Designs]
- Development of shipboard fire control software [AN-SLQ-32] [Raytheon]
- Development of real estate multiple listing database and print management software [DA-Com, Santa Barbara, CA]

**President, Norris Associates, Consultants, Santa Barbara, CA, 1974 – 1976**

I created and ran an environmental and engineering consulting firm with 6 employees. Projects included residential developments, a power plant in Omaha, NE, a sewage system in Los Angeles, CA, and oil drilling offshore Orange County, CA. We developed oceanographic, thermal plume, and atmospheric chemistry software and used fuzzy set theory to model governmental decision making.

**Senior Programmer, ITT Federal Electric Corp., Vandenberg AFB, CA, 1973 - 1974**

Development of missile range safety and auto-destruct software

**Senior Programmer, Jet Propulsion Laboratories, Pasadena, CA, 1972 - 1973**

Development of telemetry and command software for support of NASA deep space probes from the world-wide Deep Space Network [DSN] antenna array.

**Physicist, Rockwell International Science Center, Thousand Oaks, CA, 1969 - 1972**

Microwave remote sensing. Mössbauer studies of lunar rock from Apollos 11 and 12.  
Microwave studies of the earth's atmosphere. Studies of crystal growth in gels.