August 30, 1999

The Pragma Corporation

Lithuania Capital Markets

Task Order Report

(For Period of May, June, and July 1999)

for the

US Agency for International Development

General Information

Project Name:	Lithuania Capital Markets
Project Start Date:	September 30, 1997
Anticipated End Date:	December 31, 1999
USAID/ENI – COTR:	Ieva Veidemanis
Project Manager:	Mohammad Fatoorechie

Bi-monthly Report, June/July 1999, NSEL Procurement Activity

Date: August 30, 1999

Background

Through a USAID contract, The Pragma Corporation undertook the task of assisting the National Stock Exchange of Lithuania (NSEL) in developing an effective and efficient trading system. As a part of this project, Pragma was required to procure and install the software necessary for the operation in Vilnius of an up-to-date, modern trading mechanism. This requirement was initially carried out through a bidding process in which suppliers were asked to submit proposals for the system. The process yielded numerous responses; however, price and other considerations deemed it necessary to abandon this procurement activity. In its stead, the NSEL opted to develop the software through its own in-house capabilities and to rely on USAID funding to obtain the necessary hardware for its modified and upgraded trading system.

The activities under this project segment are relatively few, therefore Pragma proposed and USAID agreed that a bi-monthly activities report would suffice USAID's reporting requirements. During the month of May, Pragma forwarded its final proposal for modifying the existing contract to USAID/ENI and OP for review and approval. No other project related activity took place in this month.

The report for June and July 1999 contains the initial start-up activities under the modified Task Order, which effectively changed the substance of the procurement activity from the cancelled software acquisition to the newly developed hardware procurement action.

Project Activities (May – July 1999)

Noteworthy activities undertaken were as follows:

A. <u>Change in Scope of Work</u>

On June 3, 1999, USAID amended the Lithuania Capital Markets Project Task Order EPE-I-05-00040-00, changing the original scope of procurement from the acquisition of software to a purchase of hardware for the NSEL. At the same time, the overall project allocation was reduced from $1,459,341 to $1,121,409, with a total procurement element of $340,000. During the first quarter of 1999, Pragma received (through USAID) a list of hardware required by the NSEL for the upgrade of its present system. Pragma's technical advisor, Mr. Timothy Smith, reviewed the plan, suggested modifications to NSEL, and a final list, as agreed by all parties, was prepared (Attachment A). The itemized list included specific hardware, which is initially to be purchased through available USAID funds. The NSEL will cover the difference between the cost of the hardware and USAID funding. Pragma has agreed to assist in the procurement of the needed hardware through its amended contract. The procurement list consists the purchase of three UNIX platforms and an upgrade of the NSEL's present IBM AS/400 mainframe and the required accessories. The first two UNIX platforms will be used for database and communications, while the third will be used for developmental work and as a redundant (backup) gateway. The IBM upgrade is exclusively targeted for use as the engine for the trading system in

the immediate to medium term – one and a half to two years (Attachment B). The Task Order charged The Pragma Corporation with the work required to assist the NSEL in the purchase of the necessary hardware for its upgraded trading system and to ensure that USAID procurement rules are observed in the acquisition process.

B. Appointment of a Procurement Advisor

The Pragma Corporation appointed Mr. Bendy Viragh, former senior USAID procurement advisor, to manage the procurement process and to serve as advisor to the NSEL on procurement related issues.

C. Trading System Designed by the NSEL

Having decided to undertake the development of its own software system, the NSEL technicians, headed by Dr. Anatanas Gruskas, designed a three-tiered approach for adopting its operating system to a UNIX/IBM platform. Using the existing software system, the NSEL will also modify the capacities of its programs to provide a better and more reliable trading capability. Understanding the magnitude of the work, the NSEL emphasized that it does not intend to design an entirely new system; but rather, modify and enhance the old system and adapt modifications to the portions of the data processing, which will allow for the introduction of UNIX Gateways.

Because the modification will be done simultaneously with the operating of a functioning stock exchange (using the old system), the three-tiered approach will allow for the development of the system as the work progresses, thus utilizing the newly acquired and installed hardware to test and make revisions as needed. The NSEL anticipates that this modification and revision process will take up to nine months.

D. IRM Review

At the request of USAID/Vilnius, IRM sent Mr. William Fiore, one of its senior computer experts, to visit Vilnius (June 4 – 10) in order to review the status and requirements of the NSEL trading system. Mr. Fiore met with the NSEL technicians and local computer vendors and prepared a preliminary assessment of the NSEL trading system and of the requirements for upgrading the existing system. Mr. Fiore pointed to the UNIX system as an acceptable hardware configuration and made a number of recommendations for the NSEL staff regarding the installation and use of the NSEL's proposed software package.

E. Visit by the Project Manager

Mr. Mohammad Fatoorechie visited Vilnius June 12 – 18. During his visit, Mr. Fatoorechie met with USAID officials and NSEL personnel, and designed a detailed Action Plan for the implementation of the project. The Plan defines specific tasks and assigns target dates for the accomplishment of each task. The Plan was reviewed and discussed with USAID and the NSEL and signed as a "no objection" confirmation by the USAID/ENI – COTR, as well as the Chairman of the Stock Exchange and the responsible NSEL managers (Attachment C).

F. Search for Suppliers

The equipment needs, as envisioned by the NSEL are specific and restricted to a few eligible suppliers. The two main component of the procurement are the upgrading of the IBM AS400 production system and the acquisition of UNIX trading engines with the necessary accessories. There are only ten known suppliers of this equipment in the eligible source countries (the US and Lithuania). Of these firms, only three have in-country maintenance and support capability.

Both Mr. Fiore and Mr. Viragh, as well as Pragma's technical expert Mr. Smith, determined that the suppliers to be contacted are IBM, Hewlett-Packard, and SUN Microsystems, as well as their local in-country representatives and qualified IBM equipment suppliers.

G. Visit of Procurement Advisor

The Procurement Advisor visited Vilnius July 6 – 16 to prepare and finalize the specifications needed for the Request for Proposals. Mr. Viragh worked with Dr. Gruskas and his staff and consulted with the USAID Program Manager, Mr. Mark Segal. The specifications, which were prepared, were further reviewed and approved by Mr. Smith. The complete specifications package calls for several groups of biddable items and makes allowance for the fact that some of the items may not be purchased under USAID funding due to limited funds available.

H. IRM Review

The specifications package was submitted to IRM on July 24 for a mandatory review and concurrence. IRM responded quickly and concurred in the procurement subject to a) the submission of documents justifying the selection of the hardware system and b) providing background and explanatory notes on the design of the software system itself.

Future Activities:

- Issuance of an RFP to selected suppliers (this was done on August 20)
- Receipt of offers from suppliers NLT September 21
- Visit to Vilnius by Procurement Advisor to evaluate offers with the NSEL's technical support September 22 through October
- Visit to Vilnius by the Project Manager September 26 though 30 to resolve any issues regarding the proposed award
- Award will be made by the Procurement Advisor and the offers will be so informed, NLT October 10.

Pragma Corporation
Lithuania
A US/AID Contractor

USAID

Memo

To: Mr. Aldas Kriauciunas

From: Tim Smith

CC: M. M. Fatoorechie, Ms. Ieva viedemanis

Date: April 6, 1999

Re: Lithuanian Stock Exchange Hardware Procurement

Introduction
This is a review of the proposed hardware procurement for the National Stock Exchange of Lithuania. This memorandum reflects my review and analysis of RFQ's for a trading system hardware platform, analysis of RFQ's for an actual trading system software, and conversations with the technical/management staff at the Lithuanian Stock Exchange.

Background
Last year, the National Stock Exchange of Lithuania (NSEL) placed a tender to replace their existing trading system with a new system purchased from a software vendor. Responses to the tender were reviewed, all respondents were found lacking the minimum requirements to meet the objectives of the NSEL. Final decision on the progress of procurement was put on hold. Out of the responses to the software quotation came a clear idea of what hardware platform was needed to allow the maximum flexibility in the future selection of a trading system software product.

The proposed hardware platform was presented to three major hardware vendors, IBM, SUN and HP.

The NSEL is requesting USAID to fund the purchase/acquisition of a hardware system in order to facilitate NSEL's future upgrade to their trading system.

In absence of a specific software package, the description for an appropriate hardware platform will be limited to a general configuration which will allow the NSEL to select from the leading vendors of trading software. We begin with the assumption that the proposed platform will be UNIX as opposed to PC based. This seems to be in-line with NSEL's preferences at this time. The three hardware vendors that responded to the request for quotation were IBM, Sun, and Hewlett-Packard. The vendors are amongst the top ten vendors of UNIX hardware in the world. All vendors have a presence in Lithuania and can provide local support and training. Database and software included, the responses to the quotation range from a high of $960,000 to a low of $578,000. This review concentrates on hardware and recommends a maximum expenditure of $365,000 to fulfill the needs of the NSEL.

Methodology
This review has been to verify the reasonableness of the proposed platform and to estimate the amount of money that should be allocated to this task. The proposed hardware platform focuses on several areas of the technical infrastructure that need attention.

- Trading server, backup trading server, and communications gateways

- Upgrade of the existing trading hardware platform
- Networking/telecommunications equipment
- Administrative PC's
- Database management system for new trading software and personal computer software

For each segment of the overall need for support some comments on the motivations behind each item is in order.

1- A database management system is the underlying software infrastructure on which a software vendor builds its trading system . It is recommended that a basic license for Oracle be purchased to provide tools for evaluation and training by NSEL staff in the interim period prior to selection of a new trading system.

2- The 100 user license for a database management system priced at $220,000 is extreme with the uncertainty on final selection of a particular trading software.

3- The upgrade of the existing IBM AS/400 platform is necessary and must be provided. This is the most crucial hardware upgrade for continued operations of the NSEL.

4- The networking/telecommunications equipment will be necessary to provide remote connectivity for traders and other market participants.

5- Thirty personal computers are part of this request. These machines will be used for administrative/technical personnel at the exchange. Software for the personal computers and additional power conditioning equipment are also requested.

Recommendation

This hardware request is quite reasonable from a technical viewpoint. It shows good vision in providing a flexible platform that the NSEL can use to adapt to changing technical needs. For my recommendations, I am presenting two scenarios in a table on the following page.

Scenario 1: Provides all of the requested equipment except the 100 database license. That license should only be a 5 user development license until the actual trading system is selected.

Scenario 2: Recommends procuring a primary trading engine and two of the four requested gateways without a backup system. The latter could be procured when a trading system is selected. This scenario makes minor adjustments (cuts) to the LAN and Telecom hardware needs and further reduces the administrative computers down to 15 from 30.

This review proposes two options creating a range of configurations. These options provide flexibility to accommodate budget constraints.

On the subject of trading system software, it is worth mentioning that currently USAID has an on-going activity with the goal of compiling the best components of all USAID funded capital markets software into a consolidated stock market system. It is recommended that the National Stock Exchange of Lithuania consider reviewing this system which represents the distilled expertise of many USAID projects. For more information contact Bill Baldridge, USAID ENI/PER, bbaldridge@usaid.gov, ph: +1(202) 712-0118 in the USA.

Proposed Hardware Procurement Scenarios
National Stock Exchange of Lithuania

Equipment Specifications	*Scenario 1*	*Scenario 2*	*Comments*
Trading Engine	$30,000	$30,000	Primary UNIX Server
Backup Trading Engine	$30,000	N/A	Scenario 2 recommends delay of procuring a backup trading engine until a trading system is selected.
Gateways (Qty. 4) (for remote access)	$50,000	$25,000	Scenario 2 recommends initial purchase of 2 gateways instead of 4.
Upgrade of existing AS/400 platform	$80,000	$80,000	This upgrade is crucial and should be a priority.
Market Data Server	$10,000	$10,000	This server provides a revenue stream to the market and provides transparent information to all participants
LAN Hardware	$40,000	$30,000	Scenario 2 represents the minimum requirement for the purchase of the LAN equipment.
Telecom Hardware	$50,000	$40,000	Scenario 2 proposes reducing this equipment by $10,000
Personal Computers (30)	$50,000	$25,000	Scenario2 reduces the administrative PC's to 15 from 30.
Power Generator	$5,000	$5,000	Crucial disaster recovery hardware.
Database Management System	$10,000	$10,000	5 user development license
Personal computer software (MS Office Pro, 30 licenses)	$10,000	$5,000	Scenario 32 reduces to 15 the number of licenses
Totals	$365,000.00	$260,000.00	

Lithuania
April 18, 99

Proposed Hardware Procurement Scenarios
National Stock Exchange of Lithuania

Equipment Specifications	*Scenario 1*	*Scenario 3*	*Comments*
Trading Engine	$30,000	$30,000	Primary UNIX Server
Backup Trading Engine	$30,000	$30,000	No change.
Gateways (Qty. 4) (for remote access)	$50,000	$50,000	Note: If no back-up trading engine is purchased, then the Exchange would make do with three gateways, two for the trading engine and a third as back-up and fo. training.
Upgrade of existing AS/400 platform	$80,000	$80,000	This upgrade is crucial and should be a priority.
Market Data Server	$10,000	$10,000	This server provides a revenue stream to the market and provides transparent informatior to all participants
LAN Hardware	$40,000	$40,000	Exchange believes $40,000 is minimum fc purchase of the LAN equipment package.
Telecom Hardware	$50,000	$40,000	Scenario 3 reduces this equipment b $10,000
Personal Computers (30)	$50,000	$30,000	Scenario 3 reduces the administrative PC' to 15 from 30, but puts estimate at $200 per unit.
Power Generator	$5,000	$5,000	Crucial disaster recovery hardware.
Database Management System	$10,000	$20,000	5 user development license under Scenar 1, but 10 are needed, 5 for main engine an 5 for back-up engine.
Personal computer software (MS Office Pro, 30 licenses)	$10,000	$5,000	Scenario 32 reduces to 15 the number licenses
Totals	~~$385,000.00~~	~~$340,000.00~~	

Agreed by all parties. MT
4/19/99

8

Lithuania
June 15, 99

ATTACHMENT B

THE NSEL NEW TRADING SYSTEM DEVELOPMENT PROJECT

In early 1997, the National Stock Exchange of Lithuania, NSEL, started exploring the possibility of replacing its trading software with a more modern system that would enable the NSEL to upgrade its processing capability to the world standards. In that context, several attempts were made to identify the shortcomings and challenges. An overall technical evaluation, along with a market research performed by independent entities, were contemplated.

The evaluation of the current NSEL trading system revealed three structural and design limitations as the most limiting on the day-to-day operation of the Exchange, and causing or threatening the medium to long-term viability of the organization. These factors were:

- A complex architecture (internal structure);
- An inconvenient user interface (text mode on the terminal screen);
- An in-ability to process a large number of orders.

An independent market research company conducted an investor's survey, which included questions as to their satisfaction with the reliability and adequacy of the data processing capability of the Exchange. The majority of respondents mentioned that the unreliability and rigidity of the data processing (trading) system has a limiting factor which negatively impacts the frequency and intensity of their investment decisions. In response to the question as to how the Exchange could improve market development activities, many mentioned that the Exchange needs to promptly tend to modernization of its data processing system which is adversely affecting the climate in investors community.

Findings:

The analysis of the NSEL trading system and comments of the brokers have shown that :

1- The AS/400 machine resources often reach a high usage rate (critical zone) during active trading. This shortcoming is particularly obvious during the peaks in the number of orders and trades at the NSEL.

2- Brokers often complain about the trading system's slow response time (15-20 seconds) and the interface, which is operating in an outdated text mode. With the system in its present form, it is next impossible to release groups of orders as a package from members' automated front-office systems to the NSEL trading system. This shortcoming is considered to be the main disadvantage of the system. In addition, the system is incapable of linking the current trading system with the members' internal automated back-office system.

In an effort to resolve the software issues for short and medium term, the NSEL IT Department, prepared a design and proposed a new trading system which would result in an overhaul and modification of the on-going trading system. On March 29, 1999 the Management Board of the NSEL discussed the project and approved the proposed upgrade program. As approved for, the software and hardware applications, which will meet the basic needs for the Exchange through the year 2001, will consist of three major

components: a Trading Engine, a Gateway, and a Workstation. The machine platforms can vary between a UNIX only system to a combination of OS/400 and UNIX (depending on availability of funds).

As planned, in anticipation of the purchase of a UNIX based hardware and the peripheral equipment (an AS/400 upgrade and NSEL's new trading system), the upgrade of system in the context of the new trading system began. Abbreviated as TATS (Three-tiered Automated Trading System) the new trading system will divide the software functions into three tiers.

The mainframe AS/400 will perform the function of the Trading Engine. The databases will be transferred from the AS/400 to the UNIX platform machine with an SQL server (SYBASE). This set-up will operate in the same fashion as a Gateway machine between the brokers' workstations and the mainframe (AS/400). Data distribution to the brokers, media, market data vendors, and other subscribers, will be carried out on the WinNT platform by an SQL server (MSSQL).

The development of TATS is underway in three specific functionalities:

- The Gateway preparation the customization of client and server software. This would allow transfer of general security based trading information from a server to a broker's workstation. Information available at the workstations will be the same as that available on the NSEL web-site (in real time), presented in Windows (GUI). The brokers' workstation software will allow each broker to program a number of price and volume alerts. In order to achieve the implementation of the first component, certain programs are being written on UNIX platform where the data processing will be carried out.
- The upgrade of the client and server software to make it possible to monitor all orders of target securities. Once completed, the server software will transfer more trading data (orders and other related information) in real time to workstations. This information will be encoded for security.
- The upgrade of the present software to provide for the release of groups of orders - as a package from the members' automated front-office systems - to the NSEL trading system. Transmission from workstations to the Trading Engine through the Gateways will be established. Implementation of this component will require a major overhaul of the trading terminals that are now used by brokers.

TATS is designed and is being overhauled to include certain key capabilities and characteristics as follows:

- reliability
- faster speed
- user friendliness
- flexibility
- modern technical design and user interfaces

- utilization of modern programming instruments
- linkages with other trading systems
- convenience for the development of members' front and back-office systems.

TATS will be capable of handling the short-to-medium term projected activity levels. The Lithuanian securities market's historical performance and growth trends for other emerging markets formed the basis for setting up those benchmarks. They are:

• Listed main board companies	50
• Second-tier market companies	200
• Free market companies	1500
• Corporate debt issues	100
• Government debt issues (national and local)	50
• Financial Brokerage Firms (FBF)	60
• Daily trades	5,000
• Daily orders	10,000
• Daily Settlement transactions	5,000
• Daily trades on the corporate debt market	500
• Daily trades on the government debt market	500
• Blocks, crosses and negotiated trades	500
• Workstations	100
• System response time in seconds, less than	2.

The hardware envisioned for TATS is based on a fast and flexible three-tier client-server system, which runs on IBM AS/400 and UNIX platform machines. Each tier is connected to the next through the LAN network: the first and the second tiers are connected through Fast Ethernet network, while the second and the third tiers are linked either through Fast network or Ethernet network. All communications are carried out in TCP/IP protocol.

The first tier of the system architecture consists of the main Trading Engine IBM AS/400. For TATS, an upgraded IBM AS/400 machine will suffice for short-to-medium term needs. The CPU upgrade from 2129 to 2135 will double the speed of the AS/400. The tape drive will be 8 mm for a 20GB cartridge where all data could be copied and stored in one cartridge.

The second tier consists of an upgraded UNIX functioning as Gateways between the Trading Engine, the workstations of the NSEL members, and several PCs for system administration and technical support. The number of Gateway machines depends on the number of workstations - as many as 50 member workstations can be linked to one Gateway. The system's maintenance PCs will be connected to a Fast Ethernet network linking the Trading Engine with Gateways. For this purpose, two UNIX platform machines will be used as Gateways - one for TATS and one as redundant Gateway. In the future, if NSEL acquires a new trading system, one UNIX machine will be used as a new trading engine, one as a redundant trading engine and gateway.

SYBASE Adaptive Server Enterprise 11.9.2 was chosen as a database server for TATS. During tests with the NSEL data, the server performed satisfactorily under the highest performance speed. SYBASE will use Direct Connect program (for AS/400) that performs data exchange between the AS/400 DB2 and SYBASE ASE server. During further development of TATS, both programming tools will be utilized. It is important to add that in order to synchronize data on both Gateways and SYBASE, a Replication Server is needed.

The third tier is comprised of the NSEL system administration and support and the NSEL member workstations. They will be connected to Gateway machines through both LAN (Fast Ethernet or Ethernet) and leased lines controlled by routers. A market data distribution server is linked to a Gateway machine on the one side, and to an open NSEL and to the LAN (connected to Internet) on the other. The NSEL has a large number of information users (vendors, media, other subscribers, etc). The new trading system will perform this task automatically. A powerful market data distribution server will be installed. The server should have a number of application development tools, such as C++ and Delphi.

In order to protect the trading system from power supply failure, all UNIX machines and active LAN equipment will have a UPS to ensure uninterrupted work of the system for up to 30 minutes. The currently installed UPSes (installed in 1994) are old and their warranties have expired three years ago. Missing from the present system is an autonomous power generator, which is planned to be installed on the NSEL premises, will be used when the power supply is not restored in half an hour. Installation of an autonomous power generator at the NSEL site is included in the NSEL approved contingency plan.

In order to protect data from system failures, both Gateway machines will be supported by a streamer, one cartridge of which would be capable of holding the hard disk data.

In its present configuration, too many NSEL member workstations linked to a Gateway machine will overload the LAN connection between the second and the third tiers. As the new trading system TATS has very strict response time requirements, the speed of the 10 Mbps Ethernet currently used by the NSEL will be too low for 50 workstations as more users connect to the Gateway through one LAN segment. Moreover, the NSEL member workstations will also be connected through leased lines on the same overloaded LAN. Therefore, a device supporting Fast Ethernet 100 Mbps for commutation and routing of IP Ethernet packets is required.

As the NSEL uses 5th category twisted pair cables, there is no need to change the current cabling system. Nevertheless, the NSEL LAN has a very complicated structure with about 150 PCs connected through LAN and 50 through leased lines. Because of the nature of the system's connectivity, it complicates the pinpointing of problems (both at the physical and Ethernet data package levels). This makes it necessary to provide the technical staff

for the NSEL with a device for automated, fast, and accurate identification and registration of defects and problems in data transfer channels and on the data package level.

The platform of the system supports both leased and dial-up lines. In general, the quality of telephone services for data communication is satisfactory. The NSEL is of the opinion that at least members' offices located in Vilnius should be connected through leased lines. For this purpose, telecommunication equipment (router supporting Firewall function with 16 modems) is required.

Two Fast Ethernet switches are needed for the actual LAN structure. The NSEL LAN is connected with the LAN of its members located in the same building. These LANs have to be connected to different switch segments. These switches will be interconnected by Gb ports through optical cable. They support SNMP, the routing of IP protocols, and have MAC address filtering functions.

The twenty personal computers currently in use are outdated, have run their useful life, are not Y2K compliant, and can support only Windows 3.11 (which is also not Y2K compliant). The NSEL intends to install new PCs at work-stations for the NSEL personnel.

The NSEL staff has little experience in administration and technical support of UNIX platform machines, thus relevant training will be required.

Applications that will run on the Trading Engine will perform the following functions:

- listing
- order entry and order book management
- trading
- clearing
- settlement
- market surveillance

Applications that will run on the Gateways will perform the following functions:

- the transfer of databases from the Trading Engine to the SQL server in order to have a "hot" back-up,
- the users' identification and management,
- the data transfer between the Trading Engine and Gateways as well as between the brokers' workstations and Gateways,
- the data back-up on the streamers.

Implementation Schedule:

I- Time frame for the development of TATS:

• *first stage (May - July 1999) will include* :

• the testing of the selected of the database server;

• the development of programs that will run on Gateways: data transfer from the Gateways to the brokers' workstations programs; users' identification and management programs, transfer of databases from the Trading Engine to the SQL server programs;

• the client programs that will perform such functions as connection to the data on Gateway, receiving of data in a specified protocol, data display, programming of a number of price and volume alerts.

• *second stage (August - November 1999) will include:*

• the development of programs that will run on Gateways and perform such functions as order management using data encoding;

• the development of programs that will run on workstations and perform the same order management functions using data encoding.

• *third stage (November 1999 - March 2000) will consist of:*

• the development of programs that will run on AS/400 and perform order transfer from brokers' workstations to the Trading Engine through Gateways;

• the development of programs that will run on Gateways and perform order transfers not only from the Trading Engine to the brokers' workstations but also backward;

• the development of client programs that will allow for the release of groups of orders as a package from the members' automated front-office systems to the Exchange trading system and to link current Exchange trading system with the members' internal automated back-office system.

II- Procurement and installation of required hardware.

It is anticipated that through USAID contractor, Pragma, the required hardware system and a qualified vendor will be identified and the system will be procured and installed before the end of December 1999. Full testing, configuration and implementation of the new trading system TATS, will reach its completion by the end of April 2,000.

ATTACHMENT C

Action plan

June 1999 - December 1999

Lithuania Capital Markets Development Project (Hardware procurement)

sponsored by the US Agency for International Development

Presented by:

The Pragma Corporation

Vilnius

Jun. 17,99

Objectives:

Assisting NSEL in:

- Issuing a tender
- Evaluation of the bid (Limited competitive)
- Vendor selection
- installation and training

Project management
Guiding principles:

- Negotiated contract amendment
- Agreed by USAID list of equipment for procurement based on the April 1999 technical review.
- Fund and time limitations
- Adherence to the action plan
- Written verifiable exchange of technical information
- Focus on NSEL's needs and local conditions and requirements
- Reliance on project technical and procurement advisors opinion and expertise in the course of implementation

Implementation activities

1. Action plan (Jun. 10-22) - Vilnius
2. Draft of hardware specifications
   (Jun. 23-Jul. 13) - Vilnius
3. Submission of specs to IRM for concurrence
   (Jul. 14- 28)- US
4. RFP preparation (Jul. 19-30)- US

Implementation activities

5. Issuance of RFP (Aug. 1-16) - US
6. Evlatuion of offers (Aug. 18-27) - Vilnius
7. BAFO negotiation (Sept. 1-16) - Vilnius/US
8. Sub-contract (Sept. 17-30) - US

Implementation activities

9. Pre-delivery activities(Sept.17-Oct. 15) - US
10. Receipt of equipment at site
(Oct.11-Nov.15) Vilnius
11. Training (Oct. 18- 31) - US
12. Evaluation and reporting (June 22- Dec.31) - US

Contract Number:
EPE-I-05-95-00040-00

Lithuania Capital Markets Development Project
Action Plan
Hardware procurement for the National Lithuania Stock Exchange
June 1999-December 1999

June, 16,1999

Schedule of activities

Benchmarks/Tangible Results/Princ.Expat. Supervisor	Person days. HCN/days	1-15 Jun. 1999	16-30 Jun. 1999	1-15 Jul. 1999	16-31Jul. 1999	1-15 Aug.1999	16-31 Aug.1999	1-15 Sep.1999	16-30 Sep.1999	1-15 Oct. 1999	16-31 Oct. 1999	1-15 Nov. 1999	16-30 Nov. 1999	1-15 Dec.1999	16-31 Dec.1999	Comments and descriptions
	Person days.	22		44		66		88		109		131		154		
1- Draft of action plan/ consensus building/ M. M. Fatoorechie-US-Vilnius																
1 a Assessment of requirements/Washington &Vilnius	1															
1.b Discussions w/NSEL and USAID/Vilnius	1															
1.c Draft of an Action Plan in Vilnius/Selection Committee	1															
1.d Presentation of the plan to a joint meeting of NSEL & USAID	1															BV Proc Adv -DJ-Comm Mem-MF Com Mem & RB, Back-up for MF(Selection Committee) BV Proc Adv , DJ Member, AG, Member (Eval Criteria and Wared Standards)
1.e Final preparation for initials by NSEL, USAID and Pragma	1															
Total Item 1	5															
2. Draft of hardware specifications/Bendy Virag(Vilnius)- Tim Smith																
2 a Collection of technical specifications	5															
2 b Review, modification and preparation of the technical specs for the tender	5															
2.c Official submission to IRM for concurrence	4															
Total Item 2	14															
3. IRM Concuurance/ Bendy Viragh- US.																
3 a Follow-on w/ IRM	5															
Total Item 3	5															
4. Preparation of the RFP/Bendy Viragh- US																
4 a. Finalize the technical specifications for the tender	2															
4 b. Pre-procurement survey	3															
4 c. Definition of terms of reference for the tender	5															
4.d Prepare the RFP	5															
Total Item 4	15															
5. Issuance of RFP/Bendy Viragh-US																
5 a Dispatch of RFP to selected suppliers	5															
5.b Follow-on/clarification of issues and follow-up on RFP	10															
Total Item 5	15															
6. Receipt and Evaluation of offers/ Bendy Viragh, MMF and Tim Smith-Vilnius-US																
6 a Collect all proposals and depart for Vilnius	10															
6.b Evaluation of proposal and selection of the awardee contractor	16															
6.c Negotiation with selected supplier	10															
Total Item 6	36															
7. Best and final offer (BAFO)and award- Bendy Viragh Vilnius/US																
7 a Negotiate the best and final offer	5															
7.b Make the announcement of award to all participants	5															
7.c Follow-on on delivery and installation	15															
Total Item 7	25															
8. Sub-contract - Bendy Viragh - MMF US																
8 a Draft a sub-contract between the awardee and the Pragma Corporation	5															
8.b Submit to USAID contracting officer for consent	0															
Total Item 8	5															

Contract Number.
EPE-I-05-95-00040-00

Lithuania Capital Markets Development Project
Action Plan
Hardware procurement for the National Lithuania Stock Exchange
June 1999-December 1999

June, 16,1999

Schedule of activities

	Person days	1-15 Jun. 1999	16-30 Jun. 1999	1-15 Jul. 1999	16-31 Jul. 1999	1-15 Aug.1999	16-31 Aug.1999	1-15 Sep.1999	16-30 Sep.1999	1-15 Oct. 1999	16-31 Oct. 1999	1-15 Nov. 1999	16-30 Nov. 1999	1-15 Dec.1999	16-31 Dec.1999	Comments and descriptions
		22		44		66		88		109		131		154		
9. Pre-delivery activities/Bendy Viragh- US																
9 a Coordiantion/delivery&installation (Exchange, Pragma and the supplier)	10															
9 b Issuance of letter of commitment to the supplier	5															
Total Item 9	15															
10. Receipt of the equipment at site/Bendy Viragh & M. M. F Vilnius																
10 a Oversight of delivery	10															
10 b Post delivery actions	10															
10 c Marking and inventory records	5															
Total Item 10	25															
11. Training/Bendy Viragh-M. Fatoorechie- US																
11 a Coordination of timing & delivery between the supplier & the Exchange	10															
11 b Review and approval of follow-on training plans	5															
Total Item 11	15															
12. Evaluation and reports/Bendy Viragh/M. Fatoorechie- US																
12 a Ensure achieving project objectives and transfer of deliverables	20															
12 b Required periodic reporting	10															
Total Item 11	30															
task total	200	person days														

No objection:

R. Busila 06/17/99
NLSE

Aldas Kriaučiūnas 06/17/99
USAID/Vilnius

06/17/99
Pragma Grp.

Jean D. Veit 06/25/99
USAID/DC

The Pragma Corporation

USAID Lithuania Capital Market Systems Project

Monthly Report

(for August and September, 1999)

For the
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

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USAID Lithuania Captal Market Systems Project

Bi-Monthly Report (August-September 1999), NSEL Procurement Implementation

September 30, 1999

Summary

Procurement implementation continued in accordance with the approved Plan of Action for Procurement Implementation. Care was taken to observe AID procurement rules and to insure that the proposed equipment purchases complied with the strictest technical parameters. Specifically, the following actions were taken:

1. Final Technical Review

In early August, PRAGMA requested a final review of the procurement package from its Senior Technical Advisor, Tim Smith. The purpose of this review was to insure that all technical parameters were in accordance with IRM recommendations and NSEL requirements and that the software developed by the NSEL fully justified the hardware configurations in the specifications, which were to be included in the Request for Proposals.

2. Supplier Contacts

The Senior Procurement Advisor contacted all prospective suppliers to ascertain their interest in participating in the solicitation. At the same time, it was verified that only three (3) eligible suppliers had local technical representation in Vilnius and were, therefore, qualified to offer prompt in-country service and maintenance support.

3. Request for Proposals

Requests for Proposals were issued on August 21, 1999 and mailed to both the US and Lithuanian suppliers, which were capable of responding to the RFP. Suppliers were informed that offers must be received at PRAGMA's US office NLT September 20, 1999. See Request for Proposals (RFP) attached.

4. Receipt of Offers

Offers were received from all suppliers on September 20, 1999. The offers were not opened at this time.

5. Evaluation of Offers

The Senior Procurement Advisor handcarried all un-opened offer packages to Vilnius on September 22, 1999. On September 24 an evaluation meeting was held at the NSEL office. The meeting was attended by the NSEL/PRAGMA Procurement Committee, which was appointed by the Project Manager at the onset of the project. The Committee members Miss Dalia Jasulaityte, Dr. Antanas Gruskas, and Chairman Mr. Bendy Viragh conducted a thorough evaluation of the offers received.

Offers were received from IBM International, Hewlett-Packard and Sun (Compuserve). The offers were reviewed in terms of responsiveness to RFP terms, suitability of equipment offered, and the prices

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quoted.

A preliminary finding of the committee was that two of the suppliers, IBM and HP, should provide clarification of the confogurations described and of the capacities quoted. The firms were contacted and asked to meet with the Committee to provide the desired information and to negotiate an adjustment in the prices offered.

5. Awards

Upon clarification of the issues queried, the Committee made selections for Groups A through G of the RFP. Group H items remained without an award, as discussed below.

Group A hardware, upgrading the existing NSEL trading system, was awarded to IBM International.

Groups B through F, providing a UNIX-based trading system, with accessories, was awarded to Hewlett-Packard.

Group H procurement, the acquisition of 20 PCs, was delayed. The delay was necessitated by two factors:

a) The equipment offered did not meet source/origin requirements.

b) In view of the possibility of Lithuanian Customs forcing the NSEL to pay VAT surcharges, expenditures beyond the above purchases would be held up until this requirement is clarified. (Under bilateral agreements between the US and assistance recipient countries, AID-financed commodities and equipment are exempt from local taxes. In some instances countries have insisted on VAT payments at the point of entry and reimbursed the project at a later date.)

6. Program Review

On September 29, 1999 a program review was held at the NSEL premises. In attendance were the NSEL staff and Mr. Mark Segal, representing AID/Vilnius. The presentation was made by Dr. M.M. Fatoorechie, Project Manager.

Subsequent to the presentation, the participants signed a no-objection/approval document, whic attested to the actions taken and the remaining activities outline.

7. Forthcoming Events for the Next Reporting Period

Upon approval by the AID Contracting Officer, Pragma will issue Purchase Order/Agreements to the selected suppliers and monitor deliveries in accordance with contract terms.

Attachments:

The following background documents are attached:

1. No Objection/Approval Letter for NSEL Procurements

2. NSEL Description of Trading System

3. Specifications for Items to be Purchased
4. Technical Review and Approval by Tim Smith
5. Gantt Chart Showing Timelines and Deliverables
6. Disposition Plan for Hardware
7. Detailed Action Plan
8. Procurement Presentation

The PRAGMA Corporation
116 East Broad Street
Falls Church, Virginia 22046
Telephone 703-237-9303
Fax 703-237-9326

Request for Proposals (RFP) Number 99-22, Procurement of Computer Hardware for the National Stock Exchange of Lithuania (NSEL)

Authority: AID Contract Number EPE-I-00-0040-00

Authorized Source/Origin: United States (Code 000) and Lithuania

Date : August 19, 1999

TO:

The PRAGMA Corporation, acting on behalf of the NSEL, invites qualified and eligible suppliers to offer hardware and related accessories to upgrade and/or modify the existing equipment used by the NSEL. The proposed system should meet NSEL's needs, as outlined in the attached specifications, and be capable of operating the software developed and /or in use in the stock exchange.

Suppliers are requested to offer hardware and accessories which meet and/or exceed stated requirements. Equipment offers which do not meet minimum stated specifications may be rejected.

Suppliers are requested to divide their offers in the functional groups of the specifications list. Prices quoted must be for each functional group and for the total groups of equipment offered. The final price offered for Group A and for Groups B through F must include delivery, installation by supplier's technicians, testing and debugging, start-up, and training. Prices quoted must be stated in US dollars.

Suppliers must clearly state anticipated delivery dates, installation dates and projected start-up date, in numbers of days from the date of the contract award. Suppliers should also indicate and confirm the availability of in-country maintenance and after sale service capability.

Groups B through F will be awarded to a single supplier, based on the overall suitability of the equipment offered, and price and other conditions considered. Groups A, G and H may be awarded separately, if appropriate, to one or more suppliers.

The PRAGMA Corporation may, at its discretion, negotiate with one or more suppliers, which have submitted offers or to award contracts without further negotiations to selected supplier(s) considered to be responsive, responsible and meeting the NSEL's requirements for training and after sale support.

Inquiries should be addressed to Bendy Viragh, Procurement Director, The PRAGMA Corporation, at the above phone/fax facilities.

Offers should be submitted in four (4) copies, in a sealed envelope, clearly marked with the Project Number, and should reach the PRAGMA Corporation at the above address NLT close of business on September 21, 1999. Faxed or e-mailed offers will not be accepted. Offers received after the stated deadline or sent to a different address or delayed for whatever reason, will not be accepted.

The Pragma Corporation
116 East Broad Street
Falls Church, Virginia 22046
Tel: (703)237-9303
Fax⊗703)237-9326
e-mail: Pragma@Pragmacorp.com

FROM: Bendy Viragh, Senior Procurement Director
TO: Files
SUBJECT: No Objection/Approval for NSEL Procurements

DATE: September 29, 1999

Attached are documents outlining the details of the procurement process and actions under the NSEL procurement activity. The documents include:

- Specifications of hardware to be procured.
- Documentation relating to the design of the in-house developed system showing performance and capacity parameters justifying hardware configuration.
- Comments of Pragma's Technical Advisor regarding the technical soundness of the proposed software use and hardware configuration.
- Gantt chart showing time lines and deliverables for software development and hardware installation.
- Disposition plan for hardware procured under the project.

Your signatures signify no objection/approval of the actions described in the above documents.

Procurement Committee:

Bendy Viragh
Procurement Director

Dalia Jasulaityte
Vice Chairman

Antanas Gurskas
Technical Director

Project Oversight:

Rimantas Busila
Chairman

Ieva Veidemanis
AID/EEI

Mark Segal
AID/Vilnius

M.M Fatoorechie
Project Manager

Specifications

Procurement of Computer Hardware for the National Stock Exchange of Lithuania

AID Contract #EPE-I-00-95-00040-00, Task Order Lithuania Capital Markets Systems

Group A

Upgrading the Trading Engine now in use from the existing model to an enhanced capability version. This upgrading is to be accomplished through an exchange of the old system now in use for an improved version.

Existing Model:

IBM AS/400E model 600, with a #2129 Central Processing Unit, IBM 7208012 8mm, 5GB Cartridge and Streaming Tape Drive, with two Ethernet Interfaces, utilizing an OS/400 V4R1 software package.

Upgraded Model:

IBM AS/400E model 600, with CPU #2135, with 8mm Streaming Tape Drive for 20GB Cartridge, with two Ethernet Interfaces, utilizing a software package including OS/400 V4R4, DB2 Query Manager and SQL Developer Kit, IBM MQ series (20 user licenses) and ILEC.

Group B

1. Two (2) Unix Platform Machines, HP, IBM, SUN or equivalent, for database and communications server use.

2. One (1) Unix Platform Machine, HP, IBM, SUN or equivalent to be used as Redundant Unix Platform Machine for database and communications server.

Each Platform Machine will include, but need not be limited to, the following minimum features and/or capabilities:

a. 10,000 TMP.

b. 768 Megabyte RAM.

c. Two (2) separate SCSI Hard Disc Drives with a minimum capacity of 4GB, two (2) SCSI Hard Disc Drives with a minimum capacity of 9GB, two (2) SCSI Controllers, 4mm Streamer with a minimum capacity of 12/24GB, and two (2) Fast Ethernet LAN attachments.

d. Simple Console, equipped with separate Uninterrupted Power Supply (UPS) capable of a minimum of 30 minutes of operation.

e. Unix operating system utilizing a minimum of 100 networked user licenses.

f. C++ Programming Tools or Tool Kits, including communications and treads libraries for the above Unix operating system.

Group C

Two (2) Database and Data Management Systems, consisting of two (2) Unix Database Servers with capacity to access and provide direct connection and replication between each Database Server and an existing DB2 Database Server on an IBM AS/400 unit. Each System should include or be equipped with the following:

a. Two (2) quick SQL Database Servers for above Unix Operating System, with 5 user licenses each.

b. One (1) Software Package for connecting DB2 Database Server on the AS/400 unit with SQL Database Server on Unix Operating System above, with 10 user licenses.

c. One (1) Software Package for data replication between SQL Database Servers on Unix Operating System with 10 networked user licenses.

Group D

One Market Data Distribution Server, including or equipped with, but not limited to, the following minimum capabilities:

a. Two (2) Pentium III, 500 MHz CPUs.

b. 512MB RAM.

c. Four (4) 9GB Hard Disc Drives.

d. One (1) SCSI Controller.

e. 4mm Streamer (not less than 18GB capacity).

f. Two (2) Fast Ethernet LAN attachments.

g. Video Adapter, with 4MB RAM capacity.

h. 17" Monitor.

i. Independent UPS support of minimum 30 minutes operation.

j. Operations Software, consisting of Windows NT 4.0 Server (TSE) or Windows NT 2000 Server, MS SQL Server (or similar) with 20 user licenses, Visual C++ with one user license and Delphi 4.0 Server Suite with one user license.

Group E

LAN Hardware Equipment, including but not limited to the following:

a. Ten (10) Fast Ethernet Hubs with minimum 12 ports each.

b. Two (2) 24 port Fast Ethernet Switches with two Gigabit ports each, providing support for SNMP and routing of IP protocols, with MAC filtering functions.

c. Independent UPS, capable of supporting all Fast Ethernet Hubs and the Fast Ethernet Switches, for a minimum of 30 minutes operation.

d. One (1) Tester for physical and packet levels for Fast Ethernet Network.

Group F

Telecommunications Equipment, including but not limited to the following:

a. Sixteen (16) Synchronous Modems, capable of maintaining 128 kbps speed on noisy lines of minimum 5,000 meters length.

b. One (1) or more Ethernet Router(s), with a combined capacity of 16 serial and one or more Ethernet ports.

c. Independent UPS, capable of supporting 16 Synchronous Modems and Router(s) for a minimum of 30 minutes operation.

Group G

Twenty (20) Personal Computers, with the following minimum operating capabilities:

a. Pentium III 500 MHz CPU.

b. 128MB RAM.

c. 10GB Hard Disc Drive.

d. Fast Ethernet LAN Adapter.

e. Video Adapter with 8 MB RAM capacity.

f. 19" Monitor.

g. Operations Software, consisting of Windows NT 4.0 Workstation, MS Office 2000 Professional.

Group H

One (1) Autonomous Power Generator of minimum 5KW capacity.

NACIONALINĖ
VERTYBINIŲ POPIERIŲ BIRŽA

Ukmergės g. 41, 2600 Vilnius, Lietuva
Tel. 723871 Faks 724894

TO: Bendy Viragh
Procurement Director

FROM: Dalia Jasulaitytė
Vice Chairman

SUBJECT: Transmittal of Procurement Documentation

DATE: September 21, 1999
03-811

Attached, as you requested, is a detailed explanation of the software development and application of this software for the newly acquired hardware. The report was prepared by NSEL's technical department, under the direction of Dr. Antanas Gurskas.

Dalia Jasulaitytė,
Vice Chairman

NATIONAL STOCK EXCHANGE OF LITHUANIA

Ukmergės st. 41
2662 Vilnius, Lithuania

Tel. 3702 723871
Fax 3702 724894

THE NSEL's TRADING SYSTEM

A. INTRODUCTION

In 1998, following a market needs assessment and systems analysis, the NSEL identified the major shortcomings of its present hardware/software system. The results of those studies are highlighted elsewhere.

In order to resolve these outstanding issues, a determination was made that the existing system of hardware and software had to be modified and upgraded. In consideration of the existing limitation of funds, a decision was made to only upgrade the existing hardware. At the same time, because of the NSEL's in-house programming capability, to simultaneously modify and develop the existing trading system(software). The USAID support was sought for purchase of required hardware with the available funding.

B. SYSTEM UPGRADE

1. HARDWARE:

Our analysis revealed that, in order to bring the NSEL system to acceptable world standards, the following three criteria needed to be met:

a) The platform must be UNIX based,
b) must maintain approximately 10000 trade per minute (TPM) and
c) must have the capacity for fifty user connectivity to the gateway.

Our requirements further spell out that, in case of 10000 orders placed and up to 5000 transactions concluded per day, the response time of the system should not exceed 2 seconds.

It must be noted that our design was compatible with several off-shelf trading systems such as EFA and CMS. The specific parameters of the system consisted of:

a) A three tier system architecture consisting of a trading engine, gateways and workstations. The existing trading system would run on the existing(upgraded) AS/400 as trading engine;

b) The functions of the trading engine and the gateway are to be performed on UNIX platforms; and

c) The work stations be PC based and have operating systems in one of the three most common platforms of Win 95, Win 98 or Win NT.

2. SOFTWARE MODIFICATION

On March 29, 1999, the NSEL management approved the modification of the entire system which consisted of its software and hardware. The trading software TATS (Three-tier Automated Trading System) was supposed to be the modified version of

its present system, where the modification were to be done with full consideration of the NSEL's immediate to mid-term needs and fund limitations. The hardware was to be purchased with available funding from the USAID.

The major design considerations were, that

a) The present operating system was to be modified, as opposed to the development of an entirely new system developed from scratch;

The mainframe AS/400 would perform the function of the Trading Engine;

b) The databases currently involved in the trading process will be transferred from the AS/400 to the UNIX platform machine with SQL server (SYBASE) that would operate as a Gateway between brokers' workstations and the mainframe AS/400;

c) Data communication to the brokers, media, market data vendors and other subscribers will be carried out on the WinNT platform by SQL server MSSQL on the second UNIX platform; and

e) The third will be used as redundant platform and a machine to be used for system development.

On the Software side:
The development of the NSEL new trading system TATS will be carried out in three stages:

The first stage-- preparation of the Gateways and the client and server software allowing for the transfer of trading information from a server to a broker's workstation as well as its display on screen. The information on workstations will be the same as that available on the NSEL web-site in real time presented in a (GUI) Windows type environment. Brokers' workstation software will allow each broker to program a number of price and volume alerts.

Time frame for the development of the first stage: (May - July 1999) will include:

- testing for the selection of the database server;
- development of programs that will run on Gateways: data transfer from the Gateways to the brokers' workstations programs; users' identification and management programs, transfer of databases from the Trading Engine to the SQL server programs;

- client programs that will perform such functions as connection to the data on Gateway, receiving of data in a specified protocol, data display, programming of a number of price and volume alerts. This stage is completed at this time.

b) The second stage, upgrading of the client and server software to make it possible to monitor all the orders. At this stage the server software will transfer more trading data (orders and other related information) on a real time basis to a workstation. This information will be encoded for security reasons.

The second stage (August - November 1999) will include:

- development of programs that will run on Gateways and perform such functions as order management using data encoding;

- development of programs that will run on workstations and perform the same order management functions using data encoding.

The second stage will be implemented in the following steps: in August – end of September all orders will be transferred from the Trading Engine to the Gateway; by the end of September, the coding mechanism to secure the data will be selected; October until mid-November is devoted to the development of software according to selected algorythms; the last two weeks of November are planned for the Gateway software adaptation on the new Unix-platform machines. The second stage is to be completed by December 1, 1999. In order to complete the project successfully and on time, the new hardware should arrive at about mid-November.

c) The third stage, that is, upgrading of the present software to provide for the release of groups of orders as a package from the members' automated front-office systems to the NSEL trading system. At this stage order transmission from workstations to the Trading Engine through the Gateways will be established.

Implementation of the third stage will allow for the modernisation and upgrade of the trading terminals in use by brokers at the present time. The third stage (November 1999 - March 2000) will consist of:
- development of programs that will run on AS/400 and perform order transfer from brokers' workstations to the Trading Engine through Gateways;
- development of programs that will run on Gateways and perform order transfers not only from the Trading Engine to the brokers' workstations but also backward;
- development of flexible and user-friendly client programs that will allow to release groups of orders as a package from the members' automated front-office systems to the Exchange trading system and to link current Exchange trading system with the members' internal automated back-office system. Brokers can adapt it for their own needs on the basis of the provided package as the program has potential for that too. The Exchange is going to provide guidance by offering program descriptions, etc.

C. PERFORMANCE AND CAPACITY PARAMETERS

The new trading system TATS includes the following performance and capacity parameters:

1- Listed main board companies	50
2- Second-tier market companies	200
3- Free market companies	1500
4- Corporate debt issues	100
5- Government debt issues (national and local)	50
6- Financial Brokerage Firms (FBF)	60
7- Daily trades	5,000
8- Daily orders	10,000
9- Daily Settlement transactions	5,000

10-Daily trades on the corporate debt market	500
11-Daily trades on the government debt market	500
12-Blocks, crosses and negotiated trades	500
13-Workstations	100
14-System response time in seconds, less than	2

The hardware of the new trading system TATS is based on a fast and flexible three-tier client-server system which runs on IBM AS/400 and UNIX platform machines. Each tier is connected to the neighbour through the LAN network: the first and the second tiers are connected through Fast Ethernet network while the second and the third tiers are linked either through Fast Ethernet or Ethernet network. All communications are carried out in TCP/IP protocol.

The first tier of the system architecture consists of the main Trading Engine IBM AS/400. For the new trading system TATS an upgraded IBM AS/400 machine will be used. The CPU will be upgraded from 2129 to 2135, which will double the speed of the AS/400. The current streaming tape drive will be changed by another streaming tape drive supporting 8 mm 20GB cartridge.

The second tier will be a UNIX based system serving as Gateways between the Trading Engine and workstations of the NSEL members. Up to 50 workstations can be linked to one Gateway. System management PCs will be connected to Fast Ethernet network linking the Trading Engine with Gateways. Two UNIX platforms machines will be used as Gateways and one for the development of the new trading system TATS and as a redundant Gateway.

SYBASE Adaptive Server Enterprise 11.9.2 and the Direct Connect program (for AS/400) were chosen as the database server and the program for TATS. Also a SYBASE Replication Server will be utilised in order to synchronise data on both Gateways.

The third tier comprises the NSEL's system administration and support, and the NSEL member workstations, which will be connected to Gateway machines both through LAN (Fast Ethernet or Ethernet) and leased lines controlled by routers. The market data distribution server also belongs to this tier. This server is linked to a Gateway machine and to the open NSEL's LAN, which is connected to the Internet.

In order to protect the trading system from a failure in power supply, all UNIX machines and active LAN equipment must have a UPS which would ensure uninterrupted work of the system for half an hour. Actually, the current UPS, which was installed in 1994, is operating without a warranty. An autonomous power generator should be installed in the NSEL premises and used if the electricity failure is not restored in half an hour. Installation of an autonomous power generator at the NSEL site is included in the NSEL contingency plan approved by the Bank of Lithuania. It is worth noting that the plan also addresses the Y2K problem.

In order to protect data from failures in the computer system, both Gateway machines will be supported by a streamer, one cartridge of which would be capable of holding the hard disk data.

A large number of the NSEL member workstations linked to a Gateway machine will overload the LAN connection between the second and the third tiers. As the new trading system TATS has very strict response time requirements, the speed of the 10 Mbps Ethernet used by the NSEL today will be too low if 50 users are connected to the Gateway through one LAN segment. Having in mind that the NSEL member workstations will be also connected through leased lines to the same overloaded LAN, a device supporting Fast Ethernet 100 Mbps for commutation and routing of IP Ethernet packets is required.

Two Fast Ethernet switches are needed for the actual LAN structure. The NSEL LAN is connected with the LAN of its members which have offices in the same building. These networks have to be connected to different switch segments. These switches will be interconnected by Gb ports through optical cables. They support SNMP, routing of IP protocols and have MAC address filtering functions.

The twenty personal computers currently in use, are not Y2K compliant and support Windows 3.11 only. The NSEL intends to install new PCs to remedy the concern.

APPLICATIONS

Applications that will run on the Trading Engine will perform the following functions:
1 - listing,
2- order entry and order book management,
3- trading,
4- clearing,
5- settlement,
6- market surveillance.

Applications that will run on the Gateways will perform the following functions:

1 - transfer of databases from the Trading Engine to the SQL server in order to have a "hot" back-up,

2 - users' identification and management,

3 - data transfer between the Trading Engine and Gateways as well as between the brokers' workstations and Gateways,

4 - data back-up on the streamers.

Full implementation of the new trading system TATS will take about 4 months after the installation of the hardware is complete.

From: Tim Smith <timofius@compuserve.com>
To: NVPB Nijule <nijole@nse.lt>
Date: Tuesday, September 28, 1999 7:44 AM
Subject: Procurement Project Plan Review...

TO: Dalia Jasulaityte
Vice President
National Stock Exchange of Lithuania

FROM: Tim Smith
Computer Advisor
The PRAGMA Corporation

SUBJECT: Technical Review of NSEL's Project Development Documents

I have reviewed the final report of the NSEL outlining the background and planning of the procurements contemplated under the USAID-financed NSEL project.

I am satisfied that the documents prepared by the NSEL demonstrate fully the performance and capacity parameters which justify the hardware configurations in the specifications used for the Request for Proposals.

I have also reviewed the project plan for the procurements, showing the time lines and deliverables for the software development and hardware installation and I consider them to be reasonable and practical.

I am quite confident that this plan will accomplish the stated goals. It shows that the systems staff of the Lithuanian Stock Exchange are very competent. The challenge to upgrade an existing trading engine while providing network flexibility and future expansion capabilities is addressed correctly. The solution will maximize the utilization of the NSEL's current investment and trading platform while providing them with the hardware and architecture platform to respond to increased capacity demands in the future.

Best regards,

Tim Smith
Senior Technical Advisor
The Pragma Corporation

Three-tiered Automated Trading System Upgrade
Schedule of Tasks

	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00
Task 1 - Preparation of Gateways											
1.1 Database Server software testing and selection											
1.2 Develop software to manage user logins to the system											
1.3 Develop gateway to client workstation data transfer mechanism											
1.4 Develop trading engine to gateway data transfer mechanism											
1.5 Client workstation software development											
a) Gateway connectivity											
b) Data transfer protocols											
c) Data display functions											
d) Price and volume alerts											
Task 2 - Upgrade Client Software for real-time order display											
2.1 Develop data transfer encryption protocols											
2.2 Provide real-time order display capability											
Task 3 - Develop Order Transmission Capabilities											
3.1 Developing software for receiving of the orders											
3.2 Developing software for receiving of the batch orders											
3.3 Workstation software developement											
3.4 Testing and correcting of the developed software											

The Pragma Corporation
116 East Broad Street
Falls Church, Virginia 22046

Disposition Plan for Hardware Procured for NSEL

With the receipt of offers and the subsequent evaluation by the Procurement Committee of the offers for the equipment to be purchased, the project entered its final phase of implementation. This procurement is the only remaining activity under the NSEL project and, it is anticipated the project will be terminated after the procurement actions are completed.

Since the NSEL is not a private organization, it is eligible to acquire and retain title to AID-financed commodities. As such, upon delivery, installation and start-up, and operation title to the equipment acquired under the project will pass to the NSEL.

A record of the transfers and of the items transferred will be furnished to AID/Vilnius and AID/Washington. A copy of this documentation will be retained by the NSEL and will be available for audit access.

Progress report

June 1999 - September 1999

Lithuania Capital Markets Development Project (Hardware procurement)

sponsored by the US Agency for International Development

Presented by:

The Pragma Corporation

Vilnius

September 29, 1999

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Progress towards objectives:

(June 99-todate)

Assisted NSEL in:

- [illegible]
- [illegible]
- [illegible]
- Evaluation of the offers (Limited competition)
- Vendor selection

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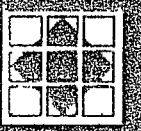
Hardware specifications:

Requirements

- UNIX platform machines
- IBM/AS400 upgrade
- Equipment & accessories for network and communication system

Sofware considerations:



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Three-tiered Automated Trading System Upgrade
Schedule of Tasks

	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00
Task 1 - Preparation of Gateways											
1.1 Database Server software testing and selection											
1.2 Develop software to manage user logins to the system											
1.3 Develop gateway to client workstation data transfer mechanism											
1.4 Develop trading engine to gateway data transfer mechanism											
1.5 Client workstation software development											
a) Gateway connectivity											
b) Data transfer protocols											
c) Data display functions											
d) Price and volume alerts											
Task 2 - Upgrade Client Software for real-time order display											
2.1 Develop data transfer encryption protocols											
2.2 Provide real-time order display capability											
Task 3 - Develop Order Transmission Capabilities											
3.1 Developing software for receiving of the orders											
3.2 Developing software for receiving of the batch orders											
3.3 Workstation software developement											
3.4 Testing and correcting of the developed software											

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Software development

Requirements:

- [illegible] Up to 100 users and the response time is under 2 seconds.
- Modification of the existing trading system
- Design specifications and parameters

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Software design and specification:

The Three Tiered Integrated Trading System "TTITS"

Architecture

- Gateway
- Workstations

Design

- Real-time monitor of the common trading data
- Systems' software upgrade
- Order transmission capabilities

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Procurement highlights: (June-Sep 99)

- [illegible]
- Procurement specifications finalized
- Review of procurement package with IRM
- IRM concurrence obtained
- Preparation and issuance of RFP (Aug 21)
- Proposals received (Sep. 20)

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Procurement highlights: (Sep/Oct 99)

- [illegible]
- Selection of suppliers
- Review and consultance for the continuation of procurement
  - Supplier notification (Oct 1)
  - Final negotiation (Oct 4)
- US (Oct 15-30)
  - Sub-contract preparation
  - Contracting officer's consent

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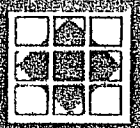
Anticipated Procurement Activities:

(Nov99 through termination of contract)

- [illegible]
- [illegible]
- [illegible]
  - Delivery
  - Installation
  - Start-up and debugging
  - Property transfer(disposition)
  - Training



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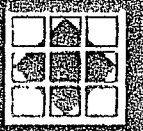
Transmittal of Documents for the Record:

- Technical advisor's review
- Time-line/software development
- Disposition plan



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The Pragma Corporation

USAID Lithuania Capital Market Systems Project

Monthly Report

(for October and November, 1999)

For the
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

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USAID Lithuania Capital Market Systems Project

Bi-Monthly Report(October/November 1999), NSEL Procurement Implementation

November 30, 1999

Summary:

Procurement implementation continued in accordance with Action Plan guidelines. Continued care was taken to insure that AID procurement rules are observed and that delivery of equipment is proceeding efficiently. During the period, the following specific activities took place:

1. VAT Clarification.

At the end of September, the Government of Lithuania issued a new regulation outlining the application of Value Added Taxes to imports. This regulation specified exemptions for assistance-funded imports, foreign property transfers, etc. An initial informal translation by the PRAGMA staff and a subsequent formal publication (of the regulation) in English confirmed that AID-funded equipment and commodities may be exempted from the VAT upon presentation and review of documents confirming the identity and funding source for these imports. As such, the NSEL-purchased equipment under this program will be exempt from the VAT.

2. Preparation of Purchase Order/Agreements for Selected Vendors.

During the first week of October, Purchase Order/Agreements were prepared for the two selected vendors, IBM and HP. The Purchase Orders specified the items to be delivered, the cost of goods on a CIF project site basis. Terms of payment and applicable AID terms and conditions for the procurements were also clarified as included as an integral part of these Purchase Orders. For HP and IBM Purchase Order Agreements see attachment A.

3. Modification of Purchase Order/Agreements.

The selected vendors, IBM and HP, requested modifications of the Purchase Orders to identify and designate their local distribution agents as the contract awardees. We noted that local business practice makes this change necessary in order to achieve quick and efficient entry of the equipment into Lithuania. Accordingly, the Purchase Orders were changed subject to submission by IBM and HP of documentation and notarized statements confirming the assignment of contract responsibilities to their distributors. Certifications were received, thereby authorizing the continuation of the procurement process.

4. Solicitation of Offers for Computers.

During the original RFP solicitation, three of the four suppliers participating in the solicitation offered non-US equipment. Therefore, the Senior Procurement Advisor decided to solicit new offers, in accordance with applicable AID procurement guidelines. The four vendors were requested to submit new, qualifying offers, providing equipment which meets AID source/origin requirements. Two responses were received. Compaq replied that it could not supply US-made computers. Unitech International offered US made computers at reasonable prices. Upon consultation with the NSEL an award was made to Unitech as the sole responsive and responsible supplier for the 20 computers requested under the RFP.
For request for new offers, vendor's response and NSEL concurrence see attachment B.

5. AID Briefing.

On October 26, Dr. Fatoorechie and Mr. Viragh met with Bruno Cornelio (Division Chief/Capital Markets and Banking USAID/EE bureau/Wash) and Georgia Sambunaris the newly appointed project COTR. The AID officials were briefed on the status of the procurements and noted the need for a no-cost extension of the contract to supply equipment to the NSEL, in order to insure equipment deliveries by the Project Termination Date. At the same time, a meeting was held with AID Contracting Officer Stan Heishman to discuss Purchase Order terms and to obtain approval, in accordance with project requirements, for the Purchase Order/Agreements. This approval was given on October 27.

6. Issuance of Purchase Order/Agreements.

Upon approval of the Purchase Orders by the Contracting Officer, the vendors were notified of this action and copies of the POs were DHL-ed to them on October 27.

7. Issuance of No-Cost Extension.

On November 30, 1999 PRAGMA was notified that a 60 day no-cost extension of the contract was approved by AID, thereby enabling the suppliers to deliver the equipment ordered within the project Termination Date. At the same time, the Senior Procurement Advisor briefed the Project Officer at USAID/Vilnius, Mark Segal, of the status of implementation. For USAID approval of no-cost extension see Attachment C.

8. Forthcoming Events For the Next Reporting Period

Pragma will monitor the deliveries to insure compliance with Purchase Order/Agreement term. Dr. Fatoorechie and Mr.Viragh will re-visit Vilnius in late January to verify receipt of the equipment, proper installation, appropriate training arrangements and transfer of title from AID to the NSEL.

ATTACHMENT "A"

The Pragma Corporation
116 East Broad Street
Falls Church, Virginia 22046
Telephone 703-237-9303
Fax 703-237-9326

Purchase Order/Agreement

Purchase Order Number: 99-22-1 Date: October 28, 1999

TO: AB ALNA
Vilnius, Lithuania

This Purchase Order/Agreement is executed by The PRAGMA Corporation with AB ALNA/Vilnius, serving as representative and acting on behalf of Hewlett-Packard/Lithuania. On the basis of the award made to HP/Lithuania, AB ALNA, in its capacity as representative and acting on behalf of HP/Lithuania, is requested and authorized to supply and deliver equipment, accessories, and related services for the intended recipient, the National Stock Exchange of Lithuania (NSEL), under an assistance project funded by the US Agency for International Development (AID). The Purchase Order/Agreement is subject to AID procurement rules and terms specified below.

Items Ordered: Equipment and accessories, and requisite training in the use of equipment to be installed, as listed in the Specifications attached to RFP Number 99-22, as modified by HP letter dated October 11, 1999, consisting of:

Group B - Two (2) Unix Platform Machines, for database and communications server use, together with appropriate training. One (1) Unix Platform Machine for use as redundant machine for database and communications server.

Group C - Two (2) Database and Database Management Systems, with software and accessories.

Group D - Market Data Distribution Server, equipped with 2 Pentium III, 500 MHz CPUs, software and accessories.

Group E - LAN Hardware Equipment, with accessories.

Group F - Telecommunications Equipment, with accessories.

Total Price of Groups B through F: $206,962

Delivery: CIF project site (see delivery address below) in Vilnius, Lithuania, NLT 60 days from date of receipt of the signed Purchase Order/Agreement by AB ALNA/Vilnius, serving as representative and acting on behalf of HP/Lithuania.

Payment: Wire transfer from The Pragma Corporation to vendor's designated bank account, NLT 5 days after satisfactory installation, debugging and start-up, as certified and confirmed by NSEL, in writing.

Special Instructions:

1. Prices quoted are net prices and do not include Lithuanian Value Added Tax (VAT) charges. The project is funded by US Government assistance programs administered by AID and, as such, the procurement is not subject to VAT levies. Supplier is responsible, with the assistance and cooperation of the intended recipient, the National Stock Exchange of Lithuania, for arranging VAT-free entry into Lithuania.

2. Training will be arranged in accordance with the accepted HP offer and may begin immediately upon execution of this document.

3. Supplier is responsible for installation and assuring operational capability. In-country spare parts and maintenance support furnished by the supplier is a requirement under this Agreement and may be verified by NSEL representatives without prior notification.

4. AID source/origin rules apply. Supplier is responsible for compliance.

5. AID marking requirements apply. Supplier is responsible for compliance.

6. Supplier is required to furnish documentation to confirm required warranties.

7. Standard "Terms and Conditions of Purchase", attached, apply.

8. Containers used to ship equipment must be clearly marked with the AID Project Number and AID Project Designation. Invoices and container markings must designate the addressee and recipient of the equipment as follows:

"National Stock Exchange of Lithuania, Ukmerges 41, Vilnius, Lithuania, USAID Project Number_EPE-00-95-00040-00". Invoices must also state: " This equipment is purchased under USAID-financed assistance program for use and operation by the National Stock Exchange of Lithuania."

For PRAGMA Corporation:	For AB ALNA:
Bendeguz Viragh	Name:_____
Procurement Director	Title:_____
Date:	Date:

The Pragma Corporation
116 East Broad Street
Falls Church, Virginia 22046
Telephone 703-237-9303
Fax 703-237-9326

Purchase Order/Agreement

Purchase Order Number: 99-22-2 Date: October 28, 1999

TO: UAB CompIdea
Vilnius, Lithuania

This Purchase Order/Agreement is executed by The PRAGMA Corporation with UAB ComIdea/Vilnius, serving as representative and acting on behalf of IBM International. On the basis of the award made to IBM International, UAB CompIdea, in its capacity as representative and acting on behalf of IBM International, is requested and authorized to supply and deliver equipment, accessories, and related services for the intended recipient, the National Stock Exchange of Lithuania (NSEL), under an assistance project funded by the US Agency for International Development (AID). The Purchase Order/Agreement is subject to applicable AID procurement rules and terms specified below.

Items Ordered: Equipment and accessories, and requisite training in the use of equipment to be installed, as listed in the Specifications attached to RFP Number 99-22, as modified by IBM letter dated September 29, 1999, consisting of and priced as follows:

Group A Upgrading of IBM AS/400E Trading Engine, with CPU #2135, with software and accessories $72,210

Group H One (1) Autonomous Power Generator (subject to availability of funds under project allocations) $ 5,250

Total Price: $77,460

Delivery: CIF project site (see delivery address below) in Vilnius, Lithuania, NLT 60 days from date of receipt of this Purchase Order/Agreement by UAB CompIdea/Vilnius, serving as representative and acting on behalf of IBM International .

Payment: Wire transfer from The Pragma Corporation to the vendor's designated bank account, NLT 5 days after satisfactory installation, debugging and start-up, as certified by NSEL in writing.

Special Instructions:

1. Prices quoted are net prices and do not include Lithuanian Value Added Tax (VAT) charges. The project, under which this procurement is executed, is funded by US Government assistance programs administered by AID and is subject to terms and conditions of US-Lithuania bilateral agreements. As such, the procurement is not subject to VAT levies. Supplier is responsible, with the assistance and cooperation of the buyer, for arranging VAT-free entry into Lithuania.

2. Training will be arranged by the supplier in accordance with the accepted IBM offer and may begin immediately upon execution of this document.

3. Supplier is responsible for installation and assuring operational capability. In-country spare parts and maintenance support furnished by the supplier is a requirement under this Agreement and may be verified by NSEL representatives without prior notification.

4. AID source/origin rules, as authorized for this project, apply. Supplier is responsible for compliance.

5. AID marking requirements apply. Supplier is responsible for compliance.

6. Supplier must furnish documentation confirming warranties specified in the RFP.

7. Standard "Terms and Conditions of Purchase", attached, reflecting applicable AID purchasing rules, apply.

8. Containers used to ship equipment must be clearly marked with the AID Project Number and AID Project Designation. Invoices and container markings must designate the addressee and recipient of the equipment, as follows:

"National Stock Exchange of Lithuania, Ukmerges 41, Vilnius, Lithuania, USAID Project Number_EPE-I-95-00040-00"

Invoices must also state " This equipment is purchased under USAID-financed assistance program for the use of and operation by the National Stock Exchange of Lithuania."

For The PRAGMA Corporation:	For UAB CompIdea:
Bendeguz Viragh	Name:_____
Procurement Director	Title:_____
Date:	Date:

ATTACHMENT "B"

The Pragma Corporation
116 East Broad Street
Falls Church, Virginia 22046
Telephone 703-237-9303
Fax 703-237-9326

Purchase Order/Agreement

Purchase Order Number: 99-22-3 Date: November 8, 1999

TO: Unitech International
Vienna, Virginia

This Purchase Order/Agreement is executed by The PRAGMA Corporation, to purchase equipment and accessories for the intended recipient, the National Stock Exchange of Lithuania (NSEL), under an assistance project funded by the US Agency for International Development (AID). It authorizes Unitech International to deliver the equipment and accessories listed in RFP Number 99-22 to the NSEL, in accordance with the terms noted below. The Purchase Order/Agreement is subject to applicable AID procurement rules.

Items Ordered: Equipment and accessories as listed in the Specifications attached to RFP Number 99-22, consisting of:

Group G: Twenty (20) Pentium III PCs and accessories, as listed in Unitech's offer dated October 18, 1999.

Total price: $45,900

Delivery: CIF project site (see delivery address below) in Vilnius, Lithuania, NLT 45 days from date of receipt of the signed Purchase Order/Agreement by Unitech.

Payment: Bank transfer from The Pragma Corporation to vendor's designated bank account, NLT 5 days upon presentation of documents evidencing shipment.

Special Instructions:

1. Prices quoted are net prices and do not include Lithuanian Value Added Tax (VAT) charges. The project is funded by US Government assistance programs administered by AID and is subject to terms and conditions of US-Lithuania bilateral agreements. As such, the procurement is not subject to VAT levies. Supplier is responsible, with the assistance and cooperation of the buyer, for arranging VAT-free entry into Lithuania.

2. There are no training requirements.

3. Supplier is responsible providing documentation confirming a 3-year manufacturer's warranty on the equipment supplied. In-country spare parts and maintenance support furnished by the supplier is a requirement under this Agreement and may be verified by NSEL representatives without prior notification.

4. AID source/origin rules, as authorized for this project, apply. Supplier is responsible for compliance.

5. AID marking requirements apply. Supplier is responsible for compliance.

6. Standard "Terms and Conditions of Purchase", attached, reflecting applicable AID purchasing rules, apply.

8. Containers used to ship equipment must be clearly marked with the AID Project Number and AID Project Designation. Invoices and container markings must designate the addressee and recipient of the equipment, as follows:

"National Stock Exchange of Lithuania, Ukmerges 41, Vilnius, Lithuania, USAID Project Number_EPE-I-95-00040-00"

Invoices must also state " This equipment is purchased under USAID-financed assistance program for the use of and operation by the National Stock Exchange of Lithuania."

For The PRAGMA Corporation:	For Unitech:
Bendeguz Viragh Procurement Director Date: 11-2-99	Name: Edmes Saliki Title: President Date: 11/09/99

UniTech International

Laptop is our business!——*Laptop Repair, Upgrade & Sales*

421-H Church Street, Vienna, Virginia 22180--Tel:(703)255-1282--Fax:(703)255-3853

October 18, 1999

Mr. Bendy Viragh
The Pragma Corporation
116 East Broad Street
Falls Church, VA 22046

RE: RFP NUMBER 99-22, Procurement of Computer Hardware for the National Stock Exchange of Lithuania (NSEL)
AID CONTRACT NUMBER EPE-1-00-0040-00

Dear Mr. Viragh,

Unitech International, Inc. hereby submits a bid for Category G of RFP Number 99-22, Procurement of Computer and Hardware for the National Stock Exchange of Lithuania (NSEL).

If you have any questions regarding this proposal please contact me at 703-255-1282.

Sincerely,

Edrees Saljuki
President,
UniTech International, Inc.

UniTech International
Laptop is our business!——*Laptop Repair, Upgrade & Sales*
421-H Church Street, Vienna, Virginia 22180--Tel:(703)255-1282--Fax:(703)255-3853

THIS IS FOR CATEGORY G
20 PENTIUM III 500MHZ CPU DESKTOP COMPUTERS:

Aptiva 922 PC

Intel® 550 MHz Pentium® III Processor featuring MMX(TM) Technology
512 KB pipeline burst L2 Cache
AGP 2X/S3 Savage 4 Pro
32MB SDRAM Video Memory
3.5" Floppy Drive
56K (v.90 Compatible) Data/Fax Modem
2 Infinity® Speakers
ESS® Audio
Windows® 98
Micro-Tower
128 MB SDRAM 3
20.4 GB Hard Drive 4
6X Max-2.5X Min DVD-ROM with software DVD-video playback 5
PCI Fast Ethernet Lan Adapters
Netscape Communicator
Microsoft Office 2000 Professional
19" IBM Monitor
Windows NT Workstation 4.0

$2295 each

Total Price for 20 Desktop Computers: $45,900.00

Warranty: 3 Year In-country warranty by IBM.

Subj: **PCs**
Date: 11/2/99 7:35:25 AM Pacific Standard Time
From: diana@nse.lt (Diana Sokolova)
Reply-to: diana@nse.lt (Diana Sokolova)
To: BViragh@aol.com (Bendy Viragh)

Hello Bendy,
thank you for the answer to our request.
I have talked to Antanas and Dalia. NSEL agrees that we make the award to Unitech on the basis of the specifications which you sent to us a few days ago,
so there will be no new solicitation.
Firewall would cost exactly USD 10 000. We are sure it is produced in Israel.
That is it for now.
Best regards,
Diana

P.S. I was able to open the agreements and forwarded them to Antanas.

Diana Sokolova
Public Relations Manager
National Stock Exchange of Lithuania

tel (+370 2) 72 38 71
(+370 2) 72 13 71 (direct)
fax (+370 2) 72 48 94
mail to: diana@nse.lt

http://www.nse.lt/

———————— Headers ————————
Return-Path: <diana@nse.lt>
Received: from rly-zc05.mx.aol.com (rly-zc05.mail.aol.com [172.31.33.5]) by air-zc03.mail.aol.com (v62.15) with ESMTP; Tue, 02 Nov 1999 10:35:25 -0500
Received: from www.nse.lt (www.nvpb.ot.lt [194.176.40.130]) by rly-zc05.mx.aol.com (v62.10) with ESMTP; Tue, 02 Nov 1999 10:35:16 -0500
Received: by www.nse.lt from localhost
(router,SLmail95 V2.4); Tue, 02 Nov 1999 16:18:45 Romance Standard Time
Received: by www.nse.lt from 10.1.0.254
(10.1.0.84::mail daemon; unverified,SLmail95 V2.4); Tue, 02 Nov 1999 16:18:44 Romance Standard Time
Date: Tue, 2 Nov 1999 17:19:24 +0100
From: "Diana Sokolova" <diana@nse.lt>
X-Mailer: The Bat! (v1.19) UNREG
Reply-To: "Diana Sokolova" <diana@nse.lt>
Organization: NSEL
X-Priority: 3 (Normal)
Message-ID: <9721.991102@nse.lt>
To: Bendy Viragh <BViragh@aol.com>
Subject: PCs
Mime-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

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Subj: **Computers, HP**
Date: 10/22/99 6:07:25 AM Pacific Standard Time
From: diana@nse.lt (Diana Sokolova)
Reply-to: diana@nse.lt (Diana Sokolova)
To: BViragh@aol.com (Bendy Viragh)

Hello Bendy,
I have talked to Antanas:
1. HP will be contacting you directly regarding signing of the contract. They did not state their opinion on Alna not signing the contract as you suggested.

2. Regarding proposals for the computers:
NSEL really would like to get Check point Firewall (about 250 licences). The description of the computers indicated in the fax that you sent to Antanas is very good. However, there are some items in the description which more then meet the requirements. In other words, if we take a bit simplier computers, maybe there would be money left over to purchase the Firewall.

Look forward to hearing from you,
Have a nice weekend.
It is becoming really cold here, so hopefully central heating will be on this weekend.
I am off to study for my finance test which is going to be tomorrow. Wish me luck!
Best regards,
Diana

Diana Sokolova
Public Relations Manager
National Stock Exchange of Lithuania

tel (+370 2) 72 38 71
(+370 2) 72 13 71 (direct)
fax (+370 2) 72 48 94
mail to: diana@nse.lt

http://www.nse.lt/

——————— Headers ———————
Return-Path: <diana@nse.lt>
Received: from rly-zc01.mx.aol.com (rly-zc01.mail.aol.com [172.31.33.1]) by air-zc04.mail.aol.com (v62.10) with ESMTP; Fri, 22 Oct 1999 10:07:24 -0400
Received: from www.nse.lt (www.nvpb.ot.lt [194.176.40.130]) by rly-zc01.mx.aol.com (v62.10) with ESMTP; Fri, 22 Oct 1999 10:07:15 -0400
Received: by www.nse.lt from localhost
(router,SLmail95 V2.4); Fri, 22 Oct 1999 16:06:16 Romance Daylight Time
Received: by www.nse.lt from 10.1.0.254
(10.1.0.84::mail daemon; unverified,SLmail95 V2.4); Fri, 22 Oct 1999 16:06:16 Romance Daylight Time
Date: Fri, 22 Oct 1999 16:06:48 +0200
From: "Diana Sokolova" <diana@nse.lt>
X-Mailer: The Bat! (v1.19) UNREG
Reply-To: "Diana Sokolova" <diana@nse.lt>

ATTACHMENT "C"

U.S. Agency for International Development
Bureau for Eastern Europe and the Newly Independent States
Office of Privatization and Economic Restructuring
Washington, D.C. 20523-2900

Dr. M. M. Fatoorechie, Ph.D.
Executive Vice President
Pragma Corporation
Independence Square
116 East Broad Street
Falls Church, VA. 22046

Date: Nov. 16,1999

Subject: Task Order #5, under IQC EPE-I-00-95-00040-00.

The subject task order is currently set to expire on December 31, 1999. In accordance with our contract extension clause, I hereby extend the task order for up to 60 days for completion of the tasks. This extension shall expire on February 27, 1999.

Please note that this is a no additional cost extension. This extension does not change the obligated amount of the task order, and EPE-I-00-95-00040-00 shall not exceed the limitation of funds that are available for this task. If you have any questions regarding this extension please contact me at: 202-712-0212.

Sincerely,

Georgia Sambunaris
Cognizant Technical Officer

Cc: Mark Segal
USAID/Vilnius

Cam Pippitt
Baltic Desk Officer

R. Singletary
Capital Markets Team Leader

C. Bennett
E&E/OP

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The Pragma Corporation

USAID Lithuania Capital Market Systems Project

Bi-monthly Report

(for December 1999 and January, 2000)

For the
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

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USAID Lithuania Capital Market Systems Project

Bi-Monthly Report for the period of:
December 1999 Through January 2000

NSEL Procurement Implementation

Summary:

Procurement implementation called for under PRAGMA's contract continued on schedule and in accordance with the approved Action Plan guidelines.

Continued care was taken to insure that AID procurement rules are observed and that the delivery, installation of equipment and training activities were proceeding efficiently. There were no complications or problems affecting any of these actions and, in-spite of the Christmas and New Year holidays and the vacations of key NSEL personnel in Lithuania, international shipment, Customs clearances and in-country freight forwarding were made promptly and on schedule.

During this reporting period the following specific activities took place:

1. Issuance of Purchase Order/Agreement for Computers

A Purchase Order/Agreement was issued to Unitech International, of Vienna, Virginia, for the delivery of 20 PCs, in accordance with NSEL specifications. The order was based on the results of a limited solicitation of offers, which yielded only one responsive, responsible supplier able to comply with AID source/origin rules applicable to this project. The PCs comprised IBM equipment and contain a three-year supplier's warranty, in accordance with RFP terms.

2. Issuance of Purchase Order/Amendment for Standby Generator

The purchase of a standby generator, requested by the NSEL in the original RFP, was delayed until the question of the Lithuanian Value Added Tax (VAT) and the advance payment requirements were clarified. As we found out, the Lithuania VAT requirement does not apply to USG-funded purchases, and as a result, project funds were not tied up in the VAT payment/refund process. Sufficient funds were made available for immediate payment to the qualified vendor. The Purchase Order/Agreement was placed with IBM International, the only responsive and responsible bidder for this item.

3. Delivery of Equipment

During December, Hewlett-Packard International, acting through its authorized local distributor, ALNA AB, delivered the three HP UNIX machines and other equipment ordered from HP under the terms of the original RFP. Installation, testing and start-up began in January. The equipment is expected to be fully operational and integrated into the NSEL's existing operational system by the end of February. Training of key NSEL personnel and technicians, who will be operating the equipment, was conducted during the last week of January.

In January IBM International also delivered its upgraded AS- 400 system. NSEL's computer specialists immediately commenced its full integration into the existing system and confirmed the successful completion of this phase of installation. The generator is expected to be delivered during the first week of February, thereby completing IBM's delivery requirements.

4. Payment for Equipment Received

In accordance with RFQ terms, HP distributor ALNA presented payment documents to PRAGMA on January 17. NSEL certified, through a completed Receiving Report that the equipment was received, installed and tested. Payment was made to ALNA on January 26, 2000.

5. Project Report

PRAGMA staff began work on a final Project Report, which will detail the activities and implementation steps taken during the life of the project, the problems encountered and solved, as well as, the impact of the acquisition and installation of the new equipment and upgraded systems on the operations of the Lithuanian Stock Exchange and on the Lithuanian capital market. The report will be finalized and presented to AID after the February 27, 2000 project completion date.

6. Forthcoming Events

During February, PRAGMA's Senior Procurement Advisor, Bendy Viragh, and the Program Director, Dr. Mohammad Fatoorechie, will visit Vilnius. Dr. Fatoorechie will stay for one week, while Mr. Viragh expects to remain in Vilnius for at least two weeks, depending on project requirements.

During the visit of Mr. Fatoorechie and Mr. Viragh, an assessment will be made of the status of implementation, verification will be conducted of the actual operation of the new equipment and systems and of the status of integration into the existing system and the compatibility with NSEL's Three-tiered Automated Trading System. In addition, although not called for in PRAGMA's contract for the procurement implementation tasks, PRAGMA agreed to prepare and coordinate the documentation required for the final transfer of title to the equipment from AID to the NSEL.

PRAGMA will close its office and facilities in Vilnius and formally terminate its activities in Lithuania on February 27, 2000. Prior to this date, Mr. Viragh will oversee the completion of documentation related to the closing, settle all outstanding bills and accounts and attend to any and all unresolved issued relating to the project and procurement implementation.

The Pragma Corporation

USAID Lithuania Capital Market Systems Project

Last periodic Report

(February 2000)

For the
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

FEBRUARY 28TH, 2000

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USAID Lithuania Capital Market Systems Project

Monthly Activities Report - February 2000

NSEL Procurement Implementation

Summary

February was the last month of the USAID Lithuania Capital Market Systems Project during which the PRAGMA Corporation was implementing this project. The activities which have taken place during February constitute the last work assignments under the contract and include the close-out of PRAGMA's project in Lithuania.

Procurement implementation continued during February. All outstanding procurement actions were completed on schedule and in accordance with the approved Action Plan guidelines. As always, care was taken to insure that AID procurement rules are observed and that the delivery, installation, training and integration of the equipment purchased was done efficiently and with technical soundness.

During this reporting period the following activities took place:

1. Visit of Project staff

During the middle of February, the Prject Manager, Dr. M. M. Fatoorechie and the Senior Procurement Advisor, Bendy Viragh, traveled to Vilnius for stays of one and two weeks, respectively. During this visit, they verified the installation, the provision of training, and operation of the newly acquired systems and hardware and the integration of the new hardware and systems into the existing stock exchange operations. Documentation was prepared for the transfer of the equipment from AID to NSEL (disposition plan), in accordance with applicable AID regulations.

2. Delivery of Equipment

During the final days of January, Unitech International forwarded to NSEL the complete order of 20 IBM PCs. The equipment arrived in Vilnius during the first week of February.

All of the newly acquired equipment was made fully operational and functioning by the middle of February.

3. Payment for Equipment Received

In accordance with RFQ terms, IBM distributor CompIdea presented documentation to PRAGMA on February 2. NSEL certified, in a completed Receiving Report, that the software and accessories were received, installed, and integrated into the existing operational system, in full compliance with RFQ terms. Accordingly, PRAGMA arranged for prompt payment to CompIdea of the full contract amount of $77,460.

In accordance with RFQ terms, IBM distributor Unitech International shipped to NSEL 20 PCs which were received by NSEL during the first week of February. Customs clearance was completed within three days of arrival. In accordance with RFQ terms, payment of the contract amount, $47,466, was made to Unitech upon presentation to PRAGMA of documentation certifying transfer of the equipment to the designated freight forwarder.

4. Final Project Report

PRAGMA continued work on the final Project Report, which details the activities undertaken under this project, throughout the life of the project. The report will be finalized and presented to AID prior to the contractually mandated deadline and after the contract termination date of February 27, 2000.

5. Transfer of Title

Disposition Plan

PRAGMA discussed the plans for the transfer of title of the acquired property to the NSEL with EE/PER Director Bruno Cornelio. Although the preparation of transfer documents and the disposition of equipment are not within the scope of PRAGMA's contract, PRAGMA Vice President, agreed to assist the NSEL in meeting the requirements for an orderly transfer of title for the equipment from AID to the NSEL.

A Disposition Plan was prepared by PRAGMA, signed by Dr. Fatoorechie and sent to AID/W for review and "No/Objection Approval" certification and signature (see Attachment A). The Plan reflects the discussions and agreements of AID, NSEL and PRAGMA in a meeting on September 29, 1999. Once approved by AID, the NSEL President will be requested to add his signature, certifying the acceptance and the validity of the transfer.

Meeting with AID/Vilnius

On February 10, a meeting was held at AID/Vilnius. The meeting was attended by Mr. Gary Imhoff, Director of AID/Vilnius, the Vice President of PRAGMA, Dr. M.M. Fatoorechie, Mr. Mark Segal and Ms. Christine Sheckler of USAID, PRAGMA's Senior Procurement Advisor, Bendy Viragh, and other AID/Vilnius officials. The meeting contained a review by Dr. Fatoorechie of project activities from inception until now and a discussion of the technicalities of transfer of title to the equipment purchased from AID to the NSEL.

Mr. Imhoff expressed a preference for a final IRM review of the integration of the newly acquired software and hardware into the NSEL system and a verification of the

operation and operational capability of the Stock Exchange. He suggested that, in addition to the documentation prepared by PRAGMA for the actual transfer, a review by an IRM expert should take place.

Inspection of New Stock Exchange Facilities by AID/Vilnius

On February 11, AID Director Gary Imhoff and other AID/Vilnius officials visited NSEL facilities for a visual inspection of the equipment and operational systems. Dr. Antanas Gruskas NSEL's Technical Director, presented a briefing on the capabilities of the upgraded system and an explanation of the functions of newly acquired equipment.

NSEL Certifications

In order to verify receipt, installation, and operational integration as well as actual operational capability of the system at the Exchange, (in accordance with the requirements of Pragma contract, IRM review and the consequential Contracting Officer approval) the NSEL was requested to provide certifications attesting to the following:

a) The equipment ordered was received, in full compliance with RFQ specifications. An inventory of purchased items is attached (see Attachment B).

b) The equipment purchased and received was installed and satisfactorily tested. Software was loaded and tested for operational competence (see Attachment C).

c) The in-house developed software was successfully integrated into the new system and tested to be fully compatible with newly acquired hardware (see Attachment D.)

Verification

PRAGMA's Senior Procurement Advisor, Bendy Viragh, inspected the equipment installed and examined the status of integration of the in-house developed software into the upgraded operational system as well as its compatibility with existing and/or acquired hardware. A memorandum reflecting the satisfactory results of the verification is attached (see Attachment E).

Inspection Visit of IRM Expert

At the request of AID/Vilnius, an IRM expert was sent to Vilnius to verify operational integration and compatibility of the newly acquired equipment with NSEL's in-house developed three-tiered trading system. The expert, Mr. Jefferson, arrived in Vilnius during the last week of February.

AID/Vilnius inquired whether or not remaining funds under PRAGMA's contract, if any, could be used to pay for the experts travel costs. PRAGMA noted that a) the costs of AID employees were not payable under contract terms, b) there were no

funds left in the contract to pay such costs, and c) the applicability of the request should be referred to the COTR and the responsible Contracting Officer.

6. Project Close-Out

PRAGMA's Senior Procurement Advisor Bendy Viragh undertook a close-out review of expenditures and operating accounts of the PRAGMA office in Vilnius. Termination notices were issued to employees, accounts and billings were settled, bank accounts were closed and documents pertaining to the project were transferred to PRAGMA's headquarters in Falls Church.

7. Termination of PRAGMA Contract

PRAGMA's contract for the implementation of this project expired on February 27, 2000. At that time, the firm's operations in Vilnius officially terminated and its facilities were shut down. Reports and documents required for project close out are being prepared and will be forwarded to AID, as needed.

ATTACHMENT "A"

The Pragma Corporation

116 East Broad Street
Falls Church, Virginia 22046
Telephone 703-237-9303
Fax 703-237-9326

MEMORANDUM

DATE: 2/8/2000

SUBJECT: No Objection/Approval of Disposal Plan and Transfer of Title for Equipment Purchased for the National Stock Exchange of Lithuania (NSEL) under the Lithuania Capital Market Systems Project –AID Contract #EPE-I-00-95-00040-00

1. By early October 1999, the Procurement Committee for the above project, consisting of the Procurement Director, the NSEL Vice Chairman, and the NSEL Technical Director, and the Project Oversight Group consisting of the NSEL Chairman, the COTR, AID/Washington, and the Project Manager in AID/Vilnius, signed documents approving an action plan outlining the procurement process. These documents included a Disposition Plan for the equipment to be purchased for installation at NSEL.

2. Procurements were conducted by The Pragma Corporation, acting on behalf of the NSEL, under an AID-financed contract, as approved by the Contracting Officer in a letter dated October 26, 1999. Title to the equipment purchased was vested in AID, subject to eventual disposal, in accordance with applicable FAR and AID regulations pertaining to the disposal and transfer of equipment to recipient governmental organizations.

3. The Disposition Plan, dated September 29, 1999, specified that the equipment purchased under the project will be turned over to the project implementing agency and user of the equipment, the National Stock Exchange of Lithuania. This transfer was to take place prior to the project termination date of February 27, 2000, upon verification by The Pragma Corporation and execution by the NSEL of certification that:

a) The equipment was delivered to the NSEL, in accordance with Project RFPs and the specifications contained therein.

b) The equipment was installed at the designated NSEL sites, tested, and activated. Training in operations and/or maintenance was conducted and completed.

c) The equipment is operational and compatible with approved, in-house developed software.

The attached documentation confirms that the above conditions were met.

Accordingly, the equipment listed in the attached inventory is hereby transferred to the NSEL, effective the date of this document. No Objection/ Approval of this action and acknowledgement of the acceptance of this transfer by the NSEL are certified by the signatures of the responsible parties below.

Rimantas Busila _____
Chairman, NSEL

_____
COTR/EE/PER/AIDW

M.M. Fatoorechie, VP.
The Pragma Corporation _____

Attachments:

a) Certification by NSEL of Receipt of Equipment

b) Certification by NSEL attesting to installation and testing

c) Certification by NSEL of operational capability of hardware and compatibility with in-house developed software

ATTACHMENT "B"

NACIONALINĖ VERTYBINIŲ POPIERIŲ BIRŽA

Ukmergės g. 41, 2600 Vilnius, Lietuva
Tel. 723871 Faks 724894

February 8, 2000 No. 04/10-98

To: The Pragma Corporation,
116 East Broad Street
Falls Church, Virginia 22046

The NSEL hereby confirms receipt and reception dates of equipment ordered under Group A, B, C, D, E, F, G, H of RFP Number 99-22, consisting of:

upgrading the hardware and operating system of one (1) existing trading engine (reception date 14.01.2000);
two (2) Unix Platform Machines, for database and communications server use (reception date 16.12.1999);
one (1) Unix Platform Machine for use as redundant machine for database and communications server (reception date 16.12.1999);
two (2) Database and Database Management Systems, with software and accessories (reception date 23.12.1999);
Market Data Distribution Server, equipped with 2 Pentium III, 500 MHz CPUs, software and accessories (reception date 12.01.2000);
LAN Hardware Equipment, with accessories (reception date 16.12.1999);
Telecommunications Equipment, with accessories (reception date 16.12.1999);
Twenty (20) Personal Computers with operations software (reception date 31.01.2000);
One (1) Autonomous Power Generator (reception date 08.02.2000).

HPUX OS Training of 5 days for 3 persons (from 24.01.2000 till 28.01.2000).

Vice President — Vidmantas Drobelis

IT Department Director — Antanas Gurskas

ATTACHMENT "C"

NACIONALINĖ VERTYBINIŲ POPIERIŲ BIRŽA

Ukmergės g. 41, 2600 Vilnius, Lietuva
Tel. 723871 Faks 724894

February 8, 2000 No. 04/10-97

To: The Pragma Corporation,
116 East Broad Street
Falls Church, Virginia 22046

The NSEL hereby confirms the receipt of the equipment according to RFP No. 99-22, which was installed and tested in the following order:

Group	Object	Date of hardware installation	Date of software installation	Date of Testing
A	Equipment for upgrade of AS/400	14.01.2000		14.01.2000
	software for upgrade of AS/400		21.01.2000	21.01.2000
B	2 Unix platform machines	17.12.1999	30.12.1999	30.12.1999
	1 Unix platform machine	17.12.1999	30.12.1999	30.12.1999
	HPUX OS Administrating Courses for 3 persons	24.01 - 28.01.2000.		
C	Software for Database and Data management		30.12.1999	30.12.1999
D	Market Data Distribution Server	12.01.2000	28.01.2000	31.01.2000
E	LAN Hardware Equipment	23.12.1999		30.12.1999
F	Telecommunications Equipment	23.12.1999		30.12.1999
G	20 Personal Computers	02.02.2000		
H	Autonomous Power Generator			

All listed items were delivered, successfully installed, software loaded, installed and tested.

Vice President — Vidmantas Drobelis

IT Department Director — Antanas Gurskas

ATTACHMENT "D"

NACIONALINĖ
VERTYBINIŲ POPIERIŲ BIRŽA

Ukmergės g. 41, 2600 Vilnius, Lietuva
Tel. 723871 Faks 724894

February 3, 2000 No. 04/10-87

To: Mr. Bendeguz Viragh,
The Pragma Corporation

Dear Mr. Viragh,

The NSEL programmers created software for the Three Tier Automated Trading System (TATS) on the basis of hardware owned by the NSEL. We are writing to inform you that the NSEL programmers have transferred, installed, loaded, debugged, and tested the TATS software on the received hardware and have got perfect results. Therefore, the NSEL is pleased to confirm that the TATS developed by the NSEL programmers is fully operational and completely compatible with the hardware received under the Project.

The NSEL intends to present the whole system to market participants and have a press conference next week. Thank you very much for all your assistance.

Vidmantas Drobelis,
Vice President

Antanas Gurskas,
IT Department Director

NATIONAL STOCK EXCHANGE OF LITHUANIA

Ukmerges St. 41
2600 Vilnius, Lithuania

Tel. 3702 723871
Fax 3702 724894

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ATTACHMENT "E"

The Pragma Corporation

116 East Broad Street
Falls Church, Virginia 22046
Telephone 703-237-9303
Fax 703-237-9326

TO: Dr. M. M. Fatoorechie

FROM: Bendy Viragh, Senior Procurement Advisor

DATE: February 15, 2000

SUBJECT: Lithuania Capital Market Systems Project

On February 14, 2000, I inspected the equipment ordered by the Pragma Corporation on behalf of the NSEL, under the subject project's funding. My findings, based on personal observation and verification, are as follows:

1. The upgrading of the existing AS 400 IBM system has been completed. The training for the use of the improved system has been completed. The revised/improved system is functioning and operational. The stand-by generator has been received, installed and tested.

2. The hardware ordered from Hewlett-Packard, consisting of two UNIX platform machines, for database and communications server use, have been received, installed and tested. The redundant Unix platform machine has been received, installed and tested. Accessories ordered with the platform machines have been received and inspected for suitability and use. Training in the use of the new equipment was completed.

3. The 20 IBM PCs have been received. Of the 20 machines, 16 have been installed and put to use. Four (4) more are expected to be installed and put to use by February 18.

4. The equipment/hardware is fully operational and in use, utilizing the NSEL's in-house developed software. Actual day-today trading is taking place via the upgraded and/or new equipment and no problems or glitches have been noted in the use of the new systems. In the words of NSEL President, the new system is "alive".

5. Documentation, prepared by the NSEL, certifying receipt, satisfactory installation, integration into the operational system and compatibility with existing hardware, has been received and is on file.