# *Phase Four*

# *Trade Efficiency System: Functional Specification Report*

# THE REPUBLIC OF LEBANON

## TRADE EFFICIENCY PROJECT M71/WB

***Presented March 1999 By;***


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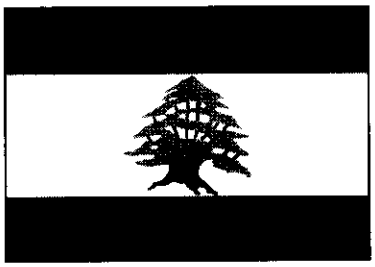

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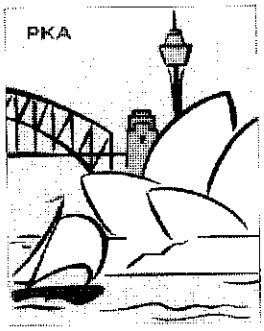


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# FOREWORD

This document refers to a specification for the Lebanese Trade Information Service. The concept has been developed from existing and planned technology implementations elsewhere, specific Lebanese requirements, and needs and emerging international trends in the trade process. This Foreword is intended to be a stand alone section of the TIS specification, introducing readers new to the concept of trade processes and trade information services, and to the factors that determine the future directions of the trade process. This section is written from a Customs-centric perspective since that is a logical starting point in any discussion of the trade process, although it must not be assumed that these systems will always remain Customs-centric. It is also written from a neutral perspective. Comments made apply to nearly all trading nations. Lebanon is not singled out for any special attention in this initial discussion.

## *The Purpose of Customs*

The historical role of Customs has been that of revenue collection, of ensuring compliance with both internal and external trade regulations and agreements, and the collection of accurate trade statistics. Many administrations also allocate immigration duties, passenger movement processing and some border control-type functions, depending on the relative status and suitability of the local military organisations.

This note concerns itself with the three principal, traditional Custom's tasks: tax collection, compliance and statistics.

## *Current Practises*

The current clearance systems in place in all Customs authorities are based on a trader's, or a trade professional's declaration of goods entering or leaving the country, no matter what the mode of transport. The Customs declaration needs to be supported by a range of business documents, such as the invoice, the packing list, the bill of lading, permits, licences and other such approvals for import and export. Other crucial documents include the shippers manifest, insurance documents, payment instructions (e.g. letter of credit). And possibly certificates of compliance from pre shipment inspection (PSI) companies, and certificates of origin. New documents such as Seaway Bills and Airway Bills, and consolidated manifests from courier and postal authorities must also be considered.

In the majority of countries these documents are processed manually by Customs authorities. They may use computers for statistics; many use one (of several) versions of an UNCTAD (United Nations Conference on Trade and Development) system called ASYCUDA (Automated SYstem for CUstoms DAta and Management), but the principle is the same.

Customs declarations are presented to an examining officer; declaration forms and accompanying documents are examined for accuracy and completeness. An evaluation is made for Customs duty or taxation purposes-which can be disputed by the trader, for later resolution, after physical examination and arbitration processes. Assuming no dispute, then decisions are made about whether to submit the goods to a physical

examination (increasingly known as the red channel/green channel). If no examination is required, taxes are paid-generally in cash or by banker's cheque, and the goods released to the port/shipper/container handler, transport company or a trader, who may be represented by a trade professional (e.g. Customs broker, a shipping agent, a freight forwarder-or increasingly, an integrated logistics operator). Post and express courier operations are often different, streamlined operations, sometimes operating on a sort of self-policing method.

The processes are much the same for both imports and exports. Transit, transshipments, duty free zones and export processing zones are generally offered simplified versions of the process. In the Less Developed Countries (LDCs) this process is almost entirely manual, paper intensive, expensive and slow. It is open to corruption at virtually each stage of the process. The consequent extra expense and delays cause significant additional, downstream costs to the consumer. The Governments in questions defend the process by the very fact that Customs duty or tax is often the principal revenue earner for the Government, followed closely by telecommunications, which, paradoxically, presents a costly challenge for future technology-based reengineering efforts.

***Part-Automated Processes***

In the emerging automated system, especially those with ASYCUDA or similar, competitive systems installed, the declaration and correction process is now computerised. Data entry is still generally performed by a Customs data entry bureau, with corrections done by the trader on hard copy for subsequent reentry by the Customs officer or data entry bureau. Some have a DTI (Direct Trader Input) facility. Some administrations can evaluate goods from the computer system; some accept a monthly account system for payments, from trusted trading partners. Statistics are accumulated automatically. Some selection of physical inspection or automated approvals are possible, but these are probably only operating in about 25-30 of the most advanced countries.

This stage of part-automation, adopted by perhaps 50 countries, offers some benefits to the trader. The systems are more predictable, they are faster, clearances take place in days rather than weeks or months. Overall costs are reduced for both traders and Customs. But Customs processing fees tend to increase with increased technological sophistication, and only very rarely is corruption totally eliminated. In fact, one ex-executive at of the world's most prestigious Customs organisation is said recently to have stated that only five Customs authorities could be said to be totally corruption free!

***Automated Systems***

A small number of the more advanced countries have a close-to totally automated system. Entries may be made by the Customs data entry bureau, by a direct trader entry system-essentially a forms-based, proprietary Customs system across a point to point network-or by EDI (Electronic Data Interchange). EDI is the exchange of standardised information between computers across private networks, open networks or value added networks. Variations of EDI now enable transactions to be sent over the Internet, or by a variety of Web forms based systems. The communication costs are lower but the total IT

and labour costs are much the same for each of the EDI flavours, although this statement is open, at times, to (sometimes very heated) debate.

These advanced countries are now able to pre clear goods so that they are available, virtually on arrival at the port, to the trader. This is true for both imports and exports.

The world leaders in Customs best practise include the UK, some Scandinavian countries, some Dutch, French and German ports, Singapore, Australia and New Zealand. They cannot yet be said to include the USA, although there are many islands of US Customs clearance efficiency. The problem in the USA is that of Government regulations and technical controls. There are over 40 agencies in the US who exercise some form of control over imports and exports. Their systems are largely not integrated with ACS (American Customs Service), which is necessary for accelerated clearances.

The challenges facing these advanced countries, and ultimately all Customs authorities, include:

1. **Volume**: Global trading and multinational's JIT, QR and ECR programs have already tripled the number of transactions per unit of trade volume in less than 10 years.

2. **Costs**: traders are expecting reduced Customs costs yet, in order for Treasury agencies to approve technology expenditure, it is often at the expense of the user. Even outsourcing, which is an accelerating trend among mature economies (the UK, Australia and New Zealand have already outsourced some or all of their Customs IT operations), presents no economies to the users. Customs must find a way to reduce costs in order to avoid penalising their own home industries.

3. **Compliance**: increasingly sophisticated regulations and controls, WTO and trading bloc agreements, standardising of evaluation and harmonising of tariffs and HS codes all pose extra demands on Customs systems.

4. **Extra Vigilance**: the drugs trade, increases in hardly detectable counterfeit goods and armaments controls all require extra vigilance from reducing staffing levels and more sophistication from IT systems.

5. **Standards and Attitudes**: the need for open and compatible international standards in Customs, transparency, accountability and attitudinal change. Traders must become Customs' business and trading partners, even clients. The traditional attitude is mutual hostility; the traditional feeling among traders is that Customs do not offer a service, they only make demands. They are seen by many to be a hindrance to trade, not a facilitator.

6. **Emerging Trends and Needs**: many analysts see the future between Customs authorities along the lines "my export is your import". This means that an exporting country can provide all of the clearance necessary for an importing country in the future. Add to this the needs of reengineering; many of the more advanced countries' computer systems are 30 years old; they are on proprietary platforms, using private, expensive networks and are probably only dubiously Y2K compliant.

***The Future of Customs Clearance Systems***

Ultimately this topic cannot be adequately treated without a full end-to-end appreciation of the complete trading cycle, and all of the players-and their own systems. This includes the importer, the exporter, the shipping, transportation and warehousing/distribution companies, ports, harbours, container handlers, all permit issuing authorities and technical control agencies, Customs, banking and insurance companies.

But Customs is the hub; it is the starting point; it is a national choke point for goods and information. The future of Customs clearance systems lies in its abilities to handle information in vast and increasing amounts, more efficiently, with a shrinking labour force. That means considerable reengineering of IT and procedural systems, and quickly.

Some of the factors to be considered in Customs systems reengineering include:

1. **Pre and Post Event Auditing**: the processes by which physical inspections are removed from the critical path of Customs clearance processes.

2. **Pre Clearance**: the process of clearing goods through the Customs approval process before they actually arrive at the port, so that they may be collected immediately upon arrival.

3. **Container Scanning**: the automation of first phase physical inspections, carried out on sealed containers.

4. **Risk Management**: the automatic evaluation of risks posed by individual consignments. This emerging process involves setting up computer profiles and history files of all importers, exporters, trade professionals, trading partners, countries of origin, of destination and source of export, product types and specific risk profiles. By developing a history of the combinations of risks against actual experiences it will be possible to concentrate on real threats rather than perceived threats-or on all consignments. Individual Customs authorities like the UK, Japan, Australia and New Zealand among others, are developing their own versions of risk management systems. There has to be a potential for a global system to which Customs authorities can subscribe. This will be cheaper, faster, and more reliable, especially for LDCs and part-automated systems.

   Risk management has the potential to eliminate the need for PSI.

5. **Facilities Management**: The capabilities and desire of some global traders to manage the end-to-end trade process for their clients, including the complete Customs process. This will also include couriers and postal authorities.

6. **New Technologies**: universal adoption of EDI and paperless trading, with Internet facilities for smaller traders and infrequent international traders.

7. **Standardisation**: UN/EDIFACT, open systems, open networks, security, digital signatures and certificates, electronic payments and the technical integration of Customs systems across international boundaries, "My export is your import".

8. **Technical Controls Automation and Risk Management**: The move to national Government trade gateways whereby controls are issued and approved electronically and are subject to the same elements of risk management as Customs declarations.

9. **Community Systems and Data Pooling**: the use of data bases to integrate trading communities' systems with Customs' systems to track the progress of consignments through the clearance system, to offer traders a wider choice of trade professionals' and logistic's services. and to harmonise processes where possible.

10. **Decoupling Customs from Non Core Duties**: the administration of statistics gathering, oversight of technical controls and even revenue collection can be decoupled from Customs systems by new technologies. That is not to say that it will be politically possible or even desirable, but it makes technical sense and is eminently possible.

11. **Digital Trade:** although Internet trade is not yet significant on an international basis there are now about 140 million users of the Internet, of which 20% have so far made purchases. Clearly this trend is growing. Nevertheless, according to IDC, by 2002 the total business-to-consumer trade will be worth less than Wal Mart's turnover today (1Q 99). Significant perhaps, but since probably less than 20% is cross border, it is not yet a truly pressing problem for Customs, but it cannot be ignored. More interestingly, the reengineering of international trade, using VANS and the Internet is increasing at a steady 20% each year, according to the VANS and various Internet research authorities. However, we can reasonably expect tax paying corporations to be good corporate citizens.

12. **Tax Collection:** Express courier companies may bear the brunt of tax collection from the increase in digital trade (for hard goods). The problems of tax collection for soft, or digital goods, is probably outside the remit of Customs, but that may be arguable. Nevertheless, this is an increasing problem, a problem that is exacerbated by the adoption of VAT systems and international harmonisation of the VAT taxation refund systems.

**Summary**

Customs systems and trade processes are now subject to the need for fundamental change because of international trade and WTO agreements, WCO pressure on standards of performance, globalisation, technology and technical standards. Technical controls in particular need to be reviewed. The volume and variety of technical controls, their purpose and their consequences are coming under increasing global scrutiny. Hence the importance of this trade process reform project to Lebanon, and in particular, initially, the implementation of the Trade Information Service (TIS).

## ***Executive Summary***

A Lebanese Trade Efficiency project, funded by the World Bank, sponsored by MOET and under contract supervision by OMSAR was initiated in July 1998. The main recommendations (Phase Three) were contained in a report comprising over 140 pages. Its recommendations are extremely broad in their implications; they cover several Ministry's sphere of operations and mandates, in addition to impacting virtually the whole of the Lebanese trading community, the port, Customs, harbour operations, trade professionals and Chambers of Commerce and other peak industry bodies. It also indirectly impacts upon the trade finance sector, insurance, transport and logistics operations.

This trade efficiency project has taken a very detailed and wide ranging look at the Lebanese trade process; it concludes that the only viable method of improving matters to the extent that it will have a significant impact upon the Lebanese economy, and its future as a trading nation, is to propose a wide ranging trade process reform programme. This programme will utilise current and new technologies and re-engineered processes based upon world best practises.

This report, Phase Four, TIS Specifications, is dedicated to one component of those recommendations. It covers technical controls, trade information and SME trade process services.

### Introduction

It is not possible to upgrade or to reengineer any national trade system by tackling the problems in a piecemeal fashion. The solution demands an holistic, door-to-door, or end-to-end approach. Therefore each of the participants in the process have been taken into consideration. These include:

- The importer/exporter, i.e. the trader or the merchant;
- The trade professionals, or trade process intermediaries (Customs brokers, freight forwarders and shipping agents);
- Ministries and agencies, from the public and the private sector, who manage the prohibition and restrictions regime (generically known as technical controls);
- Customs;
- Container handling and cargo handling authorities, and;
- The ports.

### How to Change the System: Principles of Redesign

As articulated in the Foreword to this report, there are some well accepted principles for the reengineering of national trade systems. Following a meticulously planned and executed migration from existing methods to best practise, over a period of years, the basic systems redesign principles include:

- Transparency;

- Process simplification, including the elimination of all but essential Government technical controls;
- Speed of transaction processing;
- Pre-clearance and pre-approvals of declarations and technical controls;
- Post event auditing, for physical inspections, where deemed to be absolutely necessary;
- A strict evaluation of the function of Customs clearance processes, followed by a re-engineering of Customs processes based on technology;
- Risk management by both Customs and technical control agencies, resulting in the absolute minimum of physical inspections;
- The adoption of information technology, and particularly electronic commerce techniques, to facilitate these re-engineered processes;
- The development of an appropriate legal and implementation infrastructure.

To add a little more detail to these, apparently, academic principles:

Systems design must bear in mind the paramount importance of removing all activities, except the physical operations of transport and logistics, from the critical path of trade flows. Everything else can be done before the event by pre-clearances or pre-approvals, or after the event, on a client's (not adversary's) premises, or through the adoption of contemporary risk management techniques.

Contact between traders, government officials, Customs and the port must be replaced with "electronic contacts". This includes replacing paper Customs declarations and other formalities with electronic (EDI, or Electronic Data Interchange) declarations. Ultimately this will eliminate the need for any face to face transactions.

Another pre-requisite for transparency is to ultimately replace all paper forms used in (remaining) technical controls, all signatures, all stamps and cash payments with electronic lodgment and electronic payment methods.

Green channel approvals should have a design level of 95%, increasing to 99% over time. Physical inspections should utilise new technologies, automated inspection methods and post event auditing (pre-event, if necessary, for exports). This will result in a significant reduction of Custom's workload, in re-engineering Customs work flow, and ultimately in labour force down sizing. It will, necessarily, involve Customs in retraining and re-education in order to change prevalent attitudes from that of adversarial relations and mistrust to those of trusted trading partners, or client relationships. Customs will become a "traffic cop, risk management" agency, as opposed to a "gatekeeper, policeman". Note: This re-education task will need to be extended to all players in the trade process. Attitudes evolve; they cannot be imposed.

Government controls, where they have been proven-and accepted by Customs and others-to be necessary, and to be compliant with emerging and accepted international trade treaties and the laws of international trade, will similarly need to be simplified and offered electronically. As these systems evolve in Lebanon, they will use Electronic Data Interchange (EDI), Electronic Commerce (EC) and electronic payment methods. In time, they will also use electronic (digital) signatures. In the meantime, appropriate legal agreements (trading partner agreements, or TPA) will compensate for the absence of a

written signature. All remaining technical controls will be issued from a multi-agency, single location bureau (TIS). TIS will also be the base for a commercially operated trade information service offering pre-competitive trade information, trade clearance services for SMEs, trade development and trade promotion services. It might also become the basis for an export development/promotion service.

Collection and delivery of goods will have a design level of 48 hours for imports and 36 hours for exports.

Customs will operate outside the physical boundaries of the port. The Freeports (Free Zone) will operate as was intended, outside the Customs regime and influence.

The port and container handling operation will need to make goods available for inspection and clearance within 24 hours of arrival at the port (and airport) facilities. It will be necessary to introduce an Electronic Cargo Manifest, Electronic Bay Planning/Location and harmonised exchange of electronic information between traders, trade professionals, the shippers, the port, the container handlers and Customs. These will be based on the UN approved electronic messages contained in the UN/EDIFACT (EDI for Administration, Commerce and Transportation) standards, already used by the developed countries, and many developing countries. They currently account for well over 75% of total global trade. All cargo information and all Customs clearances will involve pre-arrival (and pre-departure) processing of trade control information. Note: The Port of Dubai, the contractor for the Port of Beirut, is already compliant with the majority of these practises.

**Main Recommendations**

For the purposes of new participants in this project, and for potential vendors for the TIS component, the main recommendations contained in the Phase Three report are listed here. The key recommendations for the complete trade process included:

- To re-engineer existing trade processes based on the electronic exchange of information between all players in the trade process.

- To convert Customs from a "policing" organisation to a "risk management, trade facilitation" organisation.

- To introduce electronic container scanners to a Customs inspection regime that is located, exclusively, outside all port's operations.

- To introduce, and to enforce, transparency and the shortest critical path of trade flows between transport and logistics, traders and their clients.

- To set operational standards for the port, Customs, the container handling operation and logistics operators, which will ensure 48 hour collections for imports and 36 hour deliveries for exports. This performance standard will stipulate the standards, the methods and the frequency/timeliness of electronic information exchanges.

- To replace all existing technical control processes with a single, centralised, multi agency bureau, including Ministry of Finance payment operations. This bureau may also involve the Chamber of Commerce. It will operate to commercial hours and to competitive, private sector standards. This bureau will also ideally merge MIOET and Chamber of Commerce information services to provide a wider range of value added services, for which traders will pay fees. This bureau will become the one-stop shop for all technical controls. In the longer term there will be no necessity to visit the bureau; all technical controls will be issued electronically.The bureau is known as the Trade Information Service (TIS) throughout the remainder of this report.

- To introduce, and to enforce, a regime of post event auditing for technical control agencies, together with a system self regulation for reliable trading partners and of risk management for others. This recommendation is aimed at, together with Customs recommendations, removing the need for physical inspections (except in extreme circumstances) and reducing clearance times down ever further, to hours, even minutes, as the best world practise now dictates.

- To introduce a Customs training institute, for Customs personnel training and education, for retraining and for training and certification of trade professionals. After an initial period of grace, non-certified trade professionals will not be allowed to submit Customs declarations, nor to operate on behalf of traders, without Customs training institute certification.

- To establish an umbrella organisation for the implementation and management of this programme of recommendations. This vehicle for trade process reform, modelled on many similar organisations around the world, code named LibanFac (Liban Trade Facilitation), will, ultimately, be owned and operated by the private sector. But it will almost certainly require Government funding to begin with. Its revenues will come from the operation of the technology and services that make electronic exchange of trade information feasible and practical. Additionally, traders are already sympathetic with the idea that LibaFac may charge a trade facilitation fee of $100 for each trade declaration in order to pay for the technology and set up costs. Naturally, these fees will reduce with competition and volume growth. This facilitation fee is contingent upon clearance times being reduced to design levels and the elimination of "informal taxes". At 1998 volumes this represents a revenue stream of $40 million. It can be expected that declaration volumes will increase at a rate of 10%-20% each year, in line with global trends. Since total establishment costs and the costs of technology should be in the order of $10-$15 million, there appears to be a strong financial incentive to progress this project, not forgetting the national benefits which will also accrue from its success.

The TIS concept has now been approved through the Phase Three comment/review process. The remainder of this report concentrates entirely upon TIS.

## Acronyms Used During the Project

The following list of acronyms has been developed during this project. While not all of them are referred to during Phase Four, earlier phases of the project have discussed each of them at some stage or another. They are included as a service to new participants and potential vendors for TIS.

| | |
|---|---|
| ACS | American (or Australian) Customs Service |
| ASYCUDA | Automated System for CUstoms DAta and Management (NAJM) |
| ATM | Automatic Teller Machine |
| AWB | Air Way Bill |
| BCCI | Beirut Chamber of Commerce and Industry |
| BDL | Bank of Lebanon |
| BDV | Brussels Definition of (Customs) Value |
| BIS | Bank of International Settlements |
| BOL | Bill Of Lading |
| Bolero | Bill Of Lading Electronic Registry Organisation |
| BOT | Build, Operate, Transfer |
| CAP | Common Agricultural Policy |
| CDR | Council for Development and Reconstruction |
| CEO | Chief Executive Officer |
| CH | Container Handler |
| COC | Certificate Of Compliance |
| COO | Certificate Of Origin |
| CSC | Computer Sciences Corporation |
| DD | Direct Debit |
| DEC | Digital Equipment Corporation |
| DOS | Disk Operating System |
| DG | Director General |
| DTI | Direct Trader Input |
| EAN | European Article Numbering (Association) |
| EC | Electronic Commerce |
| ECR | Efficient Consumer Response |
| EDI | Electronic Data Interchange |
| EDS | Electronic Data Systems |
| EFT | Electronic Funds Transfer |
| EFTPOS | Electronic Funds Transfer at Point Of Sale |
| EIB | European Investment Bank |
| ELC | Electronic Letter of Credit |
| ESCWA | (UN) Economic and Social Commission for Western Asia |
| ETO | Electronic Trade Opportunity |
| EU | European Union |
| EUR.1 | European Union COO |
| FAS | Free Alongside Ship |
| FCL | Full Container Load |
| FEDI | Financial Electronic Data Interchange |
| FIATA | International Federation of Freight Forwarders Associations (translation) |
| FF | Freight Forwarder |
| FFR | French Franc |

| | |
|---|---|
| FTP | File Transfer Protocol |
| FX | Foreign Exchange |
| GATT | General Agreement on Tariffs and Trade |
| GDM | German Deutsche Mark |
| GEIS | General Electric Information Systems |
| GSP | General System of Preferences |
| HACTL | Hong Kong Association of Container Terminals Ltd. |
| HE | His/Her Excellency |
| HOD | Head Of Department |
| HS | Harmonised System (of Customs tariffs) |
| IAPH | International Association of Ports and Harbours |
| IBM | International Business Machines |
| ID | Identity |
| IDAL | Industrial Development Authority of Lebanon |
| IDD | International Direct Dialling |
| IMF | International Monetary Fund |
| ISDN | Integrated Services Distribution Network |
| ISO | International Standards Organisation |
| ISP | Internet Service Provider |
| IT | Information Technology |
| ITU | International Telecommunications Union |
| JIT | Just In Time (Inventory Control) |
| K | kilo (one thousand, approximately) |
| LAN | Local Area Network |
| LBP | Lebanese Pounds |
| LCL | Less then full Container Load |
| LDC | Less Developed Country |
| LIBNOR | Lebanese Standards Association |
| LOC | Letter Of Credit |
| MICR | Magnetic Ink Character Recognition |
| MIS | Management Information Systems |
| MENA | Middle East North Africa |
| MFA | Multi Fibre Agreement |
| MFN | Most Favoured Nation |
| MOA | Ministry Of Agriculture |
| MOET | Ministry Of Economy and Trade |
| MOF | Ministry Of Finance |
| MOFA | Ministry of Foreign Affairs |
| MOH | Ministry Of Health |
| MOI | Ministry Of Industry |
| MOIET | Ministry of Industry Economy and Trade |
| MOIP | Ministry Of Industry and Petroleum |
| MOJ | Ministry Of Justice |
| MOL | Ministry Of Labour |
| MOT | Ministry Of Transport |
| MPT | Ministry Of Posts and Telecommunications |
| NAJM | See ASYCUDA |
| NIH | Not Invented Here |
| NT | (Windows) New Technology |

| | |
|---|---|
| NTB | Non Tariff Barriers |
| OIC | Officer In Charge |
| OMSAR | Office of the Minister of State for Administrative Reform |
| OSS | One Stop Shop |
| OTC | Over The Counter (Pharmaceuticals) |
| p.c. | personal computer |
| pka | public key authority |
| PO | Purchase Order |
| PR | Public Relations |
| PSI | Pre Shipment Inspection |
| PWC | Price Waterhouse Coopers |
| QR | Quick Response |
| RFI | Request For Information |
| RFP | Request For Proposal |
| RFQ | Request For Quotation |
| RTGS | Real Time Gross Settlement |
| SAD | Single Administrative Document |
| SEAL | Secure Electronic Authority License |
| SET | Secure Electronic Transaction |
| SIG | Special Interest Group |
| SITPRO | Simplification of International Trade Procedures |
| SME | Small and Medium Enterprise |
| SMTP | Simple Mail Transfer Protocol |
| SNS | Singapore Network Services |
| SWIFT | System for the Worldwide Interchange of Financial Transactions |
| TCU | Technical Cooperation Unit |
| TEI | Trade Efficiency Index |
| TIC | Trade Information Centre |
| TIS | Trade Information Service |
| TOC | Table Of Contents |
| TOR | Terms of Reference |
| TPA | Trading Partner Agreement |
| TT | Telegraphic Transfer |
| UCC | Universal Code Council |
| UK | United Kingdom (of Great Britain) |
| UKP | UK Pound |
| UNCITRAL | United Nations Convention on International Trade Law |
| UNCTAD | UN Conference on Trade and Development |
| UNDP | UN Development Programme |
| UNEDIFACT | UN EDI For Administration Commerce and Transportation |
| URL | Unique Reference Locater |
| USD | US Dollar |
| USM | $US Million |
| VANS | Value Added Network Services |
| VPN | Virtual Private Network |
| WAN | Wide Area Network |
| WCO | World Customs Organisation |
| WTO | World Trade Organisation |
| Y2000 | Year 2000 |

| | |
|---|---|
| Y2K | Year 2000 |

## Useful Web Sites

The following web site references are intended to supplement the information contained in the body of this report. The comments made at the start of the acronym section equally apply to web sites. Please note that the entries under "vendors" have been removed from this report. They may be found in the Phase Two and Phase Three reports.Web sites listed here fall into the following general areas:

- Lebanon national sites.
- Electronic commerce technology and resources.
- Trade facilitation, trade facilitation agencies.
- Logistics, courier and express parcel services (track and trace systems).
- Ports and Harbours; Container Handlers.
- Legal Issues.

Please note that this is not an exclusive, nor even an exhaustive list. But these references will point to virtually every other site necessary to obtain a complete understanding of the technology, systems and operating agencies who are involved in technology assisted trade efficiency and trade facilitation systems.

## Lebanon Web Sites

| | |
|---|---|
| Ministry of the Environment: | www.moe.gov.lb |
| Ministry of Public Works: | www.public-works.gov.lb |
| Ministry of Posts &Telecoms: | www.mpt.gov.lb |
| Ministry of Tourism: | www.lebanon-tourism.gov.lb |
| Prime Minister's Office: | www.rafik-hariri.org |
| Ministry of Agriculture: | www.agriculture.gov.lb |
| Ministry of Public Health: | www.public-health.gov.lb |
| OMSAR: | www.omsar.gov.lb |
| Central Admin'n of Statistics: | www.cas.gov.lb |
| Ministry of Economy and Trade: | www.economy.gov.lb |
| Trade Information Centre: | www.economy.gov.lb/tic |

## Electronic Commerce Resources

| | |
|---|---|
| EC Resource Centre | www.allec.com |
| JIBC (EC, Electronic Banking) | www.arraydev.com/commerce/JIBC |
| EDI, EC Publications | www.edigroup.com |
| Internet Commerce | www.internet.com |
| Commercenet (EC Consortium) | www.commerce.net |
| EC Forum | www.edifice.org |
| EDI/EC Articles | www.erols.com/jserrat/main.htm |
| EC Info Center | www.edi-info-center.com |
| Int'l Telecoms Union | www.itu.ch |

## Standards and Codes

| | |
|---|---|
| UN/EDIFACT | www.unece.org/trade/untdid/welcome.htm |
| Uniform Code Council | www.uc-council.org |
| European Article Numbering | www.ean.be/index.html |
| Trafix | www.unicc.org |

## Digital Signatures/Security/Secure Payments

| | |
|---|---|
| COST (SET) | www.cost.se |
| VeriFone | www.verifone.com |
| VeriSign | www.verisign.com |
| Visa | www.visa.com |

## Logistics

| | |
|---|---|
| DHL | www.dhl.com |
| Federal Express | www.fedex.com |
| United Parcel Service | www.ups.com |

## Trade Facilitation

| | |
|---|---|
| Trade Compass | www.tradecompass.com |
| Tradegate | www.tradegate.org.au |
| Singapore Network Services | www.sns.com |
| World Trade Organisation | www.wto.com |
| World Customs Organisation | www.wco.org |
| Internat'l Chamber of Commerce | www.iccwbo.org |
| Federation of International Trade Organisations (FITA) | www.fita.org |

## Table Of Contents

The Lebanese Trade Efficiency project comprises five different elements, or Phases:

1. A status review, aimed at establishing which other projects were likely, or potentially capable of impacting this project.

2. A trade process analysis report, aimed at documenting present systems and highlighting areas for improvement.

3. A trade process recommendations report.

4. A trade information service specification (TIS), which is to be a sub-set of these recommendations, treated in such a manner that it can be tendered for supply.

5. A concluding debrief of findings and recommendations.

The following section contains an extract from the original TOR as it applied to the TIS. Subsequent events and work in other Phases may have slightly outdated this TOR extract but it is included here for completeness.

### 1.10 Trade Information System-Functional Specifications

Phase Four involves the preparation of the technical specifications of systems to automate the collection, analysis, dissemination and consolidation of trade and market data, as described in outline in the TOR as TIS.

The objectives for this component are:

1. To define the scope of a TIS operation;

2. To complete the requirements analysis and functional specifications for the successful operation of TIS.

The work plan, drawing heavily on previous phases of the project, will include identification of all participating agencies and trading partner's representatives from both the public and the private sector. An outline scheme will be designed to illustrate the principles, the benefits and the potential costs and savings to the major participants in TIS.

The function and TOR of a TIS will then be articulated and agreed, following the definition of a practical implementation of such a project. This will include the definition of what information and transaction types are to be included within the scope of TIS, by phase, and with reference to overseas experience and plans. International agencies at work in this area will be referenced as necessary, including ECE, EU, UN agencies, the World Bank, UNCITRAL, UNCTAD (ASYCUDA and TradePoint), UN/EDIFACT and private sector agencies like ANSI, EAN and UCC, SWIFT, SITA and international peak industry bodies, not forgetting much innovative work now being undertaken on a variety of Internet-based projects.

A detailed recommendation of establishment, operation, staffing, Costs(and potential revenues), skills and support necessary and timescale, in phases, will then be developed and discussed with interested parties.

This work will then be integrated into a final set of recommendations, partly based on the TOR provided, and also dependent upon the subsequent work on the project, consensus and approvals.

***Additional Comments Inserted into the TOR as a result of OMSAR enquiries:***

*It may be considered that all that is necessary is to duplicate the UNCTAD work in this area-and that may prove to be the case eventually. But there is a great deal of exciting new work and product emerging from the private sector, from newer organisations and from organisations that have been in this business for years. It may be that TIS can achieve considerably more than simply provide information by the time we have finished specifying its tasks and functionality. The TIS is the most enduring and important deliverable for this project. The specifications must be based on contemporary world's best practise, if at all feasible. Since the objective is to create efficiencies and national competitive advantage Lebanese requirements may entail some radical additions to current practises and models.*

**Deliverable:** *A detailed set of recommendations, specifications and implementation guidelines plus suggested business plan for TIS.*

### 1.20 Comments

**The majority of the work involved in Phase Four was actually completed during the Phase Three assignment, hence earlier comments about the TOR being slightly outdated. It also means that much of the content of this report was contained, in different formats, in either of the Phase Two or Phase Three reports.**

## 2.00 THE LEBANESE TRADE PROCESS

The specific Lebanese background to the trade process and the need for TIS is covered in the following sections. Once again, it is included for new participants and for potential vendors.

### 2.10 The Players in the Lebanese Trade Process

The trade process is an integrated series of activities which involves five groups of organisations.

1. The first is the *importer/exporter.* In the case of an importer who needs to import materials to rework and to add value, this is regarded as a re-exporter. Goods in transit between two ports, both outside Lebanon, and free trade zones complete this first group.

2. The second group comes under the heading of "*technical controls*". Restrictions and prohibitions are issued and monitored by various *Lebanese Government Ministries.* Consular invoices ("legal invoices") are issued by *Lebanese embassies* overseas, or by their nominees. The term "legal" in this case, and in some others, is a dubious semantic device. Other organisations in this group include *Chambers of Commerce and Industry*, who have the national monopoly on issuing Certificates of Origin (COO), and in endorsing (legalising!) some others, as required by foreign importers.

3. The third group comprises the *"trade professionals".* This term describes the people whose profession it is to complete and to process the documents necessary to import or to export goods into, and out of Lebanon. This includes the *shipping agent*, who is employed by, or represents, one of the shipping lines who carry goods to and from Lebanon (by sea or air).

   *Freight forwarders* are also included in this group. Their job is to pack goods into containers and manage the good's transport all the way through to the deck of a container ship, in the case of exports. Or from the ship to the importer's premises in the reverse case. In Lebanon, their duties also include processing goods through the container handling and port procedures. Freight forwarders generally represent the land transport component, particularly in the Lebanese context.

   The third of the trade professionals is the *customs broker.* His job is to complete the required customs documentation, necessary to clear them through the Customs import/export procedures.

The activities of groups two and three are often known as the "*formalities*".

4. The fourth group is contained within one organisation, Lebanese Customs. The duties of Customs are much wider than just the clearance of goods through the points of import/export. Due to the legacies of war they often undertake security and policing activities, for example. They are, in addition, generally the first line of border patrol, but only at recognised points of entry. Because of their importance to the

national economy, Customs are part of the Ministry of Finance. This is not always the case in other countries.

5. The fifth group comprises the ports. They handle the sea and air traffic, and the physical port infrastructure at the docks and terminals. In the case of the port of Beirut, a second organisation will soon be appointed to handle all container storage and movement within the port. At present it is handled by the port authority.

**Note:** The port of Beirut represents around 85% of all Lebanese imports and exports. Hence the port will be the primary focus for recommendations. However, these recommendations apply to all entry/exit points and Customs control points.

These five groups interact in a dynamic fashion to enable trade to flow. The efficiency with which they interact determines the trade efficiency of the nation.

## 2.20 Basic Principles for Systems Redesign of the Lebanese Trade Process

There are a few principles of redesign that are sacrosanct. In order to succeed they must not be compromised. They apply specifically to the final version of the implemented system, the vision. It will take some time and many different stages to get there but it is necessary to articulate and to clarify the vision for the ultimate system.

1. Transparency and separation of functions: the opportunity for face to face transactions and interactions between traders and trade professionals and the public sector must, in time, be eliminated. This will eliminate the opportunity for informal payments as these interactions become automated.

2. The critical path is represented by the time it takes to transport goods to or from an overseas port and to handle them through port facilities to Customs. The critical path is the least possible time it can take to deliver goods to the buyer. The critical path is the datum for systems design. The closer that clearance time gets to the critical path, the more successful the system.

3. Green channel approvals will have a design level of 95%, growing to 98%-99% over a 7-10 year period.

4. Except in the most exceptional circumstances, physical inspection will not, repeat not, involve unsealing containers. New technology will be utilised so that all Customs and technical control inspection, when absolutely necessary, takes place in a central control room, using electronic means for viewing the goods and for correlating the documentation.

5. All technical controls and approvals/authorisations will take place using electronic means, without any face to face interactions.

6. All payments and signatures will take place using electronic means.

7. The technology to make possible all of these changes will initially be funded by the public sector. It will be paid for by traders from a special levy for each trade

clearance. The management and supervision of this technology operation will be to commercial, private sector standards. The technology organisation charged with managing the technology will also be tasked with implementation, development, support, liaison, marketing and the ultimate integration of industry systems, legal frameworks and commercial targets. It may also embrace the technical controls technology infrastructure.

## 3.00 TECHNICAL CONTROLS

Technical controls represent the Government's attempts to influence trade for the good of the nation, according to the mandate's of a number of individual Ministries and Government agencies. The systems by which approvals are applied for, granted, paid for, collected and applied-at both the point of import and export-have a significant impact on trade efficiency.

The technical control regime is the single part of the overall trade process that could be changed, to the benefit of all, independently of the full trade process reform programme. While acknowledging that to be true, this report recommends an integrated approach. The upgrading and automation of a technical controls regime would not, on its own, specifically reduce clearance times nor dramatically reduce informal taxes. It is only the integration and implementation of re-engineered systems that will have that effect.

The objective for technical controls is to devise a plan that will eliminate any delays in obtaining technical controls. The plan must take them off the critical path of trade clearances. It must simplify and cheapen the process for traders. Ultimately, the agencies responsible for issuing and monitoring technical controls must, like the trade professionals, become part of the solution, not part of the problem for trade clearances.

Approvals will, in time, become automated. Any subsequent physical inspection approvals process will follow the path set out for Customs, and will utilise pre-approvals and pre-and post-event auditing. All automated physical inspections will take place in a control room, where sealed containers' contents will be viewed, as part of the scanning process.

The information gathered for trade controls will form part of the input for an automated trade statistics regime, delivered to Statistics through a Government Intranet.

The technical controls skills and information base, after computerisation, will become the foundation for trade development and ultimately for export development, possibly export promotion. The vehicle will be a new Trade Information System (TIS). The TIS will become a revenue-generating and profit making agency, possibly in joint public/private sector ownership. TIS will operate to normal commercial working hours and conditions.

The regulatory regime, and the base of prohibitions and restrictions represented by today's paper-based technical controls will be rationalised, reduced, automated and then, as far as is possible, eliminated. This process will take place co-operatively, with all agencies, including private sector agencies concerned (e.g. the Chamber of Commerce), all public sector agencies and Customs. A separate follow up project for implementation planning will identify the steps, timing and sequence of each step in the process.

The following section describes the operation of the future TIS as envisaged by the main recommendations in Phase Three:

### 3.10 Implementing the TIS

To begin: initiate a debrief and training/education programme to fully explore the potential of the TIS and its associated reforms. Arrange for a senior figure, or influential group in the Government to take ownership of the project, at Ministerial level.

Set up a working party comprised of all affected agencies (or their proxies, e.g. MOIET might represent Agriculture, for example). Customs, legal representatives for MOJ and a representative from the Chamber of Commerce, on behalf of the private sector may also be represented.

Agree a set of objectives, the work plan, timing and the content/format and measurables of outputs.

Select a single Ministry to become the pilot for evaluation and rationalisation of controls; the Ministry of Industry, Economy and Trade is an obvious candidate, based on their approvals variety, volume, experience and knowledge of computerisation.

MOIET and the working party to draft a memorandum for circulation to all agencies who issue technical controls. The memo to be signed by the Prime Minister, the President or the Council of Ministers. This memo to state that, from a given date (say 180 days from the date of the memo), all technical controls will be eliminated. The working party and Customs will entertain applications for the replacement or retention of technical controls against certain pre-agreed criteria. It will also state that the establishment of technical controls by Ministerial decree will no longer be acted on by Customs, without a new, approved instruction from this working party. In future, any decrees which affect trade need to be evaluated by this group, or an alternative with the same function and responsibilities.

Working party then to agree on criteria for acceptance of retained or new technical controls. The control application must be in a standard format, for all agencies, payment methods and the method of calculation of fees must be standardised for all agencies. The content and layout to be based on mandatory data, preferred data and optional data, as per UN/EDIFACT syntax and protocols. These criteria to be based on a firm understanding of the principles of automating applications and technical controls, and of automating import and export approvals at the border, i.e. Customs points. Pre-clearance and pre-and post event-auditing will be the guiding principles for the new systems design. Criteria, procedures and sampling methods to be drawn up for all pre clearances, pre-event and post-event auditing.

MOIET then sets up a one-stop shop for issuing paper-based controls. Controls will be created and stored on computers, and statistics and other data selected and delivered to appropriate agencies, overnight, by use of the Government Intranet and EC/EDI principles.

**Note:** It may become necessary to install a whole-of-Government Intranet to facilitate this process. However, the assumption is that OMSAR are already acting rapidly to install this Intranet, for other purposes, under previous Prime Ministerial approvals.

Controls will initially be printed out on computer stationery and signed as presently. Fiscal stamps and duplicate signatures will be eliminated from this process. Any resulting revenue shortfall will be made up by an increase in approvals fees. In order to facilitate rapid payment, a MOF payment booth will be empowered to be opened on the MOIET premises, in the one-stop shop.

The next step may be to pilot credit/debit card payments for approvals. The ultimate payment objective is to eliminate cheques and cash for any Government payments. Telegraphic transfers, FEDI and stored value cards may also be trialled following the first credit card/debit cards, depending on the level of interest of the banks and the status of the inter-bank WAN. Ultimately, the TIS may become a node of this WAN, under contract to the Central bank, or an acceptable alternate contractor.

By this time the project may be into the second year of operation. Other agencies may now join the MOIET in a one-stop shop operation. It may now be timely to establish separate, special purpose premises for the technical controls issuing and monitoring agency (TIS). By the end of the project, all technical control agencies will have a presence at this one-stop shop, including the Chamber of Commerce. It will by now be operating to commercial hours, at least 8.30 a.m. until 5.00 p.m., and Saturday mornings. Out-of-hours operations may be considered, based on demand and the potential for revenue generation. The location of the premises needs to be selected based on accessibility and parking.

At the same time as the range of agencies is being expanded and consolidated into a single location, and as payment options are being explored, the first web based approvals can be piloted. This involves a client completing a web based form , probably on a merchant server. Initially, the form will be electronically edited and returned for correction, as presently, does the NAJM DTI module. Corrected forms are then approved, given a pro forma approval number and returned to the client for printing out and signature. The client then attends the one stop shop in person and presents the form to a special fast track booth, set up for the purpose. The pro forma approval number is all that the approvals official requires for the issuance of a control form, which has already been printed out, awaiting the clients personal attendance. Payment is made and the client is then able to take his approvals away, in a minimal time.

This process will be complemented by a database of traders, whose details are gradually built up with application data. This data base will also form the core of the data for the automated approvals module. In time, traders will be able to submit their applications over the web, to sign them digitally and to receive approvals over the Internet, in a few minutes, well in advance of the goods arrival or departure. Payment will by then be made electronically, by card, by FEDI, by TT or by direct debit, or by account from funds deposited and topped up , in advance (for approved, category one, trusted trading partners, i.e. from the lowest risk category).

By now, systems will be integrated with Customs risk management and NAJM, through the Government Intranet or gateway. All approving agencies will be participating in the automated approvals and monitoring process. It is anticipated that this implementation process will take around five (5) years.

In addition to technical controls issuing, approvals and monitoring, TIS will have other functions. For example, it may offer a bureau service for declarations and clearances for SMEs who are unequipped for the purpose or who prefer, for reasons of economy, lack of skills or pure convenience to use TIS for the purpose. In that case, TIS becomes a surrogate Customs bureau; a place where TIS staff can create a CUSDEC (and other EC/EDI messages) and submit them to Customs for pre clearance. TIS may collect payment on behalf of Customs, as an option and after agreement between the two organisations. TIS will provide this service for a fee per clearance.

A further series of functions will include a range of pre-transaction information services. These services will be available to members of TIS, against a monthly usage amount and an annual minimum membership fee. Services may include, for example:

- All agreed and updated technical controls; access to these may also be sold to foreign clients.

- All current Lebanese trade agreements; the World Trade Organisation requirements (GATT), the EU, Arab Free Trade agreements, and any other relevant agreements.

- Any available information on technical controls needed for trading partner's countries, for import and export.

- Value added services, for a higher level of membership-and fees-will include electronic brochures (web pages) for Lebanese traders. This service will include the design, upgrading, catalogue building, order taking, electronic payment, track and trace, data warehousing and statistics monitoring for any member of TIS. Call centre support is another option. This service may also include web hosting, or may be sub-contracted to a competent supplier. Foreign clients will also be accepted, possibly at a different fee regime. Other facilities will include secure ordering, secure inventory availability, secure price lists and secure payment facilities.

- A similar service will be offered to foreign traders, or links for Lebanese traders to foreign trader's web sites.

A further level of value added services will include a marketing data base, mailing-and electronic mailing-services, together with a range of research data bases. These data bases may include local and overseas/foreign freight availability, schedules and rates, capacity and availability, discounts and special offers and surcharges. The same will be true of insurance companies, rates, availability, terms and conditions. Equally, trade finance details will be made available together with electronic LOC facilities.
In addition, electronic AWB for small shippers and couriers, track and trace systems for courier and parcel deliveries will be made available through the TIS.

Connections to electronic trade opportunities will also be made available. These will include ETOs from TradePoint (UNCTAD), products from companies like AT&T/GEIS, and Silk Road, plus other commercially relevant, specialised opportunity sources.

A further service offered will include the ability for Lebanese manufacturers and stockists to (exclusively) place their surplus inventory on TIS-designated web sites and

to auction it to members. TIS will offer this service for a percentage of the sales value to the auctioning company, plus a basic membership fee. Ordinary clients/traders will receive this service for their enhanced membership fees.

At the technical level, TIS will transparently offer all relevant communications protocols, to enable access and interconnection to all web sites, all internet service providers, selected VANS and selected proprietary networks and the Government Intranet.

Members will be offered a hierarchy of fees, from basic membership fees, say $100-$500 p.a., depending on size/turnover, up to enhanced services at $1000-$2,500 p.a. depending on the range of services taken up. Additional fees and charges will accrue for web site development and hosting, secure services, auction services and out-of-hours service and support. This is in addition to revenue obtained from the issuing of technical controls.

The result will be a self funding-even profit making operation-offering cost-efficient and virtually instantaneous technical controls, with automated approvals, input and assistance to risk management systems for significantly less cost and less time than existing systems. And the TIS will offer full transparency; the opportunity for informal taxes will be much diminished, and hopefully eradicated from this process.

Diagram 1: Proposed Trade Information Services (TIS) Systems, illustrates the concepts of the TIS.

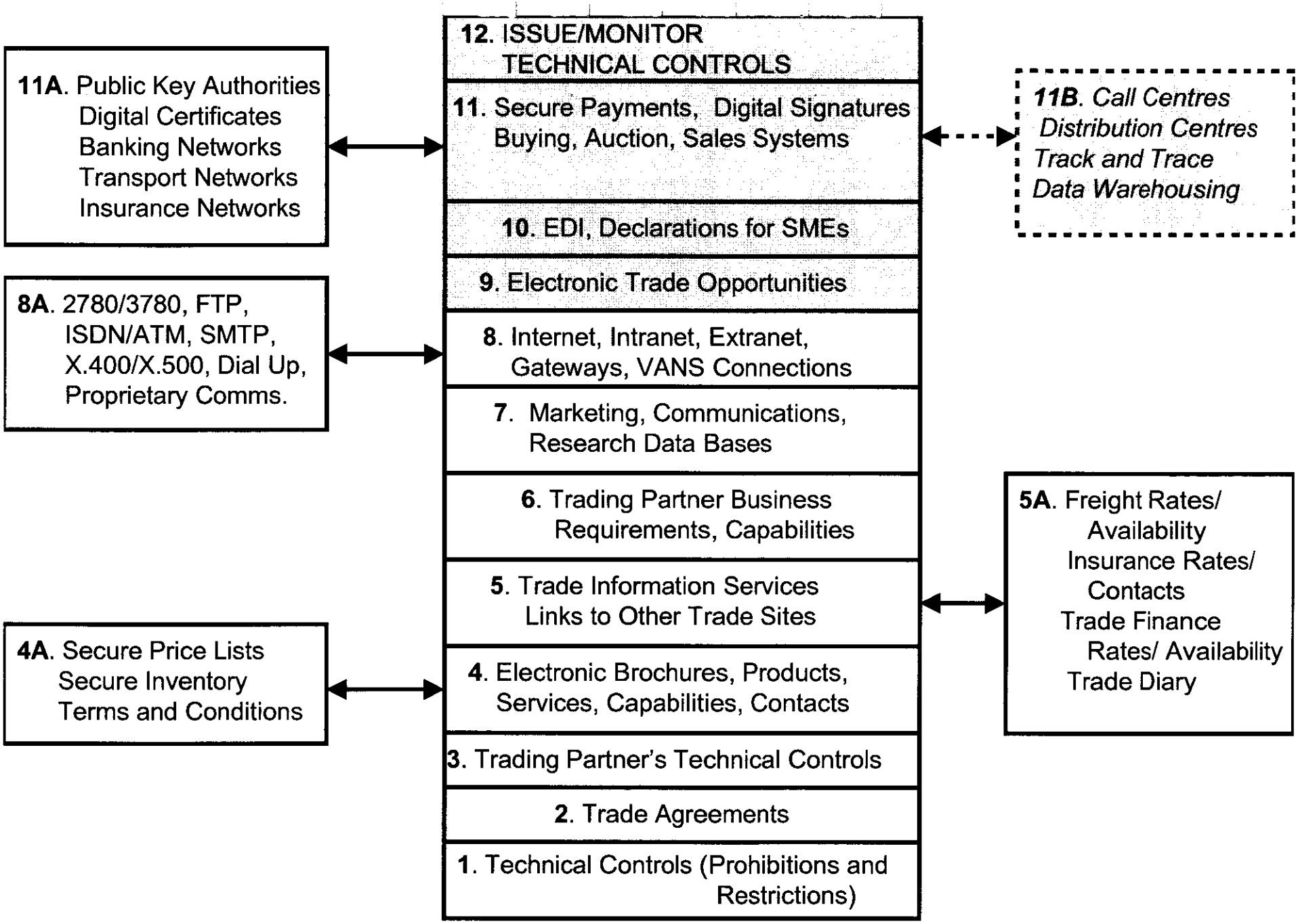



**Diagram1: Proposed Trade Information Services (TIS) Systems: Overview**

The automated approvals system need some explanation. This is likely to be the final stage of the system, and the most important to the completion of the technical controls' contribution to trade process reform.

In order to automate trade approvals the client/trader completes his application form on the TIS web site. He submits it to the web site for approval. In real-time the TIS system reads the form, edits for mandatory data (e.g. trader name, risk category, i.e. TIS pre-allocated account number, date, product data, carrier, supplier details, etc). Similar checks are made for preferred and optional data, and against submission of electronic invoices, bills of lading, and any other messages required at this stage. Input will be compared to file data on the trader, the products and suppliers concerned and any other risk management information. At this stage the form can be rejected as incomplete or inaccurate, and a resubmission demanded. Or it can go forward into the risk management system, whereby each of the agency's computer systems concerned with this category of goods and trader, examines the data and compares it to their technical controls' requirements. The communications medium is an Internet or VAN connection to the TIS, through a security firewall and access password. The interconnection of technical control approvals systems is through the Government Intranet, possibly front-ended by a proxy server, and firewall for security purposes.

Where the control application is interfaced with a CUSDEC, the approved messages go through the Customs CUSDEC/SAD and risk management system.

After all repeats for editing and corrections, and resubmissions, approvals for entry, exit and goods release are given, with electronic approval numbers. These are written to file on each of the computer systems concerned for subsequent approvals, for audits, for post event-auditing, etc. and for input to Statistics.

This overview is, of necessity fairly brief. It requires a complete implementation and project plan, and a follow up project to determine that plan.

Diagram 2: Schematic of Automated Technical Controls Approval System follows.

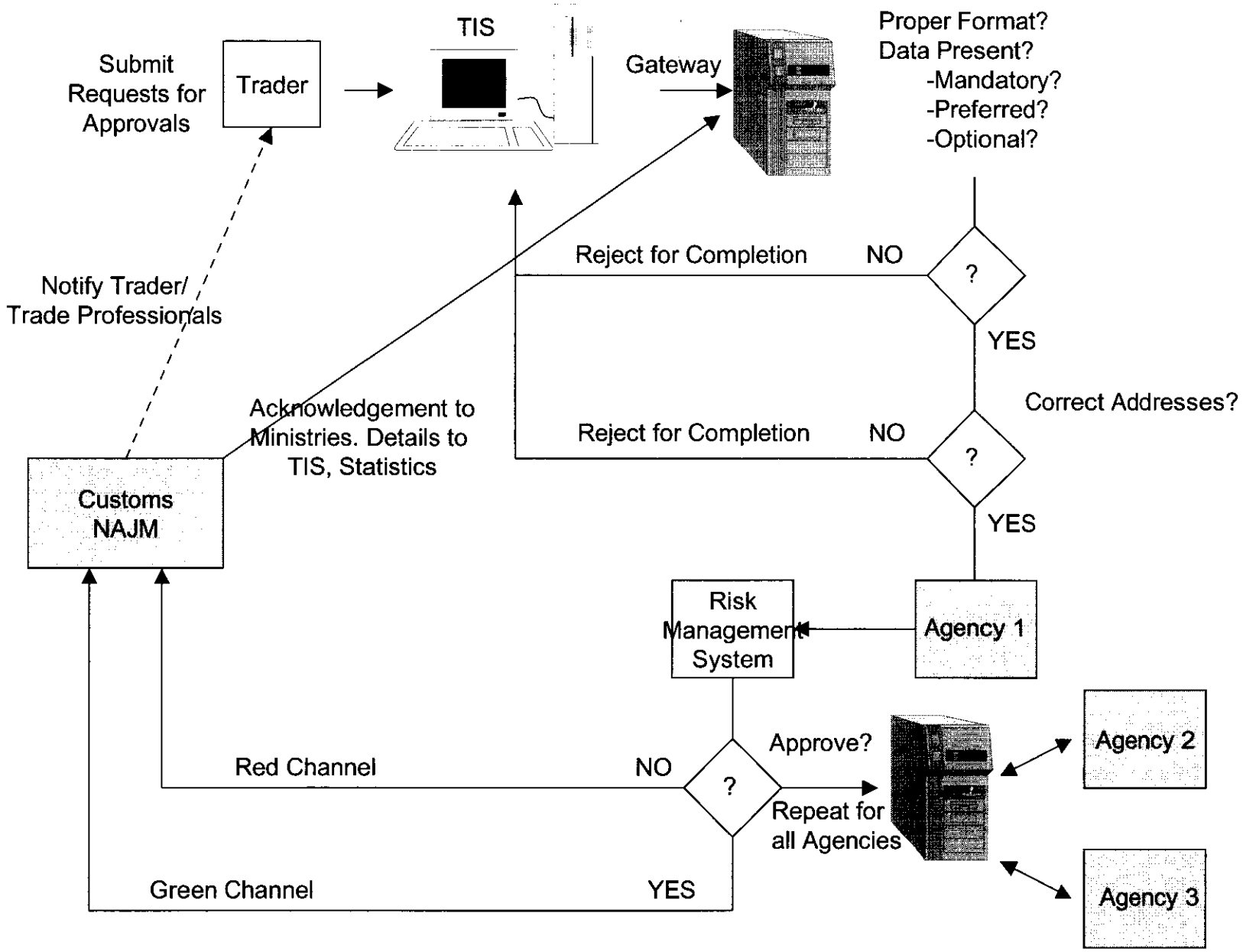



**Diagram 2: Schematic of Automated Technical Control Approvals System**

## 4.00 TIS REQUIREMENTS AND SPECIFICATIONS

This section contains the functional requirements and specifications for the TIS system. There are no pre-conceived ideas on whether TIS is to be an in-house hardware/software system, a "virtual" network hosted system, or a hybrid. Facilities managed or outsourced options are not discounted, for the right set of solutions.

Note that the term "functional", in the sense that it is employed in this document, refers to the end user functionality, or deliverable to the end user. It does not refer to the means by which the IT solution/system delivers that functionality.

### 4.10 General Requirements

The requirements as they are described throughout this section are generally in the sequence that they have been deemed to be required by the trade process programme. However, to some extent, the ultimate implementation sequence will depend upon the vendor/s chosen. It may be that some vendors are more advanced in some areas than in others; some may require to develop features and systems where others offer them as standard. Hence, the sequence of requirements and functionality may ultimately become the subject of negotiation and detailed implementation planning.

*Diagram 3: Proposed Lebanese Trade Process System* illustrates the context within which TIS will ultimately operate. Initially TIS will be a stand alone operation. Only after the remainder of the recommendations from Phase Three have been implemented will the operations of TIS be integrated, probably under the banner of a facilitating organisation known as LibanFac.

*Diagram 4: Proposed Trade Information Services (TIS) System: Specifications* is used as an overview for describing the TIS specifications in some detail. Detailed specifications will refer to the numbering convention contained in *Diagram 4*.

### 4.20 Technology Overview

TIS will be based on an industry standard operating system, Windows/NT or Unix. It will require a Local Area Network (LAN) for operations within the TIS and connections to VANS and Internet/Intranets. Other communication protocols needed will include 2780/3780, X.400/X.500, SMTP and any proprietary protocols needed to access Government systems. Dial up and ISDN are telecommunication options. At least 64K capacity will be required; probably much greater as the system's usage develops.

The system will require good log on security, firewalls, and access to pka for digital signatures and certificates.

Application software will be based on merchant or site server technology, with secure access for inventory, price lists and payment services. Good web site authoring software and data base/catalogue building software will be required.

Good archiving, audit trail, billing systems, client registration and data base systems will also be required.

An EDI module will also be necessary.

Much of the user data will be created by third parties or accessed through other network information services and web sites. However, there will be significant efforts required to build Lebanese data, for technical controls, trade agreements, trade information services, mailing services and so on. Some of this can be captured from existing sources; much will need to be created. Custom-built data (i.e. proprietary), such as electronic brochures, auction catalogues, etc. will be created by TIS or their contractors at commercial rates.

### 4.30 Technology Comments

The preferred solutions will offer open (operating) systems and open standards, in as wide an interpretation of the term "standards" as possible. They will contain cross-platform, portable code in a widely used (programming) language, or family of languages.

All systems must be fully Y2K compliant at the time tenders are submitted.

The preferred systems will include rapid development systems for prototyping and "proof of concept" pilot operations.

Products utilised for electronic commerce purposes, for example: firewalls, development tools, web development tools, catalogue developers and catalogue linking tools, merchant and site server software, data warehousing and distribution management software, security facilitation and payments systems, etc. must all be supported internationally, and be demonstrably widely used. Proprietary solutions are discouraged.

### 4.31 Support

Preferred means of support include:

Local first line support in Lebanon, preferably in Beirut. Contracted response times and call out hours. 24 hour Help Desk support. NB: "Follow the sun" support operations are preferred.

Support to be available in:

English (or American), French and Arabic.

Contracts will also agree schedules for module development, for Y2K for new modules, for standards, support and implementation plan compliance.

### 4.32 Standards

All applicable standards will be applied, for example:

*EDI/Electronic Commerce:* UN/EDIFACT, EANCOM, ANSIX12, XML options.

*Telecommunications:* All contemporary Internet standards, X.400 and X.500 for VAN interoperability and pka addressing (subject to certain sanity tests on emerging standards initiatives). As a general rule, ITU standards will prevail.

*Security:* Interoperable pka, digital certificates and digital signatures. Once again, judgements will be made closer to the time on emerging standard's initiatives, particularly ratified IETF initiatives.

*Banking:* Interoperable card systems, settlement systems, security systems, FEDI and international settlement systems. Generally speaking, these standards are more pragmatic than most; they are almost always private community standards except, famously, in the case of SET. The Central Bank and the Bankers Association will be consulted in the case of any conflict or uncertainty.

*Network Services:* VANS, ISPs, proprietary networks and private networks to be accessible by all valid users and to be interoperable for required functionality. Once again, due attention will be paid to emerging standards.

## 4.33 General Requirements

Requirements cover not just technical implementation needs for IT vendors but implementation needs for TIS. Therefore, much of what follows refers to information rather than pure IT systems. Guidance on implementation aspects-for both IT vendors and TIS- of this specification includes:

*Data Bases Content:* Data bases will come from numerous sources. Some will be via web links; some created especially for TIS, and some ported from other sources. The data base layout, technology, formatting and screen layout will be determined by, or during, the final agreements to supply.

*Data Base Support, Updating:* In most cases the support and updating will be performed by the owner, or creator, of the information. However, they may wish to provide authorised access to privileged end users for limited editing, such as Prohibitions and Restrictions (technical controls).

*System Access:* There are three end user levels of system access, plus privileged access for administration.

1. TIS bureau, in-house access, using TIS' LAN or Intranet.
2. Via secure login/password using the Internet.

3. Via secure login/password using approved Intranets, LANS or VANS.

*Natural Languages:* Initially, data will be provided only in the language in which it presently exists. Thereafter it will be translated into English and French. As the TIS system moves up the value chain into higher value added systems it is to be expected that the dominant language will become English. It will be the responsibility of TIS to facilitate natural language translation, based on unequivocal market requirements.

*Sequence:* The sequence in which services are implemented and ported to the TIS system, and then upgraded and maintained, is according to the present draft implementation plan. It will need to be confirmed by the final implementation plan, and possibly overseen by TIS, LibanFac, OMSAR or some neutral third party organisation.

The following is the initially planned TIS functionality and sequence, subject to earlier caveats. More information on a potential project plan and implementation schedule (subject to final confirmation) is contained in **Section 6.00 Project Management.**

### 4.40 Module One Requirements (See Diagram 4)

Module one contains:

1. Technical Controls (Prohibitions and Restrictions);
2. Trade Agreements;
3. Trading Partner's Technical Controls.

This group of applications will be the fastest to implement and will provide efficiencies and useful information for traders from the outset.

#### 4.41 Technical Controls

Lebanese Customs are in the process of making available their existing Prohibitions and Restriction data base, out of their ASYCUDA NAJM system. This will be the first data base available to TIS users. It will also be accessible to privileged users for the rationalisation and updating of technical controls, as outlined in the LibanFac project. The screen layouts will initially be on "as provided basis". However, over time, it may be customised against user requests-both domestic and international-with intelligent search/enquiry and multimedia facilities built in.

The system will offer enquiry, audit trail (and billing), and archiving capabilities.

4.42 Trade Agreements

Existing trade agreements will be assembled and loaded onto the data base by TIS. Where web site links already exist, these will be researched and prioritised for implantation. Thereafter a prioritised list, as agreed between users and the stakeholders/management of TIS, will develop a an implementation plan, a standardised trading partner questionnaire, standardised screen layout, data base format and requirements questionnaire, together with enquiry, audit trail (and billing?) and archive capabilities. Links to WTO, WCO, EU, UNCTAD, CEFACT and other relevant sources will be developed by TIS staff.

Over time, the TIS could offer a tracking and analysis service, for inconsistencies, new requirements, changed requirements and expert help line support.

4.43 Trading Partner's Technical Controls

This component requires that each of the Lebanese trading partner's (country's) documentary requirements for import/export processes be documented, presented and updated by TIS, where necessary. It demands a progressive and continuous service by TIS, with subsequent commercial arrangements for end users. Existing overseas technical controls will be assembled and loaded onto the data base by TIS. Where web site links already exist, these will be researched and prioritised for implementation. Thereafter, a prioritised list, as agreed between users and the stakeholders/management of TIS, will be drawn up. In addition, an implementation plan, a standardised trading partner questionnaire, standardised screen layout, data base format and requirements questionnaire, together with enquiry, audit trail (and billing?) and archive capabilities will be developed. Links to all relevant sources will be developed by TIS staff.

Over time, the TIS could offer a tracking and analysis service, for inconsistencies, new requirements, changed requirements and an expert help line, omnibus report and analysis support.

**4.50 Module Two**

Module two contains:

4. Electronic Brochures, Products, Services, Capabilities, Contacts;
5. Trade Information Services; Links to Other Trade Sites;
6. Trading Partner Business Requirements, Capabilities;
7. Marketing Communications, Research Data Bases;
8. Internet, Intranet, Extranet, Gateway, VANS Connections.

This group of applications are all aimed at the value added services requirements for clients who are prepared to pay for such services. The developments of these services will all use standard Internet development tools and products. They may be developed by TIS, or by their selected contractor/vendor.

4.51 Electronic Brochures

This requirement is a standard web based requirement, in which TIS clients display their wares over the Internet. It may be developed under an overall TIS theme and menu, or TIS may just provide the links. Content includes:

Brochures, or a multimedia substitute for paper brochures. Multilingual facilities will extend the potential audience to a much wider community. TIS will have by now decided whether to operate as an ISP, a portal or a simple Internet host. In every case, it will need to take responsibility for posting clients details to the proper search engines.

Other services in this requirement cover the display of client products, services, contacts and general company capabilities.

Phase two of this component will include a registration service, possibly with a log in/password access, even possibly with secure access to:

- Client trading terms and conditions;
- Inventory levels and trading partner history;
- Price lists (for a particular trading partner).

Trade Information Services

There is a very wide range of company services available to traders. Many are available from open public sources, from web sites, trade organisations and specialist information services, such as banks and insurance companies. They generally offer generic services buy also offer more useful detailed services as authorised users are allowed to drill down. Examples include:

- Freight rates to and from Lebanon for road, sea and air;
- Freight/transport schedules and availability;
- Insurance sources, rates and availability;
- Bank trade finance sources, costs and qualification requirements;
- Trade promotions, seminars, clipping services and newsletters.

TIS will make these available to the client community, in some versions as a value added service. Analysis, special services, request processing, etc. all qualify as a value added service.

There are no specific technical requirements for this category of service, which will expand as TIS become more experienced in the market place, as they learn more about their client's needs and what services and information already exist elsewhere.

4.52 Trading Partner Business Requirements

This will comprise generally web site references. It refers to technical control requirements by Lebanese exporters by country. In many cases this will be a simple web site reference. Where no such electronic reference exists TIS will convert paper

information into the required information on a specially created web site. This may also involve creating a questionnaire, determining priorities and designing a simple screen format. Enquiry facilities, audit and archiving will also be necessary.

A second component of this facility will be the correlation of web sites or information on the capabilities of a list of specific trading partners, by country. This list to be provided by peak industry bodies or by major Lebanese traders. This will generally be for strategically important exporters to, and sub contractors to, Lebanese industry, in order to ensure that Lebanese exporters have access to the best range of contacts for value add and re exporting purposes.

4.53 Marketing, Communications Data Bases

This component is included for marketing, mail out and electronic commerce communications. It involves creating name and address mailing lists for target markets and companies overseas, to enable mass marketing and targetted export marketing to take place. Increasingly, the emphasis will be on electronic marketing but the impact of traditional paper and brochure marketing should not be ignored.

Since these lists will have to be bought, researched and compiled by TIS, robust list management and contact management software will be required, with facilities for search, sorting, selection, remote access, remote updating, label and automatic letter production, and automatically addressed electronic mail. The email addressing facility will involve large groups, up to 5,000 at a time.

In addition to mail out lead and contact generation, TIS will require access to the widest range of contact lists and research sites. This will include contract list providers and suppliers of research product. These will be located by TIS and organised into web sites, according to pre agreed priorities, with TIS stakeholders.

**4.60 Module Three: Electronic Communications**

While the majority of communications for the modules described so far will make great use of Internet protocols, it cannot be assumed that communications will be exclusively in Internet technologies. For example, several of the key sites for information services still use proprietary protocols, such as SNA for some IBM based-services. X.400 is a commonly used protocol for Value Added Network Services (VANS). File transfer facilities from some services will require 2780/3780 compliance, especially some banking and insurance companies. Other banking services and financial information services require proprietary communications. A list of such requirements will be completed prior to contract award. Nevertheless, in the future, VANS and the Internet, plus some banking and financial services proprietary systems will satisfy a very high proportion of TIS requirements.

**4.70 Module Four**

This module contains the most advanced IT applications for TIS. They may not be implemented until two to three years after TIS has been initiated, so there may well be

additional requirements or even major revisions to this set of specifications before they are actually implemented.

Module four contains:

9. Electronic Trade Opportunities;
10. EDI Customs Declarations;
11. Secure Payment Facilities; Digital Signatures, Buying, Auction and Sales Systems;
12. Electronic Issuing of Technical Controls.

## 4.71 Electronic Trade Opportunities

There are an increasing number of electronic trade opportunity systems. Most are provided across Internet transport; some across VANS. The idea is that any Government or public service agency wishing to acquire goods or services publishes the details on an electronic trade opportunity (ETO) service. UNCTAD's TradePoint pioneered the concept but it has now been adopted by a range of competitors, many of them concentrating on specific industries and/or countries. This module requires that TIS maintain a research mandate on ETOs and then agree a list of services to which TIS subscribes on behalf of its members.

ETOs typically deliver the ETO in an email or simple text format. In very large systems it can be very difficult to categorise the type of opportunity without a great deal of effort. Since the TIS ETO will be a subscription service within Lebanon, exclusively for Lebanese traders, the data provided must be capable of being handled and responded to, rapidly. Further research will be needed by TIS to decide on the best means of retrieving and then delivering the information. Current TradePoint activity is centred upon the UN/EDIFACT PRICAT, or Price Catalogue message set for this purpose. But that may prove too clumsy and too expensive for TIS clients. It is possible that an HTML or XML approach may be better suited to the mostly, small and very small Lebanese trader.

A requirement will have been agreed at the time contracts are agreed.

## 4.72 EDI; Declarations for SMEs

By the time TIS has been fully operational for a couple of years, the Customs EDI input system for NAJM will be fully implemented. The larger traders will be declaring their imports and exports via EDI direct to Customs, probably through the LibanFac VAN service. The larger trade professionals and integrated logistics operators will also be declaring consignments in this way. TIS will offer the SME an opportunity for Customs declarations on a low cost, bureau basis, thereby allowing the SME trader to comply with Custom's requirements but without having to make the investment in technology, maintenance costs of technology and staffing.

This will require TIS to have a good EDI translator, integrated to an SQL for storage, separation and easy retrieval of trader's transactions. Once the Customs application is completed then TIS can provide an SME EDI service for a wide range of applications,

including compliance with JIT, ECR and QR programmes by Lebanon's major trading partner corporations across the world.

It may well be that this is more efficiently managed by using a merchant server approach than a simple mapper/translator. If this is the case, then secure Internet transmission capabilities need to be assured, by use of encryption-receipt acknowledgement software, SMIME, or other accredited transmission methods.

Once again, this requirement will probably not be needed for two years or so; there is so much development taking place in this area that, what today might sound esoteric, when it comes to be installed will be commonplace.

4.73 Secure Payments, Digital Signatures, Auctions

This set of requirements may be possible to implement partly out of sequence, especially the auctions component. The major requirement is enable secure electronic payments of Customs taxes to the MOF. Digital signatures will be a central feature of this service, as will digital certificates.

It is unlikely that, in the first instant, TIS will be able to justify offering this payment service from their own resources, unless a strategic decision is taken to implement it on a non-commercial basis. Ideally, TIS will brand label a local bank service and provide secure access to that service. It will also be able to make use of commercially available digital signature and certificate services. However, the end user costs of these services may be too expensive. Another option is to encourage the establishment of a whole of Government pka.

The bank payment and secure, proprietary transmission will probably be available from a Lebanese bank in the time frame under consideration. It is already available at competitive rates from a number of US, European, Asian and Australasian banks. The stand alone digital signature operation is already available, essentially for email services, as a free service from Netscape and Microsoft. It is not freely available for financial and business transactions, nor are digital certificates. Hence the Government scheme might be the best option.

Of course, Customs might initiate their own system, in which case the trade clearance payment system is solved!

While the auction scheme requires a payment component, traditional payment methods will be sufficient for an introductory period, hence it might be possible to introduce this component out of sequence, earlier than planned. The idea is that Lebanese stockists and manufacturers list their stock, or disposable inventory on a merchant server site. Privileged access to price and stock availability, even bid-buy auction facilities will be made available.

This auction method has proven hugely successful in the used and new auto business and in the surplus computer inventory area. It enables traders to dispose of unwanted and out of date stock, thereby creating cashflow and space for new, more marketable (at

full retail) stock. In the case of the buyer, it enables them to reduce the cost of their purchases, even to find local stock that was thought to be unavailable.

At a national level, this can be a valuable tool for reducing the over-ordering of stock and duplications. There are even some very specific Government applications; for example pharmaceuticals for resale to hospitals, uniforms for Government employees (Customs, the armed forces, the airlines, etc.), and a whole range of regular Government building and maintenance supplies, computer software and hardware, etc.

TIS will offer this as a subscription service, taking a small percentage as an arbitration fee.

Additional services in this module include the buying of banking and insurance products for trade and the automatic arrangement of transport and distribution for products bought at auction. Additional customer care (call centre) operations will provide help for delivery tracking and other distribution problems. Data warehousing will provide buyer pattern analysis, forecasting and marketing tools. Most of these are available through sub contract Internet services; banking and finance through proprietary services.

4.74 Technical Controls

This is the ultimate application for the TIS. It was the main purpose for the design of the TIS concept. It will probably be a web forms application, sitting on a merchant server system, with an integrated SQL for storage, retrieval, editing, auditing, archival and analysis.

In a number of phased steps, the technical control application will migrate the following design and methodology:

A trader will submit an electronic application for a technical control (an approval to import or export a consignment of goods), hopefully in a single standard layout for all agencies control's. It may be downloaded from the TIS or an individual agency web site. The form is automatically allocated an ineradicable track and trace serial number. Frivolous applications will be deterred. Note: In addition, cash and cheques will not be permitted; this is to be a paperless system.

The trader may complete the form on line or off line. The trader completes the form, digitally signs the form and pre pays using a variety of electronic payment methods (account, credit card, debit card, stored value card, TT or FEDI) and then submits it electronically. It may be returned for editing and corrections, from an automatic editor.

TIS, or the agency, through the Government Intranet, process the application as automatically as possible. Most applications will be approved and electronically returned with an approval number, e.g. an export or import certification number, within a very short time. Some overseas administrations contractually guarantee a 10 minute turnaround.

When the approval is returned, electronic copies are sent to TIS, the controlling agency and to Customs.

The trader then submits his electronic declaration package to Customs who pre clear the consignment so that it may be immediately collected on arrival. In the case where the Customs risk management system detects an exception, under the algorithm agreed for risk management for particular combinations of goods, trader, etc. the trader, his trade professional and the controlling agency representative attend the Custom's physical inspection process. It is intended that this will be a rare occurrence.

Statistics and queries are provided from the SQL data base.

There is no doubt that it will take several years to reach this automated approval system but, by breaking the process down, it is possible to incrementally implement the system, with cooperation from all of the agencies involved. The Phase Three report describes the system in some detail.

### 4.80 Potential Enhancements

In conclusion, there are some applications that may be logical extensions of TIS suite of business offerings but that have not been included in the specification. Their horizon is seen to be a little too far away for that to be a realistic requirement at the time of developing this document. There are several potential additions; they include.

*Agency Risk Management*

The first is to provide more specific risk management modules for individual agencies. It may transpire that the risk management algorithms adopted by Customs involve compromise to particular agencies methods of operation. While this will not delegitimise Custom's risk management systems they may be able to enhance then with individual risk management systems which feed into Customs, perhaps updating algorithms heuristically.

For example, a particular agency could set up their own profiles on traders, products, source and origin, countries of import and export, date comparisons, shippers and carriers, trade professionals, risk factors, seasonal risk factors, externally supplied risk factors (e.g. Interpol, WTO, WCO, ICCC, etc.), and so on. Hence an approval from this system could only enhance the Customs risk management process, leading to a zero tolerance, 100% compliance, zero physical inspection goal.

*Clearance Modelling; Track and Trace*

By integrating TIS systems into the Government Intranet/gateway and Customs NAJM and Risk management systems, it may prove possible to model and to forecast when consignments will be available for collection. Used in conjunction with transport and distribution on line applications, this can dramatically improve delivery times and storage utilisation, at each stage of the clearance process. Once again, this is a good value add opportunity for TIS.

*Data Pooling*

One of the hottest topics after risk management in Customs and trade process (including CEFACT) circles is the concept of data pooling. This means that each of the transport and storage companies supporting a particular port of entry, and banks and insurance companies, make access to their systems available to an intermediary, like TIS. TIS can then package up transport routing, schedule and pricing options in addition to banking and insurance options, in order to provide a service to the individual SME. This empowers the small company to an extent that is currently not possible.

These systems can be further enhanced by adding an SQL facility for performance monitoring and QA reporting, for track and trace and various additional logistics purposes.

*Revenue Management; Statistics*

Another option is to enable TIS to collect revenue and to manage it for MOF/Customs. With a proper technical control payment collection system and a facilities managed Customs taxation collection system, there is a possibility for a more specialised and closer managed trade revenue control system, to the benefit of all Government agencies.

The same logic may be applied to the collection of trade statistics at a greater level of detail than is currently possible.

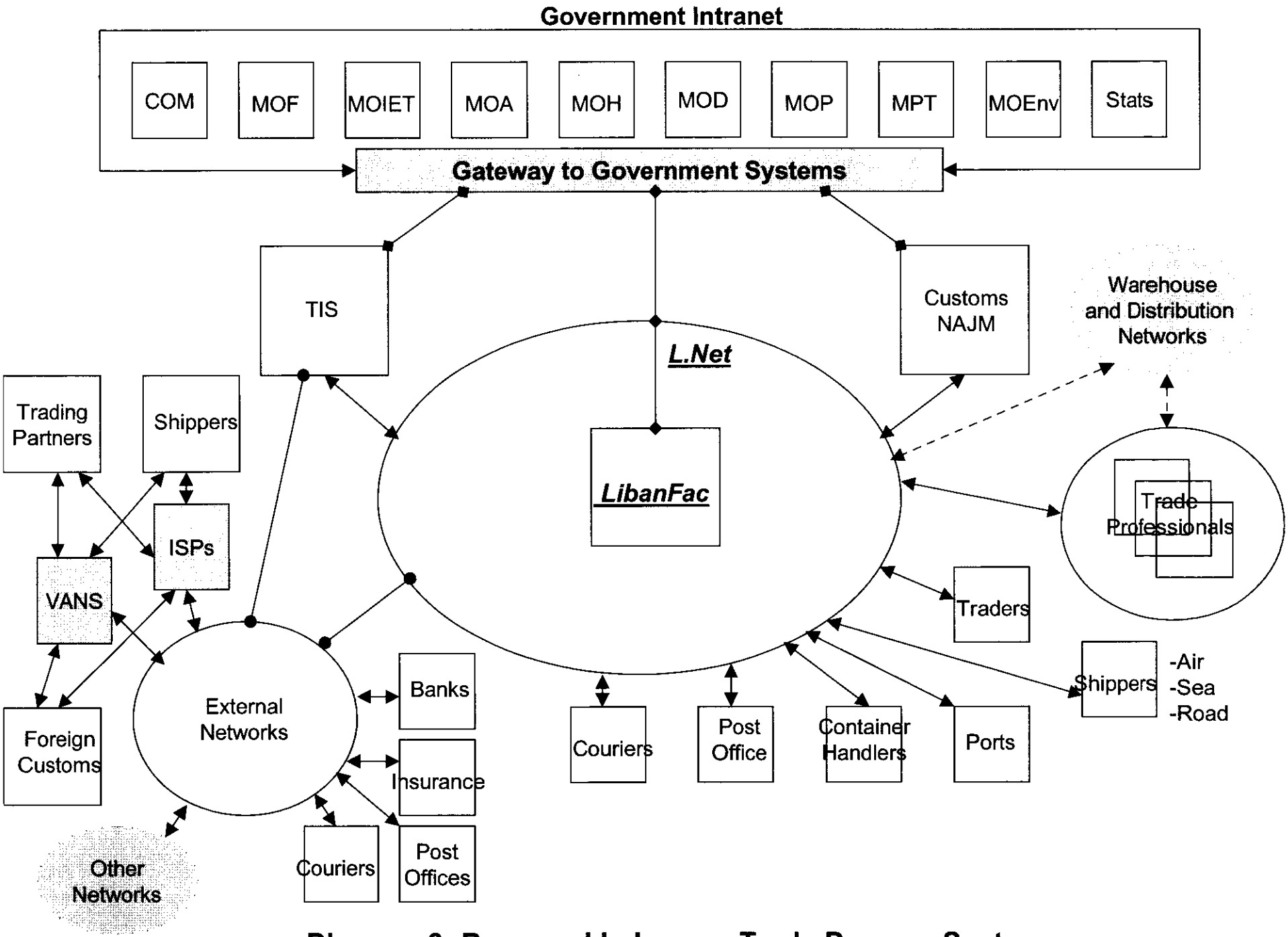



**Diagram 3: Proposed Lebanese Trade Process System**

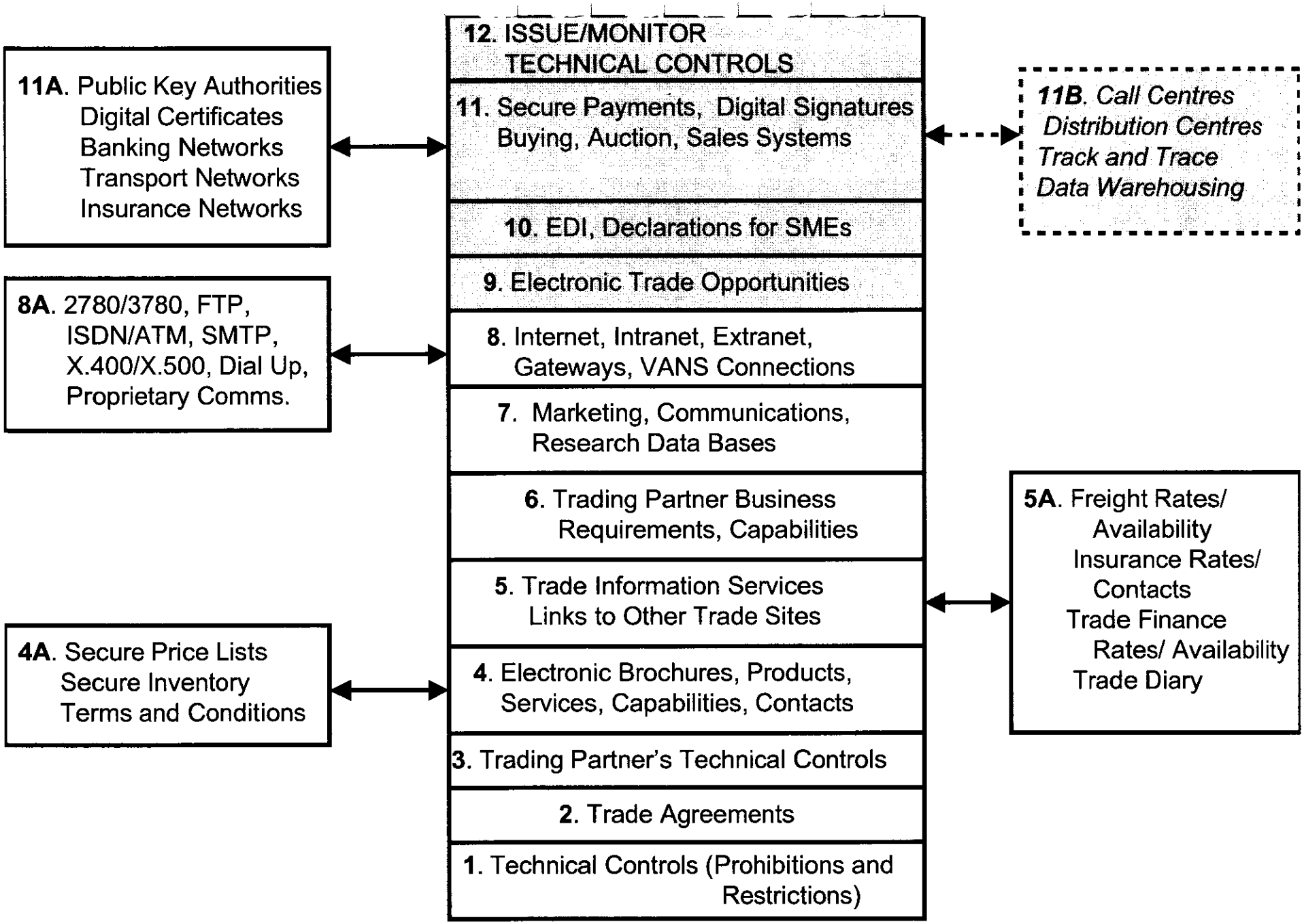



**Diagram 4: Proposed Trade Information Services (TIS) Systems: Specifications**

## 5.00 THE BUSINESS CASE

This section comprises a brief overview of the potential business case for TIS. It can only comprise a cursory view because many of the details have not been discussed yet; there are many options which affect financial outcomes.
The figures detailed here are for general guidance. Examples of details at a line item level can be found in the Tradegate 1997 balance sheet and in the World Bank reports, circulated with the Phase Three report.

### 5.10 TIS Costs

***Set up ( One Off) costs*** include:

| | |
|---|---|
| Hardware | $100,000 |
| Software | $100,000 to $500,000 |
| Acquisition/Development of Risk Management modules | $250,000 to $500,000 |
| Office fit out | $50,000 to $100,000 |
| Consulting Project fees | $75,000 |
| Miscellaneous Expenses | $100,000 |
| ***Total One Off Costs*** | ***$675,000 to $1,375,000*** |

Comments:

1. All costs are estimates at this stage, prior to agreement on specification, RFP results, timing and financing.

2. Risk management may be developed internally, over the course of the first two years and with help from similar efforts at Customs and LibanFac.

3. Local knowledge is needed to confirm costs of staff, premises, overheads, benefit costs, etc.

4. Private sector pay scales are assumed.

Repetitive costs include:

*Debt servicing*, assume 10% of $1,000,000 p.a., say $100,000 p.a.

*Staff costs*, assume 20 people, average burdened salary $30,000 p.a.

*Premises*, assume an annual cost of $100,000

*Services*, electricity, telephone, office services, etc. Assume $100,000 p.a.

*Expenses*, Miscellaneous: Assume $100,000
*Software Maintenance*, $15,000 to 100,000 p.a. Assume $75,000 p.a.

***Repetitive Totals***

| | |
|---|---|
| Debt Servicing | $100,000 |
| Staff | $600,000 |
| Premises | $100,000 |
| Services | $100,000 |
| Expenses | $100,000 |
| Software Maintenance | $75,000 |

***Annual Costs*** ***$1,075,000 p.a.***

Comments:

1. Repayment of debt may be on a reducing balance, deferred payment or some other arrangement.

2. Premises may be considerably cheaper; they may even be donated for a period.

3. Staff costs are assumed to be charged to TIS but many of them may be regarded as sunk costs and be carried on the payroll of the relevant agency.

4. Services is just an estimate, without the benefit of local knowledge.

5. Costs are quoted for a fully implemented TIS, say after three years of operation. For the first few years, costs will be considerably lower. A cash flow and P&L should be developed as part of the Implementation Project.

### 5.20 TIS Revenue Potential

The estimates here are based on numbers of users and their level of membership.

| | |
|---|---|
| Level One membership: Information Services only | $600 p.a. |
| Level Two: Information Services: Web Hosting | $1,200 average |
| Level Three: Transaction Processing | $2,500 average |

By year three, a fully implemented TIS, assume:

| | |
|---|---|
| Level One | 500 members |
| Level Two | 200 members |
| Level Three | 100 members |

Membership Revenue Totals (Year Three): $790,000

Additional Potential Annual Revenues:

| | |
|---|---|
| Technical controls fee for service, say | $200,000 |
| Auction Yields, say | $200,000 |
| Consulting, special web services, etc., say | $200,000 |

| | |
|---|---|
| Total revenues, Year Three | $1,390,000 |
| Total Costs, Year Three | $1,075,000 |
| **Contribution** | **$315,000** |

### 5.30 TIS Summary

Clearly, this is an academic look at the potential. The follow up Implementation plan for TIS needs to survey the market in more depth and to establish price points against product and service levels. It also needs to evaluate the method of operation of TIS, cross-charging for TIS technical control services and the integration with the existing TIC and Chamber of Commerce operations.

Nevertheless, there appears a prima facie business case for TIS, in addition to the national benefits that will transpire from its successful introduction.

## 6.00 PROJECT PLANNING

This section is an overview of the timing and effort needed to implement TIS and the trade process projects. While they are treated separately here, there may be merit in treating them as a single integrated project, installed under the project management of LibanFac.

### 6.10 Assumptions

This section is being presented as a very rough guide, an indicator based on the experience of other, similar projects in other countries. This guide is included to place recommendations in context with the overall scope of the problems to be solved. It should not be used, under any circumstances, as any sort of project plan. A plan can only be produced after detailed investigations and consultation with all parties potentially involved in these projects.

In order to make any projections about time, or the scope of work, it is necessary to make the assumptions:

1. The implementation goes according to the recommendations in the Phase Three report; that there are no significant changes.

2. There is no delay or compromise caused by lack of resource, of any kind.

3. That the projects are preceded by detailed implementation planning work.

## 6.20 TIS Project

*Diagram 5: TIS Project Management* provides an overview of the timing and major modules of the project, as recommended. The steps are numbered according to the category of work being undertaken. The blocks used to represent the passage of time, from 1999 to 2006 (seven years) are only estimates, for the sake of illustration of the comparative scope of the module.

The block colours are coded:

- Black for the initial implementation, or introduction of the task, or the technology;
- Patterned to illustrate the continuing nature of the task or use of the technology. It is also used to show that tasks and outcomes evolve over time.

### 6.21 TIS Implementation Steps

The steps detailed are divided into a set of macro activities. These activities are based on awareness of the project status and levels of support at the end of Phase Three of the project. The follow up implementation plan and subsequent consensus building will be the next major development in the firming up of this plan.

The anticipated macro steps, or sub projects are:

1. Develop and agree an implementation plan. Agree method of operation, ownership, business plan, timing.
2. Search for and Appoint a CEO for TIS.
3. Complete tendering and selection for TIS technology; install and commission systems.
4. Recruit TIS staff, from public and private sector.
5. Make public announcement of TIS; conduct PR to ensure maximum awareness.
6. Establish the working party, appointed to rationalise and to approve technical controls.
7. MOIET establish the first one stop shop (OSS) for issuing relevant technical controls.
8. TIS begins to offer first IT products, trade and information data bases.
9. MOIET moves OSS to new premises, established specifically for TIS' full range of services.
10. The first new Ministry joins MOIET' OSS and TIS operation at the new premises.
11. Other Ministries gradually join TIS at the new premises.
12. TIS develops a single, simplified, standard paper form for all technical controls. The form is based on UN/EDIFACT design principles.
13. Completion of all Ministries joining TIS.
14. Completion of first phase of paper technical controls rationalisation. Control of new restrictions, rationalisation and plans for automation continue.
15. Development of an electronic standard for technical controls.
16. Introduction of electronic payment for technical controls. Introduce electronic transaction processing services.
17. Introduction of electronic applications and issuing of electronic controls.
18. Development of technical controls risk management computer model.

19. Introduction of automated approvals at Customs and clearance points; introduction of pre-clearance and pre- and post-event auditing.
20. Cut over to full EC/EDI methods of application, issuing and approving technical controls. Full risk management techniques in operation.
21. Review TIS business results, equity and ownership.

Clearly many details have been omitted, but even this sparse overview illustrates a work programme extending for five to six years of innovation.

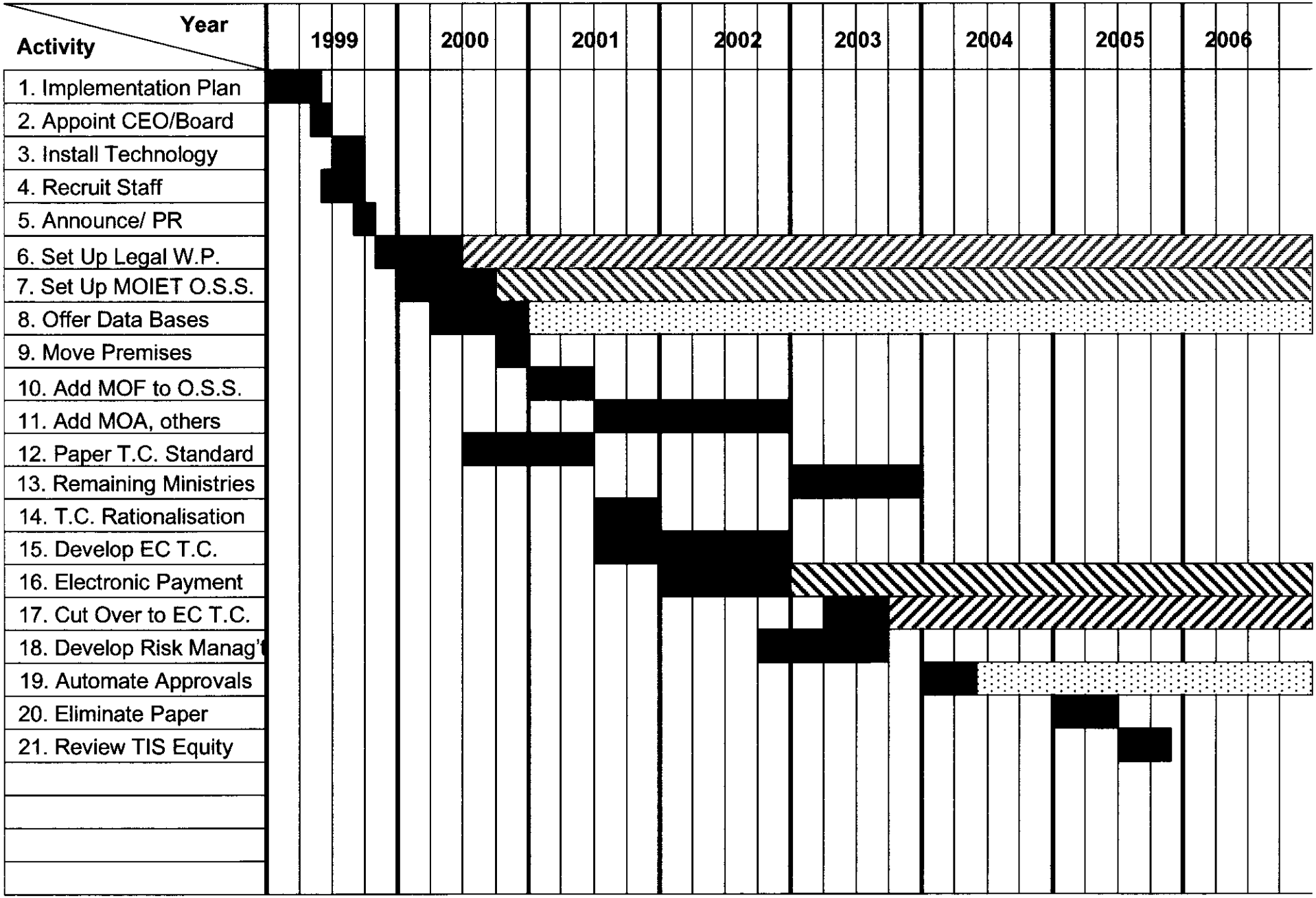



**Diagram 5: TIS Project Management Overview**

## 7.00 SUMMARY

The TIS specification has been split into five manageable modules, matched against a draft implementation plan. There is no cutting edge technology involved in the TIS although some of the technology is in a state of continuous evolution.

The final specification for TIS should be agreed following the trade process implementation plan and consultation exercise, which begins with a project debrief in April 1999. In addition, an RFI process should begin to involve potential vendors; the cross fertilisation of their input, together with the completion of the implementation plan should complete the preparation work needed to ensure a successful implementation of TIS.

# Appendix One: Response to Comments

**Lebanon Trade Efficiency Project: First Response to OMSAR Comments**

**Introduction**

This brief document comprises the PKA response to OMSARs comments on the Phase Four report, TIS Functional Specifications.

The text of the OMSAR comments follows.

*Comments on phase four:*

*In general, the report provides the Government with a good description of the proposed requirements for the set-up of a Trade Information System (TIS). It clearly describes the scope of work of the TIS and proposes guidelines for its implementation, operation and phased expansion. However, the report does not clearly distinguish between the scope of the TIS and the technical requirements which should be presented to vendors as part of a bidding process.*

*In summary, we have the following comments on the scope of the TIS:*

*1. With regards to the proposed TIS Systems (Specifications) as described in Diagram 4, we understood that the modules are sequential. Please clarify if this is the case and why they can not be in parallel.*
*2. We would like some clarification on why the process of implementation shall require around 5 years. Can it be shorter?*
*3. It was not possible from the report to determine the critical modules for the operation of the TIS. Can you please prioritize the services, identify the critical systems and provide us with your reasoning on why those selected are more essential than the others.*
*4. Can you please define all the stakeholders in the system and the level of involvement of each, since this is not apparent in the report. Who is responsible for populating the data available through the system ?*

*Moreover, we have the following comments on the technical component as required for bidding:*

*1. The report does not clearly identify the activities and deliverables required from the supplier. These need to be quantified and qualified.*
*2. Some essential elements for a tender document are missing, these include the hardware/networking requirements and specifications, training activities and plans, data entry requirements, necessary pre-requisites (e.g. the availability of the information base for the databases), database contents (including the technology, database*

*layout, etc..) amongst others.*
*3. It is not clear what databases if any the vendor should provide and which would be supplied from external parties.*
*4. The application interface needs to support Arabic*
*5. On another note, do you envisage that one or multiple vendors shall handle the implementation of the TIS. If multiple, what would be the nature of the leading company which would be invited to participate in the bid ?*

*In conclusion, it would be advisable to separate the elements which represent the overall scope from those which are required by vendors to enable them to respond to a Request for Information (RFI) or a tender document. Moreover, as you are aware the recommendations of Phase Three shall be the subject of the workshop, prior to an approval endorsed by the government as a whole (noting that the approval of Phase Three was only based on the compliance of the report with the requirements specified in the TOR). Consequently, we can not assume that the government has approved the recommendations of phase three. as a matter of fact we hope that the workshop will pave the way towards the government approval.*

The responses are divided into **Scope of The TIS** and **Technical Issues**.

**Part One: Functional Issues; Scope of the TIS**

This response was originally written in email format because there are relatively few comments to respond to and will not take too much space. This Word Addendum to the Phase Four Report is for the record.

**Introduction: General Comments**

The TIS specifications were based on the assumption that an implementation plan had taken place and that all parties were clear as to their roles and responsibilities. Clearly this is not yet the case so certain assumptions had to be made which will be clarified during the implementation planning phase and vendor responses. The biggest doubt lies over whether LibanFac operates both LibanFac technology and TIS, which is my recommendation. In which case the implementation plan needs to take account of both services and organisations.

**1. Sequential or in Parallel?**

Section 4, pp 35-42 describes four sequential groups for the 12 different sets of functional modules. There is a potential for overlap between modules but, preferably, not between groups. Not for technical reasons but for implementation and human capacity reasons. To implement groups in parallel would be too much to absorb in one bite. Having said that, if a vendor has compelling reasons for installing one before the other-or in parallel-that would be fine, provided that the TIS/LibanFac organisations could make immediate productive use of those modules. The final decisions will follow a detailed implementation plan after acceptance of these recommendations.

**2. Five Year Implementation?**

I was responding to community reactions, especially committee members, when I designed a five year plan. Technically, there is no reason why it could not be a three year plan. But it could not be much less than three years because some of the technical components such as Risk Management will take almost that long to develop and to be usable by TIS staff. Note: The development and testing might only take six months but TIS will not be ready to absorb and offer it for much longer.

There are also debates surrounding digital identities and payment issues that are as yet not totally resolved, but certainly will be within 18 months or so.

The main reasons why five years is a safer, more conservative choice, is the human resource and skills requirements, not to mention the time it will take to receive universal acceptance in the Lebanese environment. If I were proposing this for a European country or for an advanced Asian country I would have no hesitation in recommending a three year plan. But my own judgement, based on a 12 month experience of the Lebanese environment, is that five years is more realistic.

Once again, the final decisions will be taken during the adoption of an implementation plan and during vendor input.

**3. Critical Modules**

This question really needs more clarification: critical for function? for day to day operations (mission critical)? for trader's needs? for technical success? or for commercial success?

I organised the groups of modules initially based on the requirements for trade process reform: i.e. which modules could actually assist the process? From that perspective, modules 1. Technical Controls database and 12. Issue and Monitor Technical Controls are crucial. But the time difference between them is based on the time to develop and test the systems, to integrate them with others, to develop and to sensitise the market, TIS staff, TIS management and the TIS stakeholders (owners, directors/Board members and those critically involved in its success).
Hence, automating technical controls is the top priority in the overall context of trade efficiency and trade process reform.

From the point of view of commercial success, modules 4. Electronic Brochures, 9. Electronic trade opportunities, 10. SME declarations and 11. Auction and sales on line are the priorities. Each of these will generate user growth, volume growth and transactional revenue growth. But they are not critical to trade efficiency and trade process reform.

From the point of view of day to day usefulness to traders and the general trading community modules 2. Trade Agreements, 3. Trading Partner technical controls, 3. TIS links and Freight/Insurance/Finance rates and 7. Marketing Communication research data bases will be the most useful. It will be these services that justify the annual and joining fees.

Clearly from the technical standpoint, the Intranet, Extranet and Gateway facilities are the most important
The implementation plan will need to prioritise these modules based on the factors in this response and in the previous response. My own priorities were based on the assumptions previously described and on experience of what it takes to run a TIS-like organisation.

A note on the realities of business life here. We may design a perfect TIS and obtain everyone's agreement. Then, after two years of market and services development, the Board might become nervous about the financial performance of TIS and change the priorities to revenue generating rather than trader services. I have to say that this is almost inevitable. This is why I have designed the mix of function and commercial in this way and in this sequence. This is also why we need a balanced mix of stakeholders and directors, and Government support for the first few years.

## 4. Stakeholders

I can only recommend, not mandate. But in an ideal world the Government would provide the funding and appoint a commercially experienced and mandated CEO. The Board would then comprise a number of directors-with commercial experience-representing the equity holders. Stakeholders with a minority equity interest, such as the Chamber of Commerce, Trade Professionals and Banks and Insurance companies would also be represented. Non executive, non voting directors should also include representatives from Customs, Port and Harbour and Container Handlers.

There are several models. Visits can be arranged to the most relevant during the Implementation Planning Phase.

## Part Two: Technical Issues

The following response concerns your comments on the technical requirement as required for bidding. I would note that the Phase Four document was a functional specification, regarding the functionality of the systems to be provided by the various vendors and on how the systems will be deployed by the end users. It was not written to be a RFQ or a tender document. The contract did not ask for that. Indeed OMSAR has much more expertise than most in this area. Nevertheless, as you are aware, I have already provided information acknowledged to be satisfactory to OMSAR regarding an RFI. However, subject to these caveats and to the understanding that there will need to be an implementation plan and RFI prior to final specifications, I will answer your questions in as much detail as I am able.

### 1. Activities and Deliverables from Suppliers

The ability to meet this functional specification changes every day as new suppliers emerge, new products are announced and new contracts agreed. The major factor in deliverables will be the response to the RFI (PK input provided December 1998).
In general the vendors will need to supply hardware and operating systems, network products and basic application software necessary to running the TIS service. The vendors will also have to provide Internet access tools and web development tools. These basic products and services should be obtainable locally but, at OMSAR's choice, may be bundled in with the functional tools for data base access and higher value add components, described in pp 35-42 of the Phase Four report.

Note: It has been assumed that OMSAR are progressing their recommended whole of Government Intranet and that TIS makes use of it. If not, OMSAR will need to add their Intranet specifications to the TIS RFQ. This is to ensure access for all Government agencies involved with technical controls.

Specific data bases are obtainable from a range of sources; certain vendors may have their own proprietary information, but, with the exception of those specifically developed for TIS, it is anticipated that they will be accessed using traditional Internet means.
For example, the Prohibitions and Restrictions data base has been developed by Customs. It is currently only available in Arabic and utilises an Excel spreadsheet presentation. It will need to be translated into English and French for wider trader use. This will be a function of the TIS. To regularly update versions and to ensure multi language versions are available for traders and clients.

Trade agreements will need to be entered by TIS or a sub-contractor, unless they are already in a machine readable format. Mechanisms to ensure that TIS keep these data bases up to date will also need to be agreed.

Trading partner's technical controls will be a hybrid. The vendor may wish to contract for that job. Alternatively, TIS may wish to create and operate that function. Somewhere in the middle is the range of countries who already provide free or paid (privileged) access

to that data. This decision will require a detailed examination of what is available if the vendors cannot provide such information. However, the priorities are quite clear. Only those data bases which refer to the majority of trade (import and export) need to be priority. That information is available from TIC.

Electronic brochures, capabilities, etc. will require a merchant server (from a selection of 10 or so, many referenced in the web sites in the report). This will also require technical scanning to a professional level, digital cameras, colour printers and high quality screens. Specific web creation software may also be proposed, depending on the amount of work envisaged. A later, secure component, will be the subject of further discussion but I favour asking vendors to make specific proposals on this item.
An alternate to this is that there might be a whole of Government studio facility, or an outsourced facility. These are implementation issues.

Trading partner business requirements are a TIS function. They will receive requests from their members and either create links or build data bases, probably a hybrid of both. The same is true of marketing communications. Freight rates can also be a TIS created data base or accessed via links. The same is true of banking and insurance products.

Electronic trade opportunities will be subject to vendor proposals but can also be linked via free and privileged web sites. The conversion of TradePoint opportunities will need to be developed by a sub contractor for TIS, or by one of the bidding vendors.

EDI and SME declarations will be another merchant server product, perhaps residing on the electronic brochures server. Ideally, it should be a higher functionality server since it will need to input into a Customs ASYCUDA system. It is expected that vendors will need to propose such a system, including "credit card payment per transaction" and account options.

Secure payments can be a further development of the electronic brochure server, perhaps bid for at a later date, depending upon RFI input.
The automated technical controls and risk management systems will be a major external development. It may require its own dedicated server for security purposes. It will need to be developed by a vendor.

As you can see, there are many variations. Without substantial input from the stakeholders and an agreed implementation plan, together with input from the vendor RFI there would be so many combinations that to go into any more detail would be impractical at this stage.

## 2. Tender Document

As mentioned previously, Phase Four was not concerned with developing a tender document, it was a functional specification. However, when OMSAR are ready to issue

a tender document I will be pleased to help. In the meantime, I offer the following observations.

We have to make some assumptions on the number of users in TIS. Bearing in mind the current status of consultation, there is very little to go on. I guess that a starting configuration of 10 workstations on a TIS LAN will be sufficient to begin with. Ultimately, I foresee all government agencies-however they are, by then organised-each with their own Intranet server and LAN. Assume that each has an average of five users at this stage. By the time TIS is fully functional with all applications operational and connected to LibanFac then we could see up to 200 workstations and a hierarchy of servers, function as described in the previous set of comments.

I would also suggest that, since this is to be a commercially operated, service organisation, each workstation will require a personal printer by the time that the system is fully operational.

Comments on training are valid but it is too early to be specific apart from general observations. We will need to know which modules will be developed in-house by TIS and other agencies and which will be developed externally, therefore requiring formal external training. The previous answers will give the best guidance available to those answers at the moment. However, the IT professionals at OMSAR are much better qualified to give these answers than any outsider.

Probably the best option would be for any outside vendors to provide specialist training (and upgrade training) to two designated TIS staff and for TIS to operate an end user training function.

Comments about DB layout are no longer relevant in my view. I have already stipulated an SQL environment in the Phase Four Report.

Data entry requirements are subject to who provides the data bases, which is still open to much discussion. The previous section gives a good guide.

**3. Data Bases**

See 1. Actions and Deliverables.

**4. Arabic Requirements**

I agree that Arabic is a local requirement but the linked data bases will be in their country's natural language, and English and French. The responsibility for translation will surely be TIS', subject to an ROI or overwhelming qualitative argument. Each case should be treated on its merits.

You already have my view on EDI standards, message sets, implementation guidelines, code sets, etc. The same may well be true of XML and XSML which are set to become the commodity version of EDI.

**5. Number of Vendors**

I believe that it is possible that you will get a single vendor who will agree to do everything. But I would be suspicious of that vendor. On the other hand, ideally, you will get a vendor who will agree to outsource or facilities manage the whole programme. They might even agree a revenue share-funding option. I believe that this latter course is the most favourable for Lebanon because it involves delegating responsibility with guarantees of performance and revenue.

I believe that several vendors will be interested in this approach. I can name them privately if you wish.

**Conclusion**

Bearing in mind my comments during this technical response I believe that I have completed my obligations. I will naturally help out as much as I can. It might be that there will be time available during the Workshop- period that we can draft a tender document or at least list the variables for resolution. I can also help draft the various TORs that emerge from the Workshop and the Phase Four recommendations if we have time.

**Lebanon Trade Efficiency Project: Second Response to OMSAR Comments**

The following is the reply to the comments received from OMSAR Friday April 2nd (Saturday April 3rd in Australia). The text of the comments is as follows:

*In order to make the phase four report partly focused on functional specifications as outlined in the original TOR, we request that you add functional specifications for each of the proposed TIS systems and grouped modules as extracted from the first draft of the phase four report:*

*Module One Requirements*
*1. Technical Controls*
*2. Trade Agreements*
*3. Trading Partner's Technical Controls*
*· Module Two*
*4. Electronic Brochures*
*5. Trading Partner Business Requirements*
*6. Marketing, Communication Data Bases*
*· Module Three*
*7. Electronic Communications*
*· Module Four*
*8. Electronic Trade Opportunities*
*9. EDI; Declarations for SMEs*
*10. Secure Payments, Digital Signatures, Auctions*
*11. Issue/Monitor Technical Controls*

*As the table of content title for module one states (Module One Requirements), each grouped module description tends to be more requirements than functional specifications. To facilitate for non-technical functional specifications to be documented, the stack diagram referred entitled 'Proposed Trade Information Services (TIS) Systems' needs to be drawn as a data/process flow diagram. This diagram needs to bring out the data input and output requirements of each system (1 through 11 as stated above). From these requirements, the functional specifications of each system can then be deduced. Again, no technical specifications are required here, yet it will be clearer to any potential vendor as to what the system needs to fulfil. How this is fulfilled will be left to the vendor to decide and propose.*

*With the data inputs and outputs of each TIS system clearly documented, the inter-links between the various TIS systems becomes easier to visualise and document as well. Hence the data/process flow diagram request. This diagram can extend over a proposed holistic or piece-wise (per system) timeframe yet adding another visual dimension to the deployment of the TIS systems. Tend to think of this data/process flow*

*diagram as the series of guidelines that potential vendors need to adhere to and/or enhance in the drive the implement the overall TIS setup.*

*As for the module groups, we need not propose any at this time, but rather leave it up to the various vendors to propose implementation scenarios. The as divided module groups (1 through 4) can be a proposed scenario, yet the vendor is left with the freedom to propose other scenarios as fits with the systems and communications offerings available through that vendor. We need not limit ourselves and the vendors to one implementation scenario at this stage. With a change in scenario, which in large part may be due to advancements in systems and communications technologies, the implementation steps and timeframe will certainly change as well.*

*With the above said, the functional specifications resulting from phase four can be eventually used in an RFI document with some introductory and editorial content for distribution to potential international vendors or consortiums in this field. Again, they need not be technical, however they should clearly depict a proposed piece-wise (individual system) and holistic (all TIS systems) data and process flow, with a certain implementation timeframe.*

The interpretation of this set of comments is that OMSAR are still not clear on the technical component of the report and therefore require some more explanation. While I will comply with the request, I have to point out that the web sites referenced in Reports Two, Three and Four all pointed to vendors whose web sites illustrate live demonstrations of all but one of the components described, i.e. Technical Controls Issue/Monitor (although Tradegate and Australian Customs do describe their systems), which is not yet developed but has been specified in some detail within the original Phase Four report and within the Phase Three report. Further, none of the specialist vendors listed in the web sites, and contained in the RFI, will require any elaboration. They know perfectly well the sorts of systems I was asking for, and describing. As OMSAR will discover when you start talking to them.

**Specific Response**

The following set of notes and diagrams illustrate modules one to four and their constituent components 1-12. Start by referring to the "stack diagram", reproduced as Diagram 1: TIS Systems Overview here.

Each application is separated out in the diagram and numbered 1-12 because **they are stand alone applications**. There is only a modest potential for integration between these applications. This is not an elegant IT construction. It is a working set of applications necessary for efficient trade processes. It is just more convenient to have a

centralised access, or switch, and an opportunity for revenue earning in order to subsidise the TIS organisation.

Access to the TIS system (switch) is by LAN, Internet, Lebanese Government Intranet, and by VANS. Some proprietary networks are also identified within the comms module.

Internet, electronic mail (e.g. AOL, CompuServe, other proprietary mail systems) and web access are necessary for users to make optimum use of the TIS system.

Note that the system may, at some stage, require payments to be made for a range of privileged services. Based upon TIS' decisions at the time these may be selected from: secure Internet payments (SET, SSL, etc.), TIS account customers (electronically debited and credited; electronic account maintenance and presentation), electronic bill presentment or FEDI. See Appendices to Phase Three and web sites referenced for further details if required.

The following diagrams and comments contain an information flow for each of the applications listed in the stack diagram (Diagram 1: Proposed Trade Information Services (TIS) Systems) in Report Four, except for component 8, communications module which is self explanatory and component 12: Issue/Monitor Technical Controls (see P.31, Report Four).

**1. Component One: Technical Controls**

Refer to Diagram 2.

For (web site) examples of this application, and links, see Customs web site (if now set up), Department of Commerce, USA; Department of Trade and Industry, UK; SITPRO, UK; Department of Foreign Affairs and Trade, Australia; Department of Commerce, New Zealand; ITC, Geneva; UNCTAD, etc.

**2. Component Two: Trade Agreements**

Refer to Diagram 3.

This is a free text database to be set up by TIS. There is no centralised source of this information in electronic format at the moment. For similar examples see WTO web site; see TIC web site, MOIET. See also Dept. of Industry and Trade, UK and various countries like Zambia, Tunisia through the TradePoint network.

**3. Component Three: Trading Partners Technical Controls**

Refer to Diagram 4.

This is a construction of links to be created by TIS. There is no central; source although UNCTAD and the WTO, together with ITC are working on it. See their sites.

Note that the first three components are simple web site access systems. They are not interconnected or integrated, except through links. Simple HTML technology is perfectly adequate, but good graphics and XML, Java and the like will be useful additions for navigation and for holding attention. Access is open to all Internet users and all TIS users for basic information. Privileged information (at the discretion of TIS) will be by login, password and firewall navigation.

## 4. Component Four: Electronic Brochures

Refer to Diagram 5.

This component is the first that requires some specialist expertise. It may need to be built, based on a merchant server, such as Microsoft Enterprise Site Server, InterWorld, etc. (see web site references).

Brochures are essentially electronic catalogues organised by products, services, capabilities and company/organisation contacts. Each "brochure" will be a discrete web site with the TIS merchant server so that there is a single point for navigation and search. A range of search engines will also be required.

Open access to this information will be available to all users and to any Internet user. Access will be encouraged and advertised as a service to members.

Privileged data on price lists, inventory availability and terms and conditions of sale and purchase will only be available through a hierarchy of security, using sophisticated firewall technologies. Encryption may be considered as an option, but only in later phases, as TIS gains experience in those topics.

## 5. Trade Information Services: Links to Other Sites

See Diagram 6.

Once again, this is a simple web access for members and users of TIS. TIS will construct navigation tools from icon 5 access. This will provide links and commentary for trade information services. Some may link to other web sites; some to proprietary networks and VANS. The idea is to provide a one stop shop for information on logistics, finance, insurance, news and information of general interest to the trader.

This site could also house the TIS newsletter, the EC Association site, "whats new", news releases and the like. It is a perfectly straightforward web site.

Some sources of information may demand secure or privileged access. That might be automatically allocated to TIS members, once they are logged in to TIS. Some might also wish to retain their independence and maintain their own security.

TIS will need to construct this site, perhaps with help from ITC and the existing TIC system.

**6. Trading Partner Business Requirements, Capabilities**

See Diagram 7.

As with most of the other components, the details of this activity will rest with TIS, after researching their customer and potential customer base. It is anticipated that the first part of this component will be via icon 6 on the TIS home page, which will lead to a list of URLs for the major Lebanese trading partners, those who have their own trading partners requirements web sites. See Walmart, Woolworths Supermarkets, EAN, AIM web sites for examples.

A later development, based upon market feasibility and demand, could see a further use of the merchant server technology utilised in icon 4 (electronic capabilities). TIS could reproduce this system but instead of completing the catalogues for Lebanese companies it would complete identical [pages for major consumers of Lebanese products and services.

**7. Marketing Communications; Research Data Bases**

See Diagram 8.

Icon 7 will point to a series of general research links, taken from TIC and complemented by TIS. See TIC, ITC, TradePoint, Silk Road, InfoTrade and various Government procurement sites.

The second part of icon 7 functionality is to be a marketing data base to be used by TIS clients for general communications. It will comprise a TIS generated list of company names (Customers and Suppliers), addresses, contacts, Industry, Country, Size, Number of Employees, etc. It will be complemented by links to similar lists, e.g. Kompass. The list software technology will be decided by TIS but standard contact management software will be adequate for the job.

**8. Network, Electronic Communications**

Diagram 1 illustrates the protocols and access methods commonly deployed in these types of systems.

**9. Electronic Trade Opportunities (ETO)**

See Diagram 9.

ETOs are now listed on a variety of data bases, although UNCTAD TradePoint (inaccurately) claims to have invented the term. The idea is that interested purchasers

briefly list their requirements on a web site and expect bidders (buyers or sellers) to complete a form offering to buy or sell. Variants include html data bases, where buyers can obtain detailed information from the URL. An extra sophistication is the ability to click on the html script and submit an EDI generated PRICAT, Price/catalogue message, in ANSI X12, EANCOM or EDIFACT formats.

The first phase of component 9 will see users select icon 9 to see a list of ETO providers. Some will be privileged access; some, especially country procurement sites, will be free. See Australian Government for free ETO/Contract details. See TradePoint, Silk Road, for privileged access. A simple print out of a web page is good enough to begin with. TIS will need to provide sort and presentation tools for TIS user presentation and convenience. Standard search engines will be sufficient for the first stage.

ETO EDI will require a file to be output from the ETO and to be translated into EDI formats. The TIS system will need a good multi purpose EDI translator, with comms modules, for this activity.

**10. EDI Declarations for SMEs**

See Diagram 10.

This component requires a merchant server front end to the ASYCUDA system. The trader or TIS will complete and electronic form with Customs required information. The form will transmit this declaration to ASYCUDA in EDI format (EDIFACT CUSDEC) over the Internet, initially in the clear, later on in encrypted formats. It may also send data in OBI format from the merchant server.

Both web EDI, using html and xml, and MIME (later S/MIME) for email carried EDI will be necessary. Some custom development may be needed or possibly an EDI Gateway could be installed, containing all necessary functionality. See Oracle, Sterling, Harbinger, AT&T, etc.

Customs will respond with an email message of approval, via the Government Intranet and the Internet .

**11. Auctions, Payments**

See Diagram 11.

This penultimate system will require a full functionality merchant server, with catalogues for items to be sold/auctioned. Items will be posted with a time limit for auction. Best price wins. Payment will be electronic, by credit card, on account, bill presentment or FEDI. Encryption will be needed for all payment methods and for connection to the banking clearance system, or an acquiring bank.

Later stages, especially for SET functionality, will require a CA for certificate issuing/ verification and digital signatures. TIS may possibly be able to operate its own CA.

The merchant server will need to provide interconnection, through the TIS comms module, with the interbank clearing system, with transport and logistics networks (for automating delivery instructions), and with insurance networks. It may also, in time, interconnect with voice and image call centres and data warehousing for trend tracking.

See any shopping or business to business site for examples, e.g.Cisco, Dell, Compaq. See any of a range of auction sites, such as excess IT inventory, autos, etc.

**12. Issue/ Monitor Technical Controls**

See Phases Three and Four Reports for description and diagrams.

**Summary**

The exact functionality, timing of components and/or modules and the sequence can only be determined after a full Implementation Plan has been completed. This will require significant consultation with the user/client base, and with the TIS stakeholders, and probably with their LibanFac counterparts. Unless TIS and LibanFac become a single organisation.

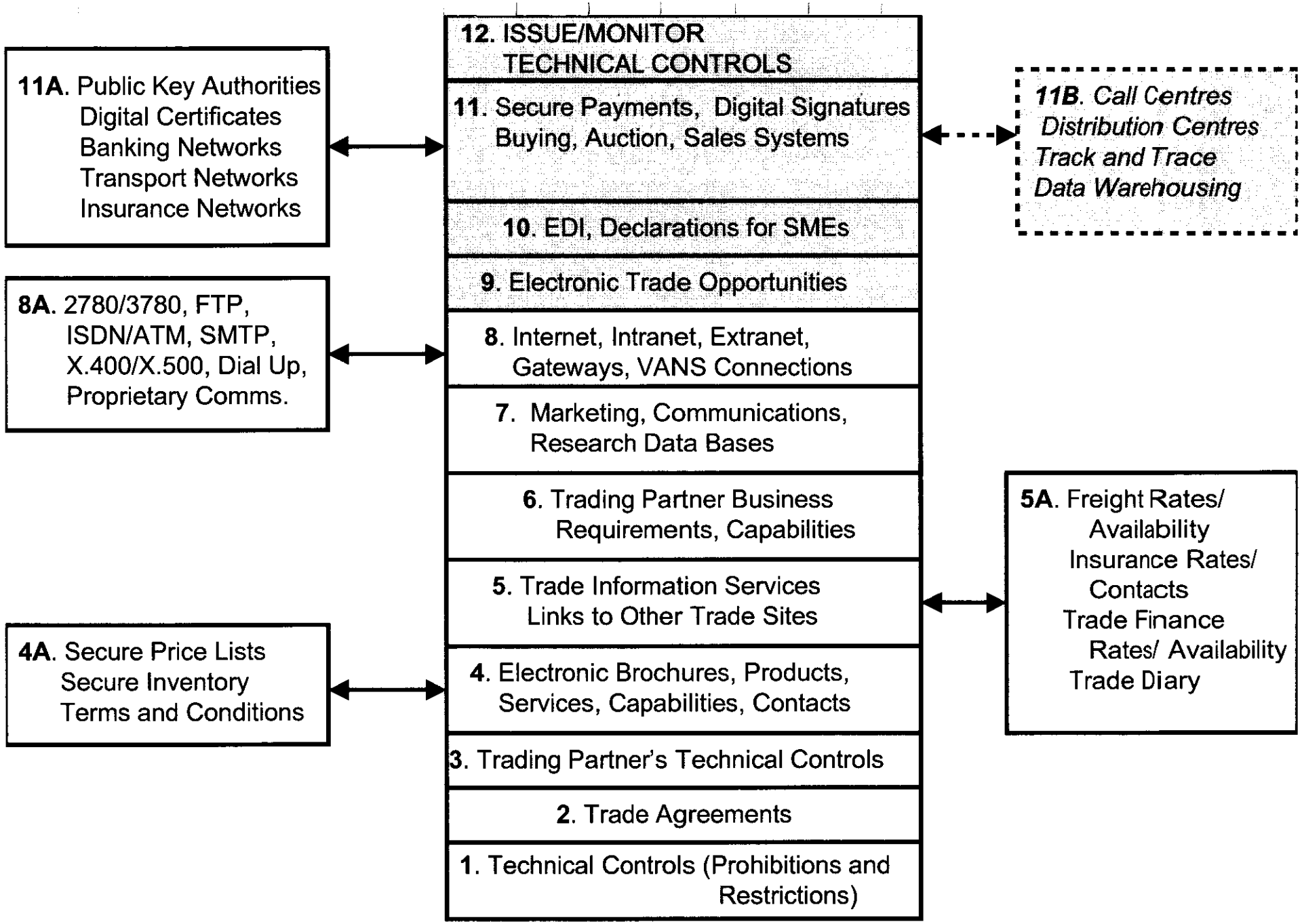
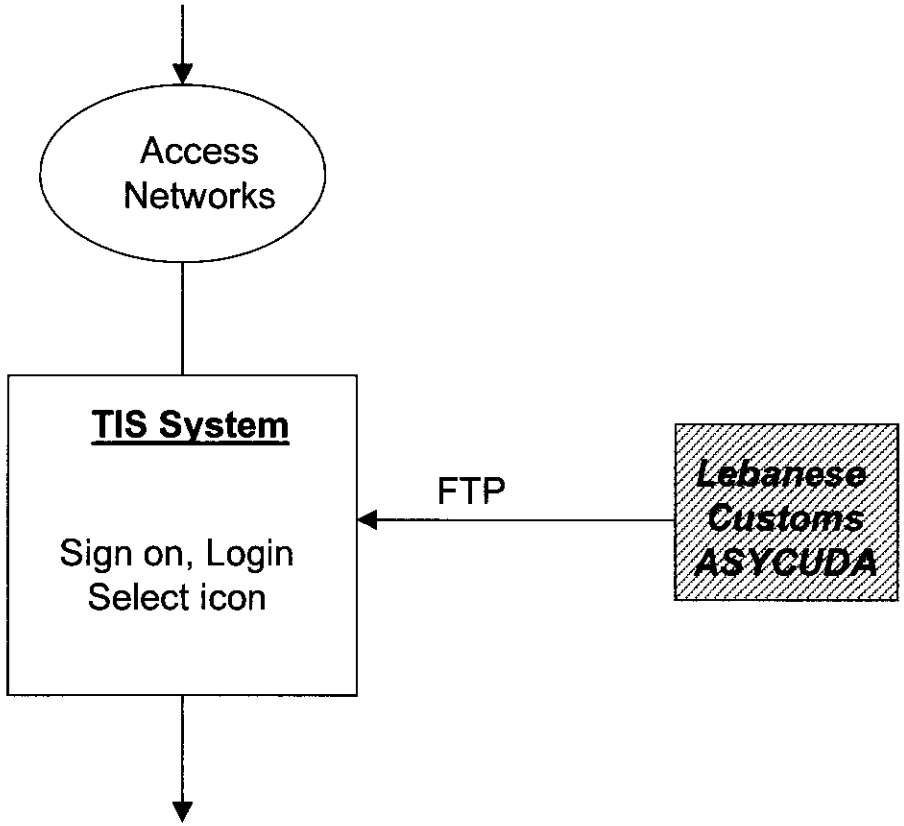



**Diagram1: Proposed Trade Information Services (TIS) Systems: Overview**

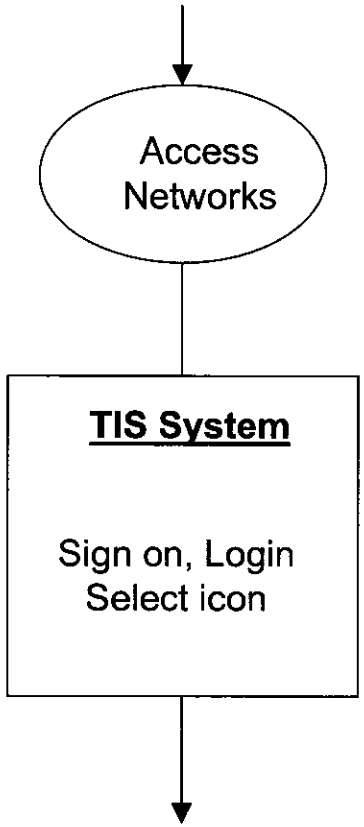
Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.




***Icon 1*** is a URL which points to the Customs Excel database on Prohibitions and Restrictions. Assuming correct level of access (determined by TIS) end user reads database organised by HS code, HS suffix, chapter, description, tariff and technical controls required. P and R is a read only database. It may be held on the TIS system and updated by regular FTP from Customs ASYCUDA database.

**Diagram 2: Technical Controls; Prohibitions and Restrictions**

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.

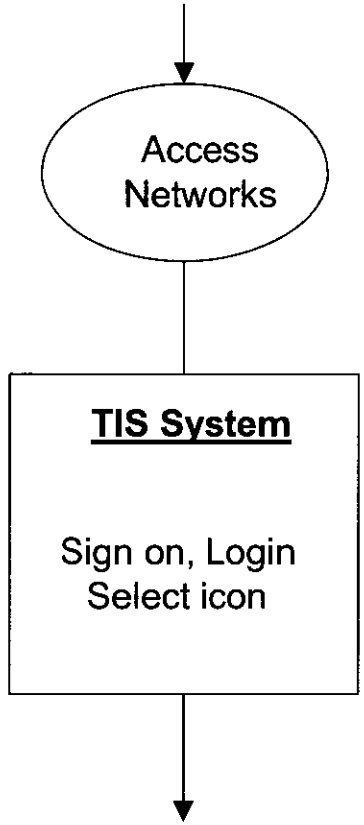



***Icon 2*** is a series of free text entries, created by TIS, with links to specific country web sites. Each page contains the details of Lebanese trade agreements with foreign countries

There will be a wide selection of links to make this page useful, constructed by TIS or their contractors.

## Diagram 3: Trade Agreements

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.




***Icon 3*** is a series of free text entries, created by TIS, with links to specific country web sites. Each page contains the details of trading partner technical controls, reflecting the Lebanese P and R page.

There will be a wide selection of links to make this page useful, constructed by TIS or their contractors.

## Diagram 4: Trading Partner's Technical Controls

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.

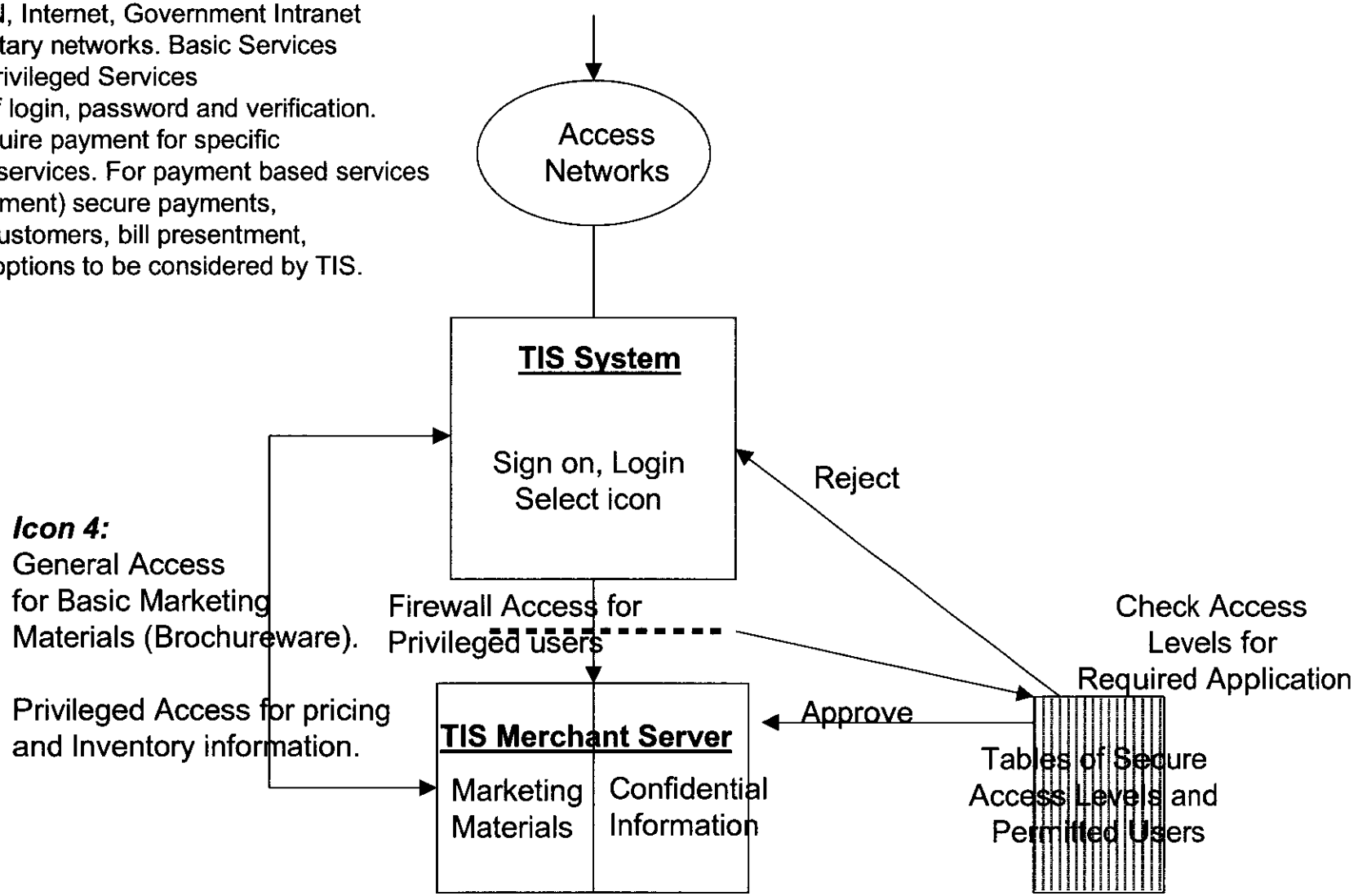



**Diagram 5: Electronic Brochures**

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.

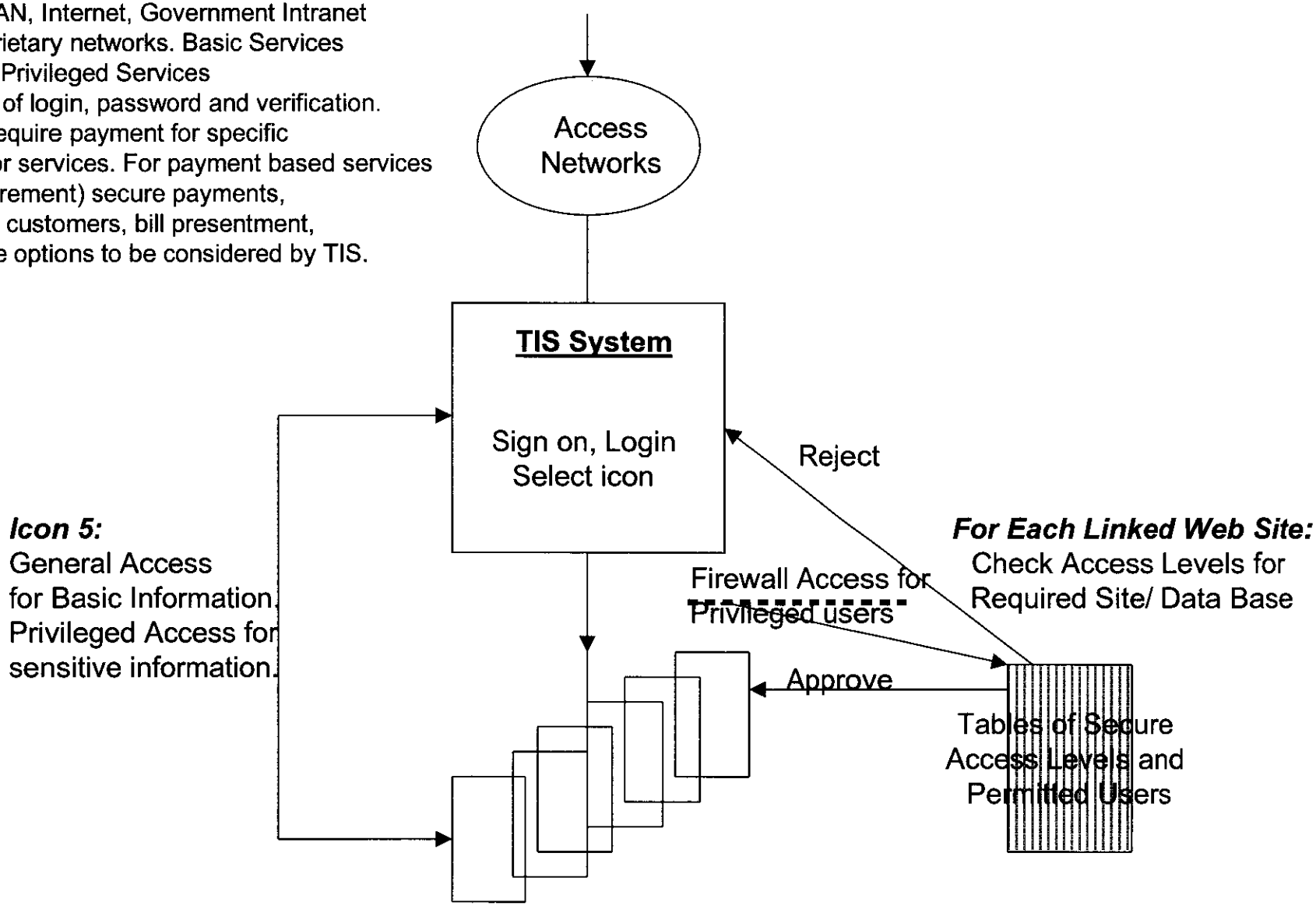



**Diagram 6: Trade Information Services Links**

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.

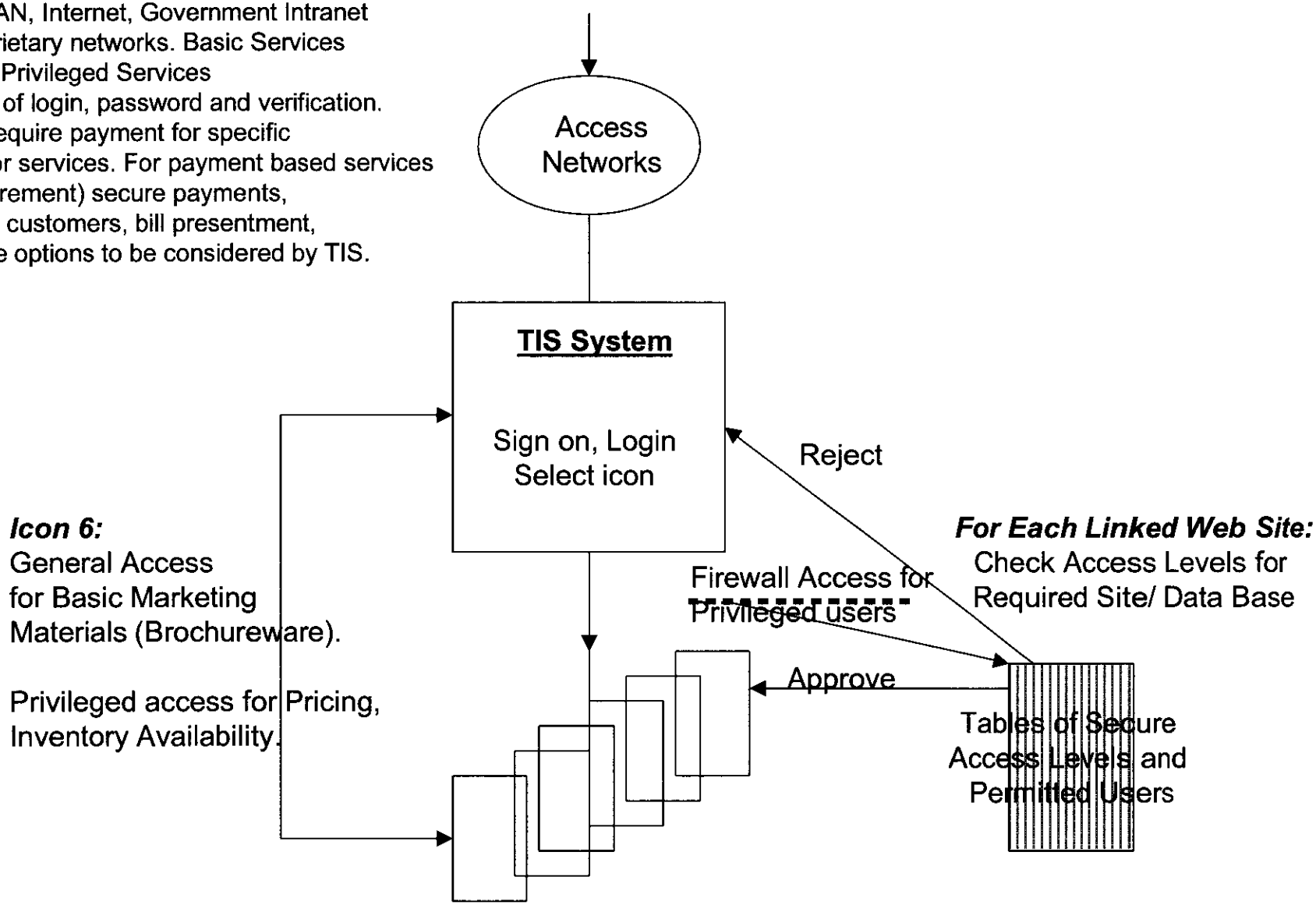
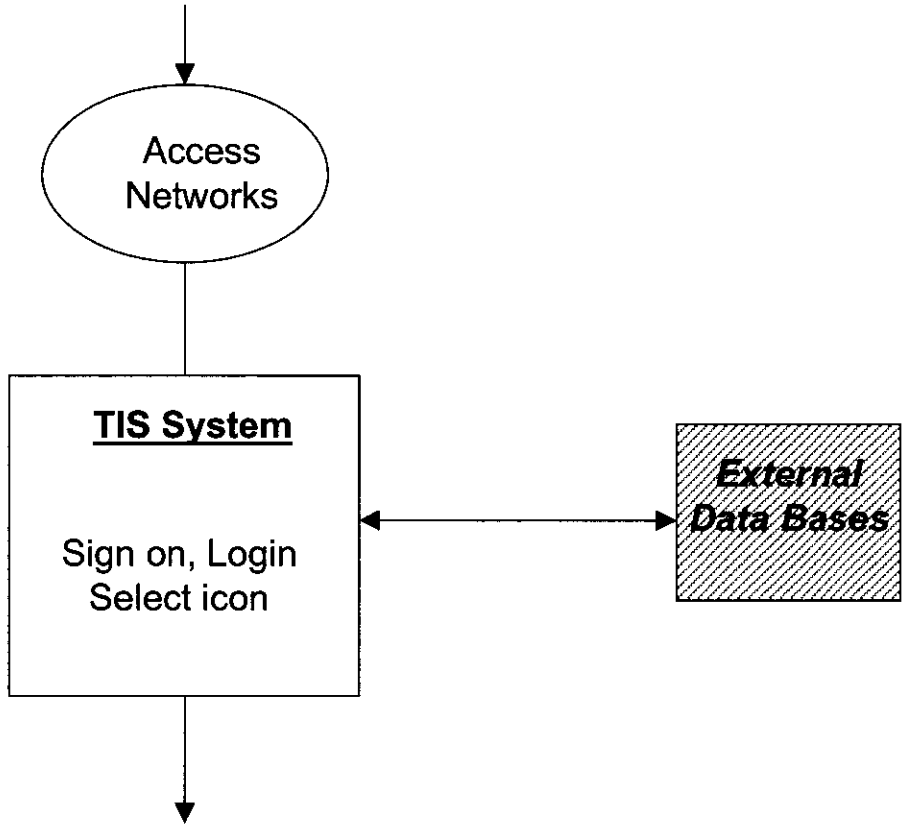



**Diagram 7: Trading Partner Business Requirements; Capabilites**

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.




***Icon 7*** is a URL which points to a series of icons/references. One set is for general economic and marketing research.

It also points to a name and address data base, sortable by a variety of sort keys (e.g.Industry, Country, Size of Company, No of Employees, etc.). This data base will be compiled by TIS and complemented by others.

**Diagram 8: Marketing, Communications, Research Data Bases**

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.

***Icon 9*** is a URL which points to a series of icons/references. Each of these is an ETO service, some free, some privileged..

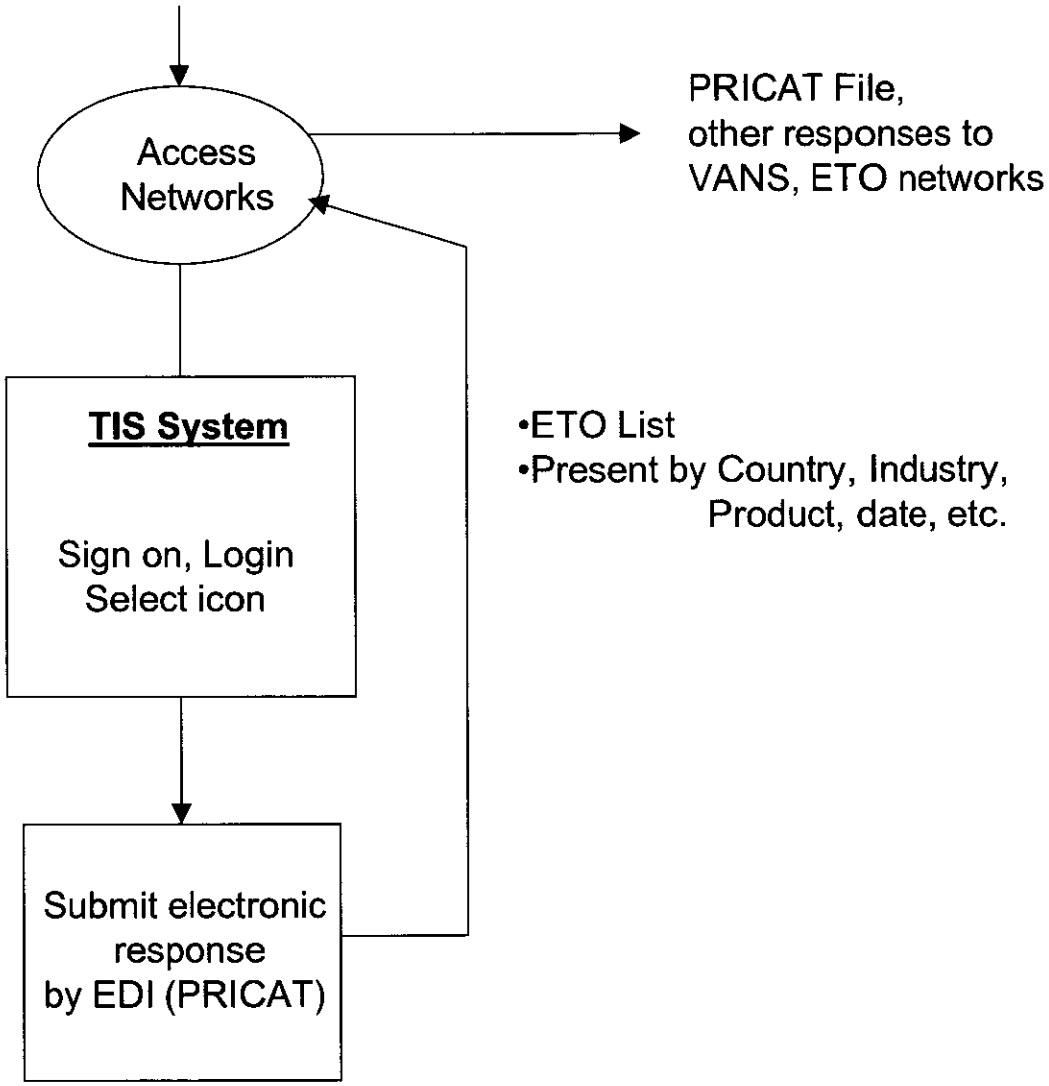



**Diagram 9: Electronic Trade Opportunities (ETO)**

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.

***Icon 10*** is a URL which points to a web site with CUSDEC forms. These may use web EDI or encrypted email carriage. Web site will use drop down menus for code lists and standard Customs entries.

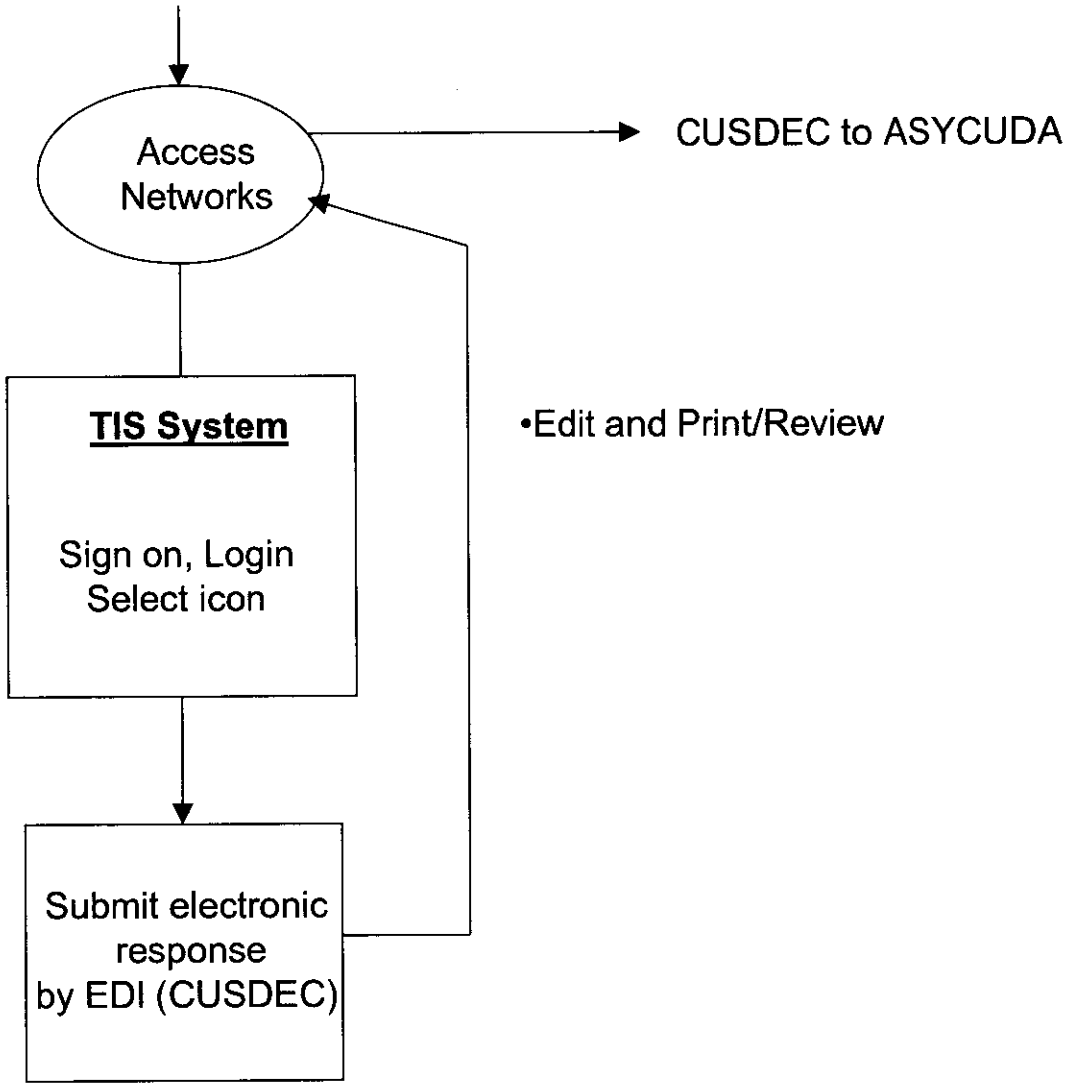



**Diagram10: EDI Declarations for SMEs**

Access by LAN, Internet, Government Intranet VANS, Proprietary networks. Basic Services free access. Privileged Services requires use of login, password and verification. Some may require payment for specific information or services. For payment based services (a later requirement) secure payments, TIS account customers, bill presentment, and FEDI are options to be considered by TIS.

***Icon 11*** is a URL which points to a web site catalogue functionality. User selects items from catalogue and completes Eform with bid..

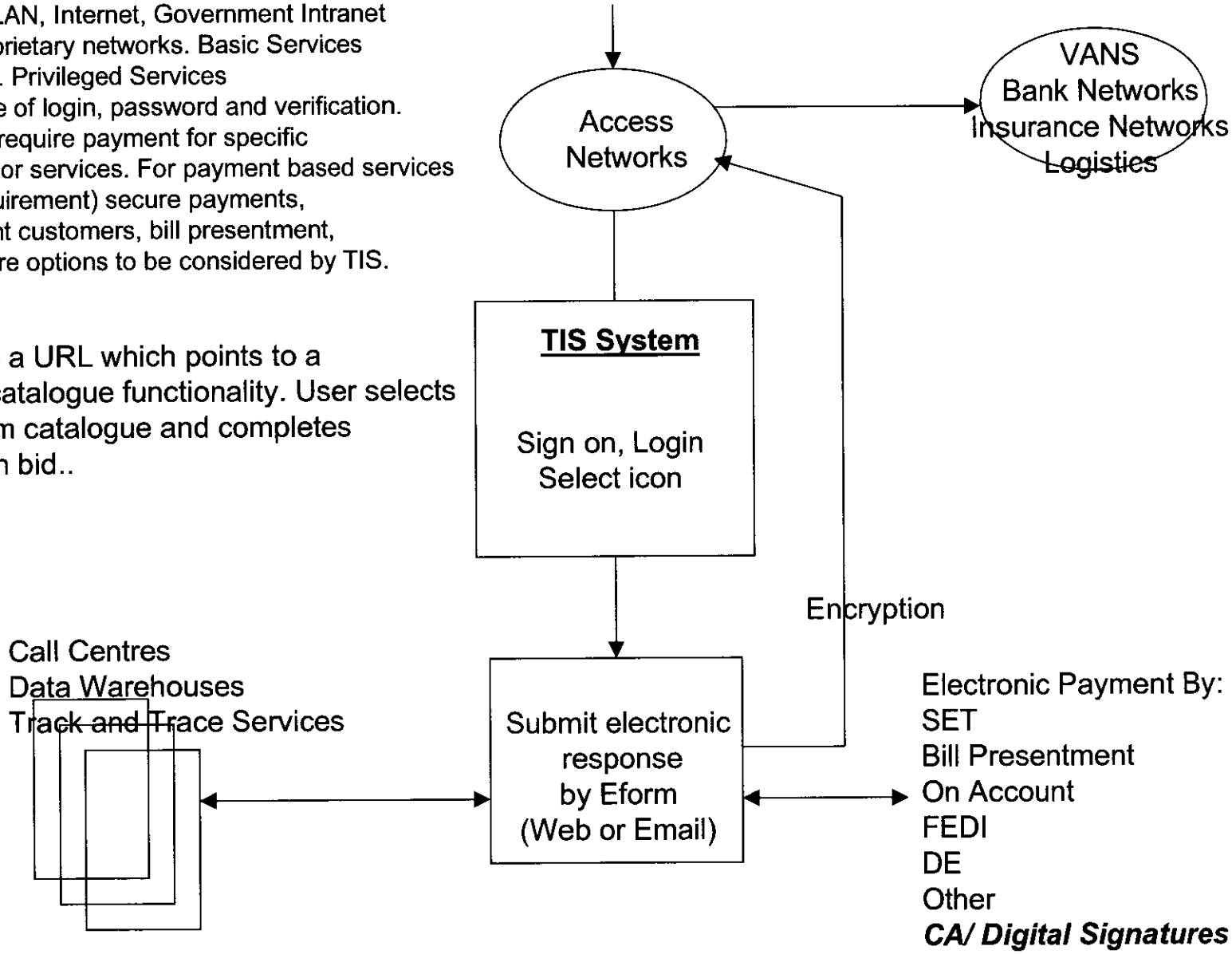



**Diagram11: Auctions, Sales Systems**

# Appendix Two: TIS Inputs and Outputs

## Phase Four Response: TIS Inputs and Outputs

The following description looks at the input/output processes for the TIS project. It treats each module in turn and is supported by a diagram. Note that this outline is still subject to vendor input and final design inputs from users. In particular, the comments on interoperability are dependant upon the ultimate systems design.

### Lebanese Technical Controls

This is to be a free service to members, chargeable to non members.

*Purpose/Beneficiary*

The purpose of this database is to provide traders and researchers from Lebanon and from Lebanon's trading partners with up to date information on Lebanese technical controls.

*Input*

The enquirer accesses the data base through a menu on the TIS web site.

*Output*

The enquirer can search on several fields, including HS code.

*Data Source/s*

Customs create and maintain the data base through their own research and from the Government's official journal.

*Data Description*

Prohibitions and Restrictions and other technical controls are to be accessible through a TIS link, from the Customs database. TIS offer read only access.

Technical controls are listed by HS code and suffix. They include a description of goods or service, type of control required, from which Government agency together with decree details.

*Maintenance and Upgrades*

Customs provide and maintain the database.

*Interoperability*

This is a stand alone module. There is no interoperability with other modules.

*Volumes*

The data base is currently around 500 pages of printed data.

**Trade Agreements**

This is to be a free service to members, chargeable to non members.

*Purpose/Beneficiary*

The purpose of this database is to provide traders and researchers from Lebanon and from Lebanon's trading partners with up to date information on Lebanese trade agreements with trading partner countries and with trading blocs, such as WTO, EU and GCC.

*Input*

The enquirer accesses the data base through menu selection on the TIS web site.

*Output*

The enquirer can search on country name.

*Data Source/s*

Trading partner's technical controls are currently in a paper format, in the libraries of TIC and the Chamber of Commerce. TIS are to prioritise the importance of the technical controls (by country and trading bloc: See TIC trade statistics for guidelines). This will involve web site research and correspondence in some cases. This may also involve research among their members/clients.

TIS are then to design a standard layout for screen and web site access, approved by a pilot/focus group.

TIS then research and key enter the relevant data.

*Data Description*

Trade agreements are in free text format

Trade Agreements to include:

- Country name
- General details on agreements
- HS Codes.
- HS Suffix.
- Product/Service Descriptions.
- Tariffs.
- Exceptions.
- Details of specific agreements (e.g. calendar, religious requirements, etc.).
- Technical control details.

*Maintenance and Upgrades*

TIS to create and maintain this database.

*Interoperability*

This is a stand alone text data base. There is no interoperability with other modules.

*Volumes*

Volumes will initially be the top 10 trading partners. Countries and blocs will be added as members and clients require and TIS management decide.

**Trading Partner's National Technical Controls**

This is to be free service to members; chargeable to non members.

*Purpose/Beneficiary*

The purpose of this database is to provide Lebanese traders and researchers with full details of the technical control requirements of their trading partners and of their country's import/export regulations and requirements.

*Input*

The enquirer accesses the data base through menu selection on the TIS web site.

*Output*

The enquirer can search on country name.

*Data Source/s*

Trading partner's technical controls are currently in a paper format, in the libraries of TIC and the Chamber of Commerce. TIS are to prioritise the importance of the technical controls (by country and trading bloc: See TIC trade statistics for guidelines). This will involve web site research and correspondence in some cases. This may also involve research among their members/clients.

TIS are then to design a standard layout for screen and web site access, approved by a pilot/focus group.

TIS then research and key enter the relevant data.

*Data Description*

International technical controls to include:

- Country name
- Import/Export Controls
- HS Codes.
- HS Suffix.
- Product/Service Descriptions.
- Tariffs.
- Exemptions.
- Exceptions.
- Details of specific agreements (e.g. calendar, religious requirements, etc.).
- Technical control details.
- Decree/law numbers/references and dates.
- Contacts and processes for technical controls.

- Costs and time involved.
- Defaults, penalties.
- Commentaries.

*Maintenance and Upgrades*

TIS to create and maintain the data base.

*Interoperability*

This is a stand alone module. There is no interoperability with other modules.

*Volumes*

Volumes will initially be the top 10 traders. Countries and blocs will be added as members and clients require and TIS management decide.

**Electronic Brochures**

This is to be an optional, chargeable service to members.

*Purpose/Beneficiary*

Lebanese importers and exporters will use this service to promote products, develop business contacts, source supply and to generally promote their businesses. A second component of this module allows privileged enquirers to seek details of product pricing, inventory availability and trader's terms of trade.

*Input*

The enquirer can access company and product details through a menu list on the TIS web site. Access to confidential data will be by password. At a later stage a digital signature may be deployed for access.

*Output*

The enquirer can access the data base by company name, can search by product type or, under secure access controls, on price, inventory availability and terms and conditions of trade.

*Data Source/s*

TIS will design a standard template for this service, after consultation with their membership. The client will select his options from this template and complete the required information questionnaire. TIS will then create the web site pages and provide the access and search facilities. TIS will also negotiate search engine/portal access, plus web advertising where required.

*Data Description*

Input to pages can include scanned product and marketing materials plus a standard formatted page containing contacts, capacities, company data, technical/administrative capabilities, such as bar coding, EDI (standards, message sets supported, implementation guidelines), ISO 9000, etc.

Additional data from the client can include required technical controls, QR, JIT or ECR requirements. It can also contain packaging, shipping and logistics requirements, preferred shippers, logistics/trade professional details and banking/LOC requirements, etc.

*Maintenance and Upgrades*

TIS will create the web pages and maintain them on behalf of their members/clients. It may prove to be feasible to allow some clients to update their own pages, either at TIS' premises or remotely. TIS will retain the role of content auditor and quality control.

*Interoperability*

The two components of this module may interoperate with the Electronic Trade Opportunity module, for the creation of Lebanese trade opportunities for foreign exporters. It may also interoperate with the auctions module, for buying/selling inventory made available for auction.

*Volumes*

Volumes can only be guessed at this stage but it seems reasonable to assume 100 members will want this service in the first year, with growth rates of about 100 web pages each year.

**Trade Information Services**

This is to be a free service to members and non members alike.

*Purpose/Beneficiary*

The purpose is part marketing, part member service. All members will be able to benefit from the time savings and utility of a good set of trade related links on the TIS menu and web site. It will also encourage browsers to search the TIS web site and, indirectly, attract them to Lebanese trader capability pages.

*Input*

The enquirer will access the links through the TIS web site. He will then navigate through the menus and bookmarks in order to find the most appropriate site for his purposes.

*Output*

A range of web sites, list servers and FTP sites related to trade.

*Data Source/s*

MOET (TIC) and the Chamber of Commerce Information Service already have a very comprehensive list of links and bookmarks on their systems and in their libraries. These links will be transferred to the TIS system and other links researched and added according to the requirements and input of their members and user community.

*Data Description*

A list of URLs in html format plus a brief description of the site.

*Maintenance and Upgrades*

TIS will create and maintain these links.

*Interoperability*

This is a stand alone service. There is no interoperability between other modules.

*Volumes*

There are probably around 100 major sites which are appropriate.

**Trading Partner Business Requirements and Capabilities**

This is to be a free service to members. It will not be offered to non members.

*Purpose/Beneficiary*

Lebanese exporters who are researching potential buyers of their products or services. Lebanese importers who are researching local and foreign sources of supply.

*Input*

The enquirer will access the links through the TIS web site. He will then navigate through the menus and bookmarks in order to find the most appropriate site for his purposes.

*Output*

A range of web sites, list servers and FTP sites related to local and foreign trader requirements and capabilities.

*Data Source/s*

MOET (TIC) and the Chamber of Commerce Information Service already have a very comprehensive list of links and bookmarks on their systems and in their libraries. These links will be transferred to the TIS system and other links researched and added according to the requirements and input of their members and user community. Further links will be sought from the member community. More links will be added as they are researched by TIS staff.

TIS will organise and catalogue these sites and links in a manner that makes for simple access and navigation.

*Data Description*

A list of URLs in html format plus a brief description of each site.

*Maintenance and Upgrades*

TIS will create and maintain these links.

*Interoperability*

This is a stand alone service. There is no interoperability between other modules.

*Volumes*

Ultimately, this service will comprise hundreds of links to country pages, Kompass and other business directories as well as individual country, industry or organisation's pages.

**Marketing Communications**

This is a chargeable service to members and non members alike.

*Purpose/Beneficiary*

To provide Lebanese businesses with a central source of business contacts and mailing lists.

Anyone wishing to use a targetted and sorted mailing list of Lebanese companies or potential trading partners in other countries.

*Input*

The member will specify from a list of options which companies he wishes to mail (electronically), by fax or by normal mail. He will specify HS codes and/or product types and/or business types. He will specify country or region. He will specify the time when these addresses are required, if they are not immediately available.

*Output*

Output can be from a read only screen, downloadable with format and size options, in hard copy formats and in label formats.

*Data Source/s*

Initial sources are from member lists on the TIS data base. Other lists will be acquired and added to the data base as needs arise. They will be from a variety of sources such as the existing references and guides that TIS and other trade libraries already posses. Others can be bought or rented.

*Data Description*

Names,
Addresses,
Electronic Contacts,
In label formats.

*Maintenance and Upgrades*

TIS will be responsible for TIS created lists. Third parties will provide their own maintained lists, as required.

*Interoperability*

This is a stand alone application and service. It does not interoperate between any other modules.

*Volumes*

Unknown at this stage. Subject to the developing requirements of members.

**Electronic Communications**

This is to be a vendor provided capability to TIS, as part of the TIS computer and network implementation.

*Purpose/Beneficiary*

To provide electronic communications between TIS and TIS' clients, and TIS' information sources.

*Input*

Not Applicable.

*Output*

Not Applicable.

*Data Source/s*

Not Applicable.

*Data Description*

Not Applicable.

*Maintenance And Upgrades*

Vendor/s

*Interoperability*

Not Applicable.

*Volumes*

Interconnections: Initially, about 20 TIS workstations, the whole of Government Intranet, LibanFac VAN.

**Electronic Trade Opportunities (ETO)**

This is to be a chargeable service to members. TIS management to decide if they will offer the service to non members.

*Purpose/Beneficiary*

To provide an electronic source of new business opportunities to Lebanese exporters and importers.

*Input*

TIS will deliver a file of ETO to registered members each day, electronically received by TIS from contracted third parties..

*Output*

A file of qualified trade opportunities ("want to buy" or "want to sell") will be delivered by email or fax to registered members each day.

*Data Source/s*

TIS will subscribe to TradePoint, Ibex, GEIS, Silk Road and other systems which advertise trade opportunities. This will include foreign government procurement pages. TIS will develop filters to search the output from these systems, according to the requirements of their membership, e.g. sort by HS code. TIS might also deliver the ETO as an EDI PRICAT message to those members who prefer that mode of delivery.

TIS will act as the gateway/filter between third party sources of information and TIS members. TIS do not originate the data.

*Data Description*

Description of items sought to buy/sell. Specifications, HS codes, names and addresses, contacts, time/date requirements.

*Maintenance And Upgrades*

Data: Third parties. Filter software: TIS.

*Interoperability*

Members who already have a page on the TIS web site may choose the option of having the ETOs delivered to their web site in an area firewalled off except to registered users with a password. They may also use this page to generate their own ETOs to be circulated to TIS membership and to ETO organisations.

*Volumes*

There are potentially thousands of ETO each day, but the majority will be irrelevant to TIS membership. The TIS filter will reduce this to a few hundred each day. However, TIS may want to archive the ETO which will have an impact on storage requirements.

**EDI Declarations for SMEs**

This will be a two tier, chargeable service. Members will pay a small transaction fee; non members will pay a higher fee. The system will be vendor provided.

*Purpose/Beneficiary*

To automate Customs declarations and approvals for SMEs. To provide economic access to NAJM for SMEs.

Any firm or individual wishing to make a Customs declaration using the TIS system.

*Input*

TIS staff or the trader completes a CUSDEC on the screen. This can be done at TIS premises (TIS Bureau), or remotely from a trader's own system, using a web form.

*Output*

A translated EDI file, delivered to ASYCUDA/NAJM. A response from Customs will also be provided, such as a rejection, with reasons. Customs will also provide an acceptance, with an import/export approval number.

*Data Source/s*

The source document for the CUSDEC is a Customs SAD or a commercial invoice. Other data will be taken from Packing Lists, Bills Of lading, Manifests, Technical Controls, Certificates Of Origin, Letters Of Credit, etc.

*Data Description*

The current printed SAD form illustrates the data required.

*Maintenance And Upgrades*

Vendor

*Interoperability*

This is a stand alone service. There is no interoperability between other modules.

*Volumes*

Subject to the success of TIS marketing and business arrangements there is a potential for 100-200 declarations each day.

**Secure Payments, Auctions**

This will be a chargeable service for members with pages on the TIS web site. The system will be vendor provided.

*Purpose/Beneficiary*

To better utilise existing inventories and investments in Lebanese businesses. Lebanese traders, wishing to buy or sell product using the TIS service.

*Input*

The trader will log onto the TIS web site, navigate by menu to the auction site and search for products services of interest, using the TIS search engine. If he detects items of interest on the selected page he will complete the web form and make a bid for price and quantity. This bid will be supported by an electronic signature and optional digital certificate.

If the bid is accepted, the trader has the option of paying by credit/debit or smart card, by TT, by direct debit, or by Financial EDI.

Transactions will be completed by the use of SSL, SET or whatever secure means are available at the time of implementation.

Certificates will be provided by a third party, e.g. VeriSign, GTE, or a national CA.

*Output*

A completed transaction will be accompanied by a confirmation, digital signature and optional certificates. Delivery details may be agreed over the system, as required. Delivery of digital goods will take place using the TIS connection. Optional call centre, track and trace for delivery details and data warehouse facilities for customer service may also be implemented.

*Data Source/s*

Data will be loaded onto the TIS auction merchant server by TIS, interacting with the Electronic Brochure module as necessary. The TIS merchant server will operate as the merchant for payment and information provision purposes.

*Data Description*

Product descriptions, specifications, quantity, contacts, addresses, timing.

*Maintenance And Upgrades*

The system will be provided and maintained by the vendor. TIS will maintain the data.

*Interoperability*

There may be interoperability with the Electronic Brochure web pages for company details, product details, pricing and inventory data.

*Volumes*

Unknown. A member survey exercise will be needed to establish take up and transaction volumes.

**Issue/Monitor Technical Controls**

Issuing of technical control approvals over the TIS system will be a chargeable service to members and non members alike. It may be vendor provided or TIS/Government agency developed.

*Purpose/Beneficiary*

Reducing the time and costs involved in obtaining technical controls.

Automating technical control application and provision for Lebanese importers and exporters.

*Input*

Completion of a web form, designed by TIS and Legal/regulatory SIGs. Digital signature.

*Output*

An electronic approval for import or export from the relevant technical control agencies.

*Data Source/s*

Input data is created by TIS bureau staff or by the trader direct, through his own system. After programmed edit checks the input form is sent to the relevant agencies in EDI or other standard formats, connecting via the Government Intranet, using access controls.

Data is then checked for validity and subjected to risk management criteria by the agency system (electronic or manual).

Approvals and denials, with reasons are delivered to the TIS system in an agreed time. TIS will reroute the responses to remote users.

*Data Description*

Existing printed technical controls illustrate the data required.

*Maintenance And Upgrades*

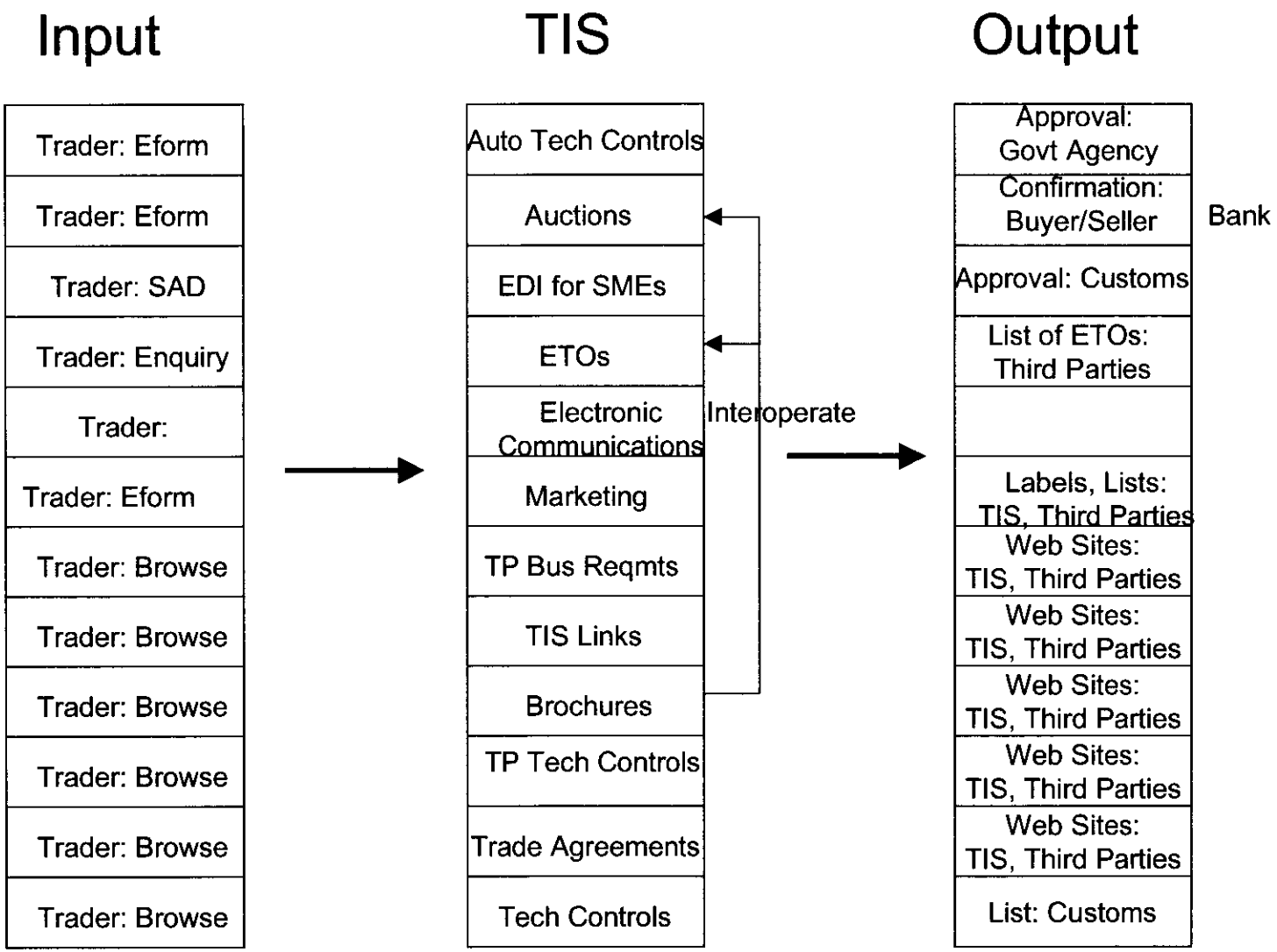
Vendor/ developer supported and maintained.

*Interoperability*

This is a stand alone TIS application but it interoperates with Government agency systems.

*Volumes*

Present volumes are estimated at about 1,000 per day. This volume can be expected to grow by the time of implementation, but also has the potential to decrease due to reform and rationalisation of trade law and regulations.




**TIS Input/Output Schematic**