XV CONFERENCIA ANUAL DE LA ORGANIZACION
INTERNACIONAL DE COMISIONES DE VALORES (OICV - IOSCO)

SANTIAGO - CHILE 1990

"MARKET AUTOMATION AND ITS IMPLICATIONS FOR REGULATORY ACTIVITIES"

by the
Development Committee
of IOSCO

October 9, 1990

International Organization of Securities Commissions
Development Committee

Working Group 1: "Market automation and its implications for Regulatory activities"

Final Report

Contents

Working Group integrated by Korea, Mexico & Taiwan

October 9, 1990

Chapter one: Introduction.

To comply with the goals set up by the Venice Conference, the working group integrated by Korea, Mexico and Taiwan designed the guidelines and strategies in order to follow an adequate development pattern in the automation process of securities markets.

After setting forth the objectives, the working program and the project definition, the diagnosis stage was prepared designing the methodology, questionnaires and gathering programme. Comprehensive questionnaires were sent to countries with emerging markets.

Additionally, the working group agreed to start designing a model of automation for the trading process.

This final report contains the diagnosis results of the survey. These results identify the degree of automation for both stock exchange and securities commission. These survey's results also facilitate the understanding of the elements involved in the whole process of automation phenomena. Based on them, practical solutions are proposed for an adequate development pattern to automation processes of emerging markets, even that data has not been checked by the surveyed countries.

This final report also contains the procedures for the surveillance functions as well as the model of market information system. A first draft of these proposals was presented and discussed in the Mexico meeting last may. These proposals could become the minimum standards for the automation of regulatory functions.

We are pleased to recognize the contribution towards this collective aim, from people and institutions of many countries.

The working group integrated by Mr. Tracy Cheng (Taiwan), Mr. Whang, Kyoung Teck (Korea) and Mr. Andres Viesca (Mexico), hopes to be able to achieve the main aims set at the Venice Conference and to contribute to the success of the Santiago Conference and its future goals.

Objectives and working program.

This section contains the objectives and programs of the working group to address the subject of market automation and its implication for regulatory activities.

General objective: to achieve concrete results related to the development pattern of the automation processes in the emerging securities markets.

Milestones:
-to obtain an adequate exchange of information about securities operations among the emerging markets;
-to set international minimum standards for markets automation among emerging markets;
-to strengthen local regulatory authorities by means of implementing practical solutions.

Working program.
It was proposed to set a working schedule composed by four stages:

-Project definition. The project definition was primarily oriented in the design of the working group program. Secondly, the planning and design of the research survey was conformed. An instructive and questionnaire in english and spanish version were designed as a basic instrument for the diagnosis goals. They were reproduced and sent to 33 countries with emerging market (Annex 1).

-Diagnosis. Learning about the automation infrastructure of the emerging securities markets would allow the working group to fulfill one of the principles established in the Venice Conference regarding the promotion of an adequate development pattern of the automation process of securities markets. The diagnosis stage was to know the current level of automation in securities operations, as well as the infrastructure capacity to absorb new technologies.

-Strategy. Once the diagnosis stage was completed, the working group members will propose a strategy to present practical solutions.

-Implementation. Once the study and its recommendations are approved, the development committee shall determine the implementation strategy of the practical solutions to be adopted.

Chapter two: Trading Process Automation.

2.1. Diagnosis.

2.1.1. Planning issues.

The role of securities commissions in the automation process needs to consider not only the regulatory aspect but the promotion of the modernization trends for a better financial system as a whole.

Regulatory bodies are recommended to be present in the process of planning, designing, developing and operating the securities market system, to ensure market efficiency, financial system stability, and investor protection and confidence.

To have an optimal technical solution of a fully-integrated computerized and paperless system for the securities market depends on the planning exercise developed. In that sense, only two commissions surveyed, Argentina and Chile, notified that the stock exchanges of their countries had reached this optimal technical solution. This represents the 10 percent of the total sample. Thus, planning function is questioned for the countries of the remaining 90 percent. However, Buenos Aires stock exchange actually reached only 50 percent of average automation degree for all the activities in the trading process. In the case of the Chile stock exchange, the average automation degree is almost 80 percent and in the Comercio de Santiago stock exchange, accounts for 40 percent.

To determine if policy makers have actually accepted the responsibility for automation of the markets, the securities commissions were asked if there exist legislative actions to promote the automation in the securities industry of their countries. The Chile stock exchange and the Costa Rica stock exchange denied that legislative action had set forces in the promotion of automation in the securities industry of their countries and they have reached an acceptable automation degree in the global trade process. The Korea, Taiwan and Malaysia stock exchanges have responded to the influence practiced by legislation to the promotion of automation and this reflects in the global automation degree reached.

Policy makers need to promote the participation of all actors involved in this modernization movement. This is the case of the securities commissions of Argentina and Korea. They established by law a committee to coordinate and to undertake the automation process of the securities industry in their countries.

The experience of the Korea securities market shows that one of its key features was the development of a strategic plan to introduce I.T. to the trading process. This plan was set up as one of the fundamental parts of the global scheme to develop the equity market in Korea. A similar example could be the case of the Costa Rica market.

I.T. planning has to take the dynamic market evolution into account. The aim should be to link systems planning and the strategic business planning of securities markets, and trends within the securities industry.

In the case of the Taiwan stock exchange, its system was released after a short time of development, without considering in the design, the plan of the subsequent market growth. Actually, electronic data processing (EDP) people, are afraid of a system down, mainly due to its terminal-computer connections architecture, which has adopted constant variations in order to follow the unexpected growth acceleration.

Technical assistance in planning could order the process of I.T. application in emerging markets, avoiding costly and useless efforts.

Sources of I.T. advisory could be conformed by international organisms, national initiative, I.T. industry, stock exchanges, international consultant firms, and academic institutions.

International I.T vendors have been doing a great effort in structuring planning approaches to help the introduction and application of I.T. It is important to consider that these methodologies lead mainly to the acquisition of their products, rather than to the best solution of the particular securities market's needs.

Stock exchanges from emerging markets are actually providing advisory services to other securities markets. The Sao Paulo stock exchange is counseling the Portugal and Venezuela markets . The Taiwan stock exchange is advising the Philippines one and the Korea, the Malaysia one.

I.T. introduction produces a relevant time and cost saving in the operation of securities market. Automation of the trading process, avoiding repetitive manual functions, results by itself in the efficiency of the securities industry.

Emerging markets have supported the above mentioned evidence. All of the samples surveyed answered that in fact, modern computer programs could lead to the improvement of the market in terms of efficiency, lowering the time and cost of the trade operation. These savings, could rise the level of maneuver in market competitiveness.

2.1.2. Market design.

In regard to market efficiency, regulators in a new environment of automated trading process, need to stress their attention from the planning stage to the actual operation of the following elements of the trading process:

-adequate capacity
-price determination
-information dissemination
-market access
-market integration
-financial system stability
-market surveillance

Adequate capacity.

The volume of the trading task is likely to be the main factor which has primarily originated the introduction of I.T. to the marketplaces.

In emerging markets, only in a few countries like Brazil, Taiwan, Korea, Thailand and Mexico, the automation process has been justified in relation to the level of trading volume.

Trading task in terms of functioning must have enough capacity to handle peak transaction loads. Computers must be adequately sized and prepared in order to deal with a critical environment of trading task. This means the I.T. service which supports the trading task, can not stop at any time throughout the session. A fault tolerant architecture has been adopted by the Taiwan, the Korea, the Malaysia, the Sao Paolo and the Mexico stock exchanges in their I.T. infrastructure.

In the survey, 20 percent of the sample stated to rely on a fault tolerant architecture, while the 48 percent notified to operate on an orthodox basis. The rest, 12 percent on PC Server, 4 percent, Microcomputer and 12 percent, none. If these results are crossed with the daily average number of transactions, it can be seen that the Sao Paolo, Taiwan, and Korea stock exchanges with fault tolerant architecture have the most important volume traded. In the case of Rio de Janeiro and Thailand, the volume of transactions per day asks for a fault tolerant architecture and they are on an orthodox basis, while the Mexico stock exchange is automated considering a fault tolerant architecture and the number of transactions per day are occupying the sixth place within the sample.

Price determination.

Price discovery refers to the process by which a securities market attempts to establish transaction prices. Markets might be designed and regulated so as to improve the quality of price determination.

I.T. introduction in the price determination function, is specially complex since each method requires different software solutions to computerization. There are two options for continuous markets: continuous price auction and market making. For call markets, a single price auction.

In the emerging markets environment, few experiences have applied I.T. in the price determination procedures. Those which have reached full automated price determination process are the Korea, the Santiago and the Sao Paulo stock exchanges. Whereas the Santiago stock exchange adopted a single price auction method, the Korea designed its stock market automation trading system, combining two price determination procedures: single price auction and continuous price auction. Lastly, the Sao Paolo stock exchange is operating through a continuous price auction method with a similar pattern of CATS price determination procedure.

Although some stock exchanges answered in the emerging markets' survey, certain automation degree in this procedure, price definition is not carried out electronically. They use I.T. support equipment and devices to get access to historical price basis and then establishing the price by a traditional auction mode. Examples of this case are the stocks exchanges of Colombia, Costa Rica and Malaysia.

In the survey, 24 percent of the sample answered that the price determination process was automated. Sao Paolo, Chile, and Korea are 100 percent automated in price determination, whereas Colombia and Costa Rica in 80 percent and Malaysia in 50 percent.

Information dissemination.

Information dissemination refers to information about prices, bids and offers from current trading levels and their amounts in the market arena, to be provided equally to different classes of market participants and in similar time frames.

Market information system in the emerging markets is the highest automated stage of the trading process. However, in most cases, domestic electronic coverage of market information is supported by a severely limited telecom infrastructure; whereas these markets have an adequate international electronic coverage through foreign information vendors.

In the case of market information system, 64 percent of the sample in the survey stated that it was automated, 44 percent answered the system was at 100 percent of automation level. However, in terms of communication ports it can be seen that only 12 percent of the whole sample has more than 400 ports, 16 percent between 200 to 400, 4 percent between 150 to 200, 20 percent from 10 to 50, 16 percent less than 10 and the 16 percent, none. This fact seems to reflect that even when the market information system is the first priority in the automation process, information dissemination is not considered in terms of communication devices, and additionally, only the market information system from the Rio de Janeiro stock exchange communicates program to program whereas 24 percent of the total sample has terminal emulation as teleprocess roll and only two stock exchanges have file transfer; 36 percent of the sample uses OLTP teleproc. roll for their market information system.

53 percent of the sample answered that the market information system was providing information of trade for all participants, 29 percent said that it was not the case, and 18 percent did not answered. A greater stress should be given to information dissemination.

Electronic market information dissemination depends primarily on the basic design features of the trading system; the system could be structured as a call, a continuous, or a mixed market. Between them, there are certain distinctions in how traders can observe the behavior of bid and ask quotations, transaction prices, and trading volume over the course of the trading day. In continuous trading, for dealer markets (quotation-based systems) this information on current market conditions is not as open as in the auction markets (order-based systems).

In call markets, floor information is not even available to traders in the market session. Traders are less certain about the prices at which orders will transact. Bid and ask quotations are not revealed until the market is called.

There are many examples in which emerging markets are introducing order-based systems resembling automated auction markets; some examples are placed in Taiwan, Brazil, Portugal, etc. An experience in electronic call market is the Santiago one with the Telepregon system.

Mixed markets are designed as a mixture of continuous and batched trading. They can operate as a continuous or as a call market, depending on the trade operation level and the opening procedures. Since the Korea stock exchange is actually operating with a single and continuous price auction, this market might be considered as a mixed market.

Today's technology makes possible to disseminate, equal and immediate market data, for all market participants through information vendors. Information vendors of market information have been organized and are operating quite separated from the exchanges. This has not generally occurred in the emerging markets. One of the exceptions being the Korea stock exchange. Korea's market founded an independent company with the specific function to disseminate information.

Market access.

From order collection to order routing, systems need to be designed to permit access to the market to all participants.

In the emerging market experience, in Asian markets such as the Taiwan and the Korea stock exchanges, those systems seem to be the first application of I.T. used in the trading process. For both countries, order entry, routing and market information systems, were the first application of I.T. in the trading process. Conversely, only few examples from the latin american exchanges, may account for the automation of those stages of the trading process: the Costa Rica, the Santiago, and the Sao Paolo stock exchanges.

Furthermore, 65% of the surveyed stock markets stated that the access to the market of all participants is adequate and equitable and only 47% affirmed that their market information system is at present disseminating trade information to all participants.

24 percent of the sample is automated in order entry, and only the Rio de Janeiro, Taiwan and Korea stock exchanges have a 100 percent automated order entry. The commissions surveyed answered that 65 percent of the access to trading market by investors is adequate. 24 percent stated it was not and the remaining 12 percent gave no information. The last fact was considered from the questionnaire intended to the commissions showing that automation in order entry is not given the importance in terms of opportunity and speed to execute the transactions.

Market integration.

A form of market integration could be the application of I.T. to support electronic linkages among certain marketplaces, to standardize the price either by consensus or by quotation matching as implicit arbitrage.

In emerging markets, countries like Brazil, Colombia, Costa Rica, Nigeria and Chile have more than one different local or regional stock exchange or other fragmented market systems. They need to consider in planning measures greater market integration through quotation and confrontation systems, to avoid arbitrage problems. I.T. will help them to become integrated in a national market system.

From the sample, only Argentina and Brazil (Rio de Janeiro) stated to have automated market linkages. The Rio de Janeiro Stock exchange declared that this process is automated in a 100 percent level, whereas Argentina only 25 percent. This fact means that countries like Colombia, Chile and Nigeria with more than one stock exchange are lacking automated linkages for information dissemination as well as arbitrage functions in terms of same price for the same stock in every marketplace.

Securities automated packaged systems condition the future linkages to other markets. This is true because they are designed as fully automated systems, providing the support for trading through remote terminals around the world. There are two major design models: CATS and NASDAQ.

The CATS system allows for international trading linkages with other exchanges and financial institutions. In emerging markets, there are examples like the Taiwan, Sao Paolo, Korea stock exchanges, etc.

NASD market is actually providing technological assistance in OTC projects to some countries as Taiwan, Brazil, etc.

Financial system stability.

Increasing securities operations should result in the necessity for automating backoffice systems to reduce risk in data handling, data input, data transmission and in certain cases, certificates depository. The I.T. introduction in backoffice environment also leads to competition among intermediaries, having to increase their capacity and improve their efficiency.

In the emerging markets, a relevant experience is the Korea stock market which designed and developed electronic backoffice systems, in parallel to those of the stock exchange, resulting in a complete integration for the whole trade process.

From the survey, it can be seen that telecommunications infrastructure has to be stressed in most of the emerging markets since only 12 percent of the sample has more than 400 ports; 32 percent has Front End Processors, Taiwan with 58 followed by Sao Paolo stock exchange with 9. Related to the transmission facilities, Chile and Nigeria answered to have satellite communications, and 56 percent of the sample are relying on leased lines. No stock exchange considers fiber optics, public data net, or wats.

One of the main objectives to ensure the stability and the soundness of the financial system within the financial policy in developing countries, is a safe and efficient clearing and settlement stage of the securities processing cycle.

In the emerging securities markets, the clearing and settlement stage, represents the second procedure more automated in the sample of emerging markets survey. Eventhough less than 50% has reached a certain level of automation: Argentine, Korea and Mexico are the only three countries with a high degree of I.T. application in this process.

56 percent of the sample answered they were automated in the clearing and settlement process. 36 percent stated that the level of automation was 100 percent. An interesting feature is that Taiwan stock exchange declared a level of 20 percent in automation of this process, being very advanced in the other stages of the securities processing cycle and the chilean stock exchanges are automated in 0 percent in terms of this phase. When the commissions were asked about the automation level of the clearing and settlement process, Argentina and Mexico answered that it was high (12 percent), 24 percent answered it was medium, 29 percent stated that low, and 35 percent answered there was no automation effort in this process.

Considering the total elements involved in the clearing and settlement cycle, (intermediaries back offices systems, comparison, and clearing and settlement systems). The emerging securities markets sample has shown a tremendous imbalance in the level of automation in those elements. After the market linkages stage, order entry represents the less automated stage in the securities processing cycle.

The Costa Rica, Chile, Taiwan and Korea securities industries, have actually automated this procedure. The Costa Rica and the Korea stock exchanges have integrated in electronic mode, all the elements which conform the clearing and settlement cycle.

The stock exchanges with more automated integration in the trading process, like the Taiwan and the Chile ones, are not computerized in the stage of clearing and settlement. This may result in the eventual disruption of the trading process. The Chilean experience could become critical in the event of trade growth.

2.1.3. Investor protection.

The following objectives increase investor's protection and confidence: equal access and market data for all participants, fair treatment in order priority and pricing, control of speculative market movements and insider trading abuses.

Order priority and pricing.

This function should guarantee fairness by recording the time of entry into the trading system of every bid and offer. Execution of orders should take place in strict order of arrival within each price, regardless of size. Additionally, this function should guarantee adequate treatment by assuring fair price applied to the small investors, as well as preventing the market from artificially affected prices.
The emerging securities markets survey reflected 76% of the stock exchanges guarantees fair treatment of client order, with regard to order priority and pricing.

Market surveillance.

This function helps to maintain fair and orderly markets for securities, detecting manipulative practices and insider trading. It investigates such practices when they appear to have occurred.

Market surveillance electronic facilities in the emerging markets are asked to be performed by the regulatory bodies; but at present only two commissions are equipped in the automated monitoring trading activities in the market: Mexico and China-Taiwan. Perhaps this function should be performed by the exchanges themselves since they are better equipped and developed in the application of I.T. in the market surveillance functions.

From the emerging markets survey, although only 35% stated to have an automated monitoring system, this fact represents a better infrastructure than that of the securities commissions surveyed. Additionally, 65% of the exchanges surveyed, have also stated to have facilities to store data, so as to allow inquiry for audit functions.

Market surveillance systems are installed in most of the developed exchanges that are self-regulatory organizations (SRO). The most high-tech application to those functions in the developed markets environment is the NASDA market.

In the emerging markets, a similar application of this technology is found in the National Securities Commission of Mexico as shown in the emerging markets survey.

Market surveillance is automated in 48 percent of the emerging markets sample, achieving 28 percent more than 50 percent of automation level. In the case of the commissions, they stated that 76 percent of the stock exchanges protect treatment of client orders and that 41 percent of the commissions has automated monitoring system whereas 65 percent of the stock exchanges has facilities to storage trading data that allow queries sample.

2.1.4. Legislative issues.

Three elements seem to be the main causes which have promoted the automation of the markets:

-Efficiency
-Strategy
-Mandatory

In some markets, the decision has not steamed from the real functional market's needs. This has been particularly true in relation with the emerging markets. Within this environment, in many cases, the initiative has been primarily mandatory but the exchanges have usually taken the decision to automate at the time they have considered suitable.

The only experience which was promoted by mandatory decision is possibly that of the Korea stock exchange; where the regulatory body has been involved in the whole market automation process. The promotion of automation in emerging markets has been mainly based on strategic factors rather than mandatory or efficiency elements. This condition seems to imply that the adequate introduction and application of I.T. and the regulatory functions which derive from automated trade, are not present in the regulators working agenda.

2.2. Preliminary recommendations.

First. To establish a domestic committee conformed by investors, intermediaries, issuers, stock exchanges and regulators to orient the automation process of the securities industry in developing countries.

Second. To pursue the integration of information technology planning in advisory services, at the level of accounting, legal, and financial consultancy.

Third. Regulators need to assess the technical reliability of functioning, taking into account peak levels of trade volume, and more sophisticated instruments and operations. Regulatory bodies also need to conduct periodically audit studies by themselves or through outside experts in order to check the systems' capacity and reliability. To also check the adequate setup of a contingency plan and disaster recovery.

Fourth. Regulatory bodies need to verify the automated solution to determine that the stocks prices are adequate from the beginning to the end of the trading session. To monitor the price discovery process, considering the method used and the computer solution applied, to identify the price efficiency and eventual price manipulation.

Fifth. Regulators need to evaluate in the automation proposals, the existence of an adequate information dissemination, for a better participation at national and international levels. The authority needs to be related with information dissemination planning as well as the extent of the operation regarding the quality of the information in terms of accuracy, frequency, coverage of distribution and fragmentation of market information.

Sixth. Regulators need to examine the adequate access of automated systems in the market, relating to current and future trade levels as well as the financial community participation. Also to prevent the existence of unstable elements (trading program).

Seventh. Regulatory bodies need to prove that the options selected for automation, correspond to the domestic and global trends.

Eighth. As to financial system stability, the regulator function should be oriented to check if systems proposals have the following features:

-Adequate capacity of intermediaries' backoffice systems.

-Electronic linkages between intermediaries and the trading floor or the electronic trading system.

-Clearing and settlement cycle. To evaluate whether the system is compatible, both domestic and global, with the actual and future processes of comparison, clearing and settlement.

Ninth. In regard to investors' protection and confidence, the regulator needs to analyze, from the planning stage, whether the exchange system proposal will perform the market surveillance tasks by itself. This condition could eventually amplify the self- regulatory functions of the emerging markets. From the survey, it may be recommended that as in developed securities markets, the stock exchanges should carry out self regulation since they are better equipped in terms of automation tools.

Chapter three: Regulatory functions automation.

3.1. Diagnosis.

3.1.1. Automation experiences.

These market trends should be the main factors to be considered when deciding to automate the surveillance functions over the trading process:

-an increasing transactions volume
-complexity of transactions
-investor protection

Automation experiences refer only to the Mexican securities commission (MSC) and the Taiwan securities commission (TSC).

3.1.2. Futures developments.

In accordance with the results of the survey, only five securities commissions sampled have presently planned to develop applications for their regulatory functions. These countries are: Bolivia (BSC), Colombia (CSC), Chile (ChSE), Turkey (TSE) and the Mexican securities commissions (MSE).

This table shows how these applications will be ready by next year:

PROC/COUNTRY	BSC	CSC	CHSE	CHIN	MEX	TSC
Order entry .		X			X	
Order routing.						
Price determin.						
Order execution	X		X		X	
Order notifica.						
Clear. & settle.	X				X	
Market inf. sys.				X	X	
Market surveill.				X	X	X
Market linkages					X	

The table shows that the development plans will enhance the order execution and the market surveillance processes. This means that those are the processes in which securities commission are most interested in. Order entry, clearing and settlement and market information systems being the second priority.

3.1.3. Automation capacity

Exhibit one shows a detailed review about I.T. characteristics of every commission surveyed. It is suitable to classify securities commissions in accordance to their own characteristics. The following table, points out five main I.T. categories:

RELATION TABLE OF CAPACITY INDEXED BY HARDWARE AND SOFTWARE COMPATIBILITY

A. ONLY PC TECHNOLOGY

COUNTRY	QUANTITY	OMPUTER	MODEL	BRAND	ACITY	SEC. ST	CAPACITY	O SYSTEM	LANGUAGE	RODUC TOOLS	OM SOFTWARE
ARGENTINA	X	PS	25	IBM	12 KB	NONE		DOS 3 3	/CL/MG/L123	NONE	NONE
BOLIVIA	1	PS	80	IBM	4 MB	1 MAG DISK	70 MB	DOS 3 3	DB	NONE	NONE
	3	PS	25	IBM	12 KB						
	1	PC	XT								
PERU	1	PC	XT		640 KB	6 MAG DISK	350 MB	DOS 3 3	O ASSEMBLER	NONE	NONE
	1	PC	AT		1 MB	CARTRIDGE	60 MB	NETWARE	IPPER/EXCEL		
								FOX	BASE/VENTURA		
									QUATTRO/WS		
PORTUGAL	2	PC	PC/IT	UNISYS		2 MAG DISK	40 MB	DOS 3 2	DBASE/LOTUS	NONE	NONE
	3	PC	PW2	UNISYS			20 MB		HARVARD/WS		

B. ONLY MINICOMPUTER TECHNOLOGY (COMMUNICATION IF SOFTWARE)

COUNTRY	QUANTITY	OMPUTER	MODEL	BRAND	ACITY	SEC. ST	CAPACITY	O SYSTEM	LANGUAGE	RODUC TOOLS	OM SOFTWARE
BRAZIL	1	MC		COBRA	1 MB	3 MAG DISK	475 MB	SOD	COBOL	SPP	
						1 MAG TAPE				SABIA(4GL)	
CHILE	1	MC	V5-45	WANG	2 MB	10 MAG DISK	600 MB	XXXXXXXX	MBLER/COBOL	NONE	NONE
									BASIC/		
CHINA (TAIWAN)	1	MC	TXP	TANDEM	16 MB	13 MAG DISK	3099 MB	GUARDIAN	COBOL	ENCOMPASS	FOX EPAND.
						2 MAG TAPE	1600 BPI				
									BASIC	VPLUS 3000	

C. MINICOMPUTER AND PC TECHNOLOGY

COUNTRY	QUANTITY	OMPUTER	MODEL	BRAND	ACITY						
COLOMBIA	1	MC	1300	TEXAS IN	8 MB	2 MAG DISK	700 MB	SYSTEM V	C/PASCAL	UNIPLEX II	
						1 MAG TAPE	8000 BPI			INFORMIX	
						1 FD1.2					
	3	PC	XT	OTHER							
	1	PC	IIC	APPLE							
EGYPT	1	MC	S/36	IBM	12 KB	1 CARTRIGE	60 MB	SSP	COBOL/RPG	NONE	NONE
	3	PS	30	IBM				DOS 3 3	LOTUS/DBASE		
MALAISYA	1	MC	100/71 41	UNISYS	8 MB	12 MAG DISK	5800 MB	EXEC 1100	SEMBLER/ADS	DMS 1100	CMS6TELCON
	23	PC	HT	UNISYS		1 MAG TAPE	6250 BPI		COBOL/PLUS	DDS	
	7	PC	XT	SANYO		3 MAG TAPE	1600 BPI				
	4	PC	AT	UNISYS							
	1	PC	386	CASSPER							
MEXICO	1	MC	AS/400	IBM	16 MB	5 MAG DISK	1200 MB	S 400	COBOL/RPG	SQL 400	SNA
						1 MAG TAPE	1600/6250				
	1	PS	80	IBM	4 MB			NETWARE	ASCAL/DBASE	IEW	NACS/NAS
	60	PS	30/55/70	IBM					BASIC/LOTUS		
									CLIPPER/WS		
TURKEY	1	MC	3000/37	H P	1 MB	2 MAG DISK	136 MB	MPE	COBOL	IMAGE 3000	DSN/LNK
						1 CARTRIDGE	67 MB		FORTRAN	QUERY 3000	
									BASIC	VPLUS 3000	

D. TELECOMMUNICATION CLASIFICATION

COUNTRY	QUANTITY	OMPUTER	MODEL	BRAND	ACITY	SEC ST	CAPACITY	O SYSTEM	LANGUAGE	RODUC TOOLS	OM SOFTWARE
CHINA (TAIWAN)	1	MC	TXP	TANDEM	16 MB	13 MAG DISK	3099 MB	GUARDIAN	COBOL	ENCOMPASS	FOX EPAND.
						2 MAG TAPE	1600 BPI				
MALAISYA	1	MC	100/71 41	UNISYS	8 MB	12 MAG DISK	5800 MB	EXEC 1100	SEMBLER/ADS	DMS 1100	CMS6TELCON
	23	PC	HT	UNISYS		1 MAG TAPE	6250 BPI		COBOL/PLUS	DDS	
	7	PC	XT	SANYO		3 MAG TAPE	1600 BPI				

	4	PC	AT	UNISYS							
	1	PC	386	CASSPER							
MEXICO	1	MC	AS/400	IBM	16 MB	3 MAG DISK	1200 MB	OS 400	COBOL/RPG	SQL 400	SNA
						1 MAG TAPE	1600/6250				
	1	PS	80	IBM	4 MB			NETWARE	ASCAL/DBASE	IEW	NACS/NAS
	60	PS	30/55/70	IBM					BASIC/LOTUS		
									CLIPPER/WS		
TURKEY	1	MC	3000/37	H P	1 MB	2 MAG DISK	136 MB	MPE	COBOL	IMAGE 3000	DSN/LNK
						1 CARTRIDGE	67 MB		FORTRAN	QUERY 3000	
									BASIC	VPLUS 3000	

E. BRAND CLASIFICATION

UNISYS

PORTUGAL	2	PC	PC/IT	UNISYS		2 MAG DISK	40 MB	DOS 3.2	DBASE/LOTUS	NONE	NONE
	3	PC	PW2	UNISYS			20 MB		HARVARD/WS		
MALAISYA	1	MC	100/71 41	UNISYS	8 MB	12 MAG DISK	5800 MB	EXEC 1100	SEMBLER/ADS	DMS 1100	CMS6TELCON
	23	PC	HT	UNISYS		1 MAG TAPE	6250 BPI		COBOL/PLUS	DDS	
	7	PC	XT	SANYO					CLIPPER/WS		
	4	PC	AT	UNISYS							
	1	PC	386	CASSPER							

IBM

S/36 COMPATIBLE IBM

MEXICO	1	MC	AS/400	IBM	16 MB	3 MAG DISK	1200 MB	OS 400	COBOL/RPG	SQL 400	SNA
						1 MAG TAPE	1600/6250				
	1	PS	80	IBM	4 MB			NETWARE	ASCAL/DBASE	IEW	NACS/NAS
	60	PS	30/55/70	IBM					BASIC/LOTUS		
EGYPT	1	MC	S/36	IBM	12 KB	1 CARTRIGE	60 MB	SSP	COBOL/RPG	NONE	NONE
	3	PS	30	IBM				DOS 3.3	LOTUS/DBASE		

PERSONAL SYSTEMS

ARGENTINA	X	PS	25	IBM	12 KB	NONE		DOS 3.3	/CL/HG/L123	NONE	NONE
BOLIVIA	1	PS	80	IBM	4 MB	1 MAG. DISK	70 MB	DOS 3.3	DB	NONE	NONE
	3	PS	25	IBM	12 KB						
	1	PC	XT								

COUNTRY	STRUCTURE	ORGANIZA. LOCATION	ALLOCATED BUDGET
BOLIVIA	B	3	12.00%
CHINA (TAIWAN)	A	3	18.75%
COLOMBIA	C	3	15.39%
EGYPT	B	4	NA
MALAISYA	C	4	NA
MEXICO	A	3	X
NIGERIA	C	NA	1.32%
PERU	C	NA	13.00%
PORTUGAL	C	NA	40.00%
TURKEY	B	4	08.00%

A. PC technology
As it can be seen, approximately the 30 percent of the sample equipped with EDP and telecom capabilities, fall in this category. Meaning that computer application developments operating in PC's can be well shared among the securities commissions of the sample. Nevertheless, none of the developments in PC environment are surveillance-oriented. Only the Bolivian securities commission has plans to develop applications for monitoring the order execution and clearing and settlement processes in the near future.

More applications should be developed for securities commissions working under PC technology.

B. MC technology
The securities commissions of Brazil, and China (Taiwan) acknowledged the existence of minicomputer technology in their EDP departments. In China there are two processes already automated on this technology.

C. MC and PC technology
50 percent of the securities commissions sampled that have integrated an EDP department, have introduced minicomputers and personal computers. Until now, electronic surveillance is only implemented in Mexico. The Colombia, Chile and Turkey institutions plan to develop some applications for this function in the near future.

Software interchange among countries under this technology should be considered, checking the existence of adequate communication software.

3.1.4. Organization and skills

Organization issues assigned to EDP and Telecom activities, are other factors helping to evaluate the capacity to accept new I.T. applications.

Each securities commission, depending on the resources allocated, the organization level into the general organizational structure, the organization and divisions on the EDP department, and human resources inventory, have different levels of capacity to absorb new technologies.

Exhibit 2 shows in detail, the organization location, peoples' education and experience and the allocated budget of EDP and Telecom activities in the securities commissions included in the survey.

- First column contains the country of the securities commission.

- The second column represents the structure classified into three different categories pertaining to the internal organization of EDP department:

A. Those securities commissions that have integrated a three organized fall in this category. One regarding top decisions, one operating functions and one to development activities.

B. Securities commissions that have integrated the top decision area and the operational functions.

C. Those securities commissions that did not sent information about their EDP organization chart.

- The third column of the table shows the organizational level location assigned to EDP department of securities commissions. For example, Number 3, implies the third level into organization chart structure up to down.

-The fourth column shows the budget allocated to EDP and telecomm activities of the whole organization expenses. Letters NA are assigned to those securities commissions that did not provide information.

Note that only 10 institutions over 17, sent some information about organization and skills.

3.1.5. Capacity to absorb technology

Four categories can be defined related to EDP and Telecom departments' capacities.

A - Securities Commissions with no EDP and telecom department. Electronic data processing and telecom functions are not considered within these institutions. Justifiable in the case of Panama and Nigeria where the work under manual basis is still adequate. Other examples are Venezuela, Argentina and Korea commissions.

B - Securities commissions with nascent EDP.
Securities commissions that have recently installed departments or areas, specially designed to perform partial electronic data processing activities. Few developments are present only to support administrative functions. Bolivia, Peru, Portugal, Egypt are classified under this category.

C - Securities Commissions with growing EDP.
Under this classification are found those securities commissions having a structured EDP and telecom area, supported by MC technology sometimes combined with PC. These commissions lack applications regarding to the trading process surveillance. The countries within this category are: Brazil, Colombia, Chile, Malaysia

D - Securities Commissions with structured EDP.
Few market authorities fall under this classification. They are characterized by the introduction of trade-process regulatory applications. The countries in this category are: Mexico and China.

3.2. Preliminary recommendations.

First. The survey results speak for themselves, providing an adequate exchange of information about commissions and stock exchanges of EDP and Telecom infrastructure as well as procedures in the trading processing cycle. In the Santiago conference the directory of the people involved in the survey gathering will be distributed. This will allow the exchange of I.T. experiences among the people in charge of this subject (Annex 1).

Second. Practical solutions to improve the commissions' capacity to use I.T. in the regulatory functions are located among the following countries: Brazil, Colombia Chile Malaysia and Turkey. These regulatory authorities could take advantage from the Taiwan and Mexico experiences since they are equipped with organizational and technical infrastructure capable of adopting, in a short time these experiences. This technical support needs to provide the software applications, installation, assistance and technical training. This practical solution requires the acceptance of the commissions' decision makers involved.

Third. Commissions with less developed I.T. infrastructure may apply the market surveillance procedures (Annex 2) designed by the working group, in order to begin to establishing the first step previous automation.

Fourth, Three models for market information systems provide a design assistance for different levels of market development These models were designed by the working group as a proposal for standardizing I.T. application to the dissemination of market information. (Annex 3).

Fifth. Commissions' I.T. functions (EDP and Telecom) need to perform, not only the internal commissions'duties but also the regulatory role in the securities market's automation committee. This role has to consider the understanding of the overall securities market trends, its strategies, competitive environment and the dynamic market evolution to regulate from the planning to the operational stage of the securities market automation system.

Sixth. Stock exchanges in emerging markets are better equipped than commissions to perform market surveillance automated functions. The working group recommends to strengthen self-regulatory policies.

ANNEX 1
SURVEY'S DATABASE

- Stock exchange
- Securities commission

ANNEX 1

SURVEY'S DATABASE: STOCK EXCHANGE

BASIC INFORMATION

	ARGEN BV	BOL B.V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL SCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
1. HOW MUCH WAS THE STOCK MARKET CAPITALIZATION DUE DEC. 31st?																									
1985	2036		427685	34462		377.12	623.3			2429.85	10432		285	7381	23921	3241	2743	320		1368	1488	1838			
1986	1588		409885	39005		740.19	872.5			4646.37	15449		561	13824	24812	5572	1112	389		4725	4018	1949	2081887		
1987	1039		189489	17004		1245.41	25524.2			5711.72	48549		631	33033	29695	8715	974	114		13202	9823	5418	4857879		
1988	1998		310667	30973		1035.28	778.1			7107.25	120102		780	84348	36380	15184	980	9		11600	10935	8770	2089101		
1989	2392		441411	44181			22.586			10081.1	235925		958	140480	57781	28563	983	83		16780	14498	25882	8573813		1464365
N.A		X			X			X	X			X							X					X	
2. WHICH HAS BEEN THE PERCENTAGE OF CHANGE IN VALUE OF STOCKS TRADED ACCORDING TO MKT. IDX?																									
1985	646.58		401.5	550.75			5			74.16	-0.35		104	17.1		89.37	28.3	991		128.9				592.8	817.7
1986	19.27		41.2	-5.38			104.5			137.77	0.244		59	68.9		104.5	27.4	284		112.2				2499.5	2090.5
1987	164.47		34.9	75.81			83.7			31.08	1.2518		1	98.3		13.32	16.9	-6		148.9				4645.1	3928.6
1988	526.27		2549.5	2238.09		-5.58	2.4			33.81	1.1875		-6	70.5		32.03	22.4	810		-21.2				5033.9	3896.4
1989	17231.81		1762.49	1930.65		26.08	11.9			84.76	0.88		44	-1.1		85.35	39.3	3818		139.5					2754
N.A.		X			X			X	X			X			X				X		X	X	X		
3. METHODOLOGY USED TO CALCULATE MKT. IDX?																									
Yes 15 60%	X		X	X		X	X			X	X		X	X	X	X	X			X		X		X	
No 3 12%												X						X					X		
N.A. 7 28%		X			X			X	X										X		X				X
4. COMPANIES LISTED DUE DEC. 31st OF THE FOLLOWING YEARS																									
1985	227		541	615	31	106	99	51		215	127	319	33	342	284	212	98	212		47	23	97		43	83
1986	217		592	658	34	103	99	60		215	130	380	38	355	288	233	99	222		63	44	38	449	41	83
1987	206		590	648	39	95	92	69		211	141	430	41	389	291	302	100	245		144	119	109	545	41	71
1988	194		589	630	43	89	85	73		203	163	484	44	502	295	352	102	293		171	128	141	690	40	74
1989	184		592	629	45	86	83	78		213	181	510	44	626	307	438	111	307		181	121	175	836	39	75
N.A.		X							X										X						
5. DAILY AVERAGE NUMBER OF TRANSACTIONS DURING THE FOLLOWING YEARS																									
1985			8472	3447			166			142	7008	28	30	5900				134				0			29.5
1986			9880	4287			177			350	15579	28	67	8700		2200		289				648	13		55.8
1987			7015	2391			400	360		584	34896	29	112	23300		3000		227				2654	59		86.4
1988			7830	3234		210	209	458		546	76377	27	64	80185		2300						3588	125		84.3
1989		5	7101	4341		212	161	517		640	274752	24	139	88534		1570						6884	934		83.3
N.A.	X								X						X		X		X	X	X			X	
6. BROKERAGE AGENTS OPERATING STOCK MKT. IN THE FOLLOWING YEARS																									
1985	163		104	80	8	24	30			30	27	9	4	25		32	20	29		3	3	28		70	38
1986	168		108	89	9	24	30	21		33	28	14	6	25		32	23	30		4	3	28	47	71	41
1987	168		99	93	9	25	32	19		33	28	17	6	25		30	33	31		7	3	30	70	74	41
1988	168		101	84	11	26	24	23		32	102	16	6	25		30	43	29		10	3	32	80	73	42
1989	167	X	106	78	10	26	24	22		33	249	16	6	25	X	26	61	29		10	6	35	90	78	42
N.A.									X										X						
7. MKT. SHARE BY BROKERAGE AGENT																									
Answered 16 64%		X	X	X		X	X	X		X	X		X	X		X		X		X	X	X	X		
Not answered 9 36%	X				X				X			X			X		X		X					X	X

			ARGEN BV	BOL B V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
8 DAILY AVERAGE VALUE OF STOCKS TRADED DURING FOLLOWING YEARS																											
1985			2022 347		2 12	8	3 4	14 2	15 2	0 27		0 018	17 0	212	0 213	18 4	10 5	0 64	0 058	0 02		0 0245	0 082	0		0 015	
1986			1319 55		1 52	2 19	4 0	33 11	15 9	0 1		0 026	67 0	447 3	0 661	38 0	5 2	0 53	0 064	0 06		0 318	0 084	4 73	0 052	0 103	
1987			1074 846		0 26	0 41	4 4	48 88	30 7	0 23		0 026	325 0	641 4	0 727	88 6	16 4	1 09	0 024	0 08		6 06	1 57	19 59	0 496	0 183	
1988			1771 843		0 16	0 21	8 9	34 706	28 1	0 1		0 04	988	445	0 249	290 0	10 2	0 7	0 022	0 01		3 36	2 34	24 87	0 415	0 083	
1989			5163 752		0 04	0 05	8 0	43 99	29 5	0 1		0 051	3383 0	655	0 795	413 3	28 1	0 83	0 015			8 25	2 54	0	3 211			
N A				X							X										X						X
9 HAS COUNTRY'S ECONOMIC POLICY PROMOTED THE STOCK EXCHANGE'S DEVELOPMENT?																											
YES	13	52%										X	X	X	X	X	X	X	X	X		X		X	X		X
NO	8	32%	X		X	X	X	X	X	X																	
N A	4	16%		X							X										X		X			X	
WHY?																											
DEREGULATION	8	32%										X	X	X				X	X			X		X	X		
TAX POLICY	7	28%					X						X	X	X	X						X		X			
NOT NECESSARY	1	4%				X																X					
NO PROMOTION	2	8%	X																X								
OTHER	3	12%			X										X				X								
10 ELEMENTS INFLUENCING TO PROMOTE DEVELOPMENT OF NEW STOCK EXCHANGES IN THE COUNTRY																											
YES	16	64%			X	X	X	X	X	X		X	X	X				X	X	X		X		X	X		X
NO	3	12%	X												X												
N A	6	24%		X							X					X	X				X		X			X	
WHICH?																											
SECU INDUS CULTUR	9	36%			X		X			X				X				X	X			X			X		X
INFRASTRUC LIMITS	3	12%			X									X								X					
POLICY RESTRIC.	7	28%			X		X	X					X					X				X		X			
SYSTEMS	2	8%						X										X									
HUMAN RESOURCES	3	12%						X						X													
CAPITAL EXPEND.	3	12%					X			X																	X
ECONOMY OF SCALE	6	24%			X	X				X			X			X						X			X		
MARKET GROWTH	2	8%										X															
INCIPIENT MARKET	1	4%							X																		X
11 ELEMENTS INFLUENCING TO PROMOTE BOKERAGE AGENTS																											
YES	16	64%			X	X	X	X	X	X			X	X			X	X	X	X		X		X	X		X
NO	3	12%	X												X												
N A	6	24%		X							X	X				X					X		X			X	
WHICH?																											
SECU INDUS CULT.	5	20%			X			X											X						X		X
INFRAS LIMITS	3	12%								X				X													
POLICY RESTRIC.	8	32%			X		X	X					X			X	X					X		X			
SYSTEMS	3	12%						X						X								X		X			
HUMAN RESOURCES	4	16%						X						X										X			
CAPITAL EXPEND.	4	16%			X		X							X											X		X
ECONOMY OF SCALE	6	24%			X	X			X									X							X		X

			ARGEN. BV	BOL B.V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
12. HOW MANY INVESTORS DOES YOUR STOCK MARKET HAVE?																											
1995					7000000	-							400461	N.A.		770000	-						178415			
1996						-							473755	N.A.		1410000	-						177369			
1997						-							634395	N.A.		3100000	1081748						165436			
1998						-							1606170	N.A.		6540000	1187431						220059			
1999			7000000	50000									4166269	N.A.	38000	-	-	BENITO					243040			
N.A.			X	X			X	X	X	X	X	X		X				X	X	X	X	X	X		X	X	X
13. HOW MANY INSTITUTIONAL INVESTORS DOES YOUR STOCK MKT. HAVE?																											
1995			33		204	-										347	-				4			6265			84
1996			33		297	-										347	-				4			5228			84
1997			33		369	-										349	57511				4			5413	7		72
1998			33		482	1412							189			353	68326				4			8657	17		73
1999			32		575	1302							280		38	449	-	BENITO			4			12148	38		73
N.A.				X			X	X	X	X	X	X		X				X	X	X		X	X			X	
14. COMPETITIVE ADVANTAGES THAT I.T. APPLICATIONS HAVE PROVIDED TO THE STOCK MARKET																											
YES	13	52%	X		X	X	X	X	X	X		X	X		X									X	X	X	X
NO	1	4%																									
N.A.	11	44%		X							X			X		X	X	X	X	X	X	X	X				
WHICH?																											
EFFICIENCY	6	24%			X		X			X						X		X									X
IVEST.PROTEC	2	8%								X			X														
ACCURACY & SPEED	10	40%	X		X	X	X	X				X	X			X		X							X		
TRANSPARENCE	6	24%						X				X	X					X								X	X
ECONOMY OF SCALE	4	16%			X	X	X	X																			
MKT. INTEGRAT.	1	4%				X																					
INFO.DISSEMINA.	2	8%																						X		X	
15. PROMOTING POLICIES FOR ATTRACTING FOREIGNER INVESTMENT																											
YES	17	68%	X	X	X	X		X	X	X		X	X	X		X		X	X					X	X	X	X
NO	2	8%					X								X												
N.A.	6	24%									X						X			X	X	X	X				
WHICH?																											
INDIRECT.PORTFOL.	2	8%										X				X											
INVESTMENT		0%																									
COMPETITIVE RATES	1	4%								X																	
ECONOMY STABIL.	4	16%								X			X					X									X
MARKET POLICIES	3	12%				X												X	X								
LIBERALIZA. POLICY	1	4%																						X			
LAW	5	20%	X				X												X						X	X	
TAX INCENTIVES	2	8%												X													X
OTHER	5	20%			X	X		X					X					X									
16. HAVE THEY IMPLEMENTED IN THE STOCK MKT?																											
YES	11	44%	X			X				X		X		X		X		X	X					X	X		X
NO	7	28%			X		X	X	X				X		X											X	
N.A.	7	28%		X							X						X			X	X	X	X				
WHY?																											
POLICY RESTRIC	3	12%			X		X						X														
MARKET POLICY	5	20%	X				X																		X	X	X

			ARGEN BV	BOL BV	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
17. FEES PAID TO THE INTERMEDIATES TO HANDLE INVESTMENT ACCOUNTS																											
YES	13	52%			X	X	X	X		X		X		X		X				X	X			X		X	X
NO	7	28%	X						X				X		X			X				X			X		
N A	5	20%		X							X						X		X				X				
HOW MUCH?					0 04	0 05	0 055	0 01		9 4 M.		FREE		0 005		0 004								0 05		0 01	
18 AVAILABILITY OF OTHER INVESTMENT INSTRUMENTS IN THE SECURITIES MARKETS																											
YES	9	36%	X		X	X				X			X			X							X	X		X	
NO	11	44%					X	X	X			X		X	X			X	X			X				X		X
N A	5	20%		X							X						X			X	X						
WHICH?		0%																									
MARGIN ACC	6	24%			X	X							X			X								X	X		
FUTURES	3	12%			X	X																				X	
OPTIONS	3	12%	X		X	X																					
SHORT SELLS	2	8%				X							X														
STOCK LOAN	1	4%														X											
FONDOS INVER.	1	4%								X																	
MUTUAL FUNDS	1	4%								X																	
DEBENTURES	1	4%																						X			
OTHER	1	4%	CIONES																								

I T STRUCTURE IN THE STOCK EXCHANGE

CENTRAL PROCESSING UNIT

19 INSTALLATION DATE																											
1988 to date	15	60%	X	X	X	X			X	X	X	X	X			X	X	X	X						X		X
1984 to 1987	7	28%					X	X							X							X	X	X		X	
1981 to 1983	0	0%																									
Before 1981	0	0%																									
None	3	12%												X						X	X						
20 ARCHITECTURE																											
Fault Tolerant	5	20%			X								X			X	X	X									
Orthodox	12	48%	X			X	X	X	X	X	X	X										X	X		X		X
PC Server	3	12%		X															X							X	
Microcomputer	1	4%													X												
None	3	12%												X						X	X						

			ARGEN BV	BOL B V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR USB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
21 NUMBER OF CPUs																											
More than 5	1	4%											X														
Up to 5	2	8%				X										X											
Up to 4	0	0%																									
Up to 3	4	16%			X					X							X							X			
Up to 2	5	20%	X						X			X						X						X			
1 or PCs	10	40%		X			X	X			X				X				X			X	X			X	X
None	3	12%												X						X	X						
22 BRANDS																											
CPU 1			DPS8000	IBM PS2	IBM	IBM4381	XAS INS.	IBM	XAS INS	UNISYS	IBM	WANG	TANDEM		IBM	UNISYS	TANDEM	TANDEM	IBM			UNISYS	P. 3000	C 6200	DDE	NISYS	ALTOS
CPU2					IBM	IBM4381		TE	XAS INS.	UNISYS		WANG	TANDEM		IBM	UNISYS	IBM	UNISYS	IBM					PC LAN	IBM		
CPU3					IBM	RAMX850				UNISYS			TANDEM			UNISYS	DEC		IBM						NORTHSTAR		
CPU4					ELEC	RAMX850							TANDEM			UNISYS											
CPU5					ELEC	RAMX850							TANDEM			STRATUS											
CPU6													TANDEM			TANDEM											
23 CYCLE TIME																											
Lower than 50 nS	2	8%			X													X									
50 to 100 nS	6	24%	X			X			X				X			X	X										
100 to 300 nS	2	8%								X	X																
More than 300nS	6	24%					X	X		X												X			X		X
PC Server or PC	4	16%		X											X				X							X	
None	5	20%												X						X	X		X	X			
24 PERFORMANCE (MIPS)																											
More than 15 MIPS	3	12%														X		X							X		
10 to 15 MIPS	0	0%																									
5 to 10 MIPS	2	8%			X				X																		
2 to 5 MIPS	9	36%	X			X	X			X	X	X	X				X					X						
Up to 2 Mips	5	20%						X							X				X					X		X	
None	6	24%		X										X						X	X		X				X
25 PERFORMANCE (ET1)																											
More than 30	1	4%	X																								
15 to 30	1	4%																X									
7 to 15	1	4%											X														
1 to 6	3	12%								X	X	X															
Lower than 1	6	24%					X	X							X				X			X			X		
None	13	52%		X	X	X			X					X		X	X			X	X		X	X		X	X
SECONDARY STORAGE																											
26 TOTAL CAPACITY																											
More than 10 GB	4	16%											X			X	X	X									
6 to 10 GB	1	4%				X																					
1 to 5 GB	6	24%								X	X	X										X		X	X		
Lower than 1 GB	8	32%	X				X	X	X						X				X				X				X
None	6	24%		X	X									X						X	X					X	

			ARGEN BV	BOL B V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
27 TECHNOLOGY																											
Optical	0	0%																									
Magnetic Disk	21	84%	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X			X	X	X	X	X	X
Magnetic tape	16	64%	X		X	X	X		X	X	X	X	X			X	X	X				X	X	X			X
Diskette	0	0%																									
None	5	20%		X										X						X	X					X	
28 L PRINTER TECHNOLOGY																											
Laser High Speed	1	4%											X														
Chain Printer	6	24%						X		X	X		X			X	X										
Laser Low Speed	1	4%																							X		
Matrix	13	52%		X	X	X	X		X						X				X			X	X	X	X	X	X
Specialized	5	20%	X						X					X						X	X						
Band	3	12%										X	X					X									
29 BRANDS																											
Printer 1			BULL	EPSON	IBM	IBM	TEXAS I	IBM	TEXAS I	UNISYS	IBM	WANG	CDC		IBM	UNISYS	TANDEM	A PROD	EPSON			UNISYS	HP	ONICS	EPSON	NISYS	EPSON
Printer 2						PROCEDA	TEXAS I	IBM	TEXAS I	UNISYS		WANG	NTRONICS		IBM	UNISYS	IBM	SPERRY	EPSON			C ITOH			CITOH		SEIKOSHA
Printer 3						ELEBRA	TEXAS I	IBM	TEXAS I	UNISYS			GENICON			UNISYS	DEC	SPERRY	EPSON								SEIKOSHA
Printer 4							TEXAS I		DATA P							STRATUS											PANASONIC
																TANDEM											PANASONIC
30 TERMINAL																											
Personal Computer	20	80%	X		X	X	X	X	X	X	X	X			X	X	X	X	X			X	X	X	X	X	X
How many?			30		300	141	11	2	3	34	48				2	7	395	13	3			21	8	40	5	4	5
VDT	20	80%	X		X	X	X	X	X	X	X	X	X		X	X	X	X				X	X	X	X	X	X
How many?			250		1150	807	15	17	29	13	53		1961		2	2338	65	502				133	8	54	20	3	25
Special purp ter	5	20%			X											X	X					X				X	
How many?					170											80	1100					1				1	
Scanner	1	4%														X											
How many?																1											
MICR	4	16%						X						X						X	X						
How many?								5																			
None	1	4%		X																							
TELECOMMUNICATION																											
31 COMMUNICATION PORTS																											
More than 400	3	12%			X								X			X											
200 to 400	4	16%	X									X					X	X									
150 to 200	1	4%				X																					
50 to 150	4	16%							X		X											X					X
10 to 50	5	20%					X			X													X	X	X		
Lower than 10	4	16%						X							X				X							X	
None	4	16%		X										X						X	X						
32 FRONT END PROCESSORS																											
Yes	8	32%	X		X	X	X			X			X			X		X									
FEPS number			2		8					3			58					2									
No	12	48%		X				X			X	X			X				X			X	X	X	X	X	X
None	5	20%							X					X			X			X	X						

			ARGEN BV	BOL B.V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL SCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
33. DATA SWITCHES																											
Yes	4	16%			X			X									X									X	
No	17	68%	X	X		X	X			X	X	X	X		X	X		X	X			X	X	X	X		X
None	4	16%							X					X						X	X						
34. # COM PORTS/CLUSTER																											
More than 50	1	4%											X														
20 TO 50	6	24%			X	X	X				X					X								X			
10 TO 20	1	4%															X										
1 to 10	3	12%						X										X									X
None	16	64%	X	X				X	X	X		X	X	X	X				X	X	X	X	X		X	X		
35. COMMUNICATION PROTOCOLS																											
X.25 layer 4 to 7	1	4%	X																								
x.25 layer 1 to 3	5	20%											X			X	X	X								X	
SNA PU2	4	16%			X	X					X							X									
3270/tty	12	48%	X					X		X		X	X			X						X	X	X	X	X	X
Uniscope	2	8%														X		X									
UUCP	1	4%							X																		
SDLC	2	8%						X										X									
Other	1	4%																				R8232C					
None	7	28%		X			X							X	X				X	X	X						
36. TRANSMISSION FACILITIES																											
Satellite	2	8%										X						X									
Fiber Optics	0	0%																									
VAN or Microwave	2	8%	X									X															
Public Data Net.	0	0%																									
Wats	0	0%																									
Leased line	14	56%	X		X	X	X	X		X	X	X	X			X	X	X				X	X				
Microwave links	1	4%																X									
Dial Up	8	32%				X		X	X								X	X				X	X				X
Value added net.	1	4%	X																								
None	9	36%		X										X	X				X	X	X			X	X	X	
SOFTWARE																											
37. OPERATING SYSTEM NAME																											
VMS	5	20%				X					X	X					X							X			
MVS	2	8%			X	X																					
Guardian	5	20%											X			X	X	X	X								
Exec	1	4%														X											
UNIX	6	24%					X			X													X	X		X		X
GCOS	1	4%	X																								
Other	10	40%						X	X	X					DOS 3.3	X	RT11	OS1100	OS 3.3					MPEV			STOS	
None	4	16%		X										X						X	X							
38. TELECOMMUNICATION SOFTWARE																											
Yes	10	40%	X		X	X					X		X			X	X	X		X					X		
No	8	32%					?	X		X		X			X											X	X	X
None	7	28%		X					X					X					X		X	X	X					
NAME:																											
			TELCON			TCAM3						FOX EXPAND				X	VTAM	TELCON						DECNET			
						VTAM												PATHWAY										

			ARGEN BV	BOL B V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV CMI	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
39 PROGRAMMING LANGUAGES																											
C	8	32%	X			X	X		X		X													X			X
PASCAL	6	24%	X		X	X				X								X				X		X			
COBOL	15	60%	X		X	X			X	X	X	X	X			X	X	X						X			
ASSEMBLER	7	28%	X		X	X			X							X		X				X	X	X		X	
PL/1	3	12%				X					X					X		X						X			
TAL	2	8%														X											
RPG	3	12%						X								X	X										
FORTRAN	5	20%	X			X			X								X	X									
ALGOL	2	8%	X			X				X						X								X			
Others	9	36%	ADA				FOXBASE			X		BASIC		DBASE 3+				DBASE 3+					FOXBASE		TAFLEX	MANAG	
							LYRIX							LOTUS 123				FOXBASE									
																		LOTUS123									
None	8	24%		X										X	X				X	X	X						
40 PRODUCTIVITY TOOLS																											
CASE																											
Yes	3	12%	X														X										X
No	8	32%			X		X			X	X					X						X	X	X			
None	14	56%		X		X		X	X			X	X	X	X				X	X	X				X	X	
41 DBMS/SQL																											
Yes	11	44%	X		X		X		X	X			X		X				X				X		X		X
No	5	20%									X					X	X					X		X			
None	9	36%		X		X		X				X		X				X		X	X					X	
42 DOCUMENTATION AIDS																											
Yes	2	8%															X										X
No	8	32%	X		X				X	X	X					X						X		X			
None	17	68%		X		X	X	X				X	X	X	X			X	X	X	X		X		X	X	
43 FOURTH GENERATION LANGUAGES																											
Oracle	1	4%	X																								
Informix	3	12%					X		X																		X
Mantis	1	4%															X										
Natura	1	4%			X																						
None	18	72%		X				X	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
Other	1	4%				X																					

CHAPTER II

APPLICATIONS IN THE TRADING PROCESS
STOCK EXCHANGE

			ARGEN BV	BOL B.V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
44. ORDER ENTRY :																											
PERCENTAGE			0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	80.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
METHOD					mark sense reader											data entry by VDT											
DEVELOPER:																											
- In house	6	24%			X					X	X		X			X	X										
- software house	0	0%																									
- specify																											
SYSTEM					1,2,3					1	1,PC		1,2,3,5,6			4,5	1										
INSTALL DATE					/74					11/89			08/85			02/83	05/88										
SOFTWARE:																											
- C	1	4%									X																
- Pascal	0	0%																									
- Cobol	5	20%			X						X		X			X	X										
- Assembler	3	12%			X						X					X											
- PL/1	1	4%									X																
- TAL	0	0%																									
- RPG	0	0%																									
- Fortran	0	0%																									
- Algol	0	0%																									
- 4GL	1	4%								X																	
Others	0	0%																									
TELEPROC ROLL																											
- prog to prog	1	4%								X																	
- terminal emul	2	8%			X					X																	
- file transfer	2	8%			X					X																	
- OLTP	6	24%			X					X	X		X			X	X										
- other	0	0%																									
UNDER REGULATION?																											
- YES	6	24%			X	X				X			X			X	X										
- NO	0	0%																									

			ARGEN BV	BOL B V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EQY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
45 ORDER ROUTING																											
PERCENTAGE			25 00%	0 00%	100 00%	0 00%	0 00%	0 00%	0 00%	80 00%	100 00%	0 00%	100 00%	0 00%	0 00%	100 00%	100 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%
METHOD																program											
																execution											
DEVELOPER																											
- in house	6	24%	X		X					X	X					X	X										
- software house	1	4%											X														
- specify																											
SYSTEM			1		1,2,3					1	PC		TANDEM														
INSTALL DATE			09/86		/74					11/89			1,2,3,5,6			4,5	1										
SOFTWARE													08/85			02/83	05/88										
- C	1	4%									X																
- Pascal	0	0%																									
- Cobol	5	20%	X		X						X					X	X										
- Assembler	1	4%														X											
- TAL	1	4%											X														
- 4GL	1	4%								X																	
Others	0	0%																									
TELEPROC ROLL																											
- prog to prog	1	4%								X																	
- terminal emul	2	8%			X					X																	
- file transfer	2	8%			X					X																	
- OLTP	6	24%			X					X	X		X			X	X										
- other	1	4%	X																								
UNDER REGULATION?																											
- YES	7	28%	X		X	X				X			X			X	X										
- NO	0	0%																									
46 PRICE DETERMINATION																											
PERCENTAGE			0 00%	0 00%	100 00%	0 00%	80 00%	81	0 00%	80 00%	100 00%	0 00%	0 00%	0 00%	0 00%	100 00%	50 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%
METHOD																program											
																execution											
DEVELOPER																											
- in house	6	24%					X			X	X		X			X	X										
- software house	0	0%																									
- specify																											
SYSTEM					1,2,3		1			1	PC		4			1	1										
INSTALL DATE					/74		02/88			11/89	11/89		08/85			03/1988	05/88										
SOFTWARE																											
- C	2	8%					X				X																
- Pascal	0	0%																									
- Cobol	4	16%									X		X			X	X										
- Assembler	1	4%														X											
- RPG	0	0%																									
- 4GL	1	4%					X																				
Others	1	4%								X																	
TELEPROC ROLL																											
- prog to prog	1	4%								X																	
- terminal emul	2	8%					X			X																	
- file transfer	1	4%								X																	
- OLTP	5	20%								X	X		X			X	X										
UNDER REGULATION?																											
- YES	5	20%				X	X						X			X	X										
- NO	0	0%																									

			ARGEN BV	BOL B.V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
47. ORDER EXECUTION																											
PERCENTAGE			50.00%	0.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	80.00%
METHOD						on line						PREGON				program											
																execution											
DEVELOPER:																											
- in house	12	48%	X		X	X	X		X	X	X	X	X			X	X						X				
- software house	2	8%							X																		X
- specify									TEXINS																		SAE
SYSTEM			1		1,2,3	1	1		1,2	2	1,PC	1	4			1	1						1				1
INSTALL DATE			10/84		/80	08/72	08/89		06/81	/83	11/81	08/88	08/85			03/88	05/88						04/87				12/88
SOFTWARE:																											
- C	2	8%					X				X																
- Pascal	0	0%																									
- Cobol	9	36%	X		X				X		X	X	X			X	X						X				
- Assembler	3	12%			X	X										X											
- PL/1	1	4%									X																
- 4GL	4	16%					X		X	X																	X
TELEPROC ROLL																											
- prog to prog	0	0%																									
- terminal emul	3	12%							X	X		X															
- file transfer	2	8%							X	X																	
- OLTP	11	44%	X		X	X	X			X	X	X	X			X	X						X				
- other	0	0%																									
UNDER REGULATION?																											
- YES	10	40%	X		X	X	X			X		X	X			X	X										X
- NO	0	0%																									

48 ORDER NOTIFICATION																											
PERCENTAGE			50.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	80.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
METHOD						on line										program											
DEVELOPER:																execution											
- in house	12	48%	X		X	X			X	X	X		X			X	X	X				X	X				
- software house	1	4%							X																		
- specify									COLOMBIA												ARTH	ANDER					
SYSTEM			1		1,2,3	1			1,2	1,2	1,PC		1,2			1,4,6	1	2				1	1				
INSTALL DATE			10/84			08/81			06/81	11/89	11/89		08/85			02/83	05/88	/80				03/88	04/87				
SOFTWARE:																											
- C	1	4%									X																
- Cobol	10	40%	X		X				X		X		X			X	X	X				X	X				
- Assembler	3	12%			X	X										X											
- PL/1	1	4%									X																
- 4GL	2	8%							X	X																	
Others	0	0%																									
TELEPROC ROLL																											
- prog to prog	0	0%																									
- terminal emul	4	16%							X	X								X				X					
- file transfer	5	20%			X				X	X								X				X					
- OLTP	11	44%	X		X	X				X	X		X			X	X	X				X	X				
- other	0	0%																									
UNDER REGULATION?																											
- YES	7	28%			X	X				X			X			X	X	X									
- NO	1	4%	X																								

			ARGEN BV	BOL B V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
49 CLEARING AND SETTLEMENT																											
PERCENTAGE			100 00%	0 00%	100 00%	100 00%	80 00%	0 00%	100 00%	80 00%	0 00%	0 00%	20 00%	0 00%	0 00%	100 00%	50 00%	100 00%	0 00%	0 00%	0 00%	100 00%	100 00%	SI	0 00%	0 00%	100 00%
METHOD						batch										program											
DEVELOPER:																execution											
- in house	11	44%	X		X	X	X		X	X			X			X	X	X					X				X
- software house	4	16%							X													X		X			
- specify																											SAE
SYSTEM			1		1,2,3	1	1		1,2	2,3		4,CENTRAL DEPOS									AFTH AND		BDC				1
INSTALL DATE			04/88		/74	06/72	08/89		06/84	/83			01/90			02/83	03/84	/78				03/88	05/88	06/87			03/89
SOFTWARE																											
- C	1	4%					X																				
- Cobol	11	44%	X		X	X			X				X			X	X	X				X	X	X			
- Assembler	2	8%			X											X											
- RPG	0	0%																									
- 4GL	4	16%					X		X	X																	
TELEPROC ROLL																											X
- prog to prog	0	0%																									
- terminal emul	4	16%							X	X																	
- file transfer	5	20%			X					X						X	X					X	X				
- OLTP	6	24%	X		X		X			X			X									X					
- other	4	16%				BATCH							BATCH					REPORTS				X		X			
UNDER REGULATION?																											
- YES	10	40%	X		X	X	X			X			X			X	X	X						X			
- NO	1	4%																									X
50 MARKET INFORMATION SYSTEM																											
PERCENTAGE			1	SI	1	1	0 7	SI	0 3	0 8	1	1	1	0	0 2	1	1	1	0	0	0	1	1	0 7	0	0	0
METHOD					broadcast	on line					through LAN					program	by terminals										
					inquiry						via terminal					execution	& monitors										
DEVELOPER																											
- in house	13	52%	X		X	X	X			X		X	X		X	X		X				X	X	X			
- software house	3	12%							X		X						X										
- specify									TEX INS		IBM						TELEFAX										
SYSTEM			1		1,2,3	1	1		2	1,2,3	1	1,2	4		1	6,7	3	2				1	1	2			
INSTALL DATE			10/84		/74-/90	12/78	08/89		03/90	/83		01/81	11/87		10/87	08/78	06/87	/80				01/83	04/87	09/89			
SOFTWARE																											
- C	2	8%					X																				
- Cobol	8	32%	X		X							X	X			X		X						X			
- Assembler	4	16%			X	X										X	X					X	X				
- PL/1	1	4%															X							X			
- TAL	1	4%														X											
- Fortran	1	4%														X											
- 4GL	3	12%					X		X	X						X											
Others	2	8%																									
TELEPROC ROLL														DBASE 3+									FOXBASE				
- prog to prog	1	4%				X																					
- terminal emul	6	24%			X	X			X			X						X					X				
- file transfer	2	8%								X								X				X					
- OLTP	9	36%	X		X	X	X						X			X	X	X				X					
- other	1	4%																					TV BROADC				
UNDER REGULATION?																											
- YES	10	40%	X		X	X	X			X		X	X			X	X	X									
- NO	2	8%													X									X			

			ARGEN BV	BOL B.V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL BCB	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
51. MARKET SURVEILLANCE																											
PERCENTAGE			100.00%	0.00%	80.00%	100.00%	40.00%	0.00%	0.00%	50.00%	0.00%	50.00%	10.00%	0.00%	0.00%	85.00%	20.00%	80.00%	0.00%	0.00%	0.00%	100.00%	0.00%	40.00%	0.00%	0.00%	0.00%
METHOD						on line																					
DEVELOPER:																											
- In house	12	48%	X		X	X	X			X		X	X			X	X	X				X		X			
- software house	0	0%																									
- specify																											
SYSTEM			1		1,2,3	1	1			1		2	1,2,3,4,5,6			1	1					1		2			
INSTALL DATE			10/84			01/85	08/89			10/89		01/88	02/90			03/88	12/88	/80				01/83					
SOFTWARE:																											
- C	1	4%																						X			
- Cobol	9	36%	X		X	X						X	X			X	X	X				X					
- Assembler	3	12%			X											X								X			
- Fortran	0	0%																									
- 4GL	3	12%				X	X			X																	
Others	3	12%				DBASE						BASIC											FOXBASE				
TELEPROC.ROLL																											
- prog to prog	1	4%				X																					
- terminal emul	2	8%										X										X					
- file transfer	2	8%				X																		X			
- OLTP	8	32%	X		X	X	X						X			X	X	X									
- other	2	8%											BATCH				BATCH										
UNDER REGULATION?																											
- YES	11	44%	X		X	X	X			X		X	X			X	X	X						X			
- NO	0	0%																									
52. MARKET LINKAGES																											
PERCENTAGE			25.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
METHOD																											
DEVELOPER:																											
- In house	2	8%	X			X																					
- software house	0	0%																									
- specify																											
SYSTEM			1			1																					
INSTALL DATE			11/85			06/86																					
SOFTWARE:																											
- Cobol	2	8%	X			X																					
Others	0	0%																									
TELEPROC.ROLL																											
- prog to prog	0	0%																									
- terminal emul	0	0%																									
- file transfer	1	4%				X																					
- OLTP	1	4%	X																								
- other	0	0%																									
UNDER REGULATION?																											
- YES	1	4%				X																					
- NO	1	4%	X																								
TOTAL			7	1	8		5	2	0	8	7	3	7	0	1	8	8	4	0	0	0	4	4	3	0	0	2
53 FUTURE DEVELOPMENTS																											
- If yes, does it enhance																											
the trading proc?	10	40%				X	X			X		X	X					X	X					X	X		X
- management functions	7	28%	X			X				X		X						X				X			X		

CHAPTER THREE: TECHNOLOGICAL ABSORTION CAPACITY

HUMAN RESOURCES

			ARGEN BV	BOL B V	BRA AO PAO	BRA RIO	COL CALI	COL MEDE	COL BOGO	CR BV	CHIL BV	CHIL SCS	CHIN BV	EGY BV	JAM BV	KOR BV	MAL BV	MEX BV	NIG BV	PANA BV	PERU BV	POR LISB	POR PORT	THA BV	TUR BV	URU BV	VEN BV
54 ORGANIZATION LOCATION																											
Up to 2nd level	3	12%			X																	X					
3rd level	6	24%					X		X		X					X		X									X
4th level	5	20%						X		X		X					X		X						X		
5th level	1	4%											X														
None	10	40%	X	X		X								X	X					X	X		X	X		X	
55 EXPERIENCE (MANAGEMENT)																											
More than 10 years	5	20%							X		X	X						X				X					
5 TO 10	3	12%					X	X					X														
2 TO 5	0	0%																									
1 TO 2	0	0%																									
Up to 1 year	0	0%																									
None	17	68%	X	X	X	X				X				X	X	X	X		X	X	X		X	X	X	X	X
56 EXPERIENCE																											
More than 5 years	6	24%						X	X		X		X					X				X					
Up to 5	1	4%					X																				
Up to 4	0	0%																									
Up to 2	0	0%																									
Up to 1 year	1	4%								X																	
None	17	68%	X	X	X	X								X			X		X				X	X	X		X
57 EDUCATION (MANAGEMENT)																											
Doctorate PHD,DA	0	0%																									
Master	3	12%							X									X									X
College	5	20%					X	X	X		X	X															
High School	0	0%																									
Lower than High School	0	0%																									
NONE	17	68%	X	X	X	X							X	X	X	X	X		X	X	X	X	X	X	X	X	
58 EDUCATION																											
Doctorate PHD,DA	0	0%																									
Master	0	0%																									
College	6	24%							X	X	X	X						X									X
High School	2	8%					X	X																			
Lower than High School	0	0%																									
NONE	17	68%	X	X	X	X							X	X	X	X	X		X	X	X	X	X	X	X	X	
59 EXPENSES RATIO																											
More than 8%	5	20%					X						X					X							X		X
4% to 8%	1	4%	X																								
2% to 4%	2	8%							X			X															
1% to 2%	1	4%													X												
Lower than 1%	0	0%																									
NONE	16	64%		X	X	X		X		X	X			X		X	X		X	X	X	X	X	X		X	

ANNEX 1

SURVEY'S DATABASE: SECURITIES COMMISSION

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
1 HAVE THE STOCK EXCHANGE REACHED THE OPTIMAL TECHNICAL SOLUTION OF A COMPUTER SYSTEM?																	next year		
YES	2	12	X				X												
NO	13	76		X		X		X	X	X	X	X	X		X	X	X	X	X
NONE	2	12			X									X					
WHY?																			
Just created (planning phase)	3	18		X							X							X	
High computer developments	1	6	X																
Transforming period	2	12										X					X		
Costs	2	12											X		X				
Scarcity of funds	1	6							X										
None	8	47			X	X	X	X		X				X		X			X
2 ARE THERE ANY LEGISLATIVE ACTION THAT PROMOTES THE AUTOMATION IN THE SECURITY INDUSTRY?																			
YES	8	47		X				X	X	X	X	X				X	X	X	X
NO	7	41	X			X	X						X		X				
NONE	2	12			X									X					
WHY?																			
Necessary	3	18		X									X					X	
Law restrictions	1	6	X																
Market size	1	6													X				
Market policies	2	12					X					X							
Other	2	12															X		X
None	8	47			X	X		X	X	X	X			X		X			
3 COULD MODERN COMPUTER PROGRAMS IMPROVE THE MARKET?																			
YES	15	88	X	X		X	X	X	X	X	X	X	X		X	X	X	X	X
NO	0	0																	
NONE	2	12			X									X					
WHY?																			
Efficiency	5	29		X								X	X		X				X
Transparence	5	29	X	X								X	X		X				
Support market development	3	18	X									X						X	
Other	2	12					X					X							
None	9	53			X	X		X	X	X	X			X		X	X		
4 HAS REGULATORY AUTHORITY ANY STRONG REASON FOR CONSIDERING MARKET INTEGRATION?																			
YES	12	71	X	X				X	X	X	X	X	X		X	X		X	X
NO	3	18				X	X										X		
NONE	2	12			X									X					
WHY?																			
Enhance market performance	6	35	X	X								X	X					X	X
Market policies	3	18	X				X					X							
Descenteralization	1	6													X				
Other	1	6															X		
None	7	41			X			X	X	X	X			X		X			
5 DOES THE STOCK EXCHANGE PROTECT TREATMENT OF CLIENT ORDERS?																			
YES	13	76	X	X			X	X	X	X	X	X	X		X	X	X	X	
NO	2	12				X													X
NONE	2	12			X									X					
WHY?																			
Stock exchange rules	2	12			X													X	
Securities Commission policy	2	12	X		X														
To provide confidence	2	12											X		X				
None	12	71		X		X	X	X	X	X	X	X		X		X	X		X

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
6. IS ACCESS TO TRADING MARKET BY INVESTORS ADEQUATE?																			
YES	11	65	X	X		X	X	X	X	X	X		X			X	X		
NO	4	24										X			X			X	X
NONE	2	12			X									X					
WHY?																			
Unprecedent mald. growth	1	6																X	
Securities Commission policy	1	6	X																
Information & segmentation	1	6													X				
Other	3	18										X	X						X
None	11	65		X	X	X	X	X	X	X	X			X		X	X		
7. HOW IS LEVEL AUTOMATION IN CLEARING AND SETTLEMENT PROCESSES?																			
HIGH	2	12	X									X							
MEDIUM	4	24								X	X					X	X		
LOW	5	29				X		X							X			X	X
NONE	6	35		X	X		X		X				X	X					
WHY?																			
In creation phase	4	24		X			X						X					X	
Developed systems	2	12	X									X							
Lack of systems	2	12							X										X
Other	1	6													X				
None	6	35			X			X		X				X		X	X		
8. DOES MARKET INFORMATION SYSTEM SHOW INFORMATION OF TRADE FOR ALL PARTICIPANTS?																			
YES	8	47	X	X			X	X		X	X		X			X			X
NO	6	35				X		X				X			X			X	
NONE	3	18			X									X			X		
WHY?																			
Provide transaperence	4	24	X	X									X						X
Lack of systems	3	18							X						X			X	
Other	3	18								X	X	X							
None	6	35			X		X	X						X		X	X		
9. IS THE DISSEMINATION OF MARKET INFORMATION CONTROLLED?																			
YES	13	76	X	X		X	X	X		X			X		X	X	X	X	X
NO	2	12							X		X	X							
NONE	2	12			X									X					
WHY?																			
Regulations	4	24	X										X					X	X
Transparence objective	2	12										X			X				
Other	1	6									X								
None	10	59		X	X	X	X	X	X	X				X		X	X		
10 DOES THE STOCK EXCHANGE HAVE AN AUTOMATED MONITORING SYSTEM?																			
YES	7	41	X				X			X	X	X				X	X		
NO	8	47		X		X		X	X				X		X			X	X
NONE	2	12			X									X					
WHY?																			
Lack of systems	3	18											X					X	X
Technical capacity	3	18	X									X			X				
In planning stage	5	29															X		
None	8	47		X	X		X	X	X		X			X		X			
11. DOES STOCK EXCHANGE HAVE FACILITIES TO STORAGE TRADING DATA THAT ALLOW QUERIES?																			
YES	11	65	X	X		X	X	X	X	X	X				X	X		X	
NO	4	24										X	X		X			X	
NONE	2	12			X									X					
WHY?																			
Stock Exchange roll	1	6	X																
Lack of systems	3	18							X			X			X				
Few auction information	2	12											X						X
None	11	65		X	X	X	X	X		X	X			X		X	X	X	

HARDWARE
CENTRAL PROCESSING UNIT

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
12 INSTALLATION DATE																			
1988 to date	9	53		X		X			X			X	X		X				
1984 to 1987	3	18			X		X	X										X	
1981 to 1983	0	0									X								
Before 1981	0	0																	
None	5	29								X				X		X	X		X
13 ARCHITECTURE																			
Fault Tolerant	1	6						X											
Distributed	0	0																	
Orthodox	8	47				X	X		X		X	X						X	
PC Server	1	6		X											X				
Microcomputer	3	18	X										X			X			
None	4	24			X					X				X			X		X
14 NUMBER OF CPUs																			
More than 5	0	0																	
Up to 5	0	0																	
Up to 4	0	0																	
Up to 3	0	0																	
Up to 2	3	18						X				X							
1 or PCs	11	65	X	X	X	X	X		X		X		X		X	X		X	X
None	3	18								X				X			X		

			IBM	BM PS2	COBRA	EXAS IN	WANG	TANDEM	IBM		UNISYS	IBM	ND		CANON	UNISYS		HP3000	
15 BRANDS																			
CPU1																			
CPU2												IBM							
CPU3																			
NONE										X							X		

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
16 CYCLE TIME																			
Lower than 50 nS	0	0				X													
50 to 100 nS	2	12						X											
100 to 300 nS	1	6			X													X	
Greater than 300nS	6	35				4						X							
PC Server or PC	4	24		X									X		X	X			X
None	4	24	X				X		X	X	X			X			X		
17 PERFORMANCE (MIPS)																			
Greater than 15 MIPS	0	0																	
10 to 15 MIPS	0	0									X								
5 to 10 MIPS	0	0																	
2 to 5 MIPS	6	35		X		X		X				X							
Up to 2 Mips	6	35											X					X	
NONE	5	29	X		X		X		X	X				X	X	X	X		X
18 PERFORMANCE (ET1)																			
Greater than 30	0	0																	
15 to 30	0	0																	
7 to 15	0	0																	
1 to 6	3	18						X				X							
Lower than 1	8	47		X		X							X						X
NONE	6	35	X		X		X		X	X	X			X	X	X	X	X	

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
SECONDARY STORAGE																			
19. TOTAL STORAGE CAPACITY	(ON LINE)																		
Greater than 10 GB	0	0																	
6 to 10 GB	1	6					X												
1 to 5 GB	3	18						X				X							
Lower than 1 GB	6	35		X	X	X			X		X				X	X		X	
None	7	41	X							X			X	X			X		X
20. TECHNOLOGY																			
Optical	0	0																	
Magnetic Disk	8	53		X	X	X	X	X			X	X			X			X	
Magnetic Tape		0			X	X	X	X			X	X			X				
Diskette	0	0														X			
None	8	47	X						X	X			X	X			X		X
INPUT/OUTPUT																			
21. LINE PRINTER TECHNOLOGY																			
Laser High Speed	0	0																	
Chain Printer	2	12																	
Laser Low Speed	2	12										X				X			
Matrix	8	53	X	X	X	X			X		X	X	X		X	X		X	X
Specialized	0	0																	
Band		0						X											
None	4	24					X			X				X			X		
22. BRANDS																			
Printer 1			EPSON		CENTRONICS				IBM							UNISYS		HP	CANON
Printer 2																			
Printer 3																			
Printer 4																			
23. TERMINALS																			
Personal Computer	12	71	X	X		X	X		X		X	X	X		X	X		X	X
How many?			?	3			25		3		27	60				5		8	5
None	5	29						X		X				X			X		
TELECOMMUNICATION																			
24. COMMUNICATION PORTS																			
(X # BROKER)																			
Greater than 400	1	6						X											
200 to 400	0	0																	
150 to 200	0	0																	
50 to 150	0	0																	
10 to 50	3	18				X					X	X							
Lower than 10	2	12																X	
None	11	65	X	X	X		X		X	X			X	X	X	X	X		X
25. FRONT END PROCESSORS																			
Yes	3	18				X		X			X							X	
No	10	59	X	X	X		X		X	X		X	X		X	X			X
None	4	24												X			X		
26. DATA SWITCHES																			
Yes	0	0																	
No	13	76	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X
None	4	24												X			X		

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
27. COMMUNICATION PROTOCOLS																			
X 25 Layer 4 to 7	0	0																	
SNA LU 6 2	0	0																	
x 25 layer 1 to 3	1	6													X				
SNA PU2	0	0																	
3270/tty	4	24				X UUCP		X				X							
2780/3780	0	0																	
Uniscope	0	0																	
None	12	71	X	X	X		X		X	X	X		X	X		X	X	X	X
28. DATA TRANSMISSION FACILITIES																			
Satellite	0	0																	
Fiber Optics	0	0																	
VAN or Microwave	0	0																	
Public Data Network	0	0																	X
Wats	0	0																	
Leased Line	4	24						X			X	X			X				
Dial Up	0	0																	
None	13	76	X	X	X	X	X		X	X			X	X		X	X	X	
SOFTWARE																			
29. OPERATING SYSTEM NAME																			
VMS	0	0																	
MVS	0	0																	
Guardian	1	6						X											
UNIX	3	18									X								
MSDOS		0	X	X			X		X				X		X	X			
NETWARE		0										X			X				
OS400		0										X							
Other	7	41			X	X	X											MPE	
None	8	35								X				X			X		X
30. TELECOMM SOFTWARE																			
Yes	3	18						X			X	X						X	
No	10	59	X	X	X	X	X		X	X			X		X	X			X
None	4	24												X			X		
Name							FOX EXPAND			CMS TELC		/NOVELL						DSN/LNK	
31. PROGRAMMING LANGUAGES																			
C	1	6				X													
PASCAL	1	6				X						X							
COBOL	5	29			X		X	X	X		X	X	X					X	
ASSEMBLER	1	6					X				X				X				
PL/1		0																	
TAL		0																	
RPG		0							X			X	X						
FORTRAN		0																X	
ALGOL		0																	
BASIC																		X	
Others	1	6									X								
None	8	47	X	X						X				X		X	X		X

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
32. ANOTHER SOFTWARE																			
LOTUS			X						X			X	X			X			
DBASE			X	X					X			X	X			X			
FOX BASE															X				
CLIPPER			X									X			X				
EXCELL															X				
VENTURA															X				
WORDSTAR												X	X		X	X			
WINDOWS																			
HARVARD			X													X			
None											X						X		
33. PRODUCTIVITY TOOLS																			
CASE																			
Yes	1	6										X							
- NAME		0										IEW							
- MANUFACTURER		0										KNOW.WAR							
- RELEASE		0																	
No	7	41	X	X	X	X	X	X	X	X	X				X	X	X		X
None	8	53											X	X				X	
34. DBMS/SQL																			
Yes	6	35				X		X			X	X						X	
- NAME		0				UNIPLEX		ENCOMPASS			DBMS1100	SQL400						IMAGE3000	
- MANUFACTURER		0				REDWOOD		TANDEM			UNISYS	IBM						HP	
- RELEASE		0				6 015					SRID	R01M02							
No	3	18	X	X	X		X		X	X					X	X	X		X
None	8	47											X	X					
36. DOCUMENTATION AIDS																			
Yes	0	0									X								
- NAME		0									DDS								
- MANUFACTURER		0									UNISYS								
- RELEASE		0									3R								
No	7	41	X	X	X	X	X	X	X	X		X			X	X	X		X
None	10	59											X	X				X	
38. 4th GENERATION LANGUAGES																			
ORACLE	0	0																	
INFORMIX	1	6				X													
MANTIS	0	0																	
NATURA		0																	
Other	2	12			X		SPEFD 2												
None	14	82	X	X				X	X	X	X	X	X	X	X	X	X	X	X

CHAPTER II

MAIN CHARACTERISTICS OF THE I.T TECHNOLOGIES APPLIED TO ASSIST IN REGULATORY TASKS IN TRADING PROCESSES

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
PROCESSES																			
37 ORDER ENTRY																			
PERCENTAGE	1	6	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
METHOD																			
DEVELOPER																			
- In house												X							
- software house																			
- specify																			
SYSTEM												1							
INSTALLATION DATE												/89							
SOFTWARE																			
- Cobol												X							
TELEPROC ROLL																			
- prog to prog												X							
- terminal emulation																			
- file transfer																			
- OLTP																			
- Other																			
38 ORDER ROUTING																			
PERCENTAGE	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
39 PRICE DETERMINATION																			
PERCENTAGE	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
40 ORDER EXECUTION																			
PERCENTAGE	1	6	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
METHOD																			
DEVELOPER																			
- In house												X							
- software house																			
- specify																			
SYSTEM												1							
INSTALLATION DATE						x													
SOFTWARE																			
- Cobol												X							
- Assembler																			
TELEPROC ROLL																			
- prog to prog												X							
- terminal emulation																			
- file transfer																			
- OLTP																			
- Other																			
41 ORDER NOTIFICATION																			
PERCENTAGE	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
42 CLEARING AND SETTLEMENT																			
PERCENTAGE	1	8	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	100 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%
METHOD																			
DEVELOPER																			
- In house												X							
- software house																			
- specify																			
SYSTEM												1							
INSTALLATION DATE												/89							
SOFTWARE																			
- Cobol												X							
TELEPROC ROLL																			
- prog to prog												X							
- terminal emulation																			
- file transfer																			
- OLTP																			
- Other																			
43 MARKET INFORMATION SYST	2	12	0 00%	0 00%	0 00%	0 00%	0 00%	X	0 00%	0 00%	0 00%	80 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%
PERCENTAGE																			
METHOD																			
DEVELOPER																			
- In house												X							
- software house								X				X							
- specify								Tai eyecom											
SYSTEM								1				1,2							
INSTALLATION DATE								03/86				06/89							
SOFTWARE																			
- Cobol								X				X							
- Psecal												X							
TELEPROC ROLL																			
- prog to prog												X							
- terminal emulation																			
- file transfer																			
- OLTP																			
- Other								BATCH											
44 MARKET SURVEILLANCE	2	12	0 00%	0 00%	0 00%	0 00%	0 00%	X	0 00%	0 00%	0 00%	80 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0 00%
PERCENTAGE																			
METHOD																			
DEVELOPER																			
- In house												X							
- software house								X				X							
- specify								Tai eyecom											
SYSTEM								1				1,2							
INSTALLATION DATE								03/86				06/89							
SOFTWARE																			
- Cobol								X											
- Psecal												X							
TELEPROC ROLL																			
- prog to prog												X							
- terminal emulation																			
- file transfer																			
- OLTP																			
- Other								BATCH											

			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
45 MARKET LINKAGES	1	6	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	80.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PERCENTAGE																			
METHOD																			
DEVELOPER:																			
- in house												X							
- software house												X							
- specify																			
SYSTEM												2							
INSTALLATION DATE												07/89							
SOFTWARE:																			
- Turbo basic												X							
TELEPROC ROLL																			
- prog. to prog.												X							
- terminal emulation																			
- file transfer																			
- OLTP																			
- Other																			

CHAPTER THREE: TECHNOLOGICAL ABSORTION CAPACITY

HUMAN RESOURCES

46 ORGANIZATION LOCATION																			
Up to 2nd level	0	0																	
3rd level	4	24		X		X		X				X							
4th level	5	29							X	X	X		X					X	
5th level	0	0																	
None	8	47	X		X		X							X	X	X	X		X

47 EXPERIENCE (MANAGEMENT)																			
More than 10 years	0	0																	
5 TO 10	1	6										X							
2 TO 5	1	6								X									
1 TO 2	0	0																	
Up to 1 year	0	0																	
None	15	88	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X

48 EXPERIENCE																			
More than 5 years	0	0																	
Up to 5	0	0																	
Up to 4	1	6				X				X									
Up to 2	1	6										X							
Up to 1 year	1	6																	
None	14	82	X	X	X		X	X	X		X		X	X	X	X	X	X	X

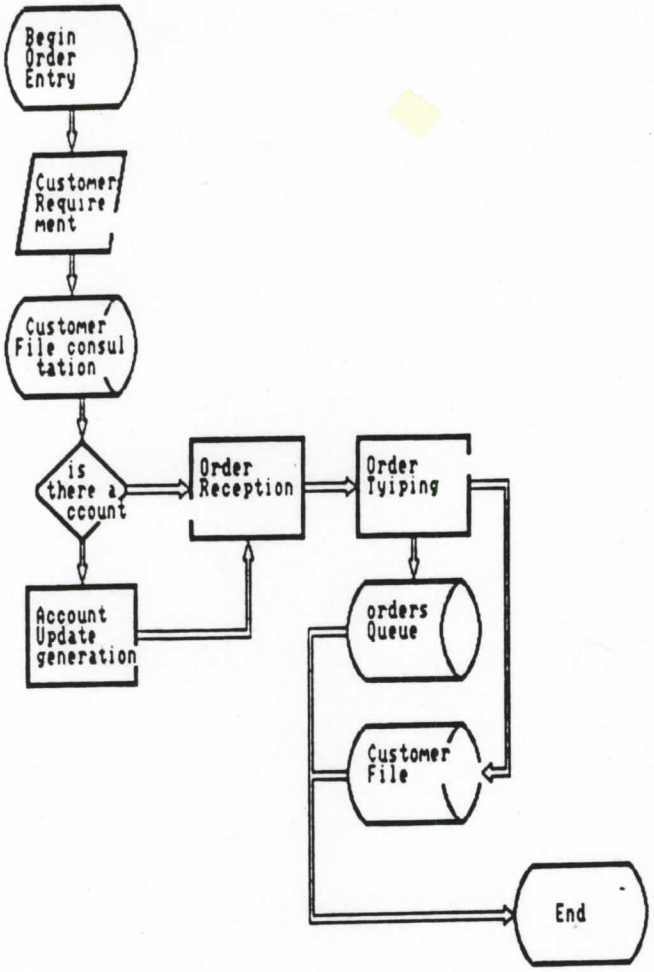
49 EDUCATION (MANAGEMENT)																			
Doctorate PHD,DA	0	0																	
Master	1	6										X							
College	3	18				X				X			X						
High School	0	0																	
Lower than High School	0	0																	
None	13	76	X	X	X		X	X	X		X			X	X	X	X	X	X

50. EDUCATION			ARG	BOL	BRA	COL	CHIL	CHIN	EGY	KOR	MAL	MEX	NIG	PANA	PERU	POR	THA	TUR	VEN
Doctorate PHD,DA	0	0																	
Master	0	0																	
College	3	18				X				X		X							
High School	0	0																	
Lower than High School	0	0																	
None	14	82	X	X	X		X	X	X		X		X	X	X	X	X	X	X

51. Expenses Ratio																			
More than 8%	5	29		X		X		X				X				X			
4% to 8%	1	6													X				
2% to 4%	2	12								X			X						
1% to 2%	0	0																	
Lower than 1%	1	6																X	
None	8	47	X		X		X		X		X			X			X		X

ANNEX 2
MARKET SURVEILLANCE PROCEDURES

- Order entry
- Order routing
- Price determination
- Order execution
- Order notification
- Clearing o Settlement
- Market Information System
- Market surveillance
- Market interconnection



1. PROCEDURE: ORDER ENTRY

PROCEDURE: ORDER ENTRY.

a) Generation of the buy/sell order. The customer calls to the broker asking him to execute the order. The broker checks the master file containing the information related with that customer.

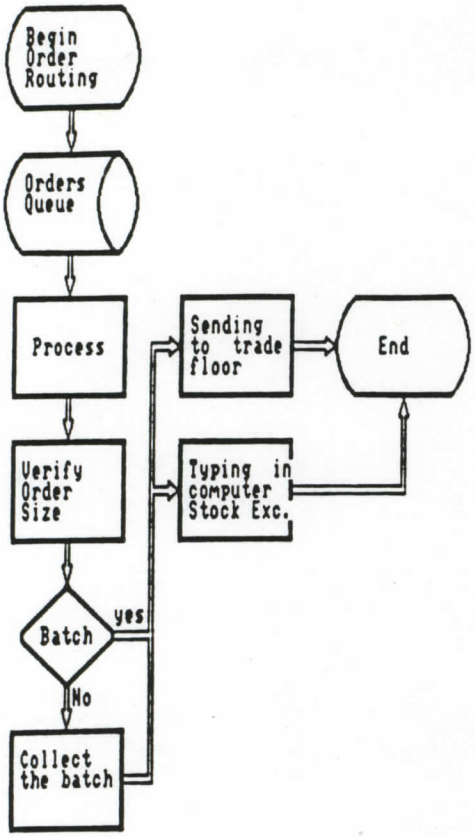
b) If the customer doesn´t have an investment account, then the broker will ask for all the general information to start a new one.

c) Once the broker checks the existence of the investment account and/or creates the master file, then he will receive the order to buy/sell a given security.

d) If automated this procedure, then the broker types the data entry operation in his computer terminal.

e) Whatever the computer or the manual operations, then two files are updated, the customer investment account, and the pending orders queue.

In a simultaneous way, the credit is checked, whatever the operation will be, but this operation has been included in the clearing and settlement procedure.

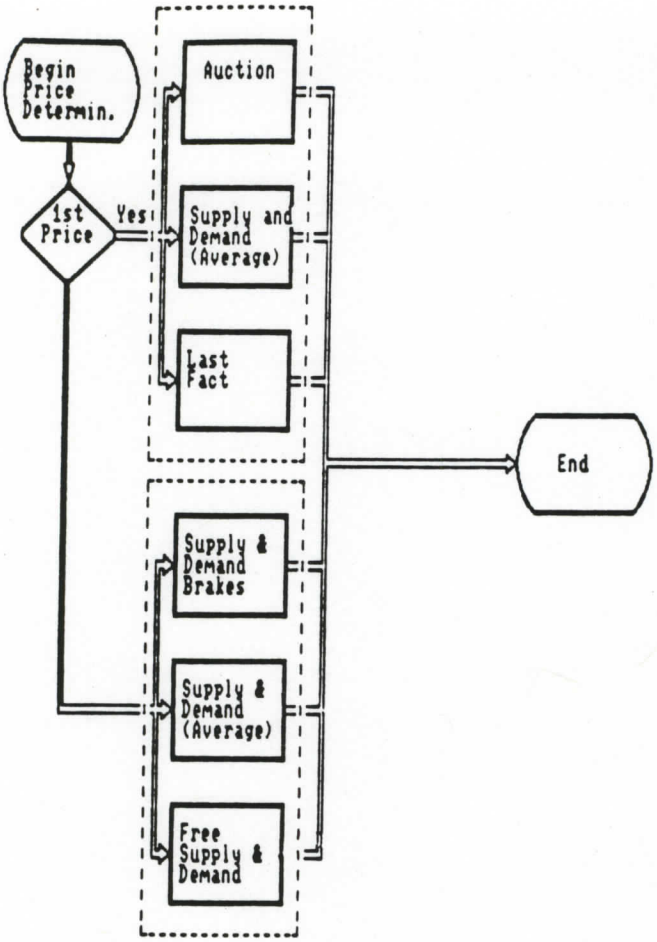


PROCEDURE: ORDER ROUTING

2. PROCEDURE: ORDER ROUTING.

1) The order queue file, previously updated is then accessed to check the size of the order. This size will dictate the strategy to buy or sell this specific security.

2) As soon the strategy is defined then the broker house sends the order to the market, via the stock exchange computer if computer trading exist, or through the broker media which can consist of computer, telephone, etc.



PROCEDURE: PRICE DETERMINATION

3. PROCEDURE: PRICE DETERMINATION.

It has been included six different way to fix the price of a given security, which depend basically of the procedures used in every market.
Starting price:

1) Auction. The supply and demand will give the starting price. The higher price available for selling positions the lower for buying.

2) Average Supply and Demand. Starting price will depend of an average or pre defined algorithm to fix the starting price.

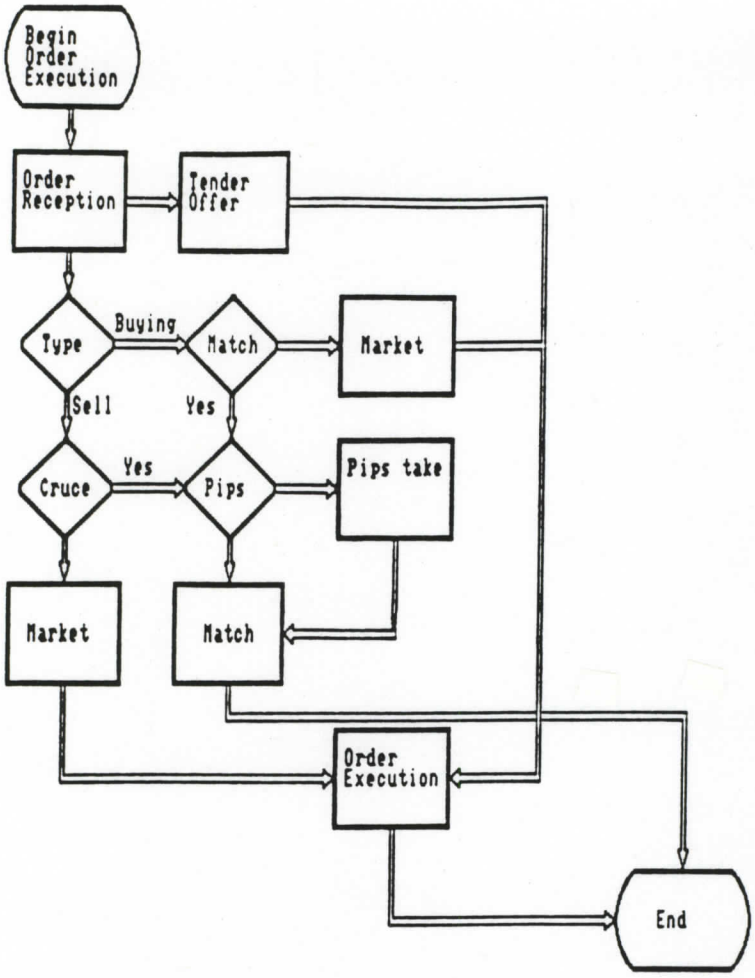
3) Price of the last transaction. The opening price will be that one of the last transaction done the day before.

Trading time:

1) Supply and demand with trading brakes. The price will be fixed merely by supply and demand. In certain markets there are brakes to protect investors stopping sudden rise of any stock.

2) Supply and demand. This method eliminates the possibility of any brake in his rise and fall patterns.

3) Supply and demand. Certain markets only maintain slight variation in the opening price which is established through an average of the supply and demand prices or by means of a pre defined algorithm.



PROCEDURE: ORDER EXECUTION

4. PROCEDURE: ORDER EXECUTION.

The order can be executed through a stock exchange or through an offer directly to the buying/selling counter-part. Certain countries allow the execution of operations outside the stock exchanges however exist some requirement to make these operations.

If the broker have both buyer/seller, then he will notify both the authority and the market before complete the operation.

If not, it will go to the market to ask or bid his offerings. As soon find the security or the buyer it will execute the operation.

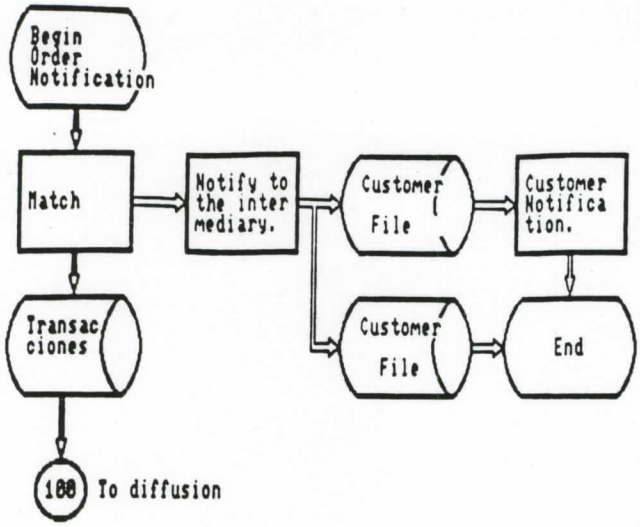
There are certain tasks to be performed by the regulatory organism or authority:

1) To check the assignation procedure of any security traded. Operations will be based in a FIFO philosophy.

2) Brokers will assign his own position of any security given after satisfy the total demand of his customer base.

3) Orders executed are performed after the proper request of the order entry procedure.

4) Orders to be executed will not be short selling operations, thus broker will check that customers have either the securities traded or the credit or money to operate.



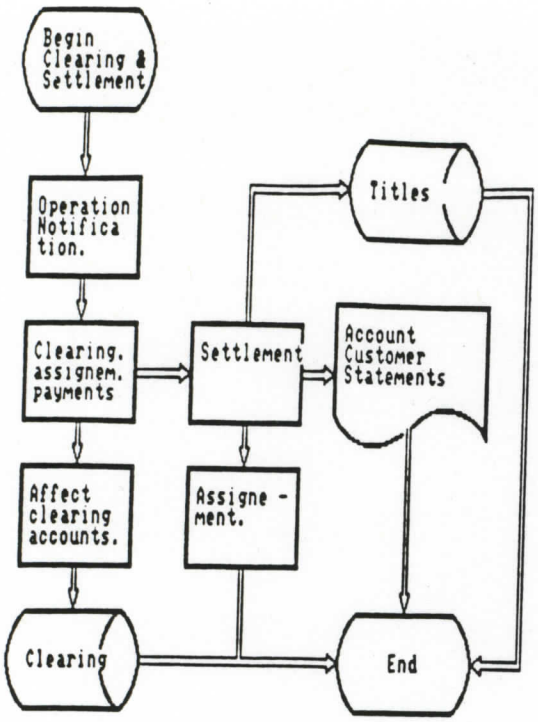
PROCEDURE: ORDER NOTIFICATION

5. PROCEDURE: ORDER NOTIFICATION.

Once the orders are executed either trading floor or computer trading, the broker or intermediate will receive the notification of operations performed.

This information will be used to update the customer master file as well as the customer orders file, customer account, and general ledger.

After it, the customer is notified that his operation has been performed.



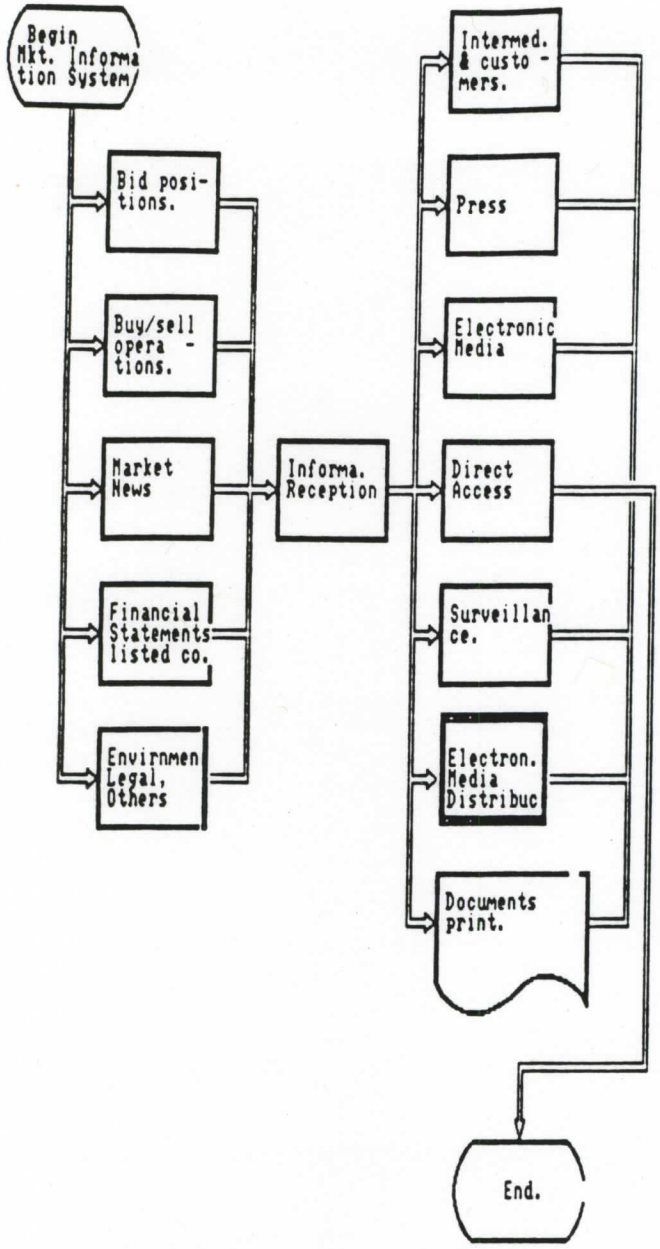
PROCEDURE: CLEARING AND SETTLEMENT

6. PROCEDURE: CLEARING AND SETTLEMENT.

With the notification, the stock exchange, the brokers and the clearing house (if available) perform all the Clearing and Settlement procedures. If Clearing, all the payments are assigned. When Settlement, the securities are assigned or sent to the new owners or representatives.

This operation will affect the clearing and settlement master file, as well as the customer statements, and the assignation of securities.

The customer will receive the statement showing his new balance of credit/debit and securities.



PROCEDURE: MARKET INFORMATION SYSTEM

7. PROCEDURE: MARKET INFORMATION SYSTEM.

It has been indicated some of the main areas to be covered by a market information system, regardless it is automated or not.

1) Ask/bid positions

2) Buy/sell operations

3) News related with the market, sector or any particular stock.
4) Financial statements of listed companies (and related ones)

5) Environment, Legal, etc.

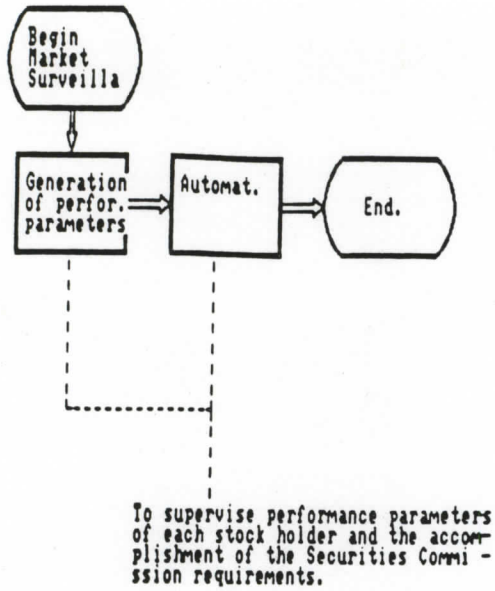
6) Broker/intermediate and customers positions

7) Media distribution

8) Self regulatory environment

9) Market performance information

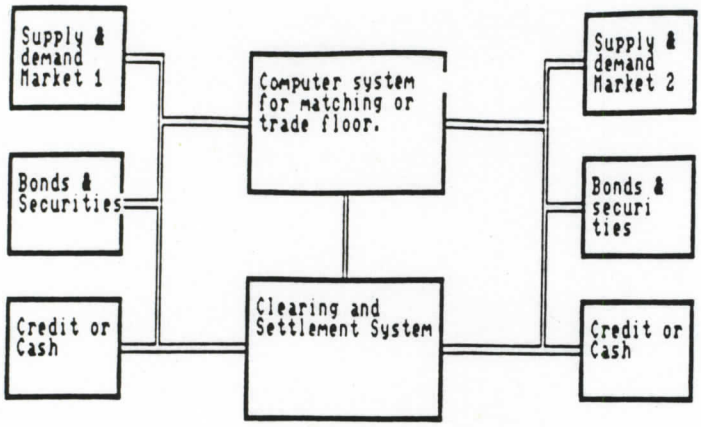
10) Electronic media distribution.



PROCEDURE: MARKET SURVEILLANCE

8. PROCEDURE: MARKET SURVEILLANCE.

If considered within a self-regulatory environment, this procedure includes the generation of performance parameters as well as the implementation of these parameters in the critical operational factors.



PROCEDURE: MARKET INTERCONECTION.

9. PROCEDURE: MARKET INTERCONNECTION.

Several stock exchanges or market systems must computerize the linkages of these separate local market places to operate as one single market.
These systems requires an interconnection beetwen the computer system for matching or trade floor and the clearing and settlement system also to achieve an eficient real time price dissemintaion and price comparison systems for all markets involved.

ANNEX 3
MARKET INFORMATION MODELS

- Model for infant markets

- Model for emerging markets

- Model for mature markets

DEVELOPMENT OF COMPUTER MODELS FOR INFORMATION DISSEMINATION

Model 1 - Model for Infant Markets

A. Prerequisites

1) The market is limited and small-scale, and so in an infant stage.

2) Investors are few and come from a narrow range of society.

B. Formation

1) The model can be adopted through the formation of a joint-use, information processing company.

2) Management of the company is consigned to the concerned institutions or related third-party institutions.

C. Procedure

1) Inputting investors' orders in the terminal.

2) Checking reliability of the securities business system.

3) Outputting the order slips in the agents' room at the exchange.

4) Settling the orders according to the order slip (at each post)-

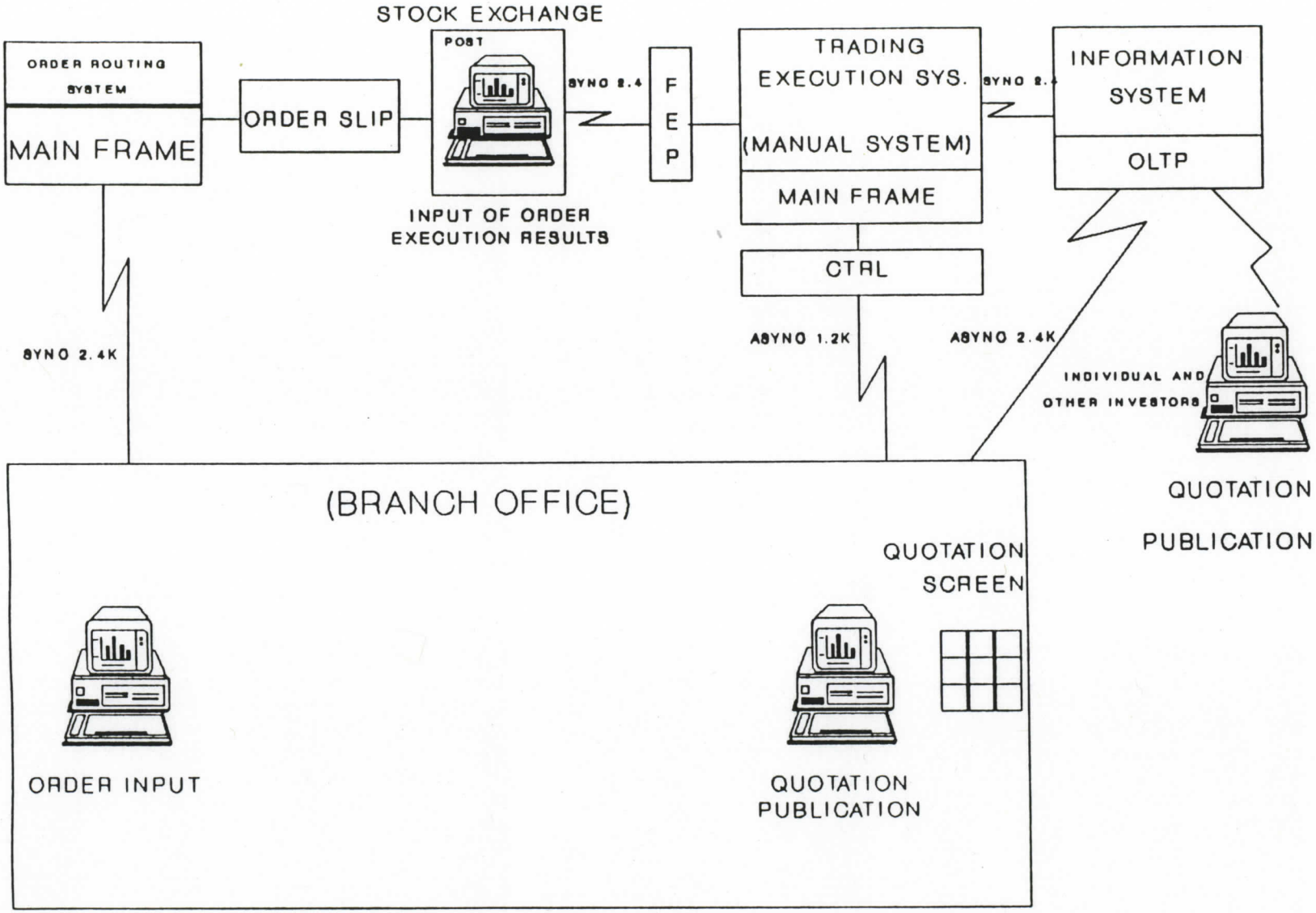
5) Inputting the results of the order settlement in each agent's room.

6) Routing the results of settlement to the information system and the securities business system.

7) Informing the results of settlement to the branch office terminals.

8) Routing quotation etc. to the branch office quotation screen and terminals through the information system.

9) Routing the information to the terminal installed for the individuals or corporations.



MODEL FOR INFANT MARKETS

Model II - Model for Emerging Market

A. Prerequisites

1) The market for this must develop from a limited small-scale market of the infant state to an emerging market, especially increasing market volume. The relative importance of the investors and the relative importance of the securities market in the economy must increase.

2) A computer network must be developed nation-wide to provide the proper enviroment for computerization.

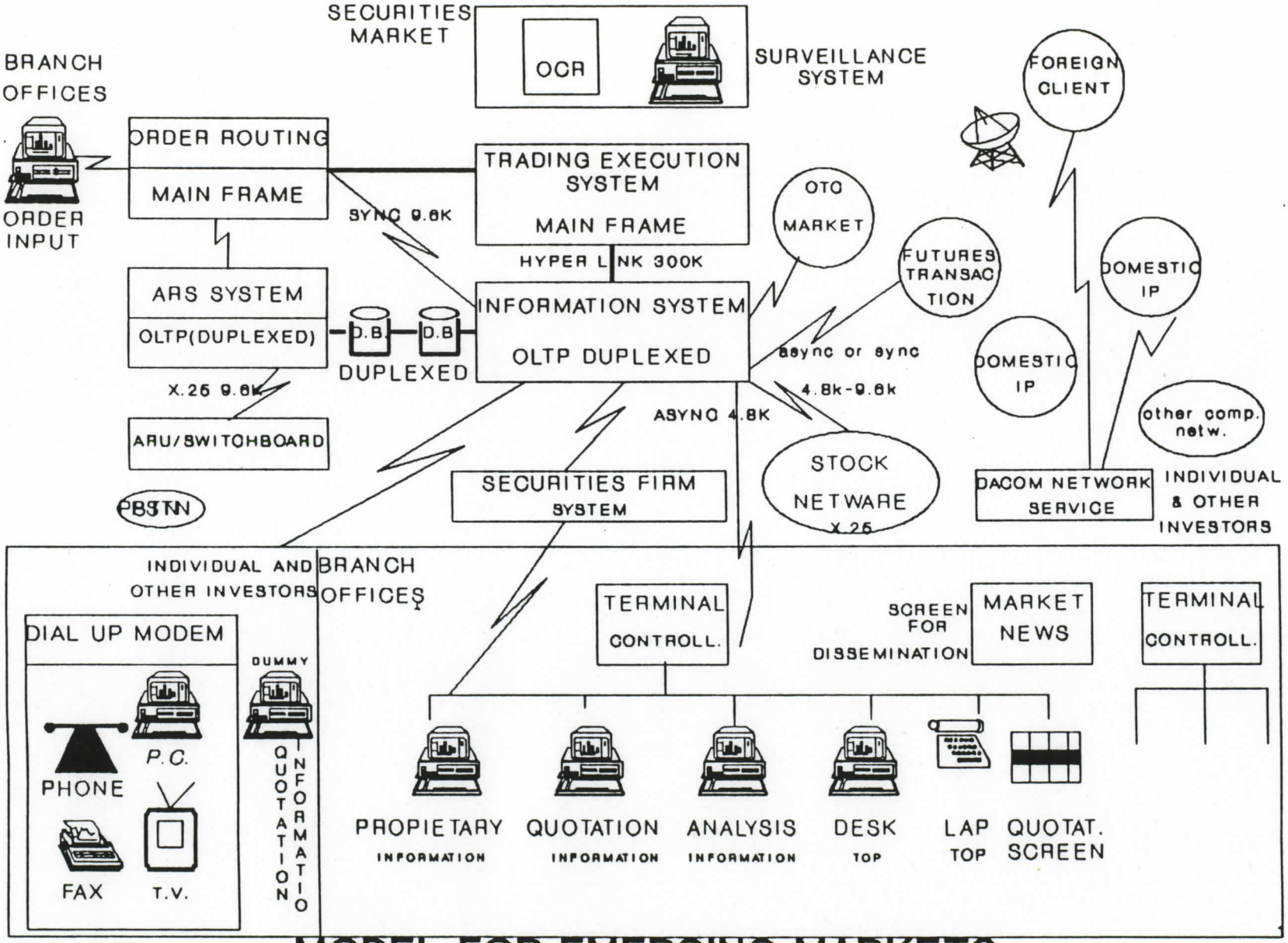
B. Formation

1) Each securities company will develop separate propietary computer systems.

2) The model can be adopted through the development of comprehensive securities computer network formed by linking such propietary systems.

C. Procedure

1) Order imput (branch offices).
2) Placing orders by using a home trading system on a PC or using the ARS via the telephone.
3) Transmitting quotation information to the information system and to the trading execution system.
4) Transmitting the results of order execution to the information system.
5) Updating the results of order execution in the DB.
6) Clients using the ARS to inquire about the results of order execution and market movements.
7) OTC market results input.
8) Futures transaction results input.
9) Input of various information by domestic IP.
10) Information input by securities-related institutions.
11) Transmitting comprehensive information to the pertinent medium.
12) Interfacing securities network with the DNS network.
13) Transmitting information to the foreign contracted companies.
14) Accumulation of information from domestic IP.
15) Providing information to contracted individuals.



MODEL FOR EMERGING MARKETS

EXIBIT 3
ORGANIZATION CHARTS

Securities Commissions:

- Argentina
- Brasil
- Mexico
- Panama
- Taiwan

Stock Exchanges:

- Cali
- Comercio de Santiago
- Costa Rica
- Jamaica
- Kuala Lumpur
- Lisboa
- Medellin
- Mexico
- Occident (Colombia)
- Portugar
- Taiwan
- Turkey
- Venezuela

Model III - Model for Mature Markets

A. Prerequisites

1) The investors of the market need more detailed financial information.

2) Investment vehicles diversify to include futures, options.

3) The market is open to foreign participation.

B. Formation

The model can be adopted by forming a comprehensive computer network for securities market information offering comprehensive service.

C. Procedure

1) Translating the results of trading-execution of branch Office orders and customer's trading into DB.

2) Routing of information on the over-thecounter market, futures market and trading-execution results.

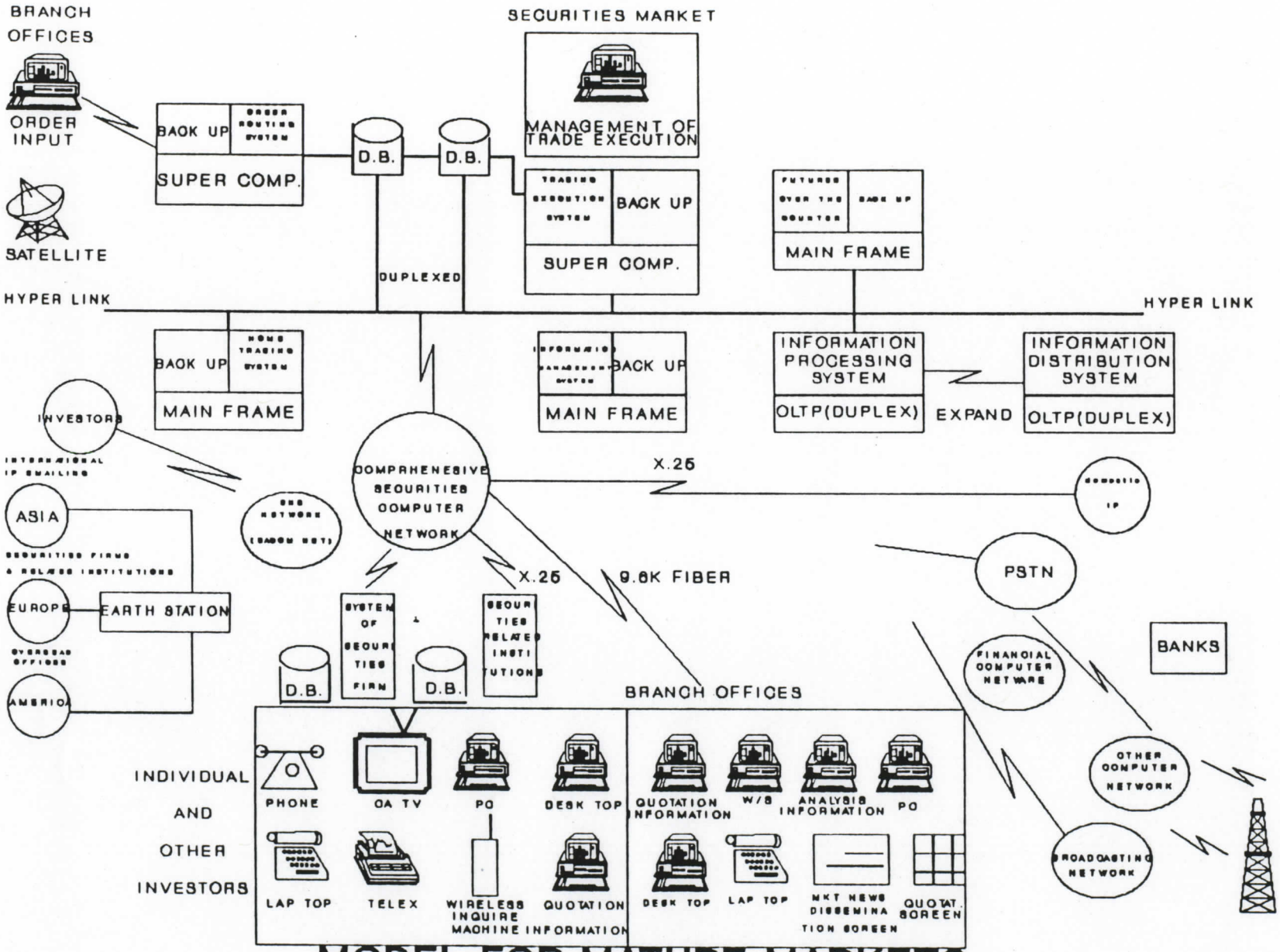
3) The gathering of each section's information by domestic IP.

4) Connecting the securities network with various other networks.

5) Linking the securities network and the securities company's systems and related-institution's systems.

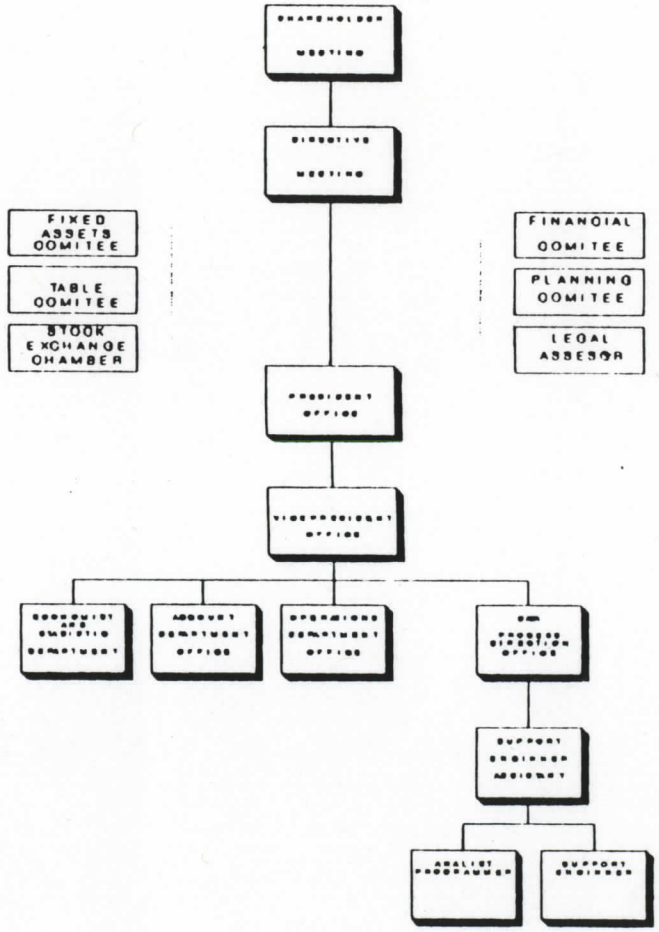
6) Transmission of information abroad through the DNS network.

7) Information service for individual investors through the DNS network.



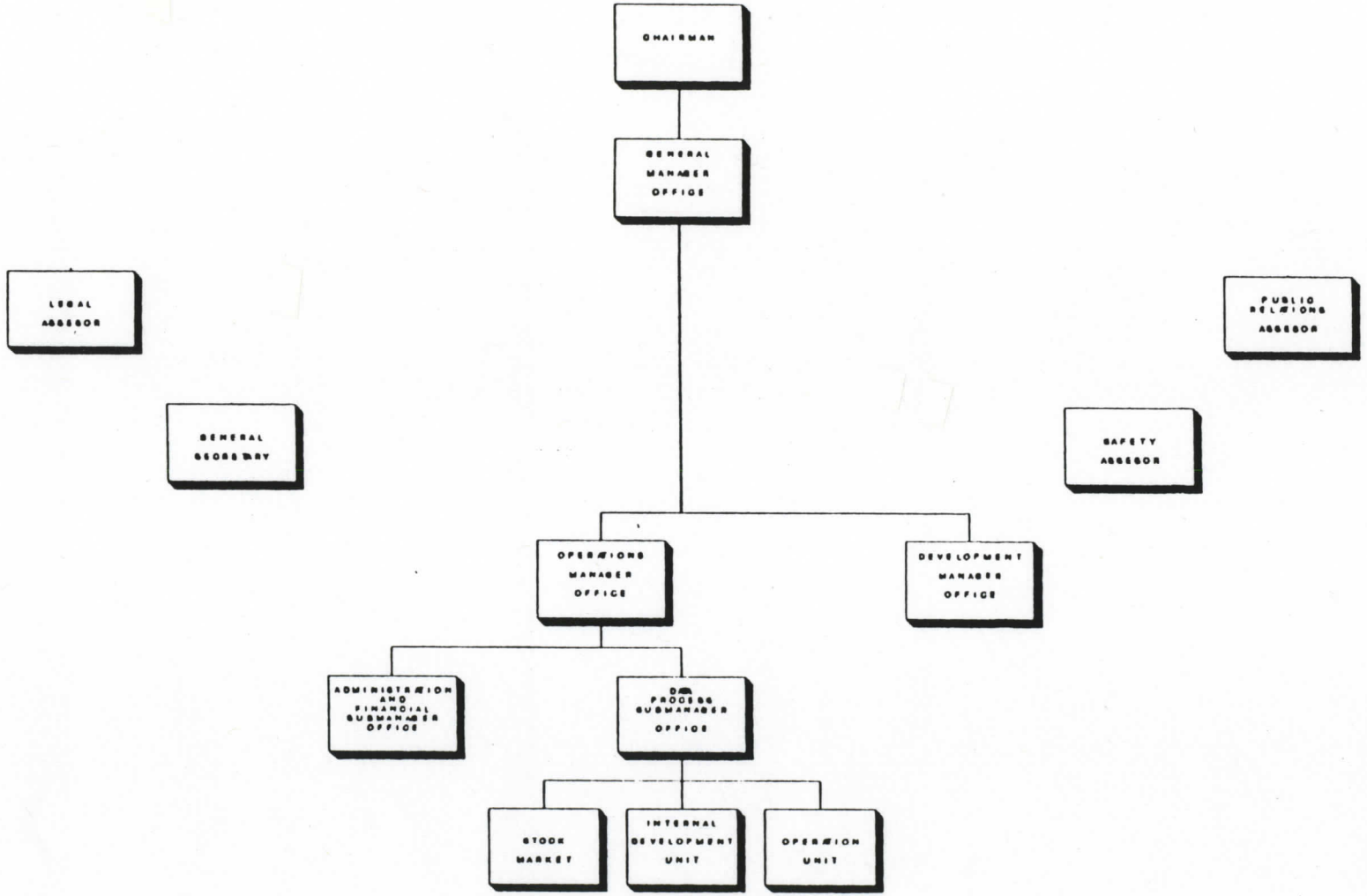
MODEL FOR MATURE MARKETS

CALI STOCK EXCHANGE



Calise

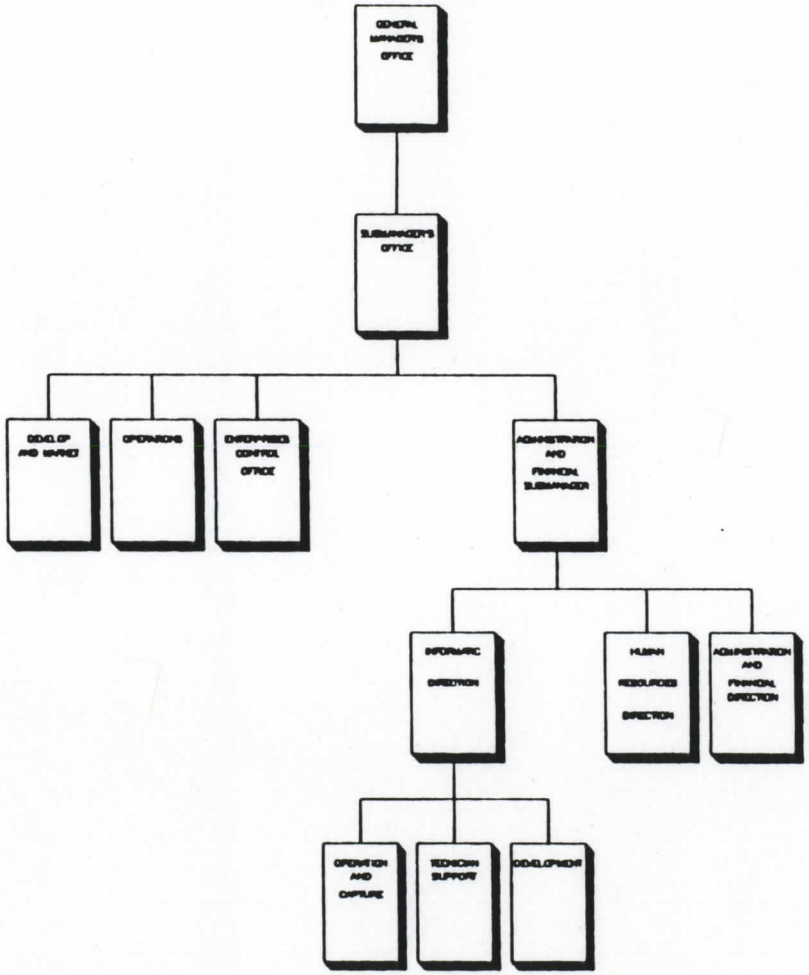
COMERCIO DE SANTIAGO STOCK EXCHANGE



Santiago

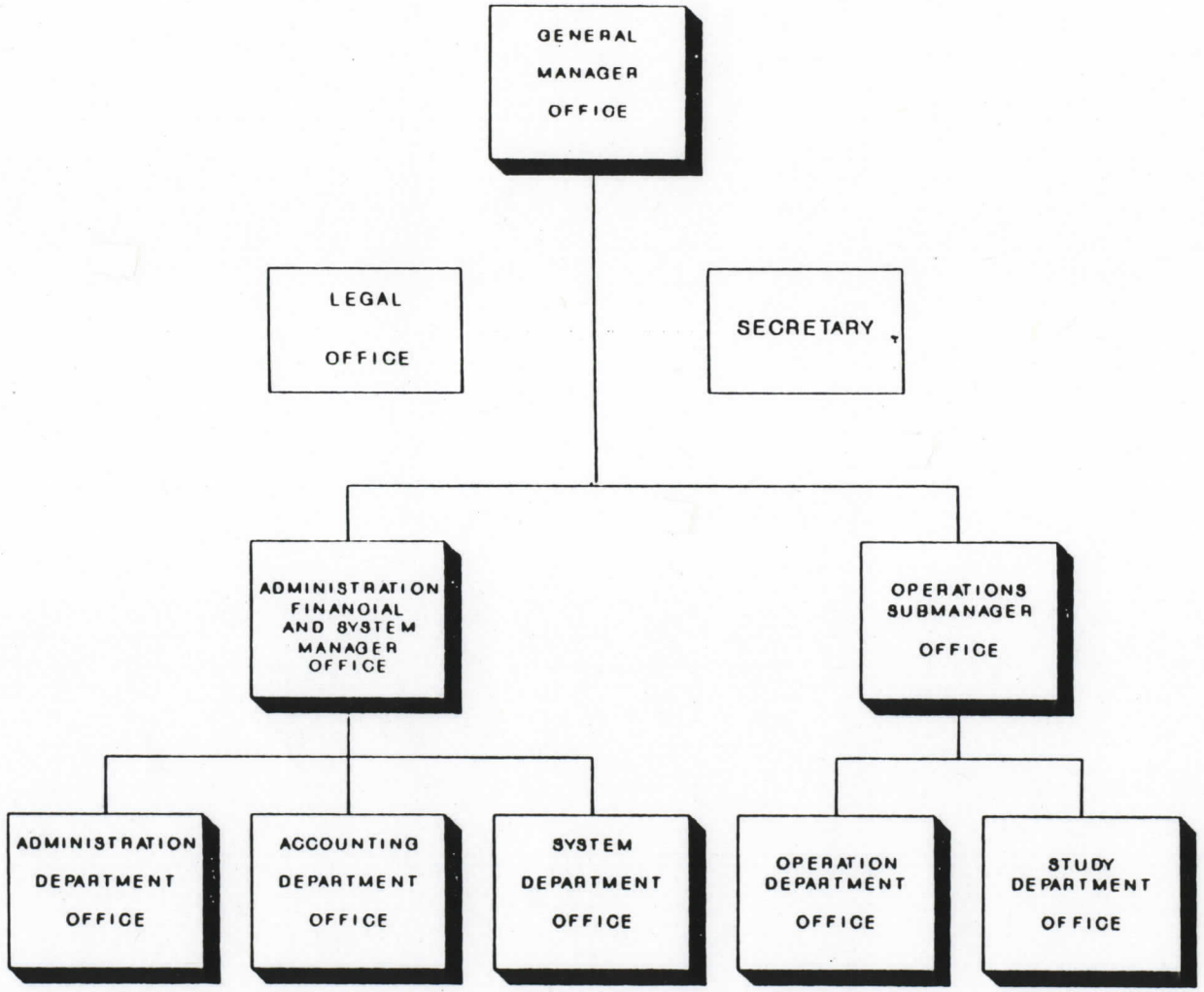
COSTA RICA NATIONAL STOCK EXCHANGE

DATA PROCESS LOCATION



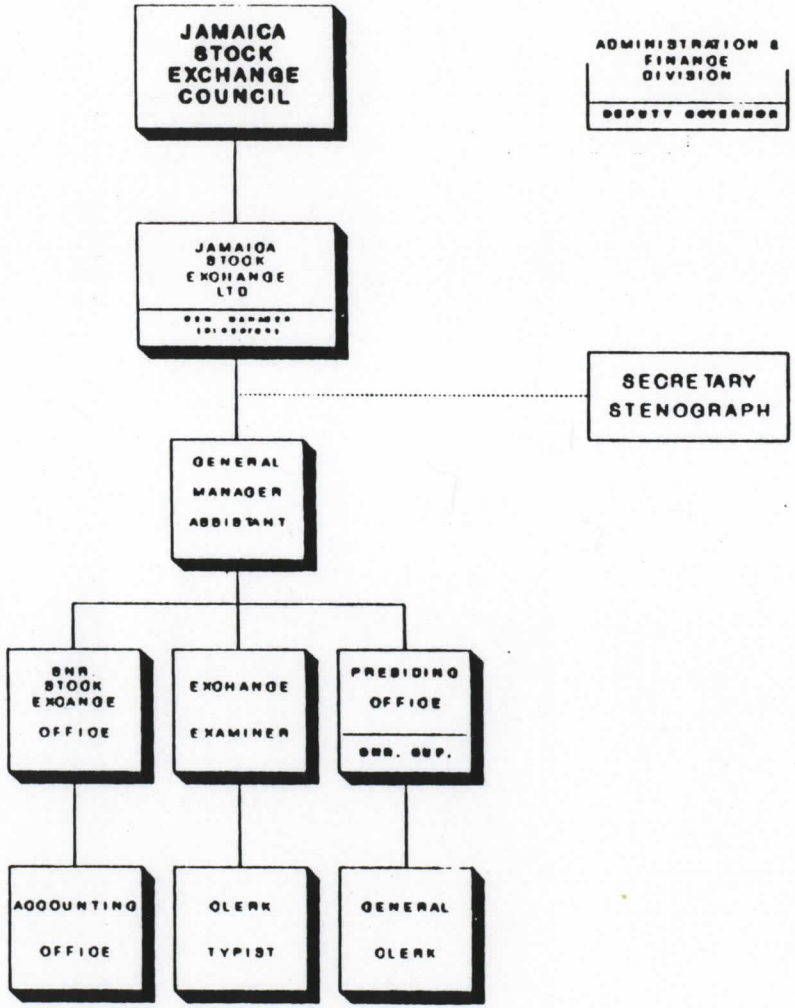
Costaric

CHILE STOCK EXCHANGE

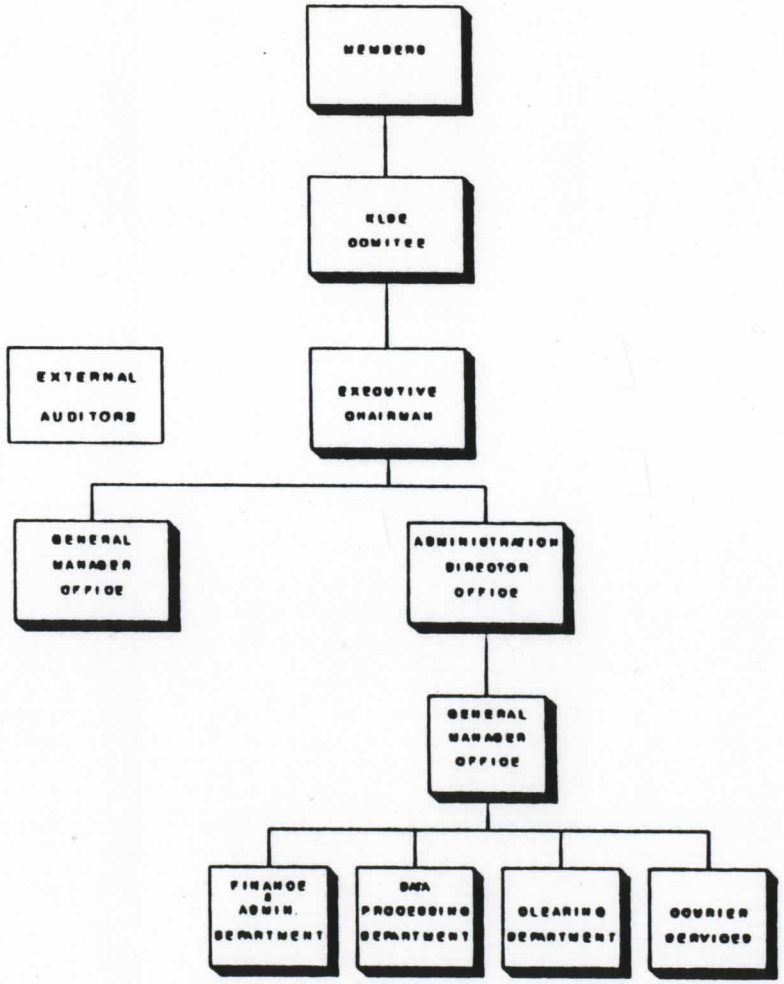


Chile-01

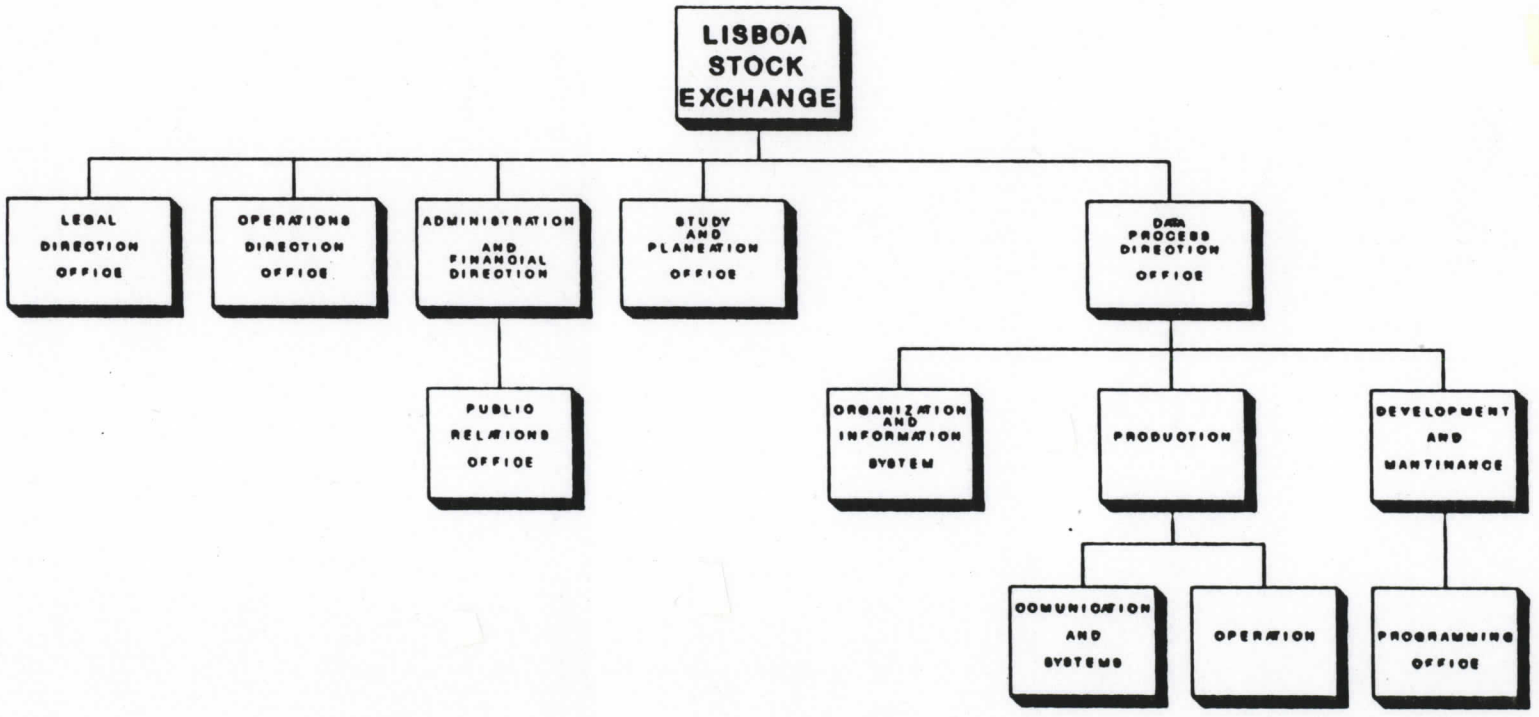
JAMAICA STOCK EXCHANGE LTD.



KUALA LUMPUR STOCK EXCHANGE



LISBOA STOCK EXCHANGE



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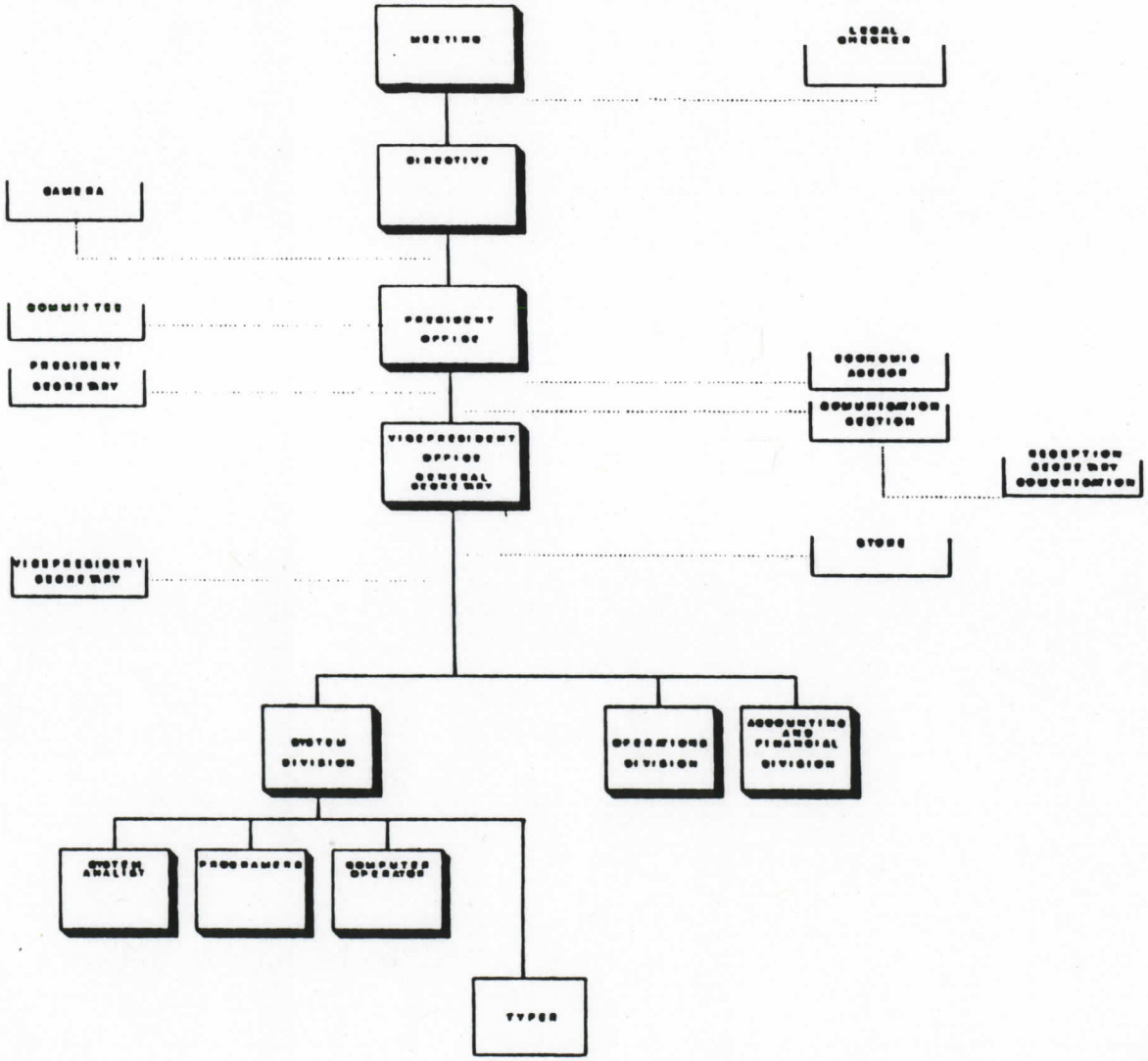
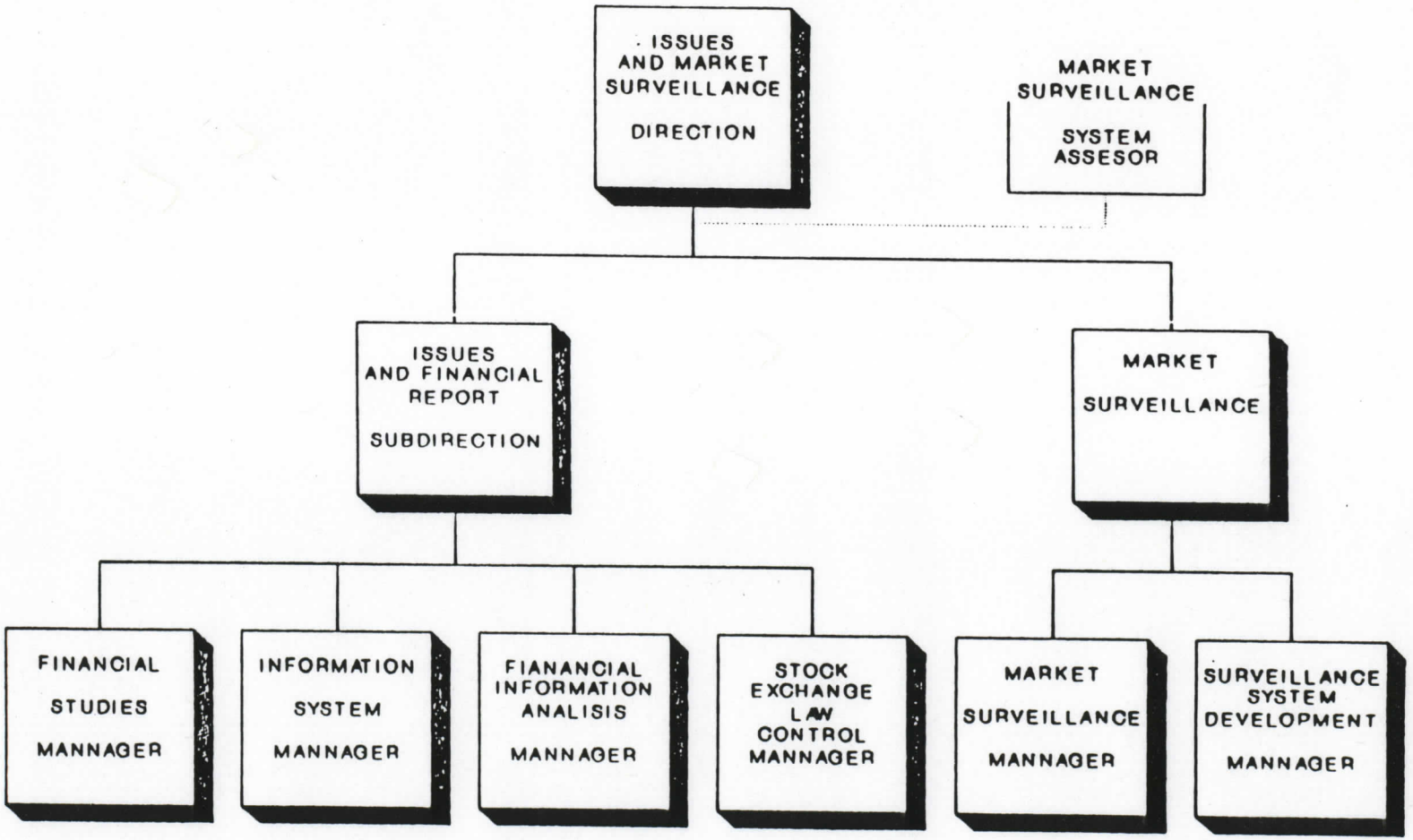
MEDELLIN STOCK EXCHANGE



Medellin

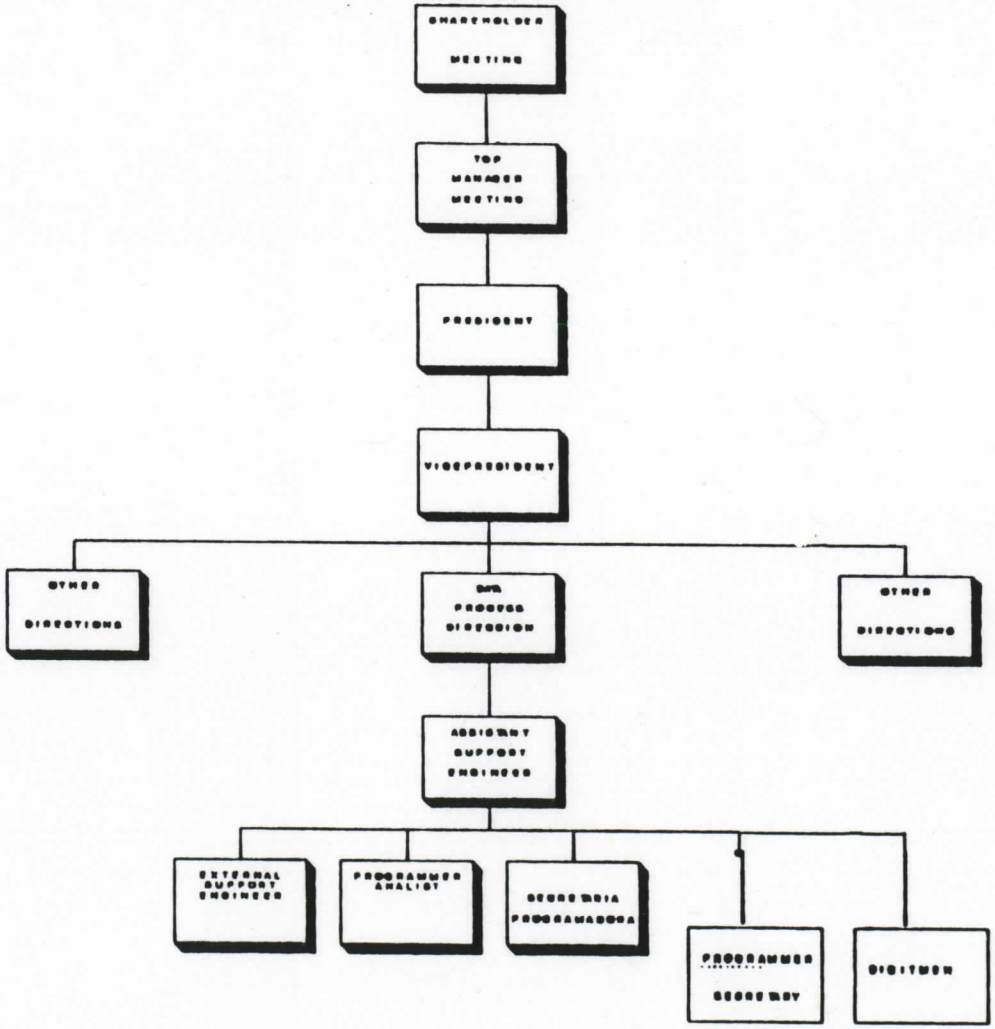
MEXICO STOCK EXCHANGE



Méxicose

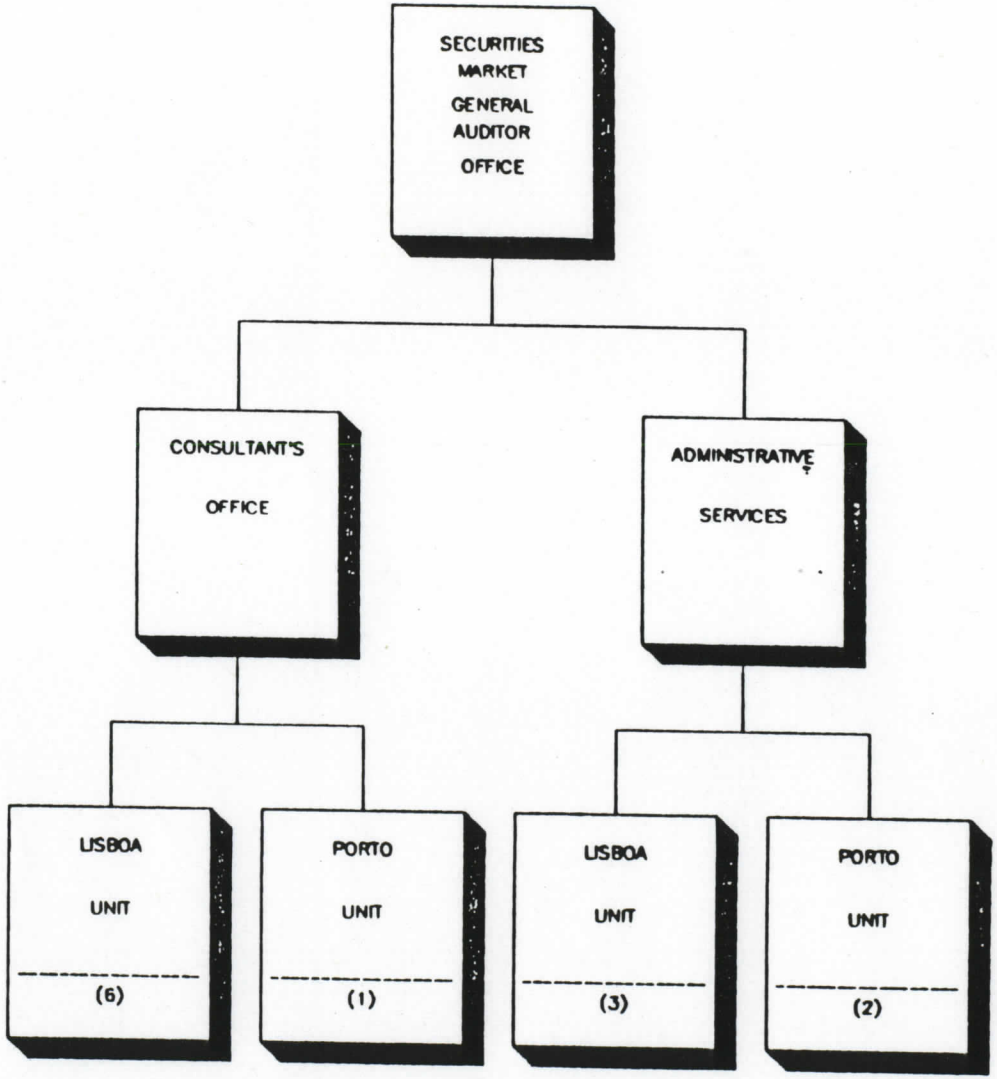
COLOMBIA OCCIDENT STOCK EXCHANGE

DATA PROCESS LOCATION



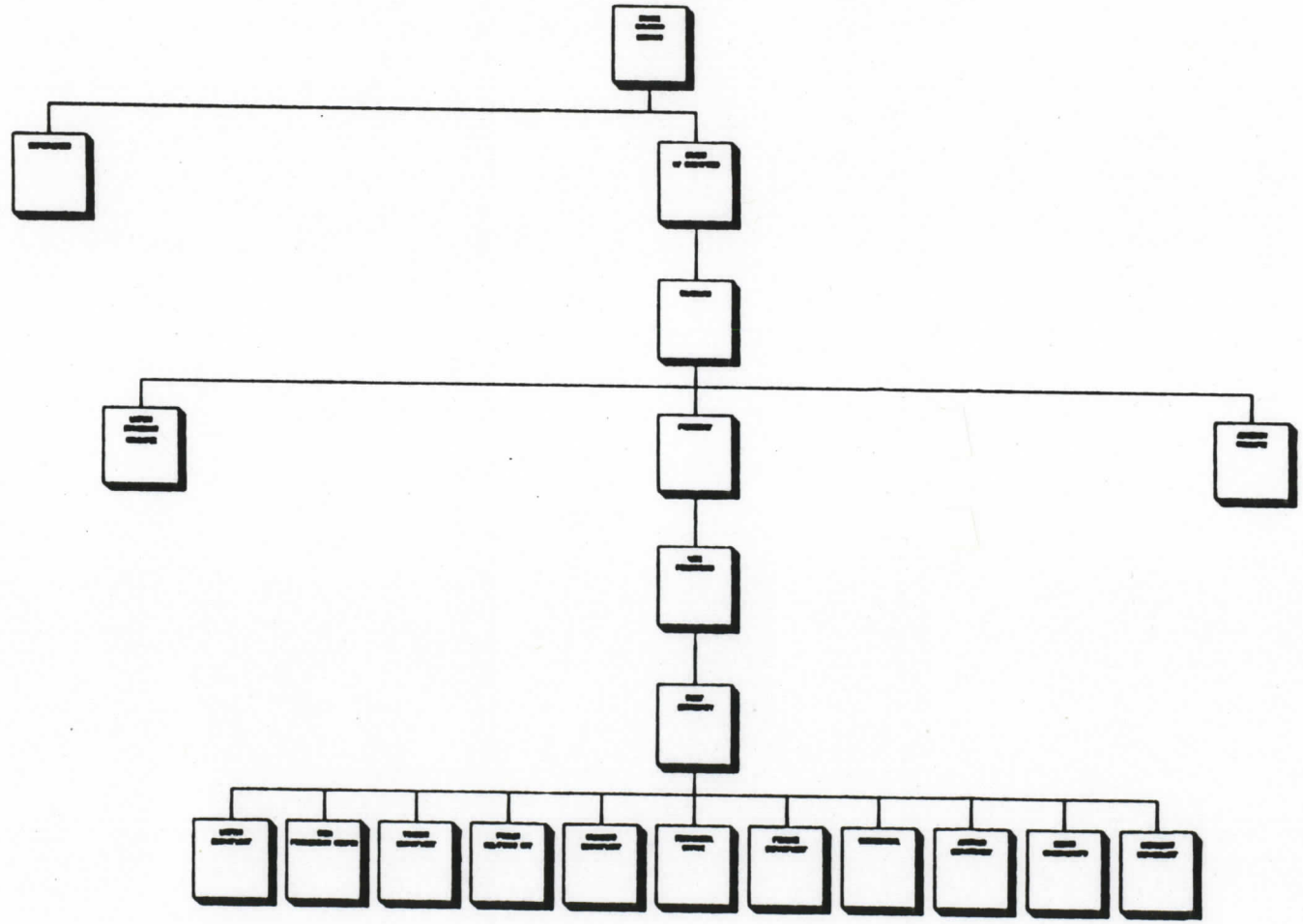
Colombi

PORTUGAL NATIONAL STOCK EXCHANGE



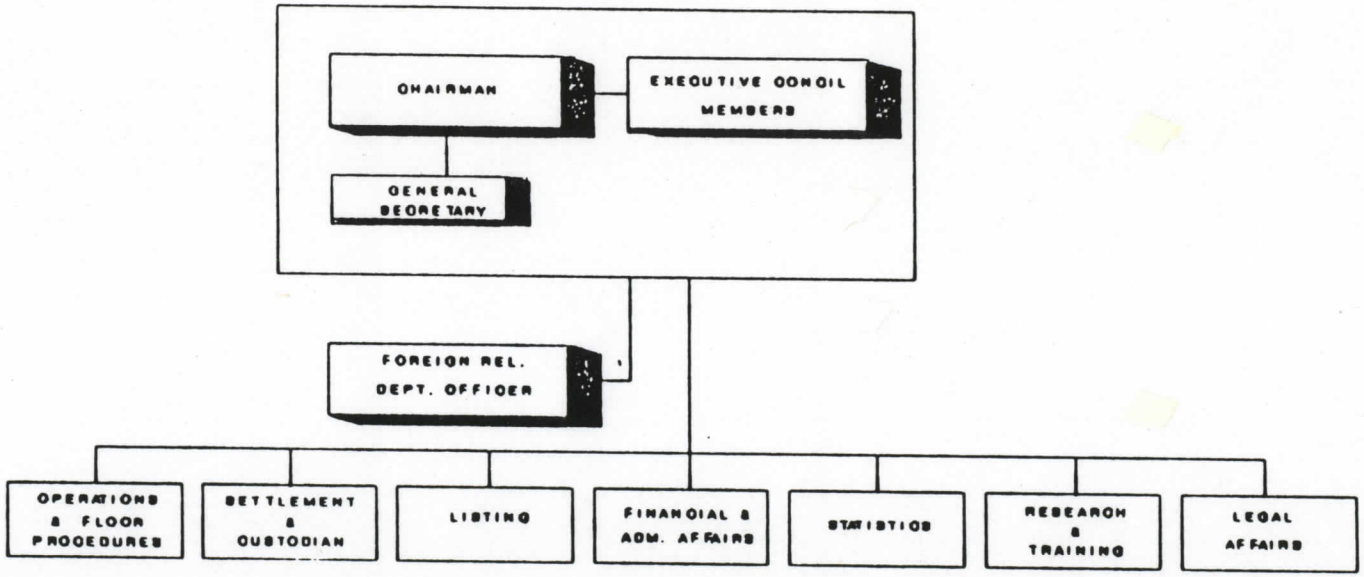
Portuese

TAIWAN STOCK EXCHANGE



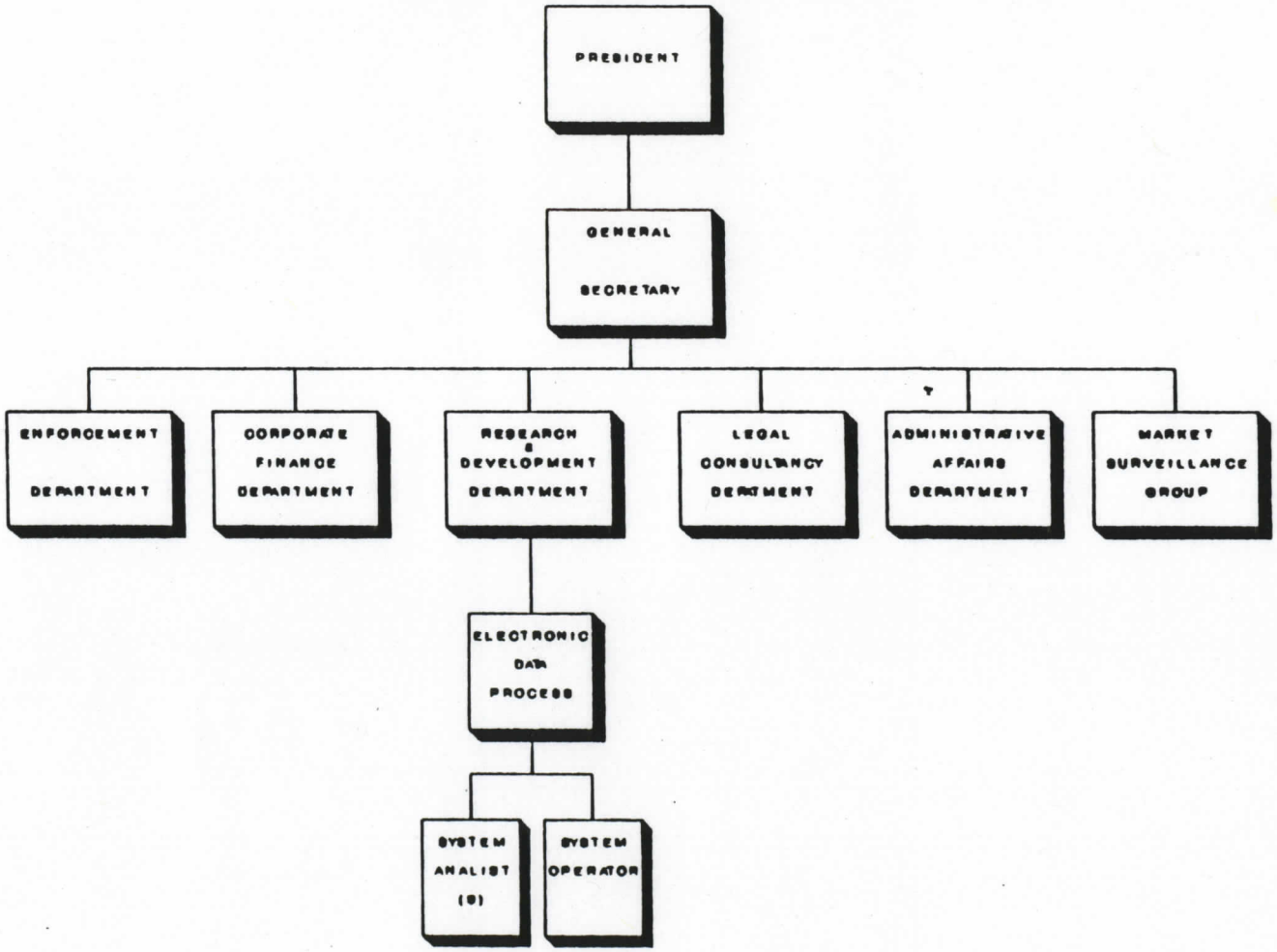
Taiwan 1

TURKEY NATIONAL STOCK EXCHANGE



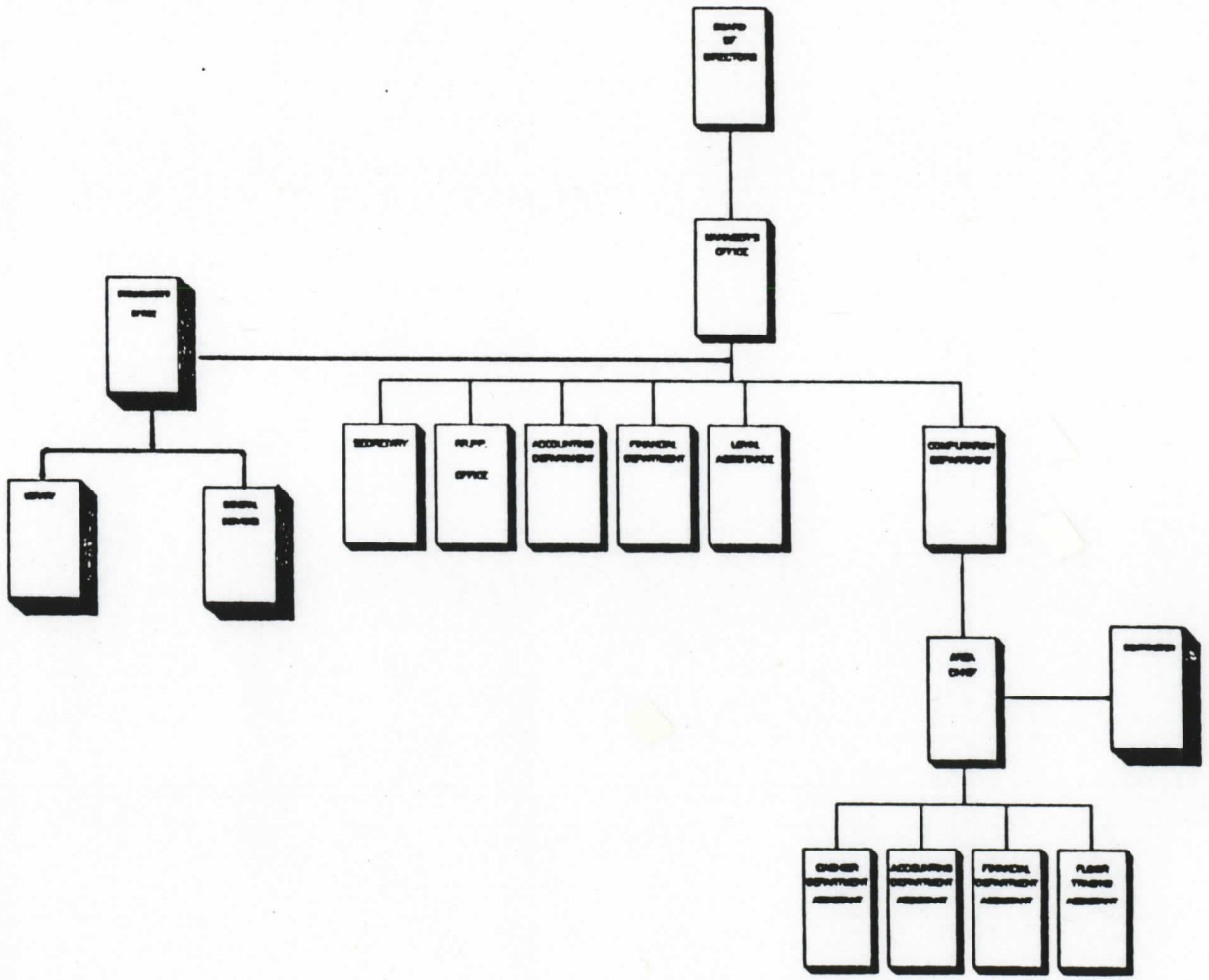
TURKEY NATIONAL STOCK EXCHANGE

DATA PROCESS LOCATION. — fulura



Turkey

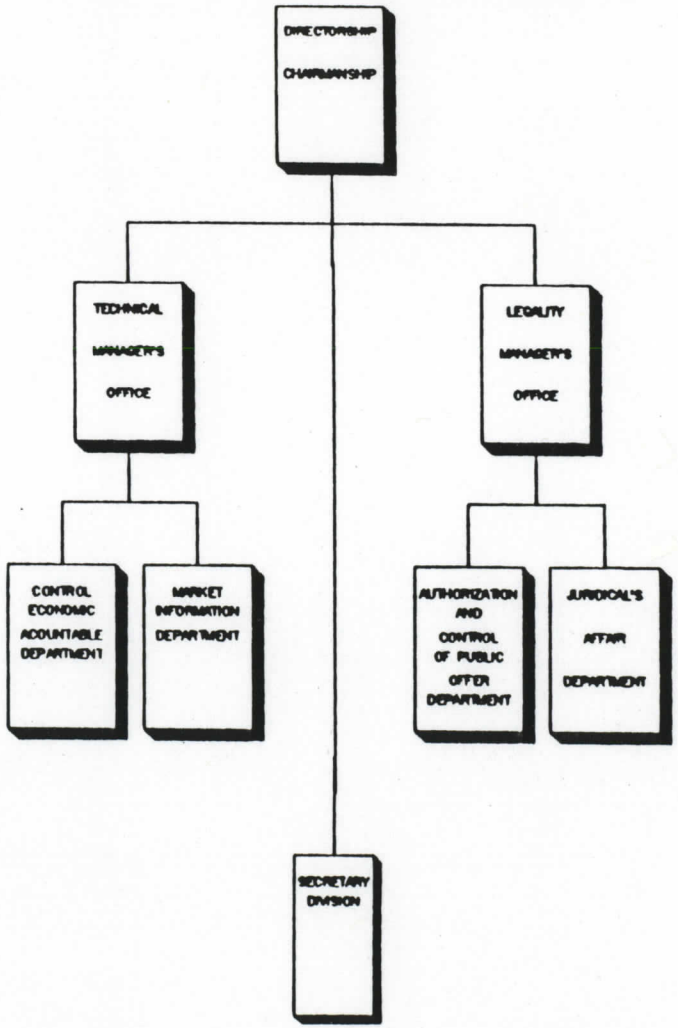
VENEZUELA NATIONAL STOCK EXCHANGE



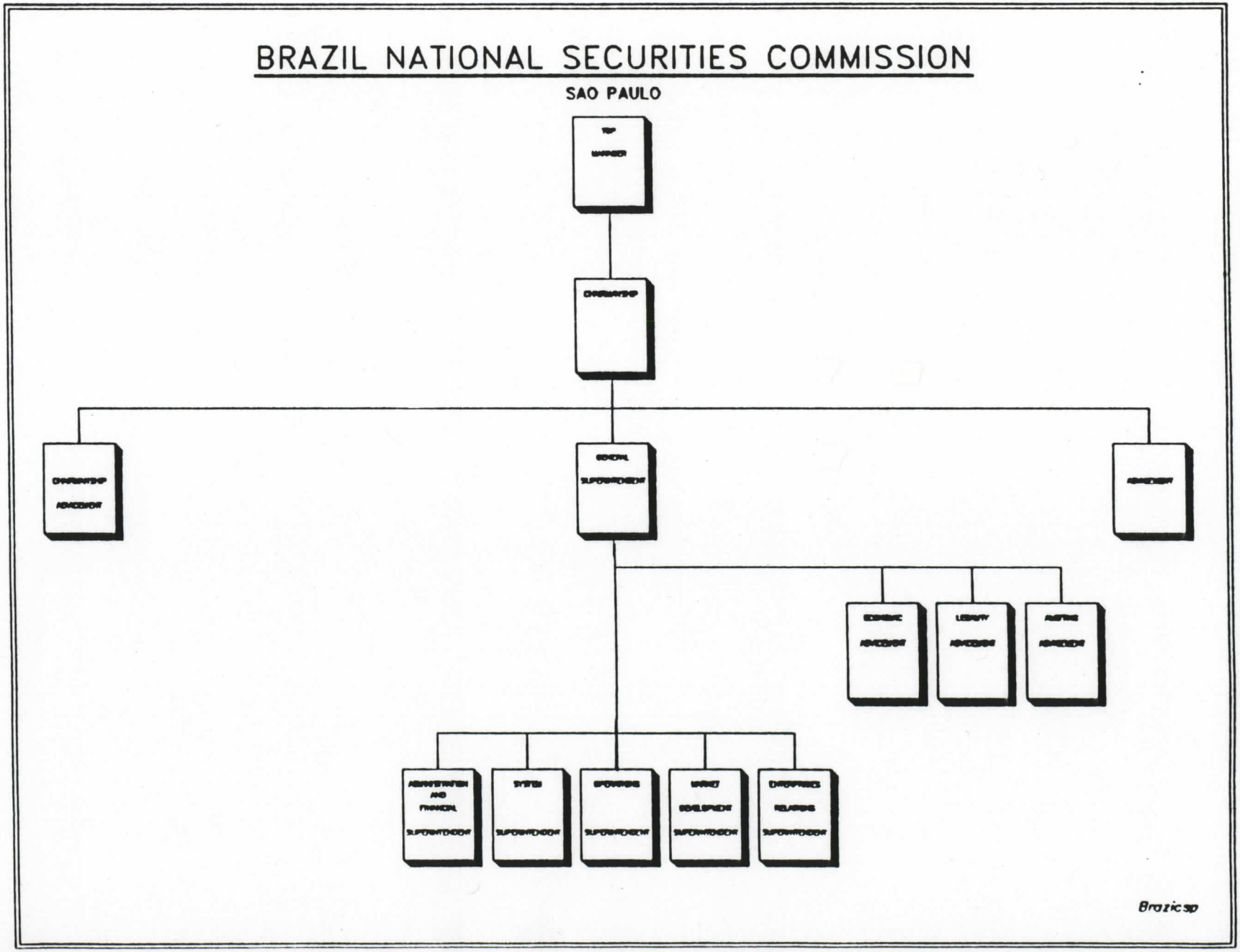
Venezuel

ECONOMIC AND WORK MINISTRY

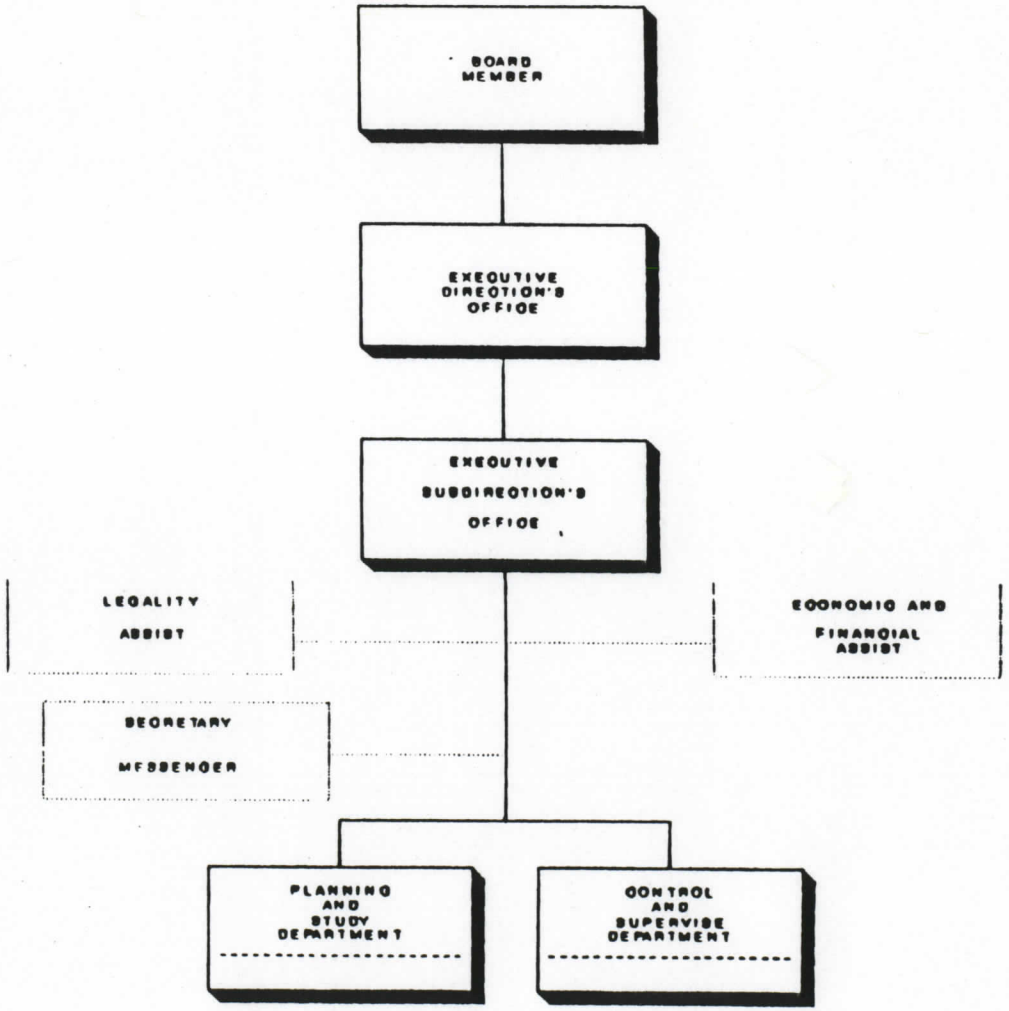
ARGENTINA NATIONAL SECURITIES COMMISSION



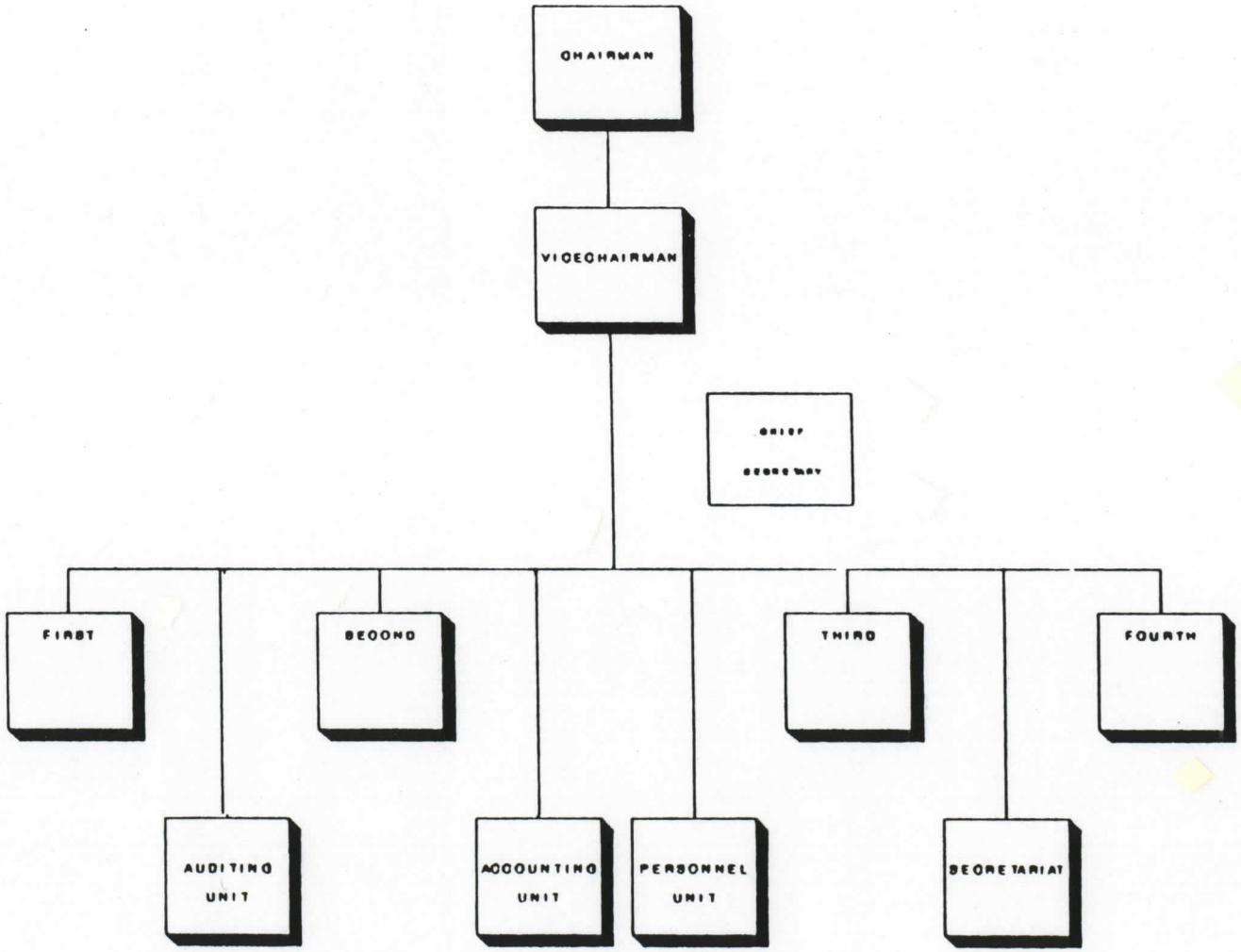
Argentin


BRAZIL NATIONAL SECURITIES COMMISSION
SAO PAULO
Brazicsp

PANAMA SECURITIES COMMISSION



TAIWAN SECURITIES COMISION

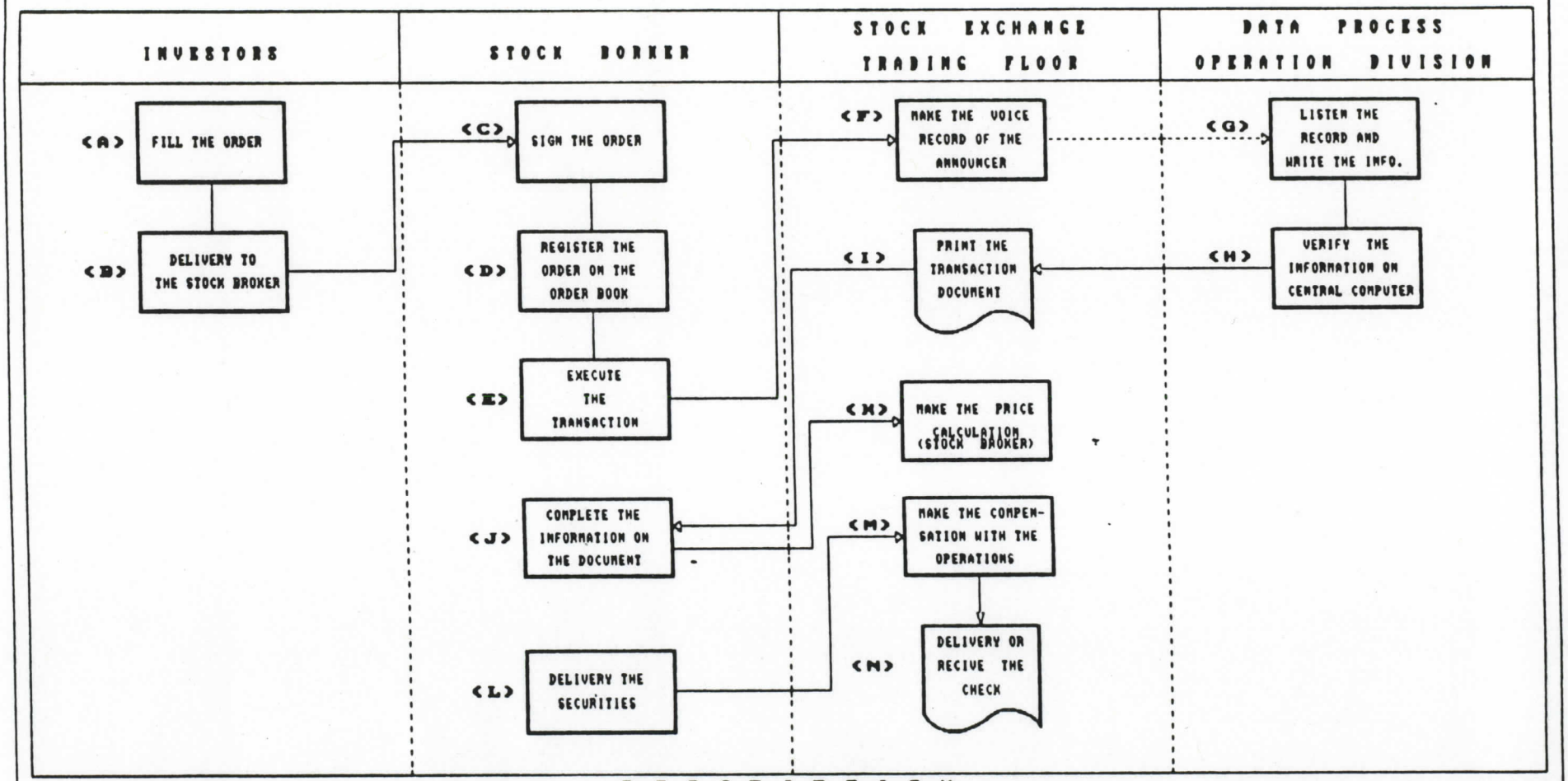


Taiwan-1

EXIBIT 4
TRADING PROCESS SYSTEMS
FLOW CHART AIDED

- Bogotá stock exchange
- Costa Rica stock exchange
- Jamaica stock exchange
- Lisboa stock exchange
- Medellin stock exchange
- Mexico stock exchange
- Taiwan stock exchange
- Turkey stock exchange
- Venezuela stock exchange

COMPUTER - ASSISTED TRADING SYSTEM AT BUCUTA STOCK EXCHANGE



DESCRIPTION

A) FILL THE BUY/SELL ORDER.
THE INVESTOR FILL THE BUY/SELL ORDER OF THE SECURITIES.

B) DELIVERY TO THE STOCK BROKER.
DELIVERY THE ORDER TO AN STOCK BROKER, TO CONTINUE THE TRANSACTION.

C) SIGN THE ORDER.
THE STOCK BROKER SIGN THE ORDER RECIVED FROM THE INVESTOR.

D) REGISTER ON THE ORDER BOOK.
PROCEED TO REIGER THE ORDER ON THE ORDER BOOK OF THE STOCK BROKER HOUSE.

E) EXECUTE THE TRANSACTION.
PROCEED TO TAKE THE ORDER TO THE STOCK EXCHANGE, TO CONTINUE THE TRANSACTION.

J) COMPLETE THE INFORMATION ON THE DOCUMENT.
THE STOCK BROKER COMPLETE THE INFORMATION ON THE TRANSACTION DOCUMENT.

L) DELIVERY THE SECURITIES.
PROCEED TO DELIVERY THE SECURITIES SELLED, OR THE BUY CHECK.

F) MAKE THE VOICE RECORD OF THE ANNOUNCER.
WHEN THE ANNOUNCER OFFERS THE SECURITIES PROCEED TO RECORD IT IN A VOICE TAPE.

I) PRINT THE TRANSACTION DOCUMENT.
IN THE PRINTERS OF THE TRADING FLOOR THE STOCK BROKER PRINT THE TRANSACTION DOCUMENT.

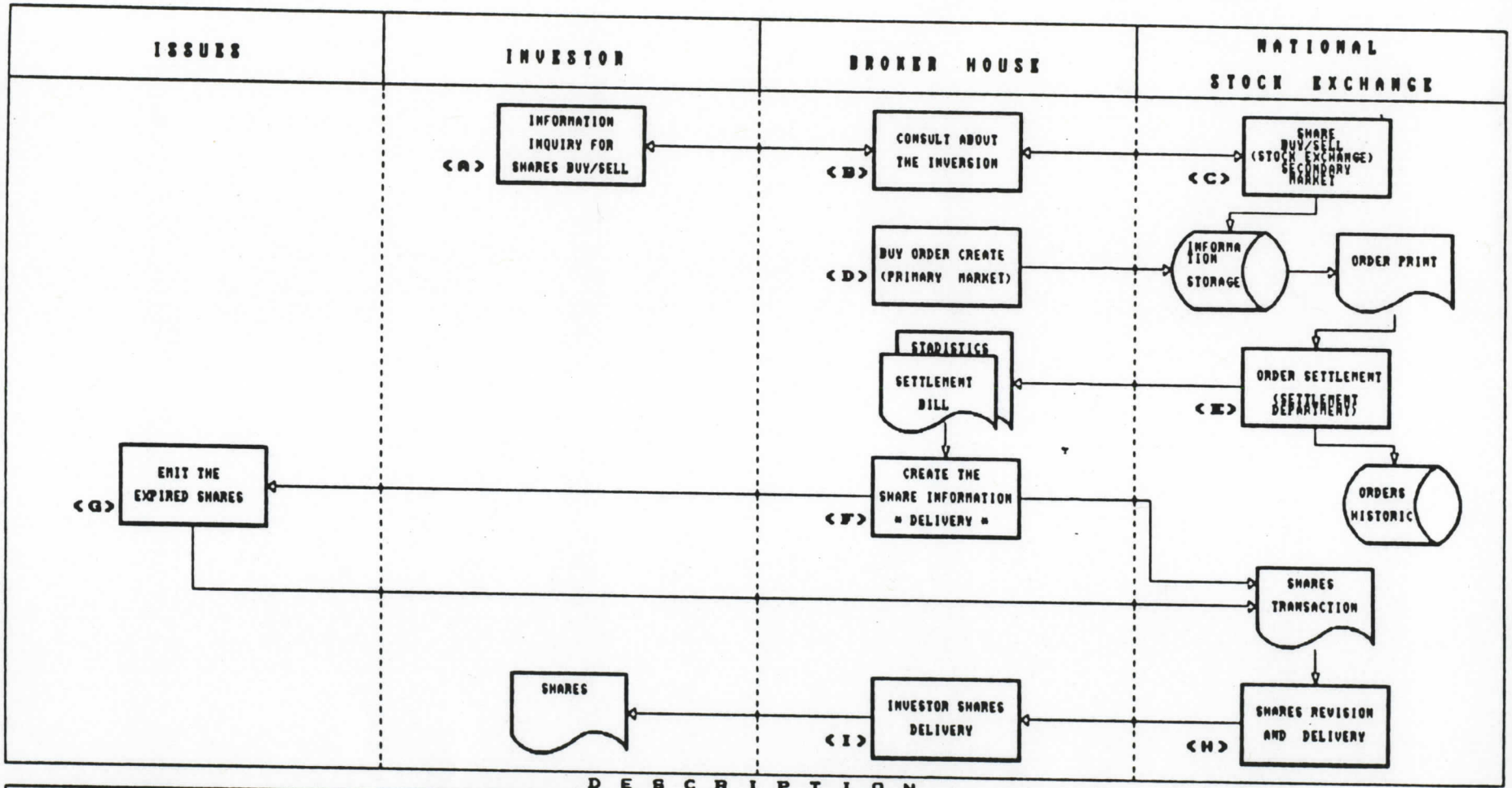
M) MAKE THE COMPENSATION WITH THE OPERATIONS.
THE STOCK EXCHANGE PROCEED TO MAKE THE COMPENSATIONS WITH THE BUY/SELL OPERATIONS DURING THE DAY.

N) DELIVERY OR RECIVE CHECK.
DELIVERY OR RECIVE THE CHECKS OF THE TRANSACTIONS REALISED DURING THE SESSION.

G) LISTEN THE RECORD AND WRITE THE INFORMATION
THE OPERATORS LISTEN THE TAPE AND PROCEED TO WRITE THE INFORMATION IN THE TERMINAL OF THE TRADING FLOOR.

H) VERIFY THE INFORMATION ON CENTRAL COMPUTER.
VERIFY THE INFORMATION AN THIS IS STORAGED ON THE CENTRAL COMPUTER.

COMPUTER - ASSISTED TRADING SYSTEM AT COSTA RICA STOCK EXCHANGE



DESCRIPTION

(G) EMIT EXPIRED SHARES.
WITH ALL THE INFORMATION PROCEED TO EMIT THE EXPIRED SHARES.

(A) INFORMATION INQUIRY.
A CUSTOMER ASK FOR INFORMATION TO THE PERSONAL OF AN BROKER HOUSE ABOUT THE BEST WAY FOR BUY OR SALE SHARES.

(B) CONSULT ABOUT THE INVERSION.
THE BROKER GIVE THE INFORMATION RELATED TO THE CUSTOMER ABOUT THE POSIBLE OPERATIONS.

(D) BUY ORDER CREATE.
CREATE THE BUY ORDER ON THE PRIMARY MARKET, AND STORE THE INFORMATION ON A MAGNETIC MEDIUM.

(F) CREATE THE SHARE INFORMATION.
BASED ON THE LIQUIDATION BILL AND STATICS PREPARE THE INFORMATION FOR THE SHARES DELIVERY.

(I) SHARES DELIVERY.
THIS PROCEDURE ENDS WHEN DELIVERY THE SHARES OR THE PAYMENT CHECK TO THE BROKERS, AND THEY DELIVERY IT TO HIS RESPECTIVE CUSTOMERS.

(C) SHARE BUY/SELL
SHARE BUY/SELL ON THE TRADING FLOOR OF THE NATIONAL STOCK EXCHANGE OF THE SECONDARY MARKET, AND STORE THE INFORMATION ON A MAGNETIC MEDIUM OF THE COMPUTER.

(E) ORDER SETTLEMENT.
BASED ON THE INFORMATION STORED ON THE MAGNETIC MEDIUM, PROCEED TO PRINT THE ORDERS, SETTLEMENT VOUCHER, STATICS, FOR THE SETTLEMENT DEPARTMENT, AND STORE THE INFORMATION ON THE HISTORIC ORDERS FILE.

(H) SHARES REVISION AND DELIVERY.
WITH THE SHARES TRANSACTION PROCEED TO THE REVISION FOR THE SHARES DELIVERY.

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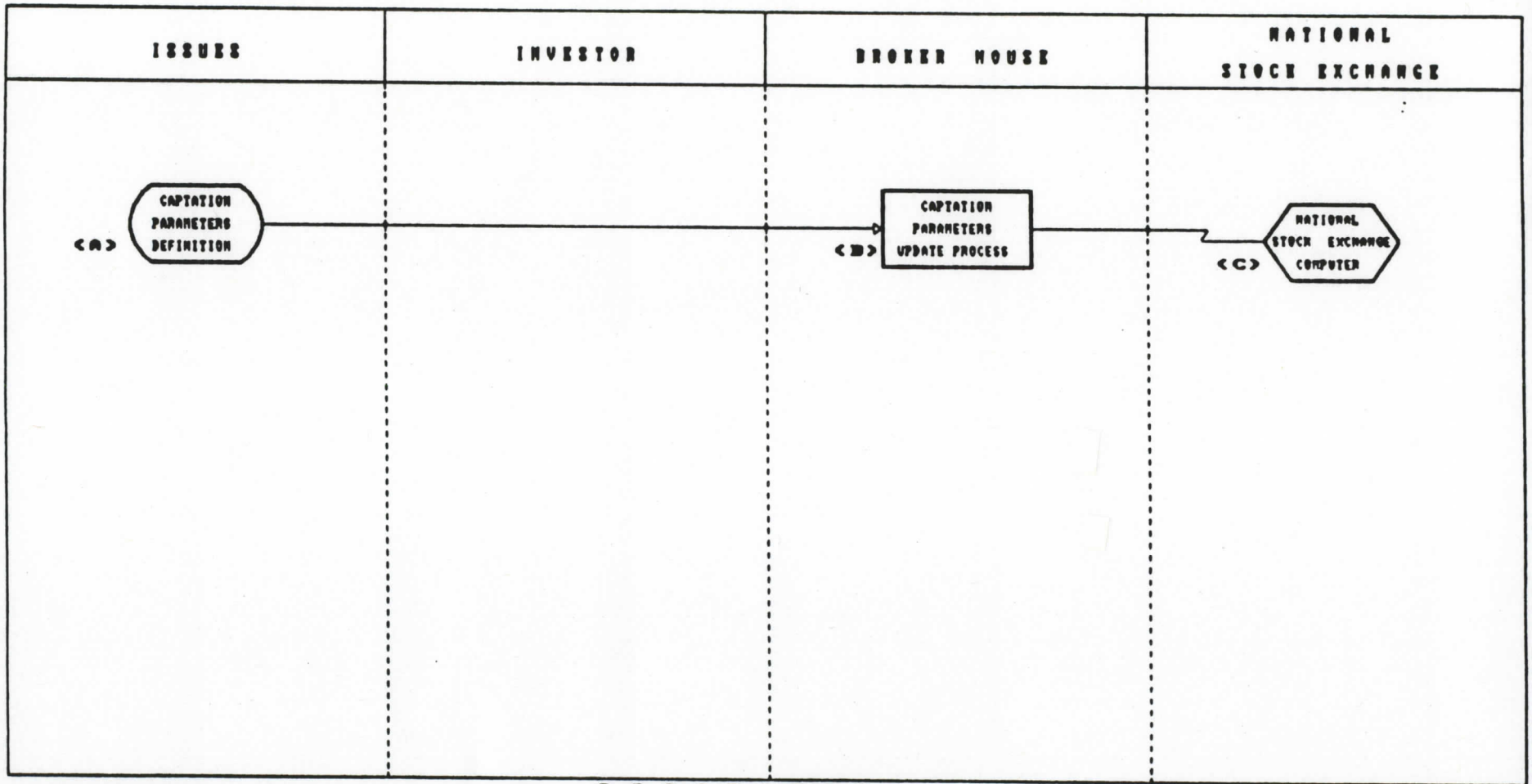
COMPUTER - ASSISTED TRADING SYSTEM AT COSTA RICA STOCK EXCHANGE



DESCRIPTION

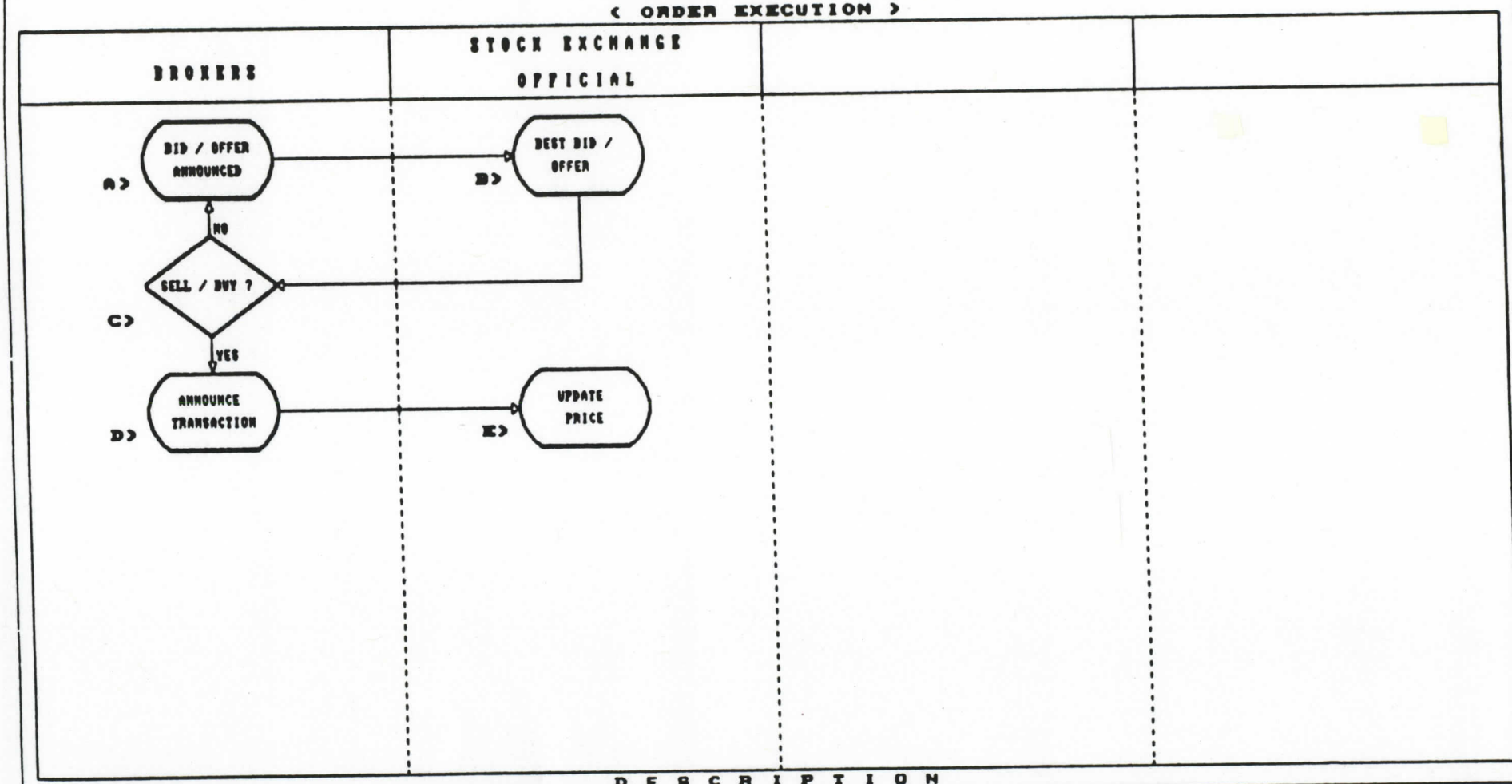
(A) CAPTATION PARAMETERS.
THE ISSUER DEFINE THE CAPTATION PARAMETERS BASSED ON THE SUPPLY AND DEMAND.

(B) CAPTATION PARAMETERS UPDATE.
RUN THE PROCESS TO UPDATE THE CAPTATION PARAMETERS AND TRANSFER THE INFORMATION TO THE NATIONAL STOCK EXCHANGE COMPUTER.

(C) PARAMETERS STORAGE.
STORE THE CAPTATION PARAMETERS ON HIS COMPUTER FOR THE FUTURES TRANSACTIONS.

COMPUTER - ASSISTED TRADING SYSTEM AT JAMAICA STOCK EXCHANGE

< ORDER EXECUTION >



D E S C R I P T I O N

A) BID OFFER ANNOUNCED.
THE BROKER PROCEED TO ANNOUNCE HIS BID OFFER ON THE TRADING FLOOR.

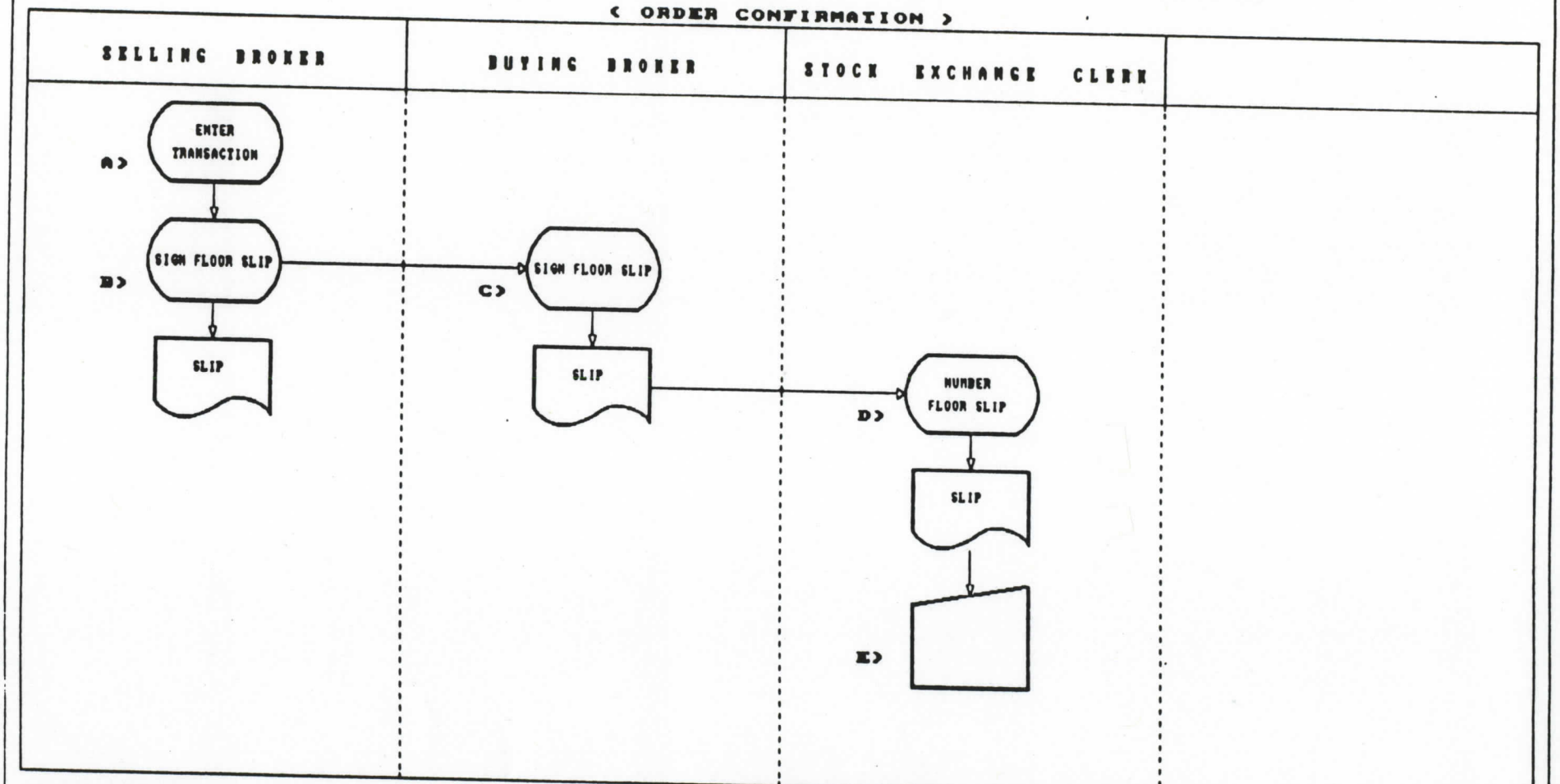
B) BEST BID OFFER.
THE BEST BID/OFFER IS ENTERED ON THE BOARD OF THE TRADING FLOOR.

C) SELL / BUY ?
IF THE OFFER IS NOT ACCEPTED BY ANY OTHER BROKER, PROCEED TO BID OFFER AGAIN.

D) ANNOUNCE TRANSACTION.
IF THE OFFER IS ACCEPTED THEN THE MOVEMENT IS ANNOUNCED ON THE TRADING FLOOR.

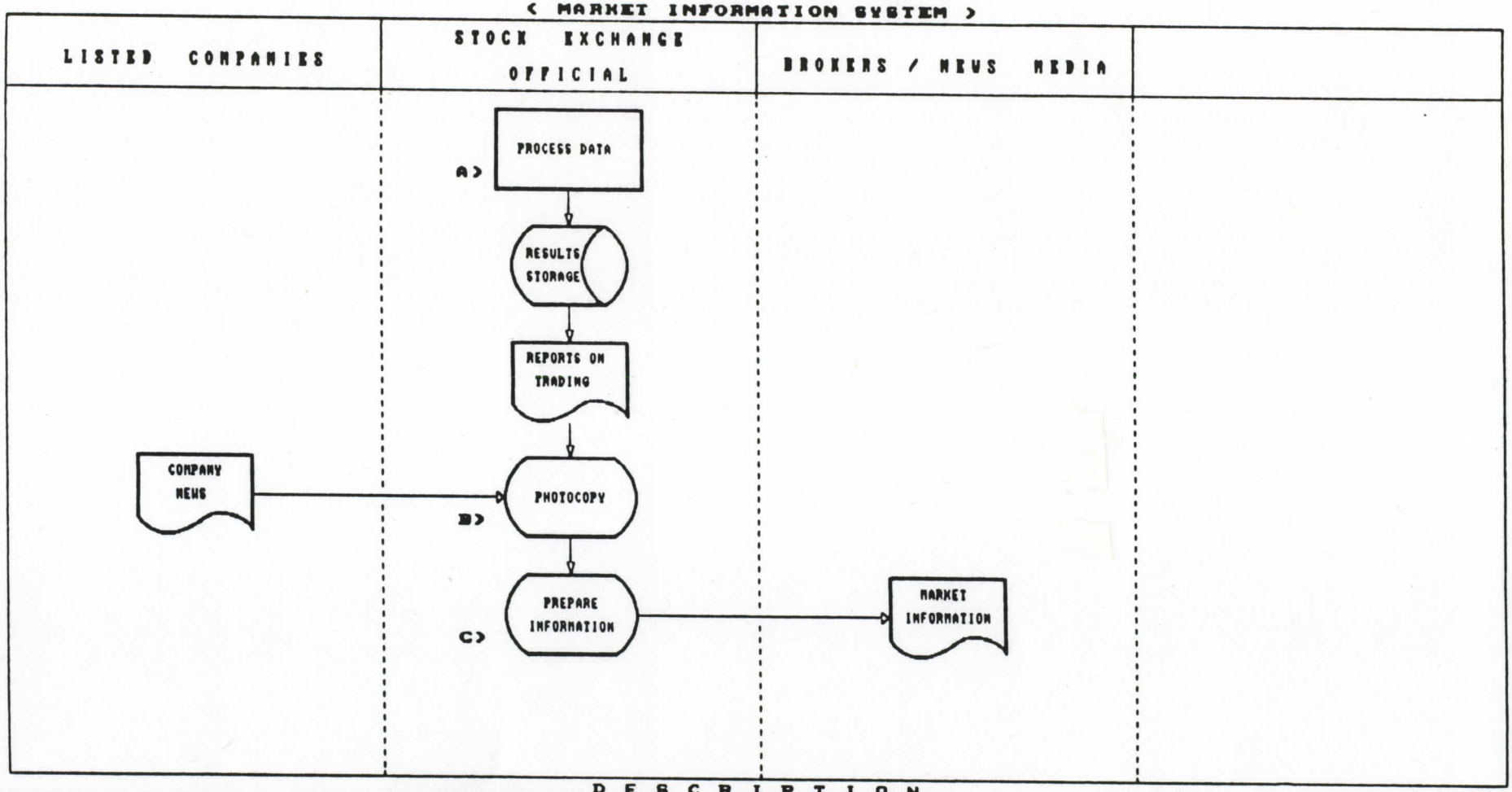
E) UPDATE PRICE.
WHEN THE OPERATION IS COMPETED PROCEED TO UPDATE THE LAST SALE PRICE.

COMPUTER - ASSISTED TRADING SYSTEM AT JAMAICA STOCK EXCHANGE



COM..ER ASS..IED ..NDING SYS'.. AT JAMAICA STOCK EXCHANGE

< MARKET INFORMATION SYSTEM >



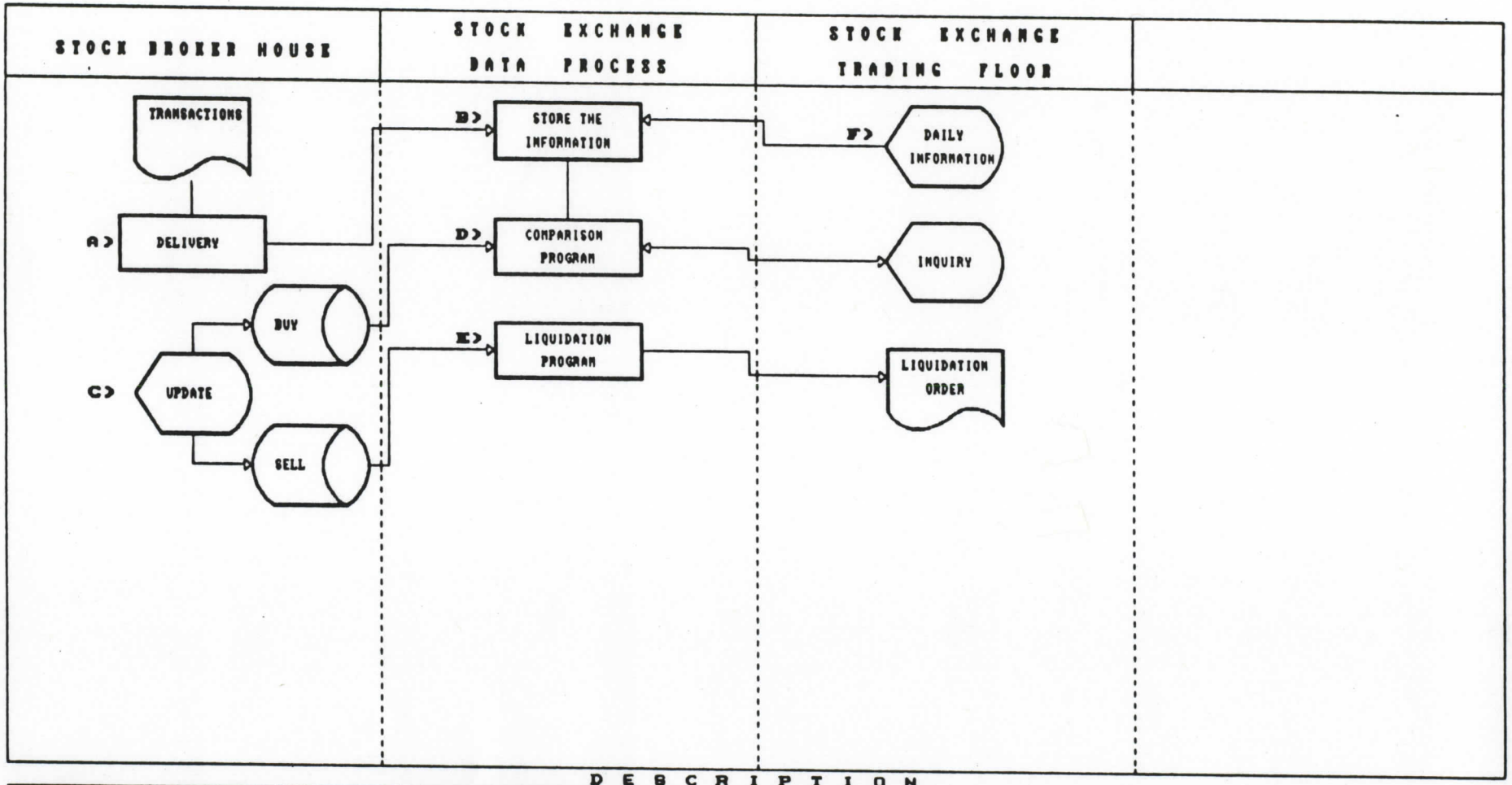
DESCRIPTION

A) PROCESS DATA.
PROCESS THE DATA FROM THE FLOOR SLIP; STORE THE RESULTS ON THE COMPUTER AND PRINT THE REPORTS ON TRADING.

B) PHOTOCOPY.
PROCEED TO PHOTOCOPY THE REPORTS AND THE COMPANY NEWS RECIVED.

C) PREPARE INFORMATION.
PREPARE THE MARKET INFORMATION FOR SEND IT BY:
- MAIL
- FAX
- HAND DELIVERY.

COMPUTER - ASSISTED TRADING SYSTEM AT LISBOA STOCK EXCHANGE



DESCRIPTION

A) DELIVERY.
DELIVERY THE INFORMATION ABOUT THE INVESTOR TRANSACTIONS.

C) UPDATE.
UPDATE THE INFORMATION WITH THE BUY/SELL TRANSACTIONS.

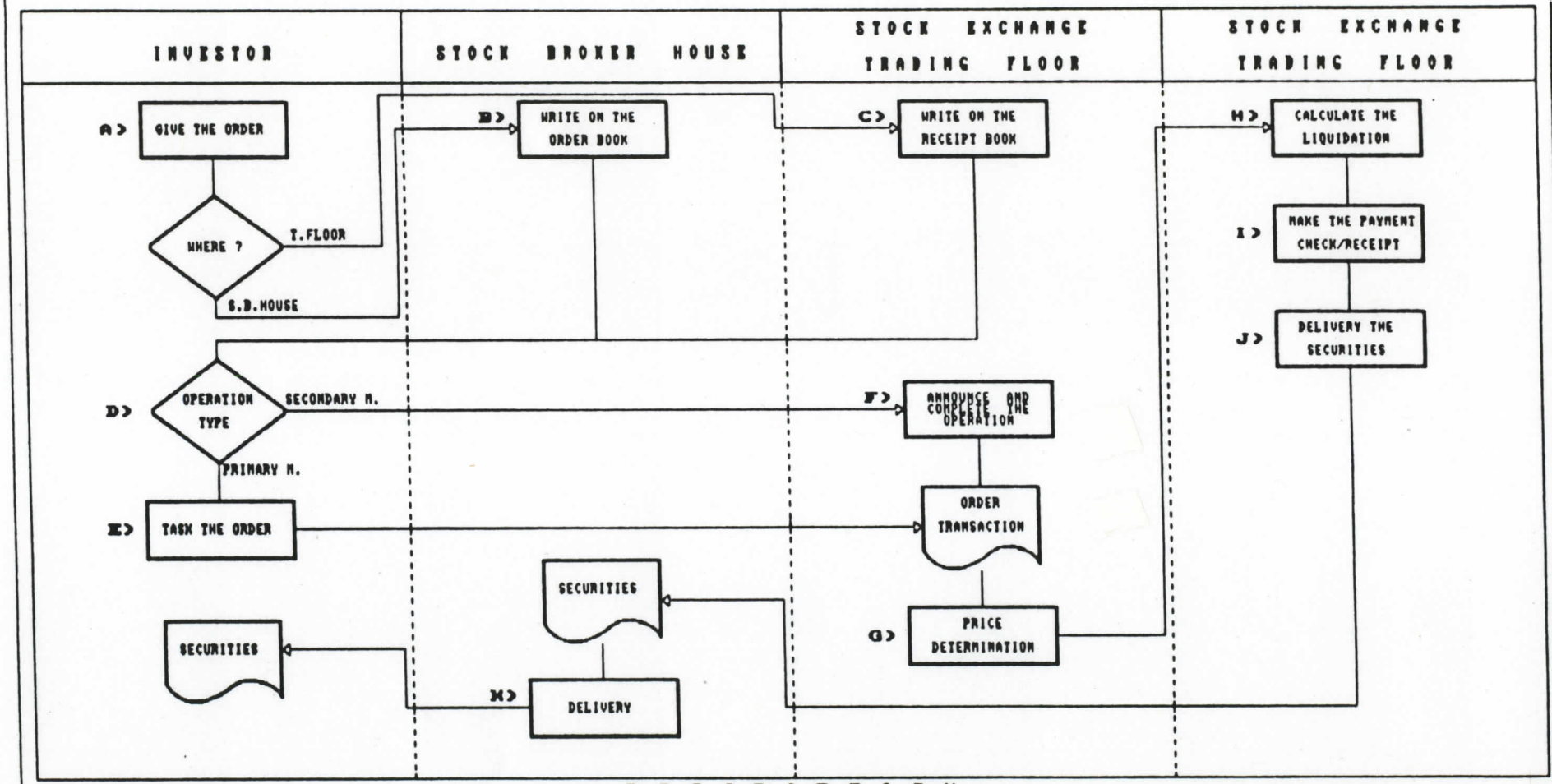
B) STORE THE INFORMATION.
WITH THE INFORMATION RECIVED FROM THE STOCK BROKERS HOUSE AND THE TRADING FLOOR STORE AND UPDATE THE INFORMATION.

D) COMPARISON PROGRAM.
USE THE COMPARISON PROGRAM FOR INQUIRY FROM THE TRADING FLOOR.

E) LIQUIDATION PROGRAM.
USE THE LIQUIDATION PROGRAM TO CALCULATE AND PRINT THE LIQUIDATION OF THE SESSION.

F) DAILY INFORMATION.
DELIVERY THE INFORMATION DAILY OF EVERY ONE OF THE TRANSACTIONS.

COMPUTER - ASSISTED TRADING SYSTEM AT MEDELLIN STOCK EXCHANGE



DESCRIPTION

A) GIVE THE ORDER.
THE INVESTOR GIVE THE ORDER TO BUY/SELL SECURITIES, IT CAN BE THROUGH AN STOCK BROKER HOUSE, OR DIRECTLY TO THE TRADING FLOOR.

D) OPERATION TYPE.
DEPENDING OF THE OPERATION TYPE WILL BE THE TRAITMENT.

E) TASK THE ORDER.
IF THE TRANSACTION CORRESPONDS TO THE PRIMARY MARKET, THEN PROCEED TO TASK THE ORDER TO THE TRADING FLOOR.

B) WRITE ON THE ORDER BOOK.
IF THE TRANSACTION IS WITH AN STOCK BROKER HOUSE; THIS PROCEED TO REGISTER IN THE ORDER BOOK.

K) DELIVERY.
THE STOCK BROKER HOUSE PROCEED TO DELIVERY THE SECURITIES TO THE INVESTOR, AND THE TRANSACTION IS COMPLETED.

C) WRITE ON THE RECEIPT BOOK.
IF THE TRANSACTION IS DIRECTLY WITH THE TRADING FLOOR, PROCEED TO REGISTER IN THE RECIPT BOOK.

F) ANNOUNCE AND COMPLETE THE OPERATION.
IF THE OPERATION CORRESPONDS TO THE SECONDARY MARKET, ANNOUNCE AND COMPLETE THE OPERATION ON THE TRADING FLOOR.

G) PRICE DETERMINATION.
DEPENDING ON THE SUPPLY AND DEMMAND, AND VISION THE TERMINALS ON THE TRADING FLOOR ASSIGN THE PRICE TO THE SECURITIES.

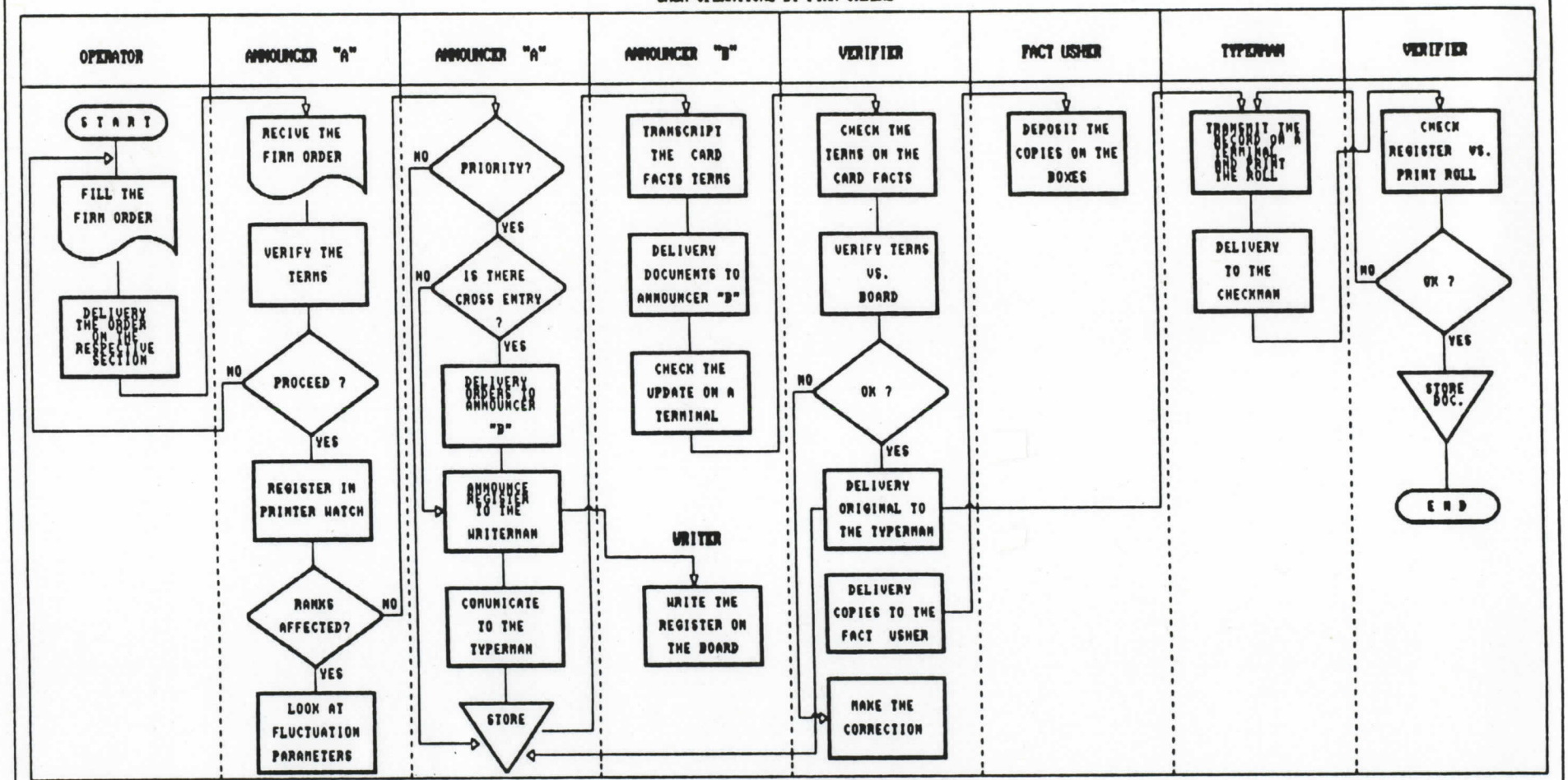
H) CALCULATE THE LIQUIDATION.
BASED ON THE DAY TRANSACTIONS PROCEED TO CALCULATE THE LIQUIDATION BY BROKER STOCK HOUSE.

I) MAKE THE PAYMENT CHECK/RECEIPT.
DEPENDING OF THE LIQUIDATION FOR EVERY STOCK BROKER HOUSE, PROCEED TO MAKE THE PAYMENT CHECK/RECEIPT.

J) DELIVERY THE SECURITIES.
WHEN THE STOCK BROKER HOUSE PAY PROCEED TO DELIVERY THE SECURITIES.

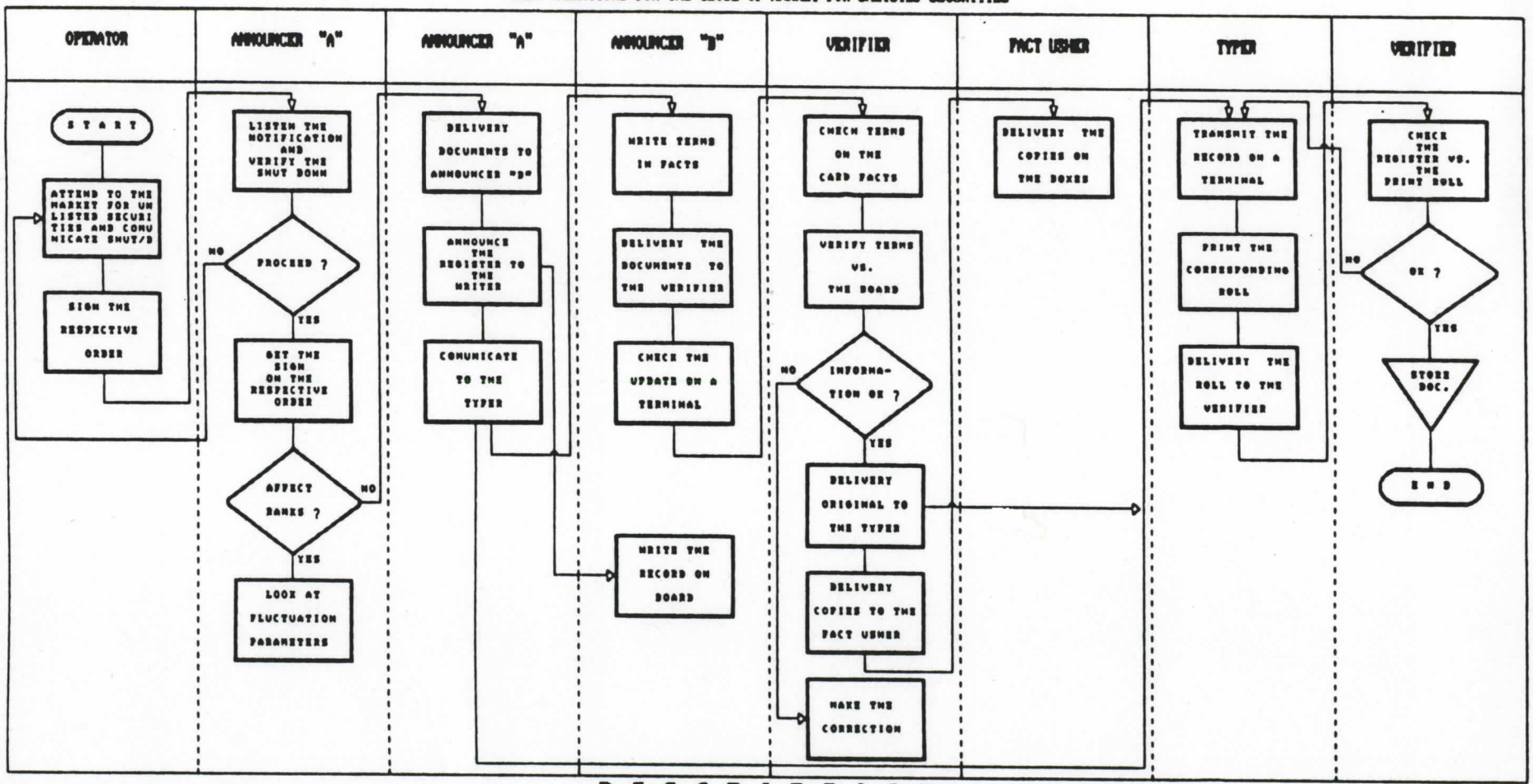
COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

CASH OPERATIONS BY FIRM ORDERS



COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

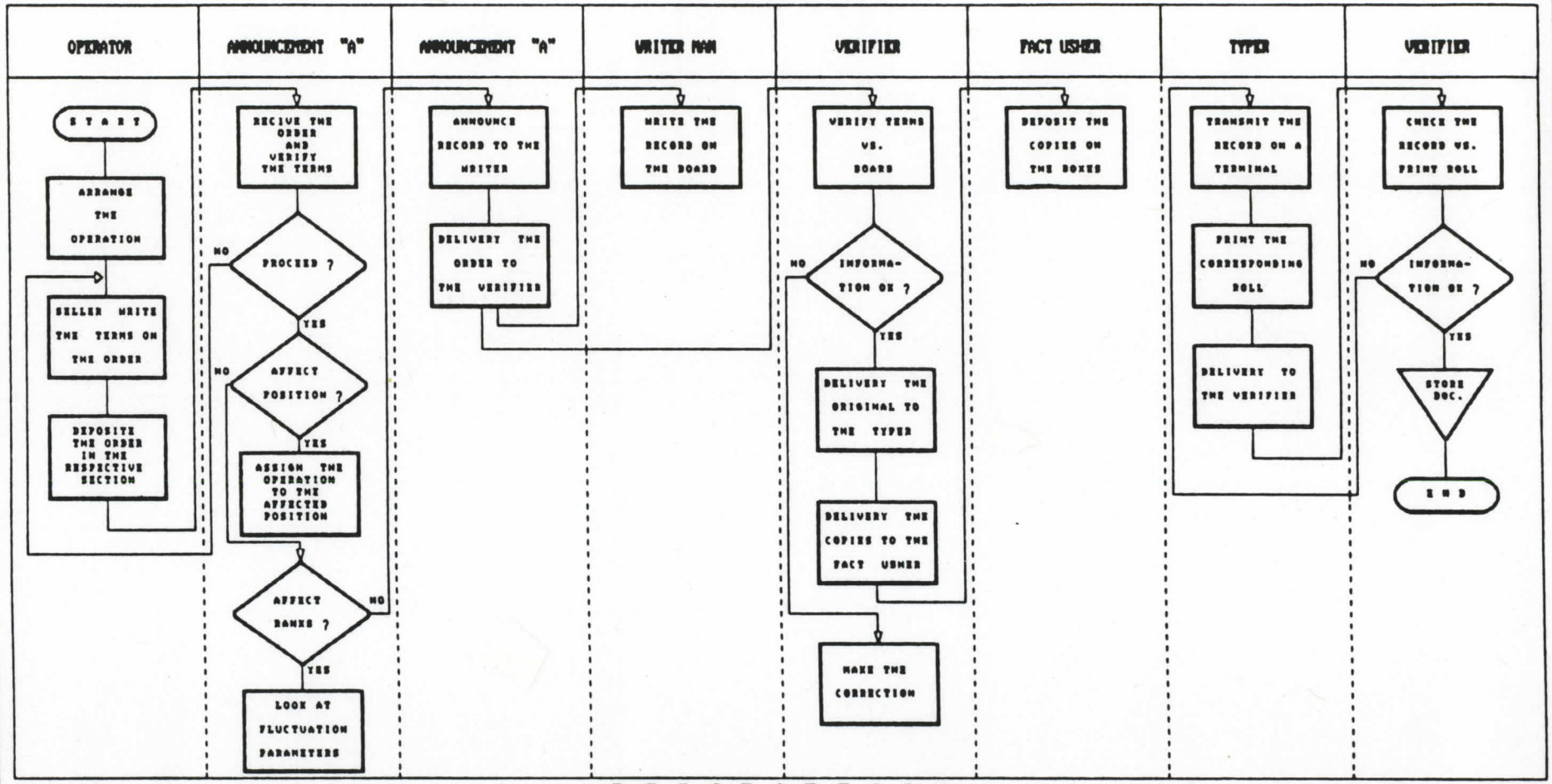
CASH OPERATIONS FOR THE CLOSE OF MARKET FOR UNLISTED SECURITIES



DESCRIPTION

COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

CASH OPERATIONS ON VOICE

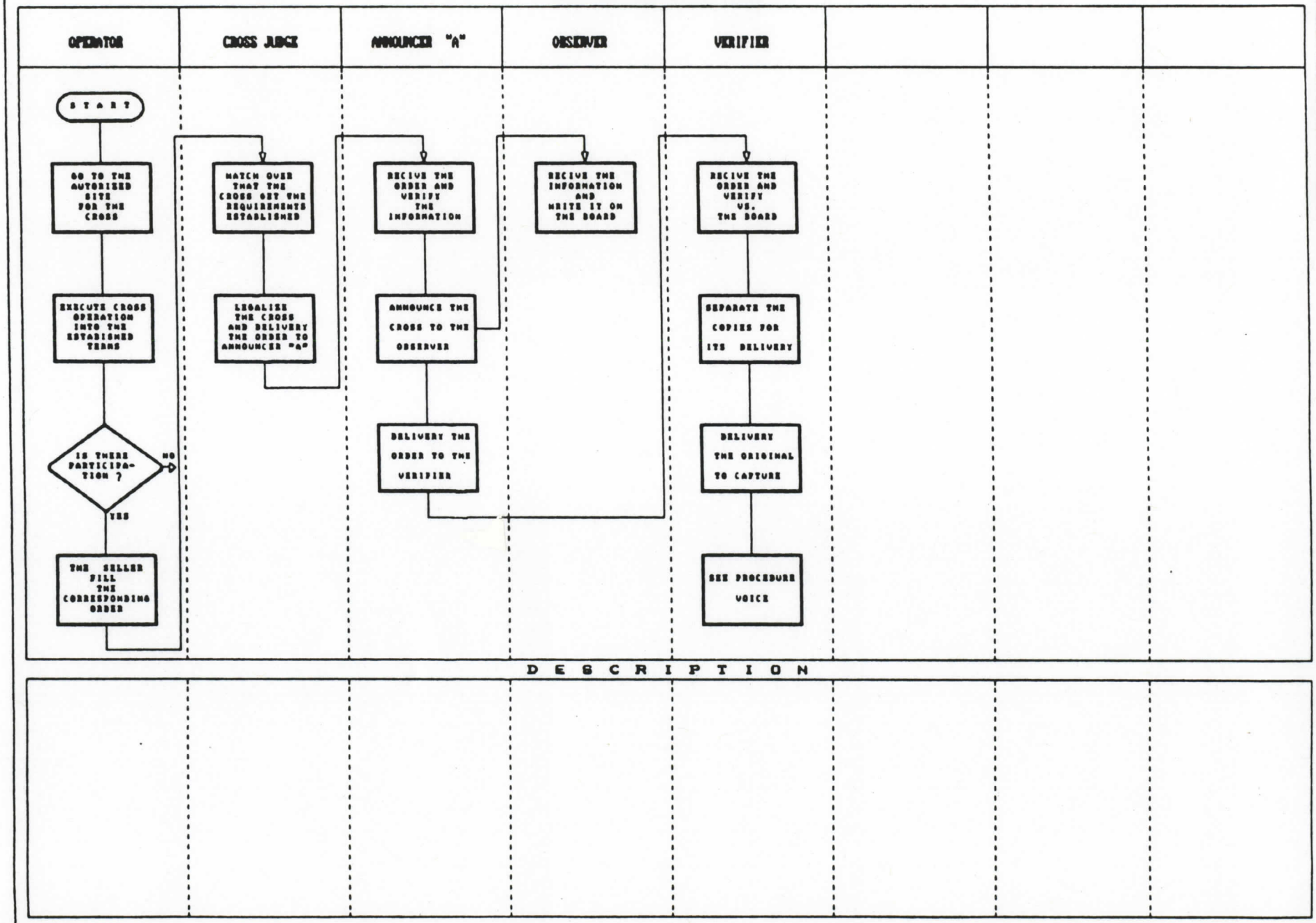


DESCRIPTION

MEXICO-B

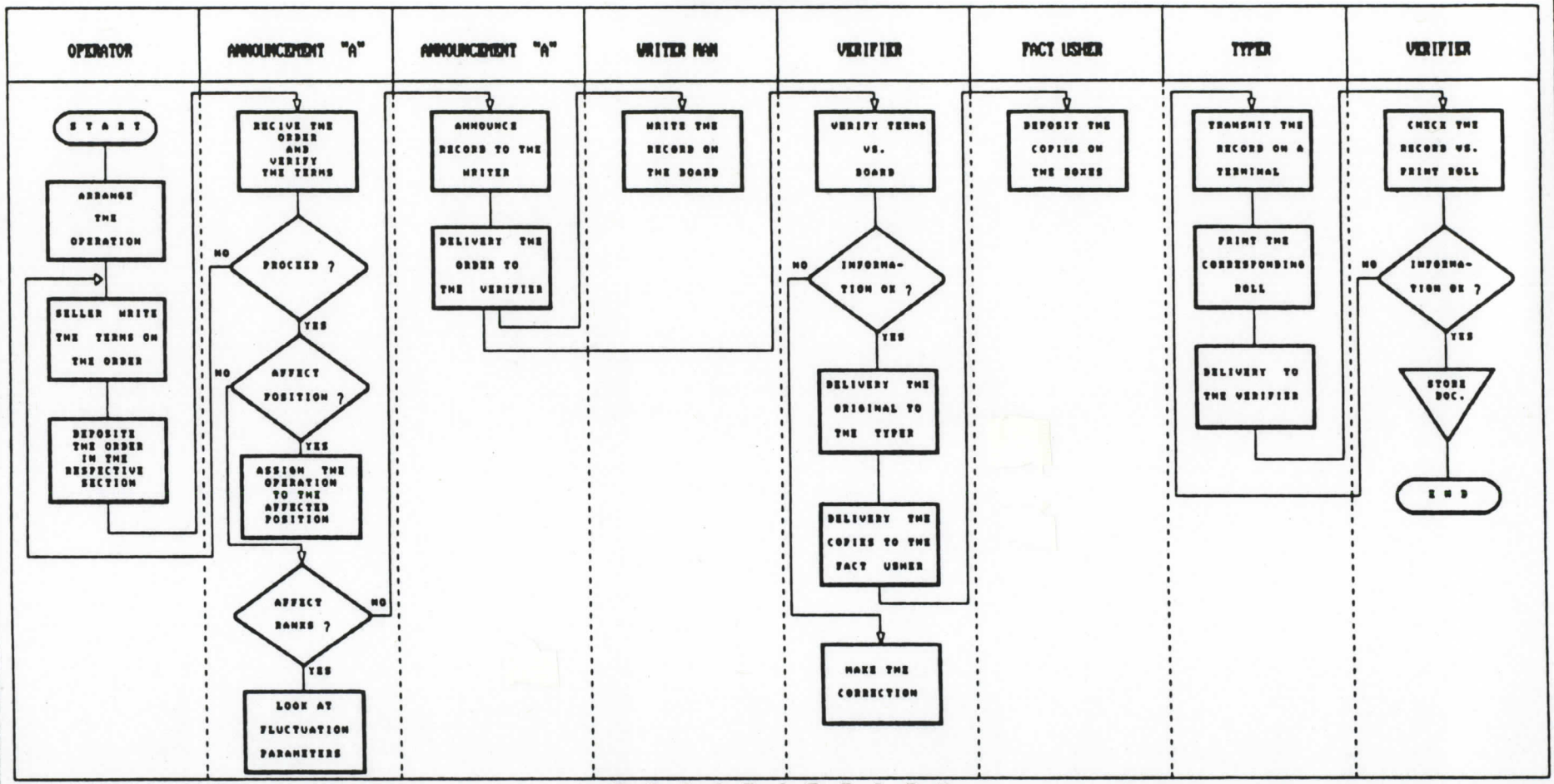
COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

CASH OPERATIONS CROSS OR CROSSED



COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

CASH OPERATIONS ON VOICE

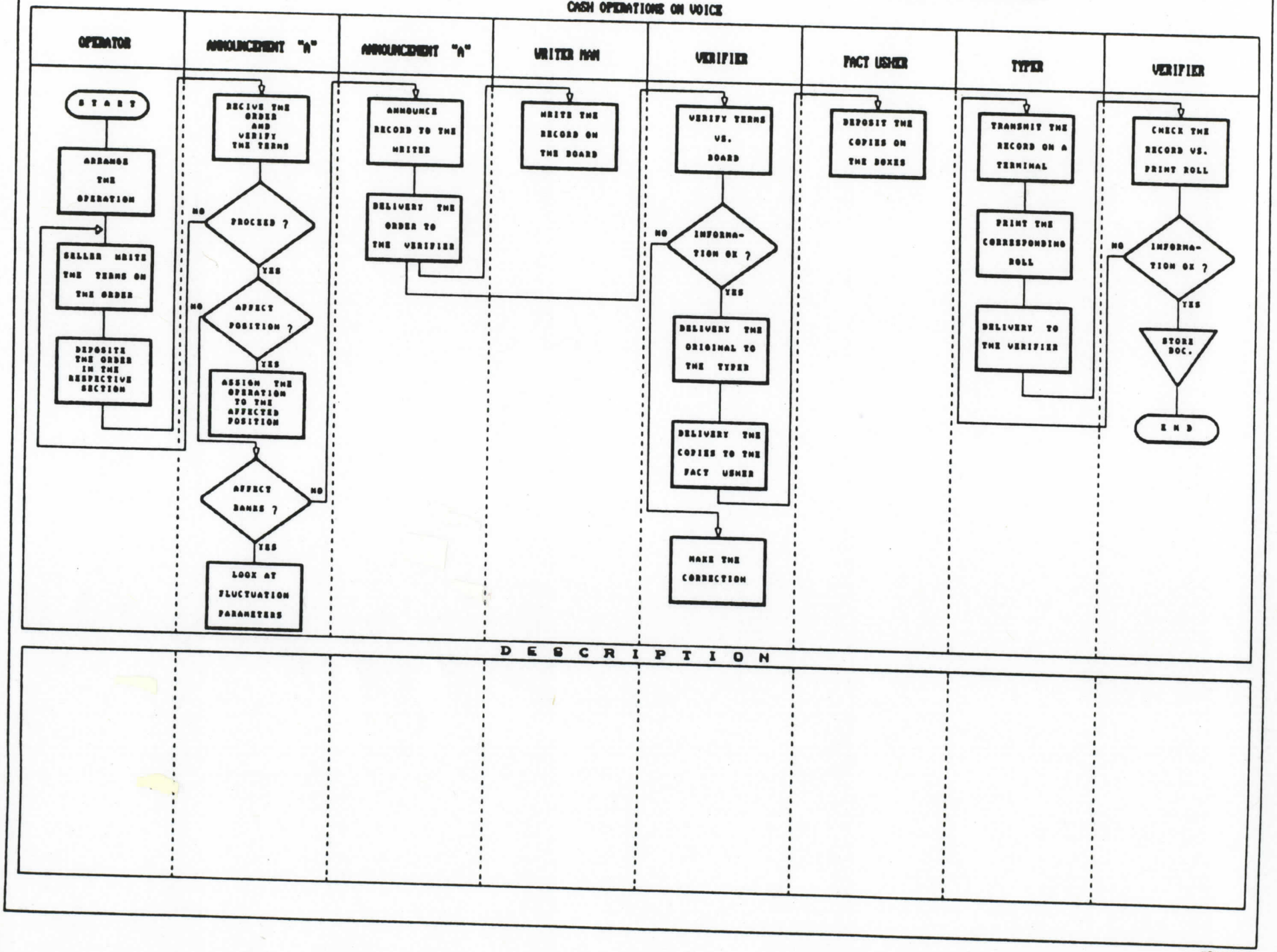


DESCRIPTION

MEXICO-B

COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

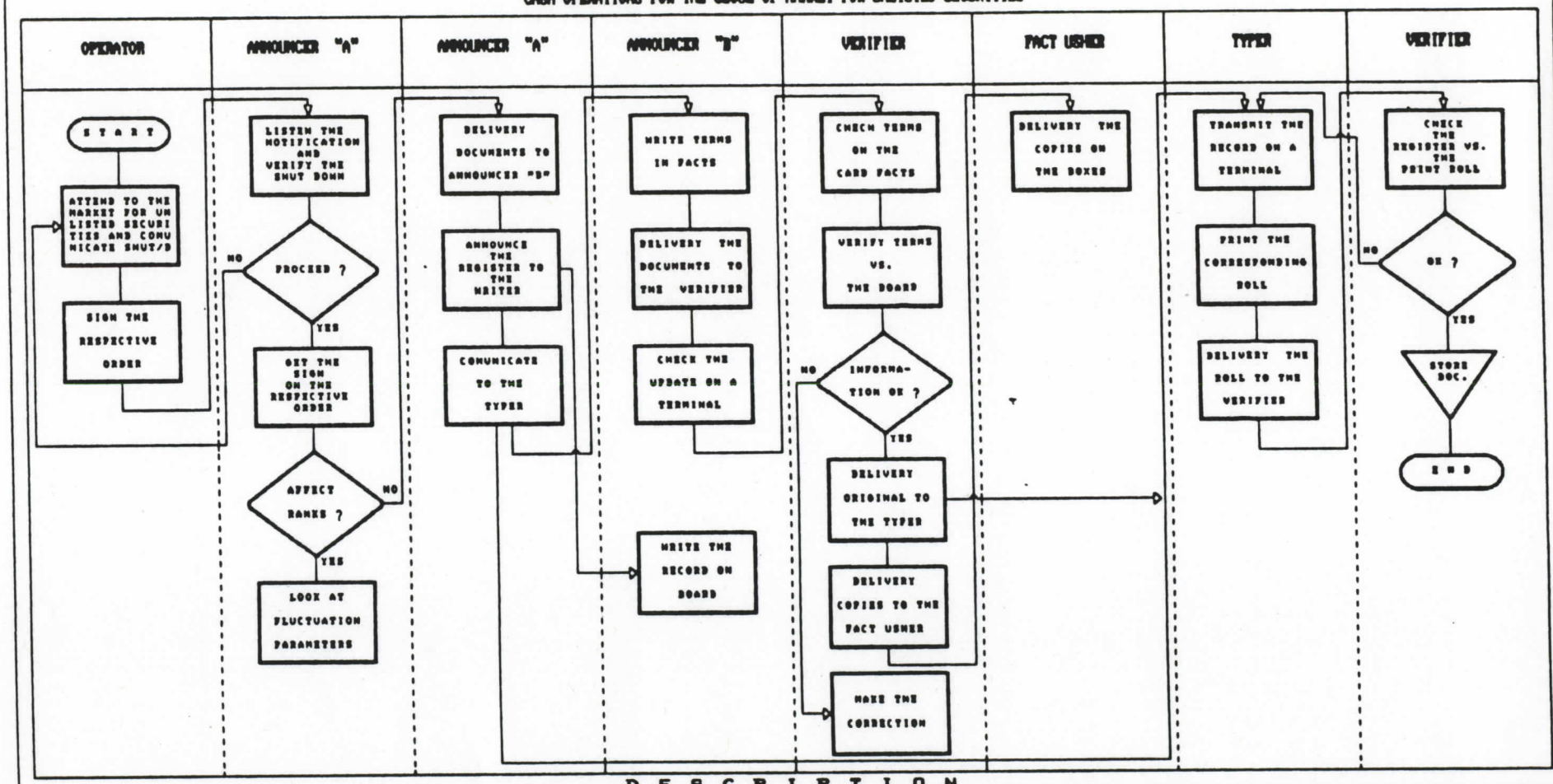
CASH OPERATIONS ON VOICE



MEXICO-B

COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

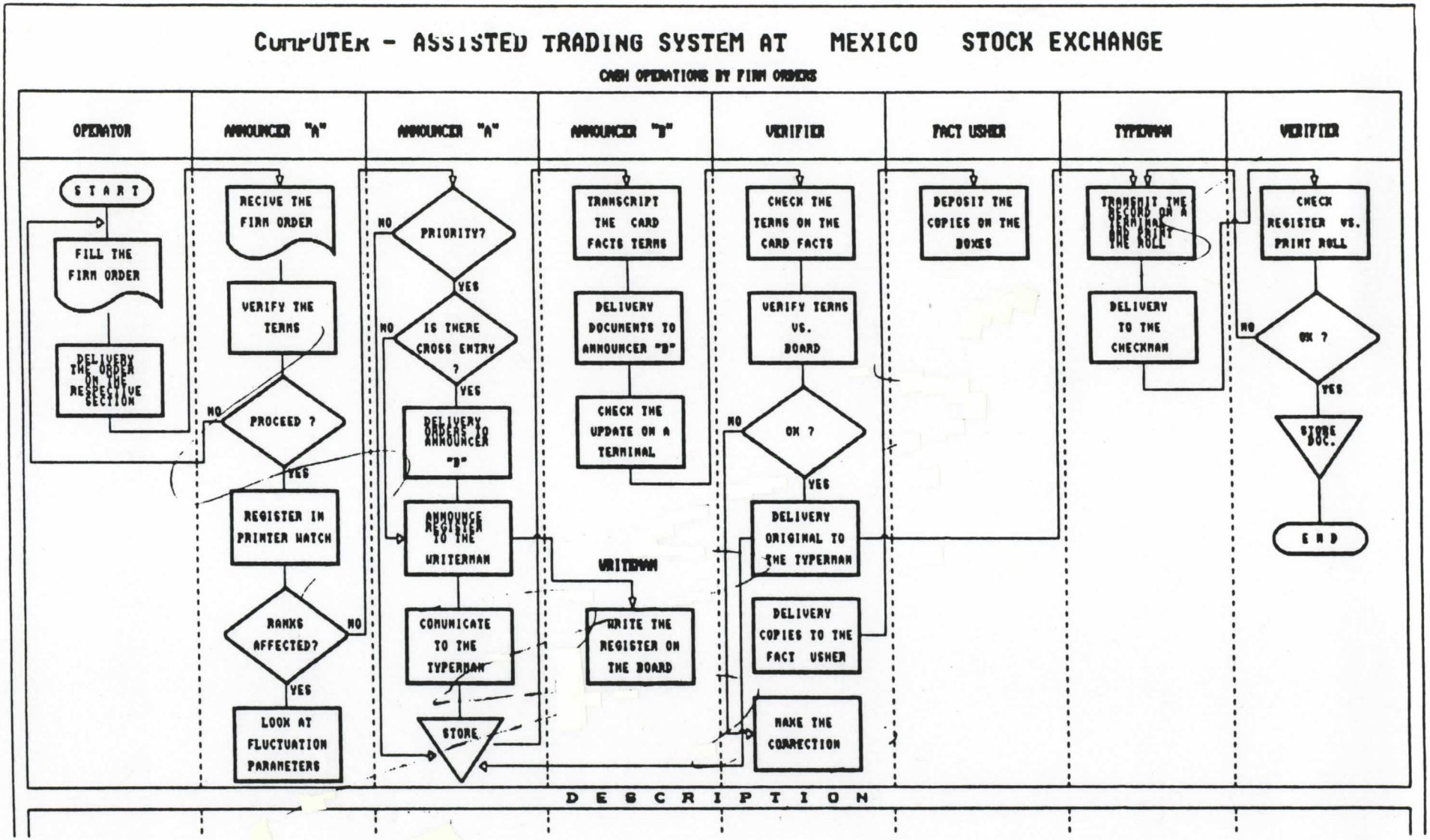
CASH OPERATIONS FOR THE CLOSE OF MARKET FOR UNLISTED SECURITIES



DESCRIPTION

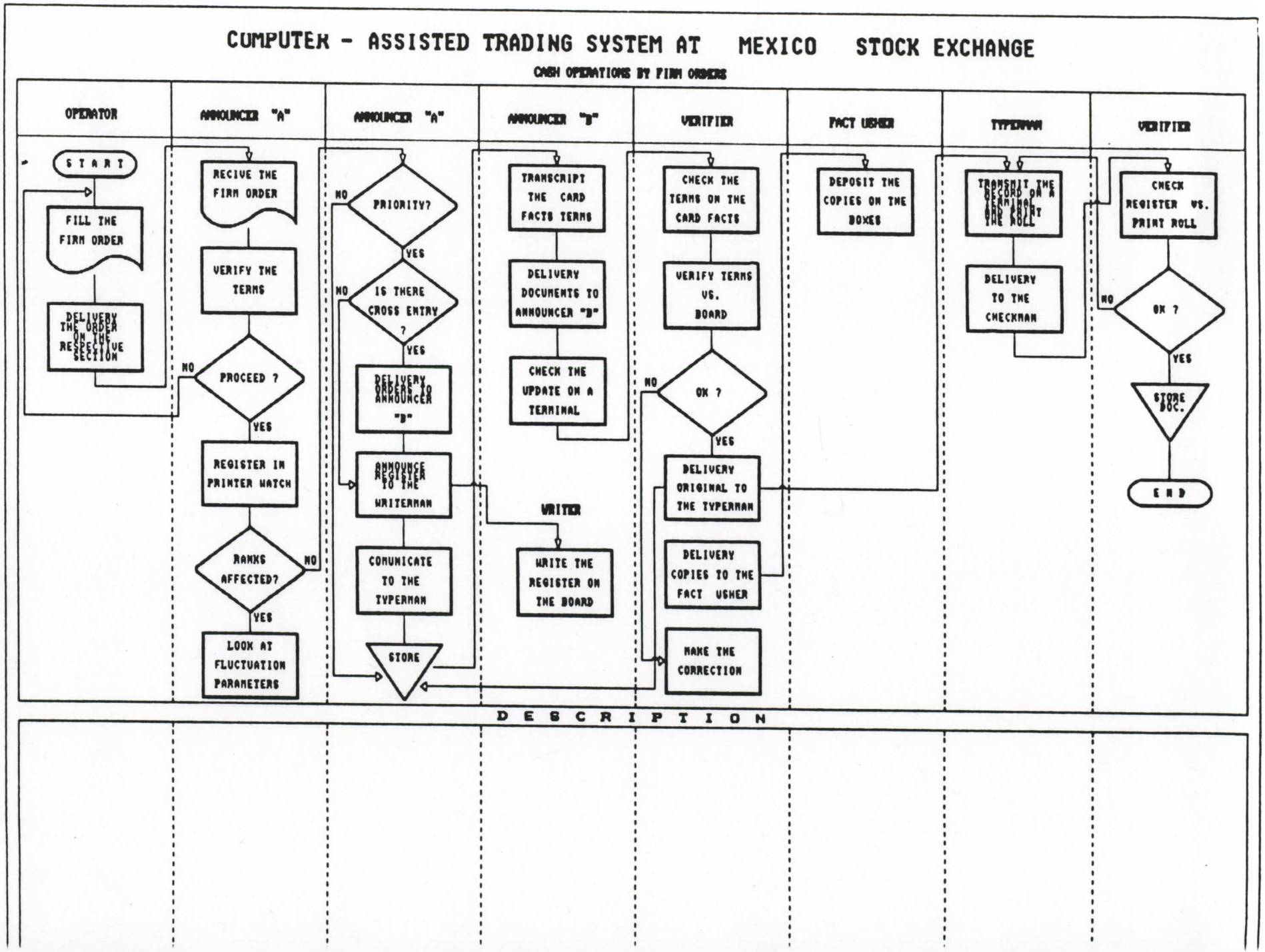
COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

CASH OPERATIONS BY FIRM ORDERS

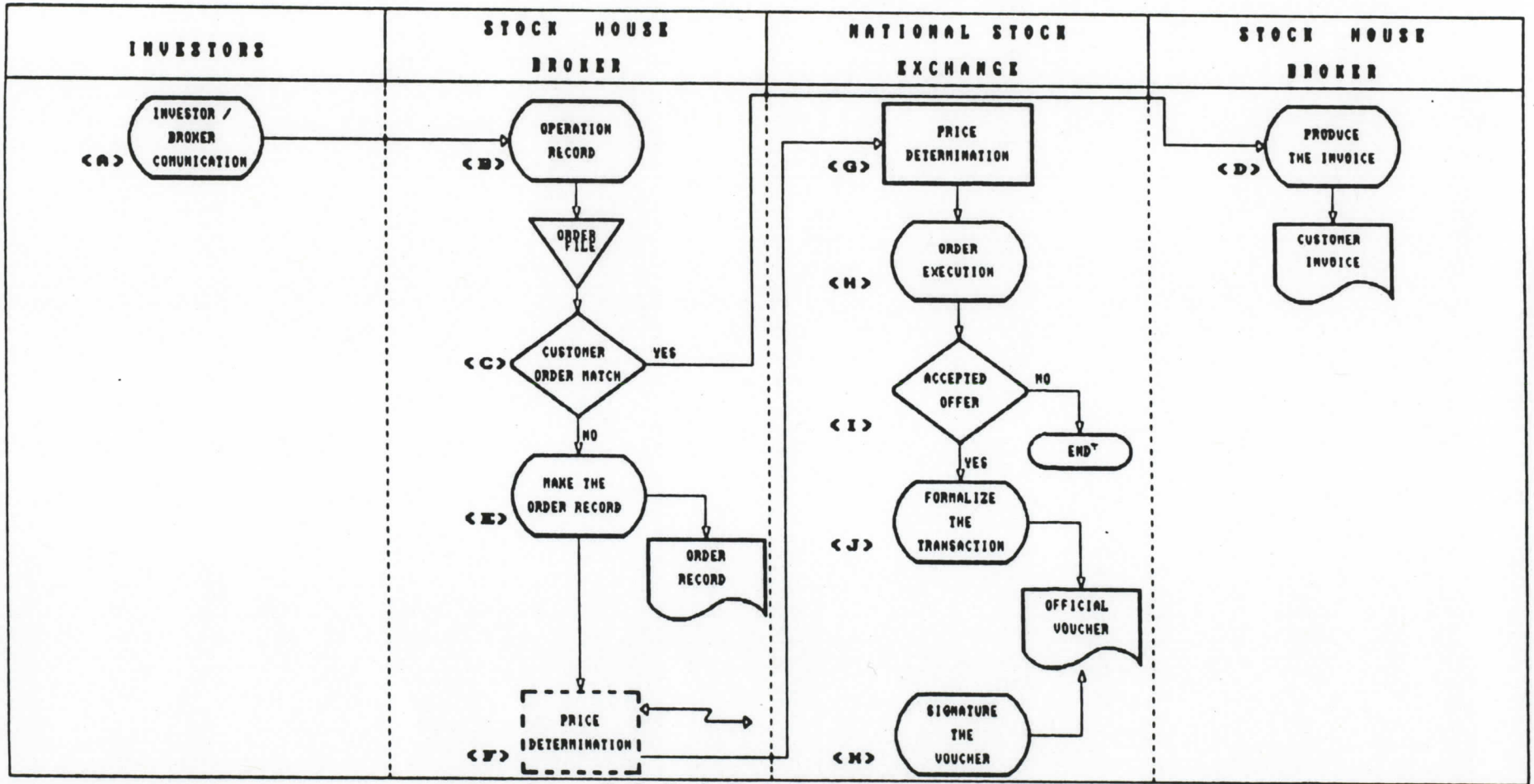


COMPUTER - ASSISTED TRADING SYSTEM AT MEXICO STOCK EXCHANGE

CASH OPERATIONS BY FIRM ORDERS



COMPUTER - ASSISTED TRADING SYSTEM AT COLUMBIA OCCIDENT STOCK EXCHANGE



DESCRIPTION

A) INVESTOR BROKER COMUNICATION.
THE INVESTORS INTRESTED IN BUY/SELL SHARES ESTABLISH COMUNICATION WHITH A STOCK HOUSE.

B) OPERATION RECORD.
THE STOCK HOUSE ENTRY THE INFORMATION ON THE ORDERS BOOK, AND STORE IT.

C) CUSTOMER ORDER MATCH.
SEARCH ON THE ORDER FILE IF AN ORDER COMPLE TE WITH THE REQUIERIMENTS OF THE NEW ORDER.

E) MAKE THE ORDER RECORD.
IF ANY ORDER MATCHES THEN PROCEED TO FORMALI SE THE OPERATION PRODUCING THE ORDER RECORD.

F) PRICE DETERMINATION.
ESTABLISH COMUNICATION WITH THE STOCK EXCHAN GE COMPUTER AND ACCESS THE CALCULATION PRO GRAM, IF THEY HAVE A COMPUTER.

G) PRICE DETERMINATION.
THE BROKER CAN ACCESS THE TERMINALS LOCATED ON THE TRADING FLOOR TO DETERMINATE THE PRI CE OF THE SECURITIES.

H) ORDER EXECUTION.
THE BROKER PROCEED TO OFFER THE SECURITIES.

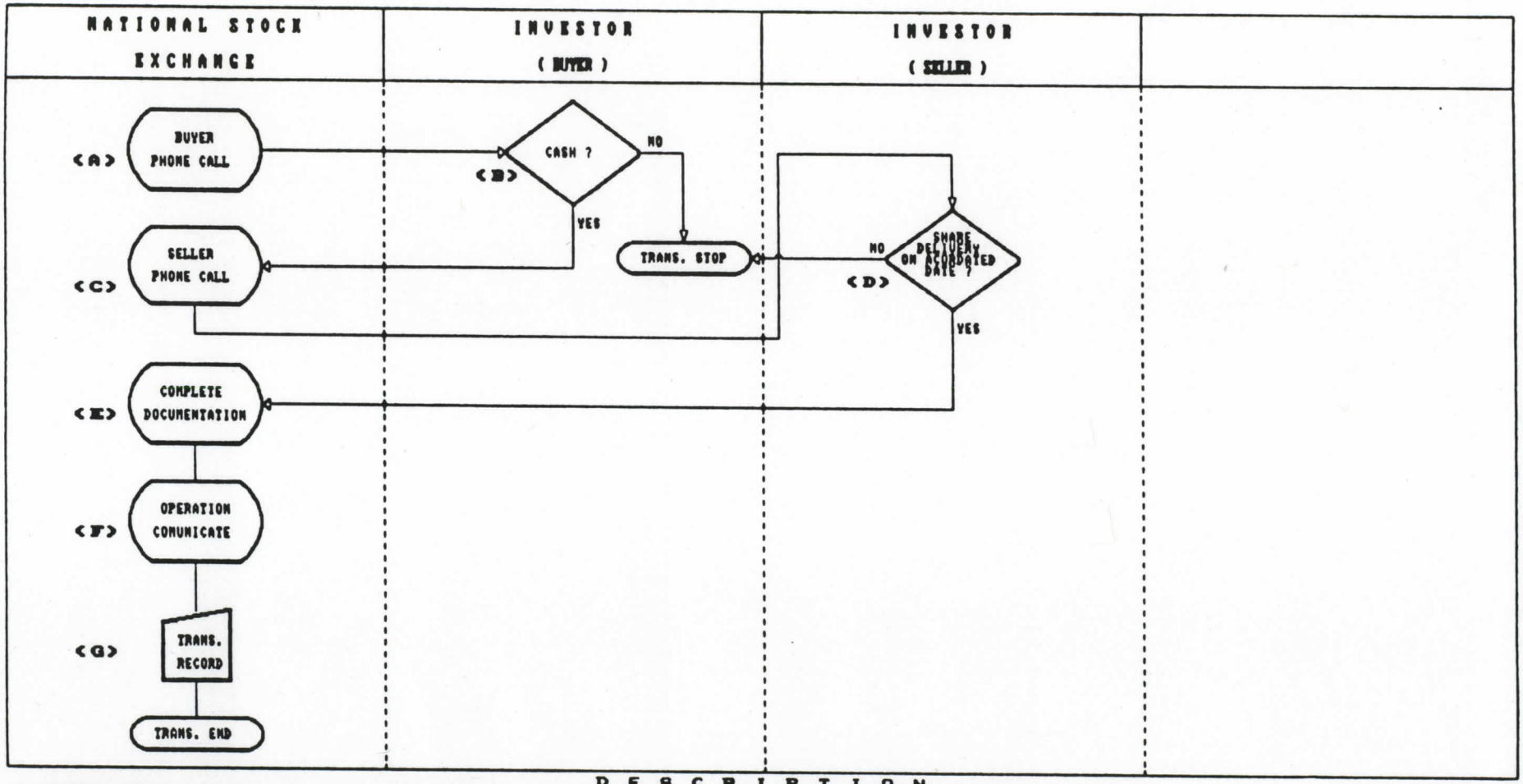
I) ACCEPTED OFFER.
IF THE OFFER IS ACCEPTED PROCEED TO FORMALI SE THE TRANSACTION, OTHE WISE THE OPERATION ENDS.

J) FORMALIZE THE TRANSACTION.
A TRADING FLOOR OFFICIAL PROCEED TO PREPARE AN OFFICIAL VOUCHER.

K) SIGNATURE THE VOUCHER.
THE TRADING FLOOR PRESIDENT AND THE INVOLU CRED BROKERS SIGNATURE THE OFFICIAL VOUCHER AND THE TRANSACTION IS COMPLETE AT THIS MO MENT.

D) PRODUCE THE INVOICE.
IF THE OPERATION MATCH WITH ANOTHER ORDER THE STOCK HOUSE PRODUCE THE CORRESPONDING INVOICE AND COMPLETE THE OPERATION.

COMPUTER - ASSISTED TRADING SYSTEM AT COLOMBIA OCCIDENT STOCK EXCHANGE



DESCRIPTION

A) BUYER PHONE CALL.
WHEN THE OPERATION IS RELIZED ON THE TRADING FLOOR THE BROKER CALL BY PHONE TO HIS CUSTOMER (BUYER).

B) SELLER PHONE CALL.
THE BROKER (SELLER) CALL TO HIS CUSTOMER TO CONFIRM THE SHARES DELIVERY ACORDATED DATE.

E) COMPLETE DOCUMENTATION.
PRODUCE THE TRANSACTION DOCUMENTATION WITH ALL THE REQUIRED INFORMATION, AND THE TRADING FLOOR AND BROKERS SIGNATURE.

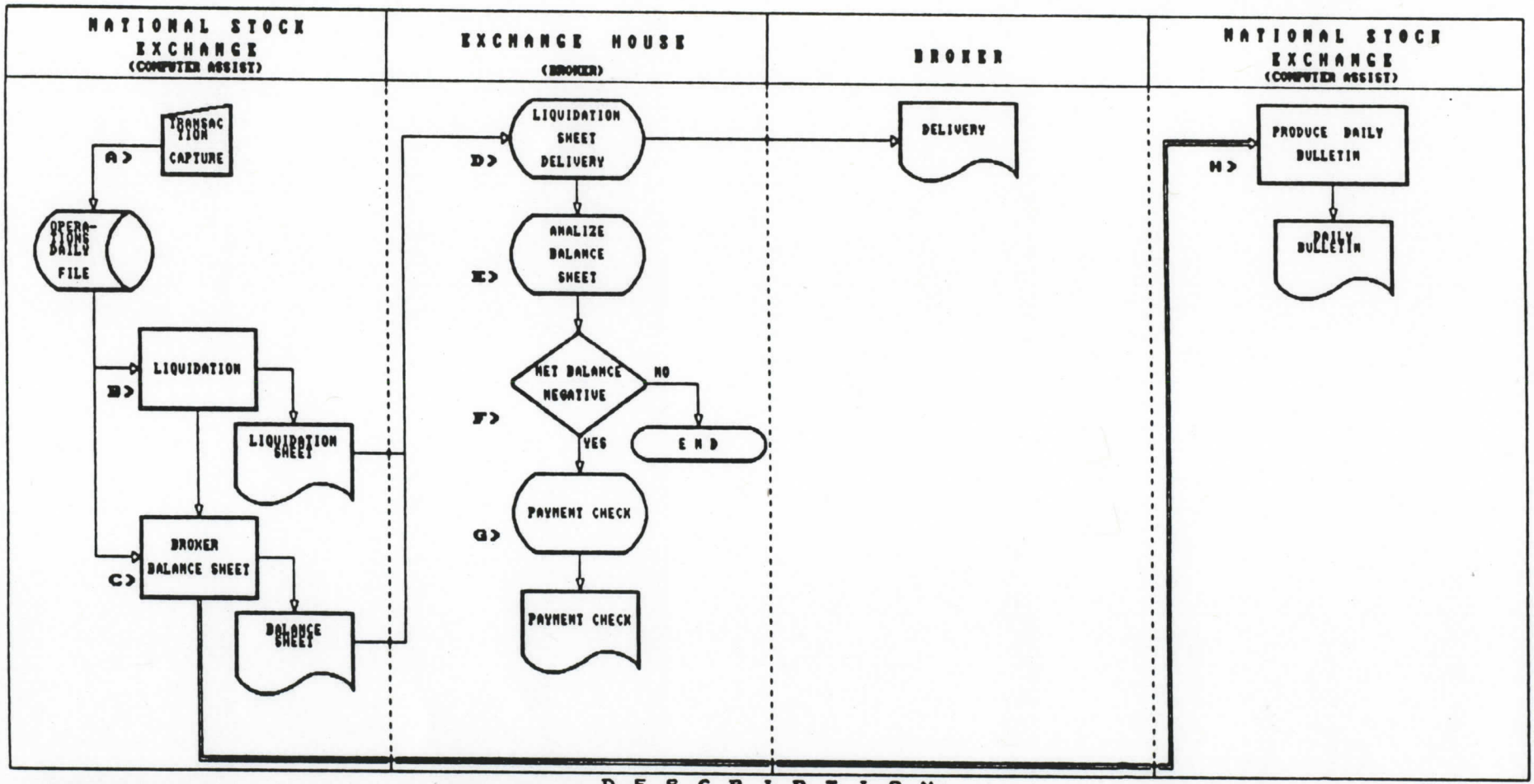
F) OPERATION COMUNICATE.
COMUNCATE TROUGH THE TRADING FLOOR LOADSPEAKER ABOUT THE COMPLETED TRANSACTION.

G) TRANSACTION RECORD.
USING THE TRADING FLOOR TERMINALS PROCEED TO CAPTURE ALL THE INFORMATION RELATED TO THE TRANSACTION, AND THE PROCEDURE ENDS.

B) CASH ?.
IF THE BUYER HAVE THE CASH TO COMPLETE THE OPERATION?, THIS CONTINUE, OTHER WISE THE TRANSACTION IS STOPPED.

D) SHARES DELIVERY ON ACORDATE DATE ?.
IF THE CUSTOMER CAN'T DELIVERY THE SHARES ON THE ACORDATED DATE THEN THE TRANSACTION IS STOPPED.

COMPUTER - ASSISTED TRADING SYSTEM AT COLOMBIA OCCIDENT STOCK EXCHANGE



DESCRIPTION

A) TRANSACTION CAPTURE.
WHEN THE OPERATION IS COMPLETED, PROCEED TO THE TRANSACTION CAPTURE, TO UPDATE THE OPERATIONS DAILY FILE.

B) LIQUIDATION.
AT THE END OF THE CAPTURE PROCEED AUTOMATICALLY TO PRODUCE THE LIQUIDATION'

C) BROKER BALANCE SHEET.
AT THE END OF THE TRADING FLOOR DAILY ACTIVITIES PRODUCE TROUGH THE COMPUTER THE BROKERS' BALANCE SHEET, DELIVERING IT AND THE LIQUIDATION TO THE BROKERS.

D) LIQUIDATION SHEET DELIVERY.
THE BROKER PROCEED TO DELIVERY THE LIQUIDATION SHEET TO HIS CUSTOMER.

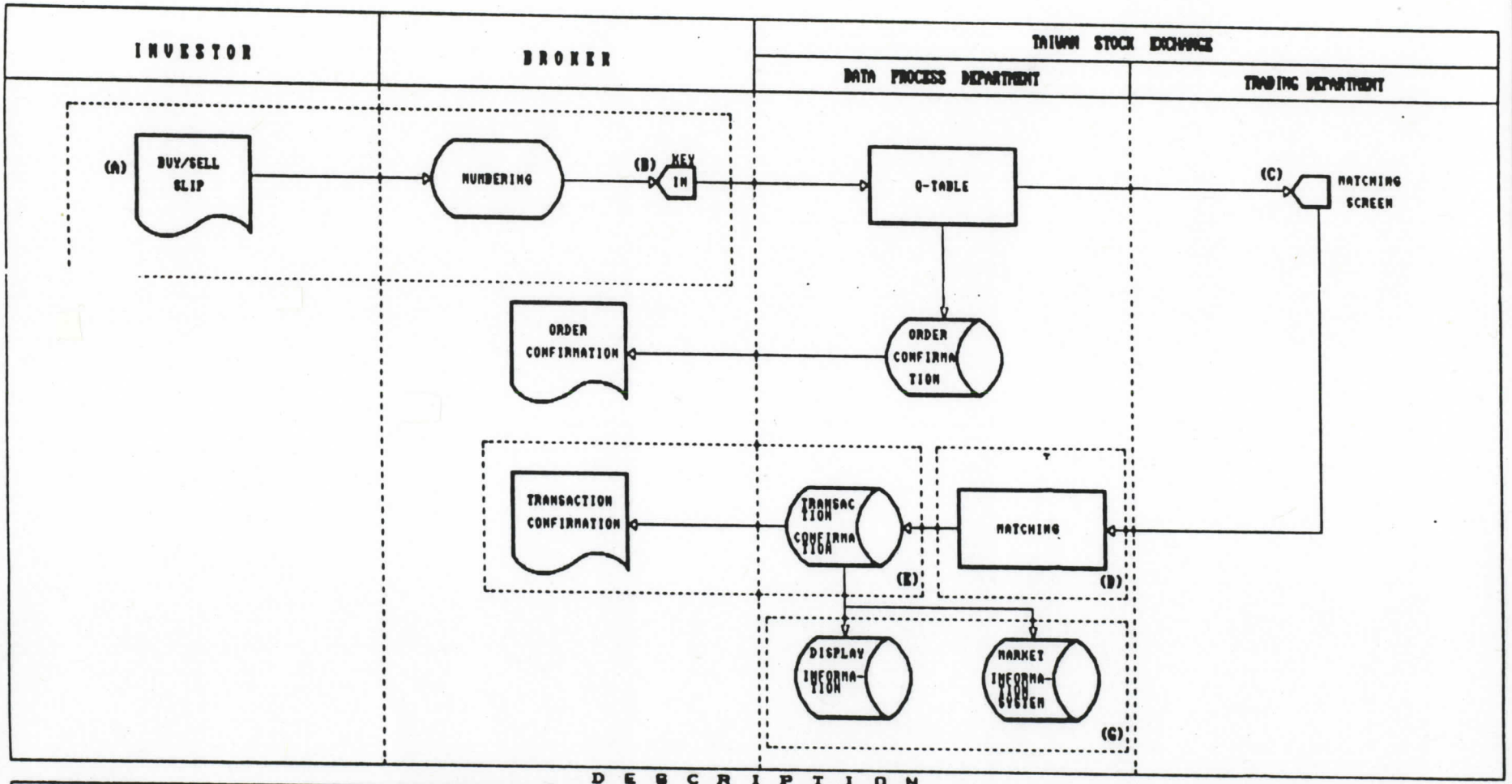
E) ANALIZE BALANCE SHEET.
ANALIZE THE BROKERS BALANCE SHEET AND DETERMINE THE BALANCE.

F) NET BALANCE NEGATIVE.
IF THE NET BALANCE IS NEGATIVE, THE SHOULD DO A PAYMENT TO THE STOCK EXCHANGE, OTHERWISE HE MUST RECIVE THE PAYMENT.

G) PAYMENT CHECK.
THE BROKERS PROCEED TO PRODUCE THE PAYMENT CHECK AND DELIVERY IT TO THE STOCK EXCHANGE.

H) PRODUCE DAILY BULLETIN.
BASED IN THE RECORDED INFORMATION OF THE TRANSACTIONS, PROCEED TO PRODUCE THE DAILY BULLETIN. WITH THIS FILE INFORMATION CAN PRODUCE BULLETINS BY MONTH, YEAR ACUMULATED AND OTHERS.

COMPUTER - ASSISTED TRADING SYSTEM AT TAIWAN STOCK EXCHANGE



DESCRIPTION

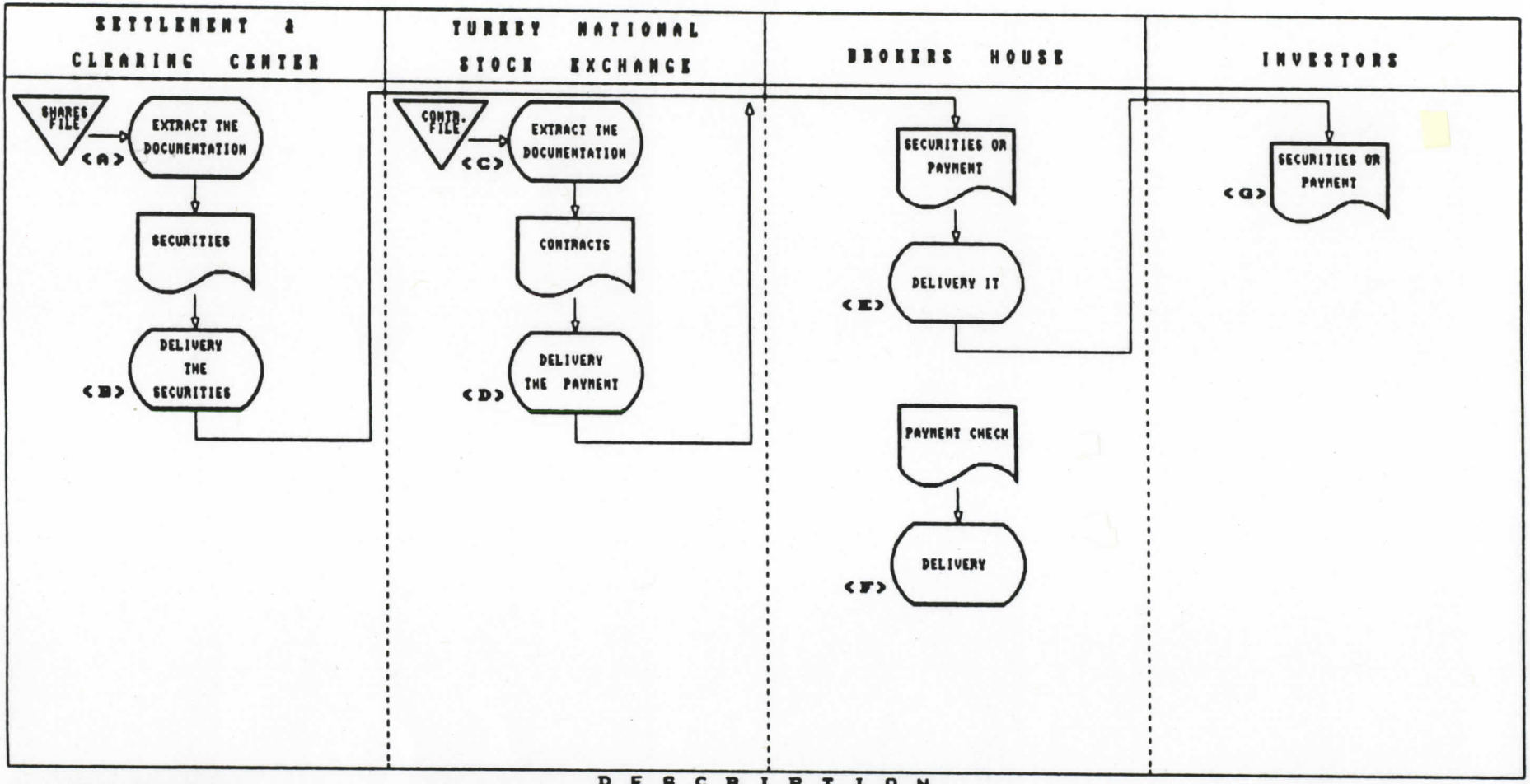
(A) ORDER FILL:
A CUSTOMER FILL OUT THE ORDER SLIP AND GIVE IT TO THEB BROKER.

(B) ORDER ENTRY:
THE BROKER NUMBERED THE SLIP AND ENTER THE ORDER INTO AN ORDER ENTRY TERMINAL.

(E) ORDER EXECUTION:
THE COMPUTER WILL MATCH THE BUY/SELL ORDER BASE ON THE DECIDED PRICE.

(C) PRICE DETERMINATION:
THE MATCHING STAFF OF TRADING DEPARTMENT DECIDE THE MATCHING PRICE MANUALLY, BASE ON THE EXISTING PRICING PRINCIPALS.

COmruTER - ASSISTED TRADING SYSTEM AT TURKEY STOCK EXCHANGE



DESCRIPTION

(A) EXTRACT THE DOCUMENTATION.
BASED ON THE COMPLETED OPERATIONS EXTRACT THE SECURITIES.

(B) DELIVERY THE SECURITIES.
DELIVERY THE SECURITIES RELATED TO THE OPERATION TO THE BROKERS HOUSE.

(C) EXTRACT THE DOCUMENTATION.
EXTRACT THE CONTRACTS, REQUEST ORDER AND OTHER DOCUMENTS THAT MAKE THE OPERATION COMPLETE.

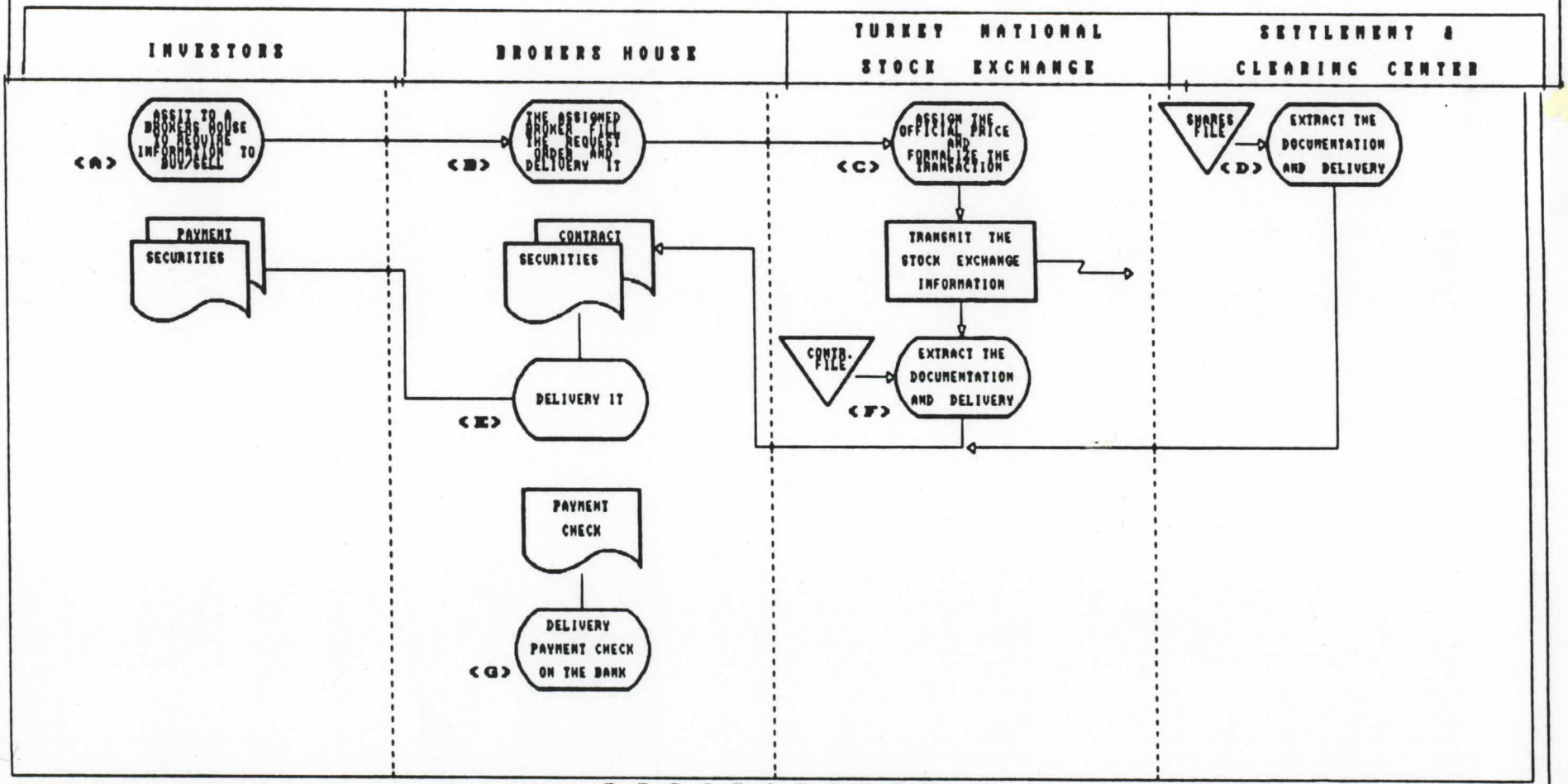
(D) DELIVERY THE PAYMENT.
DELIVERY THE PAYMENT TO THE BROKERS HOUSE WHEN THE OPERATION HAS TO SALE SECURITIES.

(E) DELIVERY THE SECURITIES.
THE BROKER HOUSE RECIVE THE SECURITIES FROM THE SETTLEMENT AND CLEARING CENTER THEN PROCEED TO DELIVERY IT TO HIS CUSTOMERS.

(F) DELIVERY THE PAYMENT.
IF THE OPERATION HAS TO BUY SECURITIES, THE BROKER HOUSE DELIVERY THE PAYMENT CHECK TO THE BANK, INTO THE ACCOUNT OF THE NATIONAL STOCK EXCHANGE.

(G) RECIVE THE DOCUMENTATION.
THE CUSTOMER RECIVES THE SECURITIES OR THE AMMOUNT OF THE SALE.

COMPUTER - ASSISTED TRADING SYSTEM AT TURKEY STOCK EXCHANGE



DESCRIPTION

(A) ASSIST TO A BROKERS HOUSE.
AN INVESTOR INTRESTED ASSIT TO A BROKERS HOUSE TO REQUIRE INFORMATION ABOUT THE SHARES, IF IS INTRESTED THE TRANSACTION CONTINUE.

(B) FILL THE REQUEST ORDER.
THE ASSIGNED BROKERFILL THE REQUEST ORDER SO THAT THE OPERATION BE FORMALIZED, AND DELIVERY IT TO THE STOCK EXCHANGE.

(E) DELIVERY TO THE CUSTOMER.
THE BROKERS HOUSE RECIVES FROM THE SETTLE MENT AND CLEARING CENTER THE DOCUMENTATION OR THE PAYMENT, THE WICH MUST BE ENTERED TO THE INVESTOR.

(G) DELIVERY PAYMENT CHECK.
IF THE OPERATION IS THE SECURITIES BUY, THE BROKERS HOUSE DELIVERY THE PAYMENT CHECK ON THE BANK IN THE ACCOUNT OF THE NATIONAL STOCK EXCHANGE.

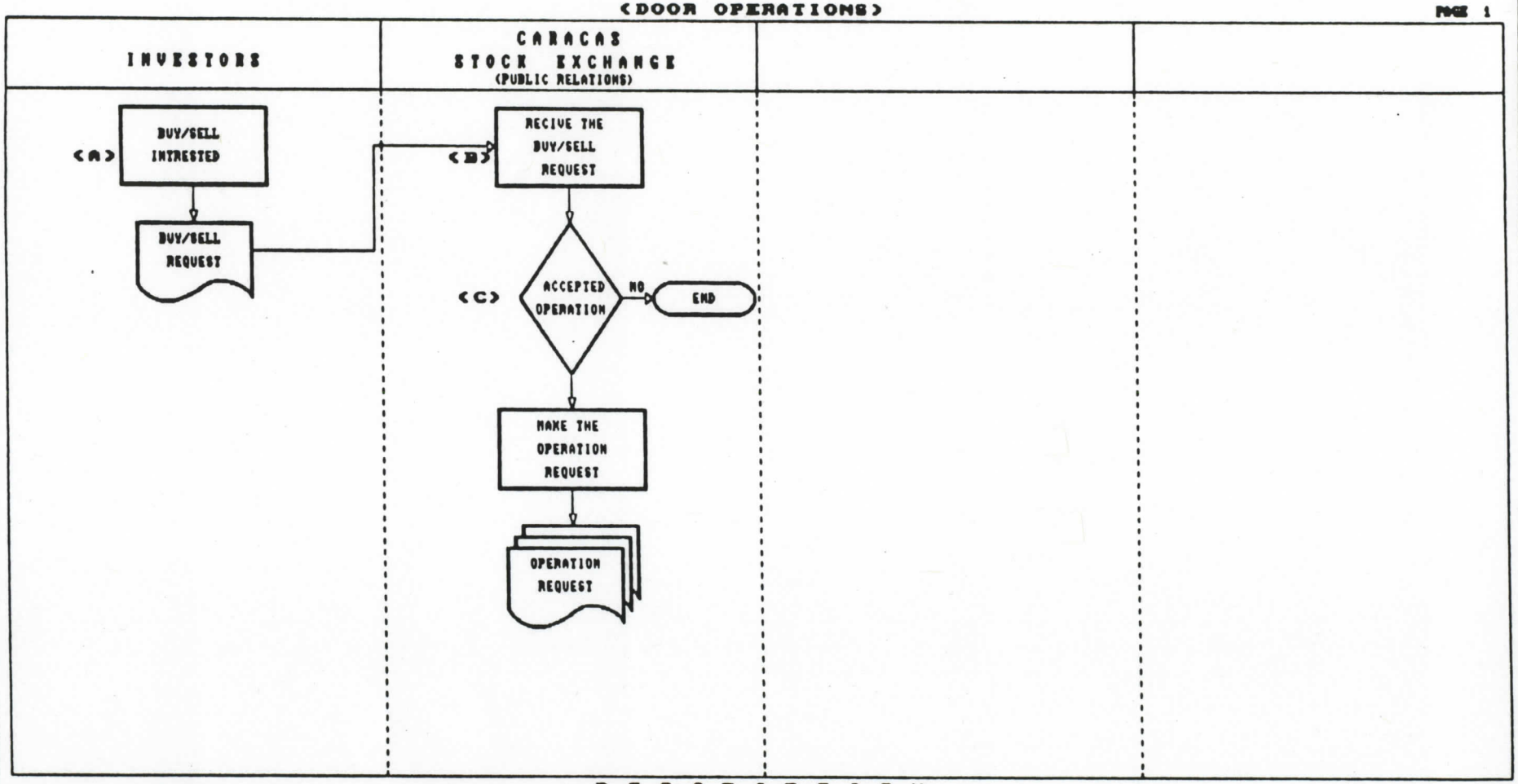
(C) DEFINE THE OFFICIAL PRICE.
BASED IN THE PREVIUS DAY SESSION THE STOCK EXCHANGE DETERMINE THE OFFICIAL PRICE AND FORMALISE THE TRANSACTION.

(F) EXTRACT THE INFORMATION.
THE STOCK EXCHANGE EXTRACTS THE DOCUMENTA TION, AND DELIVERY IT TO THE AFFECTED BROKERS HOUSE.

(F) EXTRACT THE DOCUMENTATION.
THE SETTLEMENT AND CLEARING CENTER EXTRACT THE DOCUMENTATION OF THE TRANSACTION AND DELIVERY IT TO THE BROKERS HOUSE AFFECTED.

COMPUTER - ASSISTED TRADING SYSTEM AT VENEZUELA STOCK EXCHANGE

(DOOR OPERATIONS)



DESCRIPTION

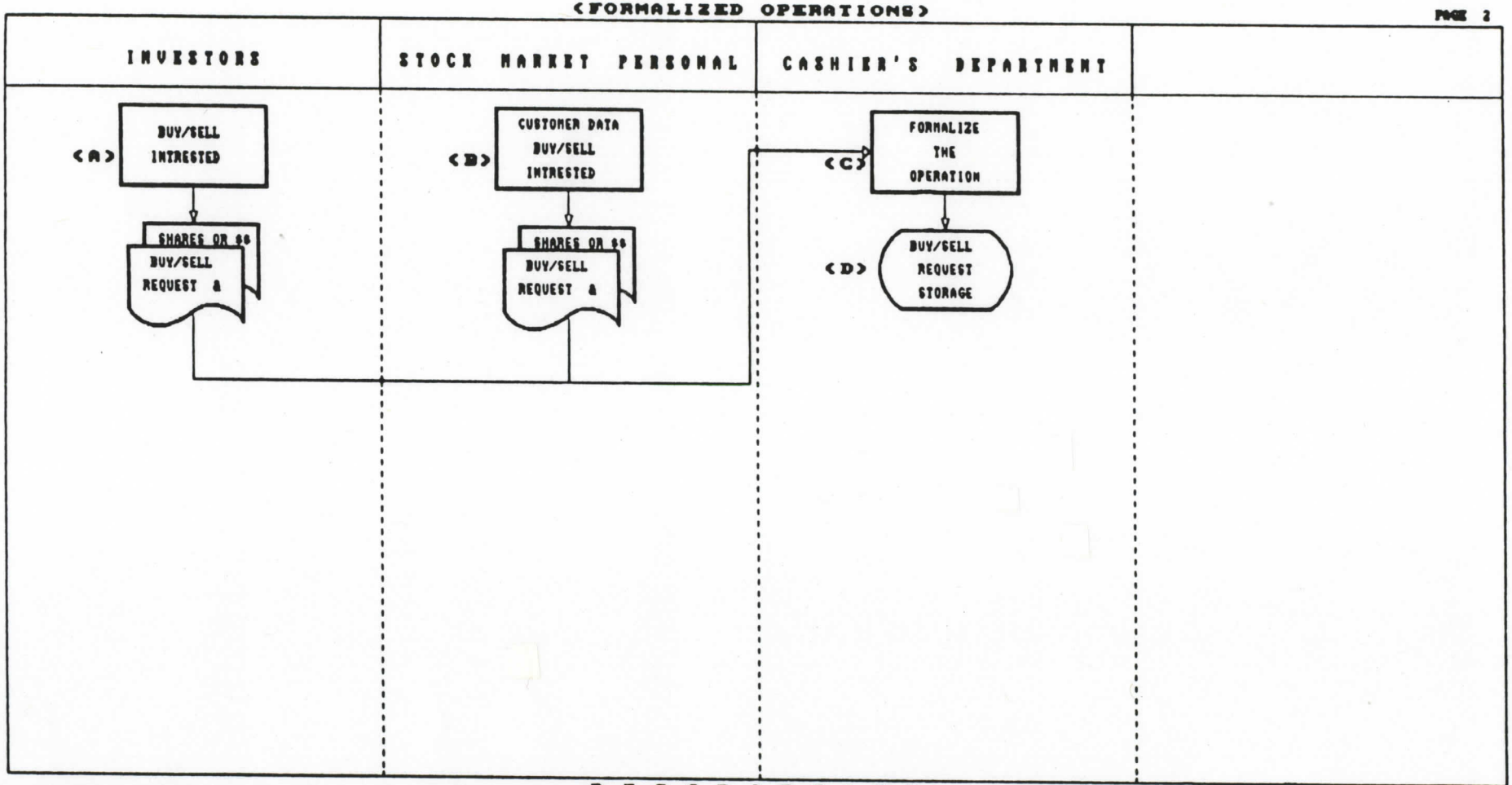
(A) BUY/SELL INFORMATION.
THE INVESTOR PRESENTS TO PUBLIC RELATIONS OFFICE OF CARACAS STOCK EXCHANGE FOR BUY/SELL INFORMATION, AND FILL/UP A REQUEST FOR OBTAIN THE PRICES, AND DELIVERY IT TO THE PERSONAL IN THE OFFICE.

(B) RECIVE THE BUY/SELL REQUEST.
THE PERSONAL OF THE PUBLIC RELATIONS OFFICE INFORMS ABOUT THE PRICES TO THE INVESTOR, AND FILL THE BUY/SELL REQUEST.

(C) ACCEPTED TRANSACTION?.
IF THE TRANSACTION IS NOT ACCEPTED THE PROCEDURE ENDS; ELSE FILL_UP THE OPERATION REQUEST AND DELIVERY IT TO THE CASHIERES'S DEPARTMENT.

COmpuTER - ASSisTED TRADING SYSTEM AT VENEZUELA STOCK EXCHANGE

(FORMALIZED OPERATIONS)



DESCRIPTION

(A) BUY/SELL INTRESTED.
IF THE OPERATION IS APPROVED THEN PRESENTS THE BUY/SELL REQUEST ON THE CASHIER'S DEPARTMENT IN ORIGINAL AND TWO COPIES.

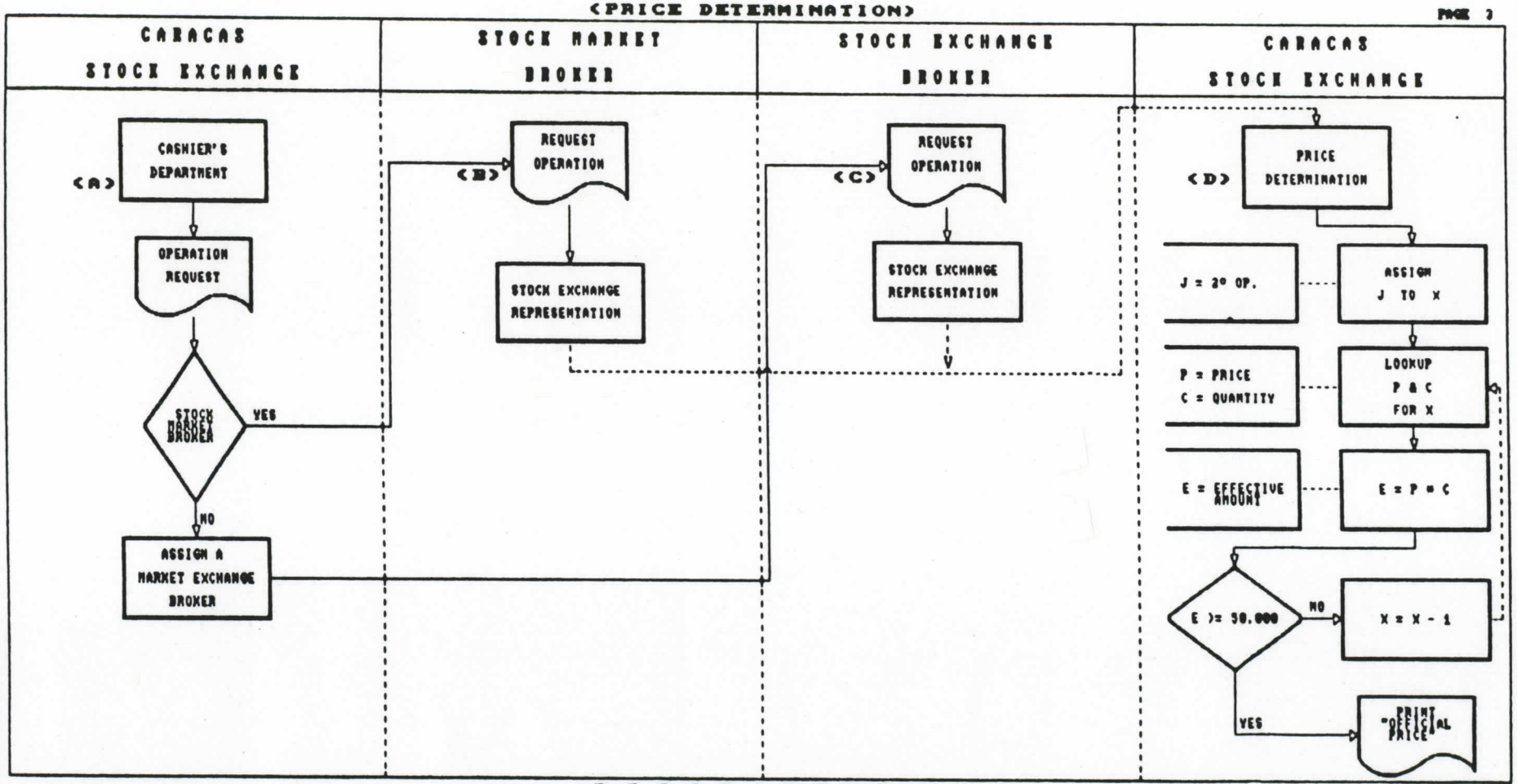
(B) RECIVE THE BUY/SELL REQUEST.
WHEN THE OPERATION IS APPROVED THEN SEND THE BUY/SELL REQUEST TO THE CASHIER/S DEPARTMENT OF CARACAS STOCK EXCHANGE. IN ORIGINAL AND TWO COPIES.

(C) FORMALIZE THE OPERATION.
THE CASHIER'S DEPARTMENT RECIVE THE BUY/SELL REQUEST FROM THE INVESTOR DIRECTLY OR FROM A STOCK MARKET OFFICE IN ORIGINAL AND TWO COPIES. WITH THIS INFORMATION THE OPERATION IS FORMALISED.

(D) FILES THE CASHIER'S COPY.
THE CASHIER'S DEPARTMENT FILES THE COPIES OF THE BUY/SELL REQUEST RECIVED FROM THE INVESTORS. OR BY THE BROKER OF AN STOCK MARKET.

COMPUTER - ASSISTED TRADING SYSTEM AT VENEZUELA STOCK EXCHANGE

<PRICE DETERMINATION>



DESCRIPTION

(A) CASHIER'S DEPARTMENT.
SEND THE BUY/SELL REQUEST TO THE BROKER WHEN THE OPERATION IS THRU A STOCK MARKET, OR ASSIGN A BROKER OF THE STOCK EXCHANGE IF THE OPERATION IS MADE DIRECTLY FROM THE INVESTOR.

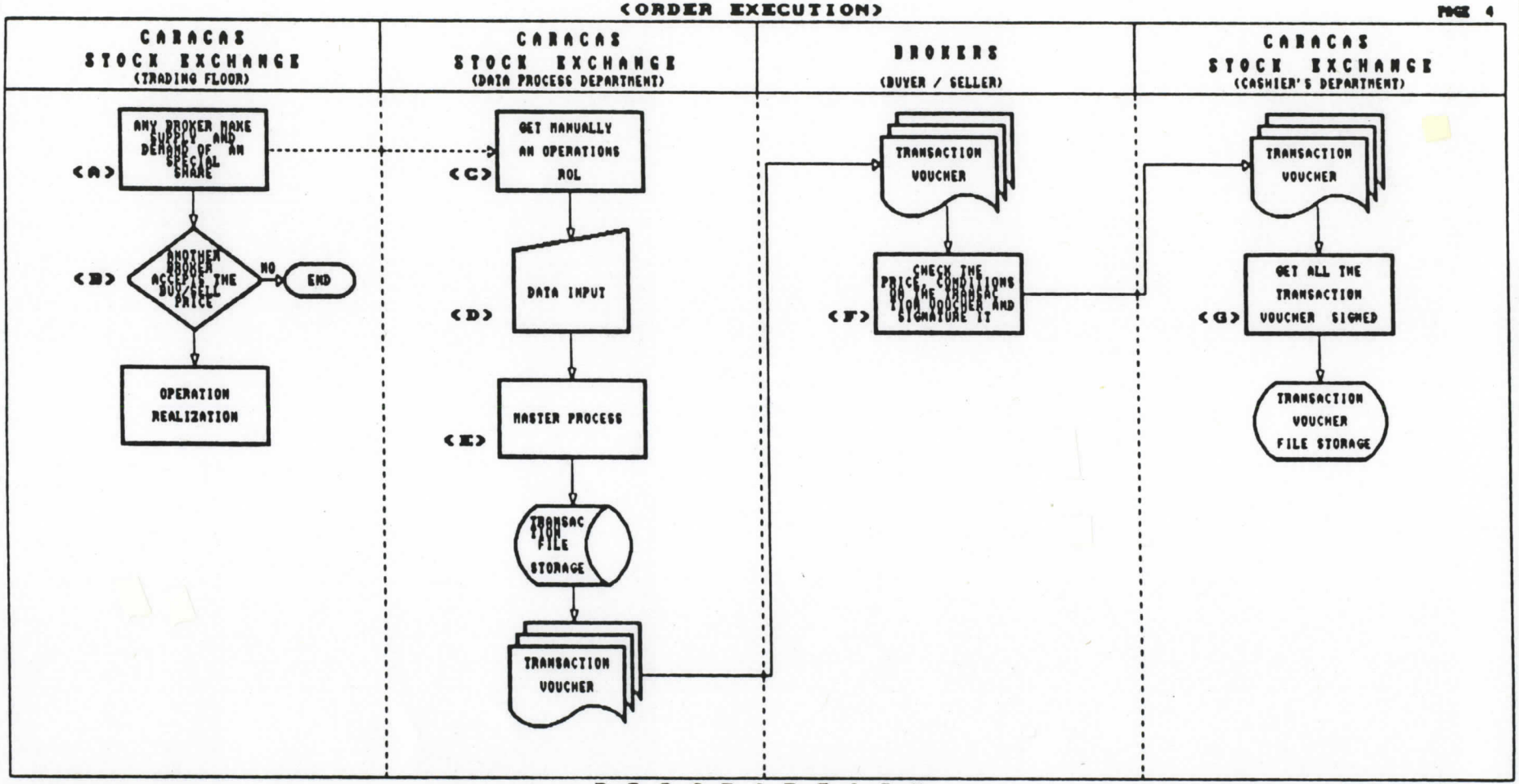
(B) RECIVE THE REQUEST OPERATION.
RECIVE THE REQUEST OPERATION FOR REPRESENT TO HIS OWN CUSTOMERS OF THE TRADING FLOOR.

(C) RECIVE THE REQUEST OPERATION.
RECIVE THE REQUEST OPERATION FOR REPRESENT TO THE CUSTOMERS THAT CAME ALONE TO THE TRADING FLOOR FOR BUY/SELL OPERATIONS.

(D) PRICE DETERMINATION.
FOR DETERMINATE THE BUY/SELL PRICE OF THE SHARES, IT BEGINS WITH THE OFFICIAL PRICE THE WICH WILL BE THE RESULT OF MULTIPLY IN REGRESIVE WAY THE PRICE OF THE OPERATIONS BY THE QUANTITY OF SHARES CORRESPONDING TO THAT OPERATION AND WHEN FIND THE FIRST OPERATION WITH AN EFFECTIVE AMOUNT GREATER OR EQUAL TO 50.000.00 BOLIVARES, THIS WILL BE THE OFFICIAL PRICE, WHEN IT SUCCEED THEN PROCCEED TO MAKE THE PRINT OUT OF THE OFFICIAL PRICE.

COMPUTER ASSISTED TRADING SYSTEM AT VENEZUELA STOCK EXCHANGE

(ORDER EXECUTION)



DESCRIPTION

(A) SUPPLY AND DEMAND.
ANY BROKER MAKE A SUPPLY OR DEMAND OF OF SHARES AT THE TRADING FLOOR OF THE STOCK EXCHANGE.

(B) ANOTHER BROKER ACCEPT THE OFFER.
IF ANOTHER BROKER ACCEPTS THE PROPOSITION IT IS REGISTRED ON THE BOARD AND THE OPERATION IS ACCOMPLISHED. OTHERWISE THE PROPOSITION IS CANCELED.

(C) GET A ROL MANUALLY.
THE PERSONNAL OF DATA PROCESS TAKE MANUALLY A ROL WITH ALL THE MOVEMENTS ON THE STOCK EXCHANGE.

(D) DATA INPUT.
BASED ON THE MANUALLY ROL THE PERSONAL OF DATA PROCESS INPUT THE DATA TO THE COMPUTER

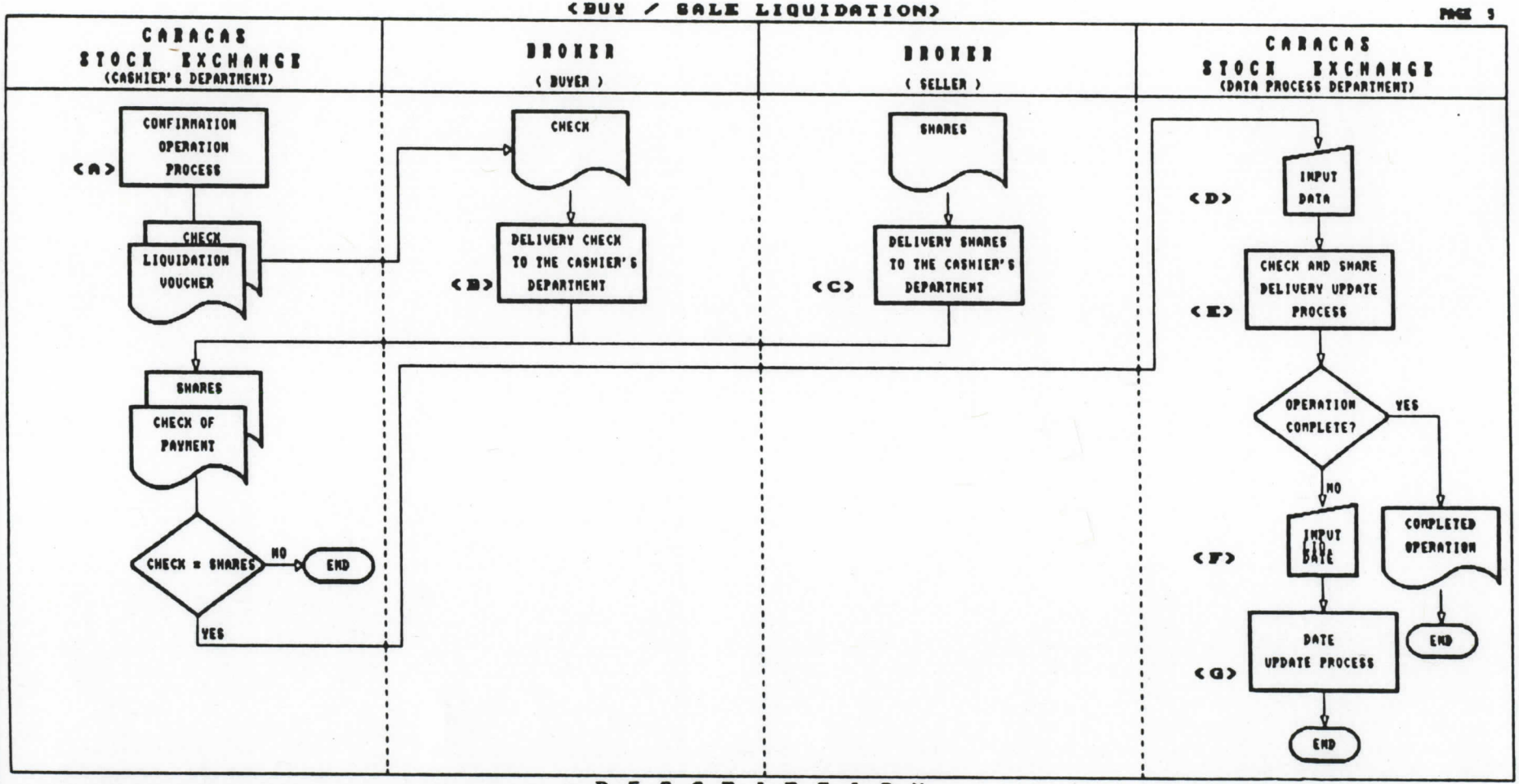
(E) RUN THE MASTER PROCESS.
WITH THE INFORMATION THAT IS ON THE COMPUTER OBTAINS THE TRANSACTION VOUCHER AND STORE THE INFORMATION ON THE TRANSACTION FILE.

(F) CHECK THE CONDITIONS.
THE BROKERS (BUYER/SELLER) CHECK THE PRICE AND CONDITIONS OF THE TRANSACTION VOUCHER AND SIGN THE VOUCHER IF THEY ARE OF COMMON ACCORD.

(G) GET ALL THE TRANSACTION VOUCHER.
GET THE TRANSACTION VOUCHERS THAT HAVE BEEN SIGNED BY BOTH BROKERS AND STORE IT ON THE TRANSACTION VOUCHER FILE MANNUALY, FOR THE LIQUIDATION OF THE BUY/SELL.

COMPUTER - ASSISTED TRADING SYSTEM AT VENEZUELA STOCK EXCHANGE

(BUY / SALE LIQUIDATION)



DESCRIPTION

(A) CONFIRMATION OPERATION.
THE CASHIER'S DEPARTMENT PERSONNAL ASK TO DATA PROCESS DEPARTMENT TO RUN THE CONFIRMATION PROCESS, TO OBTAIN THE LIQUIDATION VOUCHERS AND THE CHECKS, AND DELIVERY THE DOCUMENTS TO THE BROKERS.

(B) DELIVERY THE PAY CHECK.
THE BUYER BROKER DELIVERY DE PAY CHECK OF THE OPERATION TO THE CASHIER'S DEPARTMENT TO COMPLETE THE OPERATION.

(C) DELIVERY THE SHARES.
THE SELLER BROKER DELIVERY THE SOLDED SHARES TO THE CASHIER'S DEPARTMENT TO COMPLETE THE TRANSACTION.

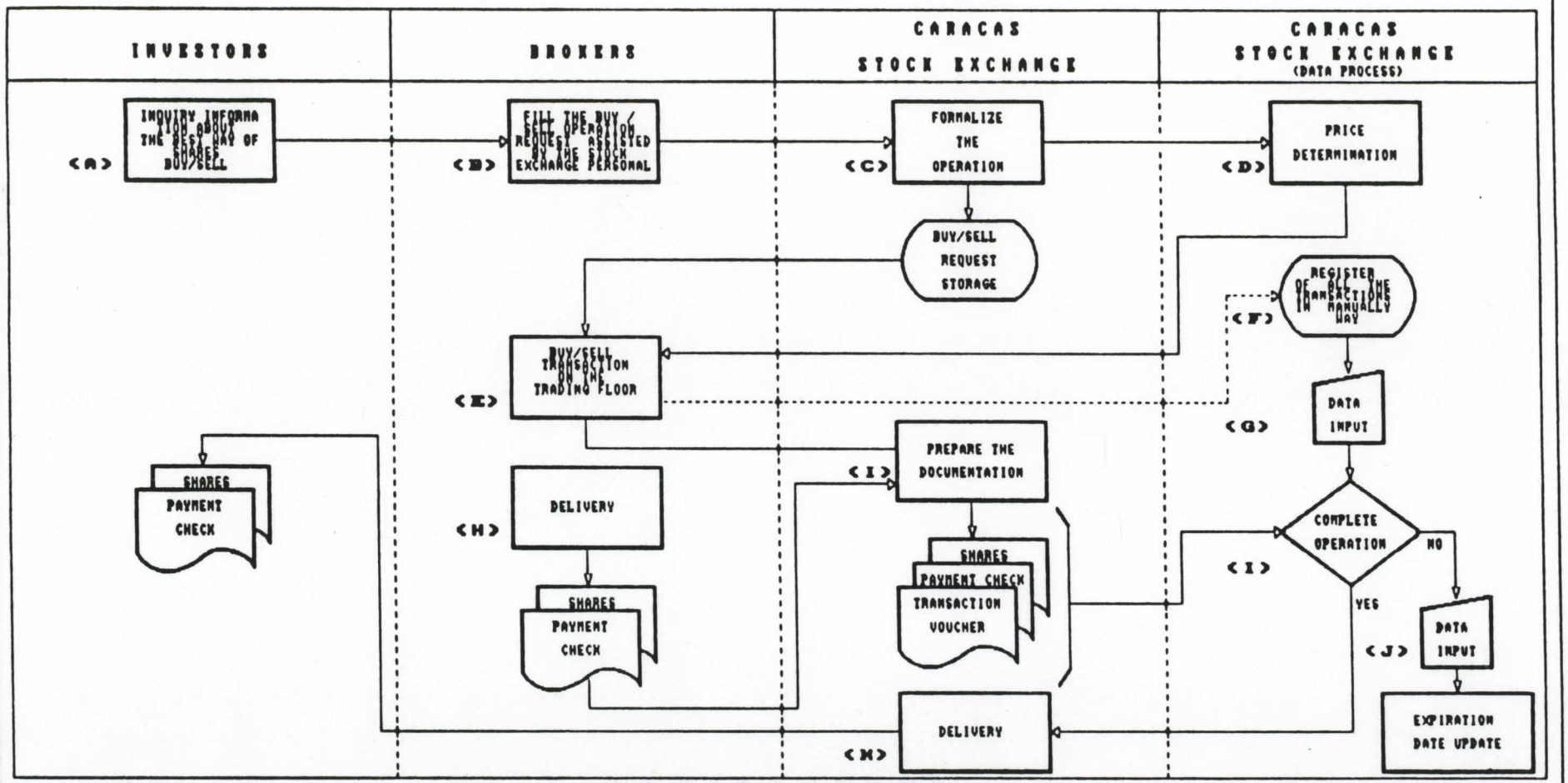
(D) INPUT THE DATA.
INPUT THE DATA INFORMATION RECIVED FROM THE CASHIER'S DEPARTMENT.

(E) DELIVERY UPDATE PROCESS.
RUN THE DELIVERY UPDATE PROCESS TO OBTAIN MATCHED CHECKS VS. TRANSACTION VOUCHERS. IF IT IS TRUE SEND THE MESSAGE COMPLETED OPERATION AND THE TRANSACTION ENDS.

(F) INPUT LIQUIDATION DATE.
IF THE TRANSACTION MUST BE COMPLETED IN OTHER DATE. THIS IS CAPTURED ON THE COMPUTER.

(G) RUN THE PROCESS FOR DATE UPDATE.
EXECUTE THE PROCESS FOR THE DATE UPDATE OF THE OPERATION THAT WILL BE EXPECTING THE EXPIRATION DATE.

COMPUTER - ASSISTED TRADING SYSTEM AT VENEZUELA STOCK EXCHANGE



DESCRIPTION

(A) INQUIRY INFORMATION.
THE INVESTORS INQUIRY INFORMATION ABOUT THE BEST WAY TO BUY/SELL SHARES, IN A STOCK MARKET, OR DIRECTLY IN THE CARACAS STOCK EXCHANGE.

(B) FILL THE OPERATION REQUEST.
THE BROKER FILL OUT THE OPERATION REQUEST, IF THE INVESTOR WORKS DIRECTLY WITH THE STOCK EXCHANGE, THIS ASSIGN A BROKER, SO THAT HE CAN BE REPRESENTED IN THE TRADING FLOOR.

(E) TRANSACTION ON THE TRADING FLOOR.
BASED ON THE SUPPLY AND DEMAND THE BROKERS MAKE THE TRANSACTION, AND IT IS REGITRED ON THE BOARD.

(H) BROKERS DELIVERY.
WHEN THE TRANSACTION HAS BEEN FORMALISED THE BROKERS MUST DELIVERY THE SHARES OR THE PAYMENT CHECK, TO PROCEED WITH THE OPERATION.

(C) FORMALIZE THE OPERATION.
WITH THE OPERATION REQUEST THE OPERATION IS FORMALISED BY CARACAS STOCK EXCHANGE, AND THE PROCEDURE IS CONTINUED, AND STORE THE BUY/SELL REQUEST RECIVED.

(H) PREPARE THE DOCUMENTATION.
WITH THE SHARES AND THE PAYMENT CHECK THE DOCUMENTATION IS PREPARED TO CONTINUE WITH THE TRANSACTION; AND THE INFORMATION IS CO MUNICATED TO DATA PROCESS.

(K) DOCUMENTATION DELIVERY.
WHEN THE COMPUTER REPORTS DOCUMENTATION COM PLETE, THEN PROCEED TO DELIVERY THIS DOCU MENTATION TO THE BROKERS, AND THEY DELIVERY IT TO THE CUSTOMER.

(D) PRICE DETERMINATION.
WHEN THE OPERATION IS FORMALISED, PROCEED TO DETERMINATE THE SHARES OFFICIAL PRICE.

(F) REGISTER OF TRANSACTIONS.
REGISTER ALL THE TRANSACTIONS IN MANUALLY WAY.

(G) INPUT THE DATA ON THE COMPUTER.
BASED ON THE MANUALLY ROLL THE PERSONAL OF DATA PROCESS INPUT THE DATA ON THE COMPU TER.

(I) PROCESS TO VERIFY.
RUN THE PROCESS TO VERIFY IF THE DOCUMENTA TION IS COMPLETE.

(J) DATA INPUT.
IF THE DOCUMENTATION IS INCOMPLETE, THEN INPUT THE EXPIRATION DATE, AND RUN THE PRO CESS TO UPDATE IT.

VENEZUEL

MARKET AUTOMATION SURVEY'S DIRECTORY

Country	:	*Argentina*	
		Securities Commission	*Stock exchange*
Main officer name:		Dr. FERNANDO JOSE ROBLES	Dr. GUIDO C. M. TAVELLI
Job title	:	PRESIDENTE	PRESIDENTE
Address	:	HIPOLITO IRIGOYEN 250 PISO 10 OFNA. 1010 BUENOS AIRES, ARGENTINA	25 DE MAYO 367, 9° PISO 1002 BUENOS AIRES, ARGENTINA
Phone	:	(541) 345-799 345-941 341 919	313 4122
Telex	:	219 MINEC AR	17445 MERBA SR
Fax number	:		
Responsible	:		
Job title	:		

Country	:	*Bolivia*	
		Securities Commission	*Stock exchange*
Main officer name:		PERCY JIMENEZ CABRERA	FERNANDO SANCHEZ LOZADA
Job title	:	PRESIDENTE	GERENTE GENERAL
Address	:	EDIF. BANCO CENTRAL DE BOLIVIA PISO 15 CASILLA # 72 LA PAZ, BOLIVIA	AYACUCHO ESQ. MERCADO #308 LA PAZ, BOLIVIA CASILLA 4808
Phone	:	(5) (912) 374 151 EXTS.332/335	352-308 350-935
Telex	:	3471 EXPRESS BV	
Fax number	:	(5)(912) 232 3274	
Responsible	:	ANDRES QUIROZ ZURITA	
Job title	:	DIRECTOR DE ANALISIS FINANCIEROS Y SISTEMAS COMPUTARIZADOS	

Country	:	*Brasil*	
		Securities Commission	*Stock exchange (Sao Paulo)*
Main officer name:		MR. MARTIN WIMMER	HORACIO MENDONCA NETTO
Job title	:	PRESIDENTE	SUPERINTENDENTE GENERAL
Address	:	RUA 7 DE SETEMBRO 111, ANDAR 32 RIO DE JANEIRO 20050 BRASIL	RUA XV DE NOVEMBRO, 275, 10° ANDAR. SAO PAULO, SP, CEP 01012
Phone	:	(5)(521) 292 5117 EXTS 246/247 232 5992	258-7222
Telex	:	21549, 33526 CVMS BR	
Fax number	:	(5)(521) 292 5117 EXT 211	005-011-360871
Responsible	:		ANDRES E. RUEDA GARCIA
Job title	:		SUPERINTENDENTE EJECUTIVO DE SISTEMAS

Country	:	*Brasil*
		Stock exchange (Rio de Janeiro)
Main officer name:		MARCO AURELIO CHAVES
Job title	:	JEFE DEL DEPTO DE INFORMATICA
Address	:	PRACA XV DE NOVEMBRO, 20 20010 RIO DE JANEIRO RJ
Phone	:	(21) 271-1001
Fax number	:	(21) 221-2151
Responsible	:	
Job title	:	

Country	:	*Chile*	
		Securities Commission	*Stock exchange (Chile)*
Main officer name:		SR. FERNANDO ALVARADO ELISSETCHE	
Job title	:	SUPERINTENDENTE DE VALORES Y SEGUROS	
Address	:	TEATINOS #120 PISO 6ª SANTIAGO DE CHILE	MONEDA 1020-PISO 3ª, SANTIAGO CHILE
Phone	:	(562) 696 8017	6-96-26-18
Telex	:	340 - 260 CPBVTR CK	
Fax number	:	(562) 699 3674	6-96-05-03
Responsible	:	ALEJANDRO FERNANDEZ CIFUENTES	EDUARDO GOMEZ SANGUESA
Job title	:	JEFE DE ESTUDIOS DE VALORES	GERENTE GENERAL

Country	:	*Colombia*	
		Securities Commission	*Stock exchange (Cali)*
Main officer name:		LUIS FERNANDO URIBE RESTREPO	WILLIAM AGUIRRE PELAEZ
Job title	:	PRESIDENTE	PRESIDENTE
Address	:	CARRERA 7a #31-10 PISO 4ª BOGOTA, COLOMBIA A.A. 39600	CL. 8 # 3-14 PISO 17 EDIF. CAMARA DE COMERCIO CALI-VALLE
Phone	:	(571) 287-3300 287-5953 287 5750	923-81-70-22
Telex	:	44326	
Fax number	:	(571) 287-5716	923-81-57-20
Responsible	:	PEDRO DIAZ GOMEZ	HECTOR CABRERA BECERA
Job title	:	ASESOR DE SISTEMAS	JEFE DEL CENTRO DE SISTEMAS

Country	:	*Colombia*	
		Stock exchange (Bogota)	*Stock exchange (Medellin)*
Main officer name:		HERNAN BELTZ PERALTA	FRANCISCO PIEDRAHITA ECHEVERRI
Job title	:	PRESIDENTE	PRESIDENTE
Address	:	CARRERA 8a. Nª. 13-82, PISO 7 Y 8 BOGOTA, COLOMBIA A. A. 3584	CARRERA 50 Nª.50-48 PISO 2ª. MEDELLI, ANTIOQUIA
Phone	:	243 6501 243 1141	942 60300
Fax number	:	281 3170	942 511 981
Responsible	:	MAURICIO DUQUE GOMEZ	CARMEN SOFIA RESTREPO
Job title	:	JEFE DE SISTEMAS	JEFE CENTRO DE SISTEMAS

Country	:	*Costa Rica*	
		Securities Commission	*Stock exchange*
Main officer name:			RODRIGO BOLANOS ZAMORA
Job title	:		GERENTE GENERAL
Address	:		SAN JOSE, COSTA RICA APDO. 1736-1000 COSTA RICA
Phone	:		(98)(506) 22-80-11
Fax number	:		55-01-31
Responsible	:		ROBERTO VENEGAS
Job title	:		

Country	:	*Ecuador*	
		Securities Commission	*Stock Exchange*
Main officer name:		CARLOS MUNOZ INSUA	
Job tilte	:	SUPERINTENDENTE	
Address	:	ROCA 660 Y AVE. AMAZONAS CASILLA POSTAL 687 QUITO, ECUADOR	
Phone	:	(5932) 549 572 / 549 573	
Telex	:	2595 SCIASQ ED	
Fax number	:	(5932) 566 685	

Country	:	*Egypt*	
		Securities Commission	*Stock exchange*
Main officer name:		ABDEL FADIL ALI KAMAR	FAUAD SHAHIN
Job title	:	CHIEF OF INTERNATIONAL CO. SECTOR	CHAIRMAN OF STOCK EXCHANGE COMMITEE
Address	:	20 EMAD EL DIN STREET P.O.BOX 618 CAIRO, EGYPT	4 EL CHERIFIEN STREET CAIRO, EGYPT
Phone	:	(202) 779-696	(202) 3-92-14-47 3-92-86-98
Telex	:	94282 UN	
Fax number	:	(202) 775-339	
Responsible	:		RAFEE MAHROUS ABDEL
Job title	:		GENERAL SECRETARY

Country	:	*El Salvador*	
		Securities Commission	*Stock exchange*
Main officer name:		SR. ALBERTO BENITEZ BONILLA	
Job title	:	PRESIDENTE	
Address	:	1ra. CALLE PONIENTE, 425 SAN SALVADOR, EL SALVADOR	
Phone	:	(98)(503) 211-144	
Telex	:	200-088	
Fax number	:		
Responsible	:		
Job title	:		

Country	:	*Guatemala*	
		Securities Commission	*Stock exchange*
Main officer name:		SR. FEDERICO LINARES	
Job title	:	PRESIDENTE	
Address	:	7ma AVE. 22-01 ZONA 1 CIUDAD GUATEMALA, GUATEMALA	
Phone	:	(5022) 182-281 AL 289	
Telex	:	6073 GUABAN GU	
Fax number	:		
Responsible	:		
Job title	:		

Country	:	*Honduras*
		Securities Commission ***Stock exchange***
Main officer name:		SR. GONZALO CARIAS PINEDA
Job title	:	PRESIDENTE
Address	:	AVE. JUAN RAMON MOLINA 5ta. CALLE TEGUCIGALPA, HONDURAS
Phone	:	(504) 22-2270 AL 2279
Telex	:	5529
Fax number	:	
Responsible	:	
Job title	:	

Country	:	*Hong Kong*
		Securities Commission ***Stock Exchange***
Main officer name:		MR. BAB NOTTLE
Job title	:	COMMISSIONER FOR SECURITIES TWO EXCHANGE SQUARE, 38th. FLOOR CENTRAL HONG KONG, HONG KONG
Phone	:	(8525) 842 7666
Telex	:	61919 SECUR HX
Fax number	:	(8525) 810 5385

Country	:	*India*
		Securities Commission ***Stock exchange***
Main officer name:		MR. S.A. DAVE
Job title	:	CHAIRMAN
Address	:	MITTAL COURT "B" WING, 1st FLOOR 224, NARIMAN POINT BOMBAY- 400021
Phone	:	(98)(911) 202-8221
Fax number	:	202-1073
Responsible	:	
Job title	:	

Country	:	*Indonesia*
		Securities Commission ***Stock Exchange***
Main officer name:		MR BARLI HALIM
Job title	:	CHAIRMAN
Address	:	JALAN MERDEKA SELATAN P.O. BOX 439 JAKARTA, INDONESIA
Phone	:	
Telex	:	734 5605

Country	:	Israel	
		Securities Commission	*Stock exchange*
Main officer name:		MR. ARIE MIENTKAVICH	
Job title	:	CHAIRMAN	
Address	:	3 KANFE NESPARM STREET P.O. BOX 7450 JERUSALEM 9546, ISRAEL	
Phone	:	(02) 533 161 539 161	
Fax number	:	(9722) 240 353	
Responsible	:		
Job title	:		

Country	:	Jamaica	
		Securities Commission	*Stock exchange*
Main officer name:		MR. DONALD BANKS	WAIN ITON BANKS
Job title	:	CHAIRMAN	GENERAL MANAGER
Address	:	ATRIUM 32, TRFALGAR ROAD KINGSTON, JAMAICA	JAMAICA STOCK EXCHANGE P.O. BOX 621 KINGSTON JAMAICA
Phone	:	(809) 929-9050 TO 9052	92-20806
Telex	:	3548 EAGLE JA	
Fax number	:		92-26966
Responsible	:	DONNA BEMAN	DONNA BEMAN
Job title	:	ASST. GENERAL MANAGER	ASISTANT GENERAL MANAGER

Country	:	Korea	
		Securities Commission	*Stock exchange*
Main officer name:		YEE CHUNG YOUNG	SANG MYUN SHIMG
Job title	:	CHAIRMAN	CHAIRMAN AND CHIEF EXECUTIVE
Address	:	F.K.I. BLDG, 6th FLOOR 28-1 YOIDO-DONG, YOUNGDEUNGPO-KU SEOUL, 150-010, KOREA	33 YOIDO-DONG, YOUNGDEUNGPO-KU SEOUL, 150-010, KOREA
Phone	:	(822) 785-7593 785 0061	7-80-22-71
Telex	:	KOSEC K32230	
Fax number	:	(822) 785-3475	7-80-64-21
Responsible	:	TECK WHANG KYOUNG	JOUNG UK KIM
Job title	:	DIRECTOR OF INT'L AFFAIRS	DIRECTOR OF ELECTRONIC SYSTEM

Country	:	Malaysia	
		Securities Commission	*Stock Exchange*
Main officer name:			NIK MOHAMED DIN
Job title	:	REGISTRY OF COMPANIES	EXECUTIVE CHAIRMAN
Address	:	19th FLOOR, BANGUNAN KUWASA JALAN RAJA LAUT 50350 KUALA LUMPUR	4th FLOOR, EXCHANGE SQUARE OFF JALAN SEMANTAN, DAMANSARA HEIGHTS 50490 KUALA, LUMPUR
Phone	:		03 - 2546 433
Fax	:	603 - 2901157	03 - 2547 463
Responsible	:	MRS. ZAINUM ALI	UNGKU A. RAZAK
			GENERAL MANAGER, SCANS

Country	:	Mexico	
		Securities Commission	*Stock exchange*
Main officer name:		OSCAR ESPINOSA VILLAREAL	GUILLERMO NUNEZ HERRERA
Job title	:	PRESIDENTE	GERENTE GENERAL
Address	:	BARRANCA DEL MUERTO 275 COL. SN. JOSE INSURGENTES MEXICO,D.F. 03900	PASEO DE LA REFORMA 255 MEXICO,D.F.
Phone	:	651-0563 651-0572	208 31 31 EXTS. 2000 A 2006
Fax number	:	651-6270	591 06 42
Responsible	:	ANDRES VIESCA MARIN	ENRIQUE MARTINEZ VILLAR
Job title	:	DIRECTOR GENERAL DE INFORMATICA	DIRECTOR DE INFORMATICA
Phone	:	660-0866 EXT 2500,2501	208 31 31 EXTS 2500 A 2505 703 25 23

Country	:	Niger	
		Securities Commission	*Stock exchange*
Main officer name:		GEORGE A. AKAMIOKHOR	HAYFORD ALILE
Job title	:	EXECUTIVE DIRECTOR	GENERAL MANAGER/EXECUTIVE
Address	:	MANDILAS HOUSE, 9th FLOOR 96/102, BROAD STREET P. O. BOX 12638 LAGOS, NIGERIA	THE NIGERIAN STOCK EXCHANGE STOCK EXCHANGE HOUSE LAGOS, NIGERIA
Phone	:	(2341) 663 259, 663 552, 663 948	663 287, 663 335, 663 305
Telex	:	23 623 SEC NG	
Fax number	:		
Responsible	:	DAISY EKINEH	RASAKI OLADEJO
Job title	:	PRINCIPAL ECONOMIST	ASST. GENERAL MANAGER/ HEAD OF RESEARCH DEP.

Country	:	Panama	
		Securities Commission	*Stock exchange*
Main officer name:		SR. ALFREDO JIMENEZ RUIZ	
Job title	:	DIECTOR EJECUTIVO DE VALORES	
Address	:	EDIF. LOTERIA, ENTRE AVE CUBA Y AVE. PERU PISO 18 APDO. 9658 PANAMA 4, REP DE PANAMA	
Phone	:	(507) 272 749 259 758 271 808	
Telex	:	3197 COMERRIN PG	
Fax number	:	27-5604	
Responsible	:	ERYX TEJEDA HIM	
Job title	:	ANALISTA 27-1808 (507) 26-2756	

Country	:	Peru	
		Securities Commission	*Stock Exchange*
Main officer nome:		SR. RAUL ALCALDE SCHARFF	
Job title	:	PRESIDENTE	
Address	:	AVE. STA. CRUZ Nª 315 MIRAFLORES, LIMA 18	
Phone	:	7 - 6547	
Fax	:		
Responsible	:	JORGE RODRIGUEZ GALVEZ	
Job title	:	GERENTE GENERAL	

Country	: Portugal	
	Securities Commission	*Stock exchange*
Main officer name:	ARMINDO RIBEIRO SOUSA	SR. ALVARADO CORDERO DAMASO
Job title :	AUDITOR GENERAL DO MERADO DE TITULOS	PRESIDENTE
Address :	ESTRADA DA LUZ, 151 LISBOA 1600	PRACA DO COMERCIO 1100 LISBOA, PORTUGAL
Phone :	(3511) 726 0769	(3511) 879 416 Y 417
Telex :		44751 BVLISB P
Fax number :	72-68-166	
Responsible :	JOAO LUIZ FIGUEIRA FERNANDES	
Job title :		

Country	: Taiwan (China)	
	Securities Commission	*Stock exchange*
Main officer name:	CHONG-PUNG CHANG	CHI-FANG WU
Job title :	CHAIRMAN	CHAIRMAN
Address :	3 MAN HAI ROAD 12th FLOOR TAIPEI, TAIWAN	10th FLOOR, CITY BUILDING 85 YEN-PING SOUTH ROAD TAIPEI, TAIWAN R.O.C. 10034
Phone :	(8862) 341 3101	(02) 3-11-40-20 EXT 200
Fax number :	(8862) 394 8249	(02) 3-11-40-04
Responsible :	TRACY CHENG	TRACY CHENG
Job title :	SENIOR VICE PRESIDENT	
Address :	10th FLOOR, CITY BUILDING 85 YEN-PING SOUTH ROAD TAIPEI, TAIWAN R.O.C. 10034	
Phone :	(02) 31-40-004 (02) 39-67-911	

Country	: Thailand	
	Securities Commission	*Stock Exchange*
Main officer name:		DR. MARUEY PHADOONGSIDHJ
Job title :		PRESIDENT
Address :		132 SINTHORN BUILDING 2nd. FLOOR WIRELESS ROAD BANGKOK 10500
Phone :		2500001-8 2500010-15
Fax :		(662) 2543040
Responsible :		DR. SURAT PALALIKIT
Job title :		MANAGER OF COMPUTER CENTER

Country	: Turkey	
	Securities Commission	*Stock exchange*
Main officer name:	MR MEHEMET SUKRU TEKBAS	MUHARREM KARSLI
Job title :	PRESIDENT	CHAIRMAN
Address :	MESRUTIYET CAD. 24 BESEVLER 06500, ANKARA, TURKEY	IMKB, RIHTIM CADD 245 KARAKOY 80030, ISTANBUL, TURKEY
Phone :	(904) 125 3016 212 6280	152-48-00
Telex :	46325 SPK TR	
Fax number :	(904) 117 0723 221 3323	143-72-43
Responsible :	NEJAT DURA	EMIN CATANA
Job title :	HEAD OF SURVEILLANCE GROUP	MANAGER (OPERATIONS)

Country	:	*Uruguay*	
		Securities Commission	*Stock Exchange*
Main officer name:			D. CARLOS J. CABRAL DE SIMONI
Job title	:		PRESIDENTE
Address	:		
Phone	:		
Fax	:		
Responsible	:		ARQ. FERNANDO POLLIO LEZAMA
			VICEPRESIDENTE

Country	:	*Venezuela*	
		Securities Commission	*Stock exchange*
Main officer name:		JOSE R DELUCCA	
Job title	:	PRESIDENTE	
Address	:	ESQ. SANTA CAPILLA TORRE	
		FINANCIERA DEL BCO CENTRAL	
		DE VENZUELA PISO 21	
		CARACAS, DEPTO. FEDERAL 1010-A	
Phone	:	81-93-83 TO 89	
Fax number	:	81-58-12	
Responsible	:	JESUS GUILARE ESPINOSA	
Job title	:	DIR. DE EST. ECONOMICOS Y ESTADISTICOS	
Phone	:	(9852) 82-96-21	
Fax number	:	(9852) 81-58-12	