PROJECT LA

USER REQUIREMENTS AND STATEMENT OF COMPLIANCE

VERSION 1.1

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Version	Description
Version 1.1	Only authorized for distribution within MOI, Abu Dhabi, and VASTech

Content

1 INTRODUCTION

1.1 Scope and layout of document

This document captures the requirements, answers to emailed questions and during the meeting, and assumptions made as far as possible:

- Requirements for a Mass Monitoring System were provided by MOI, Abu Dhabi during the last quarter of 2007, see Appendix A of this document. Certain requirements were unclear, and could be interpreted in different ways. Such different interpretations could lead to vastly different bids submitted by the different vendors, and may result in sub-optimal solutions to the customer.

- Clarifying questions were asked by VASTech by email, and a meeting was held between VASTech and MOI on 16 January 2008. Some requirements still require further specification; however, it was decided to provide different options as far as possible.

This document forms part of a total OFFER, as shown in par. 1.3.

This document is for reference only, in support of the SPECIFICATION for those cases where specific items have not been explicitly addressed in the SPECIFICATION. The SPECIFCIATION has a higher precedence than this document.

1.2 Confidentiality and distribution

This OFFER is provided in confidence and is authorized for distribution only to the parties indicated on page ii.

1.3 Relationship to other documents, and applicable documents

This document is for reference only, in support of the SPECIFICATION (document number “J-LA-001-SSP-01 LA System Specification”) for those cases where specific items have not been explicitly addressed in the SPECIFICATION. The SPECIFCIATION has a higher precedence than this document.

Appendix A: Compliance and feedback on MMS specification

NR	REQUIREMENTS	REPLY
1 1.1	FOREWORD The Law Enforcement Agency, LEA, hereafter referred to as the "Agency" prepared this document, to be distributed to a number of selected specialized companies, to prepare applicable quotations for the design, supply, install, test and handover in an acceptable working conditions and time of a Mass Electronic Monitoring System, hereafter referred to as the "Mass Monitoring System (MMS)".	Noted
1.2	The MMS is to be installed at the Agency's premises and connected to the public \network of the Country Telecommunication Service Providers hereafter referred to as the "SP", through Agency-provided connectivity setup, as stipulated later in this document. The Bidder who will be selected to supply the system is hereafter referred to as the "Supplier".	Noted
1.3	The Bidder shall prepare his quotation based on latest technological developments in this field, and shall employ the most sophisticated, yet easy to operate, hardware and software facilities, which shall work, nearly, in a trouble–free manner for the whole life span of the system.	Noted: VASTech is using the VASTech Zebra Mass Interception System and selected leading third party equipment. The VASTech Zebra is unique by using a VASTech gateway and commercially available severs and storage. It is software centric and uses the minimal vendor specific hardware (the gateway). As such, it can always use the latest commercially available hardware, leading to significant benefits to the customer, such as comparatively lower cost, higher supportability and increased functionality.
1.4	Each bidder shall include in his bid a detailed company profile showing the company's history in implementing similar projects along with his technical achievements in providing successful solutions for similar tasks.	See VASTECH PROFILE.
	SYSTEM FUNCTIONALITY The MMS is being built to fulfill the Agency's lawful needs for efficiently	Noted

NR	REQUIREMENTS	REPLY
	monitoring of all telecommunications activities of its targets while using any public telecommunications facility as well as International gateways and specified satellites, at any time, and where throughout the Systems' potential area.	
	Targets complete activities including Call Content CC and relevant Call Related Information CRI, are to be digitally recorded in the System, classified, processed and stored for further retrieval/analysis, along with real time tracking capability of any target.	Complies - "Target's complete activities including Call Content CC and relevant Call Related Information CRI, are to be digitally recorded in the System, classified, processed and stored for further retrieval/analysis". To assist in tracking of targets, VASTech will provide in a first phase a system implementation that will enable the CUSTOMER to filter on e.g. area or country codes.
	The hardware and software architecture of the System shall enable the operator to monitor all types of telecommunication systems currently running in the field, including but may not be limited to:	
	a)-All telecommunications activities running over specific International gateways, specified in this document including speech channels and data channels.	Complies – VASTech will intercept telecommunications activities that comply with the current ITU communication standards.
	b)-All communication activities running on specific links from number of BTS (GSM Cell), specified later include speech and data channels.	Complies as stated: In this OFFER, all intercepts will be captured on the level where the network gateways connect to the other external networks as requested by the CUSTOMER (See also feedback from CUSTOMER re this requirement, Appendix B: Clarification of user requirements, par 2.1 on page 21). Once more information is available, e.g. the number of Abis interfaces to be monitored, etc, the OFFER will be updated.
	c)-INTELSAT monitoring system	Complies as stated in OFFER.
	d)-INMARSAT monitoring system capable of reception of INMARSAT B, C~~, F~~, M, and mini-M transmission form both Atlantic Ocean-East and Indian satellites. This includes high speed data traffic from INMARSAT B and M4 terminals.	Complies as stated in OFFER.
	As for future telecommunications systems that are scheduled to be	Note that no vendor can truely comply with the requirement to have a

NR	REQUIREMENTS	REPLY
	released within the life span of the System, the Supplier shall follow up this issue in the mean time, and shall have his upgrading hardware/software packages ready to be integrated to the System once the new facility is released.	solution available immediately once a "new facility" has been released. (With "new facility" is understood new communication protocols and methods, e.g. such as at the time when Skype was introduced). ➔ The core business of VASTech is the monitoring of bulk communications, and VASTech shall endeavour to continuously update its products to provide solutions to the latest changes in the technological, communications and threat environments. Upgrade software is available through the VASTech Software Maintenance and Upgrade Option.
	The Agency will not accept any time delay between the date when any facility is released and the date when the System becomes capable to monitor it.	See previous comment.
	The Supplier shall undertake the movement shoulder to shoulder with the ever-increasing development in telecommunications technologies to develop necessary software/hardware upgrade to the System, *against mutually-agreed fees.*	Complies. Mutually-agreed fee to be negotiated in advance between the CUSTOMER and VASTech, against specific specifications. Note that generally VASTech will develop solutions for the different technologies.
3	*SYSTEM CONNECTIVITY OVERVIEW*	
	The block diagram in figure 1 shows how the system shall be built and interconnected to the SP's network (International gateways and links from specific BTS) and links from the specified satellites.	Noted
3.1 3.1.1	*Equipment Block* The MMS block includes hardware and software packages dedicated for Voice, Fax and Data processing, decoding and recording.	Noted
3.1.2	The front-end acquisition unit will be installed by the agency, with the cooperation of the SP at each site of the SP's gateways, by supplying each link and connecting it to the acquisition unit.	Noted
3.1.3	Supplier has to *specify what and how many links required from the acquisition unit* at each site to MMS.	Please see SPECIFICATION

<table>
<tr><th>NR</th><th>REQUIREMENTS</th><th>REPLY</th></tr>
<tr><td>3.1.4</td><td>Supplier has to train agency technicians how to install and program the acquisition units.</td><td>Complies</td></tr>
<tr><td>3.2</td><td>Marking Targets
Since all of the communication activities has passed through the mentioned links, including satellites. Every officer from his or station can scroll through all links and choose the session to listen or view.</td><td>Complies with improved functionality, as follows - Officers can do live playback on recordings while the conversation is being recorded. Officers can select any recording to listen to, even while recording is in progress. The VASTech solution does not provide the ability for all officers to scroll through and listen to raw timeslots. Note that the VASTech solution provides the improved benefits – if an officer finds something of interest, the call is already recorded, while in the case of listening to raw timeslots as possibly required, the officer will not be able to record the previous context.</td></tr>
<tr><td>3.2.1</td><td>The System shall include an Administration Workstation ADMIN-WS to be used by the System Administrator to give class of service for different workstation users, program user ID and Password for each user, and configure any relevant administrative function.</td><td>Complies</td></tr>
<tr><td>3.2.1.1</td><td>The administration workstation shall be capable of running all normal workstations tasks.</td><td>Complies: the same hardware administrator workstation can be used to run both the software applications (administrator and user workstation). Both applications can run concurrently.</td></tr>
<tr><td></td><td>SYSTEM COMPONENTS
System Connectivity
As shown in figure 1, the System consists of servers capable of handling the following traffic:-
A- International gateway from SP as following table:
Site No. 1
<table><tr><td>Site Type</td><td>Number of E1</td><td>Number of STM1</td><td>Number of STM4</td></tr></table></td><td>Complies. Advanced semi-automatic CIC mapping tool is provided to simplify the correlation between signalling and speech channels.</td></tr>
</table>

<table>
<tr><th>NR</th><th>REQUIREMENTS</th><th>REPLY</th></tr>
<tr><td></td><td>
<table>
<tr><td></td><td>69</td><td>12</td><td>3</td></tr>
</table>
The MMS has to correlate between speech channels in any International gateways with the signaling channel.
</td><td></td></tr>
<tr><td></td><td>Also, MMS has to be connected to the two GSM cells based on the following connectivity:
Site No. 2
<table>
<tr><td>Site type</td><td>Number of E1</td></tr>
<tr><td>GSM</td><td>16</td></tr>
<tr><td>UMTS</td><td>5</td></tr>
</table>
</td><td>Complies to requirement as further clarified in response by CUSTOMER, dated 12 December 2007. See Appendix B: Clarification of user requirements, par 4.3 page 25. Interception will be done on gateway connection the GSM cell to the external communications world. Interception will be done on non-encrypted links.</td></tr>
<tr><td></td><td>Site No. 3
<table>
<tr><td>Site type</td><td>Number of E1</td></tr>
<tr><td>GSM</td><td>33</td></tr>
<tr><td>UMTS</td><td>7</td></tr>
</table>
</td><td>Complies to requirement as further clarified in response by CUSTOMER, dated 12 December 2007. See Appendix B: Clarification of user requirements, par 4.3 page 25. Interception will be done on gateway connection the GSM cell to the external communications world on SS7 links, non-encrypted.</td></tr>
<tr><td></td><td>B- INTELSAT Monitoring System</td><td>Complies. See OFFER.</td></tr>
<tr><td></td><td>C- INMARSAT Monitoring System B, C, F, M, and mini M for both satellite Atlantic Ocean East and Indian Ocean.</td><td>Complies. See OFFER. Note that F is not an Inmarsat terminal.</td></tr>
<tr><td></td><td>System Component
SERVER
<u>Hardware</u>
The supplier should provide a server that fits their software system and capable of running 24/7 with standard back up and storage devices expandable. The data should be stored into two parallel archive storage systems.</td><td>The VASTech Zebra Capture Units and the Zebra Data Centre all will store their data and content on commercially available storage units, in RAID 1/0 redundancy format. All data is thus stored 2 times. This system configuration is operational at a number of customers. The storage capacity is readily expandable, simply by adding additional storage and storage servers, where applicable.
The Zebra Capture Units and Zebra Data Centre effectively act as “black box” systems, utilizing both Microsoft and Linux operating systems on the various blade servers, as required. SQL databases are used, and have been</td></tr>
</table>

NR	REQUIREMENTS	REPLY
	Software OS: Windows 2003 server. MS: Monitoring System should run on *Windows 2003 Server* and should use *Oracle database*. *Trend Micro anti virus software* (latest update). *Arc Serve* for back up (latest version).	operational on similar sized databases in systems with less input capacity, but storage requirements up to two years. All connections, e.g. the Administrator or the Operators, are made to the Zebra System through the Linux based Application Server. Various additional options exist, and have been implemented by VASTech. However, the exact requirements are not clear (e.g. see "Appendix B: Clarification of user requirements", par 4.4, page 25) and these options have not been included in this OFFER. It is requested that a work session be held with the CUSTOMER to further clarify the requirements to be able to provide the optimal solution: It is possible to add additional parallel storage systems; however, this will mean that all data will be stored 4 times. It is possible to provide a Data Centre where the information related to all (or only target) IRI is stored, and where the content related to target calls is stored. It is also possible to export selected data to archiving servers, where longer term copies of the data can be archived.
	ADMINISTRATOR WORKSTATIONS One administrator workstation must be provided.	Complies
	CLIENT WORKSTATIONS Number of concurrent clients will be 40 licenses. Hardware: (Minimum requirement) 80 GB Hard disk drive Intel Core 2 duo processor 1.86 G|Hz, 1066 MHz. 1 GB Memory. VGA card.	Complies

NR	REQUIREMENTS	REPLY
	Sound Blaster 32 bit audio card. GIGABIT Ethernet Network card. 1.44 MB disk drive 17" Super VGA monitor, 4MB on board 64 bit technology graphics adaptor. Arabic/English keyboard. Scroll mouse Stereo Speaker, headphone *with built-in volume/tone function* and microphone.	
	<u>Software:</u> Windows XP *Arabic enabled*. Trend Micro Anti Virus. *Latest Version.* Digital filter/Equalizer software.	The offered version will be based on an English version of the Windows XP system (however, the workstation itself will be in Arabic, see next requirement). Trend Micro Anti Virus will be provided per workstation. Digital filter software will be provided per workstation.
	MS should have Arabic interface with the following functionality:	Zebra workstation software, specifically, will be provided in Arabic version (will be provided without charge during software upgrade).
	Access to nominated targets stored information.	Complies
	Display and/or print fax messages.	Complies
	search for *specific* call of a certain target, using different target's parameters, such as time and date, "A" telephone number, "B" telephone number, etc.	Complies
	Write comments during playback, or real-time monitoring on a file attached to the target's file..	Complies – will be included without charge in software upgrade.
	Follow up targets in real-time monitoring mode.	Complies as follows: VASTech Zebra provides hot-monitoring capability for targets.

NR	REQUIREMENTS	REPLY
	Perform full voice, fax and data editing functionality.	This requirement is unclear (see "Appendix B: Clarification of user requirements", par 4.4.4, page 27). Complies as follows: VASTech is planning development to export files, executes editing external to the system, and import the edited file. This export and import functionality will be provided, free of charge, during a software upgrade.
	Process any voice file through digital filter/equalizer software to "clean" it from any hum or annoying noise, and improve its intelligibility.	As for preceding requirement. Digital filter software will be provided per workstation, to be used after exporting the file. As in the answer to the preceding requirement, the upgrade to re-import edited files will be provided free of charge during a general software upgrade.
	Generate CD copy of required recordings.	Complies: the required recording must be exported to a directory on the operator machine, from where the operator can make a CD copy.
	Visually display in one screen view, all call management features related for specific recording as provided by the SP like; calling number, called number, call waiting, date and time etc.	Complies: all metadata that has been captured will be available.
	Visually display in one screen, all pending or unprocessed audio for all workstation related active targets, and give indication about the time/date each audio war recorded.	Complies
	Display different Icons to show the type f each recording i.e. voice, fax or data.	Complies
	To manually operate PAUSE function during real-time listening, *to stop recording any irrelevant or unimportant part of the call in order to save storage space*. This function shall be toggled ON and OFF by proper clicking on the screen.	In VASTech's experience, it has been found that the context of calls may be lost in the case where only parts of calls are recorded. The VASTech Zebra system has been developed to record all calls that have been intercepted. This allows significantly better intelligence value – in the case of an incident, it is possible to go back in time to monitor calls of parties that were not previously know as targets. According to the storage management philosophy, it is possible for

NR	REQUIREMENTS	REPLY
		operators to mark complete calls for longer storage, alternatively, if a call is not related to a target, the recording will be deleted automatically after the Medium Storage Period. A work session is required with the CUSTOMER to clarify the optimal recording and storage solution. See also "Appendix B: Clarification of user requirements" for further questions regarding storage and workflow.
	Each Workstation User shall be able to configure his personal setup and monitoring set by himself which shall be saved as the program is exited.	Complies
	Re-login personal settings shall be retrieved.	Complies for operators that log into the same workstation.
	The following analytical software tools shall also be included in the system for each client: 1 - Meta data analysis. 2 - Free text Search 3 - Language ID 4 - Gender Identification 5 - OCR 6 - Speaker ID 7 - Word spotting 8 - Automatic translation (voice, fax, text, web site)	Optionally available (see "Appendix B: Clarification of user requirements", par 4.6 on page 28). The price of Meta Data Analysis is shown in the pricing tables in the OFFER. However, as requested in "Appendix B: Clarification of user requirements", it is important to have further clarification of user requirements. As example, price variables include the number of languages to be monitored, e.g. in the case of word spotting; as well as the number of concurrent operations required.
	NETWORK Ethernet 2 x 24 Port switch with fiber channel uplink.	Complies, as stated: it is assumed that this requirement is for the network on which the workstations are connected. The pricing for this is based on the following assumptions: maximum length of cable 40 x 20 m.

NR	REQUIREMENTS	REPLY
	100/1000 MB. UTP Cables with RJ45 connections.	
	System Central Storage Facility This is to be calculated based on the following approximate guidelines: Number of Intercepted traffic from the International gateway and the two GSM cells has: 75% Voice. (PSTN, ISDN, GSM) 10% Fax. 5% Data (modem to modem). Number of Intercepted information shall be stored for a period not less than *two months* before it is being overwritten.	Complies and exceeds – see OFFER.
	Training Supplier should provide User and Administrators training with *User Guide documents* in Arabic language. Supplier should provide training for IT specialists, technicians and administrators staff.	Complies
	Remote Workstation The Supplier shall consider the possibility of connecting a remote workstation to the System through Agency provided circuits and shall specify the interface requirements to implement this task.	Complies, provided connection is secured by Agency, and preferably ADSL link. VPN server is not included in OFFER.
	SYSTEM CAPABILITIES The System with its specified buildup and size shall be capable of performing the following tasks.	Noted. The design philosophy of Zebra allows the addition of other tasks and functionality. However, the prices and timescales for such other tasks and functionality have not been included in this OFFER.

NR	REQUIREMENTS	REPLY
	Other tasks and functionality's, which are not listed below, shall be integrated in the future:	
	Intercept, process and digitally record ALL telecommunication traffic specified in the systems connectivity paragraph.	Complies, as stated above in this column.
	Through Administrative Terminal; the Administrator shall be able to perform all administrative functions to the whole System.	Complies.
	System Data Server shall employ RAID or Mirrored Hard Disk technology. The Supplier shall explain benefits of one type over the other, and indicate price implications that will govern selection of either one.	Complies. The Zebra system uses the RAID 1/0 redundancy configuration for the storage of all IRI and call content. RAID 1/0 provides both striping and mirroring functionality. RAID 1/0 is used to ensure high data access speeds through the striping functionality, while also ensuring high availability of data through the mirroring functionality.
	The System shall be able to interconnect to *remote* workstations via *Agency-provided* secure telephone connectivity.	Complies. The total number of concurrent workstations connected to the system is limited by the number of licences procured.
	The System shall be designed to assure capability of continuous 24-hours operation at 100% duty cycle.	Zebra uses RAID 1/0 redundancy to improve the availability of captured data. IRI data (completed and uncompleted calls) is stored at the respective Zebra Capture Units, and in the case of IRI of completed calls, this IRI is also stored at the Central site. The system has been proven operationally, at a number of sites at different clients, to be highly reliable and has been designed to work at 100% duty cycle. However, to ensure 100% availability, it will be required to duplicate significant parts of the system, as will be required by any vendor. This duplication has not been included in the OFFER. Further features of Zebra include the fact that the MTTR of VASTech supplied equipment is typically less than 2 hours, provided the availability of manpower and spares, and the fact that services can be re-allocated to run on other blade servers.
	Any workstation shall be assignable to one or more operators simultaneously.	Complies as follows: the workstation can be used by any operator, provided that the operator uses his own log-on data. The typical work method will be

NR	REQUIREMENTS	REPLY
		where one operator works on the workstation, then logs off, to allow another operator to log-on to the workstation.
	Any workstation shall operate under *multi-target per assigned operator* working status.	Complies as follows: Each operator can be assigned different targets by the Administrator. This will be done by setting target filters for the specific operator groups. Each operator can be allocated more than one target filter.
	The System shall not permit *multiple log-ins* by the same operator at different workstations. Once an operator logs-in at a workstation, he should not be able to login at other workstation before he *logs-out* at the first workstation.	Complies.
	The System shall *store a copy of each interception in its compressed format, in an Archive (storage) unit, which can employ either Magnetic Optical Disk or Magnetic Tape technology.* The Supplier shall calculate the capacity of this unit based on the information available in this document. Bidder may ask the Agency about any more information that may be needed to properly size it.	VASTech stores the intercepted information in compressed form online, as discussed in OFFER. The Zebra system provides the capability that specific calls can be moved to the Archiving Server, from where it can be archived. The information provided, both in the original document as well as in "Appendix B: Clarification of user requirements", par 4.4 on page 25, is unfortunately insufficient to finally scope the archiving system. VASTech wishes to have a system engineering workgroup with the CUSTOMER to ensure that the requirements are sufficiently detailed, for instance: it is not known by either party what percentage of overall intercepted traffic will be due to targets. This will strongly impact the required archiving system. VASTech emphasises its willingness and capability to provide a solution based on detailed requirements.
	The System shall provide the current *date and time* on the screen display and shall synchronize this information throughout all On –Line System's components and transactions.	Complies
	The System shall provide the ability for operators report printing.	Complies. Statistics reporting are included.
	The System shall provide necessary on-line System-diagnostics,	Complies.

NR	REQUIREMENTS	REPLY
	maintenance and alarm reporting facilities.	
	The System must be capable of running for 5 days in its full capacity in unattended operation mode, i.e. without any user intervention. *Intermediate Buffering Hardware capacity shall be calculated to meet this requirement.*	Complies
	SYSTEM RELATED TECHNICAL INFORMATION	
	Fax Decoding Captured fax messages shall be processed by suitable decoding software capable to decode all ITU standard coding schemes. However, for *sister-machines'* non-standard facilities (NSF's), relevant to most, if not all fax brands available in the market, proper decoding software shall be provided.	Complies as follows: The FAX demodulation software package processes facsimile files in accordance with the following ITU-T recommendations: • V.34 (2400…33600 bit/sec) • V.17 (7200, 9600, 12000, 14400 bit/sec) • V.29 (4800, 7200, 9600 bit/sec) • V.27ter (2400, 4800 bit/sec) • T.4, T.6 – black and white pages (MH, MR, MMR) • ECM – error correction mode • T.81, T.82, T.85 – color pages (JPEG, JBIG). (Optional). See also answer to next requirement, in this column.
	If a captured fax message could not be decoded due to unavailability of proper software in the System, the Supplier shall develop such software by analyzing a stored copy of the coded message *and provide it to the Agency free of charge*, during the life span of the System. He shall keep updating the System with all new software version(s) released by him, without any additional cost.	Complies as follows: • All call files that have been classified as fax (or data) will be stored in uncompressed format, allowing later demodulation attempts by the CUSTOMER. • In addition to the normal Fax software decoding capabilities stated above, one Fax and Data Expert Station has also been offered. This Fax Expert Station can be used attempt to decode faxes that could not be decoded using the integrated fax decoding software. It is aimed at post processing in cases where the coupling parameters

NR	REQUIREMENTS	REPLY
		are unknown; session fragments are lost; link protocols are unknown; or the transmission has been impaired by the effects of communication countermeasures. It restores information content for modem sessions and images for facsimile sessions. It also allows determining the characteristics of the modem and fax equipment and parameters of the communications channels that were established during intercepted sessions. Note: Certain fax and data sessions may be encrypted, based on user keys. Accordingly, VASTech cannot generally undertake to develop or provide software to decode specific fax or data files at no charge to the CUSTOMER. However, VASTech confirms that it is in its general interest to integrate additional fax and data decoding software and shall endeavour to integrate such software.
	6.2Data Demodulation For Data Communications, the System shall first *define* the necessary modem, *before directing the signal to a bank of different ITU standard modems for successful demodulation.* If a target is using a non-standard modem where his signal cannot be demodulated, the System shall *revert captured CC to a special folder called "Non Standard Modems" for future analysis*. Each non-standard modem cc shall be stored in a separate file along with all relevant CRI. The Supplier shall develop *suitable tool(s)* to enable the Agency to overcome this difficulty whenever it may occur.	Complies as follows: • VASTech uses integrated software based data demodulation software (as required in the next requirement) to demodulate signals related to different standard ITU modems and thus do not have the need to direct the signal to specific modems. • Failed fax or data (i.e. that could not be demodulated), will be exported for additional demodulation attempts, using the Fax and Data Expert System, or other systems the CUSTOMER may have. Note: Certain fax and data sessions may be encrypted, based on user keys. Accordingly, VASTech cannot generally undertake to develop or provide software to decode specific fax or data files at no charge to the CUSTOMER. However, VASTech confirms that it is in its general interest to integrate additional fax and data decoding software and shall endeavour to integrate such software.
	The Demodulation capabilities shall be fully software based, any future modulation type shall be dealt with by software updates of the existing	Complies

NR	REQUIREMENTS	REPLY
	modems without any hardware change.	
	6.3 Digital Filter/Equalizer software *The System shall include a Digital Filter/Equalizer Software package, available for all workstations to clean any intercepted voice material from possible hum of any other king of annoying Noise*. The final goal of this application is to improve voice intelligibility for those recordings that are not easily intelligible.	Complies
	Uninterruptible Power System (UPS) The System shall work through on-line UPS, with autonomy *to supply the central hardware for 2 hours during mains power interruptions*. The capacity of UPS and the associated batteries shall be calculated based on the maximum hardware capacity expectations, so that no need shall arise in the future to change or upgrade the UPS to cope for future expansions.	Complies as discussed at meeting 16 January 2008 with customer: 1 hour.
	System Security Access to the System shall be through two security levels:	Complies
	Administrator level, and	Complies
	User level.	Complies
	User name, and password for every user, shall authorize system access.	Complies
	Any unauthorized access trail(s) shall initiate an "Illegal Access" alarm on the Administrator's screen, where date/time and workstation ID shall be displayed. The Alarm after being acknowledged shall be stored in a special *"Denied Access History"* file.	Complies as follows: • The specific account is locked after a configurable number of failed log-on attempts and can only be reset by the Administrator. • The required functionality will be provided, at not additional charge, during a software upgrade.

NR	REQUIREMENTS	REPLY
	User' Ids and Access Passwords shall remain active during the Systems shutdown (if happened). They shall be *active* once the System is re-started.	Complies as follows: User IDs and access passwords are stored in the system and do not have to be re-entered after the system is restarted. However, any user will have to log-on again after the system has been restarted.
	The System shall support at the Administrator's screen, a permanent *"Access History Table"* for each user. Each table shall show time & date of each log-in & log-out activity, along with a sub-list of all target files he opened during each session.	Complies as follows: • This functionality will be provided, as configurable item, at no additional charge during a software upgrade. (This functionality has not been included in the current version of Zebra, since it was specifically excluded by other customers).
	On each target file, the System shall also *edit* information about *when* and *who* has accessed that file.	Complies as follows: • The Administrator can allocate specific permissions to limit the access to specific recording filters to specific user groups. • The ability to provide an audit trail for any events that changes the IRI (e.g. tagging, importing, etc) will be included free of charge during a software upgrade.
	Anti-Virus Software An anti-virus software package shall be consulted automatically before opening any captured Data file. The operator shall not be able to open any attached file before he receives a confirmation message that the attachment is virus free.	Complies as follows: Trend anti virus software is provided per operator workstation. Exact operation of anti virus software is as per Trend application and the appropriate software configuration.
	Software Source Code Supplier shall provide the agency with the source code for all operating system, application and customized software. The source code for customized software shall be provided to the agency with out any pre-condition. Agency considers the provision of source code extremely important and therefore non-adherence to this requirement may lead to non-	Due to the fact that the VASTech Zebra system is software centric, with the majority of the Intellectual Property Value in the software, it is the standard policy of VASTech not to provide source code. However, it is recognized that the CUSTOMER may wish to inspect the software to ensure that it is free of back-doors or other means through which confidential CUSTOMER data can be made accessible to others. Please see COMMERCIAL OFFER

NR	REQUIREMENTS	REPLY
	selection/disqualification of the suppliers bid.	
	Mean Time between Failures (MTBF) The Supplier shall state clearly the MTBF figure of each quoted piece of equipment. This figure shall be true and based on real laboratory research and/or actual field feedback.	Field feedback is in progress. VASTech undertakes MTBF figures of 25000 hours for VASTech produced hardware, subject to compliance with specified usage and environmental specifications.
	GENERAL INFORMATION *Live Trail System* The Bidder shall provide a sample trail system to be installed at Agency's premises for real testing with SP environment to verify proper system operation. The trail system shall keep running for *two consecutive weeks, and no contract will be signed before acceptable results are obtained.*	Complies as follows: the trial system shall be specifically tailored for SS7 interception.
	Confidentiality All information included in this document, information about Bid documents or any information related to this Project, including name of our Country, the Agency or any individual who have met with the staff of any Bidder during preliminary meetings phase, after selecting the Supplier or any phase later on, shall be treated on *Top Confidential basis* and shall never be released to a third party without *prior* written consent from the Agency.	Complies.
	The Bidder, his business partners or third parties associated with him in respect of this document must exercise all due care in safeguarding of any information they may acquire in the performance of any work related to this Project. They must use the same level of care in handling this information as they would do to their own confidential data.	Complies.
	System Life Span and Supplier's Supportability The System *life span expectancy shall not be less than 10 years*, during	Generally complies. The cost rates must be negotiated in advance between VASTech and the CUSTOMER.

NR	REQUIREMENTS	REPLY
	which the Supplier shall undertake to supply any expansion/modification hardware/software, against mutually agreed cost. The Supplier shall support the System during its lifetime by providing any relevant hardware/software package they may deem necessary to maintain Systems perfect operating conditions.	
	System Warranty The Supplier shall warrant the System for *three years from the date of Provisional Acceptance*, during which he shall replace, free of charge, any faulty module and do any necessary repair work. Also the supplier shall provide the agency with any relevant upgrade software released during this period free of charge. In case of hard disk failure, the supplier should replace it without asking agency to return the faulty HDD.	Generally complies, see OFFER for exact definition, including policy on return of hard disks. Software related to defects shall be provided free of charge.
	Bid Language All Bidding information including technical literature, price list, correspondences etc, shall be in English language only.	Complies
	Bidding Currency *All prices shall be in UAE Dirhams*. The Bidder shall consider all financial factors currently in effect in the International currency markets, and convert his price to UAE Dirhams (AED), which shall be *valid for three months* from last date of Bidding, as stated in point 7.7 below.	Complies
	Last Day for Biddin *g*Bidders shall submit their bids to the Agency not later than 12:00 hours on 31/12/2007. Any bid received after this date will be disregarded.	Extension granted until 7 February 2008.

Appendix B: Clarification of user requirements

This appendix contains clarifying answers to user requirements, received 12 December 2007.

1 TIMESCALES

The tender closes on 31 Dec 2007, 12:00. What is the planned further schedule:

- Start of trial system [par 7.1, line 481, page 15]?
- Order placement?
- Required hand-over?
- Will a phased handover be considered, and under what conditions, e.g. Phase 1: Site 1 and Central Site, with satellite interception, etc.?

  Answer:

  The detailed scheduling has not been planned yet by the CUSTOMER. It is planned that a single order is placed on the successful vendor, and that the project may be implemented in phases. VASTech to suggest phases.

2 SCOPE OF SUPPLY (INTERFACES)

To clarify the scope of supply and related interfaces, kindly provide the information requested in this section. See the high level block diagram of a conceptual solution in Figure 1.

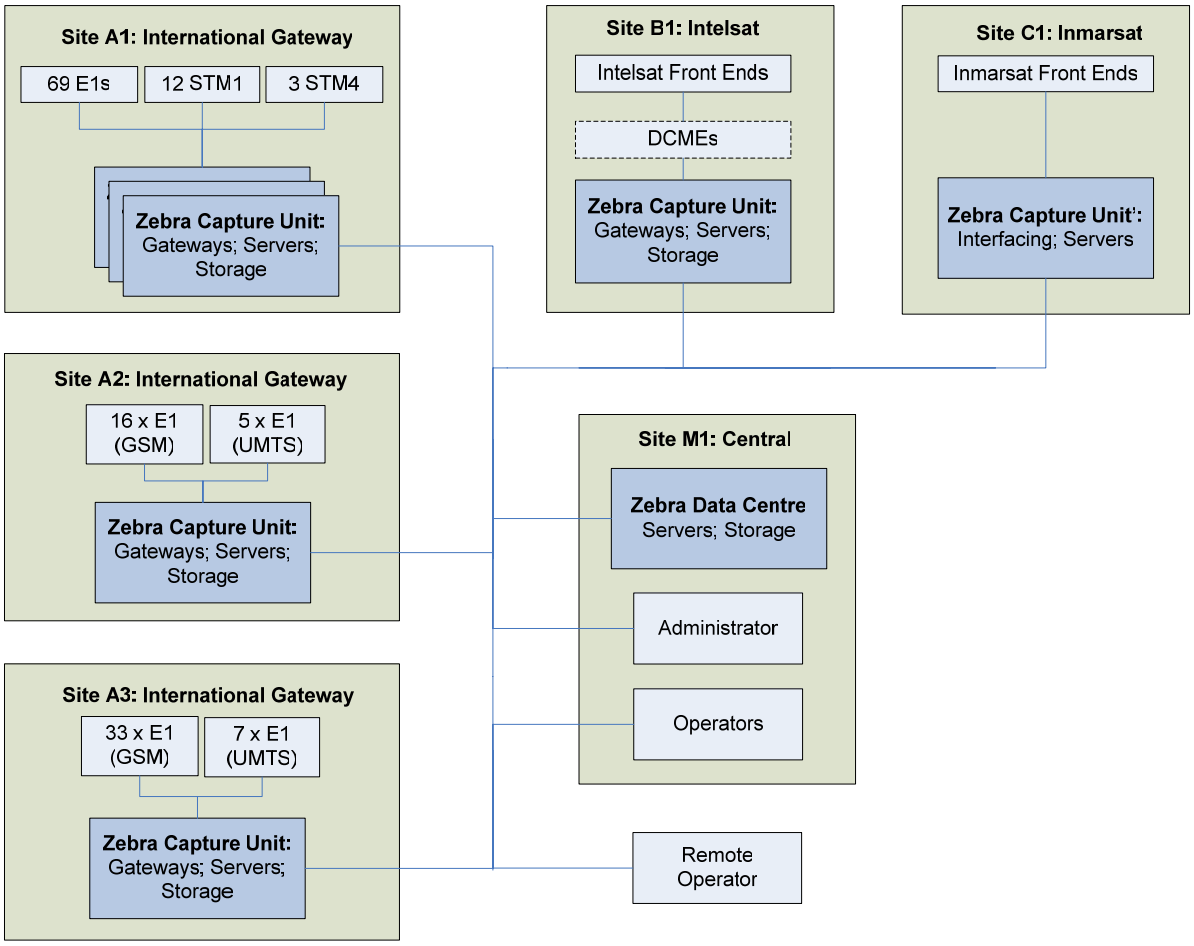

Figure 1: High level block diagram

It is stated that the acquisition units will be installed by the agency [par 3.1.2 (line 140)].

- Kindly provide the types of interfaces required at the different locations (e.g. 75/120 ohm, fibre, etc). Answer: Fibre

Please confirm if the following interpretations are correct:

2.1 For Sites A1, A2, A3:

The E1s will be brought by the agency to a distribution frame in the room where the Zebra gateways are installed. Interface is at the distribution frame. VASTech to connect from distribution frame to gateways, and provide buffer modules.

- Is the interface location correct?

Answer: During the meeting of 16 January 2008, it was stated that VASTech must provide buffers, and that the actual installation of these buffers would be done by the CUSTOMER. VASTech must provide the necessary training. Please see System Specification for proposed solution by VASTech.

The understanding from the drawing in the specification is that Sites A1 to A3 are for "international gateways" (see all being under the heading "A-International gateway from SP..." on page 7, line 172.). This raises the question of what is meant with ""all communication activities running on specific links from number of BTS (GSM Cell)... (page 3, line 99). The one requirement implies that interception will be done on the gateways where the GSM networks and UMTS networks interface to the external world (e.g. to other 3G, GSM or PSTN networks, while the other requirement implies that the interception must be done within the GSM networks.

Answer: During the meeting of 16 January it was stated that the interception must take place on the interfaces to the external communications world, and not within the mobile networks themselves.

- Please clarify. It is suggested that the first phase should be to capture all intercepts on the level where the network gateways connect to the other external networks

  Answer: See above.

- Kindly provide more detail on the protocol support required: SS7, SS5, SS7-MAP; UMTS over SS7? Note that UMTS between 3G networks may be encrypted.

  Answer: It was stated, during the meeting, that it is not necessary to decrypt intercepts. VASTech proposes that interception be done on SS7, SS5 protocols, please see System Specification.

2.2 For Site B1 (Intelsat):

The understanding from the specification is that the Agency will provide Intelsat Front Ends, including the civil works, antennas, signal analysis and processing and control modules. Agency will provide E1s to a distribution frame, from where VASTech must connect to its gateways. VASTech can provide soft DCME capabilities, integrated in its system.

Answer: During the meeting it became apparent that the understanding was wrong: VASTech to provide the satellite front-ends, including antennas.

It was stated that the Intelsat system must be provided as a minimal system that can be expanded in later phases. During the initial phase the main function of the system will be to investigate what intelligence value can be gathered from Intelsat interception. Special focus on training should be included. The outcome of this initial phase will determine the exact scope of further expansion.

Given the fact that VASTech must provide such a solution as turnkey, the remaining questions in this paragraph become irrelevant.

- Is it the intention of the customer to provide uncompressed E1s, or compressed E1s?
- How many E1s (compressed or uncompressed) must be provided (it is not clear from the specification).
- For VASTech to offer its soft DCME capabilities, what DCME units does the agency require to be supported?

2.3 For Site C1 (Inmarsat):

The understanding, from the specification, is that the Agency will provide Inmarsat Front Ends, including the civil works, antennas, signal processing and control modules. Agency will provide L-band RF signals to VASTech Inmarsat Processing System (IPS). (Note that this includes the converting of the C-band RF signals to L-band.) Two L-band signals will be provide per satellite. Two satellite front-ends will be used. (Note that "F" [page 4, line 105, par. 2.4d] is actually a type of satellite and not a transmission/terminal such as B, C, F, M, mini-M and M4).

The VASTech IPS is priced in terms of number of concurrent channels to be processed. Note that Inmarsat C (predominantly used for ship traffic) requires dedicated channels, while the others are allocated dynamically. To enable scoping of the solution, please provide the required information in the following table.

Answer: During the meeting it was stated that the Inmarsat system must also be provided as a turnkey solution, as in the case of the Intelsat, above. The Inmarsat system must also a minimal system, allowing for further expansion.

Line	Satellite	Number of dedicated Inmarsat C channels required	Number of concurrent channels to be captured from B, M, mini-M and M4 terminals)
1	Atlantic Ocean-East	?	?
2	Indian	?	?

2.4 Distances and location:

Figure 1 conceptually shows 6 different sites. However, some of these sites could be on one location. It is understood from p6, par. 3.1.3, line 143, that the agency will provide and install the secure links between the various sites and the Central site (M1).

Answer: yes

3 DIMENSIONING

Par 2.2, line 86, page 3:

- Is it a requirement to also record “uncompleted call attempts”? For what ratio should provision be made for, in this specific case?

  Answer: VASTech to advise.

- What is the average call duration, fax duration and modem session duration?

  Answer : Standard calls duration – VASTech will advise.

Par. 4.2.1, line 293, page 10:

- According to the specification, the international links (International gateway, GSM cells) will constantly be 90% fully utilized (75% voice, 10% fax; 5 % data). Is there no “busy time” and “non-busy time”, and if so, what are the channel utilization and duration of such periods?

  Answer: The information provided was as received from the service provider. No better information available. VASTech may adjust the fax and data percentages based on their experience.

“Intercepted traffic”

- Par 4.2.1, line 295, page 11:
  - Different interpretations may exist regarding the concept “intercepted traffic”. Is it meant “all traffic that is intercepted”, or only the traffic that has been marked by the agents (see Par 4.2, C, line 275 to 284, page 10), or only the traffic of known targets? In each case, what percentage of total traffic is expected? See also proposed storage concept in par. 4.4.

- Par 5 (9) line 356, page 12:
  - Is it meant “all traffic that is intercepted”, or only the traffic that has been marked by the agents (see Par 4.2, C, line 275 to 284, page 10), or only the traffic of known targets? In each case, what percentage of total traffic is expected? See proposed system concept XXXXX

4 FUNCTIONALITY

4.1 Real time tracking

Page 3, line 89, par 2.2 “real time tracking capability”: Please elaborate on this requirement. For instance, this requirement may be for the system to show on a chart/map where the last conversation of the target took place. This might not be practical in the case of intercepting on

the level of the international gateways. We suggest as first phase to start with the current system implementation which includes the ability to filter for e.g. area or country codes.

4.2 "Any facility"

Page 4, line 115: Please clarify what is meant with "when any facility is released".

Answer: Any update.

4.3 UMTS and GSM

The understanding is that this requirement (page 7, line 180-189, par 4.1) is for interception on the external gateway (see the heading line 172, page 7). Is this correct?

Answer: correct.

4.4 Storage and archiving

4.4.1 Concept

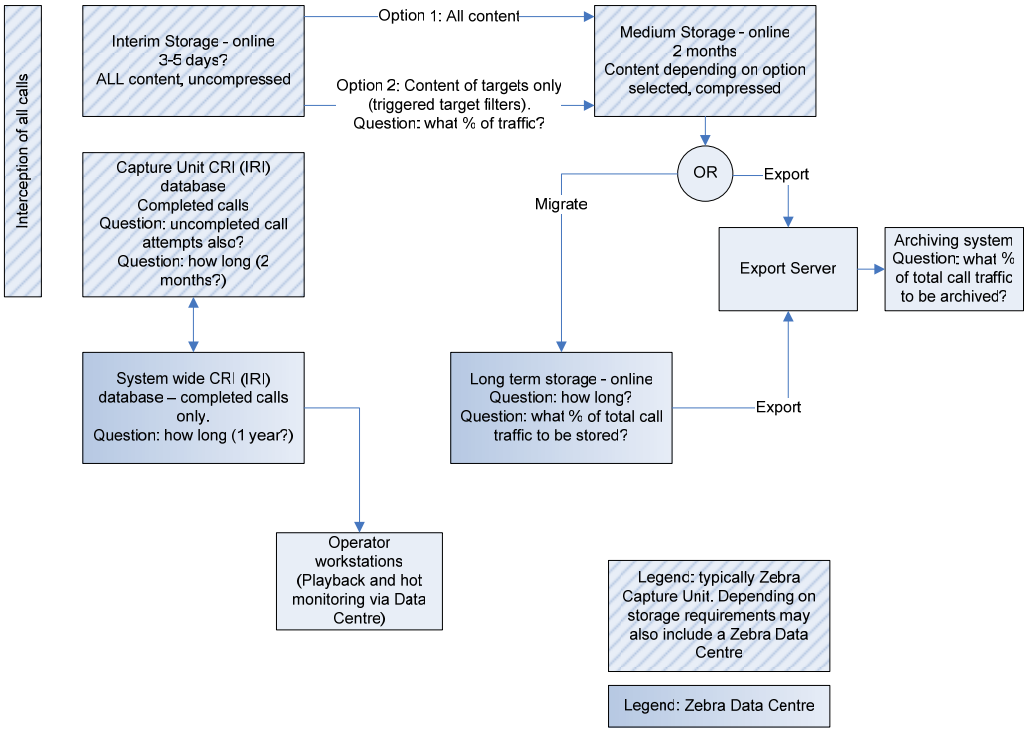

Figure 2: Storage concept

4.4.1.1 Zebra Capture Unit

The following will typically take place in a Zebra Capture Unit.

- Interim storage: The content of all intercepts are stored for an interim period of <days> in uncompressed format. During this time demodulation and speech processing tools can be applied.

    - For how long must it be stored uncompressed (it is suggested 3-5 days)?

    Answer: Good

- Medium storage: Depending on the user requirement, either (a) all the content in the Interim Storage, or (b) only the content of targets, as triggered by filters, are "moved" to the Medium Storage, where it is stored for the remainder of the 2 months required. Depending on the option selected and the volumes of traffic, a Data Centre may be provided for the Medium Storage. Questions:

    - Must all content be stored for two months, or only the content related to targets?

    Answer: During the meeting it was discussed that all content must be stored for 2 months. Subsequently, it was also asked that the content must optionally be stored for a period of 1 year.

    - If only the content related to targets, what percentage of overall traffic is expected to be targets? Answer: all content to be stored

- The CRI (IRI) of all intercepts are stored for a period of two months. Note that the CRI of completed calls is also pushed to the Zebra Data Centre, where it can be accessed by operators. Questions:

    - Is it a requirement to also store the CRI for uncompleted calls? Answer: yes.

    - What is the experience of the customer in this specific case – what is the ratio of uncompleted to completed calls? Answer: VASTech to advise

4.4.1.2 Exporting and archiving

Exporting and archiving can be done from the Zebra Capture Unit, or from the Zebra System Wide Data Centre. Questions:

- What percentage of overall call traffic will be exported and archived?

Answer: approximately 2%

- For how long should these archives be kept?

Answer: During the meeting it was stated to be one year, or optionally two years.

4.4.1.3 Zebra System Wide Data Centre (ZSWDC)

The ZSWDC may be offered to provide on-line storage of selected information for a longer period, such as 9 months to a year. The ZSWDC will contain the following:

- The CRI (IRI) of all completed calls in the overall system. Question:
    - For how long should these be kept? Answer: Two months, or for as long as content is available
- Long term storage: Content of targets or other migrated calls:
    - What percentage of overall call traffic is required to be stored for this long term? Answer: 2%
    - For what period must this content be kept? Answer: one year, optionally 2 years

4.4.2 Server

Par 4.2, A, p8, line 200+: The Zebra Capture Unit and Data Centres are considered as black boxes, i.e. there is no single server which is using e.g. Windows 2003, sever.

4.4.3 Follow up targets in real-time

Par. 4.2 C line 250, page 9: Please confirm our understanding of “follow up targets in real-time monitoring mode”: VASTech provides hot monitoring capability – if a target filter has been triggered, the agent can be informed and can monitor the real time conversation from the recording, as it is being made.

Answer: Not that important in this stage

4.4.4 Full editing

Par 4.2, C, line 251, page 9: please elaborate on “full editing functionality”

Answer: To make it simple, to be reliable

4.4.5 On once screen

Par 4.2, C, line 256, page 9: It is understood that all the *metadata* must be available, correct (the concept “features” is a bit confusing)? Answer: correct

4.5 Workflow and operations

4.5.1 Number of agents

Par 4.2 C, Line 219: 40 concurrent licences. Please elaborate on the intended operation, to ensure we provide the optimal solution. Reason: the 40 concurrent licences imply 40

operators, which seemingly will be actively deciding on what to record and what not (see par 4.2, C, line 265, p10: “to manually pause”). Is this the intended operation, since it may need some reconsideration due to the vast information being captured: say the equivalent of 1650 E1 duplex, i.e. more than 51150 channels, at 90% utilization = 46035 channels. This implies that each operator has to monitor more than 1000 concurrent channels to be able to utilize e.g. the manual pause function.

Is the following not a feasible alternative arrangement: 40 concurrent operators; a number of target filters are used. All traffic is captured and stored for short period. All target filter hits will be moved to DC or longer storage.

- How many target filters are expected?
- What percentage of total traffic will be due to target traffic (estimated)? Answer: 2%

4.6 Analytical tools

Par 4.2, C, line 275 to 284, page 10: It is understood that each operators must have access to the stated high-level functionality. However, please elaborate on the requirements as below. The exact scope of supply and project costs will be strongly influenced by the detail, such as:

- Languages to be supported for free text search, language identification, word spotting; automatic translation, etc.
- Is it required that word spotting must be done on all calls, or only on calls intercepted from known targets?
- If only on calls intercepted from targets, then what percentage of traffic can be attributed to targets?
- Must speaker identification be done over the complete set of intercepted traffic, or within specific bounds, e.g. for a specific area code?
- If for a specific area code, what percentage of traffic will be allocated to traffic from the “design-to” area code.

It is suggested that the above items are quoted for as optional.

Answer: good suggestion

4.7 Remote workstations

- Par. 5, (4), line 339, page 11: what bandwidth will be provided (e.g. ADSL, or normal dial-up)? Answer: ADSL
- Are these remote workstations included in the number of concurrent operators (40), and if not, for how many licences should provision be made? Answer: 40

4.8 Workstation: one or more operators

Par. 5, (6), line 345, page 12: Please elaborate on what is required.

4.9 Reporting

Par. 5 (11) line 367, page 12: Please elaborate on types of reports required.

Answer: Statistics Reports

4.10 Demodulation and decoding

- Par 6.1, line 380-391, page 13: VASTech will capture all fax intercepts and export those that cannot be decoded to the agency in wav format. What is the exact intention with this requirement – it is possible to understand the Bidder must develop and provide demodulation/decoding software for encrypted faxes, for whatever encryption could possibly be used. Answer: it is not required to develop software for encrypted faxes.

- Par 6.2, line 395-408, page 13: as for par. 6.1 above.

4.11 Source code

Par 6.7, line 462-470, page 14-15: It is understood that this requirement is to ensure that no back-doors exist. It must be noted that certain third party software will be used. It is not possible to provide the source code for all software. It shall be possible to allow visitors to inspect the source code of any VASTech developed software at VASTech. Can the written specification be relaxed this requirement, or can alternative methods be offered to provide the required certainty?

Answer: The requirement to inspect the source code is of fundamental importance. Customer wants source code of VASTech's products only. VASTech may advise alternative methods.

--end of questions 1—