



HELP DESK SUPPORT SYSTEM FOR BANKING COMPANY

by

Mr. Apichart Singmaneechai

A Final Report of the Three - Credit Course
CS 6998 System Development Project

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
in Computer Information Systems
Assumption University

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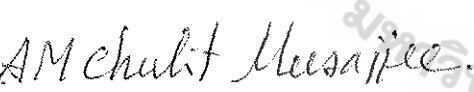

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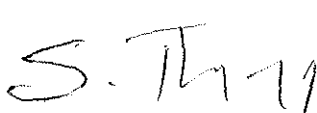
The Graduate School of Assumption University has approved this final report of the three-credit course, CS 6998 System Development Project, submitted in partial fulfillment of the requirements for the degree of Master Science in Computer Information Systems.

Approval Committee:



The seal of Assumption University of Thailand is a circular emblem. It features a central shield with a blue field containing a white cross and a white star, and a red field containing a white cross. The shield is flanked by two golden lions. Above the shield is a golden crown. The shield is surrounded by a wreath of golden leaves. The text "ASSUMPTION UNIVERSITY OF THAILAND" is written in a circular path around the shield. Below the shield is a banner with the text "LABOR OMNIA VINCIT". The text "SINCE 1969" is written below the banner. The text "BROTHERS OF" is written on the left side of the shield, and "DAUGHTERS OF" is written on the right side of the shield.

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March 2000

ABSTRACT

Nowadays, a wide variety of information systems are used in business and the last decade has seen a rapid growth of using computer services in terms of size and complexity. Users need to learn to use system and require support for the information system. Therefore, they need support from Help Desk. Help Desk is a call center to help users use system resources more effectively, to provide answers to technical or operational questions, and to make users more productive by teaching them how to meet their own information needs. The current Help Desk system in the companies using manual process cannot support user effectively. The Help Desk and support team needs more reliable and timely information to support users. So the company implements the Help Desk Support System to support users effectively.

The new proposed system will be developed from the existing system that has been processed manually to a computerized information system to perform the following activities:

- (1) To control the service to be accomplished in desirable time.
- (2) To track the status of the job.
- (3) To keep and retrieve information requests from users.
- (4) To query and follow up the job easily.

The new proposed system is developed in accordance with the System Analysis and System Design technique. The new system project covers the user requirements, system design, hardware and software requirements, cost and benefit analysis, security and control and also includes the design of the input and output screen. This system gives benefit by reducing unnecessary paperwork and human errors. Moreover, it will increase user satisfaction and help management monitor job status.

ACKNOWLEDGEMENTS

This system development project cannot be completed without kind advice of many people. The writer would like to convey special thanks to his advisor, Dr. Aran Namphol who has generously spent time advising him accomplish the project. And the writer would also like to express thanks to the Project Committee, Members of the Graduate School for their advice, special thanks to his friends, Mr. Witcha, Ms. Patcharee and his wife, Mrs. Nusara for their help and support during the entire course of this project. Last, but not least he is grateful to all the instructors who taught him in the Computer Information Systems Course so that he can apply this knowledge to the system development project.



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I. INTRODUCTION

1.1 Background of the Project

Nowadays, systems become more complex as users need constant support and guidance. To make data more accessible and to empower users, there is a need to create Help Desk. Help Desk has three main objectives: to help user use system resources more effectively, to provide answers to technical or operational question, and to make users more productive by teaching them how to meet their own information needs.

1.2 Objective of the Project

The objective of the project is to design, implement and evaluation the HDSS (Help Desk Support System) that provides better service to users.

1.3 Scope of the Project

The project will cover the basic requirements of Help Desk Support System which are summarized as follows:

- (1) Input new problem ticket.
- (2) Assign priority and severity to problem.
- (3) Assign job to groups or individuals.
- (4) Provide and update problem information.
- (5) Reassign task to other group.
- (6) Generate activity in process report.
- (7) Generate over due report.

1.4 Project Plan

The project plan is represented in the form of Gantt Chart shown in Figure 1.1.



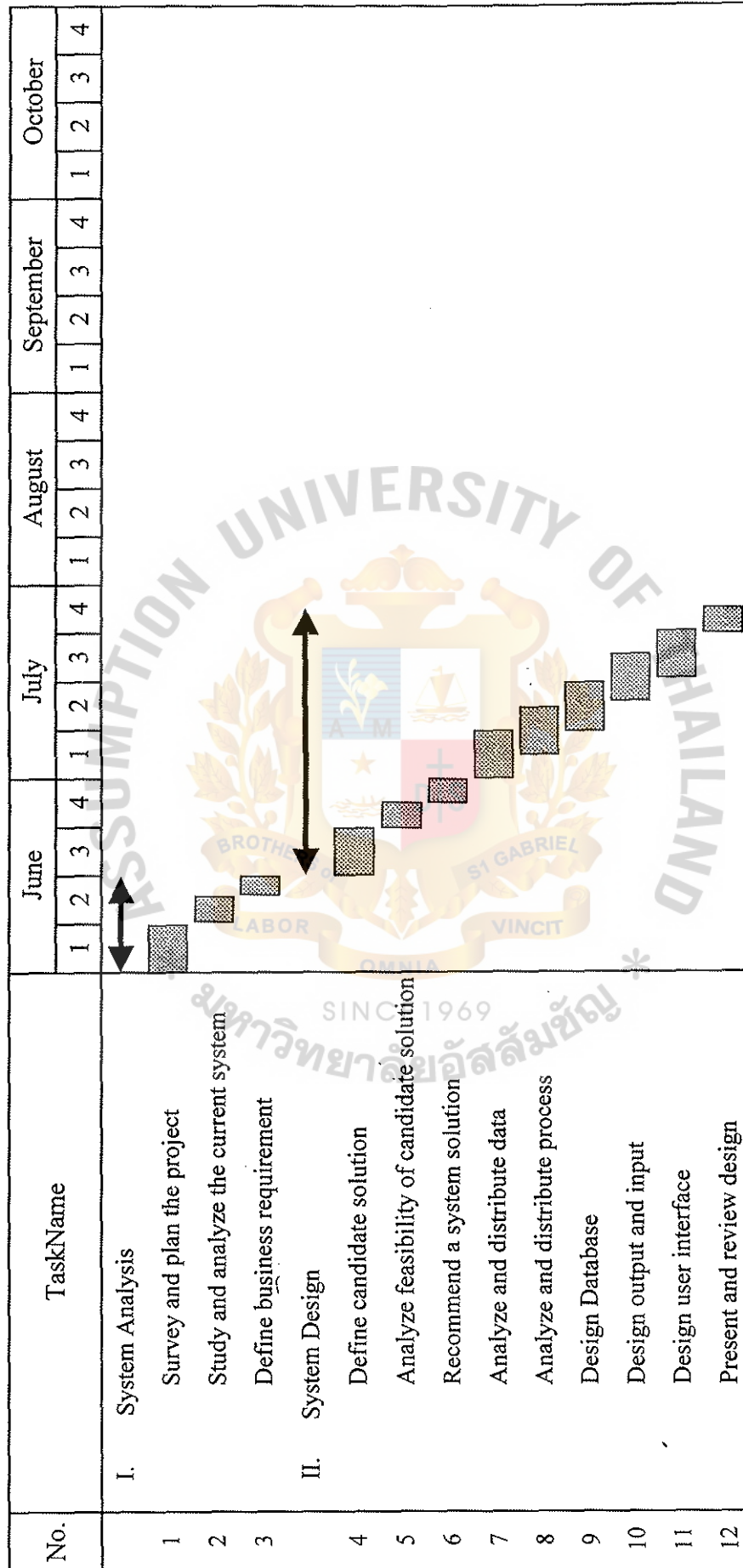


Figure 1.1. Project Plan for Helpdesk Support System.

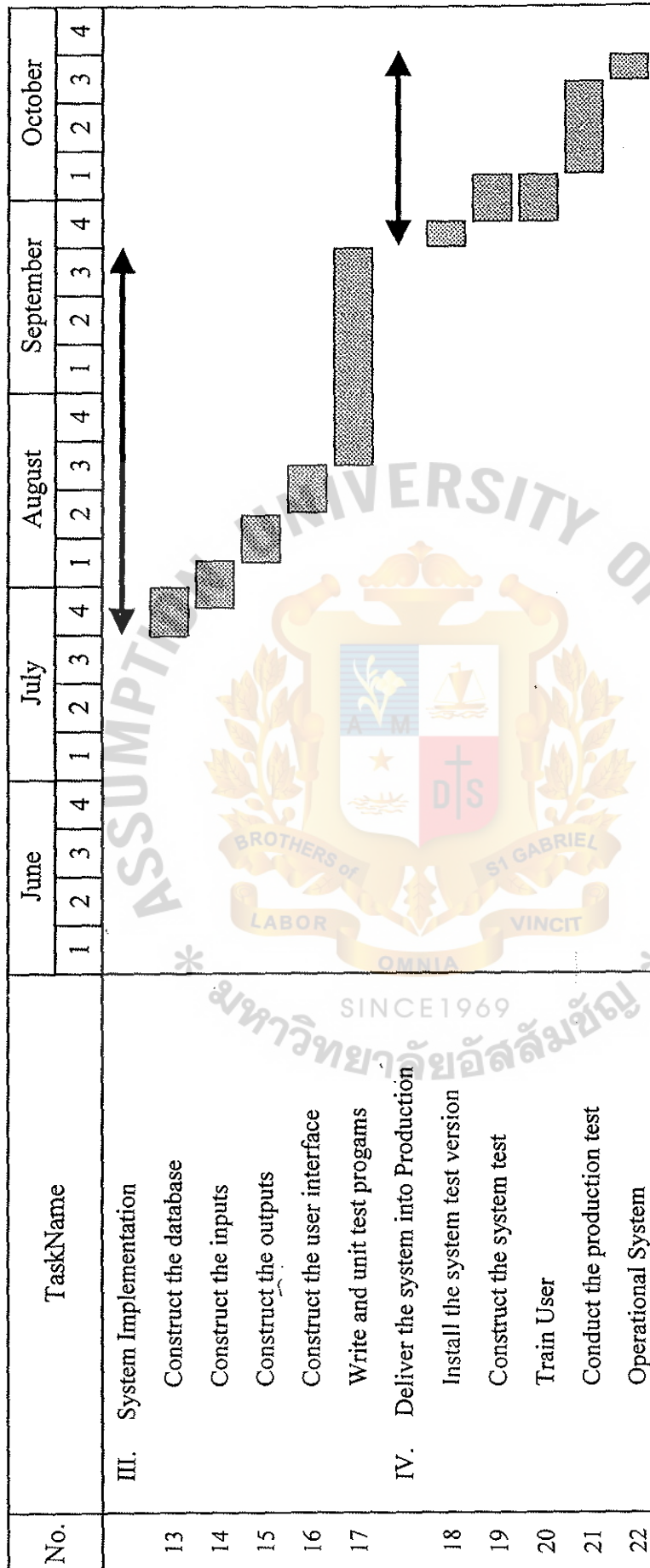


Figure 1.2. Project Plan for Helpdesk Support System (Continued).

II. EXISTING SYSTEM

2.1 Background of the Company

Euro Bank was established in October, 1989. Its business activities are all banking related products, such as deposit/withdrawal, mortgage, trade, Foreign Exchange, etc. They can be divided product into two groups.

- (1) Corporate banking Product cover all banking products that provide service for corporate or organization. Such as export, import, etc.
- (2) Retail banking Product cover all banking products that provide service for individuals, such as saving account, housing loan, etc.

These products are supported and automated by many computer systems and applications. They can acquire software by developing an in-house system, buying a software package, or customizing a software package. Sometimes, these applications or computer systems have problems that users cannot solve by themselves. To provide a smooth business workflow and to solve problems within a desirable time they set up Help Desk as a call center. Nevertheless, the existing help desk cannot support users effectively and many times they respond back to the user too late because help desk function is still a manual system. Therefore technology department head decided to redesign help desk workflow and implement a new application system to support a new help desk work flow.

The main objective of new system is to solve problems faster within an acceptable time. It can track the current status of each problem and assign function clearly. In case similar problem occur, they can find the solution from the similar problem in the system.

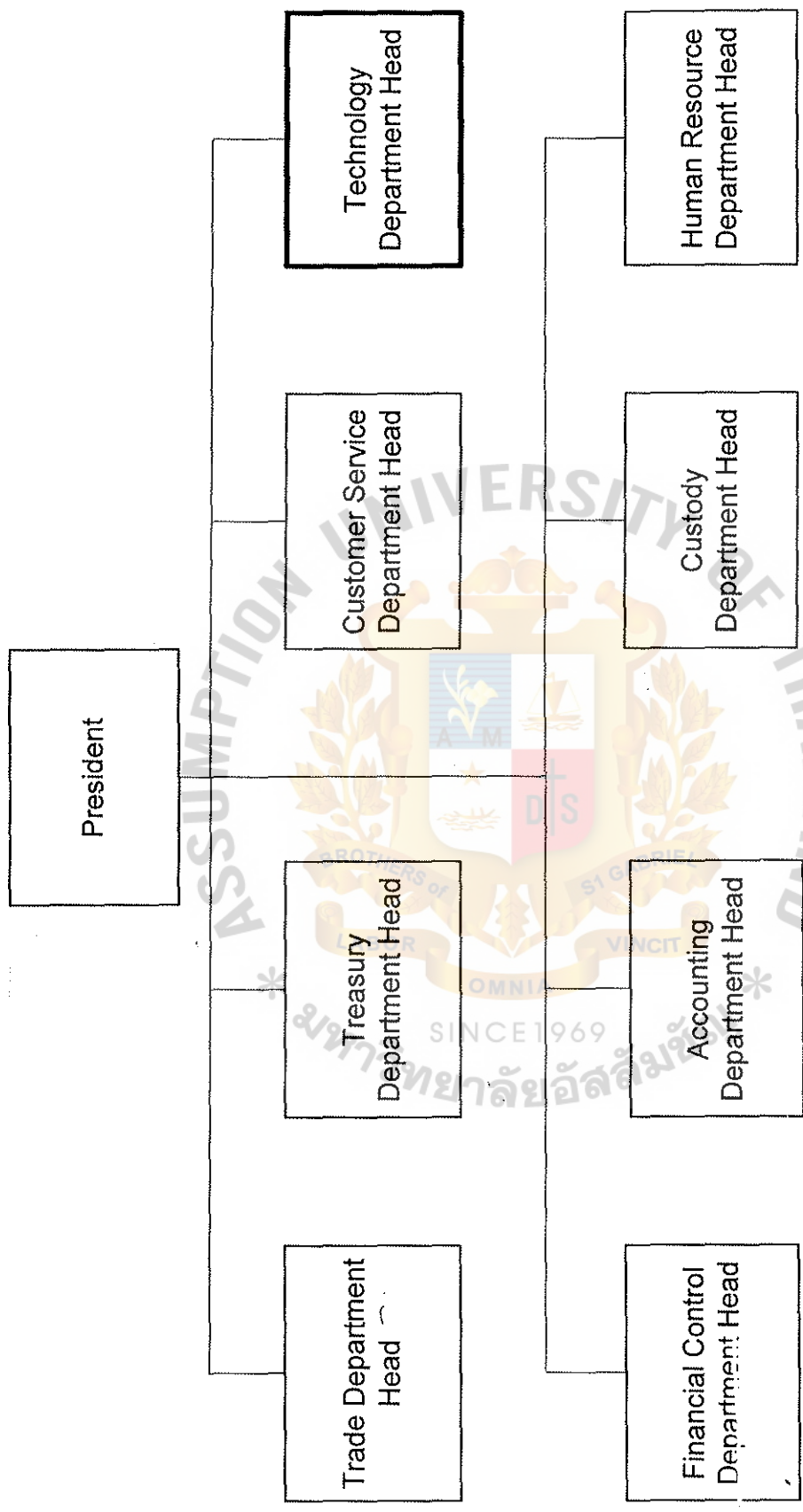


Figure 2.1. Euro Bank Organization Chart.

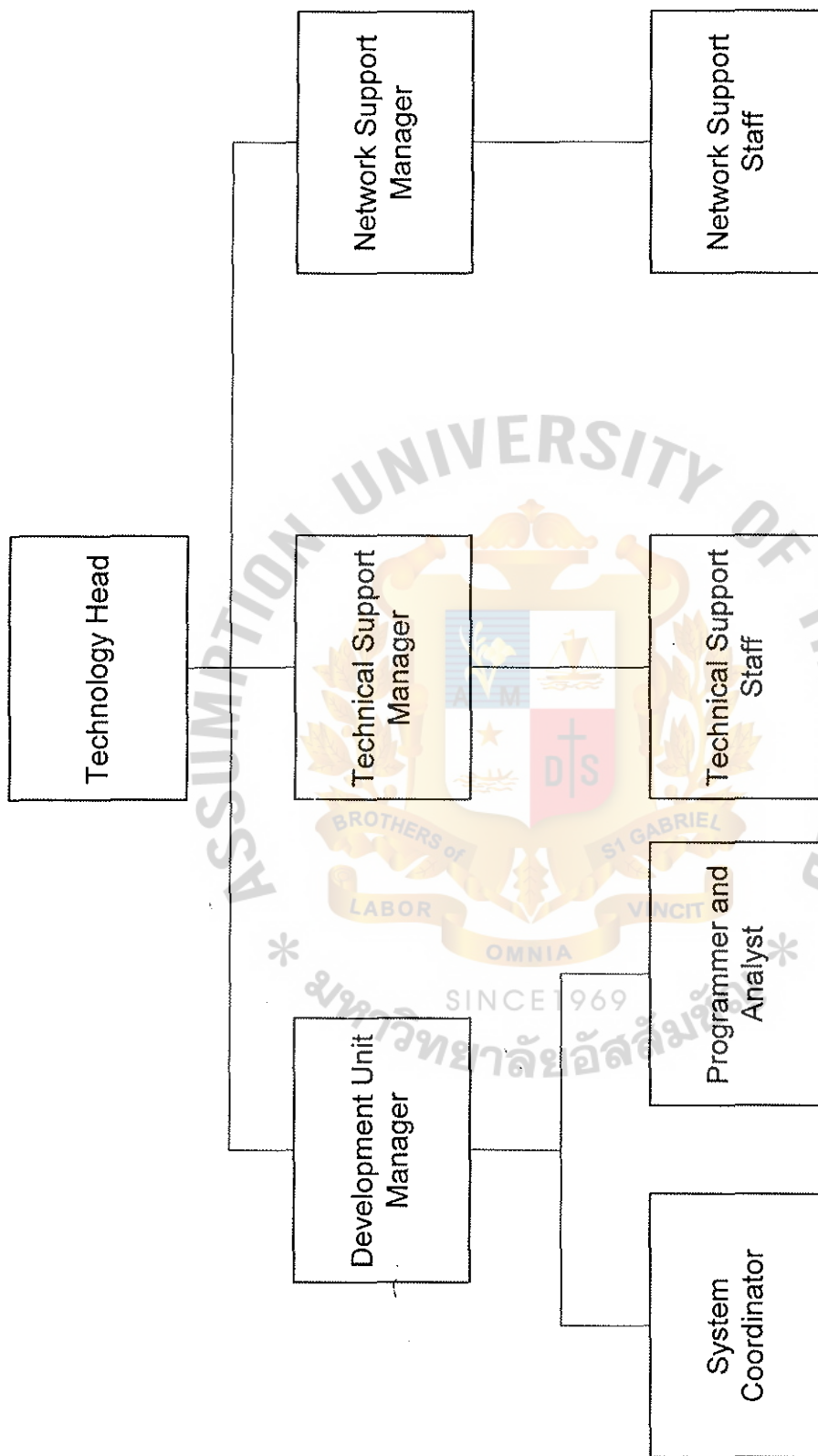


Figure 2.2. Technology Department Organization Chart.

2.2 Existing Business Function

Since the existing business functions of EURO Bank are manual, all Help Desk staff manage all problem log and problem status as shown in Figures 2.3 and 2.4.

The current work procedure is as follows:

- (1) Users send the request form to Help Desk staff.
- (2) Help Desk staff verify the request whether it is valid or not. If the request is a duplicate or it is not a problem request, Help desk staff will reject that request.
- (3) After verifying the request, Help Desk staff will categorize the request in the following types:
 - (a) Application Problem
 - (b) General Problem and Hardware Problem
 - (c) Network Problem

Then the request will be sent to the support team according to the problem type.

- (4) Support team will contact the user to get more information and find the solution to the problem.
- (5) The User verifies the solution by performing User Acceptance Test. If the testing result is not accepted, support team has to find another solution.

When the problem has been solved, the job is closed.

- (6) If the cause of problem is hardware problem, it will be sent to the vendor for replacement or repair. When the repaired hardware return to the Technical support, it will be installed for the user to do the testing.

- (7) Help Desk staff will get the test results from user to close the job and record the status of the request into the problem record book.



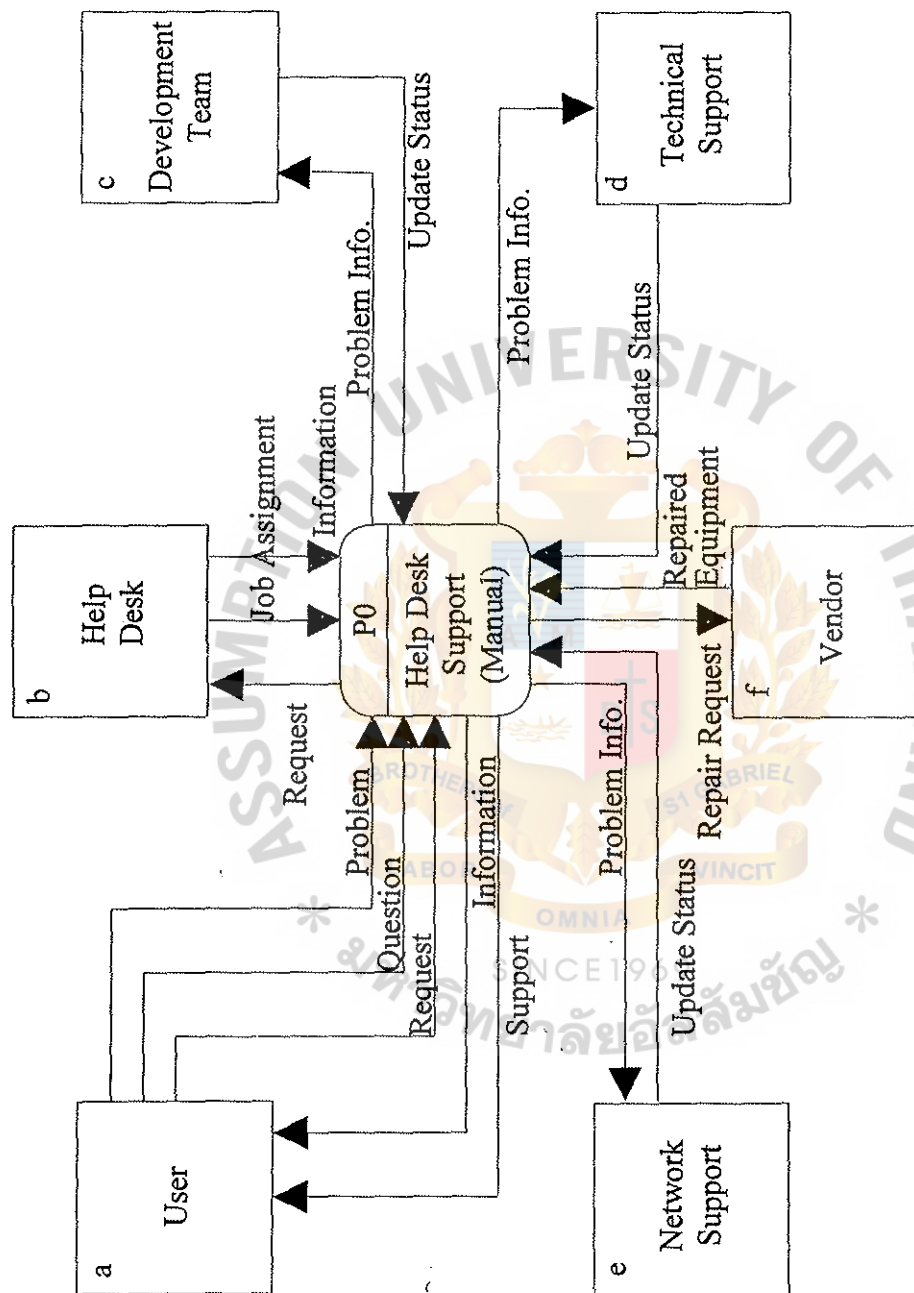


Figure 2.3. Context Diagram of Help Desk Support System (Existing System).

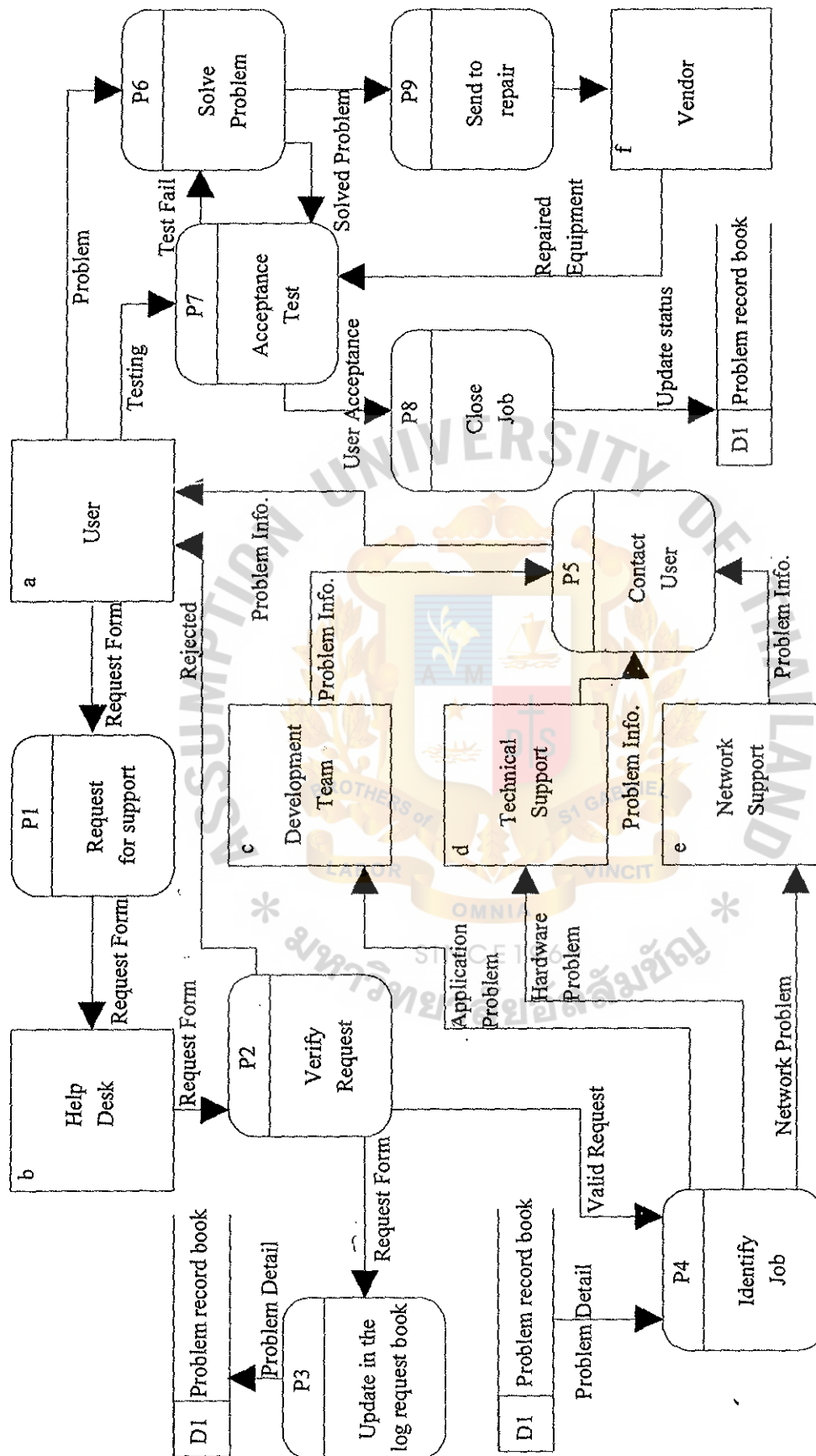


Figure 2.4. Data Flow Diagram (Level 0) of Help Desk Support System (Existing).

2.3 Current Problems and Areas for Improvement

2.3.1 Current Problems

The existing system is a manual system. Therefore many problems that occur in the Help Desk service are as follows:

- (1) Quality of information.
 - (a) Redundancy of data: sometimes problem log is updated twice.
 - (b) Outdated data: sometimes problem status is not updated because staff can not find the problem log that they want.
- (2) Difficulty in tracking the status of the current problem. If we want to check the current status, we have to search from the pile of paper.
- (3) Each of the staff members has to organize their document for each problem. Therefore they will waste much time organizing the documents.
- (4) Difficulty in following up the pending work from technical support.
- (5) Technical staff not finishing the task on time because it is hard to check the new problem log and track the old problem.
- (6) Process for Help Desk service being very slow.
- (7) Current process unable to support large volume of transactions.

2.3.2 Areas for Improvement

For this section, we try to understand the existing problem and try to find the ways to improve the current situation and solve the problems.

The following are the criteria that need to be developed.

- (1) Reducing the staff workload and human errors by using the computer systems.
- (2) Minimizing paperwork and conflict information.

- (3) Controlling the job to be accomplished within a desirable time.
- (4) Making more effective communication between help desk and the support team.
- (5) Increasing user's satisfaction by finishing the task on time.
- (6) Solving problems by priority.



III. PROPOSED SYSTEM

3.1 User Requirements

The following are the user requirements of the proposed system that were learnt from Help Desk staff during in-dept interviews, and from existing documentation and forms.

- (1) The proposed system must be easy to use and provide faster transaction to the user.
- (2) All records are centralized and updated.
- (3) All records are permanent with backup.
- (4) The proposed system allows multiple users to access the database at the same time.
- (5) The proposed system must have security.
- (6) Current status of the request can be inquired.
- (7) Support team can add comments and update status in the system without modifying other information.
- (8) The proposed system can generate reports that can track the progress of each the request.

3.1.1 Input Requirement

The following indicates the information required by users to be included in the system.

- (1) Requester Information: User Name, Extension Number, Department, and Floor. etc.
- (2) Problem Information: problem details, problem type, and severity. etc.

3.1.2 Output Requirement

- (1) Information inquiry
 - (a) Status of request
 - (b) Showing request details.
- (2) Reports
 - (a) Outstanding report, showing the requests in process.
 - (b) Over due report, showing the delayed requests.
 - (c) Activity report.
 - (d) Summary request report

3.2 System Design

3.2.1 Input Design

The major objective of the input design is to provide the convenience for staff, and to input the data into the standard format. The input design should keep the screen simple with good layout and ensure the forms can keep all the necessary information.

The input screens of the proposed system are represented in Appendix F.

3.2.2 Output Design

The output will show the information into the screen output and paper output. The output screen should be easy to read, showing all the required information. The output reports are represented in Appendix G.

3.2.3 Context Diagram and Data Flow Diagram

Proposed system is presented by using data flow diagram as a tool for structural analysis and design. The context diagram depicts the relationship between the proposed system and the external entity.

The context diagram and data flow diagram level 0, which show the whole picture of the process are represented in the Figure 3.1 and Figure 3.2 respectively. The rest of data flow diagrams are represented in the Appendix A.

The new system design divides the whole system into the processes as follows:

Process 1. The user calls Help Desk to log the problem into the system. Help Desk staff will ask for user information such as users name, department name and extension, and problem detail.

Process 2. Help desk staff will verify the request whether it is a problem or not. If it is not a problem or if the request has already been logged into the system, Help desk will reject that request and inform user.

Process 3. The valid request be categorized into one of the three types of problems.

- (1) Application Problem. This problem type will be assigned to Development team to investigate and fix the application problem that has been developed in house. For application that was developed by outsource, development team will coordinate outsource staff to find the solution.
- (2) General Problem. This problem type will be assigned to Technical Support. General problem may be hardware problem, install purchased software, general software problem.
- (3) Network Problem. This problem type will be assigned to Network support. They will solve the problem relate to network such as LAN, WAN, network setting.

Process 4. Support team will periodically check the new request from the system by enquiry screen. They may also enquiry for the pending job.

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Process 5. Support team will analysis the problem and they will find the solution for the problem. When they have the solution, they will testing before give the solution to the user.

Process 6. User will perform User Acceptance Test to verify the solution. User also keep the testing result to confirm to the support tem that the solution is work or not.

Process 7. If the solution can solve the problem, user will send the test result and confirmation to Help desk to close the job and update the status into the system.

Process 8. Help desk print outstanding report for the support team to remind them for pending job and new job. Report also printed for the user if user request for the outstanding report.

Process 9. Help desk will follow up the support team for the pending job. The current status of the job will be informed to the user.



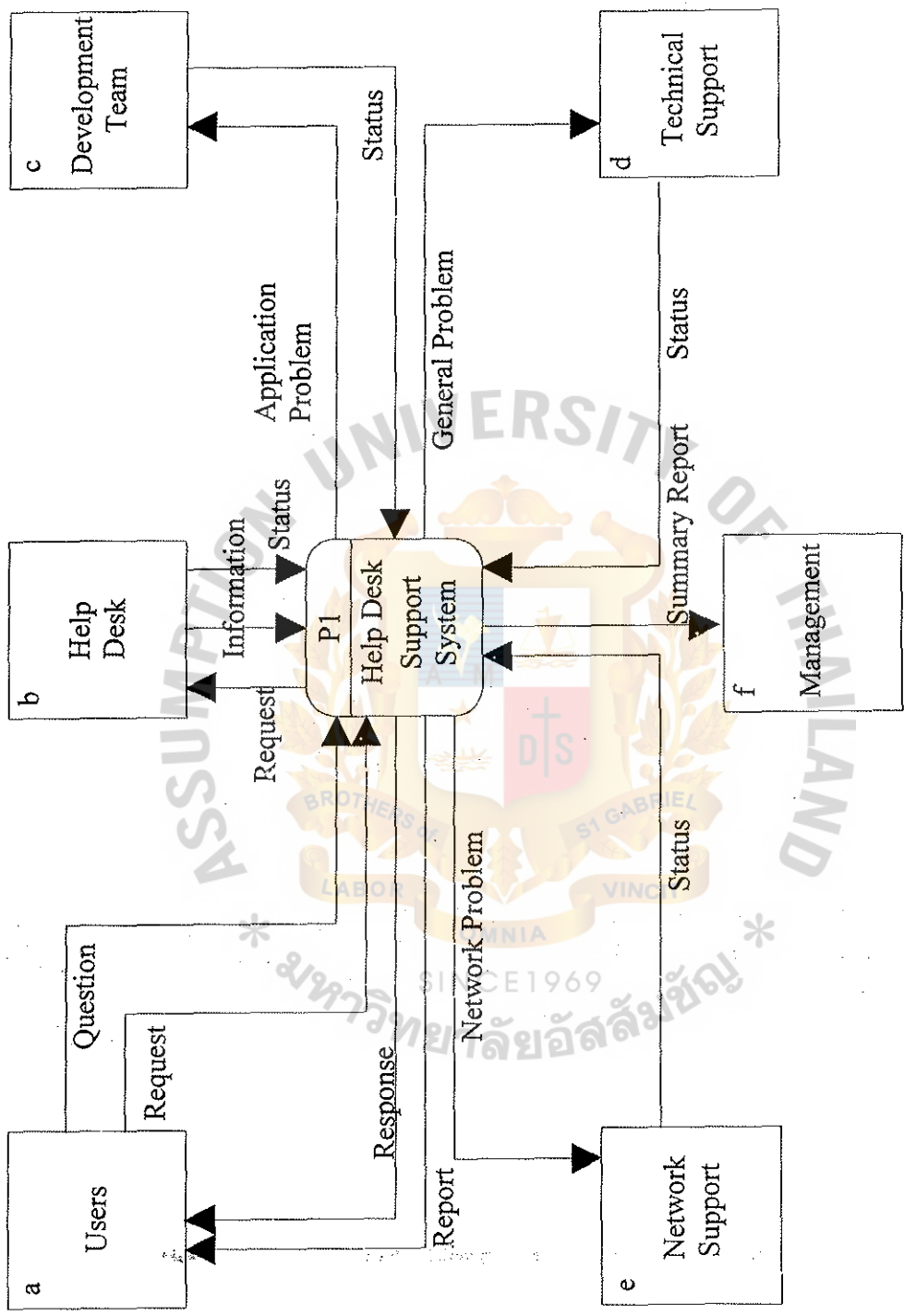


Figure 3.1. Context Diagram of the Proposed System.

3.2.4 Structure Chart

Structure chart is represented in the Appendix B.

3.2.5 Others System Design

(1) Data Dictionary

The data dictionary of the proposed system contains information about data and procedures, information about data maintained by the system including data flows, data structures, data elements, and data stores. Data dictionary is represented in Appendix B.

(2) Process Specification is represented in Appendix C.

(3) Module Specification is represented in Appendix E.

3.3 Hardware and Software Requirements

3.3.1 Hardware Requirements

(1) File server

- Pentium III 450 MHz
- Memory 128 MB SDRAM
- Hard Disk 8.4 GB
- Floppy Disk Drive 1.44 MB
- CD-ROM 45x
- Serial Mouse
- Keyboard Enhance 104 keys keyboard
- Monitor 17" SVGA color monitor

(2) Workstations

- Pentium II 400 MHz.
- Memory 64 MB SDRAM

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- Hard Disk 6.4 GB
- Floppy Disk Drive 1.44
- CD-ROM 45x
- Serial Mouse
- Keyboard Enhance 104 keys keyboard
- Monitor 15" SVGA color monitor

(3) Printer

- HP Laser Jet 1100

(4) Network Peripheral

- 3 COM EtherLink III

3.3.2 Software Requirement

- (1) Operating System - Windows 98 Thai Edition
- (2) Microsoft office 97 Thai Edition Professional
- (3) Network Operating Systems - Microsoft Windows NT 4.0
- (4) Microsoft SQL Server Version 7.0

3.4 Data Communication and Network

The proposed system will be connected to the existing Local Area Network. The network diagram of the proposed system is shown in Figure 3.3.

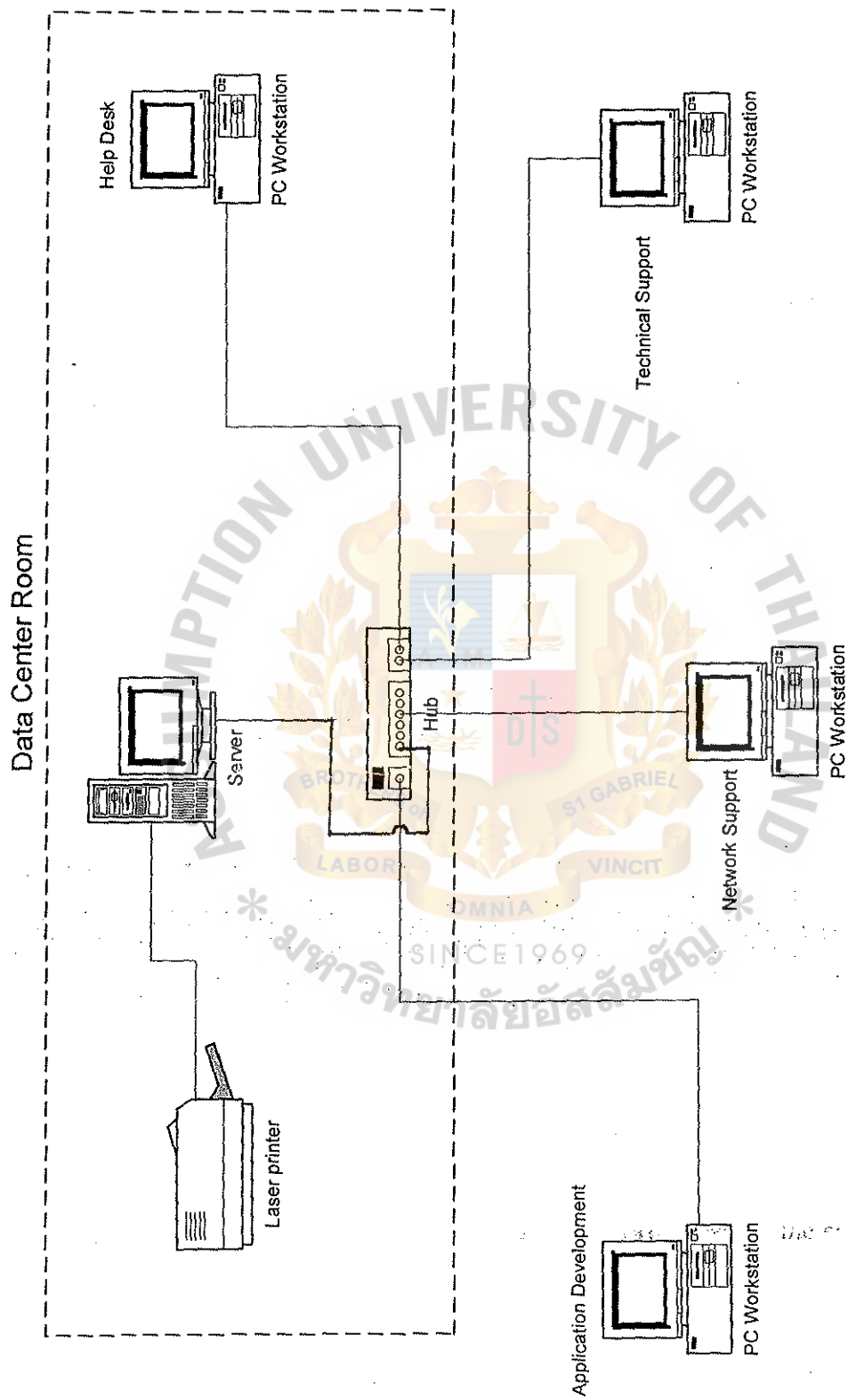


Figure 3.3. Hardware Configuration of the Proposed System.

3.5 Security and Control

Data in the existing system were maintained and secured as paper records. The proposed system concentrates data in computer files that can potentially be accessed more easily by a large number of people. Consequently, automated data are more vulnerable to destruction, error and misuse. Security and control are very important when a computer-based information system is involved. Security controls attempt to prevent or detect unauthorized access to the data.

There are many advantages to information system when they are properly safeguarded. But when large amounts of data are stored in electronic form, they are more vulnerable to many kinds of threats than when they existing in manual form. Therefore we set up the security and controls to minimize errors, disaster and computer crime.

The security and controls should include:

- (1) Protection of data from unauthorized person access.
 - (a) Use Login ID and password to entering the system.
 - (b) Force to change password within 30 days.
 - (c) Disable User ID, if that user does not login more than 90 days.
 - (d) Disable User ID, if wrong password is input more than 3 times.
- (2) Protection and prevention the loss of data or errors from any accident that may destroy the files. Backup policy should be properly set up:
 - (a) Data in the system should be backed up daily.
 - (b) System backup should be done weekly.
 - (c) Daily backup tape should be kept in 2 copies.
 - (d) Daily backup tape should be kept for 2 generations.

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- (3) Assuring data completeness and accuracy starting from input to output
 - (a) Summary report
 - (b) Report should print the date for easy reference.
 - (c) Data entry must be verified.
- (4) Assuring right function for each level users.
 - (a) Setting menu and function for each user to log into the system depend on related functions and task. For example, support team cannot modify problem details but they can add comments and change status.

3.6 Cost and Benefit Analysis

3.6.1 Cost Analysis

(1) Investment Cost

Proposed system start-up cost

Hardware Cost	(Baht)
- Database & File Server	50,000
- PC Workstation (2 units)	80,000
- Printer	20,950
- Ethernet Card (2 units)	6,000
Total Hardware Cost	<u>156,950</u>
Software Cost	(Baht)
- Operating Systems - Windows 98 Thai Edition	5,500
- Microsoft Visual Basic 5	25,000
- Network Operating System - Windows NT Server 4.0	6,450
Total Software Cost	<u>36,950</u>
Total Investment Cost	<u>193,900</u>

(2) Implementation Costs

Salary (18,000 Baht/Month) for 8 months 144,000

Training 40,000

Total Implementation Cost 184,000

(3) Annual Operation Costs (Baht)

- Salary (2 persons * 10,000) per year 240,000

- Maintenance Costs (per year) 32,000

- Diskettes 2,500

- Stationary 12,000

- Paper 3,500

- Miscellaneous costs 5,000

Total Maintenance Cost 295,000

3.6.2 Benefit Analysis

(1) Tangible Benefits

- Reduction of stationary and paper cost 2,755

- Reduction of human labor

- Salary (2 persons * 10,000) for one year 240,000

- Reduction of overtime 22,000

Total Tangible Benefit 264,755

(2) Intangible Benefits

- Better User satisfaction

- Convenience to track the status

- Faster information retrieval

- Reduced paper work
- Reduced the human error
- Increase in productivity
- Reduced cycle time for each task
- Easy follow up of the task
- Providing better information
- Providing information on time, accurate and efficient operation

Table 3.1 shows the comparison cost of the proposed and the existing system and

Figure 3.4.



Table 3.1. Cost Comparison between the Existing System and the Proposed System, Baht.

Cost items	Year			
	1	2	3	4
<u>Existing System</u>				
Salary	480,000	528,000	580,800	638,880
Utility	35,000	36,750	38,588	40,517
Maintenance	10,000	11,000	12,100	13,310
Total Cost	525,000	575,750	631,488	692,707
Cumulative Cost	525,000	1,100,750	1,732,238	2,424,944
<u>Proposed System</u>				
Development Cost				
Hardware	32,500	32,500	32,500	32,000
Software	13,500	13,500	13,500	13,500
Operating Cost				
Salary	240,000	264,000	290,400	319,440
Training	80,000	100,000	100,000	100,000
Maintenance	32,000	35,200	38,720	42,592
Utility	23,000	25,300	27,830	30,613
Total Cost	491,950	471,000	491,950	520,445
Cumulative Cost	675,950	1,146,950	1,638,900	2,159,345

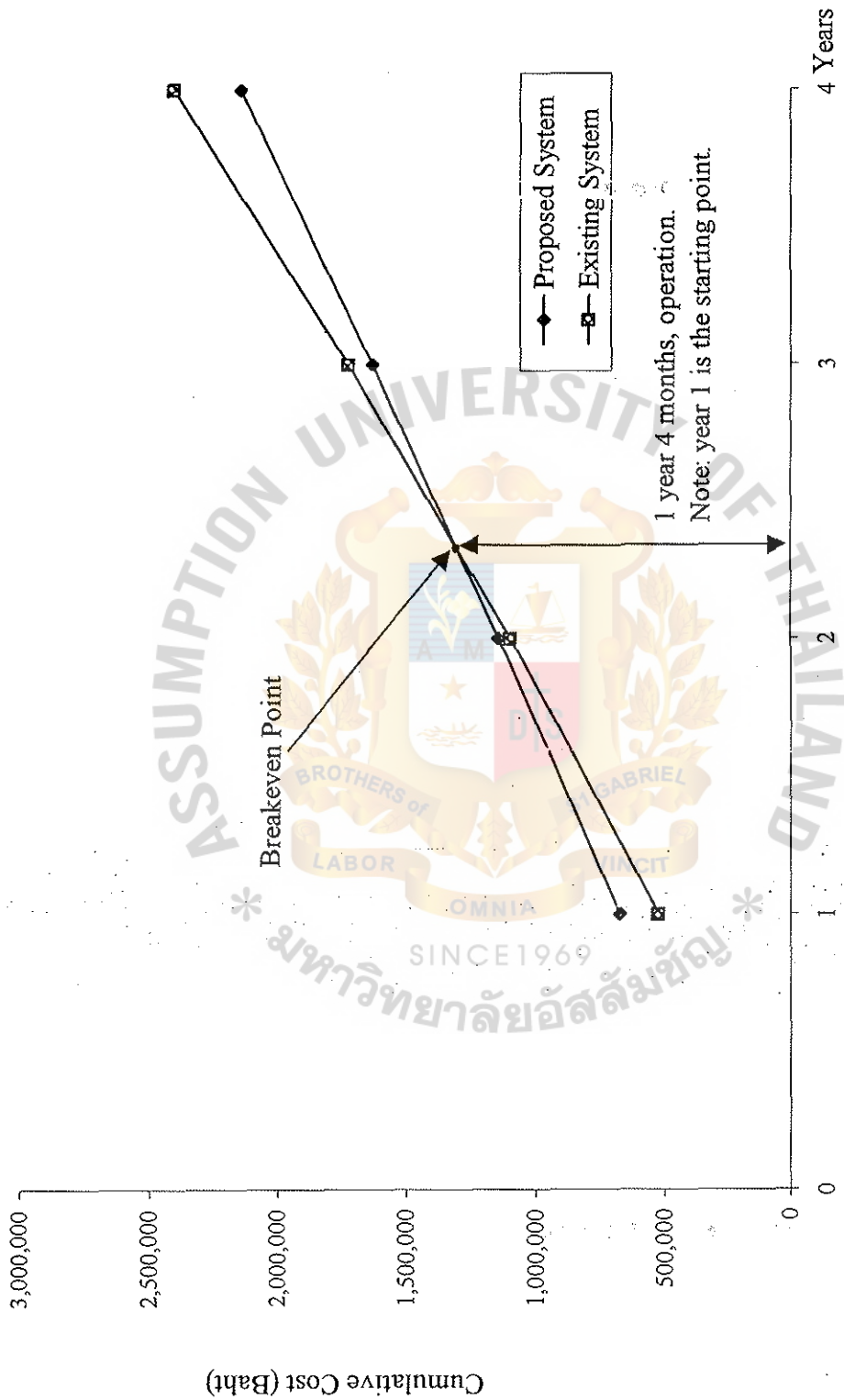


Figure 3.4. System Cost Comparison.

3.6.3 Payback Analysis

The payback analysis technique is a simple and popular method for determining if and when an investment will pay for itself. Because systems development costs are incurred long before benefits begin to accrue, it will take some time period for the benefits to overtake the costs. Payback analysis determines how much time will lapse before accrued benefits overtake accrued and continuing costs.

The payback period formula is shown as follows:

$$P = \frac{I}{(1-T)R}$$

Where

P	=	Payback Period
I	=	Initial or capital expenditure
T	=	Corporate tax rate in percent (use 30%)
R	=	Average annual return or investment

$$I = 193,900 + 184,000$$

$$= 377,900$$

$$R = 264,755 - 32,000$$

$$= 232,755$$

$$P = \frac{377,900}{(1-0.3)(232,755)}$$

$$= 2.32 \text{ Years}$$

The payback period of the proposed system is 2.32 Years.

In Table 3.2 we see an information system that will be developed at a cost of 377,900 Baht. The estimated net operating costs for each of the net five years are also recorded in the table. The estimated net benefits over the same five operating years are also shown. It can be estimated that the benefit will cover the cost in 2.04 years after the proposed system begins operating.

Net Present Value

Present value analysis adjusts the value of future costs and benefits costs to account for the time value of money. By measuring all future costs and benefits in current dollars, we can compare systems more accurately and consistently. Table 3.3 shows net present value of the proposed system.



Table 3.2. Payback Analysis for Proposed System, Baht.

Cost Items	Years					
	0	1	2	3	4	5
Development Cost	-377,900					
Operation & Maintenance Cost		-32,000	-35,200	-38,720	-42,592	-46,851
Discount Factor for 12%	1.000	0.893	0.797	0.712	0.636	0.567
Time-adjusted cost	-377,900	-28,576	-28,054	-27,569	-27,089	-26,565
Cumulative Time-adjusted costs over lifetime	-377,900	-406,476	-434,530	-462,099	-489,188	-515,752
Benefits derived from operation of new system	0	264,755	291,231	320,354	352,389	387,628
Discount Factor for 12%	1.000	0.893	0.797	0.712	0.636	0.567
Time-adjusted cost	0	236,426	232,111	228,092	224,119	219,785
Cumulative Time-adjusted costs over lifetime	0	236,426	468,537	696,629	920,748	1,140,533
Cumulative lifetime time-adjusted cost+benefit	-377,900	-170,050	34,007	234,530	431,560	624,781

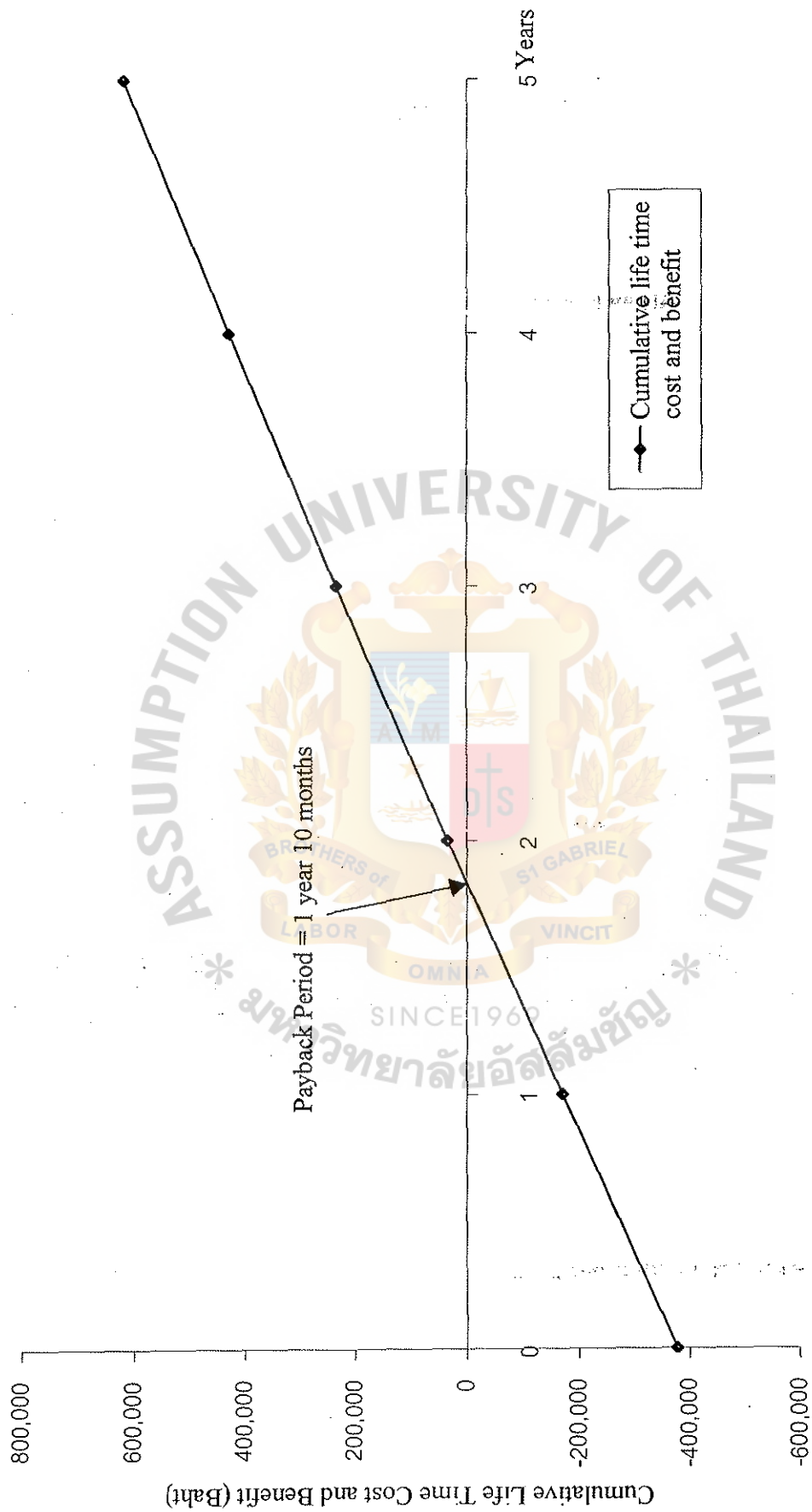


Figure 3.5. Payback Analysis for the Proposed System.

Table 3.3. Net Present Value for Proposed System, Baht.

Cost items	Years					
	0	1	2	3	4	5
Development Cost	-377,900					
Operation & Maintenance Cost		-32,000	-35,200	-38,720	-42,592	-46,851
Discount Factor for 12%	1.000	0.893	0.797	0.712	0.636	0.567
Present value of annual costs	-377,900	-28,576	-28,054	-27,569	-27,089	-26,565
Tottal present value of lifetime cost						-515,752
Benefits derived from operation of new system	0	264,755	291,231	320,354	352,389	387,628
Discount Factor for 12%	1.000	0.893	0.797	0.712	0.636	0.567
Present value of annual costs	0	236,426	232,111	228,092	224,119	219,785
Total present value of lifetime cost						1,140,533
Net Present Value of proposed system						624,781

IV. PROJECT IMPLEMENTATION

4.1 System Implementation

The remaining steps in the systems development translate the solution specifications established during systems analysis and design into a fully operational information system. These concluding steps consist of programming, testing, conversion and production. The proposed system developed by using Visual Basic and is shown in Appendix F.

4.1.1 Testing

After coding, a programmer must test the program to be sure that it functions correctly. Later, programs are tested in groups, and finally the entire system must be tested in a procedure as follows:

(1) Stub Testing

This testing performed on individual modules; whether they be main program, subroutine, subprogram.

(2) Unit Testing

Finally, a programmer tests the program. The testing of an individual program or module is called unit testing. The objective is to identify and eliminate execution errors that cause the program to terminate abnormally and logic errors that might have been missed during stub test. Unit testing uses the test data created during the design phase.

(3) System Testing

A system test includes all typical processing situations. During a system test, users enter data, including samples of actual data, perform queries, and print reports to simulate actual operating conditions. All

processing options and outputs are verified by users and the system development team to ensure that the system functions correctly.

4.1.2 Training

The entire system implementation effort can depend on whether people understand the system and know how to use it effectively. The main purpose of this training is to help users able to operate and be familiar with the proposed system. They also understand the new process when use the proposed system.

To suit the different functions for each user, training will be divided into two groups: Help Desk staff and Support team. Support team is developer, technical support and network support.

4.1.3 Conversion

Conversion is the task of translating the existing files, input forms and databases to the new format designed in the new system. Thus, the conversion plan needs to be developed, preferably as soon as the user implementation model is completed, the following issues must be taken into consideration:

- (1) The user prefers using the existing system to be parallel run with the new system to ensure its result before complete conversion to use the new system.
- (2) The existing system is manual. Therefore there will be no input of the old problem log record into the new system. Users will input only pending status and new request.

There are four conversion methods that are abrupt cut-over, parallel, location, and staged conversion. We choose parallel conversion for this proposed system to minimize the error and make user more familiar the new system.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Today, facing intense competition, many companies have to replace the business from manual system to computerize system. Therefore business information system is very important for the company. To support these systems we need to have the Help Desk Support to provide system support to the users. Since the manual process for Help Desk cannot provide good service to the user. Therefore we need to implement the computer system for Help Desk to replace the manual system.

The proposed system provide the online system that is accessible any time in the office. It will provide the work flow that reduces the paper work and tracks the job status easily. This project will describe the system analysis and design activity to implement Help Desk Support System. The measures done for this project are as follows:

- (1) Analyze the existing system.
- (2) Find out the problem.
- (3) Find out user requirements.
- (4) Design the new system by using many techniques such as data flow, process specification, structure chart to solve the problems and meet the user requirements.
- (5) Analyze cost and benefit.
- (6) Design the database that should be in the proposed system.
- (7) Design User Interface and output from the system.
- (8) Plan to implement the new system including the conversion plan.

The deliverable from the new system is the Help Desk Support System. It reduces the cycle time for processing the job and increases efficiency in working with the new system.

Table 5.1 shows the time sent on each process of the proposed system compared with the existing system. It shows that each process of the proposed system spends less time than each process of the existing system. This can explained as that the proposed system is more efficient and effective than the existing system.

Table 5.1. The Degree of Achievement of the Proposed System.

Process	Existing System	Proposed System
New Request Process	3 hrs.	1 hr.
Check Status Process	30 mins.	5 mins.
Assign Job Process	10 mins	5 mins
Report Prepare Process	1 hr.	15 mins.
Total	4 hrs. 40 mins.	1 hr. 25 mins.

Existing System

(a) New request process

User fill in a paper form and send request to Help Desk. Then Help desk verify request and response user. (2-3 hours).

(b) Check Status process

Help Desk staffs search for a specific problem log from the Log book then they call technical support to update status. (15-30 minutes)

(c) Assign Job process

Help Desk staff calls for available staff and Assign job to him. (10 minutes)

(d) Report Prepare process

Help desk staff summarize the data using MS Excel then print the report format. (1 hour)

Proposed System

(a) New request process

User calls Help Desk to log the request and verify against the existing log. Then Help Desk staff defines problem type and severity. These activities take time 30-60 minutes.

(b) Check Status process

Technical support searches the problem log from HDSS system. It takes time 5 minutes.

(c) Assign Job process

Select available staff from HDSS system and assign job to him. This process takes time 5 minutes.

(d) Report Prepare process

Help desk staff select and print report from HDSS System's menu. This process takes time 15 minutes.

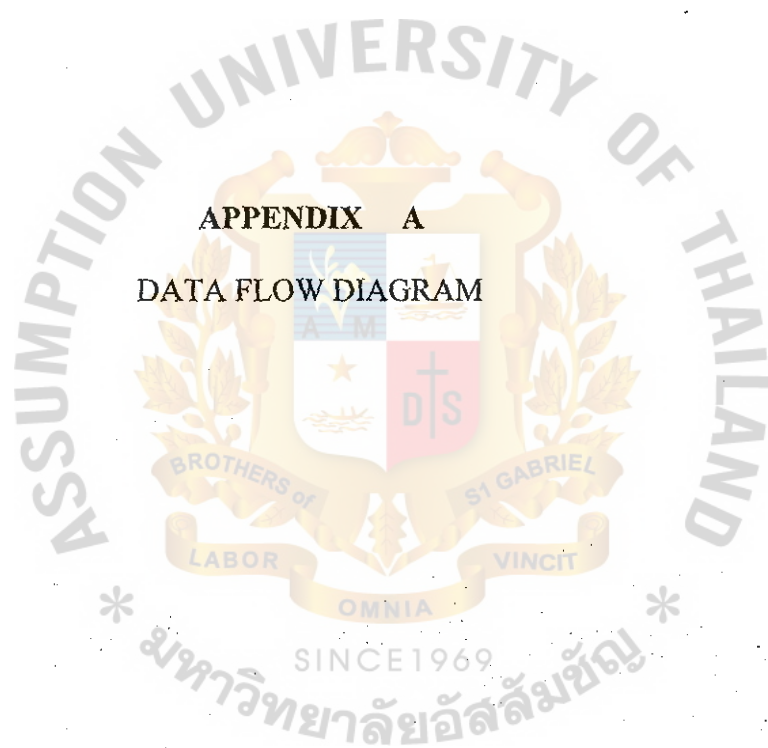
5.2 Recommendations

Help Desk is the first place users contact when they need assistance. We need strong interpersonal and technical skill plus an understanding of the business, because they will interact with users in many departments.

Help Desk Support System has been designed to support a small group of staff in the same building. In the future, the company may have branch offices and it will be difficult to support a large group of users. To cope with the future extension, we may develop Help Desk System for the intranet and setup a Web server for this system. The advantages for the Web-base Help desk system are as follows:

- (1) Due to the rapid growth of the Internet, most users in the company have Netscape installed in their computer. Therefore, there is no requirement of installing any additional program to make Web-base Help Desk system accessible. We can have access to the system anywhere in the company.
- (2) We can maintain this application system on the server and we do not have to go to each client computer to install or upgrade the program.

In addition, we can improve the security system by adding encryption module into the system and control and review the accessing of information.



APPENDIX A

DATA FLOW DIAGRAM

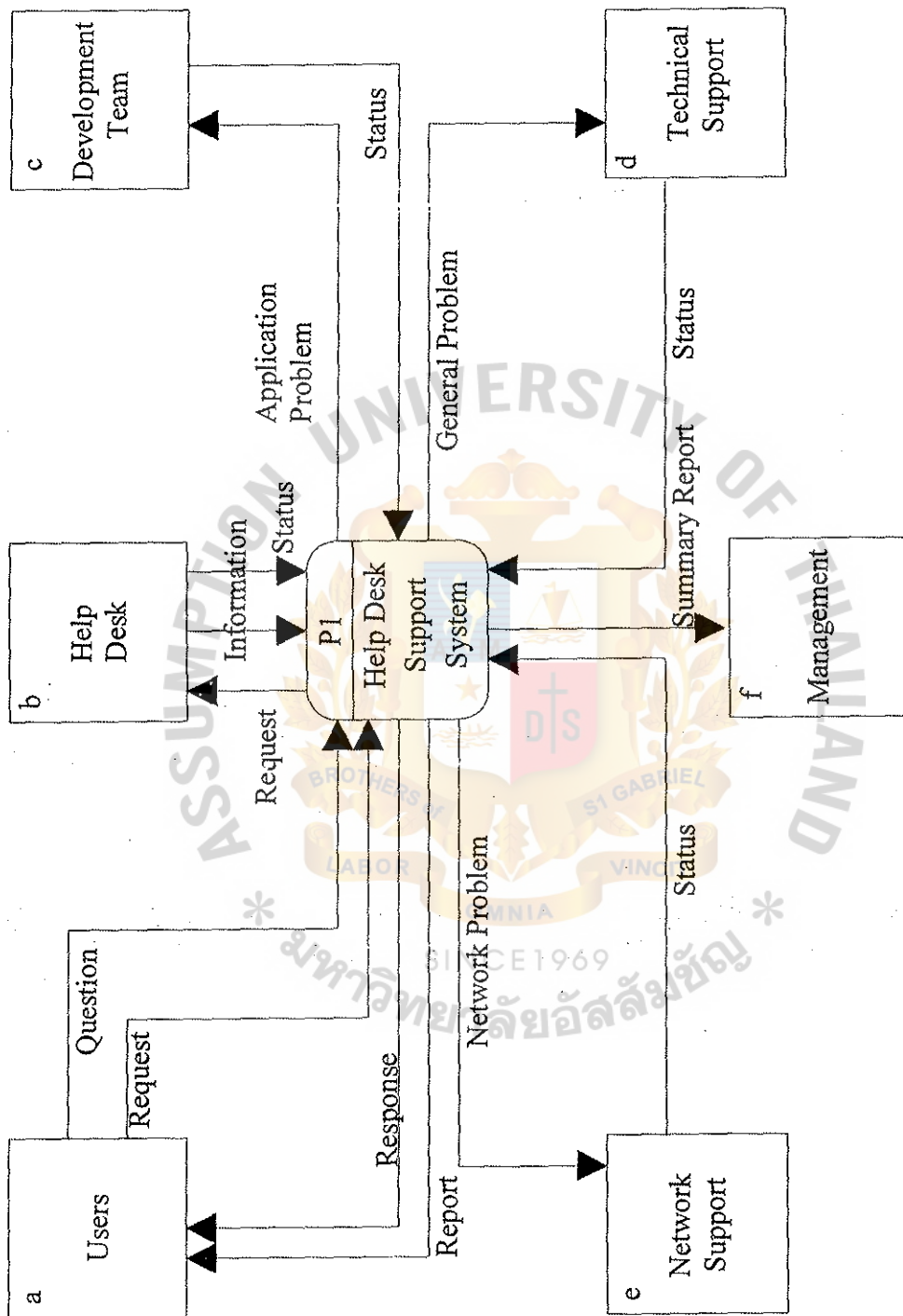


Figure A.1. Context Diagram of the Proposed System.

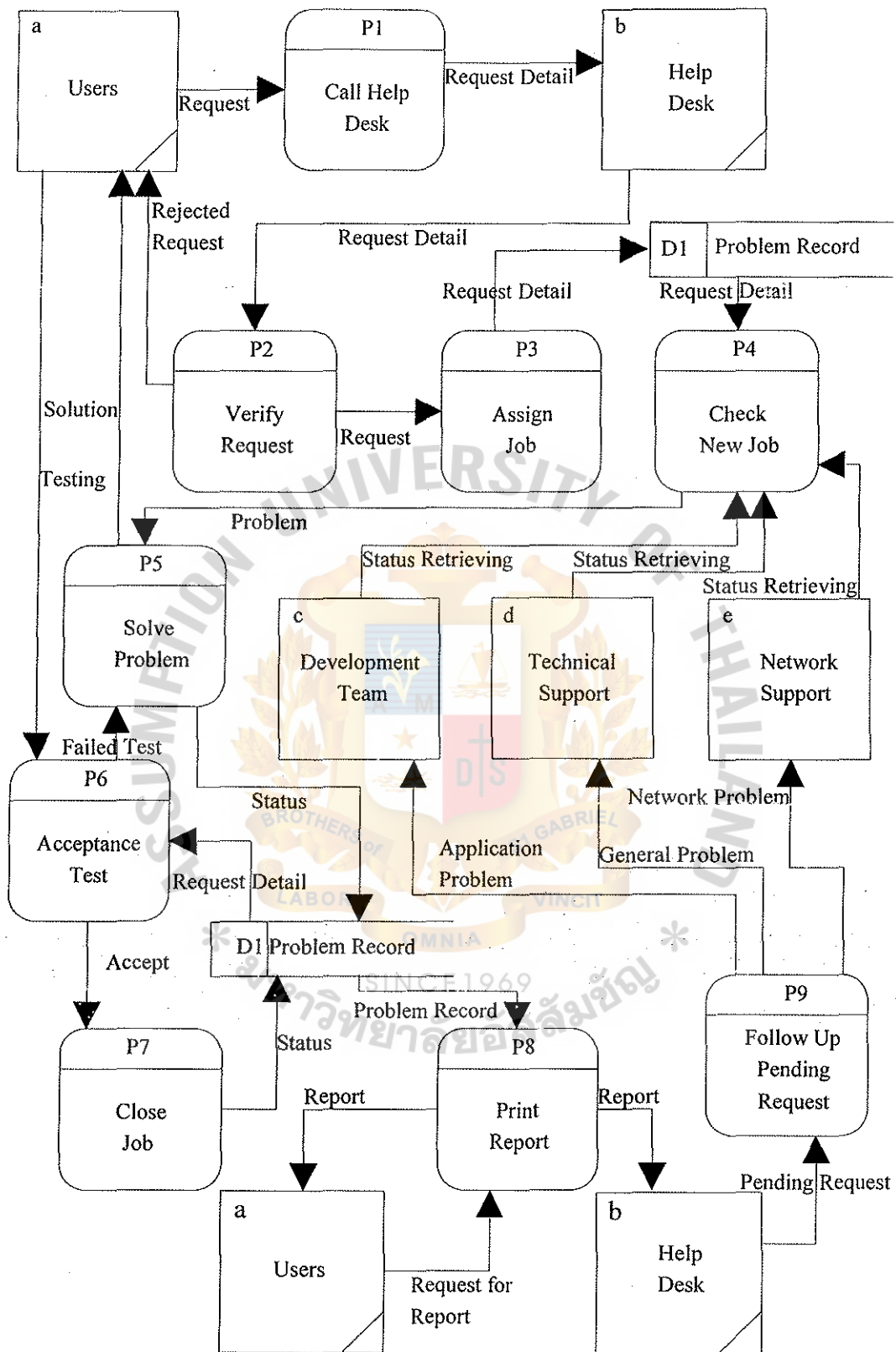


Figure A.2. Data Flow Diagram Level 0 - Proposed System.

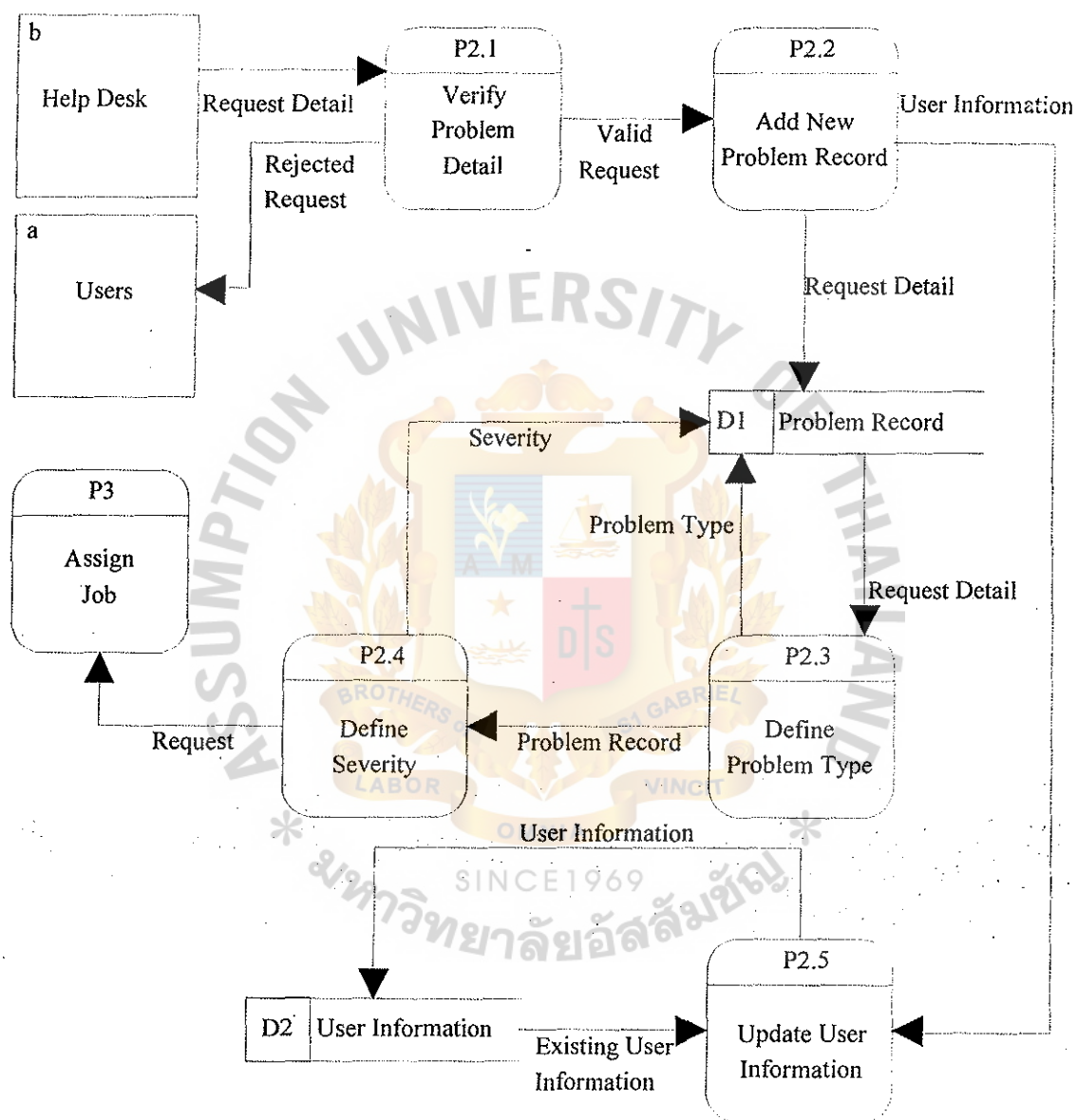


Figure A.3. Data Flow Diagram for the Proposed System - Process 2.

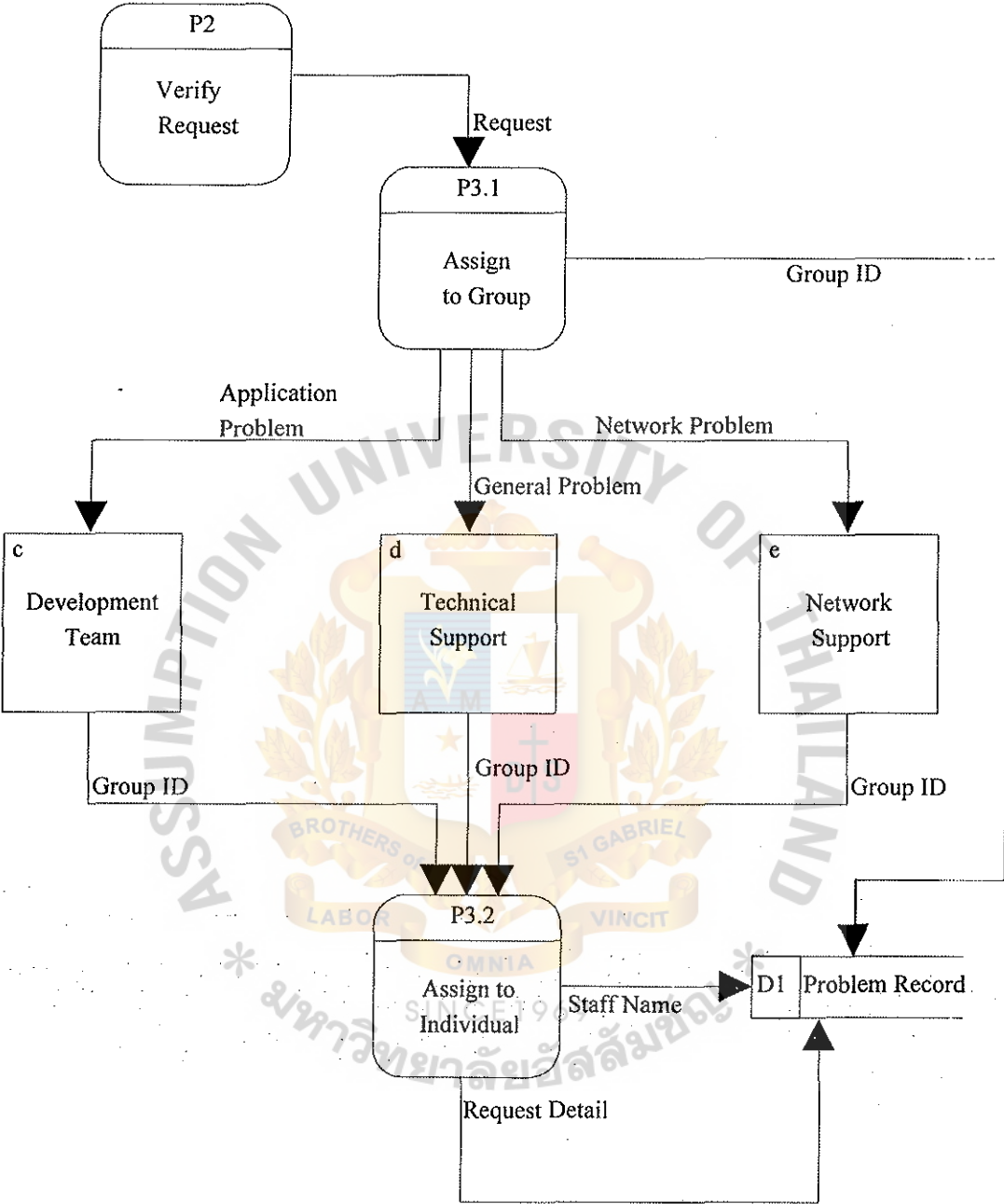


Figure A.4. Data Flow Diagram for the Proposed System - Process 3.

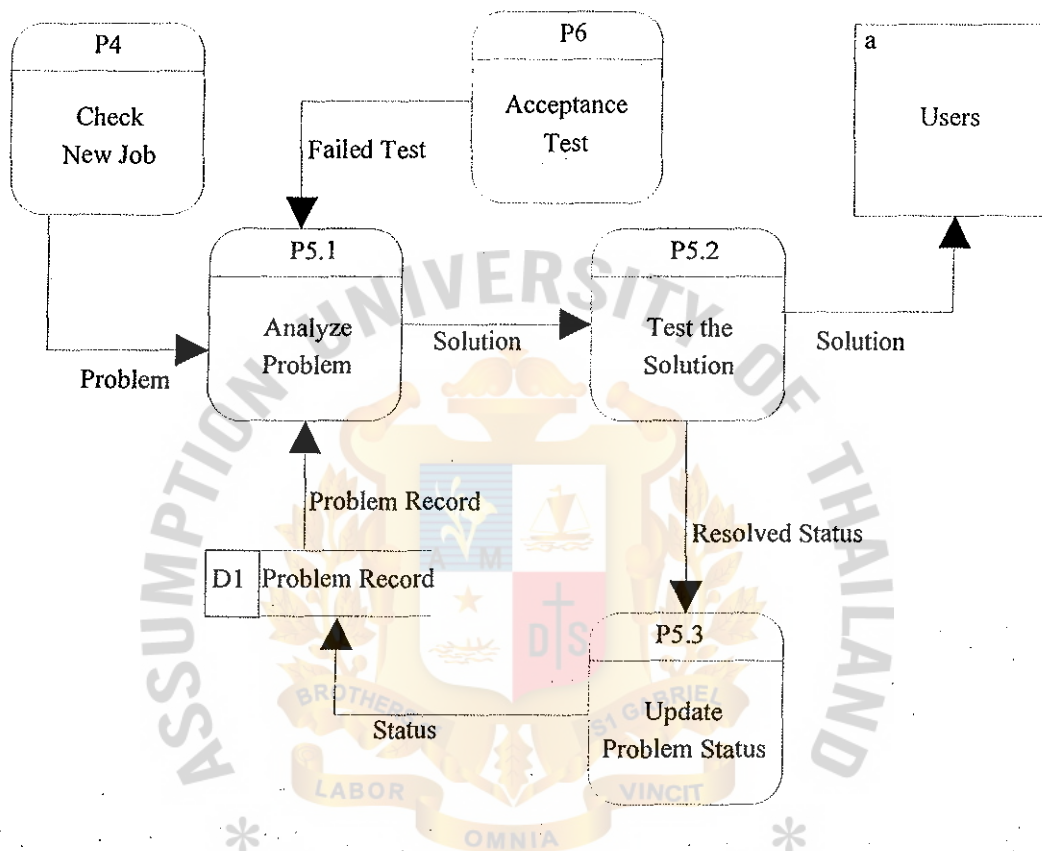


Figure A.5. Data Flow Diagram for the Proposed System - Process 5.

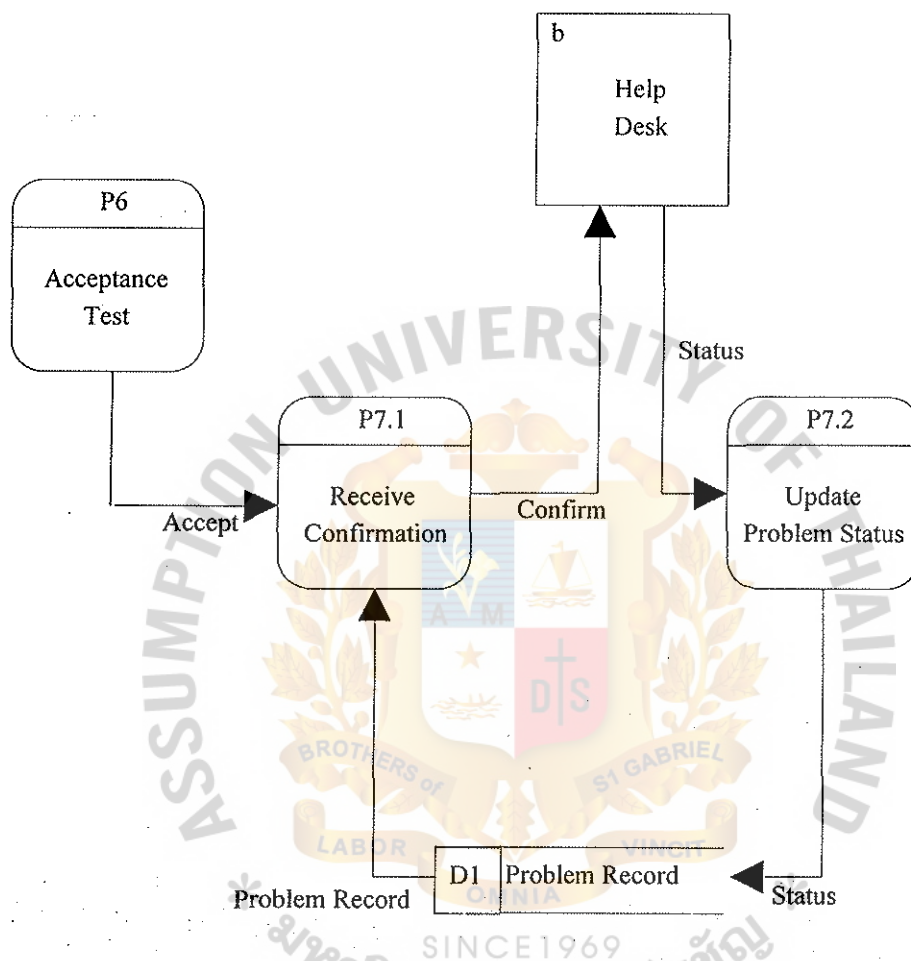


Figure A.6. Data Flow Diagram for the Proposed System - Process 7.

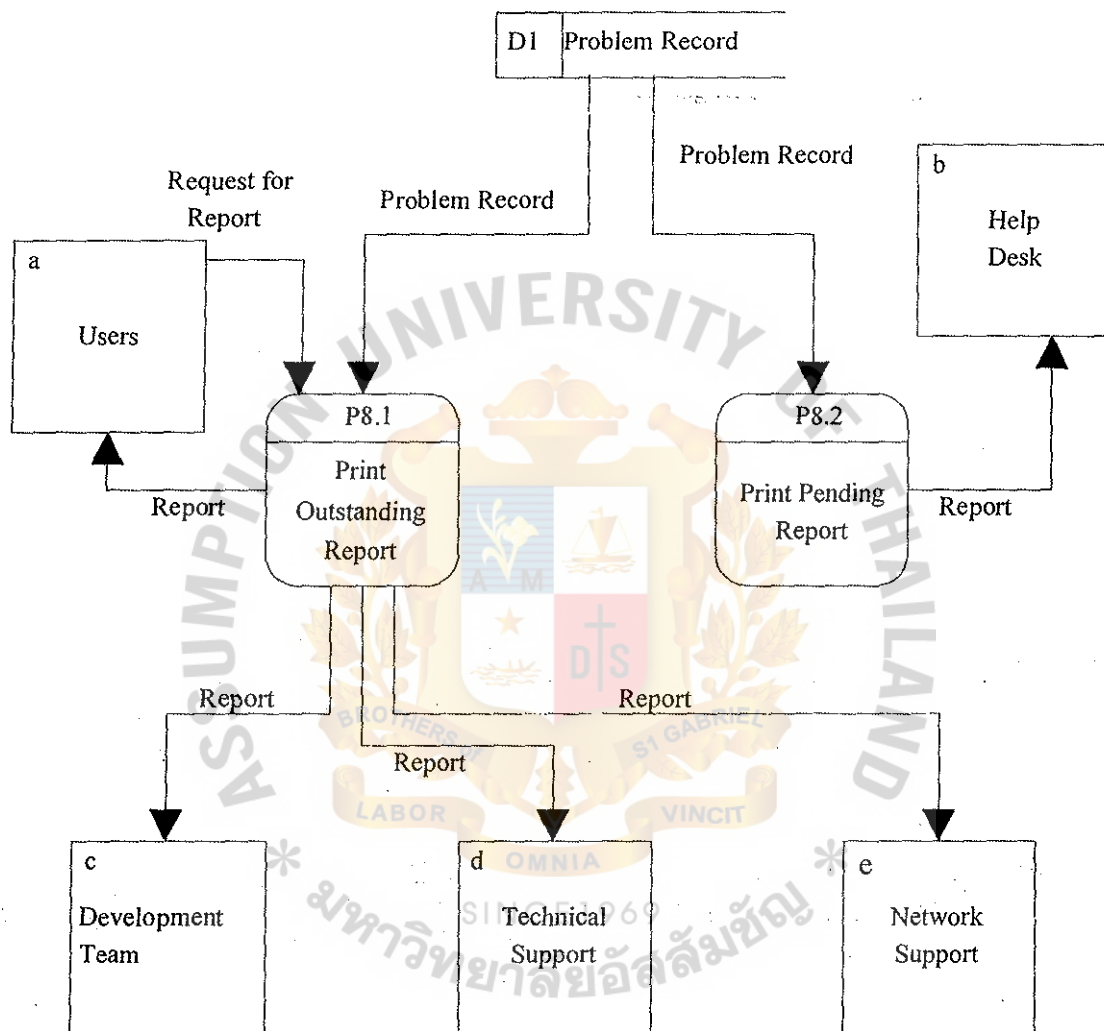


Figure A.7. Data Flow Diagram for the Proposed System - Process 8.

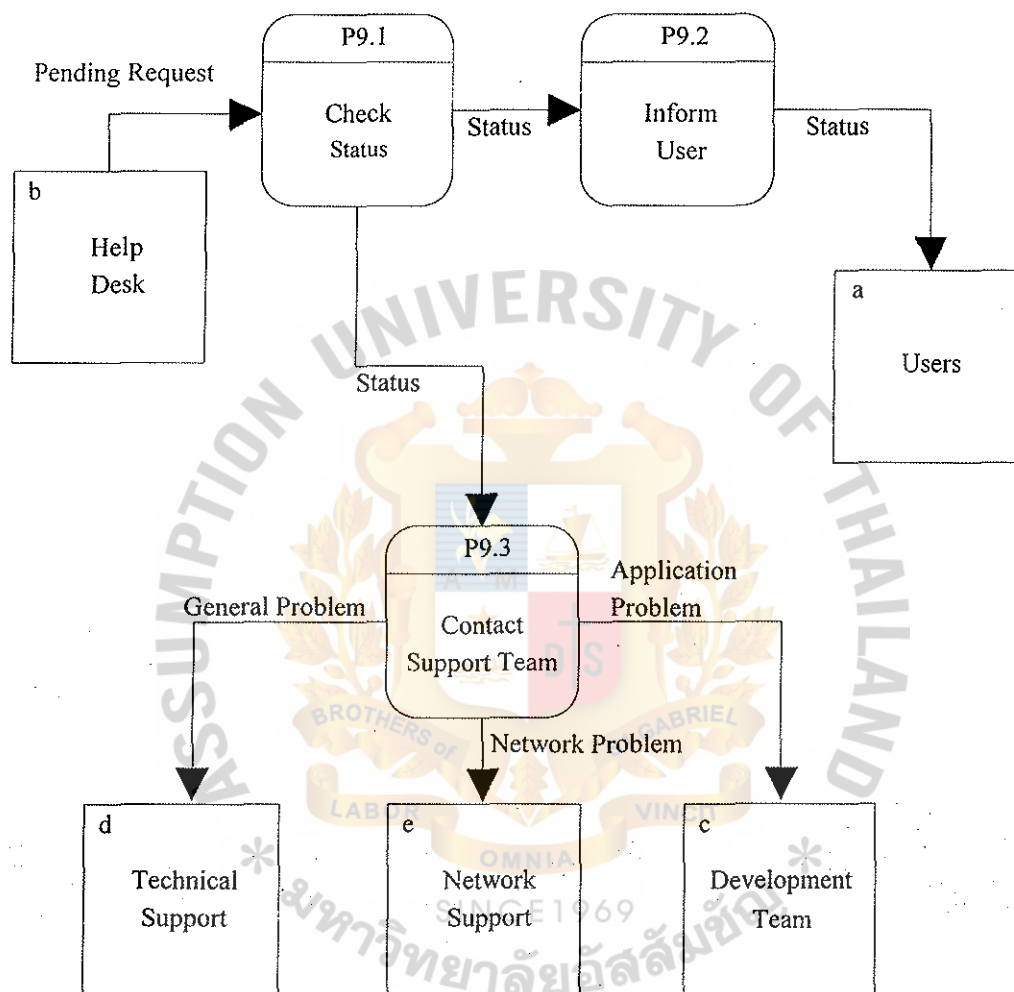


Figure A.8. Data Flow Diagram for the Proposed System - Process 9.



DATA DICTIONARY

Accept

Data Flow

Description: After perform testing and the solution can solve the problem, user has to send the test result and sign off.

Acceptance Test

Data Process

Description: Perform testing to verify the solution.

Add New Problem Record

Data Process

Description: Input new problem record into the HDSS system.

Analyze Problem

Data Process

Description: Analyze the root cause of problem.

Application Problem

Data Flow

Description: Problem from the application system, include in house application and purchased application.

Assign Job

Data Process

Description: Assign problem request to support team(developer, technical support, network support).

Assign to Group

Data Process

Description: Assign problem request to the proper group depend on problem type.

Assign to Individual

Data Process

Description: Assign to staff.

Call Help Desk

Data Process

Description: User call help desk service to log the problem detail and user information.

Check New Job

Data Process

Description: Support team check for the new request from the HDSS database.

Check Status

Data Process

Description: Check the current status of the problem request.

Close Job

Data Process

Description: When the solution is accepted, help desk will update the status.

Contact Support Team

Data Process

Description: Inform the current status to support team.

Define Problem Type

Data Process

Description: Define problem type for each problem record.

Define Severity

Data Process

Description: Define problem severity for each problem record.

Development Team

External Entity

Description: Programmer, system analyst.

Failed Test

Data Flow

Description: After provided solution cannot solve the problem user have to report the failed test result to support team.

Follow Up Pending Request

Data Process

Description: Contact the support team form job progression.

General Problem

Data Flow

Description: General computer problem, such as hardware error.

Group ID

Data Flow

Description: Group ID of support team. ["Development Team", "Technical Supprt", "Network Support"]

Help Desk

External Entity

Description: Call center for receive problem from user and contact the support team.

Inform User

Data Process

Description: Inform the current status to user.

Information

Data Flow

Description: Problem details and user information from the user.

Management

External Entity

Description: Manager and Supervisor

Network Problem

Data Flow

Description: Network problem

Network Support

External Entity

Description: Computer staff who has responsible for computer network.

Pending Request

Data Flow

Description: Problem request that was not resolved.

Print Outstanding Report

Data Process

Description: Print Outstanding Report.

Print Pending Report

Data Process

Description: Print the pending report

Print Report

Data Process

Description: Print Report for user, help desk staff, and support team.

Problem

Data Flow

Description: Problem information and other information.

Problem Record

Data Store

Description: Database to keep problem record and other information

Problem Record

Data Flow

Description: Problem detail retrieved from the HDSS database.

Problem Type

Data Flow

Description: Problem Type. ["Application", "Network", "Other"]

Receive Confirmation

Data Process

Description: Receive the test result and confirmation from user.

Rejected Request

Data Flow

Description: The request is rejected because it is just a duplication or it is not a problem.

Report

Data Flow

Description: Report generated by HDSS.

Request

Data Flow

Description: Problem Request sent from user.

Request Detail

Data Flow

Description: Detail in Problem Request.

Request for Report

Data Flow

Description: Users request the status report for their request.

Resolved Status

Data Flow

Description: Status "Resolved".

Severity

Data Flow

Description: Severity of the problem. [1,2,3,4,5]

Solution

Data Flow

Description: Method to solve the problem.

Staff Name

Data Flow

Description: Staff name who has responsible for that problem request.

Status

Data Flow

Description: Status of the problem request. (entered, assigned, resolved, rejected, rework, concluded)

Status Retrieving

Data Flow

Description: Status and information retrieved from HSDD database.

Summay Report

Data Flow

Description: Summary Report Help Desk Staff

Technical Support

External Entity

Description: Technical staff support for computer related.

Testing

Data Flow

Description: User perform testing and prepare the test result.

Users

External Entity

Description: Staff who use the computer and/or application. When computer or application has problem, they require support from Help Desk Service.

Update Problem Status

Data Process

Description: Change the problem status in HDSS system.

User Information

Data Store

Description: User information include Name, Department, Extension No.

Valid Request

Data Flow

Description: Verified request and approved.

Verify Problem Detail

Data Process

Description: Check problem detail.

Verify Request

Data Process

Description: Verify information in the problem request to reject or accept.





APPENDIX C

PROCESS SPECIFICATION

PROCESS SPECIFICATION

Process 0 Help Desk Support System

Location:

Context (CONTEXT)

Input Flows:

Request

Question

Information

Status

Output Flows:

Response

Request

Application Problem

General Problem

Network Problem

Report

Status

Process 1 Call Help Desk

Location:

DFD level 0 (0)

Input Flows:

Request

Output Flows:

Request Detail

Process 2. Verify Request

Location:

DFD level 0 (0)

Input Flows:

Request Detail

Output Flows:

Reject Request

Request

Process 2.1 Verify Problem Detail

Location

Process 2 (2)

Input Flows:

Request Detail

Output Flows:

Valid Request

Rejected Request

Process 2.2 Add New Problem Record

Location:

Process 2 (2)

Input Flows:

Valid Request

Output Flows:

Request Detail

User Info

Process 2.3 Define Problem Type

Location:

Process 2 (2)

Input Flows:

Request Detail

Output Flows:

Problem Type

Problem record

Process 2.4 Define Severity

Location:

Process 2 (2)

Input Flows:

Problem Type

Output Flows:

Severity

Request

Process 3 Assign Job

Location:

DFD level 0 (0)

Input Flows:

Request

Output Flows:

Request Detail

Process 3.1 Assign to group

Location:

Process 3 (3)

Input Flows:

Request

Output Flows:

Group ID

Application Problem

General Problem

Network Problem

Process 3.2 Assign to individual

Location:

Process 3 (3)

Input Flows:

Group ID

Output Flows:

Request Detail

Staff Name

Process 4 Check New Job

Location:

DFD level 0 (0)

Input Flows:

Request Detail

Status Retrieving

Output Flows:

Problem

Process 5 Solve Problem

Location:

DFD level 0 (0)

Input Flows:

Problem

Output Flows:

Solution

Status

Process 5.1 Analyze Problem

Location:

Process 5 (5)

Input Flows:

Failed Test

Problem

Problem record

Output Flows:

Solution

Process 5.2 Test the solution

Location:

Process 5 (5)

Input Flows:

Solution

Output Flows:

Solution

Received Status

Process 5.3 Update problem status

Location:

Process 5 (5)

Input Flows:

Resolved status

Output Flows:

Status

Process 6 Acceptance Test

Location:

DFD level 0 (0)

Input Flows:

Testing

Request Detail

Output Flows:

Accept

Failed Test

Process 7 Close Job

Location:

DFD level 0 (0)

Input Flows:

Accept

Output Flows:

Status

Process 7.1 Receive Confirmation

Location:

Process 7 (7)

Input Flows:

Accept

Problem Record

Output Flows:

Confirm

Process 7.2 Update problem status

Location:

Process 7 (7)

Input Flows:

Status*

Output Flows:

Status

Process 8 Print report

Location:

DFD level 0 (0)

Input Flows:

Problem record

Request for report

Output Flows:

Report

Process 8.1 Print Outstanding Report

Location:

Process 8 (8)

Input Flows:

Request for report

Problem record

Output Flows:

Report

Process 8.2 Print Pending Report

Location:

Process 8 (8)

Input Flows:

Problem record

Output Flows:

Report

Process 9 Follow up pending request

Location:

DFD level 0 (0)

Input Flows:

Pending Request

Output Flows:

Application Problem

General Problem

Network Problem

Process 9.1 Check Status

Location:

Process 9 (9)

Input Flows:

Pending request

Output Flows:

Status

Process 9.2 Inform User

Location:

Process 9 (9)

Input Flows:

Status

Output Flows:

Status

Process 9.3 Contact Support Team

Location:

Process 9 (9)

Input Flows:

Status

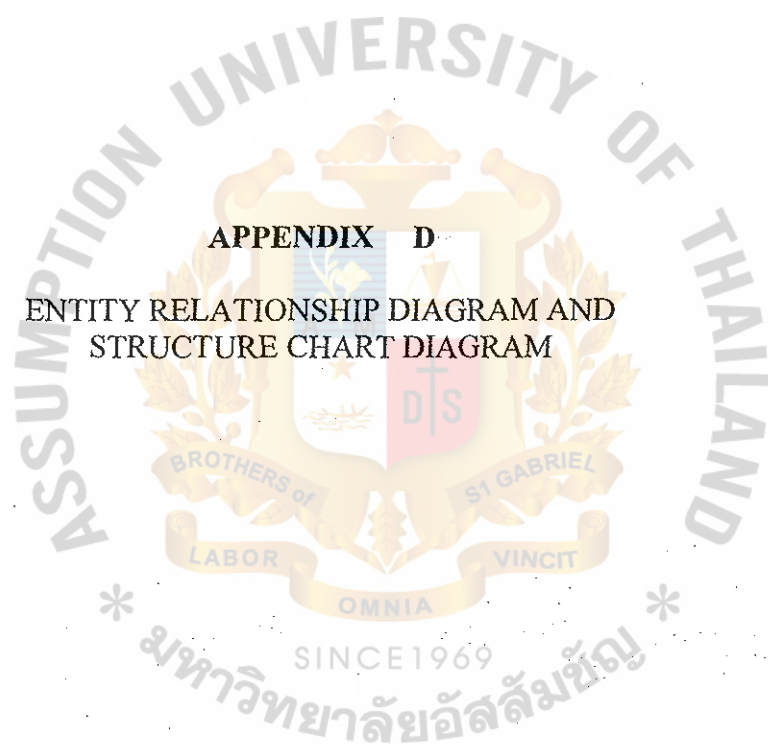
Output Flows:

Application Problem

General Problem

Network Problem





APPENDIX D

ENTITY RELATIONSHIP DIAGRAM AND STRUCTURE CHART DIAGRAM

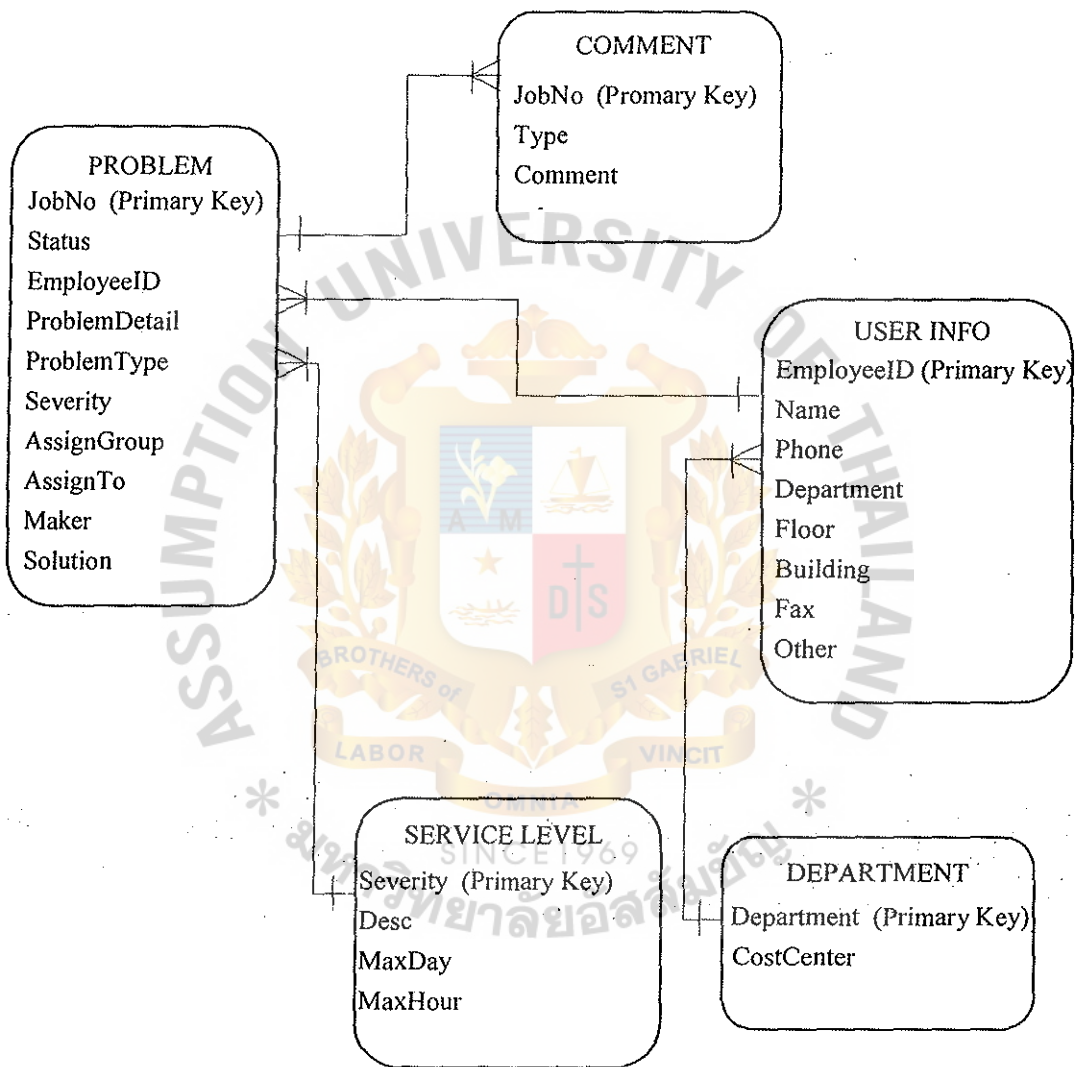


Figure D.1. ER Diagram of Proposed System.

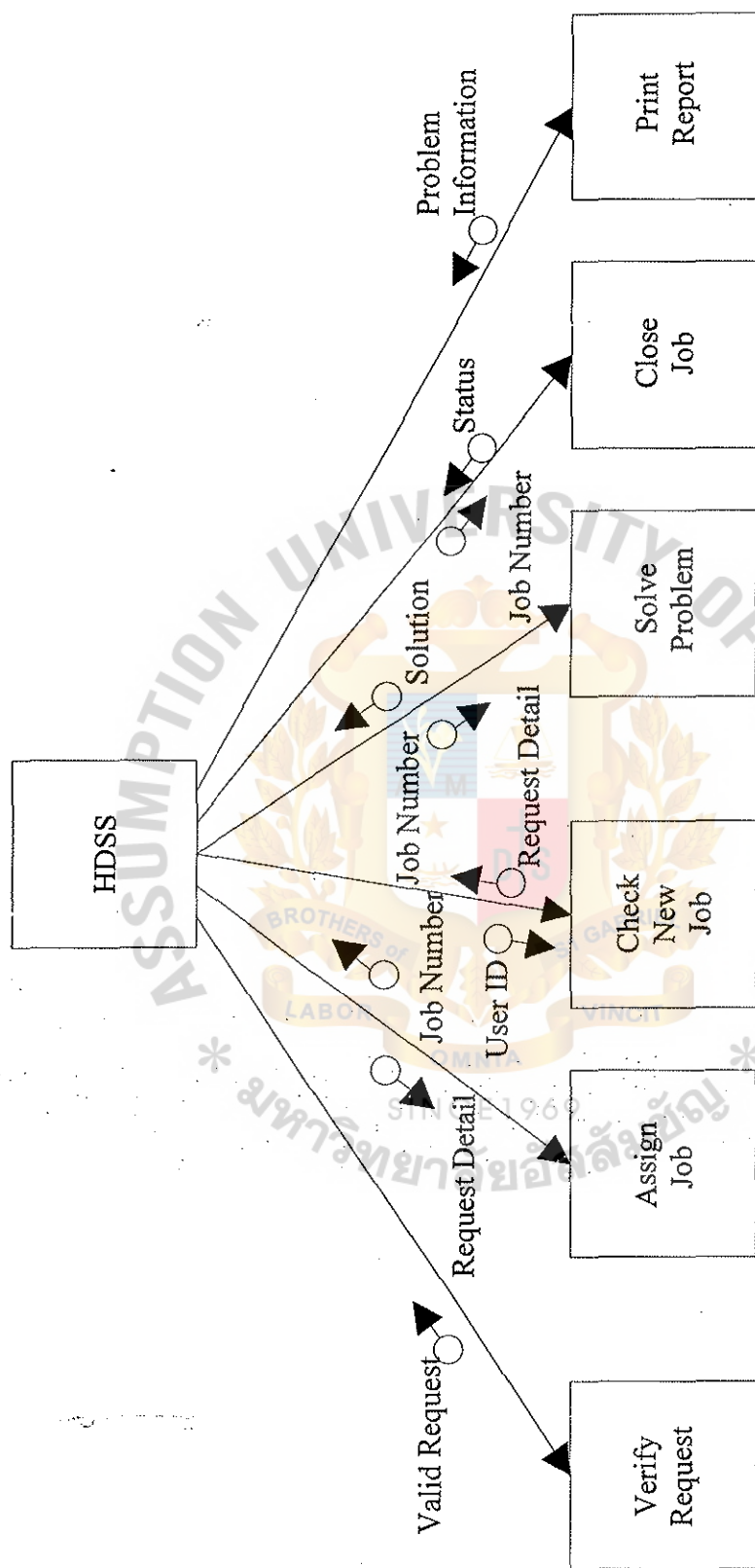


Figure D.2. Structure Chart for the Proposed System.

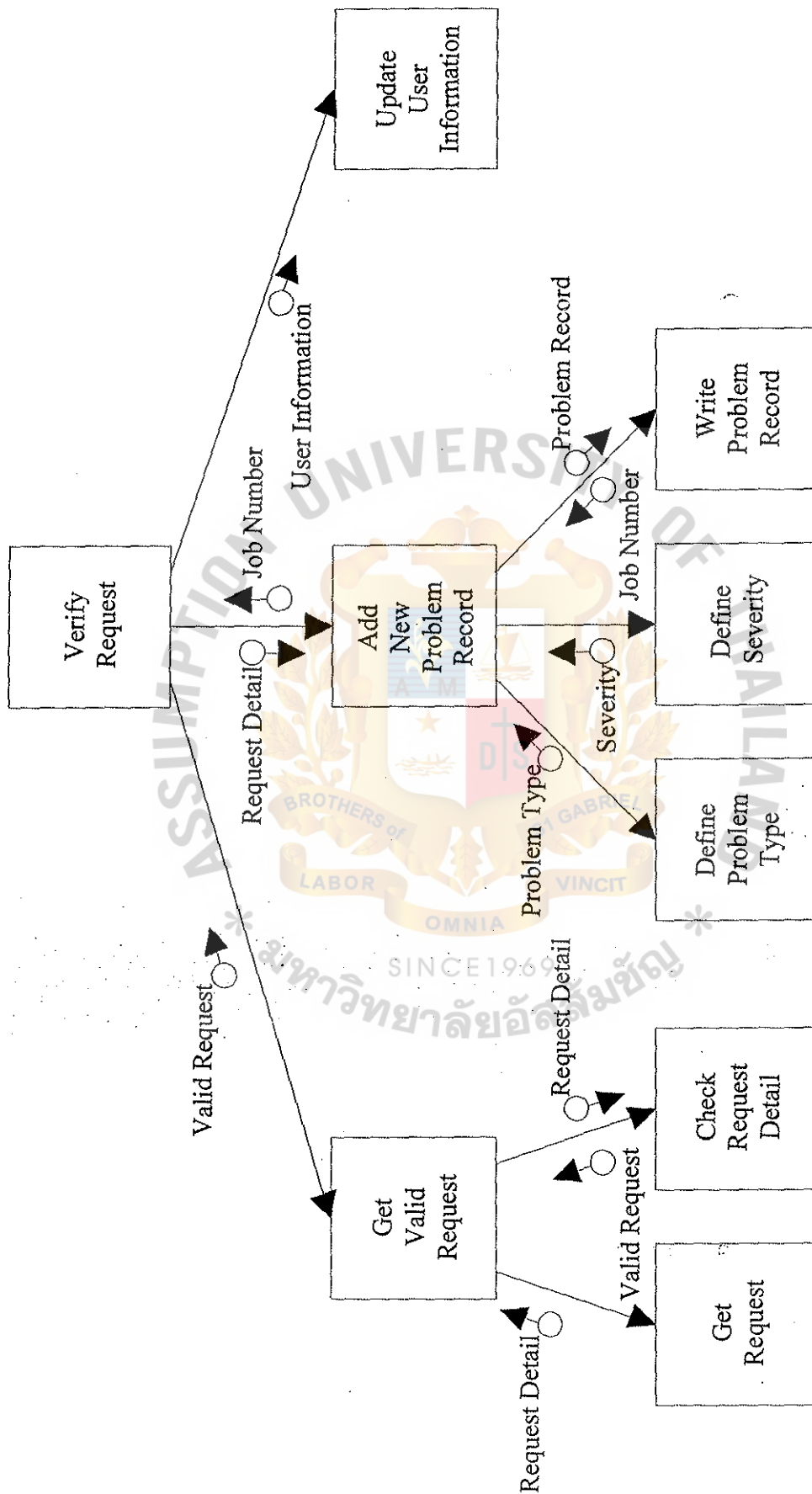


Figure D.3. Structure Chart for the Proposed System - Process 2.

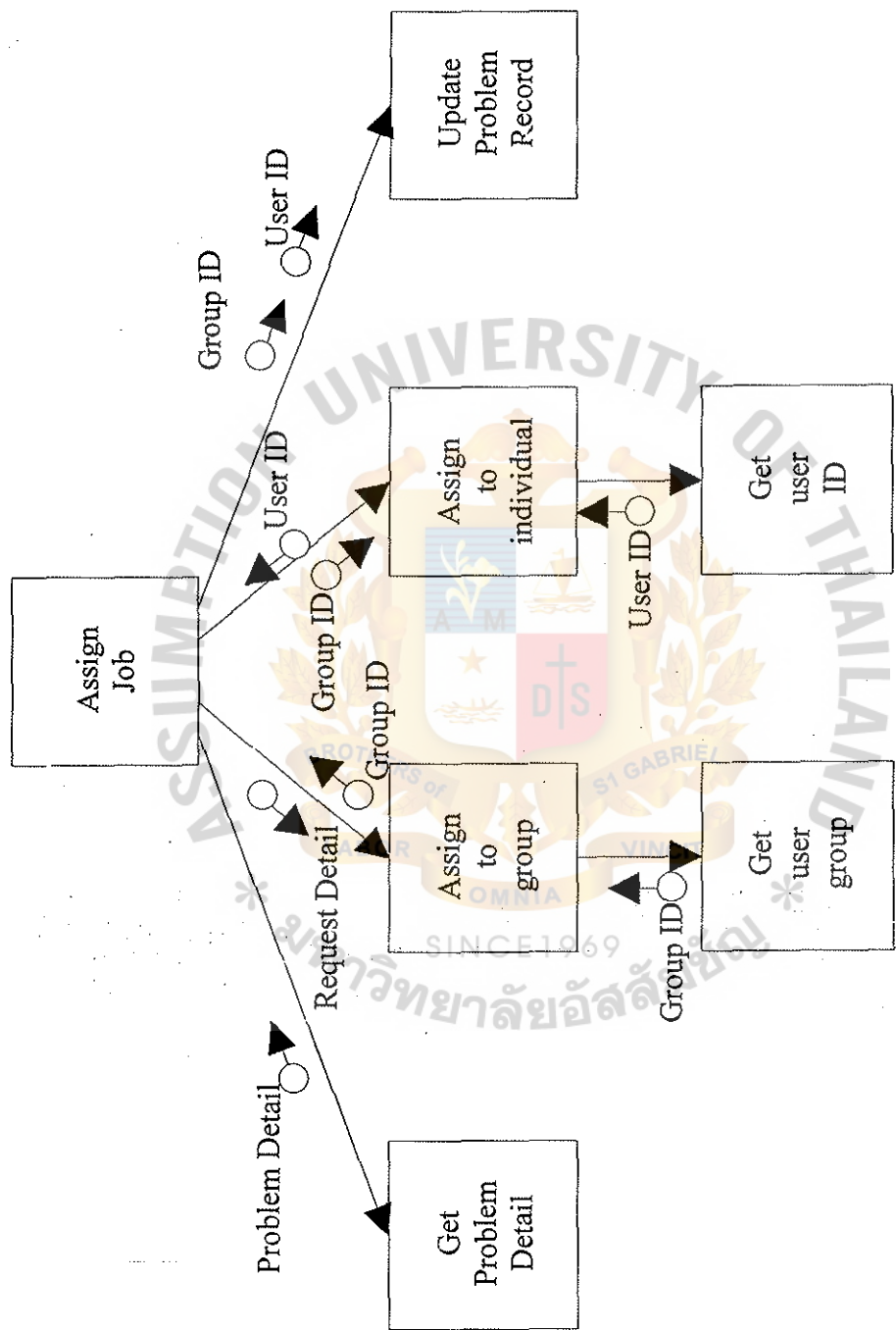


Figure D.4. Structure Chart for the Proposed System - Process 3.

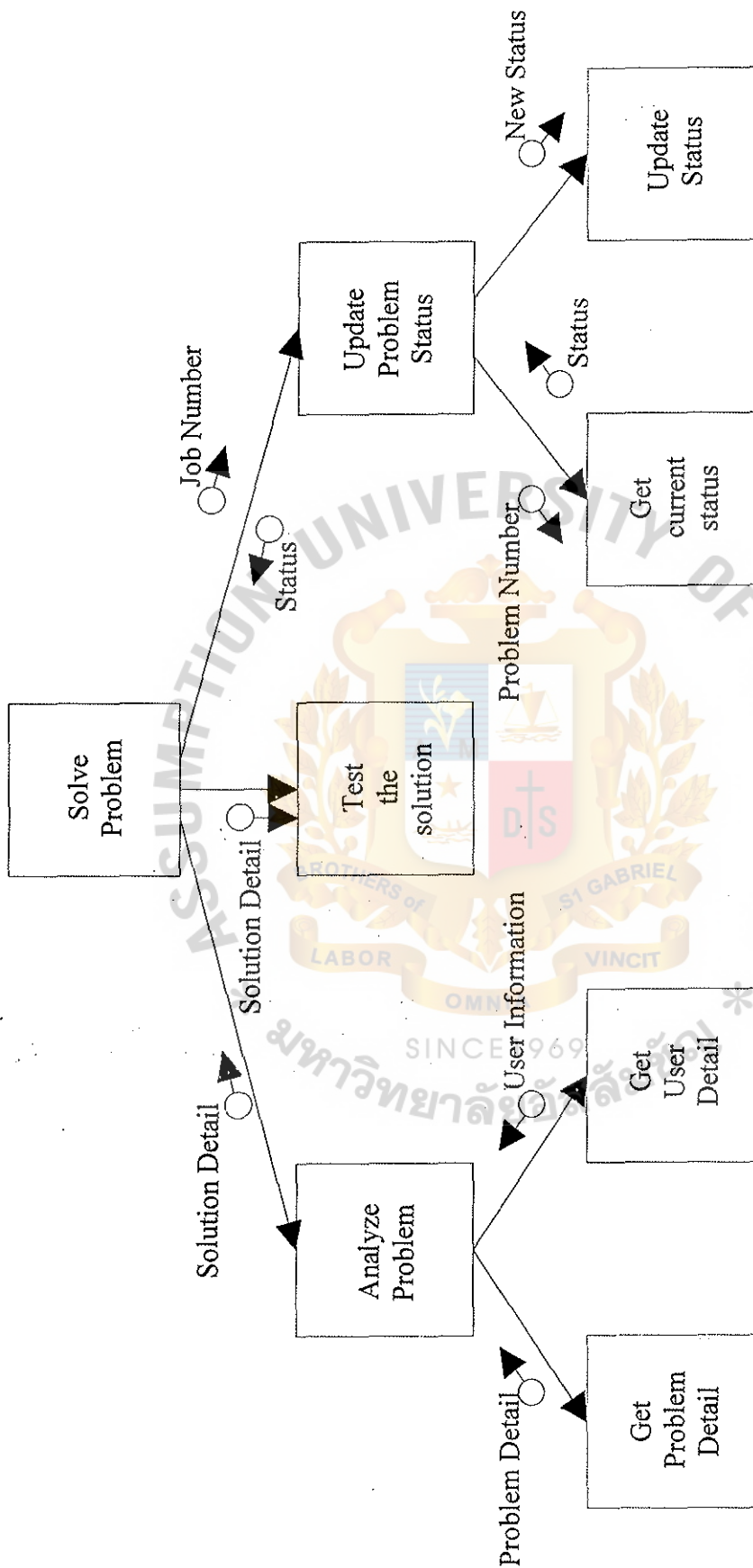


Figure D.5. Structure Chart for the Proposed System - Process 5.

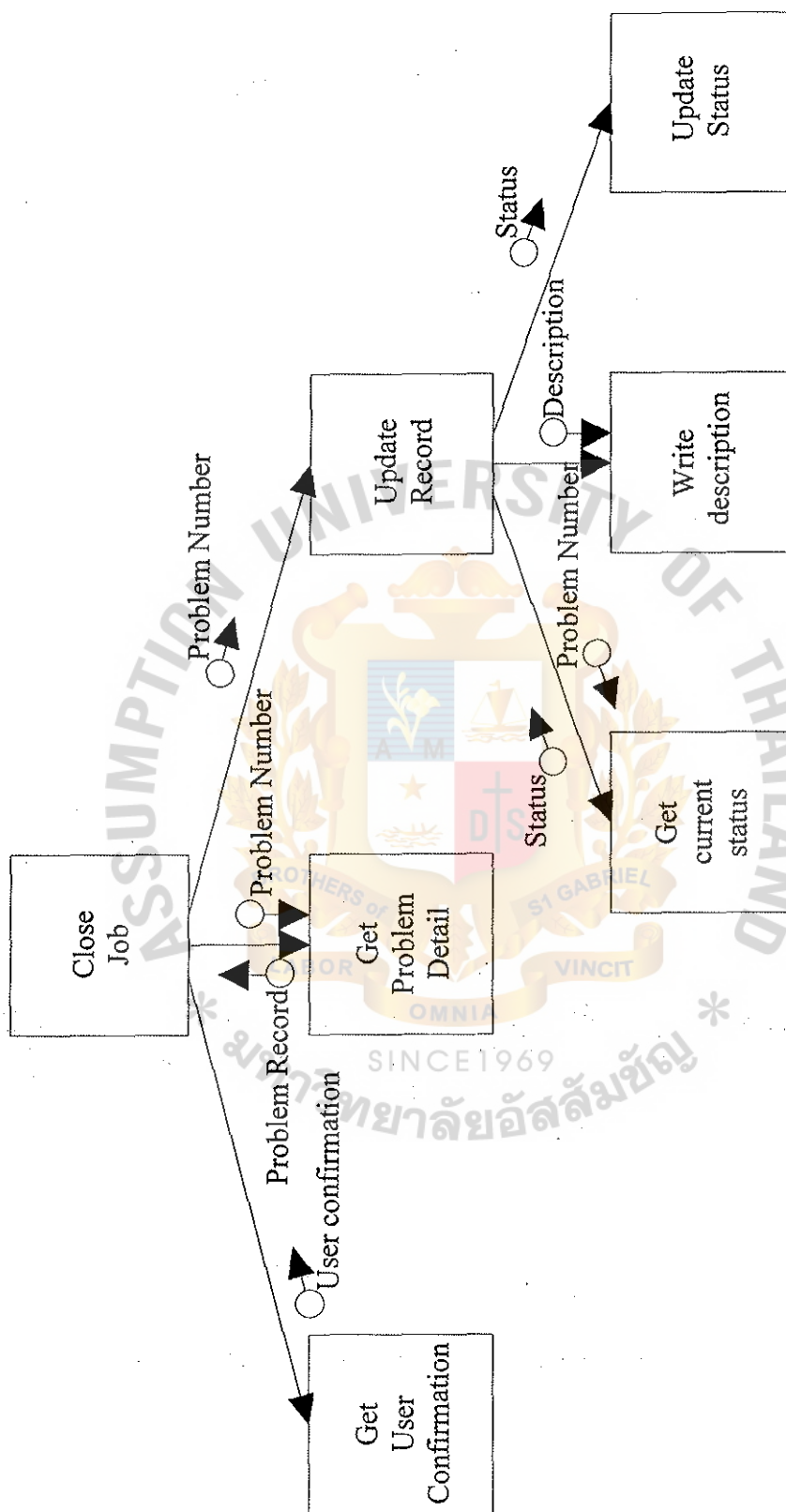


Figure D.6. Structure Chart for the Proposed System - Process 7.

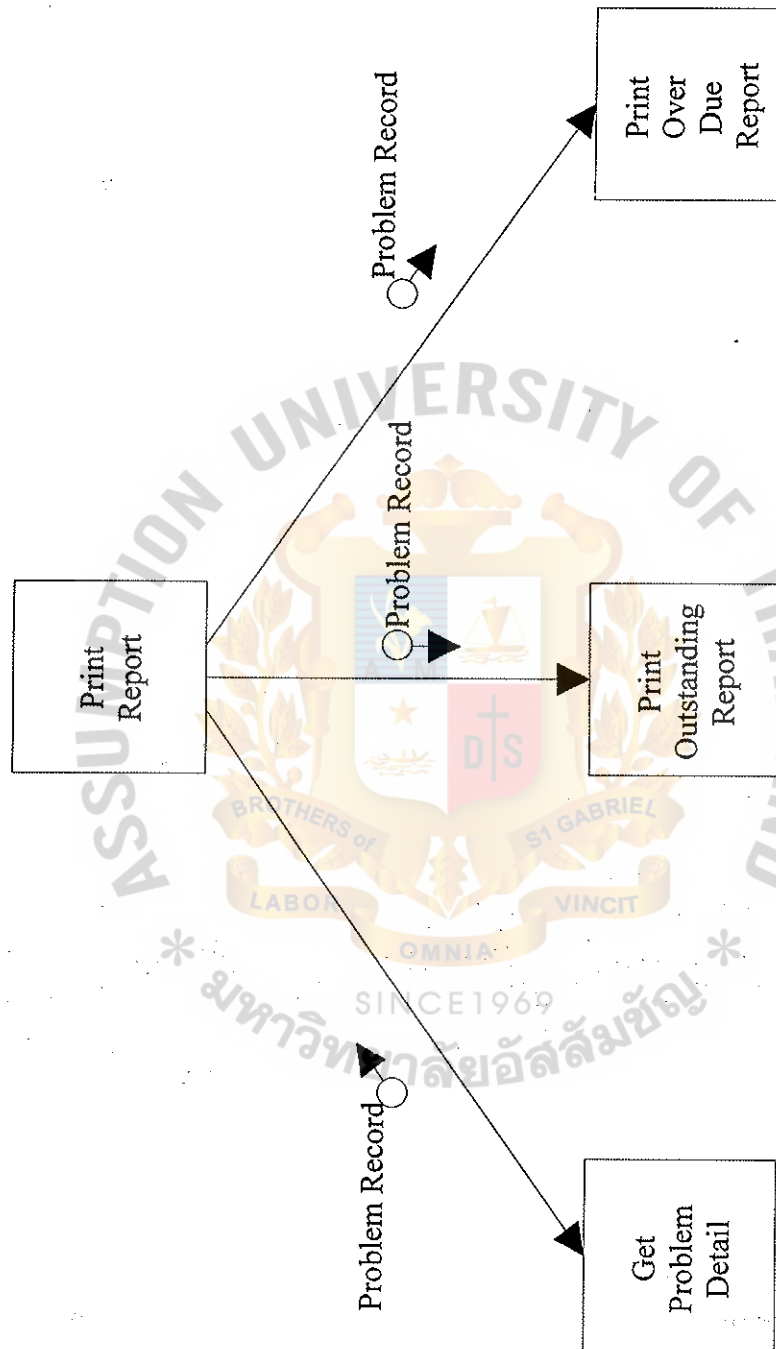
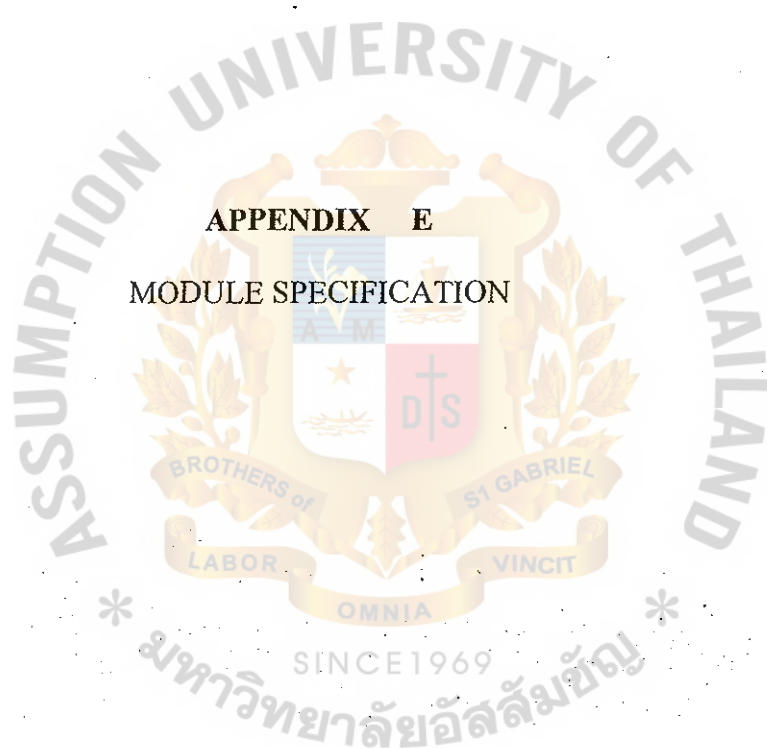


Figure D.7. Structure Chart for the Proposed System - Process 8.



APPENDIX E
MODULE SPECIFICATION

MODULE SPECIFICATION

Add New Problem Record

Module

Location:

Verify Request

Called by: Verify Request (Module)

Passed Couples:

Request Detail (Data Couple)

Returned Couples:

Job Number (Data Couple)

Calls: Define Problem Type (Module)

Returned Couples:

Problem Type (Data Couple)

Calls: Define Severity (Module)

Returned Couples:

Severity (Data Couple)

Calls: Write Problem Record (Module)

Passed Couples:

Problem Record (Data Couple)

Returned Couples:

Job Number (Data Couple)

Analyze Problem

Module

Location:

Solve Problem

Called by: Solve Problem (Module)

Returned Couples:

Solution Detail (Data Couple)

Calls: via S1 (Off-page Connector)

Get Problem Detail (Library Module)

Returned Couples:

Problem Detail (Data Couple)

Calls: Get User Detail (Library Module)

Returned Couples:

User Information (Data Couple)

Assign Job

Module

Location:

Assign Job

Called by: HDSS (Module)

Calls: Get Problem Detail (Library Module)

Returned Couples:

Problem Detail (Data Couple)

Calls: Assign To Group (Module)

Passed Couples:

Request Detail (Data Couple)

Returned Couples:

Group ID (Data Couple)

Calls:Assign To Individual (Module)

Passed Couples:

Group ID (Data Couple)

Returned Couples:

User ID (Data Couple)

Calls:Update Problem record (Library Module)

Passed Couples:

User ID (Data Couple)

Group ID (Data Couple)

Assign To Group

Module

Location:

Assign Job

Called by:Assign Job (Module)

Passed Couples:

Request Detail (Data Couple)

Returned Couples:

Group ID (Data Couple)

Calls:Get User Group (Library Module)

Returned Couples:

Group ID (Data Couple)

St. Gabriel's Library

Assign To Individual

Module

Location:

Assign Job

Called by:Assign Job (Module)

Passed Couples:

Group ID (Data Couple)

Returned Couples:

User ID (Data Couple)

Calls:Get User ID (Library Module)

Returned Couples:

User ID (Data Couple)

Check New Job

Library Module

Location:

HDSS

Called by:HDSS (Module)

Passed Couples:

User ID (Data Couple)

Returned Couples:

Request Detail (Data Couple)

Check Request Detail

Module

Location:

Verify Request

Called by: Get Valid Request (Module)

Passed Couples:

Request Detail (Data Couple)

Returned Couples:

Valid Request (Data Couple)

Close Job

Module

Location:

Close Job

Called by: HDSS (Module)

Calls: Get User Confirmation (Module)

Returned Couples:

User Confirmation (Data Couple)

Calls: Get Problem Detail (Library Module)

Passed Couples:

Problem Number (Data Couple)

Returned Couples:

Problem Record (Data Couple)

Calls: Update Record (Module)

Passed Couples:

Problem Number (Data Couple)

Define Problem Type

Module

Location:

Verify Request

Called by:Add New Problem Record (Module)

Returned Couples:

Problem Type (Data Couple)

Define Severity

Module

Location:

Verify Request

Called by:Add New Problem Record (Module)

Returned Couples:

Severity (Data Couple)

Description

Data Couple

Location:

Close Job

Passed From:Update Record (Module)

Passed To:Write Description (Module)

Get current Status

Library Module

Location:

Solve Problem

Called by:Update problem status (Module)

Passed Couples:

Problem Number (Data Couple)

Returned Couples:

Status (Data Couple)

Called by: via S2 (Off-page Connector)

Update Record (Module)

Get Problem Detail

Library Module

Location:

Assign Job

Called by:Assign Job (Module)

Returned Couples:

Problem Detail (Data Couple)

Called by:

Analyze Problem (Module)

Close Job (Module)

Print Job (Module)

Get Request

Module

Location:

Verify Request

Called by:Get Valid Request (Module)

Returned Couples:

Request Detail (Data Couple)

Get User Confirmation

Module

Location:

Close Job

Called by:Close Job (Module)

Returned Couples:

User Confirmation (Data Couple)

Get User Detail

Library Module

Location:

Solve Problem

Called by:Analyze Problem (Module)

Returned Couples:

User Information (Data Couple)

Get User Group

Library Module

Location:

Assign Job

Called by:Assign To Group (Module)

Returned Couples:

Group ID (Data Couple)

Get User ID

Library Module

Location:

Assign Job

Called by:Assign To Individual (Module)

St. Gabriel's Library

Returned Couples:

User ID (Data Couple)

Get Valid Request

Module

Location:

Verify Request

Called by:Verify Request (Module)

Returned Couples:

Valid Request (Data Couple)

Calls:Get Request (Module)

Returned Couples:

Request Detail (Data Couple)

Calls:Check Request Detail (Module)

Passed Couples:

Request Detail (Data Couple)

Returned Couples:

Valid Request (Data Couple)

Group ID

Data Couple

Location:

Assign Job

Returned From:Get User Group (Library Module)

Returned To:Assign To Group (Module)

Returned From:Assign To Group (Module)

Returned To:Assign Job (Module)

Passed From:Assign Job (Module)

Passed To:Assign To Individual (Module)

Passed From:Assign Job (Module)

Passed To:Update Problem record (Library Module)

HDSS

Module

Location:

HDSS

Calls: Verify Request (Module)

Returned Couples:

Valid Request (Data Couple)

Calls: Assign Job (Module)

Passed Couples:

Request Detail (Data Couple)

Returned Couples:

Job Number (Data Couple)

Calls:Check New Job (Library Module)

Passed Couples:

User ID (Data Couple)

Returned Couples:

Request Detail (Data Couple)

Calls: Solve Problem (Module)

Passed Couples:

Job Number (Data Couple)

Returned Couples:

Solution (Data Couple)

Calls: Close Job (Module)

Passed Couples:

Job Number (Data Couple)

Returned Couples:

Status (Data Couple)

Calls:Print Job (Module)

Returned Couples:

Problem Information (Data Couple)

Job Number

Data Couple

Location:

HDSS

Returned From: Assign Job (Module)

Returned To:HDSS (Module)

Passed From:HDSS (Module)

Passed To: Solve Problem (Module)

Passed From:HDSS (Module)

Passed To:Close Job (Module)

Verify Request

Returned From:Add New Problem Record (Module)

Returned To:Verify Request (Module)

Returned From:Write Problem Record (Module)

Returned To:Add New Problem Record (Module)

Solve Problem

Passed From:Solve Problem (Module)

Passed To:Update problem status (Module)

Print Job

Module

Location:

HDSS

Called by:HDSS (Module)

Returned Couples:

Problem Information (Data Couple)

Calls: Get Problem Detail (Library Module)

Returned Couples:

Problem Record (Data Couple)

Calls:Print Outstanding report (Module)

Passed Couples:

Problem Record (Data Couple)

Calls:Print Overdue Report (Module)

Passed Couples:

Problem Record (Data Couple)

Print Outstanding report

Module

Location:

HDSS

Called by:Print Job (Module)

Passed Couples:

Problem Record (Data Couple)

Print Overdue Report

Module

Location:

HDSS

Called by:Print Job (Module)

Passed Couples:

Problem Record (Data Couple)

Problem Detail

Data Couple

Location:

Assign Job

Returned From:Get Problem Detail (Library Module)

Returned To:Assign Job (Module)

Solve Problem

Returned From:S1 (Off-page Connector)

Returned To:Analyze Problem (Module)

Problem Information

Data Couple

Location:

HDSS

Returned From:Print Job (Module)

Returned To:HDSS (Module)

Problem Number

Data Couple

Location:

Solve Problem

Passed From:Update problem status (Module)

Passed To:Get current Status (Library Module)

Close Job

Passed From:Close Job (Module)

Passed To:Get Problem Detail (Library Module)

Passed From:Close Job (Module)

Passed To:Update Record (Module)

Passed From:Update Record (Module)

Passed To:Get Current Status (Library Module)

Problem Record

Data Couple

Location:

Verify Request

Passed From:Add New Problem Record (Module)

Passed To:Write Problem Record (Module)

Close Job

Returned From:S1 (Off-page Connector)

Returned To:Close Job (Module)

HDSS

Returned From:S1 (Off-page Connector)

Returned To:Print Job (Module)

Passed From:Print Job (Module)

Passed To:Print Outstanding report (Module)

Passed From:Print Job (Module)

Passed To:Print Overdue Report (Module)

Problem Type

Data Couple

Location:

Verify Request

Returned From:Define Problem Type (Module)

Returned To:Add New Problem Record (Module)

Request Detail

Data Couple

Location:

HDSS

Passed From:HDSS (Module)

Passed To:Assign Job (Module)

Returned From:Check New Job (Library Module)

Returned To:HDSS (Module)

Verify Request

Passed From:Verify Request (Module)

Passed To:Add New Problem Record (Module)

Returned From:Get Request (Module)

Returned To:Get Valid Request (Module)

Passed From:Get Valid Request (Module)

Passed To:Check Request Detail (Module)

Assign Job

Passed From:Assign Job (Module)

Passed To:Assign To Group (Module)

Severity

Data Couple

Location:

Verify Request

Returned From:Define Severity (Module)

Returned To:Add New Problem Record (Module)

Solution

Data Couple

Location:

HDSS

Returned From:P3 (Off-page Connector)

Returned To:HDSS (Module)

Solution Detail

Data Couple

Location:

Solve Problem

Returned From:Analyze Problem (Module)

Returned To:Solve Problem (Module)

Passed From:Solve Problem (Module)

Passed To:Test the solution (Module)

Solve Problem

Module

Location:

Solve Problem

Calls:Analyze Problem (Module)

Returned Couples:

Solution Detail (Data Couple)

Called by: Solve Problem (Module)

HDSS (Module)

Calls:Test the solution (Module)

Passed Couples:

Solution Detail (Data Couple)

Calls:Update problem status (Module)

Passed Couples:

Job Number (Data Couple)

Returned Couples:

Status (Data Couple)

Status

Data Couple

Location:

hdss

Returned From:P4 (Off-page Connector)

Returned To:HDSS (Module)

Solve Problem

Returned From:Update problem status (Module)

Returned To:Solve Problem (Module)

Returned From:Get current Status (Library Module)

Returned To:Update problem status (Module)

Passed From:Update problem status (Module)

Passed To:Update Status (Library Module)

Close Job

Returned From:Get current status (Library Module)

Returned To:Update Record (Module)

Passed From:Update Record (Module)

Passed To:Solve Problem (Module)

Test the solution

Module

Location:

Solve Problem

Called by:Solve Problem (Module)

Passed Couples:

Solution Detail (Data Couple)

Update Problem record

Library Module

Location:

Assign Job

Called by:Assign Job (Module)

Passed Couples:

User ID (Data Couple)

Group ID (Data Couple)

Update problem status

Module

Location:

Solve Problem

Called by:Solve Problem (Module)

Passed Couples:

Job Number (Data Couple)

Returned Couples:

Status (Data Couple)

Calls:Get current Status (Library Module)

Passed Couples:

Problem Number (Data Couple)

Returned Couples:

Status (Data Couple)

Calls:Update Status (Library Module)

Passed Couples:

Status (Data Couple)

Update Record

Module

St. Gabriel's Library

Location:

Close Job

Called by:Close Job (Module)

Passed Couples:

Problem Number (Data Couple)

Calls: Get current Status (Library Module)

Passed Couples:

Problem Number (Data Couple)

Returned Couples:

Status (Data Couple)

Calls:Write Description (Module)

Passed Couples:

Description (Data Couple)

Calls: Update Status (Library Module)

Passed Couples:

Status (Data Couple)

Update Status

Library Module

Location:

Solve Problem

Called by:Update problem status (Module:)

Passed Couples:

Status (Data Couple)

Called by:Update Record (Module)

Update User Information

Module

Location:

Verify Request

Called by: Verify Request (Module)

Passed Couples:

User Information (Data Couple)

User Confirmation

Data Couple

Location:

Close Job

Returned From: Get User Confirmation (Module)

Returned To: Close Job (Module)

User ID

Data Couple

Location:

HDSS

Passed From: HDSS (Module)

Passed To: Check New Job (Library Module)

Assign Job

Returned From: Get User ID (Library Module)

Returned To: Assign To Individual (Module)

Returned From: Assign To Individual (Module)

Returned To: Assign Job (Module)

Passed From:Assign Job (Module)

Passed To:Update Problem record (Library Module)

User Information

Data Couple

Location:

Verify Request

Passed From:Verify Request (Module)

Passed To:Update User Information (Module)

Solve Problem

Returned From:Get User Detail (Library Module)

Returned To:Analyze Problem (Module)

Valid Request

Data Couple

Location:

HDSS

Returned From:P1 (Off-page Connector)

Returned To:HDSS (Module)

Verify Request

Returned From:Get Valid Request (Module)

Returned To:Verify Request (Module)

Returned From:Check Request Detail (Module)

Returned To:Get Valid Request (Module)

Verify Request

Module

Location:

Verify Request

Called by: HDSS (Module)

Calls: Get Valid Request (Module)

Returned Couples:

Valid Request (Data Couple)

Calls: Add New Problem Record (Module)

Passed Couples:

Request Detail (Data Couple)

Returned Couples:

Job Number (Data Couple)

Write Description

Module

Location:

Close Job

Called by: Update Record (Module)

Passed Couples:

Description (Data Couple)

Write Problem Record

Module

Location:

Verify Request

Called by: Add New Problem Record (Module)

Passed Couples:

St. Gabriel's Library

Problem Record (Data Couple)

Returned Couples:

Job Number (Data Couple)





APPENDIX F

USER INTERFACE DESIGN AND OUTPUT

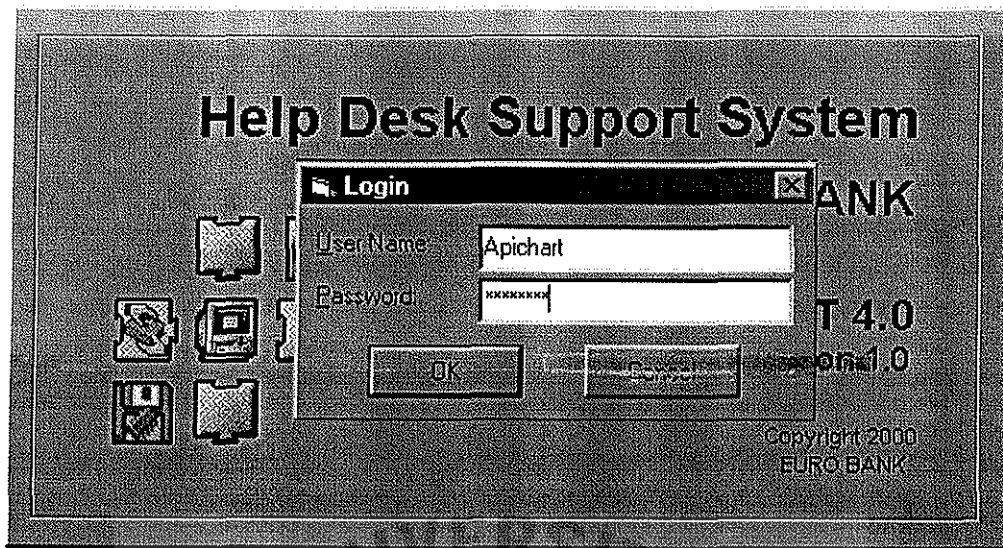


Figure F.1. Login Screen.

Login Screen

Screen Definition

Login Help Desk Support System.

Verify User ID and Password.

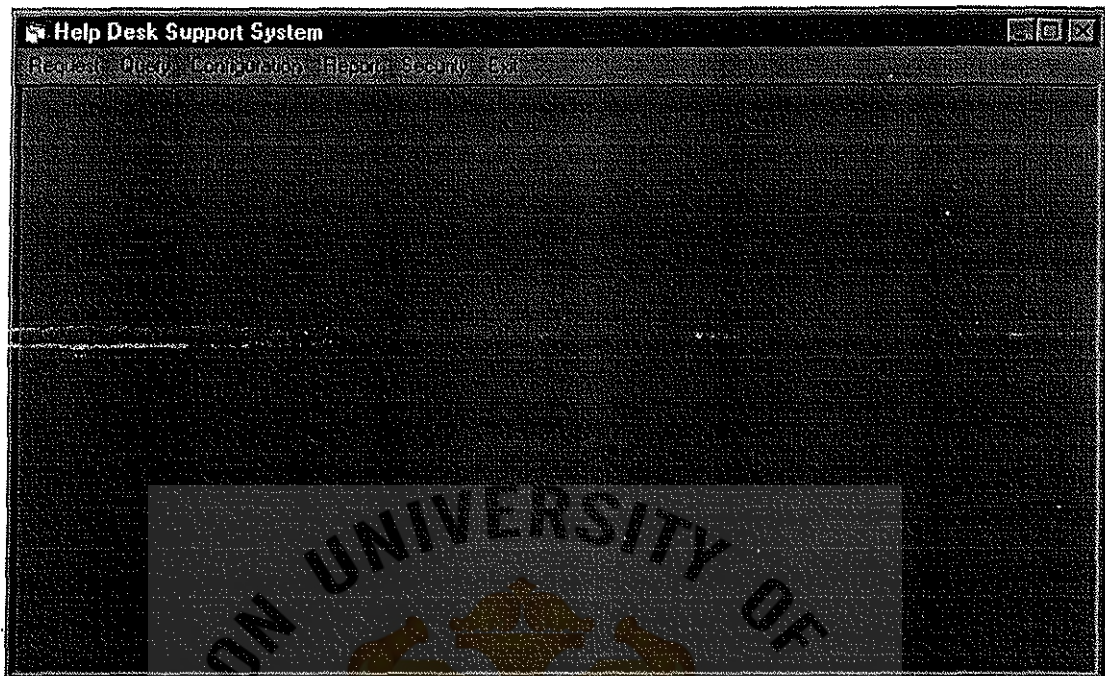


Figure F.2. Main Menu.

Main Menu Screen

Screen Definition

Main menu of Help Desk Support System. Main menu has the following structure.

Request	Query	Configuration	Report	Security	Exit
New Request		User Information	Outstanding	Group	
Update Request		Department	Overdue	User	
		Set Service Level		Access Rights	

Figure F.3. Menu Structure.

Help Desk Support System

Request Query Configuration Report Security Exit

New Request

Job No: 152 Input Date: 03/04/2000 Status: assigned

Synopsis: Microsoft Outlook Can not open

Problem Detail: After install Windows NT service 6, user can not user Microsoft Outlook.

Employee ID: 30045

User Name: Direk W. Phone No: 1425

Department: Trade Building:

Floor: 15

Problem Type: Other Severity: 2

Assign To Group: Developer Assign To: Charoen

Solution:

Buttons: Assign Resolve Reject Revert Conclude

Comment:

Buttons: Submit Exit

Figure F.4. New Request Screen.

New Request Screen

Screen Definition

Add new problem record.

The 'Query' screen contains the following fields and controls:

- Job No:
- Status:
- Employee ID:
- User Name:
- Date From:
- To:
- Problem Type:
- Severity:
- Assign to Group:
- Assign To:

Job No.	Title
152	Microsoft Outlook Can not open
*	

Buttons: Find, Exit

Figure F.5. Query Screen.

Query Screen

Screen Definition

Query the information related to problem record. Program can be searched by Job no., Status, Employee ID., User Name, Date, Problem Type, Severity, Group and User. Search result will display the problem number and synopsis into the grid. When the user double clicks at the specific line, program will open Update Request Screen for more information.

For example, if the user want to find the problem list that have “assigned” status and Assign to “Developer” group, the user has to do the following step:

- (a) Select “Assigned” status from Status combo box.
- (b) Select “Developer” Group from Assign to group combo box.
- (c) Click Find to search for the selected criteria.
- (d) Search result will display in the grid.



Update Request

Job No.: 160 Input Date: 03/04/2000 Status: resolved

Synopsis: SPECTRA program show ODBC Call failed

Problem Detail: When login into SPECTRA, it will show ODBC Call failed.

Employee ID: 39124

User Name: Witcha U. Phone No.: 6851

Department: Financial Building:

Floor: 19

Problem Type: Application Severity: 2

Assign to Group: Developer Assign To: Apichart

Solution: Some DLL file are out of date. Uninstall and reinstall applicatio.

Assign **Resolve** Reject Rework Conclude

Comment: DLL was replaced by other application.

Submit Exit

Figure F.6. Update Request.

Update Request Screen

Screen Definition

Update status, comment, and solution detail for the problem. It is not allow to modify other information.

User Information

Employee ID: 38045

User Name: Direk W.

Department: Trade Building:

Floor: 15 Phone: 1425

Other Info: Since 2538

Buttons: Add, Update, Delete, Navigation (|<, <, >, >|), Exit

Figure F.7. User Information Maintenance Screen.

User Information

Screen Definition

To add, update and delete user profile in the HDSS system

Department

Department: Trade

Description:

Building:

Floor: 15

Add Update Delete

<| < > >| Exit

Figure F.8. Department Maintenance Screen.

Department Maintenance

Screen Definition

To maintenance Department information for using in Use Information Screen and New/Update Request Screen.

	Maximum	
	Days	Hours
Severity 1	0	4
Severity 2	1	0
Severity 3	3	0
Severity 4	7	0
Severity 5	14	0

Buttons: Update, Exit

Figure F.9. Set Service Level Screen.

Set Service Level Screen

Screen Definition

To setup service time for each severity. It will be used for checking the overdue job.

From this screen Problem Severity 1 will give response and resolve within 4 hours.

If the problem cannot solved with the specific days/hours, it will show in the overdue report.

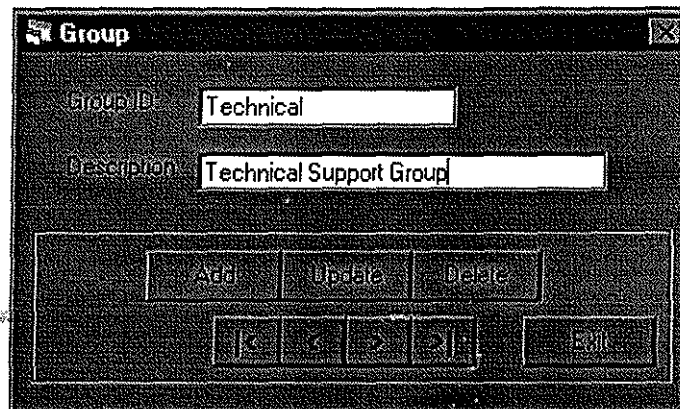
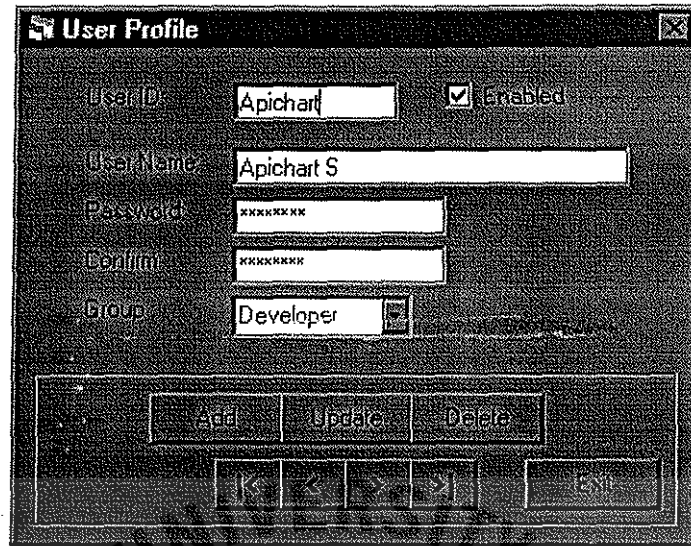


Figure F.10. User Group Maintenance Screen.

User Group Maintenance Screen

Screen Definition

Maintenance of User Group. We can set access rights to the menu for each group by using Access Rights Screen.



The image shows a 'User Profile' maintenance window. It contains several input fields: 'User ID' with the value 'Apichart', 'User Name' with 'Apichart S', 'Password' and 'Confirm' both masked with 'xxxxxxx', and 'Group' with 'Developer'. There is a checked 'Enabled' checkbox. At the bottom, there are buttons for 'Add', 'Update', 'Delete', and a set of navigation arrows (K, <, >, >I) along with an 'Exit' button.

Figure F.11. User Maintenance Screen.

User Maintenance Screen

Screen Definition

Maintenance of user profile, set user group, enable user id and reset password by Administrator.

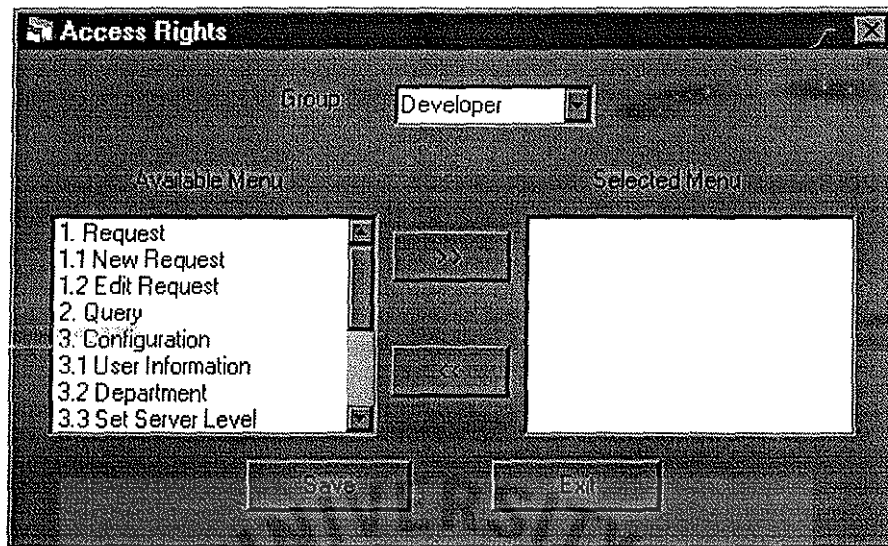


Figure F.12. Access Rights Screen.

Set Access Rights Screen

Screen Definition

To grant access right to menu by User Group. To set access rights user can do the following step:

- (a) Select user group.
- (b) Select menu name from "Available Menu" list.
- (c) Click >> to add the menu to the "Select Menu" list.
- (d) Click Save to update into the database.

 Outstanding Report					
Problem No.	Synopsis	User Name	Ext	Status	Assign to Group Assign to
542	Error message ODBS call fail	Nutchaphol S.	1459	resolved	Development Apichart
551	Windows show blue screen	Witcha U.	2540	assigned	Technical Support MS

Figure F.13. Outstanding Report.


 Over Due Report					
Problem No.	Synopsis	User Name	Ext.	Log date	Late (Days) Assign To
551	Windows show blue screen	Witcha U.	2540	28/2/2000	4 MS

Figure F.14. Overdue Report.

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