Tacis

TRACECA Project:

Trade Facilitation (TNREG 9308)

Computer Systems Report

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Executive Summary of Conclusions and Recommendations

Main Conclusions

1. *ERMIS Report*

TACIS have recently completed a major study into computer systems throughout the CIS countries (reference ERMIS/EPT/PHO2/CFR/001 & 002). This contains a comprehensive summary of technical options available in hardware, software, communications etc.

From an evaluation of the ERMIS report it is apparent that it covers many of the key technical aspects of introducing computers to the Customs Departments of the TRACECA countries. However, it also appears that there has been very little activity in the introduction of Customs computer systems in the region since the study was completed.

2. *Infrastructure*

There are infrastructure problems in all eight countries which inhibit the implementation of computer systems on a national and sometimes even a regional basis. In particular, power and telecommunications systems are unreliable which will have a significant impact on systems architecture. This constraint not only applies to the introduction of a common National Trade Data Transfer System throughout the TRACEA region but also to future development towards direct trade input and EDI.

Some attempts to overcome these problems have been made in certain countries, for example the use of radio modems in Tajikistan, and the problems were further highlighted in the ERMIS report. However it is clear that significant improvements will be required in power supply, telecommunications and networking.

3. *Awareness Levels*

Within Customs departments throughout the region there is a general awareness of the benefits of computers for statistical processes but not a comprehensive understanding of the full potential of computers with regard to basic customs work, customs clearance systems, and electronic data interchange.

Some degree of computerisation is being undertaken by Customs in each of the TRACECA countries relating to the use of cargo declaration documents, through not necessarily dealing with the processing of actual declarations. The approaches vary from country to country though not significantly, except in the case of Armenia where ASYCUDA is being implemented.

In the trade sector which interfaces with Customs there is considerable variation in both the use of computers and awareness of the potential benefits of computers systems and electronic data interchange.

There is a pressing need to increase the levels of awareness at the senior management level with regard to the potential benefits of the wider use of computers in the Customs and trade facilitation environment.

From the lack of computerised Customs clearance systems it is evident that there is limited scope for implementation of direct trader input or use of electronic data interchange (EDI) in the customs environment, either within a country or between countries. A pilot project is taking place in Kazakhstan in which one company is passing declaration data directly to Customs by computer using file transfer, but as yet the data received is still checked and the declaration processed manually.

4.   *Existing Systems*

All the TRACECA countries have computer systems in place but these are generally not being used to their full potential.

In Armenia, the recently introduced ASYCUDA computer system includes full declaration processing, accounting, selectivity, statistics collection, and the option of direct trader input (DTI) where the declarant inputs the entry data directly into the system instead of Customs officers.

In all other cases, with the exception of limited abilities to calculate revenue charges based on the data input from the declaration or to validate certain of the coded data from the declaration, computer systems are being used almost exclusively for the collection of statistical information, mostly in connection with the compilation of national trade data.

Data currently collected is usually extracted from the documents in the final stage of the declaration process, often after the goods have been released. If the input of data to the computer were advanced to coincide with the actual presentation of the declaration, validation checks could be carried out by the system itself rather than having to be done manually. This would both maximise use of the computer system and release experienced Customs officers from clerical work so that they could concentrate on their more important duties of revenue collection and the control of prohibited goods.

5.   *National Trade Data Transfer System*

A National Trade Data Transfer System comprises a central Customs clearance system supported by a range of secondary functions such as accounting, collection and recording of revenues, identification of prohibited goods, and production of trade statistics. Although these secondary functions can be separated from the Customs clearance system they can be performed more efficiently and to a higher degree of accuracy within a fully integrated computer system compared to the development of individual software packages.

The UN ASYCUDA software package was initially developed as a computerised Customs clearance system but has been progressively expanded to perform the wider functions of a National Trade Data Transfer System. As mentioned above ASYCUDA has currently been implemented in Armenia and a pilot project is also underway in Georgia. Other TRACECA countries have either:

- made no commitment to introducing a computer clearance system involving Cargo Declaration processing
- are developing or considering development of an "in-house" system
- have opted for the French SOFIX system
- have opted for the Russian Federation system.

There is clearly no consistent approach and the possibility of 4 or more systems being introduced throughout the TRACECA region will adversely affect the possibilities of data exchange between the Customs administrations.

The financial commitment to install particular systems, with the exception of Armenia, has not yet reached a stage where it is impossible to change course. Indeed financial issues are generally a delaying factor in themselves and it is still possible therefore for each country to reassess its position in the interests of regional harmony.

The UN/ASYCUDA system is now in use in approx. 70 countries, and continues to expand internationally. It is effectively the only international system which has been tried and tested in a large number of countries. In addition it has already been implemented in a number of east European countries with plans for further development in countries geographically close to the TRACECA region.

The requirements in the Terms of Reference for a National Trade Data Transfer System throughout the TRACECA region can clearly be satisfied by the introduction of the UN ASYCUDA system which has the following advantages:

- It was developed by UNCTAD for worldwide use and is therefore fully independent.
- It is available "off the shelf" thus minimising implementation times and costs.
- It is already fully tried and tested in the international Customs and trade environment.
- It contains all the modules and processes required in the TRACECA countries, as identified during the present study.
- The latest Version 3 caters for the full range of import, export and transit cargo processing operating on an open platform and utilising international standards. It therefore provides a good base for future development of direct trader input and electronic data interchange.
- ASYCUDA is provided with full technical support during the planning, implementation and operational stages.
- ASYCUDA is also provided with training packages which have been refined based on experience in installing the systems in similar environments to the TRACECA region.
- The cost of implementing a National Trade Data Transfer System is likely to be high (USD50 - 60 million for the TRACECA region) with limited internal funding. External funding agencies are more likely to be favourably disposed towards a tried and tested international system such as ASYCUDA and the World Bank already have experience in funding the system in Armenia.

By comparison neither SOFIX nor the Russian Federation system have yet achieved the same level of success and international recognition as ASYCUDA. In particular these

national systems were specifically designed for internal use rather than being developed for international use. However it is recognised that some countries may have strong reasons for adopting alternative systems eg the availability of "soft loans" or bilateral aid. Under such circumstances the key issue must be system compatibility if the long term objective of providing a regional trade data transfer system is to be achieved.

6.   Information Technology Departments

In each country the current responsibility for computerisation lies within the Statistics or Statistics and Computer Department of Customs Headquarters. This has lead to the situation where the emphasis is on the collection of statistical information, particularly for the purposes of generating national trade data. In addition, in some countries, a small number of individuals with relevant expertise tend to operate remotely with little or no coordination between regional offices.

Institutional reforms are urgently needed to ensure that the full potential of computerised systems in the Customs and trade environment is fully realised. Independent IT Departments should be free to cater for the requirements of all business areas and to provide primary clearance systems where the collection of statistical information is a by product rather than the central activity.

7.   Statistics

As described above, the production of statistics should be an important though secondary function. However, despite the fact that the current emphasis is on the collection of statistics, to the virtual exclusion of computerised clearance systems, there is considerable concern as to the accuracy of the data, even amongst Customs. It is therefore clear that there is a need for more accurate recording of statistics given that they are the main source of national trade data used by Government in economic and trade planning.

Present data collection is rarely used in connection with internal planning or as part of a Management Information System within Customs itself eg data from declarations could be used in manpower planning. In addition there is concern that the amount of data which is produced and circulated in some countries is excessive and not in a format required by the recipient. There is clearly a danger of statistical departments producing data for its own sake rather than providing a service to meet specific demands.

8.   Systems Architecture

The Customs activities in all of the TRACECA countries are most concentrated in the capital cities. This is the point of peak demand for import and export clearances; the place where most clearing agents, forwarders and traders are located; and where power and telecommunications are more reliable. This would suggest that the "hub" of any centralised computer system should be located in the capital.

All countries operate their Customs services through a network of regional offices, which act both as clearance centres and as the head office for the border posts under their control. Some countries are considering "channelling" whereby only certain borders will process transit and long distance international freight movements. The provision of adequate

resources, particularly power and telecommunications, progressively deteriorates between the capital, regional offices, and border posts, with many of the border posts being in extremely remote locations.

All these factors suggest that the systems architecture should be based on the capital city and gradually extended down to regional and finally border level. However this may require a degree of restructuring as some key border crossings currently process more throughput than some regional offices.

9.   *International Standards*

The use of recognised international standards related to Customs documentation and computer developments is inconsistent throughout the TRACECA region. Although all countries use the Cargo Declaration, completion of the document itself is not standardised nor are standard codes used throughout the document. Further discussion and recommendations on this issue are contained in our Trade Documents and Computer Procedures Report. Unless established international standards are adopted it will not be possible to make full use of electronic data interchange in the future.

10.   *World Customs Organisation*

All of the countries visited during the study expected the introduction of computers to improve efficiency but had no clear understanding of how such improvements would be achieved.

During the first regional conference it was emphasised to delegates that the introduction of computer systems alone would not automatically bring about greater efficiency in the control and clearance of cargo unless this was carried out on the basis of a comprehensive appraisal of operational procedures. Existing manual procedures inevitably require modification to adapt to a computer environment in addition to which it is an opportunity to improve and modernise present working practices.

The World Customs Organisation has recently introduced a "Reform and Modernisation Programme" the aim of which is to assist member countries of the WCO to become more efficient. A copy of a presentation by UK Customs giving an overview of this programme is included in Appendix 1.

Main Recommendations

Recommendations which are specific to particular countries have been made as part of each country report and these are highlighted within the relevant section. This summary contains major recommendations which are appropriate to all countries covered by the study.

1.   *ERMIS Report*

That supplementary reference be made to the ERMIS Report in developing computerised systems, particularly with regard to detailed technical options for hardware, software and communications.

2.   *Infrastructure*

That specialist studies be undertaken within the region to investigate the current situation with regard to power supplies and telecommunications which may otherwise inhibit the implementation of national computer systems for Customs and the trade. Their remit would be to make proposals for solutions to the infrastructure constraints that are both practical and economically viable.

3.   **Awareness Levels**

That awareness seminars be conducted, either on a country by country or regional basis, to promote the awareness of computerisation in the Customs and trade facilitation environment, including the potential usage of EDI. These seminars should be appropriate to both Customs and the trade and should, wherever possible, be conducted jointly. The presentations should be suitable for attendance by both the specialists and non-specialist personnel.

4.   *Existing Systems*

That, wherever possible, input to existing computer systems should be made at the earliest appropriate stage in the cargo declaration process, such that full use can be made of the validation and calculation facilities available within the software package.

5.   *National Trade Data Transfer System*

a)   That the development of computerisation in the Customs environment should be based on the use of a computerised clearance system leading to a National Trade Data Transfer System.

b)   That each country which does not currently have a full declaration processing system in place, considers the possibility of using the UN/ASYCUDA system to fulfil its requirements in this area. Where another system has already been selected or is being considered by an individual country the proposals should be re-evaluated on the basis of:

- the range of facilities offered by the different systems
- the technical support services available with each system
- the comparative costs of the different systems including costs of changes to existing business practices
- the comparative benefits of the alternative systems
- compatibility with both international and TRACECA regional systems.

c) That all TRACECA countries co-operate with each other in developing a harmonised National Trade Data Transfer System in order to both obtain the best financial deal and to maximise regional compatibility of systems.

6. Information Technology Departments

That each country should establish an independent Information Technology Department to service the full business requirements of the Customs and trade organisations.

7. Statistics

That trade statistics be compiled as part of an integrated National Trade Data Transfer System rather than a separate activity. This will give greater accuracy and enable immediate production of relevant data. An internal review should be made of the demands, recipient organisations and appropriate formats for the production and distribution of data with a view to improving efficiency and avoiding the production of unuseable or unnecessary data.

8. Systems Architecture

That the systems architecture for a National Trade Data Transfer System be based on the following development sequence in each country:

*   pilot project in main clearance centre in capital city, possibly in conjunction with one regional office
*   full implementation of system in main clearance centre and regional office if applicable
*   progressive implementation at regional level with connection to central computer
*   progressive implementation to connect key borders to system.

A system of prioritisation should also be established, based on Cargo Declarations processed or transfer documents issued, to ensure that the busiest regional offices or border posts be brought on line first.

9. International Standards

That each country commits itself to the use of international standards in the completion of Customs Declarations and the development of computer systems.

10. World Customs Organisation

That an approach be made to the World Customs Organisation on behalf of the TRACECA countries inviting the WCO to make a full presentation of the Reform and Modernisation Programme to NTTF members and Customs management at the highest level. It is further recommended that, following the presentation, each country should consider asking the WCO for assistance in following the Programme, if appropriate. It is appreciated that not all countries are currently members of WCO but it is considered that WCO would be prepared to demonstrate the advantages of the programme to both members and non-members.

1.   Introduction

This study into computerisation covers strategic issues and focuses on those specific aspects directly relating to trade facilitation and freight forwarding. We have attempted to present the report in a manner which makes it readily understood by the non-computer specialist.

Whilst the key aspects of the ERMIS report have been incorporated in this strategic report we have not duplicated the more detailed technical information contained in the ERMIS Report.

As required by the Terms of Reference, a comprehensive visit programme was undertaken to each of the countries in order to examine the current levels of computerisation and the potential for future development. These site visits were considered essential because of the importance of considering computerisation in the context of the specific environment of each of the TRACECA countries.

In each country, visits were made to the Customs Headquarters and at least one regional office of Customs. Discussions were also conducted with trade or trade representatives. It was not always possible to visit border crossings, except where these coincided with a Customs regional centre. However, sufficient information was obtained from other specialists in the team responsible for the border post surveys to allow assessments to be made for these locations.

In the regional centres, the flow of documentation through the Customs office was examined in order to identify how, and at what position in the sequence of events, current computer systems are being used and to identify areas for potential further developments. This has also made it possible to identify areas for improvement in the current manual systems and these are identified in the individual country reports.

Examination of the current use of computer systems was conducted in order that the requirements of the recipients, as defined in the Terms of Reference, were met in respect of the development of a concept design for a National Trade Data Transfer System for each country. The possibility of extending such a system to form a regional trade data transfer system was also considered.

Developments already under way or at the planning stage were examined with a view to assessing the possibilities of interfacing with development proposals in other countries and with any solutions recommended as a result of this study.

The study assessed the current level of experience of Customs and, as far as possible, the present range of technical skills and use of computers within the Trade. The results of this assessment may impact on the proposals made with regard to the appropriate level of computerisation and the speed of introduction.

Specific questions were raised in each country with respect to the availability of a stable infrastructure, particularly power and telecommunications. The responses in this area would be expected to affect the potential to apply particular system solutions.

The visits took place over two periods, the first concentrating on the Caucasus in May/June 1996 and the second on Central Asia in July/August 1996.

The Consultants wish to express their appreciation for the invaluable assistance given by Customs at head offices, regional offices and at border posts in each country. The information and views offered were invaluable in identifying the current computer environment in each of the TRACECA countries and in the evaluation of the opportunities for introducing more advanced concepts.

The Consultants would also like to express their appreciation for the trade representatives who provided assistance in terms of their own usage of computer systems and how the interface with Customs could be enhanced through computerisation.

2.   Country Reports

2.1   ARMENIA

In Armenia, one of the four regional centres in Yeravan was visited along with the Headquarters office. It was not possible to visit border crossings but sufficient information on these was obtained from those specialists in the project team responsible for the border posts surveys and from discussions with personnel at Customs Headquarters.

Clearance of Goods

All goods arriving in or leaving Armenia do so across land boundaries. At the border, an internal transit document is raised for goods imported by registered companies for consumption in Armenia. This contains details of the cargo and the importer. The document is a three part set. One copy is retained at the border and the other two go forward to the appropriate regional office, which is determined by the location of the registered importer. Of these two, one travels with the vehicle and one is sent by post.

When the Cargo Declaration is received and processed at the regional office, the border is notified that the movement has been completed by return of a stamped copy of the transit document.

For goods moving in transit through Armenia a three part cargo document is used.

A significant proportion of imported goods are also brought into Armenia by private individuals, referred to as 'physical entities'. Importers of these goods, the value of which must be below a certain limit, are not currently required to complete a formal Customs Declaration form, although Customs Fees are collected. In conjunction with the implementation of the UN/ASYCUDA computerised clearance system it is intended to introduce a form of simplified declaration for this type of importation in order that the associated statistics can be collected.

At the regional office, the importer presents the Cargo Declaration, the driver's copy of the transit note, and all necessary accompanying documents to the Custom House. There is a facility provided by Customs to assist importers in the preparation of their declaration. Those importers who wish to are able to sit with a data processor and the required data is entered to a "stand alone" PC which produces a declaration on the associated printer. The Customs Declaration follows the format of the Single Administrative Document used in the EU. The importer is required to check the declaration and on signing accepts legal responsibility for its content. The software within the PC simply provides the ability to complete the Cargo Declaration and, although the data is stored, it is not subsequently used within the Department.

There are four copies of the Cargo Declaration. Copy one is the Customs entry and remains with the accompanying documents for subsequent filing, copy two is the statistical copy, which is sent to Headquarters, copy three is an additional Customs copy, and copy four is returned to the importer.

Following a check of the documents the goods are physically examined, either at a special examination area remote from the Custom House or at the importer's premises, dependant upon the entry point into Armenia. All goods are required to be examined though in practice a 100% check is not carried out against every declaration. The examining officer accompanies the importer to the examination area and on completion of the examination the declaration is registered and the appropriate revenue is collected, either in cash or by bank transfer. The goods are then released to the importer.

The Yeravan regional office (Araratian) receives an average of 30 - 40 Cargo Declarations or clearance entries each day with a peak of 60. With the exception of the PC used to assist in declaration preparation, all processes are manual. Information from Customs Headquarters indicates that all other regional offices and all border posts are completely manual.

Customs Computerisation

It was established through discussions with senior Customs officials in Headquarters that, for the collection and analysis of statistics, only two PCs are currently in use within the Department. These PCs, one 286 and one 386 machine, are concerned with the input and analysis of statistical data. The data is received in paper form and entered directly to the PC from the Cargo Declaration. Although the available resources are clearly limited, the results produced appear to be reasonably comprehensive. Statistics are produced by commodity classification (to 4 digit level of the Harmonised System), by country of origin or destination, and by mode of transport.

The situation with regard to computerisation in Armenian Customs was at a point of imminent change at the time of the visit. A UN/ASYCUDA team had been on-site since September 1994 and the system was about to be implemented in May 1996 on a parallel-running basis for two weeks, following which it would be a live system in both Headquarters and the Yeravan regional office. A draft development plan has been prepared to implement the system on a country wide basis covering the regional offices with some border crossings also having access to the system. The draft plan indicates that full implementation will be completed by the end of 1996 with a subsequent evaluation period of six weeks.

The UN/ASYCUDA team had also collaborated with Customs Headquarters to prepare a plan for the introduction of further computerisation. Although important for Customs internal operations, this is not directly connected to the process of clearing imports and exports and a full investigation of this plan was not undertaken.

The system being implemented provides for the full use of ASYCUDA in the declaration process using Customs input of data for the declaration. Modules for accounting and the collection of statistics are included. As all cargo is received through land boundaries there is no immediate requirement for a manifest module.

In addition to holding standing data to assist in the processing of the declaration and the calculation of revenue, such as country/currency codes and rates, the client-server system will provide Customs with the ability to generate reports and to enter information to allow selective checks via a channelling system to be carried out. This channelling should enable

suspect and high risk goods to be targeted more precisely and thereby improve the efficiency and effectiveness of their examinations. It will also allow those goods not requiring further check to be dealt with expeditiously.

A channelling system is to operate: Green, Yellow and Red. The required information will be entered into the ASYCUDA system and the printed declaration signed by the importer. The system automatically routes the declaration to the appropriate channel at the assessment stage following the data input.

The Green Channel comes into effect where there are no matches against selective criteria, no additional documents which require to be checked, and where the importer has no record of non-payment, for example, of previous fines imposed. On payment of revenue the goods are immediately released to the importer.

The Yellow and Red Channels are similarly identified at the assessment stage and the declarations are routed to the appropriate section within the regional office. If the outcome of the additional checks and/or examination is satisfactory the goods are released on payment of revenue. If not, seizure of the goods may take place.

Diagrammatic representations of the flow of documents under the channelling system are shown in Appendix 2.

The ASYCUDA system will, since it stores all declaration data, automatically provide statistical information as required by Customs and other Departments. Equally important, it will provide management information which will allow checks to be targeted more effectively over time and this can produce significant gains in terms of the amount of revenue collected.

Equipment is already in place for operational use in Headquarters and the Yeravan regional office. All equipment is currently based in the regional office, due to problems with communication between the two physical locations. In view of this, a single server is shared by Headquarters and the regional office. Eight client systems are in place in the operations area and five in Headquarters. Two further PCs (clients) are to be provided for Headquarters. Since all the equipment is within the same building it has been possible to install a local network.

As the further implementation continues, each regional office will have its own server and a number of associated clients. The stated problems with telecommunications will mean that information passed to Headquarters will have to be passed on disk, as will information passed between the borders and their associated regional offices.

Copies of the ASYCUDA Compendium and Technical Description are attached to this report as Appendices 3 and 4 whilst the high level diagram of the proposed systems architecture in Armenia is shown in Appendix 5.

Training

Given the limited use of computers in place prior to the arrival of the ASYCUDA team, the level of keyboard and programming experience within the Department can only be expected

to be low. However, the quality of the statistical information produced from these resources suggests that the necessary capability is present and with adequate training a good standard should be attainable.

Training for use of the ASYCUDA system was in progress and was already well advanced. This was programmed to continue on a "cascade" or "train the trainers" basis for the other regional offices. A full training suite has been established comprising a server and five client systems.

Future Development

As far as trade related systems are concerned, implementation of ASYCUDA throughout the country will provide Customs with a high quality tool to assist with the control of imports and exports.

The extension of the system to direct trader input (DTI) is probably some way off, principally due to poor telecommunications within the country. In the short to medium term, plans have already been drafted, jointly by Customs and the ASYCUDA team, to introduce a system known as Tradepoint into the Yeravan regional office. This essentially moves the data entry point out from Customs to an independent body situated within the same building. A client system, connected to the regional office network, will contain the ASYCUDA declaration module. This can be regarded as the first step towards a full DTI system.

Tradepoint will, in addition, provide a 'one stop shop' for importers at which they can receive advice and information on documentation requirements and other issues relating to imports and exports, thereby fulfilling some of the role of a Chamber of Commerce.

Costs

The total cost of the ASYCUDA project in Armenia is approximately 1.5 million US Dollars. However, this excludes financial support from the World Bank and UNCTAD under which the World Bank provide the funding to UNCTAD to set up a Pilot Customs system together with an implementation and training team.

Trade Computerisation

There was no evidence of computerisation in the trading community, although the Tradepoint initiative may promote activity in this area.

Conclusions and Recommendations

Given the advanced state of implementation of ASYCUDA in Armenia, there seems little point or need to interfere with this plan. In terms of developing the system beyond several "stand alone" local networks, this will be difficult to achieve without considerable investment in infrastructure, particularly telecommunications. The power supply is also not reliable in many areas and improvement would be required in this respect if further progress is to be made. Investigations by network specialists would be required to

determine the feasibility of upgrading telecommunication systems to a level which would support data links and to assess the possibility of providing stable power supplies.

As far as direct trader input and electronic data interchange is concerned, there is little likelihood of such facilities becoming available in the near future, partly due to the infrastructure problems already mentioned and partly due to the low level of activity in computerisation in the trading community at this stage. In order to encourage such activity, it is recommended that awareness seminars are held for local companies and organisations, where they exist, to promote the benefits of computerisation in general and EDI in particular.

Additional training is also required within the Customs Department to increase the technical knowledge of staff. The possibility of establishing a small Computer Department should be considered so that internal applications could be developed, for example for extracting and manipulating statistical and management information produced from the ASYCUDA system.

No indication was given that the transit manifest module of ASYCUDA was to be used in Armenia. When full implementation of the system has taken place, that is, to the border posts, consideration should be given to using or adapting the transit manifest module so that consignments in transit through the country can be recorded at the point of entry to Armenia and written off on departure, thereby providing a more effective control for this type of cargo movement.

2.2   AZERBAIJAN

In Azerbaijan, one of the fourteen regional centres and one border crossing, in Baku, was visited, along with the Customs Committee office. It was not possible to visit border crossings, other than Baku, but adequate information on these was obtained from those specialists in the project team responsible for the border post surveys and from discussions with personnel at Customs Headquarters.

At Baku port, the port authority and one shipping line were visited. In Baku, two TIR park operators, who were engaged in preparation of Customs declarations, were also visited.

It should be noted that some difficulties were experienced due to enforced changes, caused by non-availability, of the local National Trade Task Force (NTTF). This limited access and study time in several areas. These difficulties were partly overcome and did not affect the ability to make an outline assessment of the current situation.

Clearance of Goods

Goods arrive in and leave from Azerbaijan across both sea and land borders. Cargo moving inland for clearance or in transit through the country follow one of two transit procedures.

Traffic moving in transit using the same mode of transport on which they crossed the border require a local transit document. A three part form set is used. One copy is sent from the border to the regional centre of clearance of the goods, or to the border of

departure if the goods are in transit through the country; one to the Customs Department (Headquarters); and one travels with the driver. For goods being consumed in Azerbaijan, the importer is required to inform Customs of receipt of the consignment within 36 hours of arrival.

Where the mode of transit changes, for example when goods arriving by sea transit the country by road, a four part Cargo declaration is used in addition to the local transit document.

Declarations for transit goods are presented to the regional centres. At Baku, the regional centre is situated at the port, some distance from the TIR parks to which all vehicles are required to report. Although some of the TIR parks have a Customs presence, no declarations are physically processed at these locations. Customs simply check that the documents are in order and accompany the vehicle to the importer's premises for examination. They are not, therefore, inland clearance depots but are in reality secure parking areas for bonded goods.

The Cargo Declarations are prepared by a 'declarant company' licensed by the state. In Baku, one declarant company has an office in the Customs building. They complete the Cargo Declaration on the importer's behalf, who then checks and signs the Declaration as accepting legal responsibility. The declarant company stores the Cargo Declarations on the PC but does not pass the data on to Customs in electronic form.

The Cargo Declaration form is based on the Single Administrative Document used in the EU. A five part set is used, four of which form the Customs declaration with the final copy being retained by the declarant company. A serial numbered document set has recently been introduced, although no benefits were apparent from introducing this system in terms of control or efficiency.

The declaration and accompanying documents are presented to the Customs office and pass through various Departments, including:

- Freight Department, where a cursory check is made to ensure all appropriate documents are present

- Statistical Department, which registers the declaration and issues a sequential number

- Tariff Department, in which revenue is calculated and paid

- Statistical Department, where data is entered onto computer

- Freight Department, which then carries out an examination of the goods. A 100% examination regime is in operation. The examination is carried out at the importer's premises and a Customs officer accompanies the vehicle to that location

At each stage in the process stamps are applied to confirm that a particular activity has taken place. When the goods are ready for release, one copy of the declaration is passed back to the importer, one copy is sent to Headquarters, one copy to the Finance

Department in the regional centre, and one to the Statistics Department. It appears that the data from the Cargo Declaration is input to the computer for a second time after release.

The Baku regional centre processes on average approximately 100 declarations or clearance entries per day, including both imports and exports.

For goods travelling through Azerbaijan by rail a special agreement was signed with some of the former Soviet states in 1992 such that controls would only be exercised at the entry and exit borders. This also apparently means that statistics are not collected for such movements.

Customs Computerisation

Each of the thirteen active regional Customs offices have computer facilities in place, all of which are used for gathering statistics. The distribution of PCs is as follows:

Regional Office	No of PCs
Baku	6
Astara	3
Belak	1
Airport (Baku)	1
Belasuvar	1
Jevlax	2
Alibayramli	1
Gandja	1
Sumgayit	2
Seidarak	1
Tovus	3
Xarmaz	3
Julfa	1

At the time of the visit to Baku Regional Office only four of the six PCs were operative.

In addition, five of the 21 Customs border crossings also have PCs in place. These are: Red Bridge, Boyuk-Pasik, Samur, Yalama and Lankaran. These PCs are used to pass transit information to the regional offices, on diskette, from where it is passed on to Headquarters. All other border crossings operate a totally manual system. The data collected relates only to passenger and national traffic. There are currently no trade statistics data available for transit traffic, although plans exist to include this information in future.

The statistical data is collected by the regional Customs offices from the Customs declarations, in the manner described above. Only the Baku and Astara offices transfer data to the Headquarters via a modem link, all other data from other sources being transferred on diskette.

Within Headquarters, there are nine PCs in the Statistical Department. These are networked to a server which is a 386 machine. However, it has not been large enough to store all the statistical data since 1992 when the Department was established.

There are also 12 other PCs within the Headquarters office which share the statistical information and perform additional functions such as personnel records.

Training

Given the limited access, it was not possible to fully ascertain the level of computer expertise within the Department. At the regional office level, however, only data input is carried out and this is a relatively unskilled task requiring minimal training.

No statistical information was produced by the Headquarters Department and it was not, therefore, possible to judge the quality of the results of this system. There were no indications of any training facilities within the Department, either in the Headquarters or in the regional offices.

Future Development

The head of the Statistical Department indicated that there was a plan to extend the computerisation of Azerbaijan Customs into a full Customs data processing system. This involved the purchase of 180 PCs and associated equipment and 28 servers. The total estimated cost for the project was indicated as 53,546 million Manats or approx. $12.5 m. It was not possible to examine this proposal in any detail, nor the capabilities of the staff to carry out the development work in-house, if this is the intention. However, since the project is clearly at an early stage, it would be possible to adopt the UN/ASYCUDA system instead and it is recommended that this option be given careful consideration by Customs.

Costs

The costs of the planned new system is given above. The cost to implement ASYCUDA would need to be further investigated but it is estimated that this would not exceed 7.5 million US Dollars excluding any costs for installing or upgrading telecommunications and power facilities, other than within individual office environments.

Trade Computerisation

The following information on visits to organisations interfacing with Customs provides some indications of developments within the trade sector.

Caspian Shipping Company

This company was visited in order to evaluate its ability to produce Customs related information from internal systems and whether the capabilities were in place to exchange data electronically with Customs, if such a facility were to be made available.

Indications were that currently the only functions performed using the computer system in place, an IBM4381 (one other is also in situ but is out of service), are accounting, scheduling and publicity material.

Information was provided which indicated that there is considerable programming expertise within the company staff, some of whom have been with the company for many years, and that the system could be developed to produce manifests and other Customs documentation given the requirement and the funding to do so.

The shipping office has a local PC network, although this was developed ten years ago and is in need of replacement. Given financial resources it is hoped that this will be achieved within two years.

Gate East

This is a joint stock holding company which operates in the freight forwarding and ancillary services area. Its facilities include the GE Trans TIR parks, which in Baku handle the largest volume of cross border traffic. They are a licensed declarant company but do not have a presence in the regional Customs office

The company has an in-house computer system located at the TIR park. It performs a full range of freight forwarding functions including the preparation of Customs declarations and calculation of revenue charges.

Although the volume of declarations handled had dropped since the introduction of the new serial numbered forms, it was anticipated that these would increase again as supplies of the new form become more readily available. They were currently processing approx. 1,000 declarations per month.

Makro Trans Terminal

This is a TIR park, with Customs in attendance, offering a range of services to transport operators. The organisation is not a licensed declarant but do have an internal automated management system which could be developed further to produce Customs declarations.

Baku Port Authority

The port authority operates a computer system for calculation of port charges and records of vessel calls, bunkering, passengers, and hazardous cargo. No data relating to other aspects of cargo control and movement is held and there are no plans within the Port Authority to introduce systems in this area.

A TACIS project is currently being carried out into the provision of a management system for the Port Authority. This is to cover cost and financial accounting. From discussion with the TACIS team it appears that this will be a manual system. The TACIS team were also investigating the operational and documentation procedures of the port, with a view to computerisation at a later stage. There may then be a potential to interface systems with Customs.

Conclusions and Recommendations

The level of computerisation in Azerbaijan is quite low in terms of Customs declaration processing and is principally concentrated on statistics. Current usage does, however, extend to cover all regional offices and some border crossings.

If the plans for a new processing system are approved and if that system is developed in-house, the time required to design and implement would almost certainly be in excess of three years. This assumes that the expertise is already available, which could not be confirmed during the visit.

It is recommended that consideration be given to alternatives systems and to the concept of developing a national system for Azerbaijan. In particular, the UN/ASYCUDA system should be investigated with a view to reducing costs, achieving an operating system in a shorter period of time, and promoting regional harmony.

Although two regional offices have modem connections to Customs Headquarters, telecommunications in general are not reliable enough to allow for development of a national or even regional network. A full investigation by network specialists would be required into the feasibility of upgrading the telecommunications system to support data links.

There appears to be a willingness among the trade to participate in a direct trader input system, although there is some dissatisfaction at the way the current manual system is controlled with all declarations being processed only at the regional offices. It is therefore recommended that Customs introduce a means by which declarations can be presented for processing at those TIR parks where facilities are or could be made available for Customs staff. In order that Customs did not incur additional equipment costs, the declarations could be returned to the regional office after release of the goods in order for the statistical data capture function to be carried out. This would provide some encouragement to companies in the freight forwarding and Customs clearance sector that their requirements are being considered by the Customs Department. When a computerised Customs clearance system is implemented with direct trader input capabilities and good telecommunications are available to allow for this, they would be more likely to take advantage of using such a system.

There is currently little requirement for training in computers and EDI in Customs, although this will clearly become necessary when development plans have been finalised. In the meantime, computerisation and EDI awareness seminars would be beneficial. These should be appropriate to both the trade and Customs and preferably delivered jointly to make each aware of the others capabilities and intentions and to demonstrate the potential advantages to the country as a whole.

2.3   GEORGIA

In Georgia, three regional offices were visited, two of which are also border crossings, and the Customs Department (Headquarters) in Tbilisi. Information regarding other regional offices and border crossings was obtained from local counterparts and from data provided by those specialists in the project team responsible for the border post surveys.

One declarant company in Tbilisi and at Poti, the Port Authority and one freight forwarder were also visited.

Clearance of Goods

Goods arrive in and leave from Georgia across both land and sea borders. Cargo moving inland for Customs declaration purposes and goods in through transit follow a local transit procedure. A three part document is prepared. One copy is sent to the Customs Department whilst the other two copies go forward to the regional office at which the final declaration is being lodged, or the outward checkpoint in the case of through transit movements, and a record is maintained at the original checkpoint. Where the means or mode of transport changes a declaration in Cargo Declaration format is also required. On completion of the movement, the regional office or outward checkpoint returns one copy to the original checkpoint and one to the Customs Department. The copy returned to the original checkpoint is, after notation of completion of the movement, sent to the Customs Department. Control of transit movements is therefore carried out at the Customs Department.

A computer system has recently been installed in the Statistics Department on which data from the transit documents are recorded, including the serial numbers allocated at the original border. As each copy transit document arrives the serial number is input. If it already exists, then the current copy is not the first and full details are not required to be entered. It was reported that, since the introduction of this system in January 1996, the number of transit movements not finalised has been reduced considerably, from over 1,500 in January to 900 at the time of the visit in May. At Poti port, Customs reported that 98% of unitised goods move elsewhere for clearance using the transit procedure

Declarations for imports and exports are presented at the regional office and four copies are required in each case. Two declarant companies have offices within the Tbilisi regional office, one is privately owned, the other state owned. The importer/exporter sits with the declarant company and an officer from the Customs Taxation Department who checks that all documents are present and calculates the revenue payable. In some cases the declaration has been prepared beforehand, either by the trader or by a freight forwarder. In Poti, there are twelve licensed declarant companies and Customs reported that these companies are given two months training (by Customs) before they are licensed. If a declarant's error rate becomes too high the licence is revoked. The declarant companies in Poti and Tbilisi prepare the Customs declaration using either a typewriter or a PC. In the Batumi freight terminal, there are three declarant companies, all of which type declarations. A service is also available from Customs, whereby the trader sits with an officer who types the declaration for him.

The procedure for dealing with declarations was observed at the Tbilisi regional office, as follows:

- After the declaration is checked and signed by the trader it moves forward to the Statistical Department where the data is entered to a PC and a registration number is issued.

- After payment of the appropriate revenue at the Accounts Department, the declaration moves to the Import/Export Department. Examination of the goods is arranged and carried out by this Department after which the goods are released.

- In Tbilisi regional office, export examinations take place at the trader's premises and import examinations at a terminal near the airport which has only recently been opened.

- The declaration is then returned to the Statistics where it is stored until despatched to the Customs Department for filing.

Procedures at other regional offices follow broadly the same routine, with minor local variations. In Poti port, Customs reported that "writing off " or acquittal of ships' manifests also took place on a manual basis.

Customs Department advised that freight terminals, such as that associated with the Batumi regional office, will be or have been established throughout Georgia and that in future all declarations will be registered at these locations. It was also indicated that under a planned structural reorganisation it is the intention to reduce the number of regional offices from ten to five.

Customs Computerisation

Each of the ten regional Customs offices has computer facilities in place for the collection of statistical data from Cargo Declarations. Customs reported the distribution of PCs as follows:

Regional Office	No of PCs
Batumi	2
Poti	2
Kuzi	1
Akh	1
Kheti	1
Gori	1
Rustavi	1
Sok	1
Tbilisi	3
Tbilisi Airport	1

All of the above are either 386 or 486 machines. At the time of the visit one of the PCs in the Tbilisi office and one of those in Poti port were out of service. In addition, at the Batumi freight terminal two other PCs were reported. One is used to collate data from other sites and one was spare. At Sarpi border post, there were three PCs which were used to collect data on vehicles and drivers crossing the border with Turkey. Customs reported that this data is passed to the computer section of the Statistics Department on diskette.

The database on which the border crossing information is stored and the corresponding reconciliation system in Headquarters was developed by the computer section of the

Statistics Department in Customs Headquarters with local staff advising on specific requirements. The software was developed using Assembler, with Rbase as the database application. The system recently installed in the Statistics Department on which data from the transit documents are recorded has led to a reduction in the number of transit movements not recorded as completed. Currently, however, there is no means of controlling and tracking transit movements, although Customs reported that they would like to develop such a system.

As far as the Cargo Declaration data is concerned, each regional office sends the data captured on PCs to the Headquarters (Statistical Department) on diskette. The computer section of the Statistics Department has a staff of five, including three programmers who develop all of the software using Assembler and Rbase. It was reported that there is also one programmer in Tbilisi, one in Batumi and one in Rustavi, each of whom identify local variations to the software, although any changes required are carried out by the programming staff at the Statistics Department computer section.

The system developed by Customs holds commodity code information and is able to calculate revenue in addition to providing statistical reports. Also, management information is produced from the system and this is passed back to the regional offices with the intention that it forms the basis for selective checking of consignments. This information is sent either on paper or diskette, depending on whether or not the regional office has a printer. The system was demonstrated and appears to be to a good standard. Although it was not possible to investigate its capabilities fully, it would appear that it could form a suitable basis for a full declaration processing system.

Within the computer section itself there are eight PCs, four pentium and four 486 machines. These have Windows 95 installed and are networked together using Microsoft Network.

At the time of the visit a UN/ASYCUDA team was in Tbilisi and it was planned to implement the system in Headquarters and two pilot sites, the Tbilisi regional office, and the airport. Although the project has been going on for eighteen months and is due to be completed and evaluated by April 1997, current progress has been slow.

The UN/ASYCUDA team reported that, of the six client and two server PC systems (and two printers) required for development and training, only two clients systems and two laptop computers, one client and one server, were so far in place. It was also reported that staff allocated to the project had not been made consistently available and these two issues were affecting timescales, particularly with regard to training which had been delayed twice.

The total equipment requirements for the pilot project are:

Tbilisi Customs   1 server, 9 clients, 7 printers
Tbilisi Airport   1 server, 2 clients, 2 printers
Tbilisi Headquarters   1 server, 4 clients, 4 printers

An appropriate number of uninterruptable power supply (UPS) units are also required

It was reported that a meeting is to take place in the near future at which a decision on whether or not to continue with the project would be taken.

Training

It was not possible to ascertain the level of expertise in computers within the Department, except at the computer section of the Statistical Department. Here there appears to be considerable expertise, although concern was expressed by Customs that experience with UNIX, on which ASYCUDA is based, was limited to one person.

At the regional office level the principle task is data input from declarations and this is a relatively unskilled task requiring minimal training.

Training for use of the ASYCUDA system is already planned. This includes courses on UNIX, Informix, TCP/IP, SQL, and C, as well as technical and operational training on ASYCUDA itself. As indicated, training has been delayed due to lack of staff and equipment and this will almost certainly affect implementation dates.

Future Development

Although the implementation of ASYCUDA as a pilot scheme is under way, the computer section of the Statistical Department expressed a desire to extend the system developed in-house. A system to track and control transit movements has already been mentioned and the current state of the declaration data capture and statistics gathering system suggest that it could be enhanced, although a full investigation of the functional and technical aspects of the system would be required in order to establish how much further it could be developed.

At the Sarpi border crossing, Customs reported that the PCs at the border and those in the freight terminal and the regional office were due to be networked in the near future. No written development plans were produced.

Costs

The cost to implement ASYCUDA as a pilot system has been given as 1.5 million US Dollars. To implement nationally could be expected to cost in the region of a further 5 million dollars. The cost would, of course, depend on the planned reorganisation since this, if it goes ahead as planned, would reduce the number of regional offices and potentially therefore the equipment requirements. These estimated costs do not include any costs for installing or upgrading telecommunications and power facilities, other than within individual office environments.

Trade Computerisation

These visits give some indication of the current scope of computerisation in the trade sectors which interface with Customs.

Geocontract

Geocontract is a privately owned declarant company operating in the Tbilisi regional office. They prepare declarations for importers and exporters on two PCs using Microsoft FoxPro. A maximum of 40 declarations a day are prepared, with an average of 25, of which between 70-80% are imports. The system is relatively basic, although it calculates total value and revenue. As yet it has no descriptive tariff and there are no customer files stored, although there are plans to add these.

Similarly, the company reported that they intend to produce statistical data and pass this to Customs on diskette, although the ramifications of this were not discussed. For example, the data is currently captured by Geocontract before the declaration is registered and numbered. If this were to continue, Customs would not be in a position to relate the data from Geocontract with the associated declaration.

If the ASYCUDA system is implemented in Tbilisi, it would be possible for Geocontract to connect direct, eliminating the need for diskette transfers. This would be a first step to direct trader input.

Iaguar

Iaguar is a freight forwarding company based at Poti port. They prepare declarations for importers and exporters on two PCs using a Windows based package. It was not possible to see the system in action or obtain further details concerning the applications in use.

Poti Port Authority

The Port Authority at Poti receive and deliver information on paper. There was no evidence of computerisation being used in the operation.

Conclusions and Recommendations

In the regional offices, the level of computerisation is quite low and consists of statistical gathering as far as declaration processing is concerned. Some border crossings are covered, both in terms of declarations and transit movements.

The way ahead depends on the decision taken in respect of ASYCUDA. Since the visit, a meeting has taken place and it is reported that a decision was taken to proceed with the pilot implementation. No information has been received regarding the future for ASYCUDA in Georgia beyond the pilot stage.

The position of Customs appears to be split between those wishing to develop in-house systems further and those in favour of ASYCUDA. If it is decided to proceed with ASYCUDA, then it is recommended that full implementation should follow as soon as possible after the pilot and should bring all regional offices on stream with minimal time delays between each site. During implementation, Customs would be in the position of having to operate with two systems for a time and therefore this period should be kept as short as possible.

If Customs prefer to develop their in-house systems so that it becomes a real time declaration processing system, it is recommended that a full study into the functional and technical requirements is conducted, including the possibility of introducing an EDI based direct trader input interface. It is critical that if this option were selected that international standards are adopted and potential interfaces with other systems in the region are adequately considered to ensure compatibility.

The unreliability of telecommunications is an issue in Georgia and this would affect the introduction of any networked system. It is recommended that a full investigation by network specialists is carried out in order to assess the feasibility and costs of upgrading the telecommunications system to support data links. A similar investigation is required into the availability of reliable power supplies.

During the visit to the Sarpi border crossing and the freight terminal associated with the Batumi regional office, two other issues were identified. In the freight terminal, there is a PC which Customs reported to be 'spare'. It is recommended that this is made available for use in the preparation of declarations, instead of the existing typewriter.

The computer equipment and the physical facilities available at the Sarpi border crossing suggest that it could be used as a freight terminal in its own right. It is recommended that consideration be given to allowing declarations to be presented at the border crossing and for the necessary controls, examinations, etc. to be carried out there. The distance between the border crossing and the existing freight terminal is short and the trade would therefore not be inconvenienced. Also, this would remove the need for convoys from the border to the freight terminal and would strengthen Customs controls generally at this important border.

Those declarant companies and freight forwarders visited who have computers in their offices do not appear to have any technical knowledge other than operating the applications for declaration preparation. The systems themselves are fairly basic but there is no reason to doubt that they could be developed to interface with a Customs direct trader input system. Training would clearly be required but this could be carried out in conjunction with Customs in-house training, whether ASYCUDA or a nationally developed system is selected.

In general, while there is some computer knowledge in Georgia, there does not appear to be any more than a limited awareness of EDI. It is recommended that seminars for both the trade and Customs are given to make them aware of the nature and benefits of computerisation in general and EDI in particular.

3.1   KAZAKHSTAN

In Kazakhstan, one regional office and one independent Customs post were visited, along with the Customs Department (Headquarters). Information on other regional offices or border crossings was obtained from local counterparts and from those members of the project team responsible for the border post surveys

One declarant company in Almaty was also visited.

There are nineteen regional offices in Kazakhstan and more than 100 Customs posts or border crossings. These posts are associated with regional offices. There are also five Customs posts which are independent, that is, they are not associated with a regional office.

Clearance of Goods

Goods arrive in and leave from Kazakhstan across land and sea borders. Goods moving inland for Customs declaration purposes and goods in transit through Kazakhstan follow a local transit procedure. A three part Cargo Declaration, based on the SAD, is used for transit movements and this is issued by Customs at the border of entry. Copy 1 remains at the border, copy 2 travels with the goods, and copy 3 is sent to the Division of Carriage which is responsible for tracking transit movements.

For exports from Kazakhstan, control of transit from the regional office to the exit border is carried out using a similar procedure with additional copies of the export declaration presented at the regional office.

Declarations for imports and exports are presented at the regional office or independent Customs post nearest to the destination of the goods. Goods cannot be cleared at the border. Four copies of the declaration are required for exports and for imports.

Declarations are prepared on behalf of the importer/exporter by declarant companies. There are eight declarant companies in Almaty, with the majority of work being carried out by two of these. Declarant companies are not trained by Customs but they are tested and licensed by them. Some declarant companies simply prepare declarations for importers and exporters, while others offer a full Customs clearance service. In order to comply with current legal constraints, the declarant company receives the importer/exporter's power of attorney and effectively signs the declaration as the importer/exporter. All declarant companies were indicated as having PCs for the preparation of declarations, although this could not be confirmed.

The procedure for processing Cargo Declarations was observed at Autogzuzovaya road terminal in Almaty, which is located in the same office as the Almaty regional office. This was as follows:

• After arrival of the goods, the Cargo Declaration is prepared by the declarant company. The document is then taken to another private company (Business Inform) which has been established to trial an electronic declaration registration system.

• Business Inform enters the data from the declaration into a PC and transfers this to the PC at the registration desk in the Customs post (Cargo and Shipping Department). In future, declarant companies will be able to transfer data themselves and will not be required to use Business Inform.

• The declaration and accompanying documents are presented by the declarant company to the registration desk and the registration number is recorded on the declaration. All declarations are registered electronically, although a manual record is maintained at the registration desk.

- Declarations are checked in the Import/Export Freight Department to ensure that they are accompanied by the appropriate documents and the number and type of accompanying documents are recorded on a separate form (document inventory list).

- Payment of revenue is made, either by bank transfer, cash, or guarantee. Calculations of revenue charges are made by the declarant and these are checked by the Division of Payment.

- The documents are returned to the Import/Export Freight Department where the declaration is checked to ensure that payment has been properly recorded.

- The documents are passed to the automated system sector. Here, details from the declaration are entered to a PC for statistical purposes. Declarations registered electronically do not require to be re-entered as they are file transferred from the registration desk PC. A manual comparison between the paper declaration and the computer record is, however, conducted.

- The document set is returned to the import/export freight sector where another check is made to ensure that all documents are present and that all the appropriate stamps have been applied.

- Examination of the goods is then carried out by the Operative Department at the premises of the importer/exporter. All declarations are routed to the Operative Department and inspectors there decide on the level of examination required.

The inspector releases the goods by endorsing a copy of the declaration and passing it to the importer or declarant company representative.

Procedures at other regional offices follow broadly the same routine with minor local variations. However, no other regional office receives registration electronically.

Customs Computerisation

Each of the twenty-four Customs regional offices and independent posts has computer facilities in place for the collection of statistical data from declarations. The regions and independent posts are:

Akmola
Aktubinsk
Almaty + independent post of Atakent
Atyzan
Eastern Kazakhstan + independent post of Maikapchagay
Azhambul
Zhezkazgan
Western Kazakhstan
Karaganda
Kokshetan

Kostanay
Kzylorda
Mangistan
Pavlodar
Northern Kazakhstan
Semipalatinsk + independent post of Bahty
Taldykorgan + two independent posts of Dostyk and Khorgus
Torgay
Southern Kazakhstan

Each regional office and independent post has a statistical section which is responsible for entering the data to the computer system. For example, at Autogzuzovaya road office there is one 486 PC used for the capture of statistical data, which is transferred to the regional office Statistics and Analysis Department by diskette. The PC used for electronic registration is also a 486 and it basically carries the same software as the statistics computer, with the addition of a registration number allocation facility.

The Almaty regional office Statistics and Analysis Department has six 486 machines. These are currently "stand alone" but it is hoped to network them together using Novell Netware (on a client server basis) by the end of this year. Each regional office has at least three PCs.

The regional offices pass data to the main Statistical Department in the Customs Headquarters every ten days. This is currently carried out using diskettes. The Automation and Statistics Department is responsible for collection and analysis of all Customs statistics and for producing reports on Customs statistics.

In total, there are 170 PCs in Kazakhstan Customs, 70 of which are located in Almaty.

The software used to collect and analyse statistical data was developed and supplied by the Russian Federation. It runs on DOS and uses Clipper Database Management System.

The Technical and Network Division of Customs Headquarters is responsible for providing technical support for all Customs computer systems. Customs reported that there are two Local Area Networks in the Headquarters office (one for administration and one for technical development and research) and one each in the Azhambul and Kostanay regional offices The networks in the regional offices are used in the areas of declaration processing, and payments. It was indicated that the software used in these locations was developed locally but there is no compatibility between them.

Training

Although each regional office was reported as having qualified programming staff, there is no formal training available for such personnel at the current time. Similarly, there is no training for staff in the Technical Department of Headquarters.

In the regional offices, training in basic keyboard skills is given to appropriate staff.

Future Development

The Automation and Statistical Department in Headquarters indicated that documentation for a project known as "Automation of Customs Offices" has been submitted to the Government for financial approval. If approved, the automation project will be carried out with the Russian Federation. It is intended to provide a full Customs declaration processing system. The software being developed by the Russians is said to consist of 12 modules, including freight declarations, contraband, accounting etc.

It was not possible to obtain sight of any documentation on the proposed system, the project proposals and plans, or the technical feasibility and financial plan. It was indicated that all required documentation had been prepared. The total cost of the project was estimated at USD$16 million, including the provision of software, hardware, training and communications.

As far as networking is concerned, the planned system includes:

•   installation of local networks

•   establishing of communications links between regional offices and their associated Headquarters

•   establishing communication links between regional offices and their associated Customs posts

•   installing communications links between the independent Customs posts and Headquarters

Although the project is not directly connected with the current pilot scheme of electronic registration of declarations, the two are clearly related. The electronic registration is effectively the first step towards direct trader input of Cargo Declarations.

An important feature of any direct trader input system is the ability of the declarant to have the Cargo Declaration validated by the Customs system before it is registered. This obviates the need to spend time correcting simple coding errors at a later stage and is one of the main benefits of direct trader input. It was indicated that the Russian system does provide for validation errors to be returned by the computer to the declarant. The pilot scheme, however, did not have such a facility available and all errors were both identified and sent back to the declarant manually.

The implementation date for the proposed system is dependant on the availability of finance. The Department expressed concern as to whether it would be approved.

Customs reported that other systems had been considered, including SOFIX and ASYCUDA, before the decision was taken to proceed with the Russian system. The final decision was indicated as having been made primarily on the suitability of the Russian system to the needs and procedures of Kazakhstan Customs.

Costs

The costs for the implementation of the Russian Federation system is $16 million. Given the number of locations and the volume of traffic, it is estimated that to implement the ASYCUDA system throughout Kazakhstan would cost an estimated $10.5 million. A complete investigation of the requirements of the country would need to be conducted in order to provide a more accurate costing and this can therefore only be regarded as a guide at this stage. The ASYCUDA estimate does not include any cost for installing and up-grading of telecommunications or power facilities, other than in individual office environments. It is not known whether this is included in the Russian system price but it is considered unlikely.

Trade Computerisation

The following visit report indicate the current levels of computerisation in the trade organisations which interface with Customs.

Business Inform

Business inform is a company established to participate in the pilot scheme for electronic registration of Cargo Declarations.

All declarations are received from the declarant companies (Business Inform is not a declarant in its own right) and are entered into a PC for transfer to Customs. The software used was developed specifically for the company but was checked for compatibility by Customs.

The future role of the company is unclear since it is planned to allow declarant companies to connect direct with Customs for declaration registration if the pilot is successful and the necessary changes to legislation made.

Accept Corporation

This is a declarant company which also offers a full Customs clearance service. Their declarations are prepared using PCs. The software used was developed by the company's own programming team and is based on DOS, using Clipper.

Currently, all declarations are passed to Business Inform after they are produced in order that they can pass through the electronic registration process. This involves double keying the data. The company is prepared to accept this inconvenience in the short term, since it expects to make considerable time savings when the electronic registration facility is made available to all declarant companies.

The company reported that, although they offer a full Customs clearance service to importers and exporters, the current law requires that, where such a service is provided, they sign declarations as the importer or exporter.

Conclusions and Recommendations

There is currently a limited use of computerisation in Kazakhstan in transport operations and the activity within Customs is principally concerned with the collection of statistical data.

The electronic registration scheme, however, provides a good base for full direct trader input and should be encouraged. It is recommended that this scheme is extended as soon as possible in order to allow all declarant companies to send their declarations electronically without the current requirement to double key by a third party.

The joint project with the Russian Federation could not be adequately investigated, particularly in terms of the functionality of the system. Although both the Automation and Statistics Department and the Technical and Network Department indicated that they had evaluated SOFIX and ASYCUDA systems before choosing the Russian system, their knowledge of those systems during discussions suggest that they did not have sufficient full information on which to come to an objective decision.

It is therefore recommended that Customs carry out further technical and economic evaluations of the Russian Federation system and ASYCUDA in order to confirm that the planned development is cost effective, offers the most appropriate solution for Kazakhstan, and is compatible with other systems in the TRACECA region.

Local developments were also identified, in particular the Local Area Networks reported as being in place in two regional Customs offices. In view of plans to implement a national system for Kazakhstan, it is recommended that no further local implementations are approved. While these may appear useful in the short term, they consume valuable resources on features which will eventually be abandoned. Additionally, since these developments take place totally independently of each other, there is no consistency as far as systems are concerned.

It is further recommended that the expertise which exists in Kazakhstan Customs in this area is brought together in a central forum such that ideas can be exchanged and resources used on a collective basis. Such a forum could also for the basis of an investigative team to carry out the recommendations in respect of the choice of a National Trade Data Transfer System.

2.5   KYRGHYZSTAN

In Kyrghyzstan, two regional offices and one border crossing were visited, along with the Customs Department (Headquarters) in Bishkek. It was not possible to visit other regional offices or border crossings but information regarding these locations was obtained from local counterparts and from those members of the project team with responsibility for the border post surveys.

One declarant company in Bishkek was also visited.

There are fifteen regional offices in Kyrghyzstan and 30 Customs posts or border crossings.

Clearance of Goods

Goods arrive in and leave from Kyrghyzstan across land borders only. Goods moving inland for Customs declaration purposes (the standard Cargo Declaration is used for Customs declarations and for goods in transit through Kyrghyzstan) follow a local transit procedure. A three part document (transfer slip) is prepared by Customs at the point of entry. Copy 1 remains at the border, copy 2 travels with the goods, and copy 3 is sent by post to the regional office at which the declaration is to be presented. When the declaration and goods arrive at their destination, copy 3 of the transfer slip is "written off" and returned to the border of entry to Kyrghyzstan. If the border has not received a "written off" copy 3 within ten days, a reminder is sent to the appropriate regional office. If a declaration has not been made in respect of the goods, then the matter is reported to the contraband section for investigation. A similar procedure operates for exports from Kyrghyzstan.

A new procedure for transit movements is due to be introduced in the near future. This will cover import and export transit movements and goods in transit through the country. A four part Cargo declaration will be raised at the border, either by Customs or by a declarant company. One copy will be retained at the point of entry, one will be sent to Headquarters, one will travel with the goods, and one will be sent by post to either the regional office at which the goods declaration is to be presented or to the border from which the goods will leave Kyrghyzstan. Monitoring of transit goods both through and within Kyrghyzstan will continue to be carried out by the border of entry, although a central record of transit movements will be maintained in Headquarters Statistical Department. Controls will initially be on a manual basis, but it is intended to introduce a computer data capture system in due course.

Declarations for imports and exports are normally presented at the regional office nearest to the destination of the goods. Goods can be cleared at the border, although this is discouraged due to the limited facilities available at these locations. Four copies of the declaration are required for exports and six for imports.

Declarations are prepared on behalf of the importer/exporter by declarant companies. There are 78 declarant companies in Kyrghyzstan and these are trained and licensed by Customs. Some declarant companies simply prepare declarations for importers and exporters while others offer a full freight forwarding and Customs clearance service. Some companies prepare Cargo Declarations using typewriters and some have PCs.

The procedure for dealing with declarations was observed at both the Northern regional office, which deals with rail traffic, and the Bishkek road terminal, and was as follows:

- After arrival of the goods, the declaration and accompanying documents are presented by the importer or declarant company

- Declarations are checked to ensure that they are accompanied by the appropriate documents and the declaration is then registered

- Payment of revenue is made, either by bank transfer, cash, or guarantee. Calculations of revenue charges are made by the declarant

• A full check of the documents and calculations is carried out

• Examination of the goods takes place. At the Northern regional office all examinations are carried out at the terminal. At the road regional office, examination can take place either at the post or at the importer's premises

• The inspector releases the goods by endorsing a copy of the declaration and passing it to the importer or declarant company representative

• After release, the statistical data is entered to a PC by the statistical section. At this stage, a further check of the payment amounts is carried out

Procedures at other regional offices follow broadly the same routine, with minor local variations.

Customs Computerisation

Each of the fifteen Customs Regional offices has computer facilities in place for the collection of statistical data from declarations. The regions are:

Bishkek Customs
Northern
SEZ (Free Trade Zone)
Manas
Karakol
Issyk-Kyl
Naryn
Torugart
Tokmok
Kara-Balta
Talas
Osh
Jabal-abad
South
Irkeshtam

Each regional office has a statistical section which is responsible for entering the data to the computer system. The section also re-enters data relating to declarations made at associated Customs posts from which a copy of the declaration has been received. At Bishkek road office, there are three PCs used for the capture of statistical data.

Each regional office passes data to the main Statistical Department in the Customs Headquarters. This is currently undertaken using diskettes. Although regional offices have modems in place, the lack of a reliable power supply, particularly in remote areas, means that these are not used.

The main Statistics Department in Headquarters has a staff of four. The Department has two 486 machines, one of which is used to collate the statistical data received from regional

offices and the other is used for recording revenue information based on manual accounting sheets received from each regional office on a monthly basis.

The Department is responsible for processing statistical data and producing Customs statistical reports, including those for the Ministry of Trade and the Central Statistical Office.

The software used to collect and analyse statistical data was developed by an independent software company, Mitra. It runs on DOS and uses Clipper Database Management System.

The Computer Division of Customs Headquarters is responsible for providing technical support for all Customs computers and for checking and adapting software.

Within the Computer Division there are three PCs. One is a spare held on behalf of the Statistical Department, one is used for development work, and the other is mainly used for word processing. The development machine currently holds software from the Russian Federation, which was offered for use in Kyrghyzstan. Although it was considered that the system did not meet their requirements, Customs are carrying out further investigations in order to ascertain whether it can be adapted for use, particularly in the area of administration, for example, personnel records.

PCs in use in other sections of Headquarters which were visited are used almost exclusively for word processing.

Training

Training in basic keyboard skills is carried out for those staff involved in the collection of statistics. Training in the use of Norton Commander is also given to appropriate personnel.

There are no training courses in either networking or programming and the Consultant was informed that all programming work is out-sourced to Mitra.

Future Development

The revised transit system which is shortly to be introduced is intended to include provision for the collection of data by computer, using software developed by Mitra. As part of this project, PCs are due to be installed at each of the thirty border crossings, although initially only Headquarters and 14 selected border posts will be provided with equipment.

Data concerning transit movements will be recorded at the border post of entry to Kyrghyzstan and transferred to Headquarters and the border of exit, or to the regional office in the case of goods moving inland for clearance. Transfers of data will be in real time and will involve the use of radio modems. The control of the movements will continue to be the responsibility of the border posts with the Headquarters Statistical Department simply maintaining a record of all transit movements.

A major project is also under way in Kyrghyzstan concerning the implementation of the SOFIX system for Customs declaration processing. In 1994, following a visit to France by

the President of Kyrghyzstan, Customs signed a contract to implement SOFIX, the Computerised International Freight System developed from the French Customs system.

Customs reported that the project takes the form of a series of agreements between Customs and Dasso Automatic Telecommunications, two of which have already been completed.

The first agreement concerned assistance with the selection of suitable Customs locations (referred to as objects) for the initial implementation of SOFIX. The cost of this phase of the work was 351,000 French Francs or approximately US $70,000.

The second agreement involved upgrading the infrastructure of the selected objects in readiness for the introduction of SOFIX. This principally concerned the installation of cabling in, but not between each office. Communication between offices will be by radio modem. The costs of this part of the project was 982,000 French Francs or approximately US $196,000.

The border crossing post of Akzhol was visited and this has been prepared for SOFIX implementation through the installation of cabling. An office within the post has been allocated for use by a declarant company and Customs indicated that they expected declarants, rather than themselves, would be preparing the cargo declarations required under the revised transit procedures using SOFIX.

The third agreement concerns the implementation of SOFIX throughout the selected offices and Headquarters. This includes the provision of software, hardware, training and installation. Customs indicated that the price of the SOFIX software is US $9.5 million US Dollars, but is being provided free of charge. Implementations within this phase include three regional offices, at Manas, Northern, and Bishkek; and eleven Customs posts, nine on the rail link to the border with Kazakhstan and two on road borders with Kazakhstan. Implementation is due to be completed within 24 months of the date that credit is finalised.

The cost of the third agreement is 5.5 million US Dollars. It is to be funded partly by credits from the French and partly by the Kyrghyzstan Government. The contribution from Kyrghyzstan amounts to 1 million dollars and as yet no source of funding has been identified.

The fourth agreement extends implementation to the Osh and Jabal-abad Customs regions and will cost another 6 million US Dollars, all to be financed internally. The final agreement will bring in the remainder of Kyrgyzstan Customs and will again be required to be financed internally.

Costs

The costs for the implementation of SOFIX are detailed above.

Given the number of locations and the volume of traffic, it is estimated that to implement ASYCUDA throughout Kyrghyzstan would cost in the region of 8.5 million US Dollars. A complete investigation of the requirements of the country would need to be carried out in order to provide a more accurate costing and this can therefore be regarded as an estimate for guidance purposes. This price estimate does not include any costs for installing or

upgrading telecommunications and power facilities, other than in individual office environments.

Trade Computerisation

The following visit gives an indication of the current level of computerisation in organisations concerned with freight facilitation and interface with Customs.

Kyrghyz Trans Cargo

This is a freight forwarding and declarant company based in Bishkek. They prepare Customs Declarations on behalf of importers and exporters and offer a full Customs clearance and freight forwarding service.

The Cargo Declarations are prepared using a typewriter. Although the company has a PC which they used for this purpose in the past, it was abandoned as being too slow. The software used was not identified. The representative from the company indicated that they hoped to access the SOFIX system when it became available.

Conclusions and Recommendations

In Kyrghyzstan there is currently a limited use of computerisation in the transportation operation and within Customs it is concerned principally with the collection of statistical data

There are, however, ambitious plans to introduce SOFIX on a nation-wide basis, if funding can be found.

The project relating to transit movements is due to include a degree of computerisation, which will be abandoned following the introduction of SOFIX. Since the computer equipment required for the transit project has not yet been provided, it is recommended that the computerisation element is put on hold until the SOFIX system is implemented. Until such time as SOFIX is available, the control of transit movements would continue to be carried out on a manual basis. This would avoid expense both in terms of equipment and double training.

Telecommunications are a problem within Kyrghyzstan and currently transfer of data is through diskette. The implementation of SOFIX incorporates the use of radio modems. It is recommended that the use of radio modems is considered as a means of enhancing the existing data transfer procedure such that data from regional offices can be passed to the Statistical Department electronically. This would provide a more consistent, speedy, and reliable means of collecting statistical information. The installation of such equipment would also provide a good base, as far as networking is concerned, from which to move forward with computerisation of the service in general.

The decision to implement the SOFIX system in Kyrghyzstan appears to have been made at a political level. Customs indicated that no other systems had been evaluated. As expected therefore, there was only very limited knowledge of ASYCUDA and of other national Customs computer systems.

The situation with regard to funding is unlikely to be resolved without external assistance and without the required funding it will not be possible for Kyrghyzstan to move forward to a full National Trade Data Transfer System. It is therefore recommended that the service looks again at the options available, including ASYCUDA, and should review their current development plans for both cost effectiveness and compatibility with other systems in the TRACECA region.

2.6   TADJIKISTAN

In Tadjikistan, one regional office was visited, one Customs post and the Customs Department (Headquarters). It was not possible to visit other regional offices or any border crossings, but information regarding these locations was obtained from local counterparts and from visits by these members of the project team responsible for the border post surveys.

One declarant company in Dushanbe was also visited.

There are five regional offices in Tadjikistan and 44 border posts. Of these, 20 are dealing with most of the goods being imported, exported, or transiting the country.

Clearance of Goods

Goods arrive in and leave from Tadjikistan across land borders only. Goods moving inland for Customs declaration purposes (the standard Cargo Declaration similar to the SAD is used for Customs declarations) follow a local transit procedure. A two part document is prepared at the border. Copy one remains at the border of entry and the second copy travels with the goods to the regional office at which the goods declaration is to be made.

For goods in transit through Tadjikistan, a three part SAD is used. Copy 1 stays at the border of entry and copies 2 and 3 travel with the goods. One copy of the Cargo Declaration remains at the exit border. The border of entry also notifies the regional office or exit border by radio that the movement has commenced. Radio notification of completion of the transit movement is also notified back to the border of entry by radio.

The procedure for exports is similar, but an additional copy of the export declaration is used instead of the local transit form. Details are recorded manually at the border and reports are submitted to the regional office at least monthly. Notification by radio again also takes place.

Customs reported that they are encountering problems with the non-delivery of transit goods and a new system is to be introduced in an attempt to resolve this situation. Essentially, it will involve a more strict document regime, although it is hoped eventually to use computers for the tracking and control of transit goods.

Declarations for imports and exports can be presented (and therefore goods cleared) either at the 20 border points or at regional offices and associated posts. Four copies of the declaration are required for imports and seven for exports.

Declarations are prepared on behalf of the importer/exporter by declarant companies, although importers and exporters can prepare their own declarations. All declarant companies are trained and licensed by Customs but imports and exporters do not require a licence. Some declarant companies simply prepare declarations for importers and exporters while others offer a full Customs clearance service. Some companies prepare declarations using typewriters and some have PCs.

The procedure for dealing with declarations was observed at the Dushanbe II rail freight terminal (Customs Post) and was as follows:

- The railway notifies both Customs and the receiver (importer) of the arrival of goods.

- The declarant company presents the four part Cargo Declaration, along with all accompanying documents, to Customs at the rail terminal.

- The declaration and documents are checked by Customs and the goods are either released immediately (if payment has been made) or examined and then released. Customs exercise a selective policy of examination.

- Release of the goods is notified by an endorsement on copy three of the declaration, which is then returned to the declarant or importer.

- Details from the declaration are then entered to a PC, if the Customs office has the equipment. If it does not, copy two of the declaration is sent to the regional office for data input.

- Payment of revenue can be made by cash pre-payment, cash, or bank transfer at the time the declaration is presented, or through of a gross payment account. Where the gross payment scheme is used, Customs at the terminal check that the account has sufficient funds by contacting the regional office where the account is held.

Procedures at other regional offices follow broadly the same routine, with minor local variations. In Dushanbe II, Customs reported that "writing off " or "acquittal" of the railway manifests also takes place on a manual basis. This is carried out by the railway and is subject to checking by Customs.

Customs Computerisation

Each of the five Customs Regional Offices has computer facilities in place for the collection of statistical data from declarations. The regions are as follows:

Dushanbe
Khatlon
Tursun-zade
Leninabad
Badakhshan

There is also a minor regional office at Nisnij Biandz.

Customs in Tadjikistan have around 20 PCs. With the exception of those in the Statistics Department, which are networked together, they are all "stand alone". None of the border posts have computer equipment, mainly due to the lack of reliable power and telecommunications facilities.

There are 14 PCs based in the regional offices. Data collected at these locations are transferred to the Headquarters Statistical Department by diskette, or through modem links. Most of these are radio modem links. There are three 486 PCs in the regional offices and all others are 386 machines.

In the Headquarters Statistical Department there are five 386 machines and one pentium server.

The system for statistical data capture and analysis was developed in-house, using FoxPro. Skilled programming resources are very limited within the service and Customs reported that there is currently too much work for the staff to undertake. The system is restricted to the collection of statistics. There is no check on the validity of commodity codes and no facility for the calculation of charges.

Training

There are currently no formal training arrangements for computer operations within Customs. Where computer operator skills are required for a particular job Customs only take on experienced PC users

Future Development

Although actual plans for developments in terms of computerisation are limited to maintaining and enhancing the existing statistical data capture and analysis system, there was a recognition within the Department that more could be achieved through the use of computers in certain areas.

Three specific tasks were identified as being required to be performed and these would be included as essential elements in any future computer development projects:

•   data from all declarations should be entered into the computer

•   the computer system should be able to check the validity of the data input

•   a computerised accounting system should be available

Customs considered that, wherever Cargo Declarations were presented, computers should be made available to capture the information and transfer it to Headquarters. The opinion was also expressed that the information should be entered to the computer at the earliest possible stage, that is at the time the declaration is presented, or perhaps before.

Exposure to systems such as SOFIX and ASYCUDA was limited, although there was knowledge of these products in general terms. No approaches had been made or received by Tadjikistan concerning the possibilities of national implementation of such systems.

Assistance in the area of computer development, and in particular more information in respect of systems such as SOFIX and ASYCUDA, was regarded as essential.

Costs

Given the number of locations and the volume of traffic, it is estimated that to implement ASYCUDA throughout Tadjikistan would cost in the region of 4 million US Dollars. A complete investigation of the requirements of the country would need to be carried out in order to provide a more accurate costing and this can therefore be regarded as an initial estimate. This estimate does not include any costs for installing or upgrading telecommunications and power facilities, other that in individual office environments.

Trade Computerisation

Railway Terminal

The declarant company associated with the rail terminal in Dushanbe II Customs post was visited. It is part of the railway organisation.

The company prepares Customs declarations on behalf of importers and exporters and presents them, together with accompanying documents, to Customs. A full Customs clearance service is offered. Cargo Declarations are prepared using a PC though no details of any packages used were available. Any system in use appeared to be only basic.

Conclusions and Recommendations

In Tadjikistan there is currently a limited use of computerisation and this is principally concerned with the collection of statistical data.

Telecommunications are adequate for the level of use of computerisation which currently exists with radio modems being the most reliable means of transferring data from computer to computer.

In spite of this limited level of computerisation within the service, a high degree of awareness of the benefits which could be obtained through computerisation was demonstrated. The need to capture data early in the declaration and release cycle and the use of computers to validate data and perform revenue calculation and accounting functions indicate that the use of computers are seen as aids to eliminating routine activities which currently place heavy demands on Customs resources.

The overall impression obtained from discussions with both the Headquarters Statistical Department and the operational staff at Dushanbe II rail terminal was of a realistic approach to the whole process of cargo control and clearance.

Although no explicit discussions took place concerning direct trader input of Customs declarations, there were again indications that this was seen as providing benefits to Customs. In order to capture the data from declarations by the time they are presented, which was seen as desirable, there would almost certainly need to be a direct trader input system in place.

There is currently little requirement for training in computers and EDI in Tadjikistan Customs, although this will clearly become necessary when development plans have been formulated. It is recommended, however, that computerisation and EDI awareness seminars are held. These should be appropriate to both the trade and Customs and preferably delivered jointly to make each aware of the others capabilities and intentions and to demonstrate the potential advantages to the country as a whole.

It is also recommended that consideration be given to the long term implementation of the UN/ASYCUDA system consistent with the overall concepts of regional harmony.

2.7   TURKMENISTAN

In Turkmenistan, two regional offices were visited, one of which is also a border crossing, one Customs post and a second border crossing, along with the Customs Department (Headquarters). It was not possible to visit other regional offices or border crossings, but information regarding these locations was obtained from local counterparts and from visits by those members of the project team responsible for the border post surveys.

One declarant company in Ashkabad and one shipping company in Turkmenbashi, were also visited.

There are eight regional offices in Turkmenistan and 50 Customs posts, some of which are located at the border and some inland.

Clearance of Goods

Goods arrive in and leave from Turkmenistan across land and sea borders. Goods moving inland for Customs declaration purposes (the Cargo declaration is used for Customs declarations) and goods in through transit follow a local transit procedure. A two part document is prepared. Copy two is retained at the point of arrival with details from this document being fed into a PC and the data transferred to the Customs Department via a modem connection, if available, or by diskette. The first copy travels with the goods to either the inland clearance location or the point of exit from Turkmenistan.

For goods moving in transit from and to non-CIS countries, a completed Cargo Declaration in two parts is required. The procedure for dealing with the copies is the same as for the local transit form.

Details of the transit movement are transferred from the Customs Department to the Customs office associated with the point of exit or clearance to await the arrival of the goods. When the goods arrive, this is recorded and passed back to the Customs Department via modem or by diskette. The copy of the transit document which travelled with the goods is returned to the point of arrival to be associated with their copy. If the information has not been received at the exit or clearance point by the time the goods themselves arrive, the transit document is sent to the regional office. The document is retained for up to ten days awaiting the necessary information from the Customs Department. If the information is still outstanding after this period of time, the Customs Department is informed and investigative action is carried out. This does not inhibit the movement of the goods, which are released or allowed to proceed out of Turkmenistan. If, however, the data has been received from the Customs Department and the goods arrive without accompanying documentation, release is withheld until the transit document is produced.

Monitoring of transit goods both through and within Turkmenistan is conducted by the Customs Department which maintains a computer-based control record of such movements. Although automatic matching of the start and end of transit movements is being introduced, manual supervision and control also currently take place.

Declarations for imports and exports are normally presented at the regional office or Customs post nearest to the destination of the goods. Goods can be cleared at the regional office of entry on application and subject to approval by Customs. Four copies of the declaration are required for imports and seven for exports.

Declarations are prepared on behalf of the importer/exporter by declarant companies. Around 12 such companies, both state owned and private, have offices in Ashkabad whilst 3 have offices in Turkmenbashi. All declarant companies are trained and licensed by Customs. Some declarant companies simply prepare declarations for importers and exporters, while others offer a full Customs clearance service. Some companies prepare declarations using typewriters and some have PCs.

The procedure for dealing with declarations was observed at the Ashkabad Freight Terminal (Customs Post). This was as follows:

- The goods arrive at the freight terminal and the importer submits a letter to Customs giving details of the consignment. The vehicle is moved to the importer's premises under seal and the goods are unloaded under Customs control.

- Declarations are presented and checked to ensure that they are accompanied by the appropriate documents. If necessary, verification is obtained from a bank that the required funds are available.

- Examination of the goods takes place where this has not already been carried out at the time of unloading.

- After signing by the head of the Customs post, the documents are passed to an inspector.

- The inspector, in the presence of the importer and/or declarant company representative, checks the declaration and registers it in a manual record, allocating a sequential number.

- Payment of revenue is made, either in cash or by bank transfer. In rare cases, bank guarantees may also be used. A gross payment scheme is also available and is quite widely used. Each Customs point or office where declarations are processed maintains its own records of debits and credits to gross payment accounts.

- The inspector releases the goods by endorsing copy 3 of the declaration and passing it to the importer or declarant company representative.

- After release, the statistical data is entered to a PC by the statistical section.

Procedures at other regional offices follow broadly the same routine, with minor local variations. In Turkmenbashi, Customs reported that "writing off" or "acquittal" of ships manifests also took place on a manual basis.

Customs Computerisation

Each of the eight Customs regions' main Customs offices have computer facilities in place for the collection of statistical data from declarations. The regions are:

Ashkabad
Ashkabad Airport
Mary
Lebap
Dashovuz
Balkan
Sarahks
Gushga

In addition, fifteen of the fifty Customs posts also have PCs, including eight of the nine posts associated with Ashkabad region. Ashkabad freight terminal handled approximately 1,500 import and export declarations during the first half of 1996 and has two PCs, both 386 machines, for data capture. Both machines have Windows loaded but this is used only for word processing purposes with the data capture application being DOS based.

Each regional office has a statistical section which also collects data from associated Customs posts. Between three and five staff work in these sections and each person has a PC.

Where the Customs posts have their own PC, data is transferred to the regional office either by modem or diskette. The regional offices pass data to the main Statistical Department in the Customs Department by modem. All regional offices have modem connections to the Customs Department. The Turkmenbashi regional office, which was visited, has three PCs and modem links with the Headquarters was confirmed.

The main Statistics Department in Headquarters has a staff of four, although there is currently a vacancy. Each member of staff has a PC and they are linked together through an ethernet network. There is no server but one of the PCs is modem linked and receives all data from the regions. It has an 840 megabyte hard disk with annual statistical data currently requiring 40 megabytes.

The Department's responsibilities include the exchange of information between Customs stations (Customs reported that data is disseminated such that each regional office holds data relating to imports/exports in all regions), processing statistical data, and producing Customs statistical reports.

The total number of staff engaged on statistical work in the service as a whole is 30. Customs reported that, of the 73 PCs within the service, only half were actually in use. The principle reasons given were:

- inability to attract qualified staff due to low salaries compared to those available in private enterprises (staffing was reported as being particularly a problem away from the centre of the country),

- lack of good telecommunication from Customs posts to regional offices. In and between the major cities, however, telecommunications are satisfactory.

The software used to collect and analyse statistical data was developed internally by the chief of the Statistical Department and three others in regional Customs offices. It is based on the Clipper Database Management System, which is compatible with FoxPro, the latter being in use in at least one of the regional offices.

The system was developed by Customs primarily for the purpose of gathering and manipulating/analysing statistics and for assisting in the control of export quotas. Statistical reports are produced for a number of government ministries and state organisations, either in electronic form or on paper. In addition, management information can be extracted from the system, although it did not appear that this was being produced for use in the regions, for example as a base for selective examinations and/or targeting.

Training

There are currently no formal training arrangements for computer operations within Customs.

The Statistical Department is trying to introduce a system so that where a regional office or Customs post has PCs, two or three members of staff would be trained in their use. Trained personnel who wished to move on would be expected to train their replacement before leaving their post.

The internal system currently in use was developed by just four individuals from within the service. Any increase in the use of computers within Customs would clearly, therefore, require an extensive training programme to be undertaken, beginning from very basic computer appreciation through to programming and technical support skills.

Future Development

In 1994, Customs signed a contract to implement SOFIX, the computerised international freight system developed from the French Customs system. A project plan for the introduction of the system had been prepared, including the implementation of a pilot system. A document describing the SOFIX system is shown in Appendix 6.

The total cost was originally estimated at 70 million French Francs, but this was later reduced to 50 million Francs by concentrating on those areas identified as being most in need of computerisation. This included the eight regional offices and 35 Customs posts. It excluded those posts dealing with transit movements only. This price equates to approx. US $ 10 million.

The service was operationally and organisationally ready to implement the system but lack of government approval for the financial credits required caused the project to be shelved.

During the investigation into availability of possible systems, ASYCUDA was also evaluated. Although Customs considered ASYCUDA to be easier to operate than SOFIX and would cost less, it was decided that SOFIX was more suited to Turkmenistan, principally because it would integrate more easily with their current statistical system.

Following the abandonment of the SOFIX project, the Statistical Department formulated its own plan for implementation of a computerised facility which would include some of the main elements of SOFIX. Using the current system as a base, it was planned to add new modules including valuation, classification and accounting, into each Customs post. PCs and radio modems were to be provided such that transfer of data could take place each night and information passed back from Headquarters ready for the next day.

The total cost of the internal plan was estimated at 1 million US Dollars, which would included provision of all equipment, software, and training. The costs were kept to a minimum by contracting out the software production locally - software was reported as being the major costs of the SOFIX project.

Lack of funds and lack of personnel (no legal basis to offer appropriate rates to contractors) caused this project to be shelved also. No written plans for this were available as they were reported as having been destroyed when the project was abandoned.

Costs

The costs for the two computerisation projects, both of which were subsequently not followed through, are detailed above.

Given the number of locations and the volume of traffic, it is estimated that to implement ASYCUDA throughout Turkmenistan would cost in the region of 5 million US Dollars. A complete investigation of the requirements of the country would need to be carried out in order to provide a more accurate costing and this can, therefore, be regarded as an outline estimate. This estimate does not include any costs for installing or upgrading telecommunications and power facilities, other than that within individual office environments.

Trade Computerisation

The following visits were undertaken to obtain an indication of the levels computerisation in organisations who are involved in freight facilitation and interface with Customs.

Ashkabad Expertise

This is a declarant company based in Ashkabad and is associated with the state run Chamber of Commerce. The sole function of the company is to prepare Customs declarations on behalf of importers and exporters. A total of 1,000 declarations were completed in the first quarter of 1996. Declarations, once completed, are handed back to the importer/exporter to pass on to Customs.

The majority of the declarations are prepared using a typewriter. Although the company has two computers, both of which are very old, the staff prefer to use typewriters as they feel it is quicker.

The company recognised that there was a need to progress further and stated that they were getting prepared for this. They also expressed the view that, at some stage in the future, it should be possible to transfer data electronically.

With the introduction of computerisation within their industry, they considered that a change of role was foreseen and they could be holding details on importers and exporters within their own system, including for example contract and invoice information which could be passed electronically together with the declaration.

Turkmen Shipping Company

Based in Turkmenbashi, the Turkmen Shipping Company operates a ferry service to and from Baku and also vessels on the Volga route.

There was little evidence of computerisation within the company's offices and those PCs which were on-site did not appear to be used in the transportation operations. This was supported by the fact that manifests received by the Customs office were not produced by computer.

Conclusions and Recommendations

In Turkmenistan there is currently a limited use of computerisation and that is principally related to collection of statistical data. There is evidence that some management information which could be used to target controls more effectively is available from the system.

Telecommunications are satisfactory for the level of use of computerisation which currently exist. In and between the regional offices and Headquarters, data can be transferred by modem, although outlying offices and borders do not have this capability. It is recommended that the use of radio modems is considered as a means of extending the existing network, such that data from those Customs posts which cannot currently transfer

data other than by diskette or on paper are able to do so electronically. This would provide a more consistent, speedy and reliable means of collecting statistical information. The installation of such equipment would also provide a good base, as far as networking is concerned, from which to move forward with computerisation of the service in general.

The decision to halt the implementation of the SOFIX system in Turkmenistan prompted an internal development plan to be devised. This was also shelved, due to lack of funding and the constraints faced when attempting to attract contract programming staff. If this situation is not resolved, particularly with regard to funding, it will be difficult for Turkmenistan to move forward to a full declaration processing and revenue collection computer system. It is, however, recommended that the service looks again at the options available, including ASYCUDA. This system was discounted in favour of the SOFIX system on the grounds that it could be more easily integrated with the existing statistical system. Part of any cost calculations for ASYCUDA should, therefore, include the conversion of the current statistical gathering and analysis system into ASYCUDA's own module for this purpose.

Those declarant companies and freight forwarders visited and who have computers in their offices do not appear to have any technical knowledge. The systems themselves are fairly basic and in some cases declarant company staff prefer to continue to use typewriters. Whether this reluctance is due to fear of technology or simply because of the lack of efficient systems could not be determined. The latter is more likely to be the case, given that those declarant companies with modern equipment prepare their declarations using PCs.

Training of declarant company staff following introduction of planned new systems will undoubtedly be required but this would only be at an operating level with technical support coming from system suppliers.

The proposed plans to train Customs staff in the use of the existing statistical system should be encouraged and it is recommended that some form of incentive is introduced to attract and retain personnel.

The apparent lack of any cargo related systems in Turkmen Shipping Company should not unduly affect the ability of Customs to carry out their controls effectively, given that the volume and diversity of cargo handled at the port is not great. Introduction of automated manifest transfer and acquittal systems is therefore not regarded as a high priority.

In general, while there is some computer knowledge in Turkmenistan, there does not appear to be any more than a very limited awareness of EDI. It is recommended that seminars for both the trade and Customs are given to make them aware of the nature and benefits of computerisation in general and EDI in particular.

2.8   UZBEKISTAN

In Uzbekistan, three regional offices were visited, together with two border posts, two freight terminals (road and rail) along with the Customs Department (Headquarters). It was not possible to visit other regional offices or border crossings, but information regarding these locations was obtained from local counterparts and from those members of the project team responsible for the border post surveys.

In Tashkent, two declarant companies, one transport company and an importer, were also visited.

There are fourteen regional offices in Uzbekistan and more than 200 Customs posts, some of which are located at the border and some inland. Of the latter, there are 82 at which declarations can be processed. Uzbekistan is trying to restrict traffic to eight border crossing points only.

Clearance of Goods

Goods arrive in and leave from across land borders only. Goods moving inland for Customs declaration purposes (the Cargo Declaration is used for Customs declarations) follow a local transit procedure. A three part document is prepared, together with a 'Route List', giving the vehicle and driver details. Copy 1 travels with the goods, copy 2 is sent by post to the point of destination and is subsequently returned to the border of entry on completion of the movement, and copy 3 is retained at the border of entry.

Details from the 'Route List' and the local transit form are entered into a PC and the data is transferred to the Customs Department via a modem connection, if available, or by diskette. Details from the local transit form for non-CIS movements are also entered to a PC and transferred to Headquarters. For movements to other CIS countries, no details are entered to the computer and the local transit document itself is sent to Headquarters

For goods in transit through Uzbekistan, a six part partially completed Cargo Declaration is used in addition to the local transit form.

Declarations for imports and exports are normally presented at the regional office or Customs post nearest to the destination of the goods. Six copies of the declaration are required for imports and seven for exports.

Declarations are prepared on behalf of the importer/exporter by declarant companies. At Shumilov rail centre three declarants have offices. At Samarkand one declarant company was based at the regional office and others were situated in the city. Six declarant companies were based at the road terminal in Tahkent.

All declarant companies are trained and licensed by Customs. Some declarant companies only prepare declarations for importers and exporters while others offer a full Customs clearance service. Some companies prepare Cargo Declarations using typewriters and some have PCs.

The procedure for dealing with declarations was observed at the Shumilov rail office. This was as follows:

- Notification of arrivals are advised in advance by the railway.

- The goods arrive at the rail terminal and the documents presented by the railway are checked by Customs. At this stage, Customs decide into which regime the goods fall and this determines whether or not the goods are required to be subjected to state standards and Customs laboratory checking.

- The importer is informed that all documents are ready and a declarant company is then appointed to complete the cargo declaration.

- The declaration and accompanying documents are presented to Customs and revenues are paid immediately. Payment is usually by bank transfer from companies and cash from individuals.

- After manual check by an Inspector data from the declaration is entered to the computer which checks and calculates duty and captures statistical information (for commodity codes, at HS 4 digit level)

- The declaration is then returned to the Inspector who confirms that the revenue offered by the importer is equal to that calculated by the computer.

- Examination of the goods takes place either at the rail terminal or at the importer's premises.

- The Inspector releases the goods by endorsing copy 4 of the declaration and passing it to the importer or declarant company representative.

- Copy 2 of the declaration is sent to the Statistical Department and copy 3 to the regional office. Copies 5 and 6 are returned to the declarant.

- There was no indication given that the railway manifest was used for "writing-off" purposes.

Procedures at other regional offices follow broadly the same routine with minor local variations.

Customs Computerisation

Each of the fourteen regional offices has a Statistical Department with PCs in place for the collection of statistical data from declarations. All regional offices have modem connections with Headquarters and Customs reported that it was planned to network the regional offices.

Bukhara regional office has three PCs (486s) for statistical collection. The Rail Customs post in Samarkand has one PC for collecting import, export, and transit data and sends the data on diskette to Samarkand regional office on a daily basis. All ten Customs posts associated with Bukhara regional office have a PC and are therefore able to collect and deliver statistical data to the regional office as at the rail post. However, some offices had

reverted to sending statistical data on paper (Cargo Declaration copy 2) on occasions, although no explanation could be given for the circumstances under which this took place.

A brief visit was made to the Airport Customs office in Samarkand where there was one (old) PC. This was not in use but Customs reported that two new machines were due for delivery in August and these would both be used for statistical data capture.

The road terminal in Tashkent has one PC and uses diskettes to transfer data to the regional office.

Data is sent from regional offices to the Headquarters, via the modem link, approximately every ten days. They receive their data either on diskette from those Customs posts with PCs, or on paper from others.

Copy 2 of the declarations is also received by Headquarters and staff in the main Statistical Department to enable them to compare this against the data held on the computer system.

In Tashkent Statistical Department there is a staff of eight and the other regional offices Statistical Departments have either four or five people.

There are three sections within the Headquarters' Statistical and Computer Department, dealing with:

- collection and control of statistics

- analysis of international activity

- computerisation and automation

The Computerisation and Automation Department has a total staff of 30, including ten programmers and ten technical support staff. This team developed the programs for the collection and analysis of statistical data. All systems are DOS based, using CLIPPER.

While the main priority of the Statistics and Computer Department is the compilation of Customs statistics, it was indicated that special programs had been produced for other Customs activities, for example, contraband and tariff. No demonstration of these systems was given, however, either in Headquarters nor in any regional office visited.

The equipment within the Statistics and Computer Department includes a client-server system, with 40 clients connected to the main server through a local network, using Novell Netware. Customs reported that there are also servers in Headquarters for statistics and for EMail (to regional offices) using Lotus CCMail. Tashkent regional office also operates a client-server system, while all other regional offices have 486 machines.

Training

At the time of the visit, staff of the Computer and Automation Department were undergoing training in ORACLE. This was in preparation for future developments in respect of a project concerned with the tracking of rail consignments from border to destination.

No other information in relation to training was available. It can be assumed, however, that basic keyboard skills must be given to staff concerned with capture of statistical data. In addition, the Computer and Automation Department within Headquarters, being staffed by technical personnel, are assumed to either be recruited with the necessary skills or to receive training during service.

Future Development

The Computer and Automation Department reported that a contract was under negotiation to widen the communications network in each region and between regions. This is intended to be X25. The contract includes provision for supply of software and training. It was reported that Siemens will be providing some software free of charge.

The Department indicated that, although current programming is based on DOS and CLIPPER, it is planned to move to UNIX and ORACLE.

A new development for the control and tracking of transit movements by rail, from border to destination, is currently being undertaken. This involves supplying all railway Customs posts with PCs. Installation of these is expected to be completed by the end of this year with some posts already having the equipment in place.

Tracking will take place at each border and transit point. As freight passes through a Customs transit point, that location assumes responsibility for control. When the freight has moved on to the next Customs transit point the responsibility for control moves with it and the movement is effectively discharged at the previous point. When the freight arrives at the intended destination the border of entry is notified that the movement has been completed. Freight which does not arrive at the intended destination will be investigated using information retrieved from the database.

Information is transferred from each border and transit point to the regional office. The regional office will create a database for the region and update Headquarters by modem transfer every ten days. Headquarters will create a database for the country as a whole. It is intended to have 75 ways of recalling information from the database.

In addition to providing a mechanism for tracking and controlling transit freight, it was explained that the information contained on the tracking system will also be used in revenue forecasting.

The system will initially be built using current methods, that is, on DOS/CLIPPER, but as stated above will be converted to ORACLE to run on UNIX at a later date.

The rail tracking and control system is part of a package of developments which were briefly described by the head of the Computer and Automation Department using an MS Powerpoint presentation. Other modules to be developed include a database for contraband investigations, currency control, and the Automated Working Place of Customs Inspectors, which appears essentially to replace the current data checking and statistical capture system.

There were no plans identified for extending the existing statistical data capture functions into a full declaration processing and revenue collection system. There were no indications of any plans to implement any of the available off-the-shelf packages for Customs administrations, for example, ASYCUDA or SOFIX.

Costs

The costs for the network development for which the contract is currently under negotiation is estimated by Customs at 7 million US Dollars. As previously noted, this will include software and training.

No costs were given for the planned developments described in the previous section.

Based on the number of locations and the volume of traffic, it is estimated that to implement ASYCUDA throughout Uzbekistan would cost in the region of 9 million US Dollars. A complete investigation of the requirements of the country would need to be carried out in order to provide a more accurate costing and this can therefore be regarded as a rough guide.

Given that Uzbekistan is already committed to the provision of a new network for the regional offices, additional costs in respect of networking is likely only to concern connections between Customs posts and their associated regional offices. Some of these will already have connections in place as part of the transit tracking system already under development.

Additional costs will also be incurred in order to guarantee a reliable power supply.

Trade Computerisation

The following visits give some indication of the level of computerisation in organisations concerned with trade facilitation and Customs interface.

Kontact

This is a declarant company based at the Tashkent road terminal. It is one of six declarant companies with offices at the terminal. The sole function of the company is to prepare Customs declarations on behalf of importers and exporters. The amount of work is variable, ranging from 0 - 10 daily. Declarations are prepared using a typewriter. The company has no computers.

Uzveshtrans

This is a forwarding and declarant company based at the Shumilov rail terminal in Tashkent. It is one of three declarant companies with offices at the terminal.

Declarations are prepared on typewriter. The company reported that it has a PC system for producing declarations but this was not operating at the current time. The software was reported as being developed in-house and written in Basic. No further information on this system was available.

Conclusions and Recommendations

In Uzbekistan the current use of computers within Customs is principally related to collection of statistical data, although there are plans to broaden the use within the next 12 months.

Telecommunications appear to be satisfactory for the level of computerisation currently in use. In and between the regional offices and Headquarters data can be transferred by modem, although outlying offices and borders do not have this capability. The existing development plans include improvements in this area.

The presentation by the Computerisation and Automation section of the Statistics and Computer Department indicated that Customs are committed to developing in-house systems. It is recommended, however, that consideration should be given to the implementation of an established system such as ASYCUDA.

If this recommendation is rejected, for example, due to the advanced state of the in-house work, then it is recommended that the existing plans be re-examined by the Department in order to include more front end declaration processing, accounting facilities, and the provision of a mechanism for the introduction of direct trader input of Customs declarations in the future. Compatibility of the in-house systems with regional developments should also be reviewed.

None of the declarant companies visited had working computers in their offices and do not appear to have any technical knowledge. If this is representative of the situation throughout Uzbekistan, although it was indicated that some companies do prepare declarations on a PC, then it is unlikely that declarant companies will be in a position to adopt DTI in the short to medium term unless a homogeneous software package is made available.

In general, while there is some computer knowledge in Uzbekistan, there does not appear to be any more than a very limited awareness of EDI. It is recommended that seminars for both the trade and Customs are given to make them aware of the nature and benefits of computerisation in general and EDI in particular.

3.   **Proposals For A Common National Trade Data Transfer System**

The country reports in Section 2 show that the overall requirements of each TRACECA country are similar in terms of the needs of Customs and their potential extension to the trade through systems such as DTI. This situation would be expected, given their similar recent historical background and key functional responsibilities of revenue collection and control of restricted or prohibited goods. In general, their needs match those of most other Customs organisations in the world.

However, the current level of development among the countries varies considerably. It is not expected that all eight countries will be able to introduce National Trade Data Transfer Systems at the same time. This will naturally make the possibility of introducing a regional solution for data transfer more difficult.

Similarly, future development plans in some countries have already been prepared which, if pursued, will result in different systems being used in various countries. This may affect the ability of those countries to exchange data with others in the region.

For the purposes of the development of a common National Trade Data Transfer System it has been assumed, at this stage, that the technical problems of compatibility can be resolved through the use of international standards and close co-operation across the region.

3.1   **System Functional Requirements**

The main business functions of a National Trade Data Transfer System are as follows:

- control of Goods
- collection and Accounting of Revenue
- protection of the National Economy and Public Interest
- information Management and Foreign Trade Statistics

The implementation of functions for the control of goods should:

- reduce administrative costs through simplification and rationalisation of Customs processes
- provide the means to apply foreign trade rules and Customs legislation
- create an information system to provide accurate trade statistics to Government and other relevant organisations

The implementation of functions for the collection and accounting of revenue need to capable of identifying:

- discrepancies between the values and quantities declared and the actual values and quantities of goods
- avoidance of Customs formalities
- inaccurate tariff coding made with the objective of obtaining favourable rate of duty
- false codification to by-pass regulations relating to specific categories of goods

The implementation of functions relating to the protection of national economy and public interests relate to the need to apply national trade control legislation in a uniform manner and balance this against the need for an efficient trade facilitation environment. A feature of modern trade facilitation has been the development of procedures which impose responsibility upon the trader for the input of data for the declaration process. This is most clearly shown in the use of DTI where the Customs role changes from control of the goods to control of the trader activity.

The implementation of functions relating to information management and foreign trade statistics enables the Customs to organise their resources in a business manner and measure their performance. The production of trade statistics are vital to Government in controlling trade or making decisions relating to liberalisation and compensation schemes.

Within a National Trade Data Transfer System the core of the central Customs computer clearance system is the Cargo Declaration process. In terms of the facilitation of trade, the following cargo declaration processes have been identified as required by Customs, other governmental organisations, and the trade, through their interface with Customs:-

- standard format for declarations (see Documents and Customs Procedures Report)
- validity checks on declarations input
- calculation and payment of revenue charges and other accounting functions
- selectivity, based on risk assessment and intelligence
- capture, analysis and dissemination of statistical information
- manifests for imports and transit movements, including reconciliation (or "writing off")
- control records, e.g. contraband, repayment claims and payments

The functionality provided by these processes are of value to the other sectors concerned, although the above processes would reside in the Customs central computer system.

For example, by performing validity checks on declarations the early identification of errors is possible, thus reducing delays in clearance of goods. Where direct trader input is made available, the benefits increase since many of the validity checks can be performed by the system prior to the acceptance of the declaration by Customs, thus reducing the level of errors requiring correction after presentation of the documents.

Automation of the calculation of revenue provides similar benefits and these again increase under direct trader input where the declarant can receive accurate advance notification of the revenue required.

Including a statistical data capture system as an integral part of the declaration process ensures greater accuracy of statistics with consequent benefits to other government agencies receiving the data, especially with regard to the provision of accurate international trade data . This is critical given present concerns regarding the accuracy of Customs data using existing methods.

In the development of any system the capability of analysing and producing documentation in a UN aligned format is essential. It is expected that all documents which interface with the system, either at the entry stage or produced for onward facilitation purposes, are

standardised in UN alignment as proposed in the Trade Documents and Customs Procedures report.

The manifest processes are an important feature of any potential system, since cargo in transit through the TRACECA countries is causing particular concern. Manifest processes help to ensure that all goods entering the country are accounted for by Customs since they will either by registered for home consumption or, in the case of through transit, as leaving the country. This protects revenue, improves the accuracy of statistical information collected and ensures (when combined with an effective system of guarantees and penalties) that businesses which operate within the legal framework are not disadvantaged by the activities of those operating outside it.

The computerised declaration process is shown diagramatically in Fig 1.

3.2   System Functional Specification

On the basis of the functional requirements identified in section 3.1 it is possible to provide an outline, high level specification for a National Trade Data Transfer System. It is considered that this specification would meet the requirements of each country and could also therefore be considered as a regional system, subject to the constraints identified in section 2 in relation to current and planned developments in certain countries. In order to assist in the analysis by the NTTF's, a narrative system specification has been produced, which details the activities carried out rather than relating these activities to system processes.

In essence, the specification follows the progression of a consignment through the clearance process from the time of entry to the country to the point of clearance (or exit from the country):

1.   Brief details of the consignment, the carrying vehicle and the regional office at which the formal declaration is to be presented, are recorded by Customs at the border of entry.

2.   Approval to remove the goods inland is given by the border post (subject to adequate guarantees) and the vehicle is allowed to proceed with appropriate documentation. Details of any seals applied are noted on the vehicle record.

3.   Notification of expected arrival is sent from the point of entry to the regional office at which the declaration is to be presented, or to the exit border post. Alternatively, central control of transit movements could be considered.

4.   Declaration is presented, together with accompanying documents at the regional office. Where Direct Trader Input is available, the details will already have been captured on the system.

5.   Declaration is compared with notification from border post and transit manifest record "written off". Notification of "write off" is passed to the border post of original entry, or to the central control office if appropriate.

Figure 1 - Declaration Process, Armenia
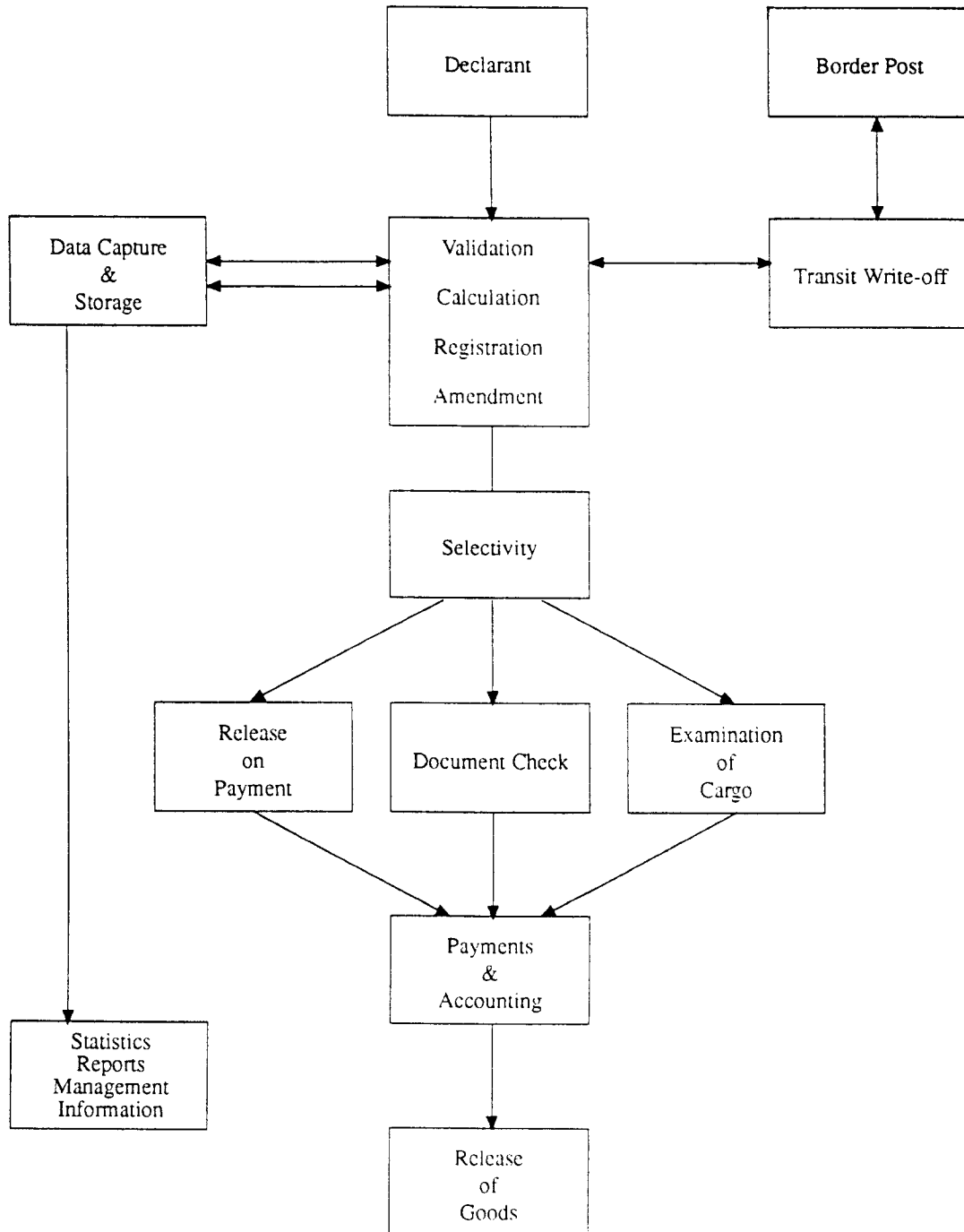
6.   Goods moving in transit through the country are presented at the border of exit. Details of the consignment are compared with that notified by the border of entry and the transit manifest is "written off". Notification of completion of the transit movement is passed back to the border of entry, or to the central control office.

7.   Data is captured from declaration with any errors identified reported back to declarant for correction. Validity checks and revenue calculations are carried out. System print generated (unless direct trader input) for confirmation by declarant.

8.   Declaration is routed for further check or to accounts as appropriate. Determination of the 'route' the declaration should take would typically include:

      -    examination of goods
      -    clearance without further check
      -    to be performed by the system
      -    subject to over-ride by Customs

      An example of declarations likely to be routed automatically for further action would be where the trader concerned has outstanding revenue debts.

9.   Documentary and/or physical check, where required, is carried out prior to payment.

10.   Cashier accepts payment of revenue and goods are released.

11.   Goods not conforming with the declaration depart from the normal process and are reported to the contraband section for further action. They may subsequently rejoin the mainstream process, or be seized.

12.   Reports are generated after a given period, as determined by local needs, and displayed at:

      -    the border of entry
      -    the regional office or border of exit identified at the time of entry to the country
      -    and/or the central control office

      Where goods in transit are identified as not reaching their destination or, in the case of through transit, the border of exit and no satisfactory explanation is forthcoming, discrepancies are reported to the appropriate section for penalty action.

13.   Statistics are extracted from the system at the point of release in order to reflect the final version of the declaration.

14.   Post release audit checks are identified by the system with extracts from declarations recorded on a management information module for subsequent use in productivity analysis, selectivity, and general management purposes.

15.   For exports, the same procedure would apply with notifications being initiated at the regional office of declaration and finalised at the border of exit.

This descriptive of the national system specification can be converted to apply to the region simply by extending the data transfer mechanisms identified across borders. Where individual countries have opted for different systems, it will be necessary to make additional technical provisions in order to allow the exchange of data to be carried out.

For goods moving from one country to another, the exit data from the first country will become the entry data for the second. This process would continue across each internal border until either the goods are declared to a regional office or leave to a third country.

3.3   Implementation Process And Training Programme

3.3.1   Time Scales

Time scales for implementation of a full National Trade Data Transfer System for each country will clearly vary according to the size of the country and the number of offices and border posts to be covered.

In order to ensure the smooth introduction of the system, it is recommended that a phased approach be adopted. Installation of a pilot, followed by a period of evaluation and correction, if necessary, would then lead to full implementation of the system. In this respect the most appropriate strategy would be to base the pilot on the Headquarters office and, possibly, one of its associated regional offices.

Time scales for the pilot system will largely be dependent on the decision of individual countries as to the system they wish to implement. For example, countries intending to develop an in-house system would be expected to require a much longer period of software development and system de-bugging than those intending to implement an existing solution where such work has already been undertaken. Based on the experience of Armenia and its implementation of ASYCUDA it is considered that implementation of a pilot system would take in the region of 18 - 24 months, assuming that the chosen system has already been developed. If a system is developed in-house this could add at least a further 18 - 24 months to the implementation dependant on the level of expertise and availability of resources. As an example, in the UK the development of CHIEF from concept through design to implementation took well in excess of five years, although the size and requirements of the UK system are much greater than those to be expected in the TRACECA countries. However, for comparative purposes and in line with our overall recommendation for the TRACECA region to adopt the ASYCUDA system, Table 1 gives indicative time scales for conducting an initial pilot leading to full implementation of ASYCUDA in each country:

Table 1 - Indicative Time Scales for Implementing ASYUCUDA

Country	Pilot Period (months)	Remaining Installation Period (months)
Armenia	Completed	12
Azarbaijan	18	24
Georgia	24	24
Kazakhstan	18	36
Kyrghyzstan	18	24
Tadjikistan	18	12
Turkmenistan	18	18
Uzbekistan	18	24

3.3.2 Resources

The number of personnel employed in each country will differ but a team of at least four permanent members is likely to be required, making a total of some 72 - 96 man months. Additional resources would be required at various stages during the programme, for example, for operational training.

3.3.3 Preliminary Strategy

In order to commence an implementation programme, there are a number of preliminary aspects to be considered:
- Development of an overall IT Strategy
- Development of an overall Management Strategy

IT Strategy

The overall IT strategy consists of a series of sub-strategies relating to various aspects of computerisation within each national Customs organisation as a whole. These cover:

•	Application software	- use of proven packages - use of in-house or external support - language of packages
•	Hardware	- procurement based on manufacturer independence - maintenance and repair policies
•	Security	- consistency of data - combination of hardware and software techniques - security protection
•	Communication	- independence - use of telecommunications and radio modems
•	Procurement	- manufacturer/supplier evaluation - contractual arrangements

Management Strategy

This strategy defines how the overall management of computerisation within Customs will be undertaken. This covers such aspects as:

●	IT	- creation of separate IT Department - definition of department's role - preparation and implementation of computerisation programmes - definition of standards and control procedures
●	Operational	- identification of operations in control of Customs - establishment of procedures plan for phased implementation - plan and control operations in changed environment
●	Legal	- establishment of legal framework for the application of computers - establishment of legal framework for the continuation of Customs activities - ensure there are no complications with any Data Protection legislation - ensure legal basis for conformity with international conventions and law
●	Administrative	- supervision of support functions - application of relevant packaged systems - procurement policy and systems

These tasks are standard applications in the development of computerisation in any environment, including Customs, and establish the overall guidelines prior to the adoption of a major computer application such as a National Trade Data Transfer System.

3.3.4 Implementing a National Trade Data Transfer System

The principle tasks in developing a National Trade Data Transfer System are outlined below. A full project implementation plan, identifying subordinate tasks and firm time scales, would require a further detailed investigation in each of the eight countries and is not recomended at this stage until some understanding is reached on systems procurement.

Establish project team and resources

This initial task concerns the profile requirements and recruitment (or identification from existing resources) of the technical and functional team

Review existing organisation and procedures

This task requires a comprehensive review of current business activities, organisation and staffing, incorporating proposals for change where required.

Define proposed software solution

This task will be dependent upon the decision of individual countries as to the system they wish to implement. For those countries selecting an established international system the task concerns identifying the need for and adapting that system to meet local requirements. For those others intending to develop an in-house solution the task covers such issues as software and hardware platforms, database management systems, and development of the applications themselves. In all cases the selection and development of software should consider the needs of regional harmony and system compatiblity.

Equipment requirements

This task concerns the identification and procurement of the appropriate equipment for the pilot sites. Equipment for the training location will also be required:

- In both offices and in the training suite, the system should consist of a number of PCs, linked to a single UNIX server through a Local Area Network. Under ideal conditions, the central server would control standing data, generate reports, etc. for the whole country. This solution, with controlled distribution, has been proposed in view of the current lack of reliable telecommunications, which would otherwise limit the stability and success of the system. Similarly, communication between the two sites will be dependent on the prevailing telecommunications situation. The number of PCs will largely depend on the volume of work at each location but from the study visit it is estimated that a minimum of six PCs would be required for each office in the pilot and for the training suite. The numbers required for subsequent national implementation can be determined during the pilot evaluation phase

- The UNIX server should be at least a 486DX machine operating at 50Mhz.. The relatively low additional cost of more powerful machines makes them a more appropriate alternative, particularly where appreciable growth in traffic is anticipated. On the server, data is managed through Structured Query Language/Relational Database Management Systems (SQL/RDBMS) products such as Informix or Oracle.

- All client PCs should be at least 486DX machines operating at 33Mhz, although this must be regarded as the minimum requirement. The recommended software for these workstations is MS DOS/Windows. Software to allow the MS clients to interact with the UNIX server will be required. For example, where Oracle is used as the SQL/RDBMS on the server, SQL*Net would provide the interface capabilities.

- Associated peripherals will also be required, such as printers. Where an existing, established system is implemented, the decision in relation to technical and equipment requirements are more easily defined as they are largely dictated by the choice of system.

- Provision of back-up power supplies should also be considered.

- Although not included in the pilot stage, the equipment requirements for border posts must also be established.

Establish training/development location

This task involves identification of suitable training locations; establishing a suitable technical environment, such as local network, provision of equipment etc.; and the installation and configuration of the hardware, software, network and the declaration processing system itself.

Training

This task covers training of the technical and implementation staff. Technical training will depend on the existing level of experience of staff and the chosen system. Examples of anticipated training requirements, based on the implementation of a system operating in an open environment, are as follows:

- Introduction and overview of the UNIX operating system
  Normally of approximately three or four days duration, this course would provide an introduction to the UNIX operating system and associated utilities to a working level.

- UNIX Administrator's course
  Normally of six or seven days duration this course would cover the maintenance of software products, terminals and peripheral equipment, security, accounting; and problem identification.

- Relational Database Management Systems
  Normally requires several courses, ranging from approximately two days to one week, aimed at database managers and users, analysts, and programmers. The courses would include data protection, parameter adjustment, program creation, and report creation.

- Basic operating skills
  Normally of two or three days duration this is essentially a system familiarisation and keyboard skills course designed to provide those dealing with the receipt and input of declarations with the necessary skills to process the declarations through the system. It covers the input, printing and interrogation transactions.

- Selectivity and management
  This course would typically be of four or five days duration and would be aimed at supervisors and those involved in specialist tasks such as risk analysis and examinations. It deals with the finer points of the system including the creation and maintenance of control files, amendment of declarations, and extraction of information.

- Accounts

Normally of three days' duration this course would provide officers involved in the cashier and accounting processes with a working knowledge of the system including payment processing, daily accounts procedures, and report generation.

- System Managers
  Normally a one week course for those at supervisory and managerial level giving an overview of the system and more detailed insight into running the system including the control of passwords.

- Technical operators
  Normally a one week course to prepare local technical staff for day to day technical maintenance and management of the system.

The identified training courses relate to the management and operation of the system itself. It is envisaged that training in other related aspects will also be required. This would include, for example, risk analysis techniques, targeting and intelligence.

Prepare documentation

This task requires the drafting of user guides and is particularly important to ensure that new procedures identified within the earlier stages of the implementation programme are operated as intended. Documentation on fallback, that is in the event of a system failure, is also required.

Establish pilot offices

This task concerns the physical environment of the pilot sites including the optimum physical layout, furniture requirements, power, and telecommunications.

Staffing

The introduction of computer systems inevitably requires a re-evaluation of staffing requirements. Formulation of job descriptions for each step in the declaration process will be required.

Installation and testing

This task involves the installation and testing of equipment in the pilot offices including the configuration of the hardware, software, network and the declaration processing system itself.

Parallel running

It is generally regarding as a sensible approach to implement the computer declaration processing system alongside the manual system for a period of time in order to ensure that stability exists. During the period of parallel running tests can also be carried out on the fallback procedures.

Live implementation

After a suitable period of successful parallel running, usually approximately four to six weeks, the system should be considered live and the parallel manual operations cease.

Evaluation

A full evaluation of the pilot implementation should be conducted, including the operational procedures and the performance of individual modules of the declaration processing system, and adjustments made where necessary.

Following a successful period of live operation of the pilot the extension of the system to other regional offices and associated border posts can be progressed. Given support from the trade, the introduction of direct trader input to the Customs declaration processing system could be effected within a relatively short period of time. This can be achieved through allowing trade access to the declaration input module, subject to the availability of suitable means of telecommunications.

3.4   Systems Architecture

3.4.1   National Level

The systems architecture needs to reflect the specific environment of the TRACECA countries. There are six significant factors to be considered:

- The peak demand for Customs clearance activities is normally in the capital cities. This is where the Customs Headquarters is also located

- All countries have a regional network reporting to the Headquarters and being responsible for a number of border crossings. In many cases, rationalisation is being undertaken to reduce the numbers of regional offices

- There are large numbers of border crossings, the majority of which are in remote locations. Some countries are considering "streaming" by limiting the numbers of borders which can process freight traffic

- The power and telecommunications problems increase outside the capitals and beyond the regional offices at the border

- The capitals are the main centres of population and commerce and are therefore the locations where existing or potential expertise and resources are most likely to be found

- The main traders, forwarders and clearance agents are located in the capital. Their location is critical if a Direct Trader Input function is to be installed

These factors suggest that the primary development should be undertaken in the capital city where both the Headquarters and main clearance centres are located. We therefore recommend that the main clearance centre in the capital city is used for the pilot with this then becoming the first computerised clearance centre to go live. It is, in any event, likely

to gain the most benefit as it is generally the busiest clearance centre. The presence of the Headquarters office will also mean that senior management support is directly available. One of the regional centres may also be usefully included in the pilot to test links to the Headquarters office.

Secondary development would be to install pilot and full systems at the regional level. This would be undertaken on the basis of prioritisation related to the size of activity, principally calculated on the annual number of declarations processed by that office and its satellite borders. However, it is recognised that there may be strategic or infrastructure (telecommunication and power) reasons for modifying the order of priorities. It is expected that direct trader input would not be made below regional level.

Tertiary development would be to install pilot and full systems at the major and then minor crossings. Most borders would only be expected to have the transit control module installed. There is concern that many of these minor crossings have insufficient volumes to be able to justify connection. Some type of channelling of freight traffic, especially transit traffic is therefore inevitable. It is also accepted that certain key borders should have priority over installation of the system at the smaller regional offices. For this reason it is considered that activity based on declarations and transits processed should be a key factor in the prioritisation strategy.

The implementation sequence is illustrated in Fig 2.

3.4.2   Regional Level

The last development would be to link the systems regionally. There are two methods by which this could be accomplished:

- Border linkage
- Central linkage

The border linkage method would be to connect the computers at the borders whereby information was transferred from one side of the border to the other. The advantage of this system is that it creates a direct interface between borders and provides live information on traffic coming through. The major disadvantage is that some borders will not be computer connected for some time and their are major telecommunications and power problems at many borders. In the short term, it is considered that this method could not be implemented with the necessary degree of reliability.

The central linkage is based on the "backbone" principle. This system is where the information comes up from the border to regional level to the central computer in one administration and is passed down or can be accessed by the central computer of another administration which then feeds it down to its regional level and to the border. This system incorporates a variety of security procedures whereby one administration can input or alter data in the others system and data is only accessible to those parties which have an interest. For example if such a system were in Uzbekistan, Turkmenistan could only access agreed data in respect of shipment which will pass through Turkmenistan. Regional links are however reliant on compatible systems and the use of international data standards.

Figure 2 - Computer System Implementation Sequence
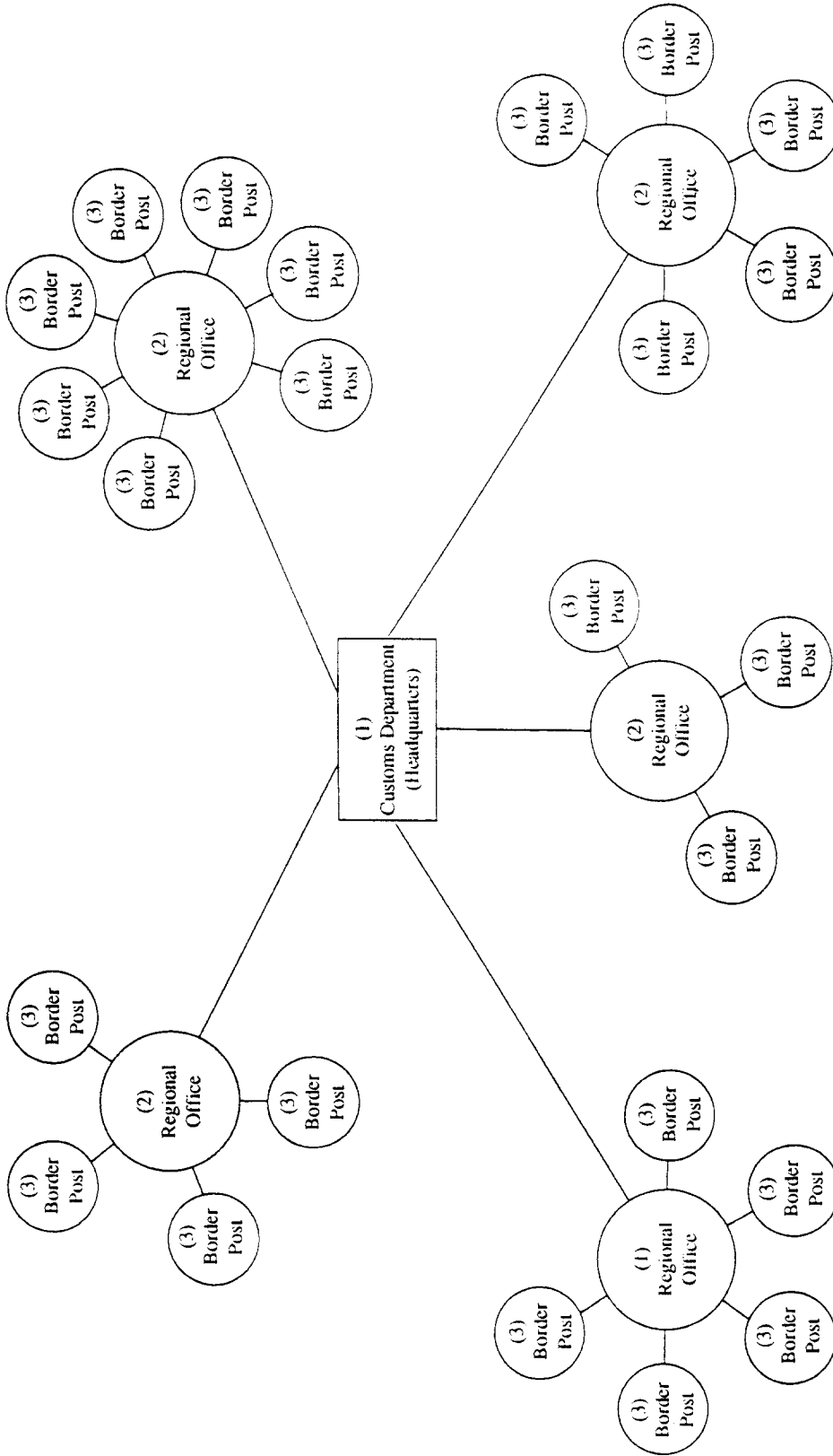
(1), (2), (3) - Proposed Order of Implementation

The central linkage system appears the most realistic for the TRACECA regional system. This is why it is important for countries to reassess their plans such that a compatible system could still be developed in the longer term.

3.5   Summary

The proposed solution for implementation of a common National Trade Data Transfer System encompasses the full process of the Customs declaration and associated activities such as selectivity, statistical gathering and reporting, and revenue collection and accounting.

A phased approach to implementation is recommended, beginning with the Headquarters and possibly one regional office. This would be followed by progressive implementation to all regions and border crossings with the latter requiring the transit control module only in most cases.

The strategy outlined above is modelled on international practice and is also similar to the procedures adopted during the implementation of ASYCUDA in Armenia.

4.   Cost

There are three main areas of cost concerned with the implementation of the recommendations contained in this report:

- technical assistance in preparation for computerisation in the Customs and trade environment

- capital expenditure in connection with installation of a common National Trade Data Transfer System.

- capital expenditure in connection with joining the National Trade Data Transfer Systems together to form a Regional Trade Data Transfer System.

4.1   Technical Assistance

It is recommended that two specialist studies be undertaken within the region to investigate the power supply and communication services so as to identify inhibiting factors which will constrain the installation of computer systems and EDI. They should make practical proposals for solutions to these problems and indicate how this will affect the systems architecture. A one week visit has been allowed for each country which would include detailed discussions with power and telecommunications authorities as well as limited site investigations. The estimated cost of this survey would be ECU 70,000.

It is recommended that computer awareness seminars are conducted, including explanations on the use and potential of EDI. This will partially be covered within this project but an allowance has been made for additional seminars to Customs and Trade after completion of the project when new systems are being introduced. The estimated cost for eight additional 2 day seminars is estimated at ECU 50,000.

4.2   National Trade Data Transfer System

The estimated cost of installing a full common National Trade Data Transfer Systems in the TRACECA countries based on the general adoption of ASYCUDA would be in the range of USD 50-60 million. A breakdown of indicative costs per country is given in Table 2 below.

Table 2 - Indicative Costs for Implementing ASYCUDA

Country	Pilot (USD)	Total including Pilot (USD)
Armenia	1.5	3.0
Azerbaijan	1.8	7.5
Georgia	1.5	6.5
Kazakhstan	1.8	10.5
Kyrghyzstan	1.5	8.5
Turkmenistan	1.5	4.0
Tadjikistan	1.5	5.0
Uzbekistan	1.8	9.0
TOTALS	11.7	54.0

It is clear that the TRACECA countries would need external funding to support a regional programme of this magnitude. Further details will therefore be elaborated following detailed consultations with the recipients in order to facilitate negotiations with the international funding agencies.

4.3   Regional Trade Data Transfer System

The installation of an automated Regional Trade Data Transfer System will be dependant on the prior installations of the various national systems. It is not considered that a cost estimate for such development would be of value at this stage, until it is known which countries are willing to proceed, the systems they intend to adopt, and the degree of compatibility which can be achieved across the region.

1

UK Customs Paper on WCO
Reform & Modernisation Programme

WORLD CUSTOMS ORGANIZATION
REFORM AND MODERNIZATION PROGRAMME
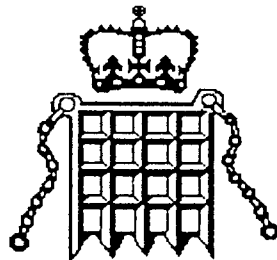
Presented by
HM Customs and Excise
International Assistance Branch
United Kingdom

1.   Overview

The World Customs Organization, based in Brussels and representing 140 Customs Services throughout the world, is spearheading a global drive to produce efficient, effective Customs administrations through "The Customs Reform and Modernization Programme". The aim is to assist Members to become more efficient through better use of resources, strengthening management capabilities and devising appropriate systems and structures.

The WCO, Donors and Lending Agencies have been the providers of technical and training expertise for many years. This programme provides the additional benefits of analyzing the essential needs of an organization before delivering technical assistance such as automation or training. This gives a clearer direction for assistance and forms the basis for evaluation.

Through the self-help tools and skilled facilitation beneficiaries are fully involved in the improvement process and can take full responsibility for reform and modernization. This develops ownership, increases the chances of success and reduces the risks of endless aid and assistance.

The aim for this project is to develop the products, the people and the climate through which the aims and objectives of the Reform and Modernization Programme will be achieved.

2.   The Need for Change

According to the United Nations Conference on Trade and Development the costs of importation and exportation bureaucracy such as voluminous paperwork, complex formalities and associated delays and errors can amount to 10% of the final value of the goods.

Typical trade transactions may involve 30 different parties, 60 original documents and 360 copies, all of which have to be checked, transmitted, re-entered into information systems, processed and filed. World wide this equates to enormous extra overhead costs brought about by systems that do not always cater for the needs of the customer, and are not as efficient as they could be.

The major UN Trade Efficiency Conference in Columbus Ohio in 1994 put the figure at $100 billion. More efficient Customs procedures must reduce overhead costs, bring greater certainty to delivery times and encourage international trade.

As well as an obvious need for greater efficiency, international trade and the world's social and economic environments are changing. World economies and communities are becoming more reliant on co-operation, partnerships, understanding and harmonization.

The reducing customs tariffs through successive GATT Rounds especially the Uruguay Round, the creation of the World Trade Organization (WTO) and the increasingly stringent scrutiny by the World Bank and the IMF of the use of funds, are examples of pressures that are forcing reform and streamlined approaches. Single markets, free trade areas, overloaded taxation systems, and the growth in organized international crime especially drug trafficking are others.

Mr Vito Tanzi, Director, Fiscal Affairs, IMF said to the 1994 WCO Council session,

"Customs Services that fail to adapt or are slow at adapting to the demands of this new environment may be inflicting a heavy cost on their national economies. There is no option, you must adapt and reform your administration".

3.   Problem Definition

Governments have to steer their economies through radical changes in public concern and global trading. Customs administrations must manage ever-increasing complexity and levels of transactions with ever-decreasing resources. Governments should expect Customs, as essential instruments of national and international policy, to strike and maintain the right balance between control and facilitation by reforming and modernizing their management methods and operational procedures.

Customs Services all over the world are having to respond to the need for change. Some, however, need an introduction to these pressures and may need assistance to help them face the challenges. There is considerable assistance available but, at times, not provided to meet an identified need and not measured to ensure value for money.

Many past interventions and missions have failed to take account of social, cultural, internal and external environment and other factors which underscore the root causes of problems. Though usually technically sound they have been seen as driven from the outside with little or no ownership of the solutions within the organization.

In the past technical assistance and training has been provided without any specific needs assessment. Missions, training and technical assistance have often not been measured for effectiveness or value for money.

There has often been a lack of strategic planning, financial and human resource management within a Customs Organization resulting in limited long term improvement and overall efficiency.

4.   Proposed Solution

The Reform and Modernization programme is the key to change and improvements in Customs Services and in turn strengthening the achievement of Government policy. In broad terms the Reform and Modernization Programme is made up of individual country projects. Each project is an ongoing and developmental self-help process that will assist in improving management, operations, accountability, human resource development, integrity, planning and control systems in each country.

The Reform and Modernization Programme achieves change through a strategic but flexible step by step process made up of a number of complementary components providing comprehensive coverage. It is made up of four stages with flexibility to vary content and delivery according to the ascertained needs of the beneficiary. The four stages are:

- Entry - assessing the beneficiaries' readiness to begin the programme, preparing them for the next stages and determining resources including funding. This stage can include the initial assessment and the Orientation Programme for Policy Makers.

- Diagnosis and Planning - the Diagnostic Study is a means of applying self-help techniques, analyzing the beneficiary's environment, objectives and problems; identifying solutions and internal and external assistance needs; and setting plans for improvements.

- Implementation - drawing on a very wide range of available financial, human and technical assistance, the beneficiary will implement plans based upon the identified needs from the previous stages. Data for this and other stages will be held on the WCO WIDEBAND. The development of training systems, infrastructure and methodologies (TSD project) and the Integrity Programme will assist in HRD and support the beneficiary organization.

- Evaluation - measuring the cost-effectiveness of the programme as applied in the three previous stages.

5.   The Orientation Programme for Policy Makers

Experience throughout the world has shown that without full support and understanding from the highest level of Government, many Customs Services have failed to become more effective.
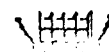
The Orientation Programme, therefore, is designed to provide policy makers and senior officials with a clear picture of the modern Customs function and the vital part it can play in achieving national policy and objectives. In this way the programme aims to develop their commitment to support change in their Customs Service.

The Orientation Programme is designed as a flexible series of presentations to inform and influence policy makers and senior officials who take decisions affecting Customs. We understand the business of Customs to be concerned with:

◊ revenue collection from imports and exports as well as from indirect taxation such as Value Added and General Sales Tax

◊ facilitating the efficient flow of legitimate trade and travellers while at the same time protecting society and trade by enforcing the law concerning the importation or exportation of prohibited and restricted goods

◊ the collection of information, intelligence and statistics relating to imports and exports.

The goal for this programme is to develop the understanding and support at the highest levels of Government for Customs improvement initiatives and assistance programmes.

6.   The Diagnostic Study

Once the support of policy makers is secured the process can then proceed to a Diagnostic Study of the Customs organisation. This is the main vehicle for the identification of the administration's needs and priorities. It is a practical management tool for Customs executives to enable them to make a self-analysis of the Customs administration and the environment within which it operates.

The study is carried out by the top management of the Customs Service using a logical step-by-step approach, assisted and facilitated by an external team of experienced Customs Officers. The workshop considers:

- the business of the host Customs Administration
- its main outputs
- the issues to be faced in the future from a global perspective
- the internal and external environment affecting the Customs
- the structure that administers the business and achieves the outputs
- the problems facing the business and their root causes
- the solutions to those problems
- the internal and external abilities to achieve those solutions and
- a Reform and Modernisation Plan
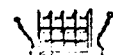
7.   Benefits

The WCO, Donors and Lending Agencies have been the providers of technical and training expertise for many years but, only recently have we realized the additional benefits of analyzing the essential needs of an organization before delivering technical assistance such as automation or training. This gives a clearer direction for assistance and forms the basis for evaluation.

Through the self-help tools and skilled facilitation beneficiaries are fully involved in the identification of what is needed to help them improve their performance and take full responsibility for reform and modernization. This develops ownership, increases the chances of success and reduces the risks of endless aid and assistance.

Technical, financial and human resource assistance can be provided by different international donors with co-ordination carried out by the beneficiary, assisted by a Programme Manager and monitored by the WCO through WIDEBAND.

This is a major breakthrough in the international arena moving away from shopping list based aid and assistance with little value for money assessment to a sound and realistic programme for change.

The success of the Reform and Modernization Programme may not be felt or seen in the short term. Improvement programmes and changing attitudes will take some time to gain acceptance, bed in and take effect. To measure the improvements brought about by the programme, it is important to assess the position before the reform process begins and to monitor improvement through business and human performance systems as the various programmes take effect.

Within a Customs Service the benefits will be:

♦ support and commitment from Government policy makers will be secured;
♦ technical assistance and training will be based on sound organisational needs analysis and value for money;
♦ development of human resources will sustain improvements;
♦ greater compliance with the law and procedures
♦ increased revenue yields;
♦ increased detections of prohibited and restricted goods and successful prosecution of offenders;
♦ decreased detections and offences through improved compliance;
♦ reductions in business overheads and easier access to markets through faster, moreefficient scrutiny and clearance of goods and documentation;
♦ more efficient and effective management of goods under customs control;
♦ more accurate and timely statistical and management information;
♦ more efficient, effective and economic Customs Administrations with better strategic planning, output definition and performance measurement.
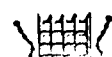
Should you require more information concerning the WCO Reform and Modernization Programme, please contact:

David Hesketh
London Attaché to the WCO Reform and Modernization Project
International Assistance
HM Customs and Excise
New King's Beam House
22 Upper Ground
London SE1 9PJ
United Kingdom

Telephone: (44) 171 865 4801
Fax: (44) 171 865 5815
Ansaphone: (44) 171 865 4880

Reform and Modernization: System Flowchart 3

Country request for assistance with Reform Programme
↓
Country information gathering and assessment
↓
Secure funding and resources for initial assessment visit.
↓
Carry out initial assessment mission to include Orientation Programme for Policy Makers and assist in assessing country's Reform Programme requirements
↓
Propose plan for Reform and Modernisation Programme ie. vision, requirement, short term action plan, diagnosis and planning, implementation, evaluation, resources, risks, results.
↓
Agree plan for Reform and Modernisation
↓
Secure funding and resources for whole or part(s) of programme.
↓
Short term action plan ie. training, *education* or development in preparation for Diagnosis and Planning Stage
↓
Review implementation and Reform and Modernisation Programme
↓
Review implementation and Reform and Modernisation Proposal
↓
Prepare for Diagnostic Study. Brief facilitators, finalize arrangements etc.

Carry out Diagnostic Study, prepare report, propose Reform and Modernisation Plan.
↓
Review Diagnosis and Planning, assess implications and requirements of Implementation Stage, in particular the country's external assistance proposal.
↓
Propose Implementation Plan with evaluation, resources, risks and results
↓
Secure funding and resources for whole or part(s) of programme.
↓
Agree Implementation Plan with all parties
↓
Implementation Stage
↓
Ongoing review of implementation and Reform and Modernisation Programme
↓
Evaluation Proposal
↓
Secure funding and resources for whole or part(s) of programme.
↓
Agree Evaluation Plan
↓
Evaluate Country's Reform and Modernisation Programme
↓
Report on Country's Reform and Modernisation programme.

EXIT

Flow of Documents - Armenia

Declarations flow: RED CHANNEL - IMPORT
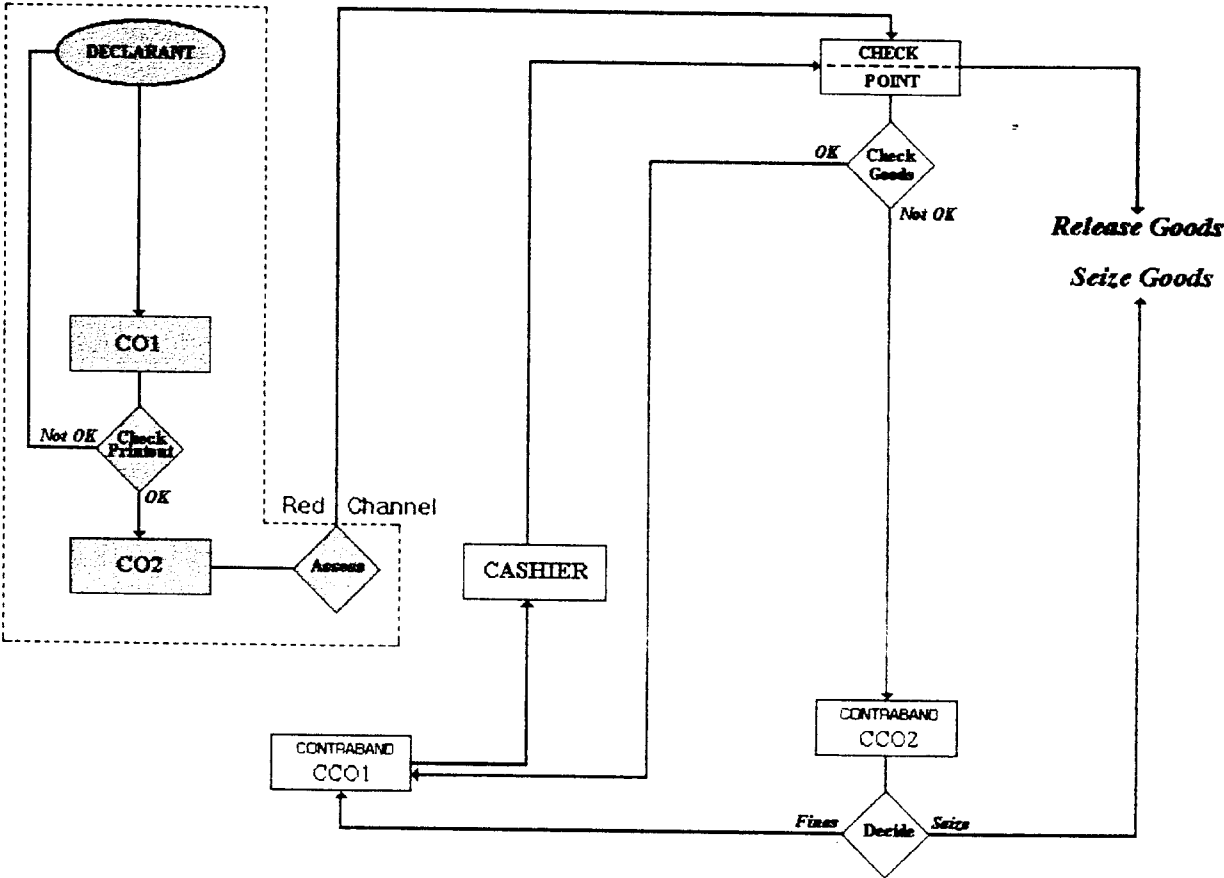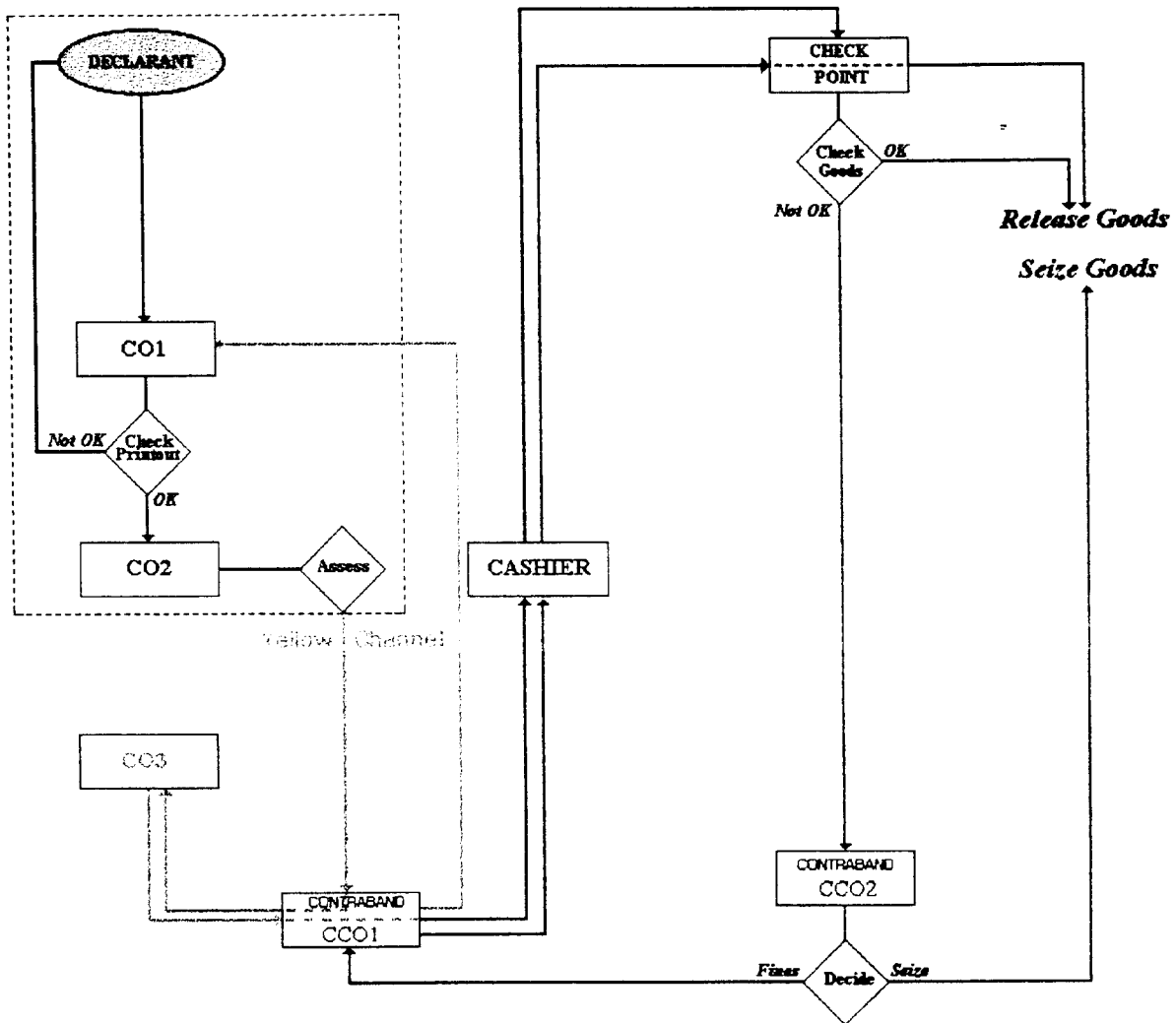
Declarations flow: GREEN CHANNEL - IMPORT

DECLARANT

CO1

Not OK — Check Printout — OK

CO2

Red Channel

Selected

Assess — OK — CASHIER

Selected

Yellow Channel

CONTRABAND
CCO1

CHECK
POINT

Check Goods — OK

Not OK

Release Goods

Seize Goods

CONTRABAND
CCO2

Fines — Decide — Seize
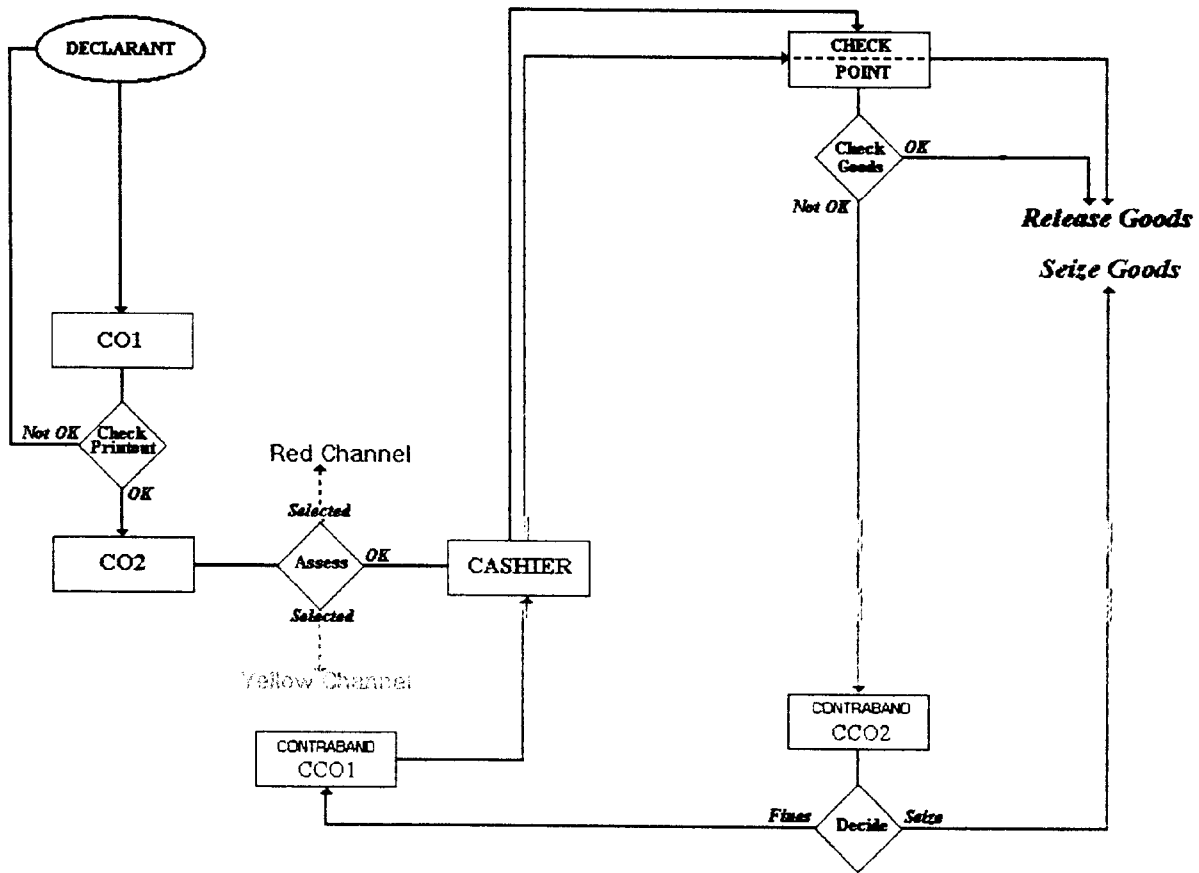
Appendix 3

ASYCUDA Compendium - UNCTAD

ASYCUDA++

COMPENDIUM

UNCTAD

ADVANTAGES OF ASYCUDA[++]

IMPROVES CLEARANCE CONDITIONS FOR TRADE

Computerisation and rationalisation Customs formalities speeds up the clearance of goods and reduces delays in deliveries to overseas customers. As a result the associated overhead costs which affect the price of imports and exports are greatly diminished.

In Mauritius and Zimbabwe for example, the transit time of goods through Customs has been decreased from one week to one day since the installation of the system.

INCREASED GOVERNMENT REVENUE

The system reinforces Customs control and monitors the collection of Customs duties, which in most developing countries are the main source of public revenue. For example, for an investment of less than 2 million USD in Sri Lanka, the revenue has increased by some 8 million USD monthly, or about 10% of Customs revenue.

PROVIDES ACCURATE EXTERNAL TRADE STATISTICS

ASYCUDA[++] generates trade data which can be used for statistical economic analyses which in turn results in more coherent information being available for the formation of realistic economic development plans and forecasts. In all user countries, ASYCUDA[++] generates the basic data which local statisticians can then tailor according to national requirements.

CONFIGURATION

ASYCUDA⁺⁺ comes with an advanced configuration system which allows the national Customs administration to adapt the system to its own needs and national regulations. The configuration facilitates the definition of mandatory and conditional data elements, the structure and format that such data should take (numeric, alpha-numeric), and the specification of validation checks that will be performed against it.

A system of indexed master tables ensures user friendly and efficient management of the large amounts of reference data which can potentially relate to a given transaction; for example country and currency codes, exchange rates (present and historical), means of transportation, means of payment, which provide all of the information which may relate to an Customs declaration.

The flexibility that has been incorporated into the design of ASYCUDA⁺⁺ reflects a conscious decision to avoid the imposition of organisational patterns upon national Customs administrations. The large degree of "parameterisation" offers a range of possibilities in terms of adaptability to varying models of organisation. By this means, the divergent requirements of Customs administrations can be satisfied by the same basic package. It should be noted however, that only an efficient administrative organization will be able to take full advantage of ASYCUDA⁺⁺'s functional wealth.

Single Administrative Document - Import form
UNCTAD   GYCUDA

| 1 DECLARATION | A OFFICE OF DESTINATION |
| Office code : 99999 |

| 2 Exporter   N° : SSSSSSSSSSSSSSSS | SSS | S | SSSSS |
| SSSSSSSSSSSSSSSSS |

| Manifest : 99999999999999999/999999999 |
| 3 Forms | 4 Lists: Registration |
| SS | SS | 99999 | Number : S SSSSSSSS Date : SSSSSSSSS |

| 5 Items | 6 Tot pack. | 7 Reference number |
| SSSSS | 999999 | SSSS / 99999999 |

| 2 Consignee   N° : 99999999999999999 | 9 Person resp. for financ settl. N°: 99999999999999999 |

| 10 Count. last | 11 Trading | 12 Value details | 13 C.A.P. |
| 999 | Consign. | 999 | Country | SSSSSSSSSSSSSSS | 99999 |

| 14 Declarant/Representative N° : 99999999999999999 | 15 Country of export | 15 C.E. Code | 17 T.O. code |
| SSSSSSSSSSSSSSSSS | a 999 | b SS | a 999 | b 99 |

| 16 Country of origin | 17 Country of destination |
| SSSSSSSSSSSSSSSS | SSSSSSSSSSSSSSSS |

| 18 Ident. & nat. of active means transp at arrival | 19 Ct | 20 Delivery terms |
| 9999999999999999999 | 999 | 9 | 999 | 99999999999999999999 | SS |

| 21 Ident. & nat. of active means of transport at border | 22 Cur. & total amount invoic | 23 Exch. rate | 24 Nature of |
| 9999999999999999999 | 999 | 999 | 99999999999 | SSSSSSS | 9 | 9 | Transr. |

| 25 Mode trsp. | 26 Inland mode | 27 Place of discharge | 28 Financial and banking data Bank code : 99999999999999999 |
| 99 at border | 99 of transp. | 999 SSSSSSSSSS | 99 | Terms of payment : 999 SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS |

| 29 Office of entry | 30 Location of goods | Bank name : SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS |
| 99999 SSSSSSSSSSSSSS | 99999999999999999 | Branch : 9999999999999999 File No: 99999999999999999 |

31 Packa. ges and descr. iption of goods

Marks and numbers - Containers No(s) - Number and kind
Marks & n° : 99999999999999999999999999999999999
of packages : 99999999999999999999999999999999999
Number and kind : 99999 999999 SSSSSSSSSSSSSSS
Containers No(s) :
99999999999999999 99999999999999999
99999999999999999 99999999999999999

99999999999999999999999999999999999999
99999999999999999999999999999999999999
99999999999999999999999999999999999999

| 32 Item 33 Commodity code |
| SS | No 99999999 999 999 9999 9999 |

| 34 C.O. code | 35 Gr. mass kg | 36 Prefer. |
| a 999 | b SS | 99999999999 | 99999999 |

| 37 PROCEDURE | 38 Net mass kg | 39 Quota |
| 9999 | 999 | 999999999 | 99999 |

| 40 Summary declaration/Previous Document |
| 99999999999999999999999999 |

| 41 Suppl. units | 42 Item price | 43 V.M. |
| 99999999999 | SSSSSSSS | 9 | code |

44 Additional infos Doc./ produ. Certif. & aut.

Licence No: 99999999999999999 / DV: 999999999 / DQ: 99999999
SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
A.D.: SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS 99999999999999999
99999999999999999999999999999999999 99999999999999999

| A : Code | 45 Adjustment |
| SSS | 99999999 |

| 46 Statistical value |
| 99999999999999 |

47 Calcula. tion of taxes	Type	Tax base	Rate	Amount	MP	48 Deferred payment 99999999999999999	49 Identification of warehouse 99999999999 / 999
	SSS	SSSSSSSS	SSSSSSSS	SSSSSSSS	S	B ACCOUNTING DETAILS Account number : 99999999999999999	
	SSS	SSSSSSSS	SSSSSSSS	SSSSSSSS	S		
	SSS	SSSSSSSS	SSSSSSSS	SSSSSSSS	S	Mode of payment : SSSSSSSSSSSSSSSSS	
	SSS	SSSSSSSS	SSSSSSSS	SSSSSSSS	S	Assessment Number : S SSSSSS Date : SSSSSSSSS	
	SSS	SSSSSSSS	SSSSSSSS	SSSSSSSS	S	Receipt Number : S SSSSSS Date : SSSSSSSSS	
	SSS	SSSSSSSS	SSSSSSSS	SSSSSSSS	S	Guarantee : SSSSSSSSSSSSS Date : SSSSSSSSS	
	SSS	SSSSSSSS	SSSSSSSS	SSSSSSSS	S		
		Total :		SSSSSSSSSS	9	Total fees : SSSSSSSSSSSSS N.C.U. Total declaration : SSSSSSSSSSSSS N.C.U.	

| 50 Principal No SSSSSSSSSSSSSSSS | Signature : | C OFFICE OF DEPARTURE |
| SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS |
| SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS |
| SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS |

| 51 Int. office. | SSSSSSSSSSSSSSSS SSSSSSSS |

| trans. - Cty | SSSSSSSSSS | SSSSSSSSS | SSSSSSSSSS | SSSSSSSSSS | SSSSSSSSS | SSSSSSSSS |
| | SSSSSSSSS | SSSSSSSSS | SSSSSSSSSS | SSSSSSSSS | SSSSSSSSS | SSSSSSSSS |

| 52 Guaranty SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS | Code | 53 Office of destination (and country) |
| not valid for SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS | SSS | SSSSSSSSSSSSSS / SSS |

D CONTROL BY OFFICE OF DESTINATION   Stamp :
Result : SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
SSSSS
SSSSSSSSSSSSSS
SSSSSSSS
Signature: SSSSSSSSSSSSSS

54 Place and date
SSSSSSSSSSSSSS SSSSSSSS
Signature and name of declarant/represent.
SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

Type	Tax base	Rate	Amount	MP	48 Deferred payme
A0	16298.501	17.50%	2851.020		B ACCOUNTING DETA
A1	16298.501	10.50%	1689.582		
					Mode of payment
					Assessment Numb
					Receipt Number
					Guarantee
					Total fees
		Total :	4521.433		Total declarati

58 Principal   Ho   Signature :

ASYCUDA++ calculates automatically the assessment of duties and taxes.

Single Administrative Document

Commodity code	Designation
010119 000000	Live horses, other tha
010120 000000	Live asses mules and h
010210 000000	Live pure-bred breedin
010290 000000	Live bovine animals, o
010310 000000	Live pure-bred breedin
010391 000000	Live swine weighing <5
010392 000000	Live swine weighing >
010410 000000	Live sheep

During all the working sessions customs tariff and control tables
are at user's disposal to check the validity of the data.
Queries are also possible on customs regulation texts.

MANIFEST (IMPORT)

EDIFACT CUSCAR

CARRIER

MAGNETIC MEDIA

CUSTOMS
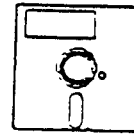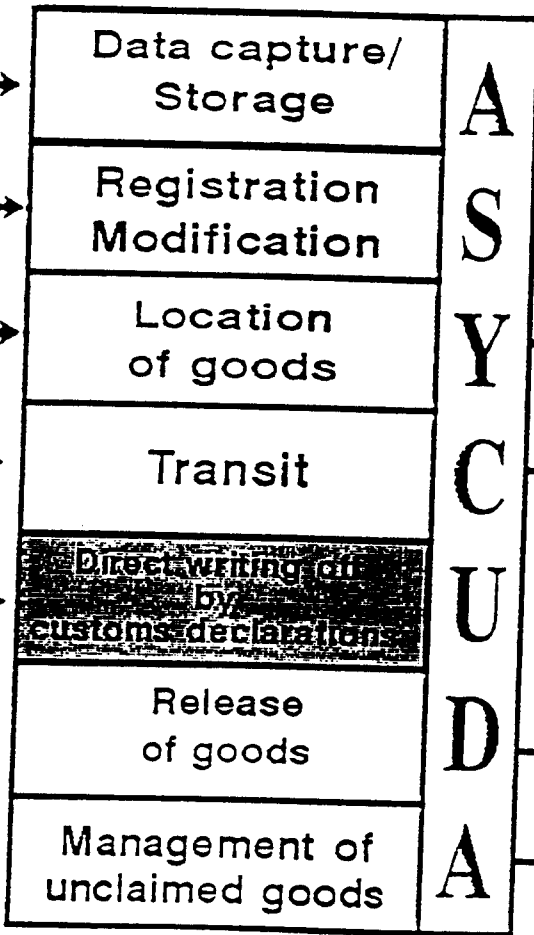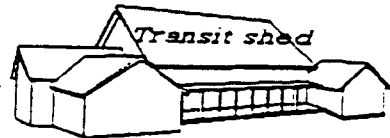
ASYCUDA	
Data capture/ Storage	Goods arrival
Registration Modification	
Location of goods	Transit shed
Transit	To inland customs office
Direct writing off by customs declaration	
Release of goods	Importer
Management of unclaimed goods	Unclaimed goods
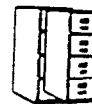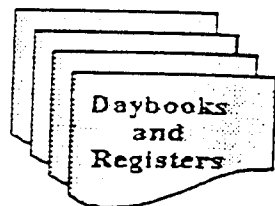
Daybooks and Registers

MANIFEST

The acceptance under Customs control of all of the goods entering the country is the first stage of the Customs process. This acceptance is undertaken through the input and verification processes controlled by the Manifest module

.

The Manifest facilities within ASYCUDA⁺⁺ are designed for processing on a multi user networked configuration, or for the integration of EDIFACT (CUSCAR) messages. This option allows transporters who frequently receive their information electronically, to transmit the same data forward to Customs thereby avoiding a re-keying exercise. The integration of manifests from diskette or magnetic tape is equally possible as a means of transferral of large amounts of data.

The facilities are designed so as to be able to adapt to many different country systems, but still meet the basic needs of any inventory system, namely the requirements to write off bills of lading by declaration/transit manifest and the ability to interrogate the manifest to determine what has been declared and what remains.

Keywords

- Store the manifest (Provisional Input)
- Register the manifest
- Itemise a bill of lading
- Transit Manifests
- Entry into warehouse
- Removal period

Storage of the manifest

The manifest storage procedure is where information pertinent to the input of both the manifest general header and the single bills of lading is entered into the system. Storage of the manifest is usually undertaken before the associated cargo arrives.

As the B/L is input, the user can indicate whether this is a house or master bill. This information can be entered at this stage or later in the manifest data processing when more information is known. This separation of the master bills into house bills is essential if the individual bills of lading are to be written off by the declarations in the system.

Registration of the manifest

Registration, or acceptance of the manifest, is made after the cargo has reached the point of entry into the jurisdiction of Customs. This is an important step as this is what creates an official document which is validated in detail against the reference tables.

DECLARATION (IMPORT)

EDIFACT
CUSDEC

DECLARANT

MAGNETIC
MEDIA

CUSTOMS

Data Capture/
Storage

Pre-lodgement

Validation
Calculation
Registration
Modification

SELECTIVITY

Licences Module

Manifest Module

Green	Yellow	Red
No control	Documentary Control	Physical Examination

ASSESSMENT

PAYMENT

Cashier Module

Manifest Module

Daybooks
and
Registers

Data entry

Direct Trader Input is available using EDIFACT (CUSDEC) messages. Alternatively, declarations can be batched on magnetic media or manually keyed in by Customs staff from paper declarations submitted.

SUSPENSE PROCEDURES

Temporary admission

ASYCUDA⁺⁺ manages specific accounts for the temporary admission of goods with automatic writing off of cargo once it is declared for re-export.

Transit Procedures

The control of goods in transit is a major problem for the Customs Administrations of land-loked countries. ASYCUDA captures data of transit consignments under the four basic procedures (inward, outward, interior and through transit) in accordance with international data and procedural standards. Each transaction is written off and closed when the goods reach their destination or leave the national territory. Management reports provide information to the Customs authorities on outstanding consignments on which action to recover duties and taxes due is required.

Where national telecommunications systems are of adequate quality and reliability, these means may be used to transfer data from point-to-point. A focal point or "clearing-house" may also be used to manage transit consignments if required.

Technical management of transit consignments should be supplemented with adequate physical control and inspections on approved transit routes. Within each ASYCUDA project, the team of experts assists the Customs Administration to develop the most cost-effective control systems appropriate to national needs.

Warehousing

The system will maintain a Warehouse account, writing off goods as they are used for home consumption, or re-exported.

EXAMINING OFFICERS

ASYCUDA⁺⁺ system facilitates the automatic assignment of declarations to different examining officers. This provides a degree of protection against collusion between a Customs examining officer and traders.
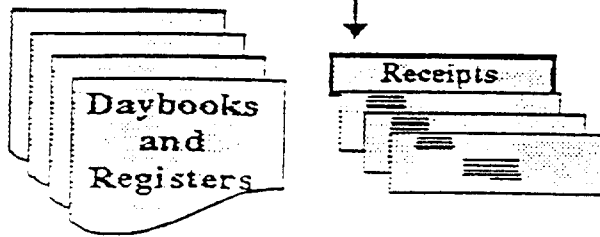
It is also important, from a system security, management, and operations viewpoint, to be able to obtain information from the system about when and by whom, certain actions were taken. ASYCUDA⁺⁺ provides a full range of reports on the declarations currently active in the system, along with a further more detailed menu containing management reports which facilitate complete control of declarations, right through to payment and archive.

CASH MANAGEMENT

DECLARATION MODULE

Assessment requested

Control of the mode of payment

Credit   Prepayment   Cash

Check the accounts balances   Assessment

Update of the cashier's files and of the credit or prepayment accounts

Assessment

PAYMENTS

Prepayments

Other Incomes

Cash

Credits

EXPENDITURES
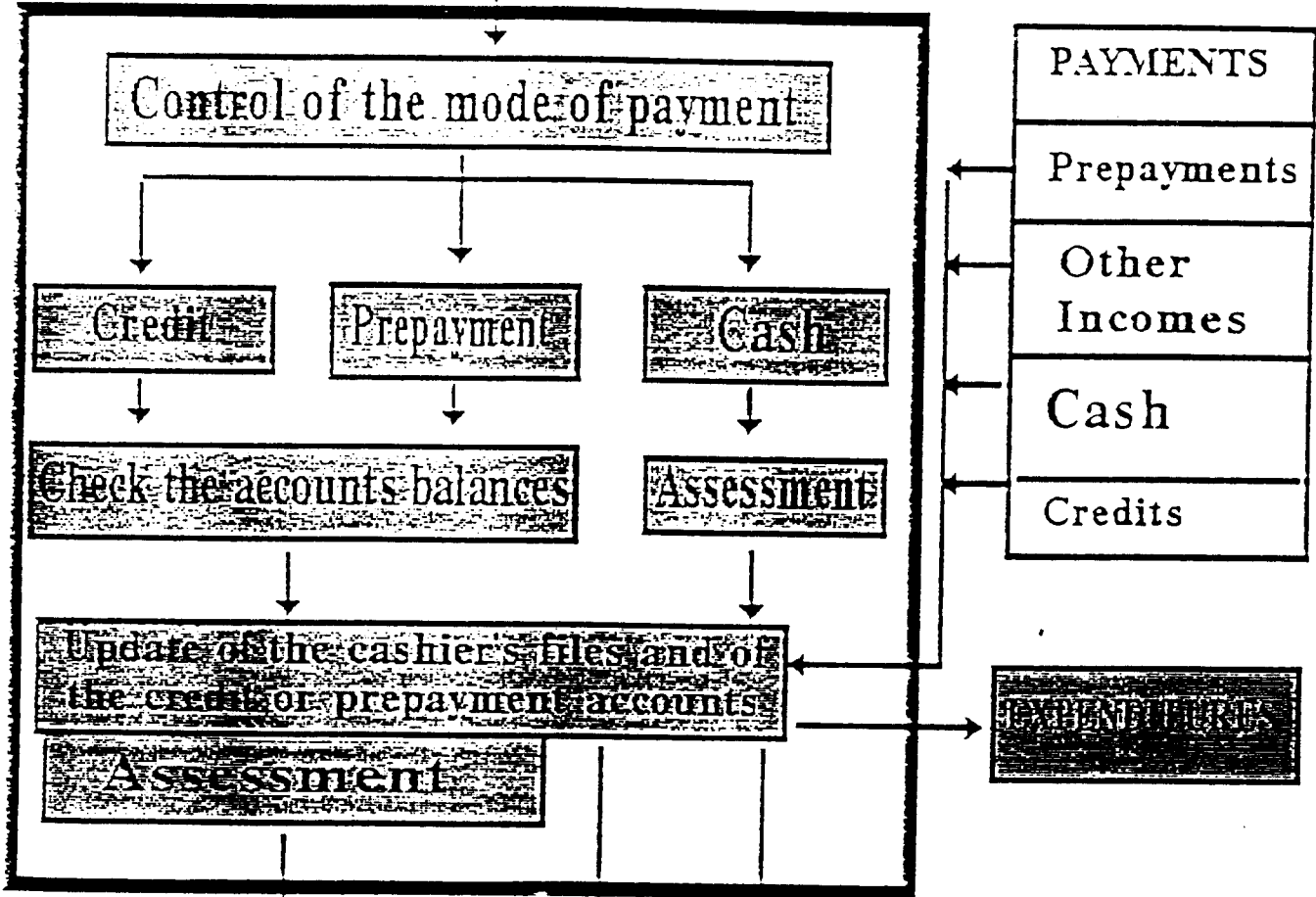
DECLARATION MODULE

Goods release permitted

Daybooks and Registers

Receipts

CONTROL FILES

Control tables are designed for verification of all of the data entered into the system. The tables are classed into functional groups, and take into account all of the international standards pertaining to the associated data elements. Along with standard format and range checks these tables incorporate checks for relationship and compatibility of the different types of information.

Information from external sources

EDI offers further possibilities for efficient access and updating of data. For example, modification of exchange rates could be undertaken regularly through an EDI message exchange with the Central Bank.

TARIFF and TAXATION

Tariff data is held within ASYCUDA^{++} as follows:

Base tariff

The base tariff contains the Harmonized System, commodity codes and nomenclature. This is the internationally agreed standard for classification, and it is designed to facilitate trade by introducing standardisation of classification worldwide. It should be adhered to in all but exceptional circumstances.

National tariff

The national tariff is a further development of the base tariff. It offers the user a chance to add further precision to the HS classifications according to fiscal or statistical requirements. It also hold the taxation data, statistical units and supporting documents pertinent to the national classification.

Taxation

The taxation system is altered and refined through a set of rules or equations, similar in presentation to the natural language of the user. These rules can then be employed either by the tariff or a nominated section, on a broad application basis, or to a specific set of HS codes, in a more selective manner.

STATISTICS

General

It is essential to regard ASYCUDA⁻⁻ as the provider of raw data to specialised statistical packages which are easily tailored to national and regional requirements.

Statistical package (Eurotrace)

The Statistical Office of the European Community (SOEC) based in Luxembourg has designed a statistical package especially for ASYCUDA⁻⁻ user countries (EUROTRACE - formerly called CADET (UK) or TRACE (FR)) to which the Customs data can be output. This package, like ASYCUDA⁻⁻, is made available free of cost within the context of a technical assistance project.

Output of data to external users

To ensure complete flexibility, ASYCUDA⁺⁺ facilitates the extraction of data in various ways according to the needs of specific users both in Customs and other Government departments. Data can be output, after selection criteria have been established, to ASCII file format for incorporation into either standardised commercial packages (such as SAS or Lotus) or into existing 'home grown' statistical systems employed by the user administration.

These data extractions are managed through a module which provides the user with a tool for constructing SQL-like queries on the ASYCUDA⁺⁺ declaration transaction databases.

DOCUMENTATION

General

The ASYCUDA⁺⁺ documentation system consists of 4 different parts:

- System installation documentation delivered with ASYCUDA⁺⁺ which describes all the functions of the software along with installation instructions;

- User documentation (operator instructions, procedures or national regulations);

- On-line help documentation; and

- Training documentation.

Each User Country produces its national User Documentation based on the national configuration of the system and the associated procedures and official documentation.

THE WORKSTATION

❏ TCP/IP:
Standard communications protocol.

❏ Message handler:
The message handler carries out, and validates, the transfer of messages (data) between the ASYCUDA++ engine and appropriate external interfaces.

❏ User Interface:
The user interface is presented through a series of window driven screens, which offer maximum flexibility to the user along with an environment (WINDOWS like) with which many will be familiar. A multi-lingual on-line help system is also included which enables a new user to be productive without constantly needing to refer to books and manuals which detract him from the task in hand.

❏ Local Engine:
To avoid unnecessary access to the network, the system reference or 'control' files are downloaded and automatically updated at the workstation so that much interim validation can be carried out at a local level. It is only when the ASYCUDA++ transaction files are to be updated that the network is used and final validation is carried out against the master database.

❏ SQL Interface:
The modular structure of ASYCUDA++ enables ease of change of the PARADOX Relational database management system.

❏ Relational Database Management System:
The PARADOX database "engine" is subject to licence fees only for the development system. This means that the end user incurs no additional fee. Paradox is one of the best known RDBMS's under DOS.

❏ Operating System:
Its ease of use, its low cost and the access it gives to a large library of applications explain the choice of DOS. Should future releases of ASYCUDA require another operating system, DOS could easily be replaced due to the modular design of the software.

Workstation

TCP / IP

↕

Message Handler

↕

User Interface

↕

Local Engine

↕

SQL Interface

↕
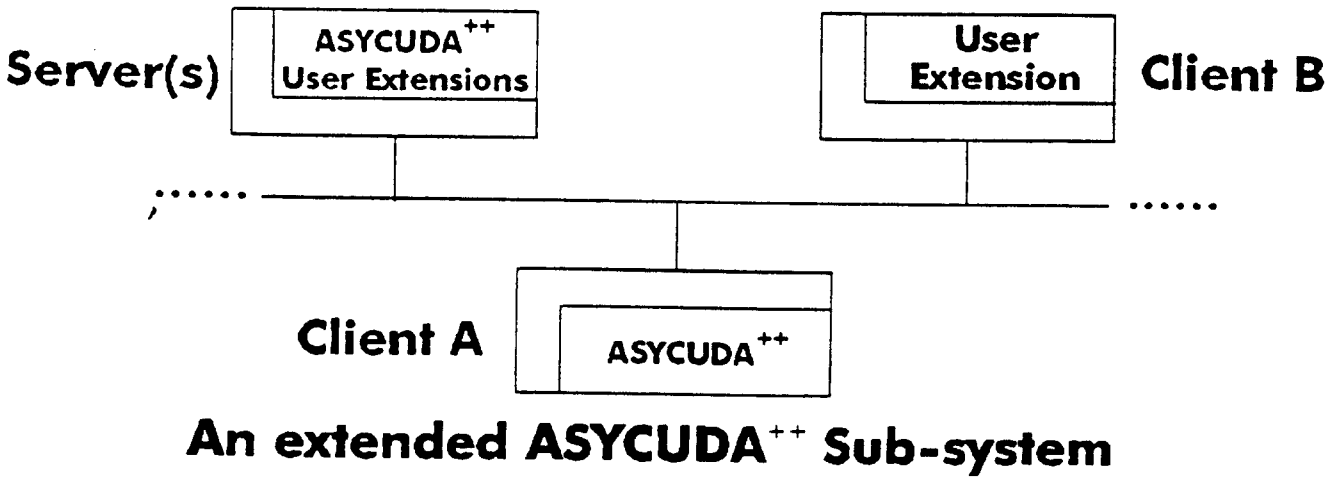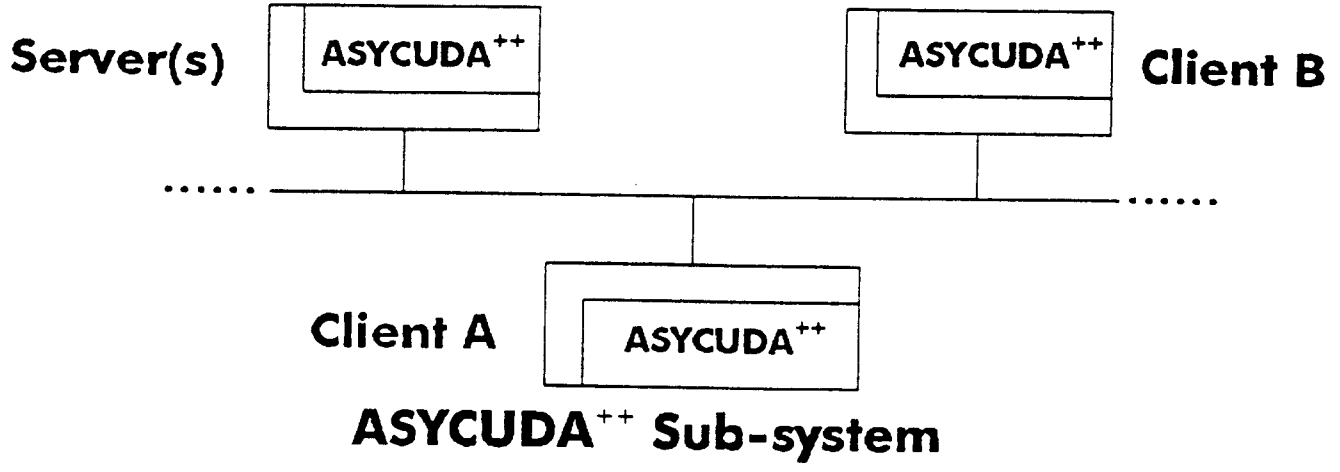
Local
DBMS Engine

↕

MS-DOS 5.0

WHAT IS A ++ ?

A SOLUTION FOR CLIENT-SERVER DEVELOPMENTS

A ++ is a technical platform for the development of client-server management information systems. Generic client-server MIS mandatory developments, for example application communication, security, database interface, EDIFACT translator, reusable abstract objects, dynamic multi-language support, standard GUIs, etc. are built-in features of A ++. Remaining development tasks using A ++ are functional design, end-user interface prototyping, business rules programming and testing.

A ++ platform components are technical documentation, training course, technical core and basic application programs running under UNIX SVR4 (servers) and DOS/Windows (Clients). On the UNIX servers, transaction data is managed through SQL/RDBMS engines (eg. Informix or Oracle). A ++ core is based on the Object Oriented Programming methodology which is the most advanced technology for building and maintaining comprehensive information systems at a minimum cost. Built-in features like message handling, EDIFACT translator and inter-server replication mechanism automatically overhaul the A ++ based applications.

A ++ is the backbone of the *new* ASYCUDA ++ software developed by UNCTAD in Geneva.

A^{++} Sub - systems

Server(s) ASYCUDA^{++} ASYCUDA^{++} **Client B**

Client A ASYCUDA^{++}

ASYCUDA^{++} Sub-system

Server(s) ASYCUDA^{++} User Extensions User Extension **Client B**

Client A ASYCUDA^{++}

An extended ASYCUDA^{++} Sub-system

Server(s) Other User Application Other User Application **Client B**

Client A Other User Application

User Specific A^{++} Sub-system

A++ Management Information Systems

Distributed Applications

A++ Sub-Systems

A++ Systems

Wide Area Network
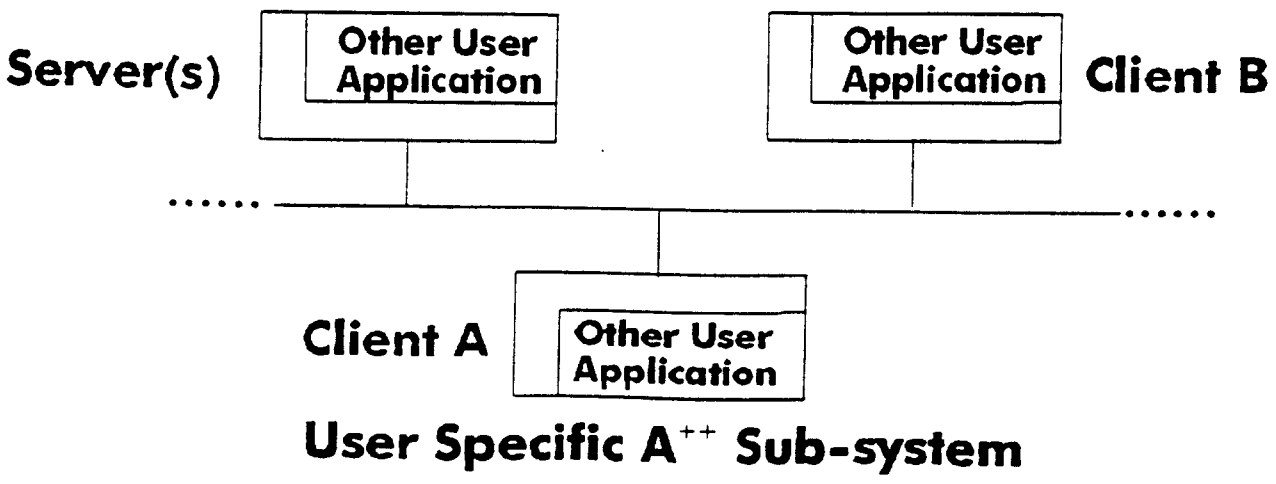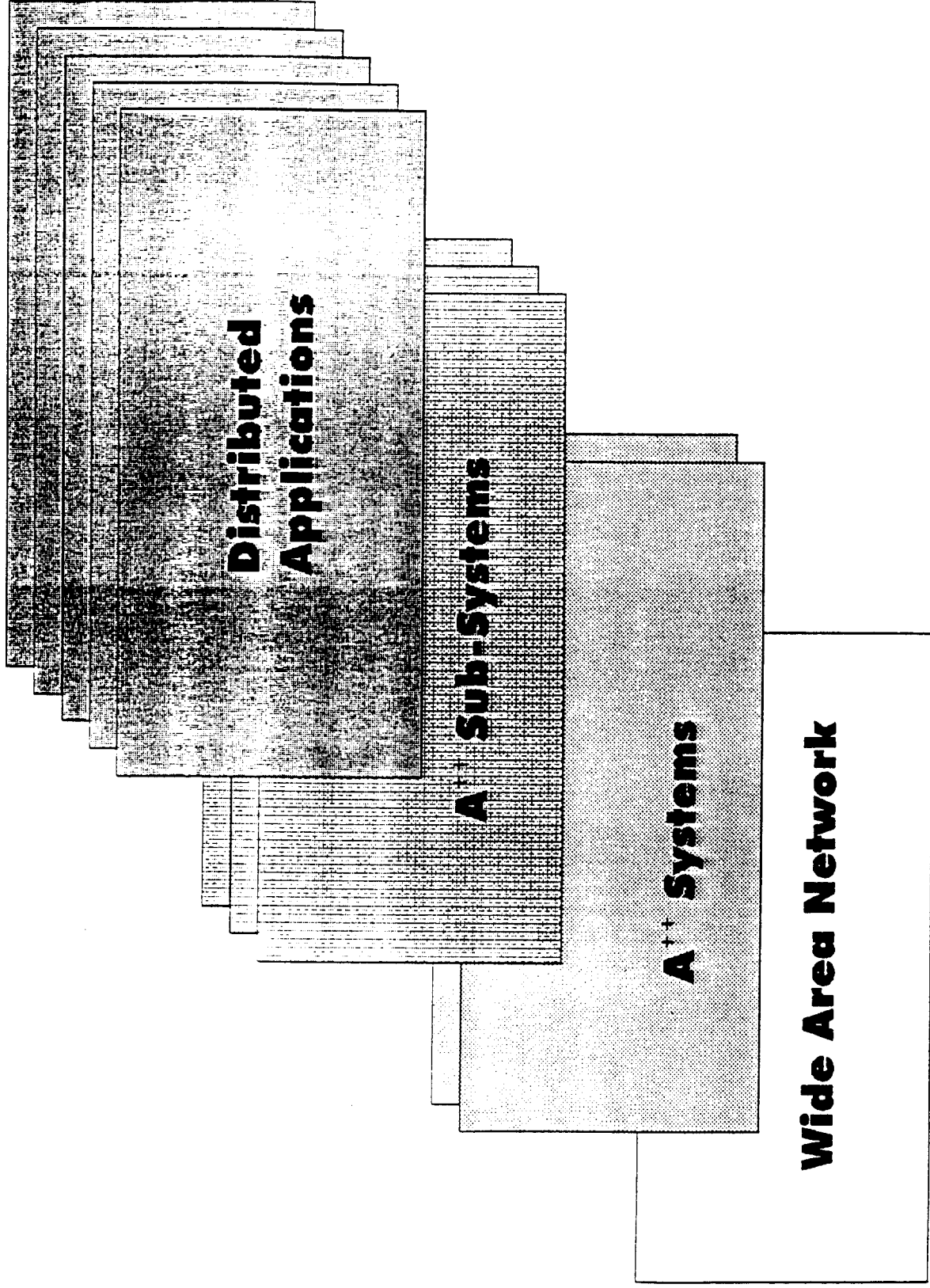
B. Operational and Training Equipment:

Server:

- (*) minimum: 486DX 50Mhz or RISC machine
- (*) 256 Kb cache
- (*) 16 Mb RAM
  - 3.5 FD Drive
  - 5.25 FD Drive
  - SCSI Streamer tape
- (*) SCSI Hard disk > 500Mb
  - VGA color screen
  - Ethernet adapter (IEEE 802.3 compatibility, at least with AUI and BNC ports)
  - US 102 keyboard

- (*) Value depends on local functional configuration and transaction volume.

UNIX Server SW Environment
  - UNIX SVR NFS 4.0 (latest release)
  - TCP/IP (Interactive Version 1.3 or latest)
  - Informix On-Line 6.0 or latest
    - SQL

Clients:

  - minimum 486 33Mhz
  - 256 Kb cache
  - 4 Mb RAM
  - 3.5 FD Drive
  - Hard disk > 80Mb
  - VGA color screen
  - Mouse
  - Ethernet adapter (IEE 802.3 compatibility, at least with AUI and RJ45 ports)
  - US 102 keyboard

PC Client SW Environment
  - DOS 6.2 (or greater)
  - FTP PC/TCP 2.0 Development Kit

Any final configuration should be confirmed by UNCTAD's Technical Development and Support Unit before placing the order.

ASYCUDA++

SUPPORT SERVICES OVERVIEW

UNCTAD

Philosophy

Experience has shown that the training programme for Customs computerisation projects has above all to instil confidence in the users of the system and remove the fear of new technology. Only a programme within which both users and their line managers feel fully involved will be successful. Thus this training programme aims to provide training and familiarisation on all aspects of the system proposed on a "top-down" basis from the senior managers, through the supervisor grades to the data input operators.

All the courseware and documentation will be provided in the local language. However, where a base course is provided, it will be given in English through interpreters. The subsequent delivery to Users will be given **only in the local language.**

Overview of training and courseware

The training activities undertaken are set out in detail below. It is broken down into four sub-sections:

- Part A - Building, installing and maintaining the system;
- Part B - Running and managing the system;
- Part C - Developing the Trade and Customs environment;
- Part D- UNIX and RDBMS training.

NB.   **Parts A, B, and C will always be given by the ASYCUDA team. Part D will be out-sourced.**

2.1   PART A - BUILDING, INSTALLING AND MAINTENANCE.

The ASYCUDA general implementation course

This course is given at the commencement of the project to the project team members and advisors. Selected regional Customs managers may also attend this course. A very experienced team of Customs trainers will present the courseware which has already trained more than thirty national ASYCUDA teams on this highly complex and technical course.

The course is designed for those building, installing and maintaining the system. It is critical to the on-going stability of the software and the ability to respond to legal, fiscal and administrative changes.

- <u>Cashier and Accounts</u>   (3 days);

AIMS:

To introduce cashier and accounts officers to the ASYCUDA system and hardware used;

To teach them how to process declaration payments and produce the necessary day books and accounting records.

- <u>Supervisor and system managers</u>   (5 days);

AIM:

To provide an overview of the main system functions and to teach supervisors and system managers how to run the system and control the Users on a day-to-day basis.

- <u>Senior managers</u>   (5 days);

AIM:

To make senior management aware of the potential and implications of the introduction of ASYCUDA, the changes it will bring and how it may be used to best advantage.

- <u>Technical course</u>   (5 days).

AIM

To enable the local Customs offices to configure, manage and carry out first-level maintenance on the ASYCUDA software.

2.3   **PART C - DEVELOPING THE TRADE AND CUSTOMS ENVIRONMENT**

While addressing the question of training and support to the technical operation is important, the efficiency of the workface environment in which the computer systems operate, and in particular the Customs requirement to use the system properly and intelligently so as to maximise revenue yield and minimise fraud/malpractice, is of equal importance.

Risk analysis, targeting and freight intelligence   (2 weeks)

AIM

To improve the efficiency of controls on goods consignments into, out of and through the country; and

To improve the detection rate of commercial fraud, prohibitions and restrictions.

Trade facilitation.

AIM:

In the field of official formalities:

* to create a new spirit in the decision-making process by making responsible authorities aware of the need for simplified, co-ordinated procedures;

* to provide these authorities with the tools necessary for bringing about the required changes.

Trainer skills

AIM:

To improve students' confidence and skills as trainers and to teach them how to prepare training sessions and train from pre-produced training modules.

Management skills

Course content

* Principles of effective management including planning, directing, organising, co-ordinating and controlling;
* Making change work - organisational change;
* Managing people - team building, motivation, understanding individual and group behaviour, recruitment and selection etc.
* Managing work - objectives, getting results, key result areas, accountability.
* Managing time - the "unrecoverable resource", setting priorities, delegation.

TCP/IP communication (3 days)

The course will enable the participants to cope with the configuration of operating systems for TCP/IP networks. Main items covered are: network configuration, log in services, file transfer, printing and mailing, NFS and NIS.

2.4.2 RDBMS training

Server RDBMS (4 days)

The course aims at database managers and system programmers. It includes interpretation of database server quality, different user approach to data, data protection, server installation, action monitoring and parameters adjusting.

SQL, 4GL (4 days)

The course aims at programmers and users of application programs. It includes: interpretation for using SQL and 4GL languages, syntax.

E-SQL/C (2 days)

The course aims at programmers. It includes training in securing of work with product embedded SQL/C (interconnection of database language SQL and C).

RDBMS administration (2 days)

The course aims at users from database, including interpretation of Superview creating, synonym defining in the terminology, WYSIWYG formulas creating, report creation.

RDBMS programming (5 days)

The course aims at analysts and programmers. It includes training in program creation in an integrated developed environment, FORMS and MENUS and program generation in 4GL.

ASYCUDA Technical Description - UNCTAD

ASYCUDA $^{++}$

Technical

Description

UNCTAD

October 1993

FLEXIBILITY

ASYCUDA^{++} has been designed to fully satisfy the needs of Customs and Statistical Services in relation to foreign trade transactions, starting from the most basic Customs functions and going on to more complex user-defined facilities. Consequently it is suitable for use in the smallest Administration as well as being easily adaptable to the larger country with very high throughput of declarations and where there is a need for a much more sophisticated environment

This flexibility means that the system aims to deal with potentially large transactions volumes without jeopardising the user friendly interface which is today an essential requirement for the modern Customs office. Thus, it caters for a range of users whilst offering an obvious advantage in its ability to grow as the computerisation process evolves.

THE ASYCUDA^{++} TECHNICAL SET-UP:

☞ A Client/Server architecture provides the system with the full flexibility and efficiency required by the most sophisticated modern computer systems.

☞ An Ethernet network allows for a large number of users to input and process data without significant performance degradation.

☞ The choice of UNIX as the Server's operating system gives the user countries flexibility regarding choice of computer model and size (from the PC 386/486 to mainframe). This leaves the decision to upgrade with the user, along with the security of knowing that any increase in processing capacity will not compromise the utility of existing equipment.

☞ The terminals used with the system are all intelligent DOS based PC workstations. The choice of such a 'front end' has been based on the fact that many potential ASYCUDA users will have had some previous experience with DOS based software, and are therefore confident and comfortable dealing with widely known environment.

One of the advantages of the Client/Server Architecture/Constructions
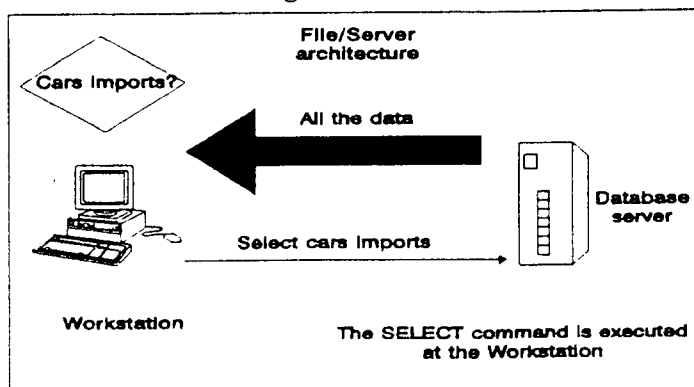
On a traditional system, the select command is processed at the workstation once all the data has been received from the server.
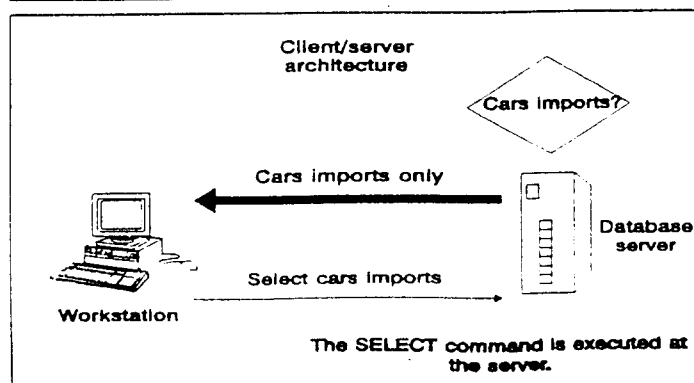
On a client server architecture, the select is processed by the server which only sends the requested data to the workstation, reducing substantially the traffic on the Network.

INDEPENDENCE

To facilitate development of the system and to maintain a degree of independence from proprietary software, ASYCUDA++ has been developed in a modular fashion. This approach has left the development team with the option of altering a software platform (for instance the relational database) without having to program changes throughout the system; only the layer of functions which interact directly with the application software would require conversion.

The complete ASYCUDA++ configuration consists of three different types of programs:

☞   *Commercial products:*

Paradox and Informix as local and server RDBMS Engines, DOS and UNIX as Operating Systems, TCP/IP for communications through an Ethernet network.

☞   *The ASYCUDA Engines and User Interface.*

These modules are developed by UNCTAD, and are the core of the system processing and data manipulation. These are designed to be re-usable in case of upgrades of the commercial products mentioned above.

☞   The UNCTAD designed *Message Handlers, and SQL Interfaces* are the only programs that would require modifications if the proprietary software (commercial products) were upgraded or replaced.

OPENING ENVIRONMENT

The system is also capable of

☞ Interacting with external computer applications. One of the system's basic functions is message handling which highly facilitates the communications requirements with other institutions such as Customs brokers, carriers, banks...
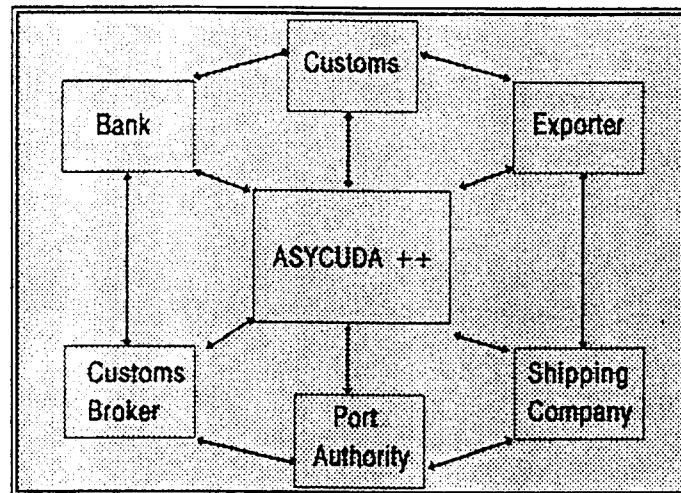
☞ Integrating itself into a world network for data and information exchange between users which is planned for implementation in the near future. Such an integration will facilitate the world wide circulation of EDIFACT messages; the exchanging of national trade statistics; and the opportunity for managers to dialogue in confidence internationally.
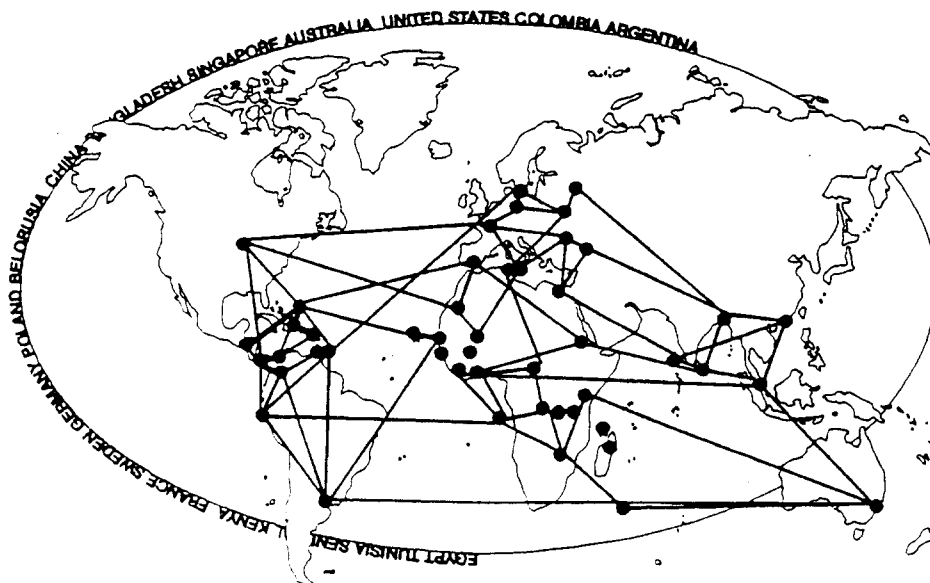
THE ASYCUDA++ TECHNICAL ENVIRONMENT

THE SERVER

Server

❏ TCP/IP:
Standard communications protocol.

❏ Message handler:
The message handler carries out, and validates, the transfer of messages (data) between the ASYCUDA++ Engine and appropriate external interfaces.

❏ ASYCUDA Engine.
The ASYCUDA engine is the central processing machine. It receives, evaluates, prepares, and returns data: it is the functional kernel of the system. This is the part of the system which has no need of modification when external software parameters are changed. The Engine will always be changed however, when additional functionality is added to the system.

❏ SQL interface :
The modular structure of ASYCUDA++ enables ease of change of the Relational database management system.

❏ Relational Database Management System:
Informix is the current SQL machine being utilised. One of the important features within the RDBMS is its rollback facility which ensures data integrity by 'rolling back' all updates should any abnormality be detected during the execution of the update modules.

TCP / IP
Message Handler
ASYCUDA Engine
SQL Interface
Server DBMS Engine
UNIX

An interface with a different RDBMS could be developed for further releases of ASYCUDA in accordance with the needs of countries and changes in the software marketplace.

❏ Operating System
UNIX, along with being a recognised standard for open systems offer the following additional advantages:

☞ The portability means that the initial investment in UNIX is small, and significant upgrade in processing power can occur within a relatively low cost framework.

☞ UNIX is presented as the standard development environment for most computer orientated technical studies. The recruitment of personnel charged with the system's supervision is therefore relatively straightforward.

THE WORKSTATION

☐ TCP/IP:
Standard communications protocol.

☐ Message handler:
The message handler carries out, and validates, the transfer of messages (data) between the ASYCUDA++ engine and appropriate external interfaces.

☐ User Interface:
The user interface is presented through a series of window driven screens, which offer maximum flexibility to the user along with an environment (WINDOWS like) with which many will be familiar. A multi-lingual on-line help system is also included which enables a new user to be productive without constantly needing to refer to books and manuals which detract him from the task in hand.

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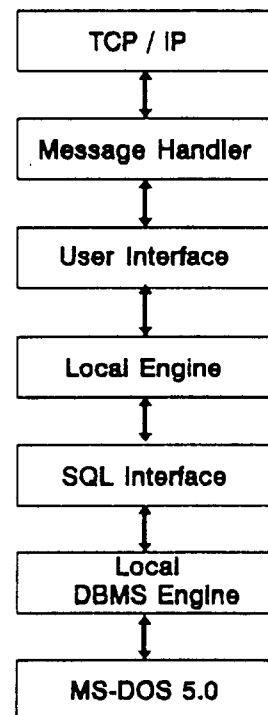
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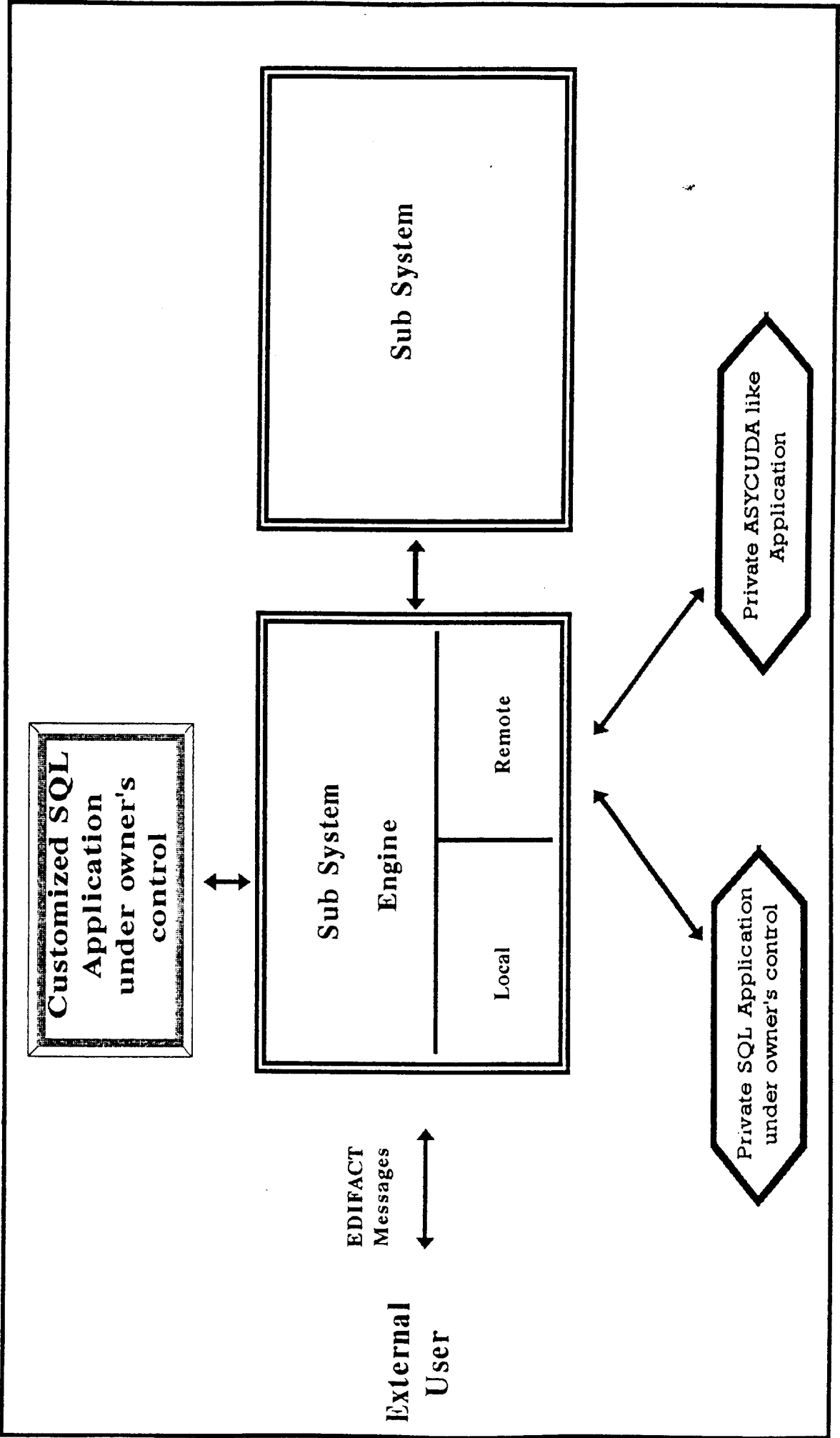
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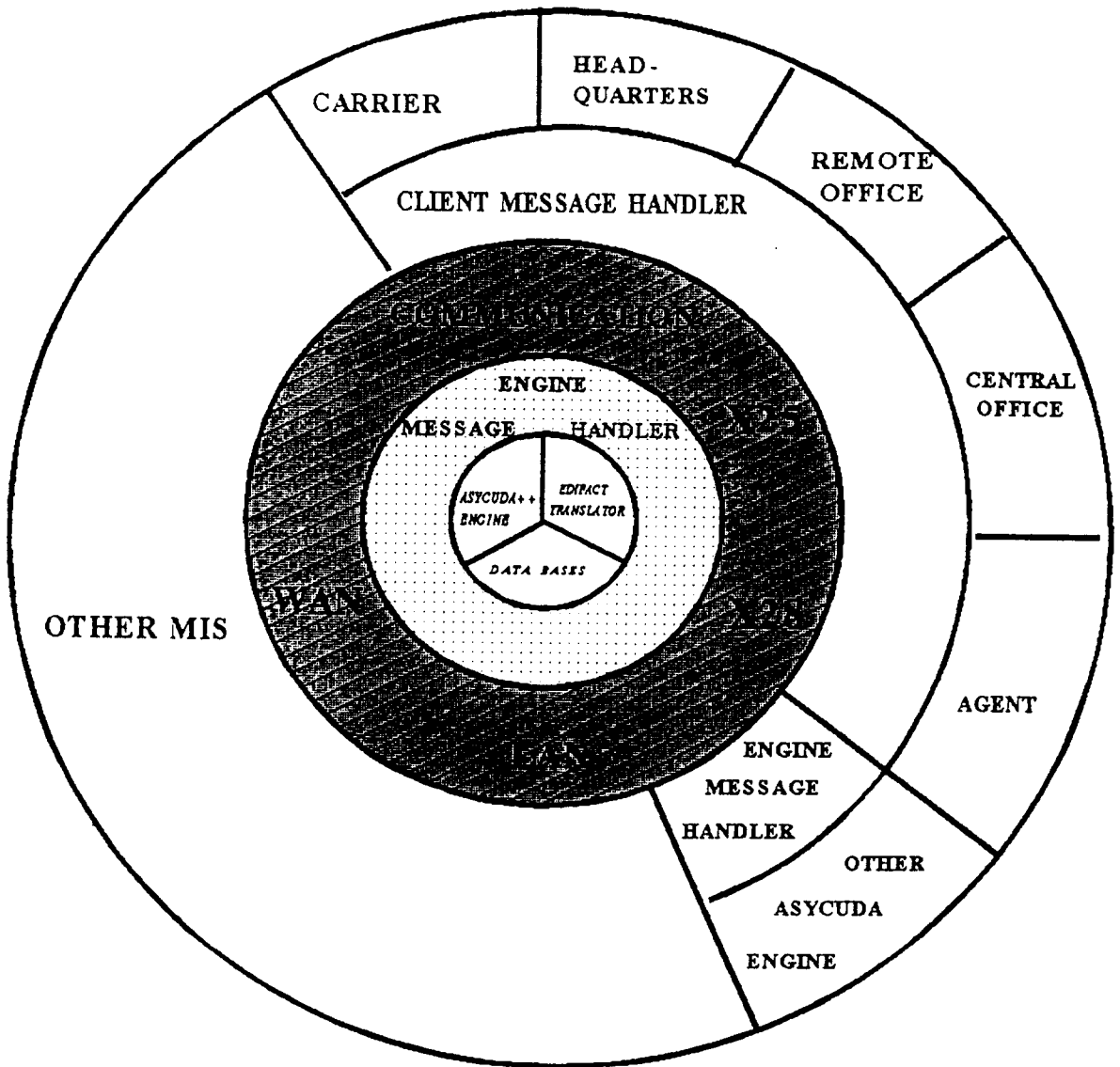
Workstation

TCP / IP
↕
Message Handler
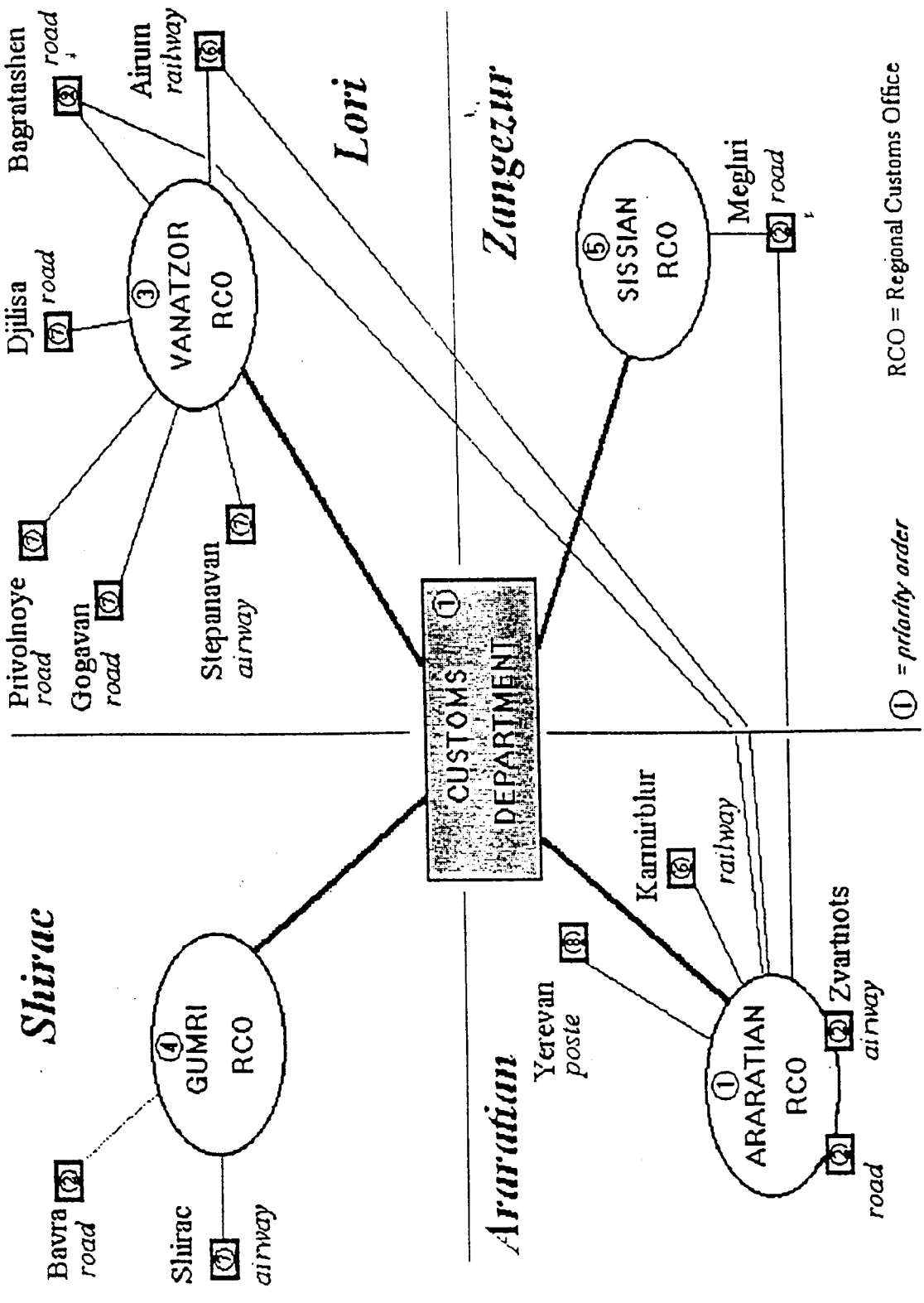↕
User Interface
↕
Local Engine
↕
SQL Interface
↕
Local
DBMS Engine
↕
MS-DOS 5.0

ASYCUDA System Architecture

Sub System

Sub System

Engine

Local

Remote

Customized SQL Application under owner's control

Private ASYCUDA like Application

Private SQL Application under owner's control

External User

EDIFACT Messages

ASYCUDA++

CARRIER

HEAD-
QUARTERS

REMOTE
OFFICE

CLIENT MESSAGE HANDLER

CENTRAL
OFFICE

ENGINE
MESSAGE HANDLER

COMMUNICATION

ASYCUDA++
ENGINE

EDIFACT
TRANSLATOR

DATA BASES

OTHER MIS

AGENT

ENGINE
MESSAGE
HANDLER

OTHER
ASYCUDA
ENGINE

High Level Diagram of Proposed Systems Architecture - Armenia

Shirac

Bavra *road* ②

④ GUMRI RCO

Shirac *airway* ②

Lori

Bagratashen *road* ⑥

Airum *railway* ⑥

③ ② Djilisa *road* ⑦

③ VANATZOR RCO

Privolnoye *road* ⑦

Gogavan *road* ⑦

Stepanavan *airway* ⑦

Zangezur

⑤ SISSIAN RCO

Meghri *road* ②

① CUSTOMS DEPARTMENT

Araratian

Yerevan *poste* ⑧

Karmirblur *railway* ⑥

① ARARATIAN RCO

Zvartnots *airway* ②

road ②

RCO = Regional Customs Office

① = *priority order*

- ARMENIAN CUSTOMS OFFICES COMPUTERIZATION PRIORITIES -

Appendix

6

SOFIX

▼

Computerized international freight system

SOFIX

G.I.E.

Douanexport

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CONTENTS

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The French Customs and Indirect Taxation headquarters has developed an automated customs clearance system, adaptable to local logistical problems about traffic, legislation, traffic volume .

Inspired by the experience with the SOFI (*) customs clearance system, the efficiency improves cargo trade, while controlling it and correctly collecting duties and taxes. The result is that this system could be profitable quite quickly.

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* S.O.F.I. : Système d'Ordinateurs de Fret International (Computerized International Freight System)

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INTRODUCTION

Beyond the differences inherited from history and geography, customs administrations worldwide share a kernel of similar missions ; of which by far the most important is goods clearance :

Firstly, as customs activity guarantees, for isolated states as well as those belonging to a customs union, collection of large fiscal revenues. Imperfection on late collection can compromise the budgetary balance.

Secondly, as clearance formalities, whatever they may be, afford a knowledge and a means of controlling commercial traffic, thus ensuring the respect of international agreements and balances, and therefore the states economy.

Lastly, as the different ways of clearing, especially the speed and ease with which goods are liberated, determine the flow of international trade of the state in question. For developing countries such a flow is essential, and for developed countries it is vital.

In order to fulfill these requirements, equipment is necessary that :

- enables immediate - complete application of up to date customs regulations

- guarantees a rigourous administration of goods and taxes or duties during the whole procedure

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■　　　improves the reliability of the procedures by supervising the agents

■　　　ensures maximum security for the integrity of the data (*administrative, accounting, commercial and statistic*) and for the running of the system

■　　　provides instant information about any operation as well as state collections or foreign trade.

During the last few years, some states have acquired equipment for computerized clearance on statistics, but until now no system seemed able to combine an overall solution with an installation that would enable it to work beyond the specific national framework for which it was developped.

However, this equipment has been developped by GIE-DOUANEXPORT, who benefitted from the experience of French Customs, pioneer in this domain, with the SOFI System.

SOFIX

SOFIX is a new product based on a long experience ; it avoids the two main problems encountered by rival systems : on one hand, systems developped years ago on equipment of that time, and which have great difficulty in adapting to modern equipment, on the other hand, systems developped for specific projects, which, having no past are obliged to completely rethink the system in order to develop further.

SOFIX is a new product developped to work on UNIX computers, with a range from heavy computers to micro-computers, using the ORACLE data base manager, standard on the market, respecting the latest data description norms (EDIFACT) of communication (x 25 x 400) etc..which make it an open, progressing system.

A product based on the long experience of French Customs, as well during the development of SOFI as during operations of international computer cooperation, which has produced :

■　　　a method for audit of organization and needs analysis (*feasability study*) permitting the evaluation of existing procedures and determining the level of required adaptation by the SOFIX kernel (*either to adapt it to satisfactory existing procedures, or as a means for administrative reforms*).

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■　　　a method of regulation analysis allowing the constitution of an integrated tariff *(automatic application of the basic tariff and the regulations required by foreign trade)*.

■　　　a method for training computer users *(of the administration and/on a local software company)*, customs officers and brokers, so that, after a real transfer of technology and know-how, the system can be managed, updated and completed by the local administration without depending on an outside partner.

■　　　finally a global approach to integration , contrary to a simply turn-key delivery, totally involving the local administration in the SOFIX.

Concerning the statistics, the constitution of a foreign trade data base, product of an automatic clearance system, permits not only the most precise economic analyses *(countries, products, border points, means of transport, values etc ...)* but also the discovery of possible fraud and the survey of economic activities.

For commercial companies, the possibility of preparing the declarations in advance by reusing data received by computer, and of depending mainly on the companies own rythm and only slightly on the customs administration *(examination and cash payment of duties)*.

Thus we have a global improvement of the processing of economic procedures resulting from the installation of SOFIX : clear operations with the administration, automatization of tasks leaving customs agents freer for more important missions *(controlling)*, observation of economic activity helping the government to choose or amend their economic policy, and companies to adapt their industrial strategies.

Therefore, SOFIX is a powerful means of integrating the international economy.

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▪ 1 ▪
GENERAL
CHARACTERISTICS

1.1. Goals

The goals set for the system are as follows :

- flexible use,

- safe operation,

- customs clearance acceleration,

- more reliable information and data,

- administrative procedure simplification,

- increased customs revenues,

- fraud supression assistance,

- archiving customs information on magnetic media

- collection of statistics.

To achieve these goals, the proposed system is based upon the use of technical options and functional principles which characterize modern customs systems.

1.2. Technical options

The technical options selected concern :

- real time (on-line) methods enabling direct dialogue between the user

and the system,

■ modular design of processing, facilitating maintenance of developed applications, and making it possible for them to be installed gradually,

■ use of a data base management system, facilitating access to all system data,

■ transmission of data via a communication network, giving immediate access to necessary information.

■ The use of Unix, a de-facto world wide standard, the main advantages of which are the following :

- UNIX is an open operating system.

- The UNIX system specifications have now become public.

- UNIX systems are the best fitted for distributed architecture.

- Major RDBMS are now available on UNIX systems.

- They are modular systems.

- They are independant from the hardware.

- User interface is simple and interactive.

- Maintenance and upgrades are easy.

Therefore, each of the main offices can be installed with specialized equipment such as screen and key-board (*console*) and a printer enabling the concerned users (*customs, shipping agents, consignees, ...*) to perform all customs operations and transactions.

Furthermore, interconnecting the various sites to each other makes it possible to centralize the information necessary for general requirements (*management reports, statistics ...*).

1.3. Functional principles

The selected functional principles are as follows :

- use of a single declaration form for all automated offices ;

- acceptance by the system of all types of declarations ;

- acceptance by the system of all automatable customs operations ;

- strict application of national customs regulations;

- complete control of the system by the Customs and Indirect Taxation Head Offices.

The main functions performed by the system concern :

- physical acquisition of goods :

    . dealing with import manifests and their discharge base on declara tions,

    . dealing with export manifests and their discharge based on export manifests,

    . warehouse management.

- processing of the detailed declaration :

    . acquisition of data necessary for preparing the declaration,

    . follow up of schedules of conditional customs procedures,

    . automatic calculation based on integrated tariff,

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. validation and printing of the declaration,

. monitoring declaration circuit.

■ integrated tariff management :

. monitoring the nomenclature based on the harmonized system,

. defining duties owed under each tariff heading according to the requested customs procedure ;

. checking foreign trade regulations by tariff heading

■ management of tables :

. updating and printing upon request of the various reference tables necessary for the system.

■ company file management :

. processing all the companies and special conditions necessary for computing customs duties.

■ recovery management :

. accounting for customs produced transaction documents and cashier's revenue,

. monitoring removal procedure with deferred payment of customs duties (removal accounts),

. monitoring outstanding payments.

■   statistics :

    . monthly production of customs statistics

    . creation and updating of the foreign-trade statistics data

The general articulation of the various processing operations is presented on the chart on the following page.

```
                    ┌─────────────────────────────┐
                    │   ACQUISITION OF CARGO      │
                    │   MANIFEST MANAGEMENT       │
                    │   WHAREHOUSE MANAGEMENT     │
                    └──────────────┬──────────────┘
                                   │
 ┌──────────────────┐    ┌─────────┴─────────┐    ┌──────────────────────────┐
 │ INTEGRATED TARIFF │    │                   │    │        OTHER             │
 │ MANAGEMENT of     │────│  PROCESSING of THE│────│     APPLICATIONS         │
 │ COMPANIES         │    │  dETAILED         │    │ AUTOMATIC dATA PROCESSING│
 │ ANd of TABLES     │    │  dECLARATION      │    │ fEE STATISTICS           │
 └──────────────────┘    └─────────┬─────────┘    │ FRAUd SUPPRESSION        │
                                   │              │ ASSISTANCE               │
                          ┌────────┴──────────┐   └──────────────────────────┘
                          │ RECOVERY          │
                          │ MANAGEMENT        │
                          └───────────────────┘
```
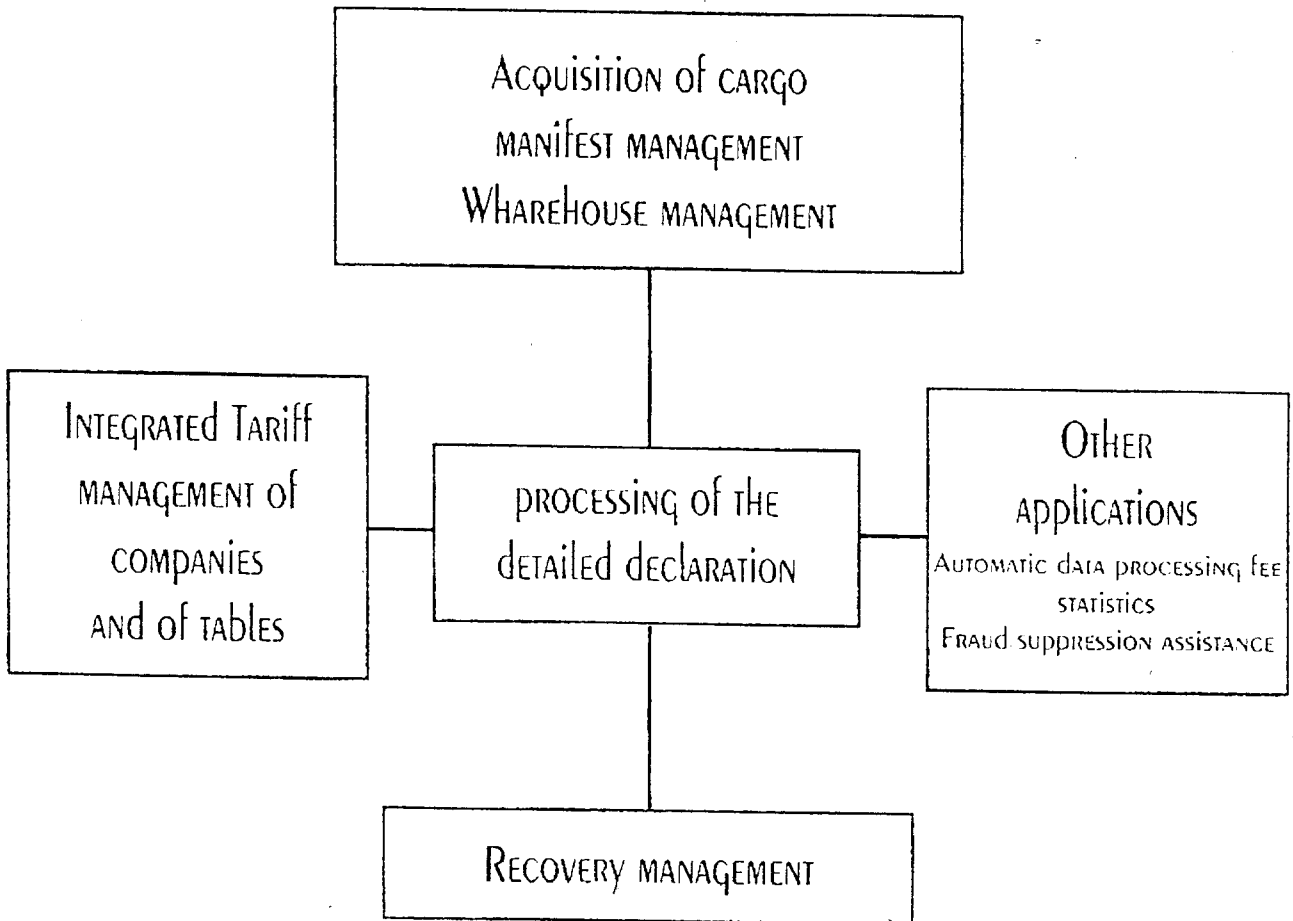
GENERAL ARTICULATION of THE VARIOUS PROCESSING OPERATIONS

1.4. Principles of use

The system works either in real time on-line (*data acquisition ...*) or later off-line (*statistical reports, ...*).

The system also includes the necessary security and safety features to palliate any physical failure or fraud attempt by :

- physical protection,

- access security,

- personalization features data.

■ 1.4.1 Physical protection ————————————————

The data are physically protected by :

- ◆ the operating system which automatically regenerates data after hardware breakdown,

- ◆ regular procedures for backing up the processed data,

- ◆ master file and software back-up in a fireproof cabinet,

- ◆ protection of installations against fire - anti-fire system - and against

power-cuts - generator set and batteries.

■ 1.4.2 Access security features

At the beginning of any working session - switching on terminal after starting up sytem -, the user must identify himself by his operator code.

The system then performs a validity test on the acquired data by comparing it with the list of approved users.

In case of anomaly on one of these data elements, a message of error appears on the screen.

Furthermore, the access to the system requires the use of a personal magnetic badge.

■ 1.4.3 Data personalization

A correct identification of the author of any data updating can be found by the following :

♦ operator code,

♦ terminal number,

♦ date and time of the update

This turns down any attempt to manipulate the tariff and any other data.

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■ 2 ■

OPERATING
FEATURES

The system operating features concern :

- The physical acquisition of goods

- The processing detailed information,

- The integrated tariff,

- The recovery management,

- The other applications.

Each of the major functions above can be broken down itself into sub-functions, corresponding to a processing module.

In this way, each of the sub-functions can be developed, installed and maintained separately, guaranteeing the system's goal of flexibility.

2.1. Physical acquisition of goods

All goods arriving on national territory must submit to customs treatment ; that means they must pass through a customs office, and there be summarily declared while awaiting a definitive customs mandate.

This summary declaration, called the manifest, sets down all the consignments covered by a transport document (bill of lading, airway bill, etc ...), either unloaded at import, or loaded at export.

Manifests are processed to check that each entry (or exit) of goods on the territory is covered by a declaration.

This function is completed by the physical management of the goods in the warehouse.

■ 2.1.1 IMPORT MANIFEST MANAGEMENT ————————————————

The manifest computer processing performs the following functions :

♦ acquisition, checking, recording and printing of the manifests,

♦ acquisition of counter check findings at loading or at entry of bonded warehouses,

♦ discharge of the manifest by customs declarations,

♦ discharge of the manifest by automatic storage of goods which are not declared or not removed within the time specified by the regulations.

♦ 2.1.1 • 1. INPUTTING, CHECKING, RECORDING, PRINTING OF THE MANIFEST

The consignees or the airline companies responsible for the cargo, acquire the manifest either on terminals installed in their premises (if the volume of work justifies it) or on standard terminals (self service).

The data to be acquired can be broken down as follows :

▲ data concerning transport :

. transport method code,

. consignee code,

. trip code,

. arrival date,

. etc ...

▲ data concerning the transport document :

. loading location,

. transport document number,

. shipper's name and address,

. name and address of actual consignee,

. name and address of notified entity ,

. marks and numbers of packages,

. kind of goods,

. weights,

. etc ...

The system checks the validity and compatibility of the information.

Once there are no more errors, the manifest is logged in the legal sense of the term.

The recording, caused by the validation of the manifest, must occur within a certain time according to the regulations. The manifest is printed once it has been validated.

The statistical number is assigned automatically by the system.

The recorded manifest can be re-printed upon request ; it can be consulted for the counter check and for the check on the manifest of the cargo, which is mandatory.

Before its validation, the manifest can be altered by the user as many times as he wishes.

However, once it is validated *(logged)*, it can no longer be altered except by customs.

◆ 2.1.1 ● 2 Acquiring the counter-check findings

Corrections come either from requests from consignees who can corroborate acquisition errors, or from records of excess quantities or storages found during unloading or receipt in the warehouse.

In any case, modifications must be covered by official documents with statistical numbers according to the type.

The code of document's type - record of proceeding, alteration request, etc ... - and the statistical number of that document must be entered into the computer by the staff in charge of the manifest in order to avoid any possible objection afterwards.

It should be noted that warehouse shortages are handled in the same way as shortages on the manifest by the preparation of a record of proceeding obtained by computer.

◆ 2.1.1 ● 3 Discharge of the manifest by customs declarations

Each transport document constitutes a consignment which may be covered by one or several declarations - overall or partial customs clearance.

Each declaration indicating the community transit procedure appli-

cable to the goods, discharges the bill of lading - or the airway bill - of the manifest to which it refers.

The discharge may cover different units :

▲ either the number of packages, when packaged merchandise is involved,

▲ or weight or volume when goods in bulk are involved.

This discharge takes place as the consignment is released from the bonded warehouses or customs clearance areas, after the removal slip is issued.

In case of emergency, it may happen that the customs service grants authorization for unloading and removal of goods before the recording of the manifest.

In this case, the declarant at customs prepares a prior import declaration without discharge of an earlier transport document to cover the operation.

When the manifest is being recorded, the transport document is automatically discharged with the type of statistical number of the prior import declaration.

It should be noted that, in SOFIX, only removal account holders have access to this type of procedure.

♦ 2.1.1 ● 4 Manifest discharge by automatic lodging

A customs procedure must be assigned to each consignment within the prescribed time which follows its arrival.

On that day, if no customs declaration has been recorded, the goods

are automatically lodged by the computer, which discharges the manifest.

A warning will be printed to be send to the consignee of the goods.

Each day, the system prints the list of all offending consignments, in order to enable the service to take the necessary measures.

When the office manager finds that the goods have actually been moved into the automatic storage warehouse, a transaction enables to acquire the transfer and to update the warehouse registers.

The same procedure applies for goods which are declared but not removed within the time-limit.

◆ 2.1.1 • 5 Printing the discharge manifest

The discharge manifest is fully printed along with all the discharge steps, i.e. the document type and the document number, in order to be filed for any later investigation.

■ 2.1.2 Export manifest management ─────────────────

The computer processing of the export manifest is similar to the computer processing of the import manifest as for acquisition, checking, recording and printing.

The difference is in the order of carrying out the customs operations ; the declaration is recorded before the manifest, and the manifest discharges the export declaration.

The export manifest is recorded after the ship's departure and the system continues with the discharge of the declaration based upon the transport document number.

A report setting down the non-discharged consignments is printed as soon as the manifest is validated.

■ 2.1.3 WAREHOUSE MANAGEMENT

For all transport modes (sea, air, rail, road), the goods must go into a bonded warehouse or a customs clearance area until an appropriate customs procedure is performed.

Only emergency removals can be exempted from passing through a warehouse.

The system provides for the physical management of the goods in the warehouse. For this purpose, screen-keyboards (consoles) are installed in the warehouse - one console per warehouse.

◆ 2.1.3 ● 1 ENTRIES

On entry into the warehouse, the warehouse manager notes the excess quantities and shortages in his copy of the cargo manifest, because there may be differences between the recorded manifest and the physical entries.

To constitute his register, the employee introduces the data corresponding to the physical entries on his terminal.

The comparison of the two documents (manifest and register), performed by the computer, creates a jointly corroborated bill of lading in case of difference.
Only this bill of lading, jointly corroborated by the carrier, the employee and customs makes it possible to establish the findings of

excess quantities or shortages, a copy of which is sent to the department in charge of the manifest management, in order to update it.

◆ 2.1.3 . 2 Exits

At the end of the customs clearance circuit, the declarant reports to customs with the removal slip, signed by the customs officer in order to take away the goods.

Customs terminals acquire the data from the removal slip, i.e. :

▲ declaration registration number,

▲ number of packages removed.

This transaction proves that the declaration has definitely gone through all the customs clearance circuit working stations, i.e. :

▲ deposit of the declaration at the admissibility counter,

▲ physical examination of goods or admission under the assumption of compliance,

▲ payment of the calculated amount, removal slip issued.

In case of anomaly detected by the system, the exit of the packages is postponed.

In this case, the declarant is required to report again to the customs officer for regularization.

Once the exit is accepted, the validation of the transaction actuates the definitive discharge of both the manifest and the warehouse inventory.

♦ 2.1.3 . 3 Checking goods in the warehouse

On the console screen, one can check the inventory of goods in the warehouse and request the corresponding print-out.

2.2. Processing declarations

From the detailed declaration acquisition, with assignment of the appropriate customs procedure, until actual removal of the goods, the system performs the following functions :

- checking acquisition,

- automatic recording and printing,

- checking declaration lodging,

- processing inspection findings,

- recovery of duties and taxes

- input of goods removal

■ 2.2.1 Input, checking, recording, printing of declaration

♦ 2.2.1 . 1 Input

Using his commercial file and coding document [1], any declarant keys in the information necessary to prepare a declaration, that is :

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▲   Data concerning the general information of the declaration :

type of declaration,

forwarding agent number,

list number,

name and address of actual consignee,

etc ...

▲   data concerning the goods, i.e. :

. manifest number,

. loading location,

. transport document number,

. number of packages, etc ...

▲   data concerning financial payment, i.e. :

. payment method,

. transferable value,

. foreign currency,

. contract type,

. freight-insurance costs,

. commissions, etc ...

---

(1) The coding document is an internal document of the shipping agent, facilitating the acquisition of data, in particular data requiring coding before acquisition.

In this latter case, the system provides users with the possibility to consult reference tables (example : ship codes, country codes ...), either directly on the console screen, or in lists, updated and printed, upon request, on the site

▲ data concerning the item. i.e. :

. tariff heading,

. invoice value,

. country of origin, etc ...

♦ 2.2.1 ● 2 CHECKS

Gradually, as data acquisition is being carried out, the system performs validity and compatibility checks, referring to the various files stored in memory, and performs various functions of monitoring, discharge and calculation.

1) Monitoring temporary export and import procedures.

Placing in warehouse storage, temporary admission and transit require particular monitoring :

    ▲ during acquisition of the corresponding declaration, the declaration is automatically entered into a special register for monitoring conditional reliefs,

    ▲ during acquisition of the declaration of regularization, reference is made to the corresponding earlier declaration,

    ▲ the system then checks that such earlier declaration actually exists in the corresponding register and then discharges the earlier declaration,

    ▲ periodic printing of the conditional relief registers enables checking the content.

2) Application of foreign trade regulations as well as calculating and totalling the duties and taxes by using the integrated

tariff *(further on in 2.3)*.

3) documentary discharge of the manifest :

▲ by acquiring the manifest number, the loading location and the transport document number, the number of packages declared is allocated to the bill of lading corresponding to the manifest.

4) removal account :

▲ in case of a declaration with a credit for duties payment, the system checks the existence of the credit, the compliance with the specifiedtime limit and the outstanding credit.

▲ if the specified time limit is overstepped, the declarant's declaration cannot be validated.

▲ in case of insufficient outstanding credit, only declarations with payment in cash are authorized

5) authorizations prior to import :

▲ reference to authorizations prior to import *(licences)* are inputed.

All these data are transmitted, by magnetic support to Foreign Trade Department ; they also include the content of the declarations.

◆ 2.2.1 ● 3 Validation

When the system no longer detects any collectability error, it displays the calculation and the list of documents required by the regulations.

The declarant can validate the declaration and this automatically leads to its registration in the customs.

Validation triggers the automatic declaration selection module - this is equivalent to preselection in the manual procedure - and if necessary, rates the inspector.

There are three kinds of selection :

▲ the so-called "mandatory selection" because the regulations provide for complete inspection of certain products.

▲ the so-called "calculated selection" because the customs service can choose various selection criteria, i.e. :

. tariff heading,
. origin,
. country consignment,
. consignee,
. customs forwarding agent,
. customs value
. etc ...

▲ the so called random selection because its determination doesn't depend on any criteria related to the declaration, but on a calculation algorithm.

Selection criteria are confidential : they are determined and updated by the local or central customs service.

When validated, the declaration is printed on the declarant's tele-printer.

The single declaration document set includes :

▲ the first copies which form a file for the attached documents. These remain filed at customs and may be used for later checks and investigations.

▲ the removal slip *(or the loading slip)*, turned over to the decla-rant after inspection and after payment of any duties. It is used to take the goods out of the warehouses an is turned over to the cus-toms services.

▲ The calculation sheet, turned over to the declarant for payment of duties and taxes.

▲ One customs duplicate, kept by the declarant for his own needs.

The declarant is to attach all the documents to the file, i.e. :

. invoice,
. circulation certificate,
. prior import authorization ...

Furthermore, he must sign the declaration before depositing it at the admissibility counter, within the set time limit.

■ 2.2.2 Checking the lodging of the declaration ———

The declaration together with all its documents duly signed, is deposited at the admissibility counter.

The customs officer can use a transaction which enables him to take note of the depositing of the declaration while checking the time limit between vali-dation and depositing.

The admissibility, specific to the declaration, is checked out by the system so the customs officer has only to check the presence of the attached docu-ments and their validity with respect to the declaration.

■ 2.2.3 Attributing of the checking of the declaration to a customs officer ———————————

The customs office manager is responsible for updating the inspector file and for the rating parameters.

During acquisition of the inspection results, the system checks the concordance between the designated inspector and the one who has performed the inspection.

A report of differences found is printed out periodically.

■ 2.2.4 Inspection findings ————————————

Once the inspector receives the declaration, he can query the system to know the reasons for the selection.

Nevertheless, the customs officer can carry out his inspection in different ways or he can immediately issue the removal slip *(if payment has been made)*.

If the customs officer discovers any anomaly on one of the elements of the declaration, he uses a transaction which enables him to recall the litigious declaration and to alter the erroneous information.

The declaration will then again be subjected to the integrated tariff checks in order to calculate the duties and taxes actually due, as well as any documents which may be required.

Whether the declaration is actually verified or whether there is a pro forma admission, the inspector must communicate the result of his check to the system i.e. :

- removal slip issued or not,

- admission under the assumption of compliance,

- recognized as being in compliance,

- inspection performed,

- false declarations,

- possible litigation.

■ 2.2.5 Recovery of duties and taxes

Duties and taxes are collected after the inspection in the case of declarations for immediate payment.

This application is the subject of a specific chapter further on, "Recovery Management" (see chapter 2.4.2.).

■ 2.2.6 Removal of goods

After collection of the amount calculated for immediate payment and after the removal slip has been signed, the declarant reports to the warehouse to remove his merchandise.

The warehouse supervisor uses a transaction which enables him to make sure that the declaration has gone through all the customs procedure work stations, i.e. :

- admissibility,

- inspection,

- cashier's office,

- removal slip, ...

by simply acquiring the number of the declaration concerned.

If the declarant has omitted a step, the system immediately signals it and the exit of the goods must be forbidden.

In the most frequent cases, when the declaration fully complies, the service must verify that the quantity, marks and numbers of the packages comply with the quantity, marks and numbers of the package coming out.

Once the physical exit transaction is validated, the system performs :

- the physical discharge of the manifest,

- the physical discharge of the warehouse.

2.3. INTEGRATEd TARiFF ANd TAblES

The system is founded on a single data base, accessible to all users either by real time queries, or by updated lists.

These data concern :

- tariff,

- companies

- tables.

- ## 2.3.1. INTEGRATEd TARiFF

◆ 2.3.1 • 1 Principles

In order to be totally automated and safe, the computerized customs clearance system must have an integrated tariff, that is :

▲ an item list, based on the harmonized system, able to be specified for reasons of national statistics or regulations.

▲ a tax rating for each tariff heading whatever customs procedure is requested.

▲ a regulation for each tariff heading enabling a control of foreign trade.

Once the integrated tariff is loaded into the system, for each declaration the computer can :

▲ automatically apply the regulations,

▲ display on the screen the list of documents to be attached to the declaration,

▲ automatically calculate the duties and taxes due.

◆ 2.3.1 • 2 Description

There are two versions of the integrated tariff :

▲ external tariff :

. the external tariff is only used for managing the updating of foreign trade and taxation regulations.

. only the "integrated tariff" team employees are authorized to

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modify the data.

▲ internal tariff :

. the internal tariff is used for real time *(on-line)* processing of the situations arising for users during the preparation or recalculation of declarations.

. all updates are logged in a historical base, that enables regularizations of the temporary import and export procedures.

. the transfer of external tariff updatings to the internal tariff takes place automatically by taking into account the upcoming of new regulations.

The new regulation will automatically be applied at the chosen date.

✦ 2.3.1 ● 3 Tariff initialization

The initial constitution of the tariff is based on a first specific customs job :

▲ To bring together all the documentation concerning tax rating and to foreign trade regulations, issued by the relevant government departments

▲ To integrate this heterogeneous information into a homogeneous tariff hard copy, that is, the tariff for the use of the paper integrated tariff.

It is only when an integrated tariff on paper is available that it will be possible to input all the data with the aid of appropriate lists.

The minimal time necessary for a team of customs officers to complete such a job is estimated at : 8 to 18 months.

So, it is absolutely essential, *(from the very beginning of the project)*,

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to establish an "integrated tariff" team that will work during the whole system setting up period.

Afterwards, this team will assume the integrated tariff management, i.e. : the keeping up to date of tax rating or regulations.

Four or five customs officers with very good knowledge of the nomenclature problems of the items covered, tax rating and regulations should be seconded full time within this "integrated tariff" team from the very beginning of the project work.

They will receive technical training, enabling them to integrate the tariff to be used.

■ 2.3.2 Tables

Permanent data, other than data related to the tariff, are managed in tables of reference, accessible to users, either :

- directly on console,

- or on hardcopy lists, printed locally.

They are updated in real time by the "tariff" group using specialized transactions.

The main user tables concern :

- countries,

- foreign currencies [2],

- ports and airports,

---

(2) The foreign curency table will be updated daily

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- associated documents,

- types of declaration,

- admissibility procedures,

- calculation procedures,

- users,

- operators,

- customs officers,

- etc ...

2.4. REVENUE MANAGEMENT

■ 2.4.1 ACCOUNTING PRINCIPLES

Customs duty accounting follows the usual procedure for direct taxes, i.e. :

- assessment,

- recovery and allocation.

Assessment makes it possible to ascertain the duties, recovery involves crediting the customs revenue account and allocation consists of budgeting the revenues by allocation to the recipients :

- budget of the state,

- accounts outside the budget.

An ascertained duties report is issued periodically, indicating the initial assessments, the alterations and the recoveries.

These date, despached by office, enable monitoring the activity of each one.

2.4.2 RECOVERY MANAGEMENT

◆ 2.4.2 • 1 GENERAL PRINCIPLE

The recovery of ascertained customs duties on the basis of declaration processing is performed by the Collector or under his responsibility.

The declarant reports to the cashier's office, with the calculation sheet and the means of payment (cash, check, other document, etc ...).

By consulting the terminal, the Cashier's Office makes sure that the declaration has gone through the prescribed circuit and that the means of payment corresponds to the calculated amount.

Entry into the terminal the means of payment and its corresponding amount(s) produces a receipt printed.

The removal account creditor reports with the grouped calculation lists which he wishes to pay and the corresponding means of payment.

The Cashier consults the terminal, checks that the amounts match the means of payment presented, and enters the amounts paid by method of payment

The system updates the removal credit, discharges the ascertained

customs duties and issues a receipt.

The data are as follows :

- ▲ identifier :

  number of calculation or deposit slip list,

- ▲ data :

  . means of payment,
  . payment amount,
  . references

◆ 2.4.2 ● 2 UNUSUAL CASES

Some special cases and practical measures must be detailed in the functional analysis :

- ▲ authorized means of payment :

  . cash,

  . checks *(bank or postal)*,

  . secured bonds,

  . credit memoranda,

  . etc ...

- ▲ Multiple payments.

- ▲ Staggered payments.

- ▲ Partial payment.

- ▲ Creation, renewal, cancellation of a secured bond.

◆ 2.4.2 • 3 Reports produced

Periodically, the system provides reports for monitoring debts from their creation until their extinguishment :

- ▲ following up of debt creation,

- ▲ daily summary of revenues recovered,

- ▲ permanent record of revenues,

- ▲ late payment report (daily),

- ▲ outstanding payments (monthly)

■ 2.4.3 Removal account management

The collector is in charge of the initialization of the removal account ; he uses a specific transaction for that purpose.

The system manages the removal account balance by keeping accounts on the following credits or debits :

- ◆ initialization of payment equal to credit

- ◆ declaration processing equal to debit

During the declaration processing, the system checks that the calculated amount is less than the removal credit balance.

If this is not the case, the declaration cannot be validated without selecting

other means of payment *(immediate full payment)*.

In case of payment in arrears, the removal account creditor has no access to the declaration validation until the situation has been regularized.

If the calculation amount is less than the removal account balance, the corresponding debt assessment is taken into account.

In real time, it is possible for the removal account creditor to consult the list of calculated duties and taxes and to select those he would like to pay for, before they become due.

The system calculates the total amount to be paid and, upon request, prints out the corresponding payment list.

2.5. OTHER APPLICATIONS

In addition to the main applications - goods physical and machine acquisition declaration processing and revenue management-, the system manages the following applications :

- computerized customs fees,

- statistics,

- fraud suppression assistance.

■ 2.5.1 COMPUTERIZED CUSTOMS FEES

The processing of the declaration may induce the collection of a special fee justified by the rapidity, fiability, security, etc....of the system.

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The processing of computerized customs fees is similar to that of recoveries. The functions involved concern :

+ determination of its amount :

  . the system calculates the amount of the computerized customs fees during declaration validation.

+ input of payments :

  . a transaction, for the office concerned, allows the input of the payments : amount and means (cash, credit...)

+ monitoring of outstanding payments :

  . an outstanding payment report is printed out by the system.

■ 2.5.2 Statistics ――――――――――――――――――――――――

In most countries, the foreign trade statistics reports are printed out periodically by the Customs and Indirect Taxation Head Offices.

They include the following selections or breakdowns :

+ special or general trade,

+ country of origin,

+ country of consignment,

+ country of destination,

+ type of product (digit tariff heading),

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- quantities *(gross weight, net weight, complementary unit)*,

- values *(FOB, CIF)*,

- preferential systems *(temporary, exoneration etc...)*,

- etc ...

Furthermore, the Customs and Indirect Taxation General Head Offices can supply on magnetic support copies of statistical information to any authorized user, while maintaining the usual conditions of confidentiality.

■ 2.5.3 Fraud tackling assistance

Computerization has a very important role in helping to tackle fraud.

The two aspects consist of improving the functioning of customs clearance operations and providing assistance to the Investigation Division, by automatic archiving with possibilities of fast query.

◆ 2.5.3 • 1 Operating improvement

Monitoring of goods by the manifest, and the declarations of the goods coming out of the warehouses makes it possible to verify that all the goods discharged are definitely covered by a declaration for a warehouse exit.

The main financial data listed on declaration enable following up the exchange controls.

Calculating the duties by using an integrated tariff eliminates calculation and currency conversion errors.

Monitoring conditional reliefs and conventions between Administration and companies substantially limits the abuse of preferential systems.

Monitoring the declaration circuit provides better supervision of compliance with procedures.

Automatization of all systems improves monitoring of all conditional relief or provisional systems along with corresponding schedules.

Suppression of manual procedures avoids errors and "excessive" fast removals with no mutual guarantee.

◆ 2.5.3 ● 2 Assistance to the Investigation Division

The archiving of the declarations and the related operations help constitute an historical background easy to consult.

Access criteria may be :

▲ declaration number,

▲ shipping agent number,

▲ consignee number,

▲ tariff heading,

▲ customs procedure,

▲ date,

▲ country of origin or country of dispatch,

▲ or any combination of the above criteria.

CONCLUSION

The UNIX & ORACLE based SOFIX (Computerized International Freight System) was designed for real-time operations, that is to say at the same pace as the customs clearance procedure.

Information and data acquired at the various stages make it possible to ascertain at any time the point reached in the customs clearance operations while simplifying the procedure and ensuring an improved regularity and control of the operations.

S.O.F.I.X. offers a unique opportunity for improving the Customs Services efficiency, giving the most up-to-date basis for a reorganization of customs procedures and services.