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**Kumaraguru College of Technology**

Department of Computer Science and Engineering

Coimbatore- 641006.

April 2003



# **ADVICE AND STATEMENT MANAGEMENT SYSTEM**

Project work done at

**POLARIS SOFTWARE LAB LIMITED**

**PROJECT REPORT**

Submitted in partial fulfillment of the  
Requirements for the award of the degree of  
**Master of Computer Applications**

Bharathiar University, Coimbatore

Submitted by

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**COIMBATORE – 641006**

**CERTIFICATE**

This is certify that the project entitled

**ADVICE AND STATEMENT MANAGEMENT SYSTEM**

Has been submitted by

**Mr. R. Ram Prakash**

**0038M1058**

In fulfillment of the award of the degree of

Master of Computer Application of Bharathiar University, Coimbatore.

During the academic year 2002-2003.

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9/4/03

Guide

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Head of the Department

Certified that the candidate was examined by us in the project work Viva voce

Examination held on ...0038M1058... and the university Register Number was

.....0038M1058.....

R. K. Kanik  
16/4/03

Internal Examiner

Chinnappa  
16/4/03

External Examiner

25<sup>th</sup> March 2003

To

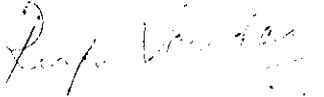
Head of the Department,  
Computer Science and Engineering  
Kumaraguru College of Technology  
Coimbatore

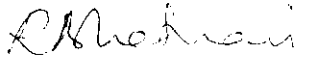
Sir.

This is to inform you that **Mr R Ram Prakash (Final Year MCA)** has successfully completed a project entitled **Advice and Statement Management System** in Java, **Oracle and Pro\*C** under our guidance from **December 10<sup>th</sup> 2002 To March 28th 2003**. As per company's rules and regulations we will not be in a position to part with the source code.

Sincerely

For Polaris Software Lab Ltd.

  
**Rupa Vendan**  
Manager – Human Resources

  
**R Bhuvaneshwari**  
Project Guide

## DECLARATION

I here by declare that the project entitled **Advice and Statement Management System**, submitted to Bharathiar University as the project work of Master of Computer Application Degree, is a record of original work done by me under the supervision and guidance of **Mrs. R.Bhuvaneshwari M.C.A., Project Manager (ASMS)**, of **POLARIS SOFTWARE LAB LIMITED**, Chennai and **Mrs. R.K. Kavitha M.C.A., Lecturer** computer Science and Engineering, Kumaraguru College of Technology and this project work as not found the basis for the award of any Degree/Diploma/Associate-ship/Fellow-ship or similar title to any candidate of any University.

Place: COIMBATORE

Date: 10/04/2003



Signature of the Student

## ACKNOWLEDGEMENT

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I wish to express my sincere gratitude to **Dr. K.K. Padmanabham, B.S.c(Engg). Ph.D.**, esteemed Principal, Kumaraguru college of Technology for providing me the necessary facilities in the college.

I wish to express my heartfelt thanks and a deep sense of gratitude to **Prof. S.Thangaswamy, B.E(Hons), Ph.D.**, The Head of Department Computer Science and Engineering, who motivated me by this valuable ideas and suggestions.

I express my sincere thanks to **Mr. A. Muthukumar M.Sc, MCA, M.Phil**, Senior Lecturer of computer science and engineering department, without whose motivation and guidance I would not have been able to embark on a project of this magnitude.

**Mrs. R.K. Kavitha, M.C.A.**, Lecturer of computer Science and Engineering has offered me invaluable help and support throughout the semester. I am thankful to her for coordinating my activities.

I am grateful to **Mrs. R.Bhuvaneshwari M.C.A., Project Manager (ASMS)** of **POLARIS SOFTWARE LAB LIMITED**, for allowing me to do project under her division.

I am also grateful to **Mr. V.K. Subbiah, Asst. Vice President** of **POLARIS SOFTWARE LAB LIMITED** who has helped me in giving route to approach the software companies and helping me in getting the project.

I like to express my indebtedness to all my team members for their invaluable guidance through the entire length of our project. My heartfelt thanks to all the employee of **POLARIS SOFTWARE LAB LIMITED** for their suggestion and for making my stay very comfortable.

I thank my Beloved Parents, Friends, department teaching and non-teaching staffs who have been a pillar of support from the start, until the completion of the project.

## SYNOPSIS

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This project “**ADVICE AND STATEMENT MANAGEMENT SYSTEM**” was done at **POLARIS SOFTWARE LAB LIMITED**, Chennai.

This project “**ADVICE AND STATEMENT MANAGEMENT SYSTEM**” is used to generate Advices & Statements for the customers of Public Banking Group (PBG) ,Japan.

ASMS will integrate all transaction and product information from product such as COSMOS, ORBIT, BPS Nikko & MTM and use the data for sending timely advices and consolidated Monthly Statements to PBG clients.

Generation & printing of daily advice for transaction, which are not customer initiated and are to be explicitly marked for advices. Generating & Printing of consolidated monthly statements for all products held by PBG customers. Providing a viewing facility for service officers and RM's to access past statement through a standard browser with facility to re-print.

Statement generation program that generates a print file for Loans, Deposits, Savings Accounts ,Checking Accounts and statements are generated in monthly basis. This print file is sent to the statements Server.

Statement print file generation program has the following features:

1. Multi-language
2. Enclosures (Mailers/Letters)
3. Statement Frequency
4. Statement Format

Advices are sent to customers from three systems – TBS, Structured Deposits System and Mark-To-Markets System (MTM). Advices are generated daily basis.

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## 1 Introduction

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This project “Advice and Statement Management System” is to develop a new system for Advice & Statement generation for Public Banking Group (PBG), Japan customers.

ASMS will build integration of all transaction and product information from Systematic, COSMOS, ORBIT, BPS Nikko & MTM and use the data for sending timely Advices and Consolidated Monthly Statements to PBG clients.

### 1.1 APPLICATION OVERVIEW

This system will provide the following functionality

1. Generation & Printing of Daily Advices for transactions, which are not customer initiated and which are explicitly marked for advices.
2. Generation & Printing of Consolidated Monthly Statement for all products held by a PBG Customer.
3. Providing a Viewing facility for Service Officers and RMs to access past statements through a standard browser with facility to re-print.

### 1.2 System objectives

Statements and advices form a crucial part of the Private Bank's communication with the client. Thus the project is meant to serve as a means of communicating financial and non-financial information to the customer.

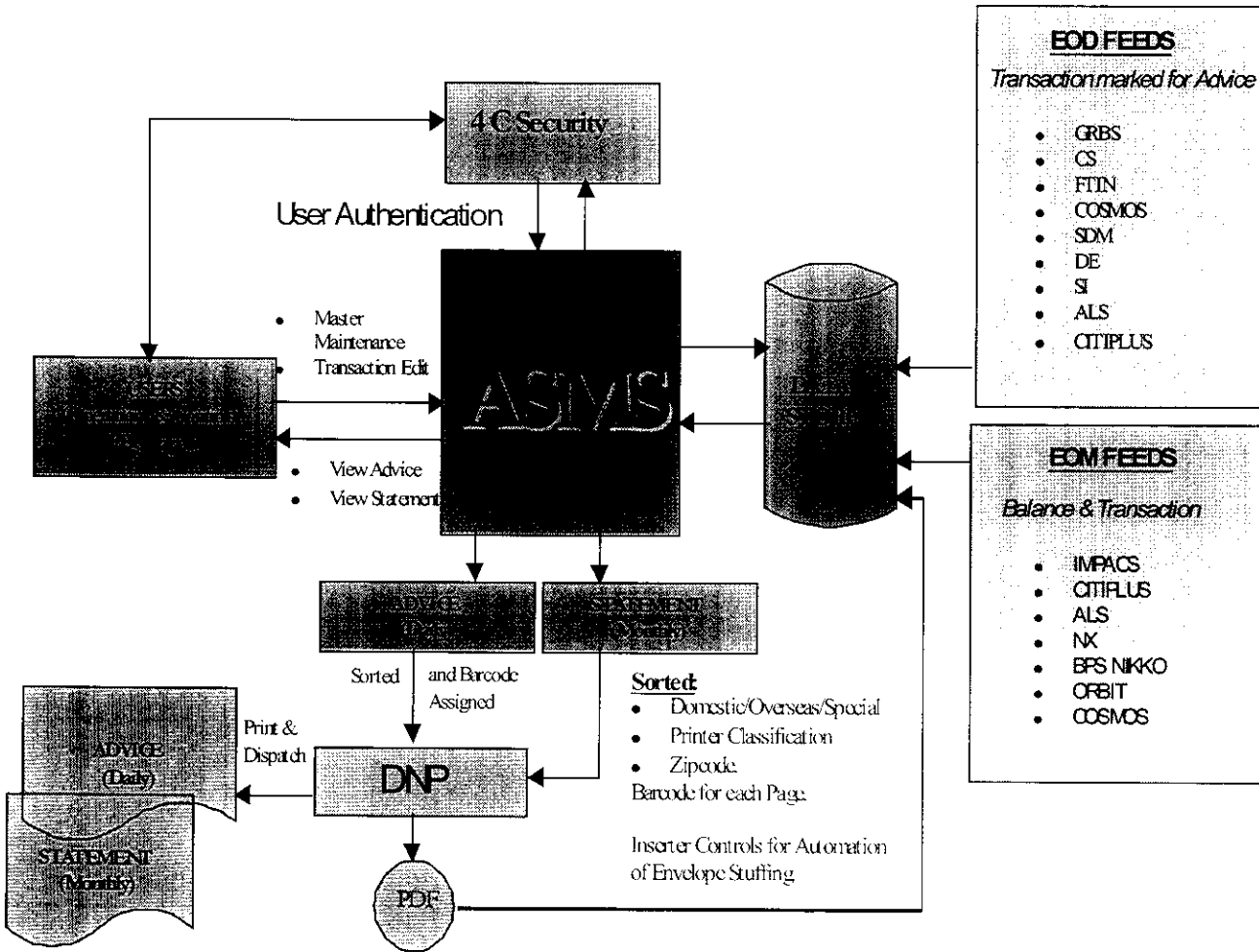
Apart from client communication, the project serves the following internal purposes:

1. It provides the Operations Department with a mechanism to manage effectively, the statement/advice process.
2. It is meant to facilitate the Control Department's monitoring of the statement/advice generation process.
3. It serves as a source for accessing historical information of advices/statements as sent to the customer.

### 1.3 System Highlights

1. Generation of Integrated Summary Statement along with account-wise detailed transaction Statement.
2. Bilingual Advice & Statement generation in English & Japanese based on customer preference.
3. Multiple copies of a customer Advice or Statement to different addresses as well as Multiple copies to the same address can be generated.
4. Bar coding for quality control at time of packing and Insert controls for automated enveloping.
5. Viewing of past advices & statements through Standard Browser.
6. Print files to suit Batch printing on high speed Printers at DNP.
7. Reprinting of Advice & Statements from image files.
8. Capability for regeneration of Advices.
9. Regeneration capability for Monthly statement when edits are done after Statement generation.
10. Maintenance facility for all Code Tables and Masters will be provided which will allow entry of Japanese translations and descriptions.
11. Transaction edits to suppress error transactions & their reversals.
12. Facility to insert transaction will be provided for accommodating errors traced after EOM process has been completed on Product processors. Such insertion will have full audit trail and modified balance maintenance in ASMS to help perform integrity check with PP's BOM balance during the next month Statement generation process.
13. Advice-Hold facility with ability to define hold period.
14. Report generation for exceptions & controls will be provided

### 1.4 Context Diagram



## 2 ORGANIZATION DETAILS

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### 2.1 PROFILE

Polaris is a techno business solutions provider for Global Banks, Financial Institutions, Insurance companies, Retail chains and Manufacturing organizations. Headquartered in Chennai, India, Polaris manages outsourcing projects for its 500 clients through five development centers.

Polaris has proven capabilities in managing successful offshore development centers through its unique methodology, ENTITY ( Extended Technology Facility ). At the core, ENTITY is a long-term relationship with, and a commitment to, the customer. The major advantage of the ENTITY model is in delivering strategic value through operational efficiency cost savings and training – resulting in a high throughput per dollar spent.

Polaris services its customers through a network of international offices. In North America, Polaris has offices at New Jersey, Los Angeles , Boston, Dallas and Atlanta. In Europe, Polaris has wholly owned subsidiaries at UK, Germany and Switzerland. In Australia, Polaris operates through its subsidiary and business partners. Polaris has long-term partnerships in the Middle East for its client operations.

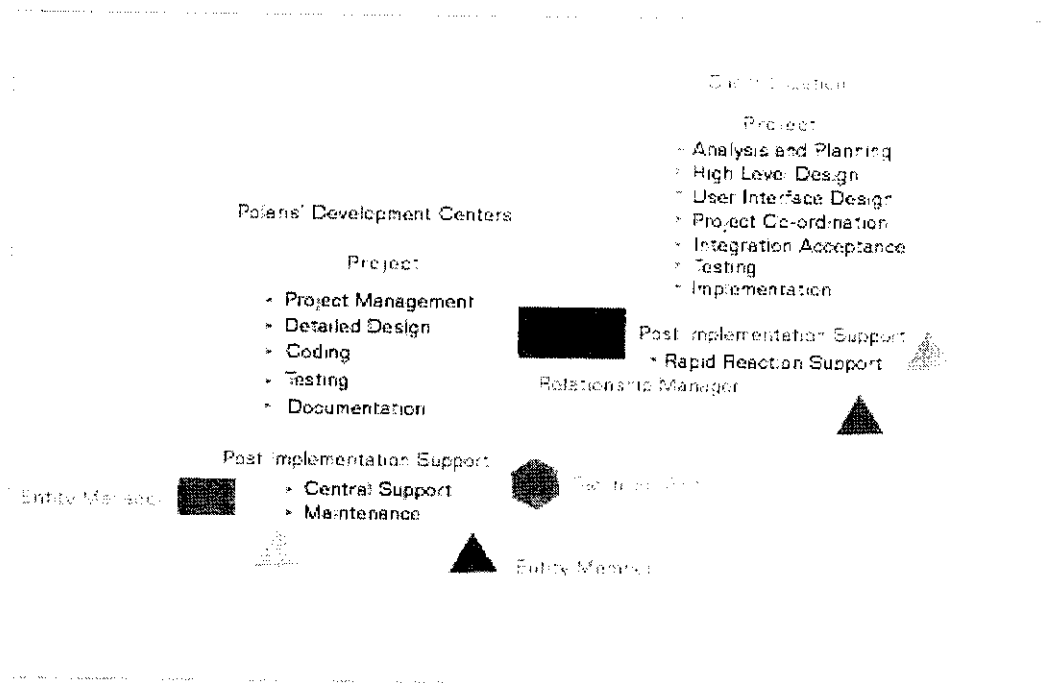
Incorporated in 1993, Polaris is a global software house providing quality and customized IT solutions to multinational clients across 20 countries. Polaris is ISO 9001 certified and aligned to SEI CMM Level 5. Today Polaris has over 2563 associates across 12 offices worldwide. In the year 2001 Polaris becomes the **world's First CMMi Level 5** Company. An experience base of 6000 person years in technology as well as domain has enabled them to consistently deliver quality and timely solutions to Banks, Financial Institutions, Insurance companies, Retail chains and Manufacturing organizations.

## 2.2 Mythology

Polaris has proven capabilities in successfully managing offshore development centers including outsourcing projects through its unique engagement model - "ENTITY" (extended Technology facility) .The core of ENTITY is a long-term relationship with the client. Polaris has till date setup over 20 offshore development centers for various prestigious clients across the globe. The Offshore Development Centre ('ODC') is structured in terms of ease of operation and ownership. It meets the objectives of the Clients in terms of virtual ownership of the ODC, without the attendant problems of management.

## 2.3 ENTITY

ENTITY enables Polaris to be the 'nth floor' of the client and hence the extended development organization. Polaris as the Technology Partner of its clients, facilitates the client's businesses and enables the client to focus on their core activities.



The major advantage of the ENTITY model is by way of operational efficiency, cost savings, training and strategic advantage.

## **2.4 Infrastructure**

Polaris has a strong global reach, with Sales and Marketing and Development centers spanning across 22 locations in over 13 countries

Headquartered in India, we have operations in the United States, United Kingdom, Germany, Switzerland, Ireland, Singapore, Australia, UAE, Japan and Hong Kong. Apart from our branches and subsidiaries in these locations. In addition, Polaris is represented in over 16 countries through more than 22 corporate business partners.

All offices are equipped with the latest hardware, software and networking infrastructure. The development centers are linked using state-of-the-art high-speed communication links, backed up by redundant networks. Video-conferencing facilities are available in all centers. The operating and security standards incorporate the most advanced information security framework.

## **2.5 Clients**

At Polaris we value long-term relationships, we invest heavily in creating and sustaining relationships and in ensuring that we deliver the same outstanding results time after time.

ABN AMRO Bank, NEC, American International Group, Australia's First Bank, On Bourse, Citigroup, Reuters, Commerzbank, Saudi American Bank

## **2.6 Alliances**

Polaris provides global and contemporary financial solutions by partnering with other industry leading technology partners like Compaq, IBM, BEA, Sun Microsystems, Sybase, BaaN, Sherwood International, Siebel eBusiness, Deloitte Consulting, iPlanet, Oracle Corporation and Top Tier software.

### 3 PRODUCT DEFINITION

#### 3.1 Application Environment

##### 3.1.1 Hardware Requirements

Component	Description
SUN E450 Server (Sun Solaris 2.6)	Application and RDBMS Server
Desktop Development Workstations	Model and Make to be determined by Polaris Software

##### 3.1.2 Software Requirements

Component	Description
Oracle/RDBMS 7.3.4	RDBMS
OCI/JDBC 7.0	JDBC
Web Logic/Web Express 4.02	Web Server/Servlet Engine
Sun/JDK 1.1.7_08A	Java Coding Environment
Sun/JSDK 2.0	Java Servlet classes
Pro C	Pro C

##### 3.1.3 External Interfaces

The Product processors with which ASMS has to interface to obtain feeds are:

Data Files	PP Name & External System
Customer Demographics Information	GRBS, Systematics
Customer Address Information	GRBS, Systematics
Customer Preferences for Statement & Advices	CS, Systematics
RM information	GRBS, Systematics
Cash & Cash equivalents (CA, SA )	IMPACS, Systematics
Time Deposit , Notice Deposit , X-Border Deposit , FCY SA , other deposits, Bills Purchase	CITIPLUS, Systematics
Loans, ACA	ALS, Systematics
GW accounts	BPS Nikko
Mutual Funds	ORBIT
Tokyo Offshore accounts	COSMOS
TTB Rates	NX, Systematics
Transactions for Advices	DE, Systematics
Transactions for Advices	SI, Systematics
Structured Deposit KO/KI for Advices	SDMS, Systematics
MTM Transactions	MTM

## **3.2 Statement / Advice process**

### **3.2.1 Statements Process**

Statement generation program that generates a print file for Loans, Deposits, Savings Accounts and Checking Accounts. This print file is sent to a Statements Server. Mutual-fund related transactions are sent to the Statement Server from ORBIT. Global Wrap information is sent to the Statement Server from BPS Nikko. Thus the Statement Server serves as a store of statement-related information from multiple systems.

Information from the Statement Server is uploaded to Dai Nippon Printers. The printer consolidates this information and prepares the Final Statement to be sent to the customer. Other information, such as disclaimers, notifications etc., is also inserted by the printer during the preparation of the Final Statement.

Once the Final Statement is prepared, Domestic statements are enveloped, weighed, stamped, and mailed by Dai Nippon. Statements not delivered are returned to the bank, where Service Officers investigate the problem and take steps to rectify the problem.

The TBS statement print file generation program has the following features:

#### **1. Multi-language:**

Statements can be printed in Japanese or English based on the preference of the customer. Similarly, the address can be printed in Japanese or in English.

#### **2. Enclosures (Mailers/Letters):**

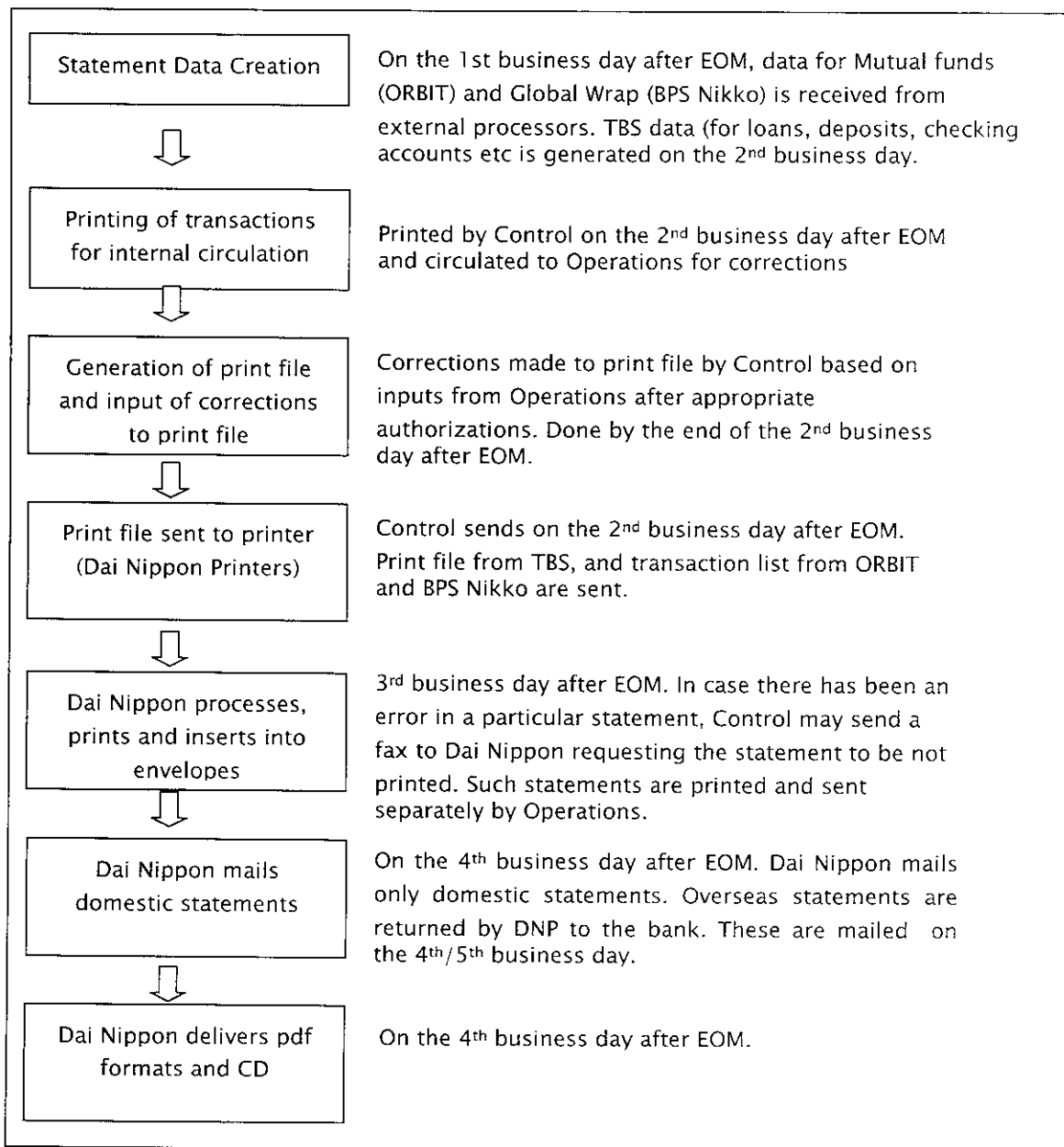
The current system allows users to specify which types of enclosures should be sent with each statement.

#### **3. Statement Frequency:**

Statements are usually for a period of one month. For some customers, TBS has the facility to be able to send statements once in six months. These are fixed dates, usually March 31 and September 30.



To ensure that the statements sent to the customer do not reflect such errors, the bank follows a manual process of correction during the monthly statement run. This current process is described in the diagram overleaf.



### 3.2.2 Advices Process

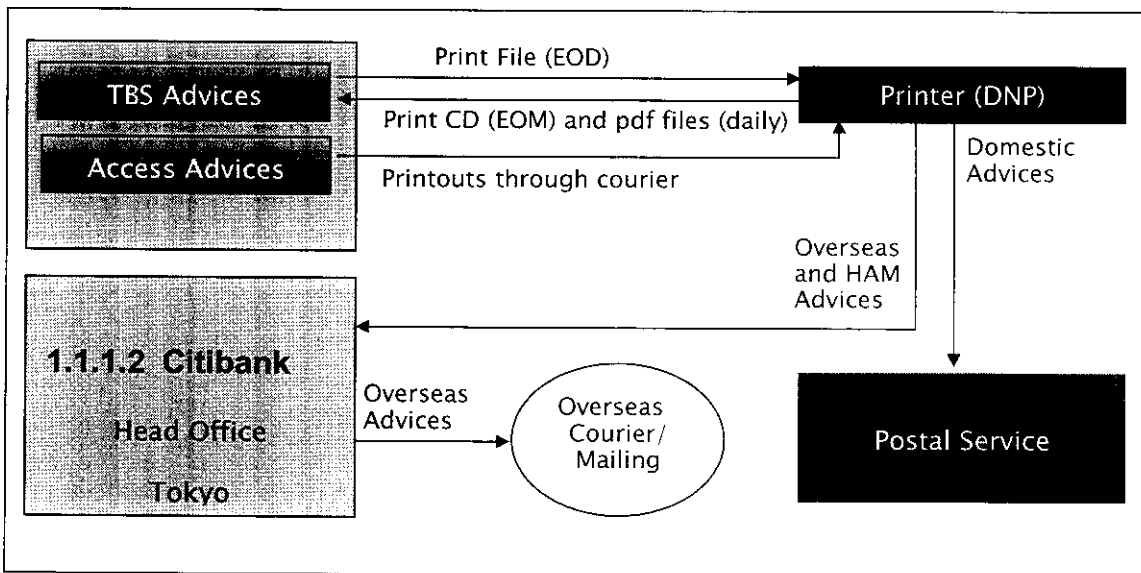
Advices are sent to customers from three systems – TBS, Structured Deposits System and Mark-To-Markets System (MTM). TBS is the primary advice system: it generates advices for Savings Accounts, Checking Accounts, Multi-Money Accounts, Deposits (including Time Deposits, Notice Deposits, Cross-Border Deposits and some Structured Deposits) and Loans.

Structured Deposits System generates advices for all Structured Deposit products.

MTM generates advices for stand-alone derivative products.

The following diagram illustrates the process of advice sending:

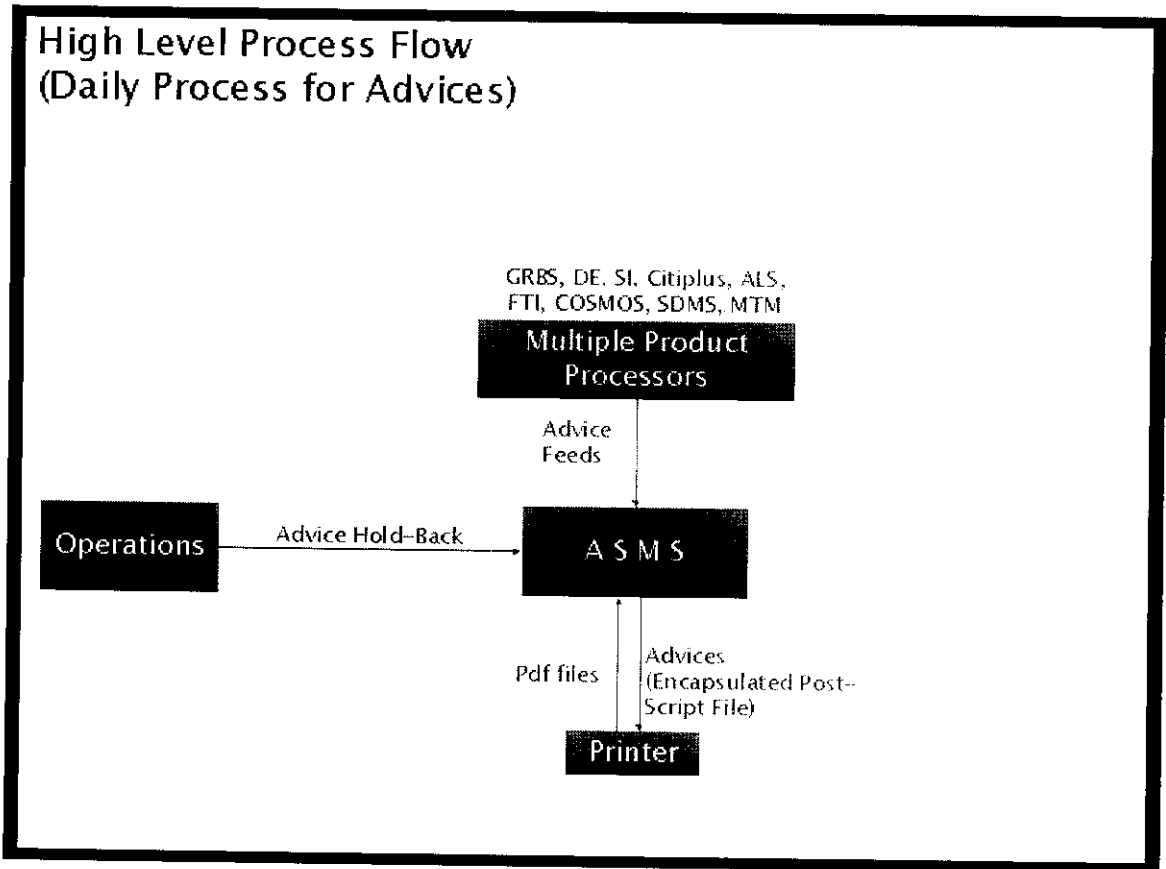
#### Current Advice Cycle



In the advice sending system, the customer receives **multiple advices** for the same transaction. Each advice contains a different portion of the information to be sent to the client.

### 3.3 Daily Process Description

ASMS will consolidate advice feeds per customer from multiple product processors and create the print file for upload to the printer. This is represented in this diagram



#### Steps in Daily process

##### Step 1: Feeds Receipt

On a daily basis, ASMS will receive ADVICE-RELATED feeds

##### Step 2: Advice Hold-Back Entries

Users may enter requests to hold back some advices.

### **Step 3: Advice Generation**

Advices will be generated on a daily basis based on the feeds received. Ensure that per day, only one mail is sent to the customer containing all advices for the day.

### **Step 4: Upload of Advice to Dai Nippon**

Once advices are generated, an Encapsulated Print File will be created for each advice. EPS files will be uploaded from ASMS to a designated server in Dai Nippon. If users wish to hold-back advices after the print file has been uploaded to Dai Nippon, they will follow the current process of sending a fax request.

### **Step 5: Advice Printing and Mailing**

Dai Nippon will print, envelop and mail advices to domestic addresses. No enclosures/mailers can be sent with advices.

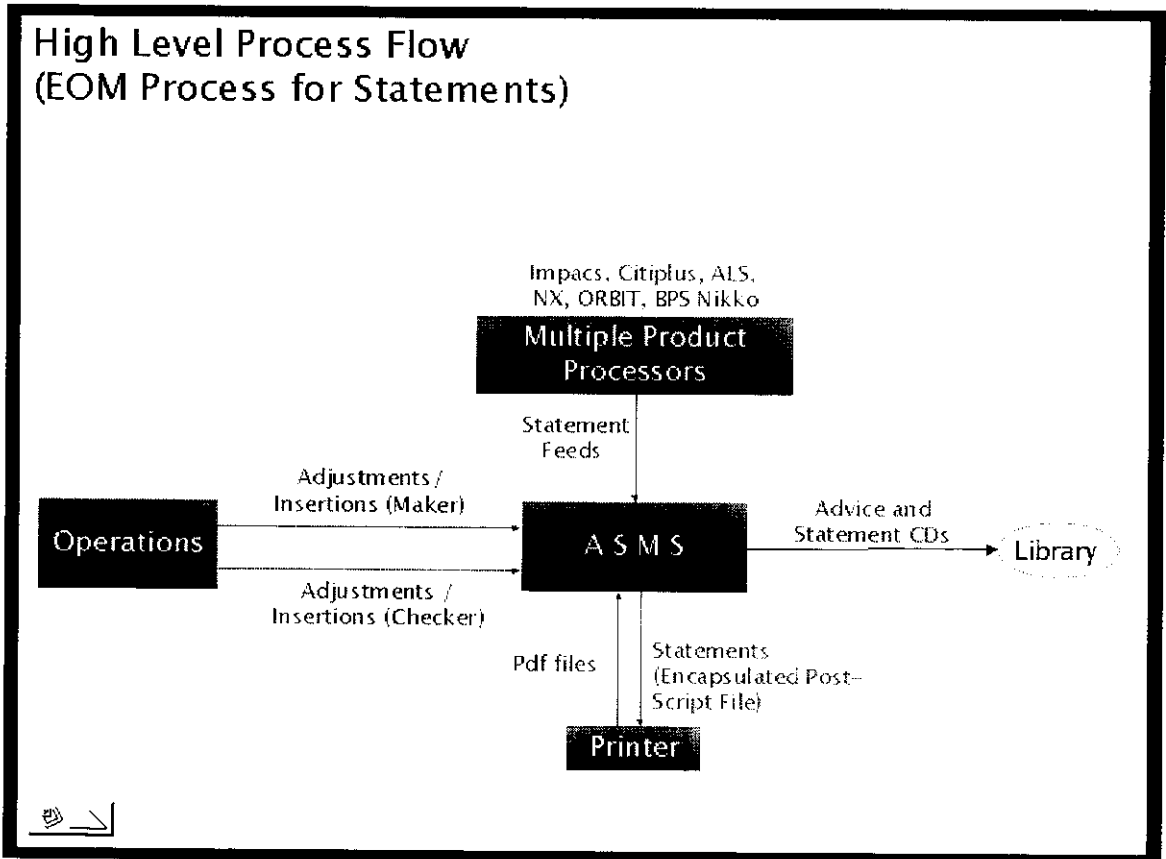
### **Step 6: Mailing Control**

Once printing is complete, Dai Nippon will upload back to the ASMS server, the final image files as sent to the customer. These will be stored in the ASMS server for a period of time.

### 3.4 End-of-Month Process Description

On the last business day of the month, the product processors will complete their EOD run, and send feeds to ASMS for the purpose of sending statements. This is represented in diagram below.

#### Month-End Process



#### Step 1: Feeds Receipt and pre-processing

Feeds will be received in ASMS at EOM:

#### Step 2: Monthly Maintenance

For each statement cycle, the following masters need to be updated by Marketing or Operations:

- Enclosures List
- Any Notes/ Disclaimers/Messages for the month

### **Step 3: Adjustments Entry/Transaction Insertion**

Adjustments to transactions or fresh transactions will be entered.

### **Step 4: Adjustments/New Transaction Authorization**

All adjustments or new transactions entered must be authorized in order for them to be reflected in the statements.

### **Step 5: Statement Generation**

Statements are generated for EOM process.

### **Step 6: Upload to Dai Nippon Printers**

Statement EPS file will be uploaded to DNP along with control reports. If users wish to holdback statements after the EPS file has been uploaded to Dai Nippon, they will follow the current process of sending a fax request.

### **Step 7: Printing, Enveloping, Enclosing and Mailing**

DNP will print statements, stuff them in envelopes and insert enclosures. DNP will mail all domestic statements. Overseas statements and Whereabouts Unknown statements will be returned to Tokyo HO (Tennouzu Office) for mailing.

### **Step 8: Printing, Enveloping, Enclosing and Mailing**

DNP will print statements, stuff them in envelopes and insert enclosures. DNP will mail all domestic statements. Overseas statements will be returned to Tokyo HO (Tennouzu Office) for mailing.

### **Step 9: Mailing Control**

Once printing is complete, Dai Nippon will upload back to the ASMS server, the final image files as sent to the customer. These will be stored in the ASMS server for a period of time.

## **3.5 User Characteristics**

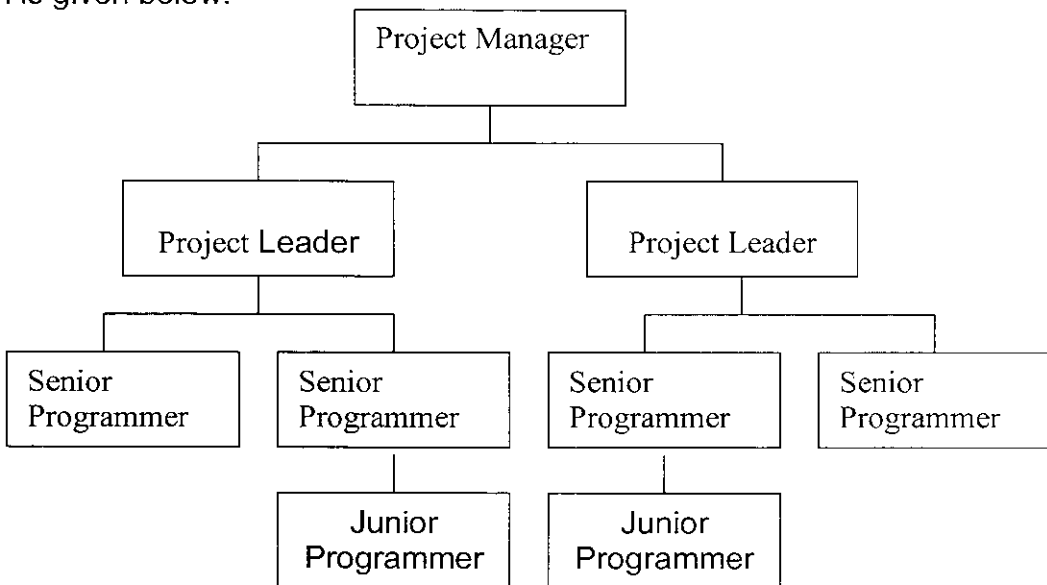
Experience is required for the user about the product. End users for this product are

Operations Department & Control Department

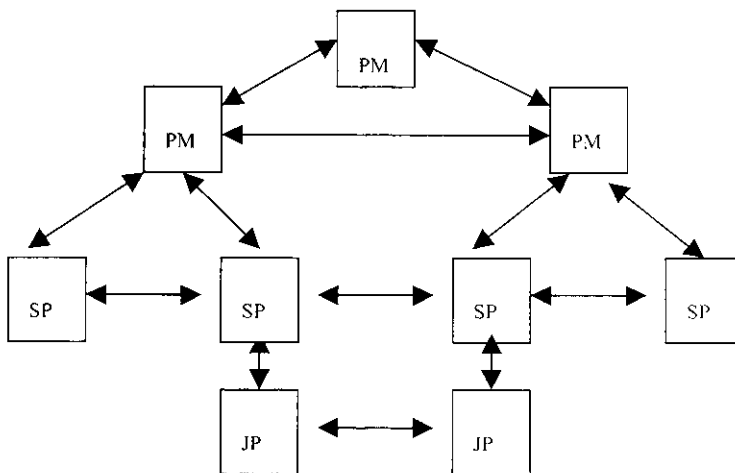
## 4 PROJECT PLAN AND FEASIBILITY STUDY

### 4.1 TEAM STRUCTURE

The team structure that we follow is the hierarchical team structure, which limits the numbers of communication path in a project while permitting effective communication among team members who need to communicate with one another. The management structure and communication path is a hierarchical team is given below.



**Hierarchical Team Structure**



**Communication Paths**

## 4.2 DEVELOPMENT TOOLS

### Java Environment

Java is a programming language developed by **SUN MICRO SYSTEMS, USA**, headed by **James Gosling** and their teammates for programming the internet, because a Java program could run on all of the different types of computers connected to the internet. Java is actually an alternative to C++. It is a very fun language to program in. We can develop very quickly and get satisfying results without a lot of pain. The compiler gives accurate, sensible error reports. The Java 2 SDK software includes tools useful for developing and testing programs written in the Java programming language. These tools are designed to be used from the command line. Except for applet viewer utility, these tools do not provide a graphical user interface.

### WHAT EXACTLY JAVA IS?

Java is a simple, object-oriented, distributed, interpreted, robust, secure, architecture neutral, portable, high performance, multi-threaded and dynamic language. This can be described as a serious but simple programming language, incorporating useful elements from languages such as C, C++, LISP, etc. optimally configured for the WWW environment. The main features of Java are

- ☞ **Simple and powerful**
- ☞ **Safe**
- ☞ **Object – Oriented**
- ☞ **Robust**
- ☞ **Interactive**
- ☞ **Architecture neutral**



**Interpreted and high performance**

**Easy to learn**

Java is likely to make programs better and required less effort than other languages. Java will help you to do the following

- **Get started quickly:** Although Java is a powerful object-oriented language, it is easy to learn, especially for programmers already familiar with C or C++.
- **Write less code:** Comparisons of program metrics (class counts, method counts and so on) suggest that a program written in Java can be four times smaller than the same program in C++.
- **Write better code:** The Java language encourages good coding practices and its garbage collection helps you avoid memory leaks.
- **Develop programs faster:** Your development time may be as much twice as fast versus writing the same program in C++.
- **Platform independent with 100% Java:** You can keep your program portable by following the exact Java code and avoiding usage of libraries written in other languages.
- **Write once, Run anywhere:** Because 100% pure Java programs are compiled into machine-independent byte codes, they run consistently on any Java platform.

All these features make Java one of the most famous languages that make everyone to understand its concept in a more easy way.

## **ADVANTAGES OF JAVA OVER OTHER LANGUAGES**

Java takes memory management out of the hands of the programmer. Memory is allocated when objects are created and remains available as long as created objects continue to be referenced. When Java detects that an object is finished being referenced, the object is freed by automatic garbage collection. Eliminating memory management simultaneously frees the programmer to concentrate on the application and removes the source of bugs.

Java was designed as a purely object oriented language. A Java class is a representation of an entity (an object). The essence of the Java class is the set of data that collectively describes the object. These set of data are accessible through the set of interfaces that controls who gets what type of access to them and what operation can be performed on them. The data together with the description of the set of interfaces to it make up the class.

The Java compiler generates byte-code rather than native machine codes. To actually run a Java program, you can use the Java interpreter to execute the compiled byte codes. So Java is an interpreted language. Java byte codes provide an architecture neutral object file format, the code is designed to transport programs efficiently to multiple platforms. A Java program can be run on any system that implements the Java interpreter and run-time system. Interpreter and run-time system implement a virtual machine called the Java Virtual Machine.

Java is highly reliable software. It is a strong typed language, which allows for extensive compile time checking for potential type mismatch problem. Java requires explicit method declarations, it does not support C-style implicit declarations. These stringent requirements ensure that the compiler can catch method invocation errors, which leads to a more reliable program.

## **ORACLE ENVIRONMENT**

Every business enterprise maintains a large volume of data for its operations. With more and more people accessing this data for their work the need to maintain its integrity and the relevance increases. Normally with the traditional methods of storing data and information in files the chances that the data loses its integrity and validity are very high.

Oracle 8 is highly “Object Relational Database Management System. It offers capabilities of both relational and object oriented database system. In general, objects can be defined as reusable software codes. These are location independent and perform a specific task on any application with little or no change to the code.

Oracle products are based on the “client – server technology”. This concept involves segregating the processing of the application between two systems. One performs all activities related to the database (Server) and the other performs activities that help user to interact with the application (client).

## **TOOLS OF ORACLE**

The tools of oracle are so user friendly that the person with minimum skills in the field of computer can access them with ease. The main tools are

- **SQL\* PLUS**
- **PL / SQL**
- **FORMS**
- **REPORTS**

## **SQL\*PLUS:**

SQL\* Plus is a structured query language supported by oracle. Through SQL\* Plus we can store, retrieve, edit and run SQL commands and PL / SQL blocks. Using SQL \* Plus we can perform calculation, list columns for any table and also format query results in the form of a paper.

## **PL / SQL:**

PL /SQL combines the data manipulating power of SQL with data processing power of procedural languages.

## **FORMS:**

This is a graphical user interface tool for generating and executing form-based applications. A form basically comprises of blocks and fields. Multiple tables can be accessed over a single form, based on the application with the help of transaction commands. We can build, generate and run an Oracle forms application.

## **REPORTS:**

Report is an application development tool for oracle, used for developing, displaying and printing reports. We can create a wide variety of reports, which have various modes.

## **SUN-SOLARIS ENVIRONMENT**

The Solaris 8 operating environment is the established OS leader for availability, scalability, and security in the Internet age. In Solaris 8 software, Sun delivers a trustworthy, universal platform to meet the needs of .com businesses – from small startups to large fortune enterprises. It's no surprise that the Solaris operating environment is the leading Unix environment today. Solaris software was originally designed with the Internet in mind. TCP/IP, the central Internet protocol, has been at the core of Solaris networking for more than 15 years. Through its time-tested design – a small, stable kernel, modular and extensible components, and well-defined interfaces –Solaris software delivers rock-solid stability and predictability for business-critical applications. And the Solaris 8 operating environment provides complete compatibility with prior versions, so you can be confident that your applications will continue to run.

### **SOLARIS IS .COM AVAILABLE:**

Internet businesses operate around the clock and are linked globally to employees, partners, customers, and suppliers. In the .com environment, downtime doesn't just affect the company – it affects the entire supply chain, from the largest to the smallest link. This means that the need for near- zero system downtime is no longer limited to financial institutions and telephone companies. It is an absolute requirement for just about everyone in the .com era and suppliers. In the .com environment, downtime doesn't just affect the company – it affects the entire supply chain, from the largest to the smallest link. This means that the need for near- zero system downtime is no longer limited to financial institutions and telephone companies. It is an absolute requirement for just about everyone in the .com era. Your customers, suppliers, and partners expect your business to be online.

The Solaris operating environment is acknowledged by the industry to be the premier reliable Unix environment. By minimizing planned and unplanned downtime, reducing administration errors, and simplifying troubleshooting, it keeps your mission – critical applications available, and ensures high speed, reliable access to your data. And because the Solaris operating environment is based on a smaller, more stable kernel and has better load balancing across multiple processors than other operating systems, it dramatically decreases your enterprise's exposure to system crashes. With features like Solaris Live Upgrade, Hot Diagnostics, Unix file system logging, and Remote Console, the Solaris 8 operating environment is built to maximize uptime.

As with the previous Solaris versions, the modular construction of the Solaris 8 operating environment allows installation of new feature updates as they become available, while at the same time assuring that your applications continue to run. Updates can be installed on a separate partition from the currently running operating environment to take control.

Because human error still accounts for a portion of system downtime, the Solaris 8 operating environment continues to improve ease of use and system management. Using Solaris Web Start Wizards[tm] software at installation time ensures trouble-free configuration of new systems. The Solaris[tm] Print Manager simplifies the management of both local and remote printers by centralizing printer information. And role-based access control enables system administrators to provide limited administrative capabilities to other users – without exposing the system's root password. In addition, security features like support for Ipsec, smart cards, and Kerberos v5 reduce the chance of downtime due to malicious behavior.

The Solaris 8 operating environment is designed for the .com age, a business and technology revolution built around universal access to the Internet. It's changing both the traditional mainframe – dominated data center and the PC – dominated workgroup by creating new demands and setting new standards for anytime, anywhere access to information. Around the world, companies rely on the Solaris operating environment to run their business-critical software across

the enterprise – from providing highly dependable, file and print services for their PC LANs to hosting huge databases on clustered 64-way supercomputers in their data centers. What's more, Solaris software is being used everywhere on the Internet, running the latest Internet appliances and powering the largest web sites and portals.

Here are eight important reasons to choose Solaris 8:

Solaris is...

- **Secure**
- **Highly available**
- **Scalable**
- **Interoperable**
- **Easy to use**
- **Universal**
- **For developers**
- **Is free.**

## **Pro c**

Embedded SQL is a method of combining the computing power of a high-level language like C/C++ and the database manipulation capabilities of SQL. It allows you to execute any SQL statement from an application program. Oracle's embedded SQL environment is called Pro\*C.

A Pro\*C program is compiled in two steps. First, the Pro\*C precompiler recognizes the SQL statements embedded in the program, and replaces them with appropriate calls to the functions in the SQL runtime library. The output is pure C/C++ code with all the pure C/C++ portions intact. Then, a regular C/C++ compiler is used to compile the code and produces the executable.

All SQL statements need to start with EXEC SQL and end with a semicolon ";". You can place the SQL statements anywhere within a C/C++ block, with the restriction that the declarative statements do not come after the executable statements.

## **WEB LOGIC SERVER**

BEA WebLogic Platform represents the integration of the existing BEA WebLogic product suite into a unified, simplified, and extensible platform. WebLogic Platform merges all of the features of the existing BEA WebLogic products—application server, development, portal, and integration—into a highly integrated solution, combining the benefits of a common application infrastructure with an easy-to-use, robust framework.

### **WebLogic Platform Features**

#### **Application Server**

Solid foundation, via the proven BEA WebLogic Server, for rapidly developing, deploying, and managing e-business applications, including a common application run-time environment.

#### **Development and Deployment**

Rich, flexible framework for developing and deploying J2EE applications, including enterprise-class Web services, through WebLogic Server.

#### **Portal**

Unified framework for building enterprise portals using BEA WebLogic Portal that includes:

#### **Integration**

Integration of enterprise information systems via standards-based integration technology, including enterprise resource planning (ERP), supply chain management (SCM), human resource (HR), and customer relationship management (CRM), as well as custom and legacy applications.

#### **Security**

Common security framework for building secure applications.



## **SERVLET**

Servlets are Java technology's answer to CGI programming. They are programs that run on a Web server and build Web pages. Building Web pages on the fly is useful for a number of reasons:

The Web page is based on data submitted by the user. For example the results pages from search engines are generated this way, and programs that process orders for e-commerce sites do this as well. The data changes frequently.

### **Advantage of Servlets Over "Traditional" CGI**

#### **Efficient**

With traditional CGI, a new process is started for each HTTP request. With servlets, the Java Virtual Machine stays up, and each request is handled by a lightweight Java thread, not a heavy weight operating system process.

#### **Powerful**

Java servlets let you easily do several things that are difficult or impossible with regular CGI. For one thing, servlets can talk directly to the Web server. This simplifies operations that need to look up images and other data stored in standard places.

#### **Portable**

Servlets are written in Java and follow a well-standardized API. Consequently, servlets written for, say I-Planet Enterprise Server can run virtually unchanged on Apache, Microsoft IIS, or WebStar. Servlets are supported directly or via a plugin on almost every major Web server.

#### **Inexpensive**

There are a number of free or very inexpensive Web servers available that are good for "personal" use or low-volume Web sites. However, with the major exception of Apache, which are free, most commercial-quality Web servers are relatively expensive.

## **Java Server Pages (JSP)**

JSP is a technology that lets you mix regular, static HTML with dynamically generated HTML. Many Web pages that are built by CGI programs are mostly static, with the dynamic part limited to a few small locations. But most CGI variations, including servlets, make you generate the entire page via your program, even though most of it is always the same. JSP lets you create the two parts separately.

## **Javascript**

JavaScript is Netscape's cross-platform, object-based scripting language for client and server applications. There are two types of JavaScript:

- Navigator JavaScript, also called client-side JavaScript

- LiveWire JavaScript, also called server-side JavaScript

Netscape Navigator 2.0 (and later versions) can interpret JavaScript statements embedded in an HTML page. When Navigator requests such a page, the server sends the full content of the document, including HTML and JavaScript statements, over the network to the client. The Navigator then displays the HTML and executes the JavaScript, producing the results that the user sees.

Client-side JavaScript statements embedded in an HTML page can respond to user events such as mouse-clicks, form input, and page navigation. For example, you can write a JavaScript function to verify that users enter valid information into a form requesting a telephone number or zip code. Without any network transmission, the HTML page with embedded JavaScript can check the entered data and alert the user with a dialog box if the input is invalid.

## **4.3 DEVELOPMENT SCHEDULE**

### **4.3.1 Milestones**

Milestones are beginning established for each and every module to improve the product visibility. It enhances the development process to become more tangible. It exposes errors, which help in improving the product quality and increases project communication. In our application it has been done sub modules wise.

### **4.3.2 Reviews**

The review summary report is prepared on weekly basis to know about the progress of each member. Review issues lists are prepared to identify problem areas within the product, which are attached with every review summary. As of a programmer we do the following reviews.

- ☞ Critical Design Review.
- ☞ Source Code Review.
- ☞ Acceptance Test Review.

## **4.4 MANNER OF DEMONSTRATION**

The programmers first do the demonstration of the product in the system and later the senior programmer integrates all the sub modules and demonstrates to the tem manger as a complete package in the multimedia projector.

## **4.5 FEASIBILITY ANALYSIS**

The feasibility study is very rough analysis of the viability of a project. It is however a highly desirable checkpoint that should be completed before committing more resources. A feasibility study is conducted to obtain an overview of the problem and to roughly assess whether feasible solution exists prior to committing substantial resources to a project.

The primary objective of a feasibility study is to assess three types of feasibility:

- ☞ Operational Feasibility
- ☞ Technical Feasibility
- ☞ Economical Feasibility

#### **4.5.1 Operational Feasibility**

Operational feasibility study is a must, because it ensures that the project implemented in the organization works. This feasibility should be high.

The operational feasibility of this project is very high, as it is automated document control and web interface for workbook, which is easy and friendly for the user to use it.

#### **4.5.2 Technical Feasibility**

Technical feasibility analysis makes a comparison of the level of technology available and the same required for the development of the product. The level of technology accounts for factors such as the programming language, the machine environment, the programming practices and the software tools. It includes the study of function, performance and constraint that may affect the ability to achieve an acceptable system.

#### **4.5.3 Economical Feasibility**

This is the most important aspect that has to be critically evaluated. This includes the feasibility study of cost-benefit analysis. This is an assessment of the economic justification for a computer based system project. The hardware and most of the software are already there in the company. The rest of the software packages needed are freely downloaded. Hence the treat of financial non-feasibility does not exist. It is determined that benefits out beat the cost of implementation and thus the system is considered to be economically feasible.

## 5 SOFTWARE REQUIREMENT SPECIFICATION

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### 5.1 SYSTEM STUDY

Advice and Statement Management System, which generates necessary client financial information in advice and statement form. Earlier TBS system has some problems that are listed below

#### 5.1.1 Problems with old system

The existing TBS Statement System has the following shortcomings:

1. TBS generates Statement print files, which do not include transaction information of Global Wrap products & Mutual Fund Investments.
2. TBS print files are sent along with GW & Mutual Fund transaction files to Dai Nippon printers where significant processing is done to merge TBS file, GW & ORBIT files. The formatting of the final statement is done at Dai Nippon.
3. TBS does not have the ability to suppress printing of error transactions that have been reversed.
4. TBS is also the Advice generation system. But it does not handle all products. Structured Deposits advices and Mark-To-Market advices are separately generated from an MS-Access based system which is being sunset. Since advices are being generated from 3 different systems Customer gets multiple advices for the same transaction in two different mail.

### **5.1.2 Proposed solution**

The new ASM system offers the following resolutions:

1. ASMS will consolidate feeds and generate Daily advices and Monthly Statements. These will be in the user specified formats including notes, disclaimers wherever required. ASMS will generate Bar codes for each printed page and a pre-sorted file will be provided to Dai Nippon printers in a ready to print state. Enclosure controls will be provided for Dai Nippon to automate stuffing of envelopes. This will eliminate the current merging and pre-processing of Data done at DNP to day.
2. Transaction edit feature will be provided in ASMS both before Statement generation and after Statement generation to help suppress reversed transactions and to correct any errors noticed before dispatch of statements to Customers.
3. ASMS will generate Bar codes for each page generated for quality check at envelope stuffing and mailing point.
4. Inserted controls will be provided to enable machine selection of enclosure during automated stuffing of envelopes. Multiple Advices sent on the same day to same address will be sent in one envelope.
5. Multiple advices for a single transaction will be avoided.

### **5.1.3 Scope and Limitation**

Enhancements are included in this category if the enhancement increase in productivity and/or reduce risk drastically.

## 5.2 Functional Requirements

### Customer Master

This module holds the customer information at Base level for PBG customers. All information required for advice & statement printing will be maintained in GRB System and provided to ASMS as one onetime upload. Thereafter any changes to existing customers or addition of new customers will be provided on an incremental basis.

Clicking on the relevant Customer A/C Number of the screen will display the customer basic information for that particular customer and users may edit this information. Once the changes are made that records are marked as pending Authorization. Once a change has been authorized the record flag changes from 'Pending Authorization' to 'Authorized'.

Maintenance of all address specific customer statement preferences. A customer can have multiple address records. The statement language, number of copies, Special handling codes, Mailing name & Contact person name will be maintained in the Combined Statement (CS) system of Systematics and will be provided on an incremental basis to ASMS.

### Parameter Maintenance

Systematics will provide onetime data to setup the required parameter tables. Thereafter any new additions or modifications will be done through incremental upload from systematics. Code translation will be provided by Systematics in English & Japanese in all transaction files. But maintenance will need to be provided for Parameter Tables to allow modifying descriptions etc.

The list of parameters are Advice Matrix, Branch Code, Enclosure Code, Document weights Table, Notes, Disclaimers & Messages, Product Code, Special Handling Codes, Transaction Codes

## Parameter Authorization

Any modifications/insertions made to the parameter table needs to be authorized. Unless the modification/insertion are authorized or rejected, the record modified will not be available for further modification by the user other than the one who originally modified the record. All the changes in the parameter maintenance are to be authorized in this module

## Monthly Enclosure Level

Enclosures are sent out along with the statements every month. Maximum of three enclosures can be maintained for a month to be sent out along with the statements. The monthly enclosures that are available to be sent out will be maintained under the menu "Parameter Tables – Enclosure Code". Once the enclosures are maintained for the month, the based on the Rm.'s preference the enclosures can be mailed along the statement. This option allows then user to maintain enclosure at the following five levels namely Group, Function, Unit, RM and Customer. The user has to maintain these enclosures for each RM every month.

## Advice Template

Advice Templates are the actual formats of advices containing data elements sent across to customers. ASMS will provide for a front-end interface through which the user can customize advices that will be sent across to the customers. Each Template will be linked to an Advice ID. An Advice Template can have a one to many relationships with the Advice ID. (I.e.) Multiple advice ids can use the same template. This will be particularly useful when a combination of more than one product code and transaction code generates the same advice. For example, for standing instruction advice irrespective of the nature of transaction whether it is Domestic transfer of funds or Internal transfer of funds, same advice is generated.



This mapping on advice templates to an advice id, if more than one advice ids use the same templates can be done through the "*Parameter table maintenance menu – Advice Matrix – Map Advice Templates.*"

## Statement Hierarchy

This module will enable the user to arrange the product groups in the Statement. This option allows the user to determine the order in which the product groups, product sub-groups and the product types will be printed in the statement.

### 5.3 PERFORAMNCE REQUIREMENTS

The system would maintain a consistent output frequency. The system response time would be as per normal standards. TO increase the response time review of code is done to reduce the number of connection to the database in the application. The product need some fine tune work to improve response time.

### 5.4 EXCEPTION HANDLING

Exception handling is powerful and general purpose system for error handling and recovery. The errors occur during the loading and processing of a file. We handle all the exception by using a general error page in all the files, which holds the reference to uncaught exception that caused the error page to invoke. To handle the errors and exception in the code the following statement are used.

- ☞ Try Statement
- ☞ Catch Statement
- ☞ Throw Statement

Some of the exceptions, which are handled, are given below: -

- ☞ Servlet Exception
- ☞ Input/output Exception
- ☞ Request redirect Exception

## **5.5 PROGRAMMING STANDARDS**

- ☞ In all the programs files the author name and revision history should be present on the top.
- ☞ All the function aim and logic should be written before the starting of the function
- ☞ The entire variable name should start with a letter, which describes the data type. Program should be properly indented.
- ☞ Standard copyrights format of POLARIS is included in all the pages.

## **5.6 OTHER NON-FUNCTIONAL ATTRIBUTES**

### **5.6.1 Reliability**

JSP is a servlet mechanism it will not span process on each invocation of the application. Only one process with multiple threads is running so it will take less time and less memory constraint. So the reliability will be high. Reliability of the system depends on the network as well as the load on the server also.

### **5.6.2 Testability**

The application is developing in a modular way the testability is high. Internal code review and functional test will conduct on each module. Also functional points and test cases for each modules will be prepared. Unit testing is required for each module and an integration testing should be done for the entire system. Functionality testing should be carried out after the integration of

the entire system. The validation test is done on both the client side and server side, which depends on the data to be validated.

### **5.6.3 Maintainability**

Since the design and coding will be properly documented the maintainability of the system will be high.

### **5.6.4 Portability**

Since the application is running on JVM it is portable to any host provided the application server should be JVM enabled. Also it can be ported to most of the web server with suitable application server.

### **5.6.5 Reusability**

Most of the program is written as a collection of packages. So they can be reused in similar application without changing the code.

### **5.6.6 Security**

The application would be accessible only to authorized users based on access rights. All passwords would be stored in the encrypted format in the database. In this product we use 4C Security product. The system would maintain a log to store the access details along with the login and log out time.

## **5.7 RISK**

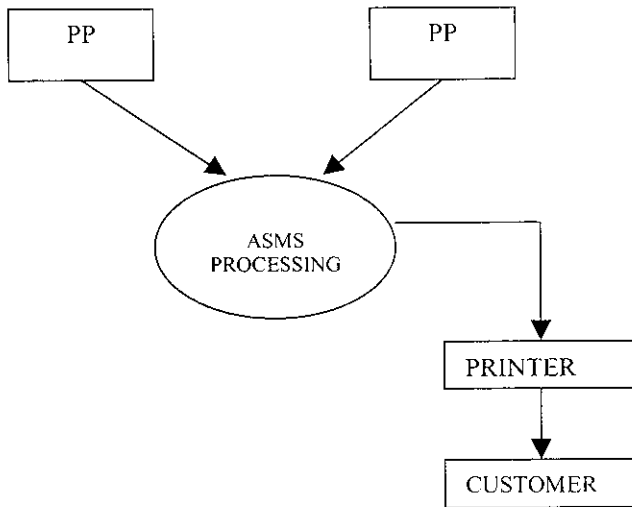
### **5.7.1 Data feed error**

Since this project is related to multiple products systems and their change, data in feed error could be expected and it could results error in statements even statement change effort work fine itself.

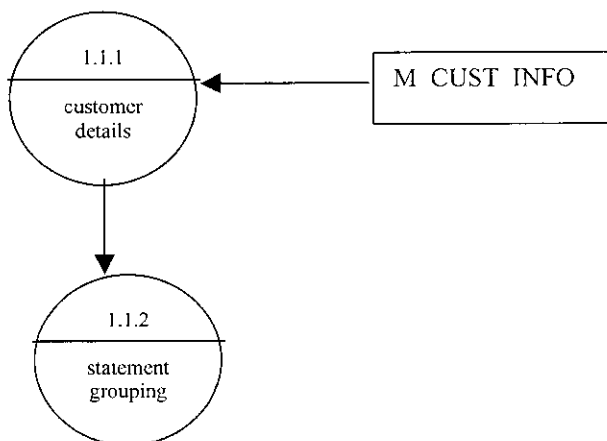
6.1 EXTERNAL DESIGN SPECIFICATION

6.1.1 Data Flow Diagram

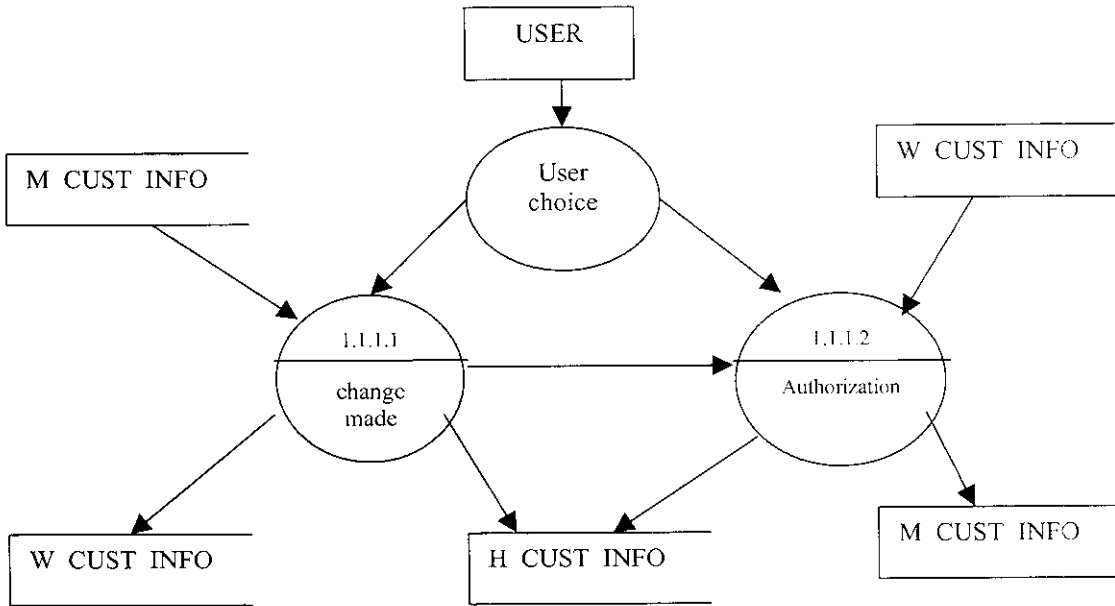
LEVEL 1 DFD



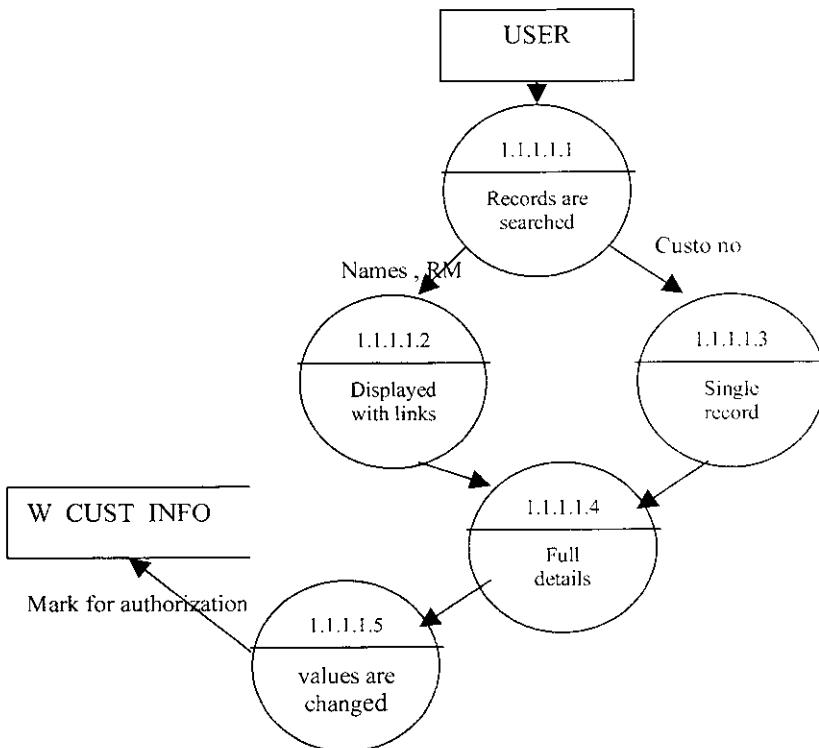
LEVEL 1.1 DFD [ Customer Master ]



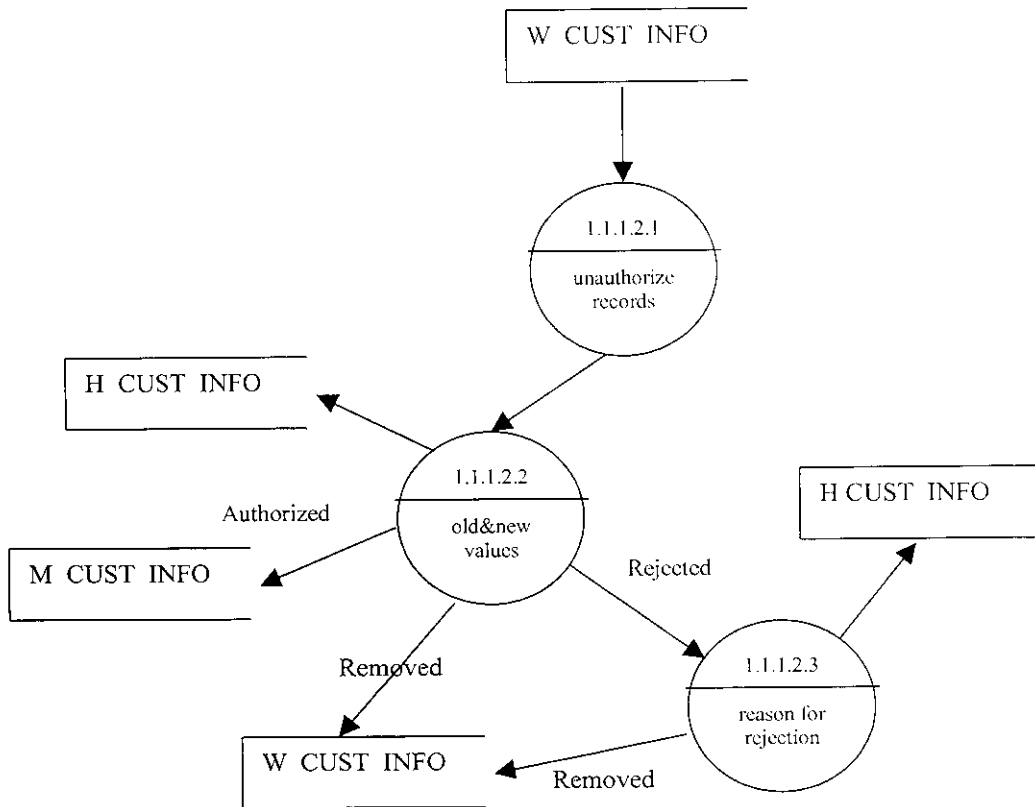
**LEVEL 1.1.1 [ Customer Maintenance ]**



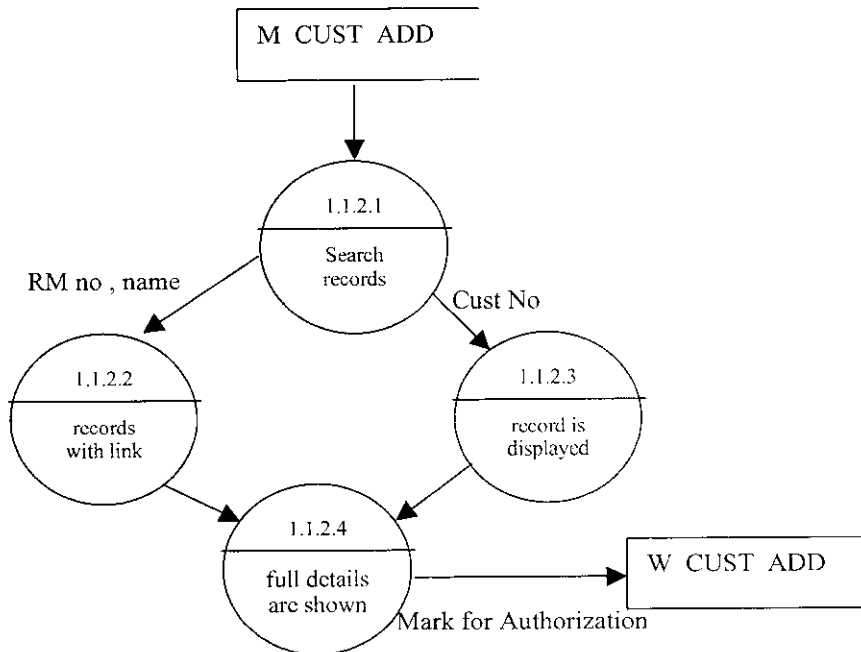
**LEVEL 1.1.1.1 [ Changing Customer Details ]**



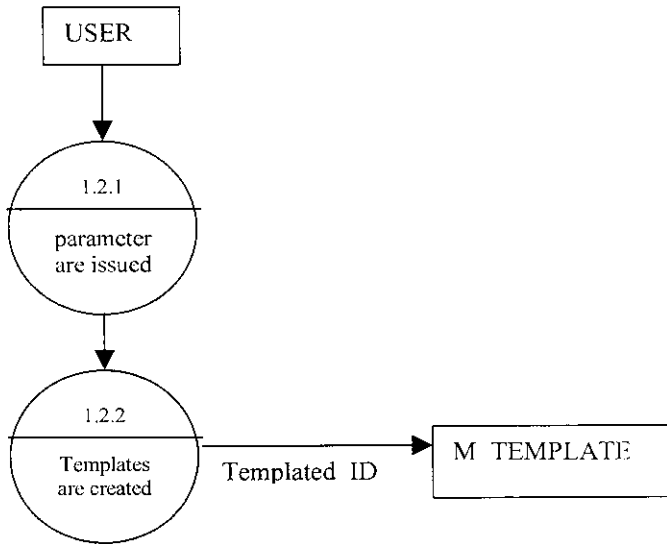
**LEVEL 1.1.1.2 [ Customer Authorization ]**



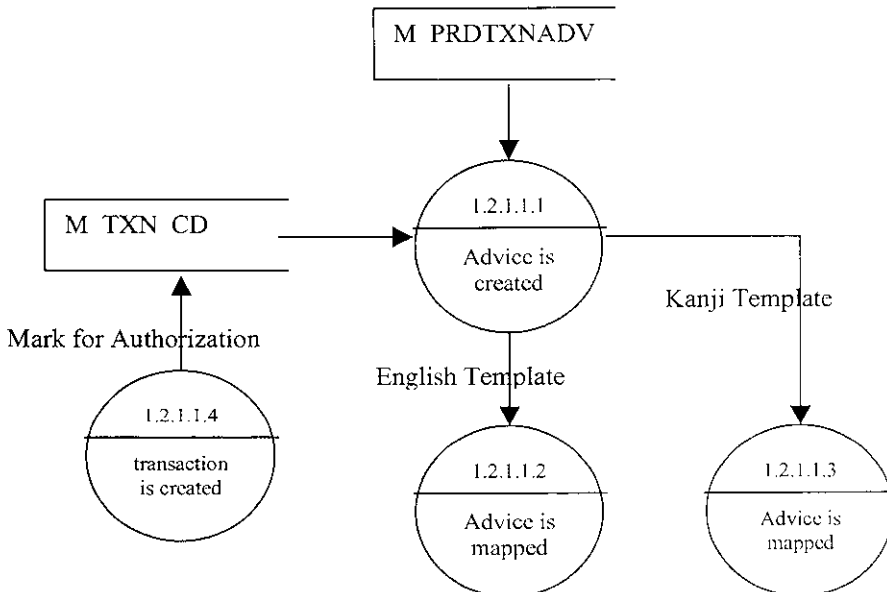
**LEVEL 1.1.2 [ Statement Grouping ]**



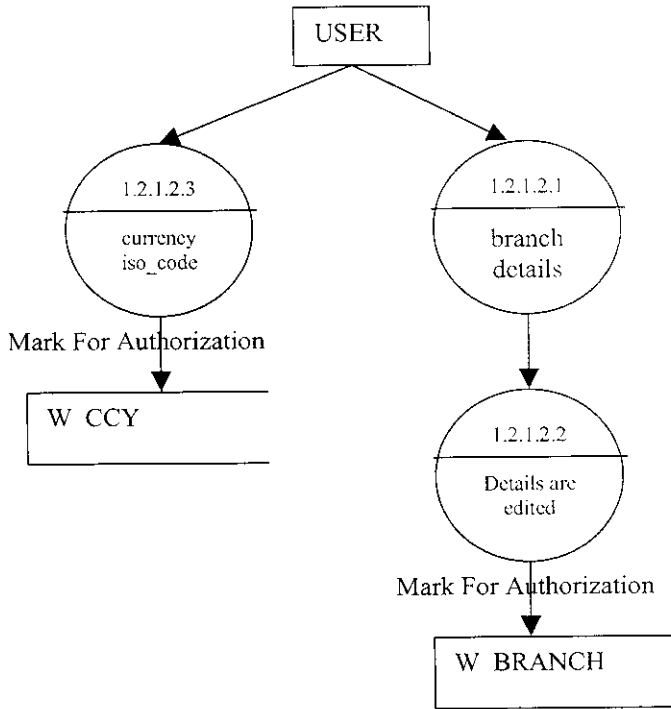
## LEVEL 1.2 [ Parameter Maintenance ]



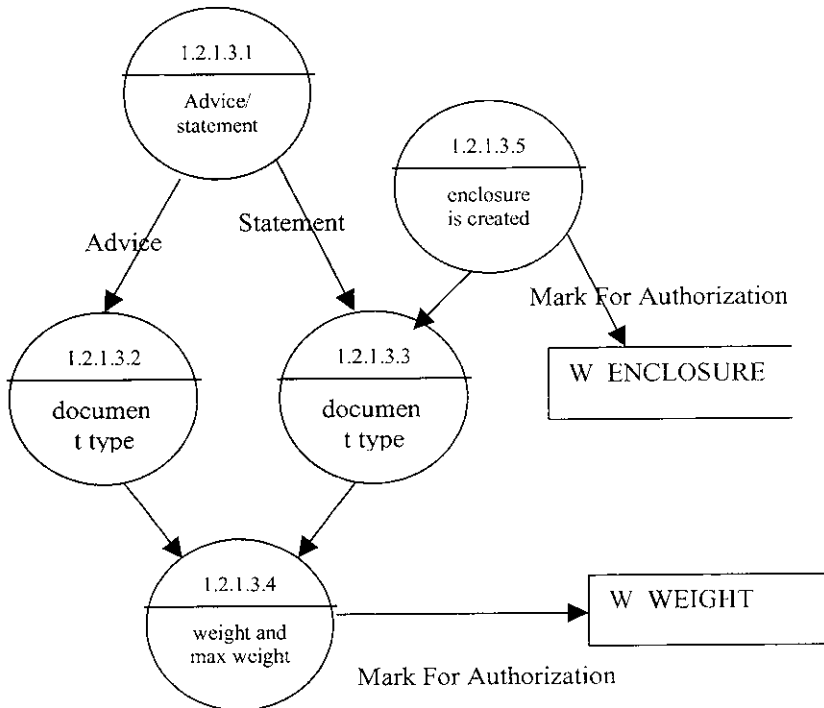
### LEVEL 1.2.1.1 [ Advice Matrix & Transaction Code ]



**LEVEL 1.2.1.2 [ Branch Code & Currency Master ]**

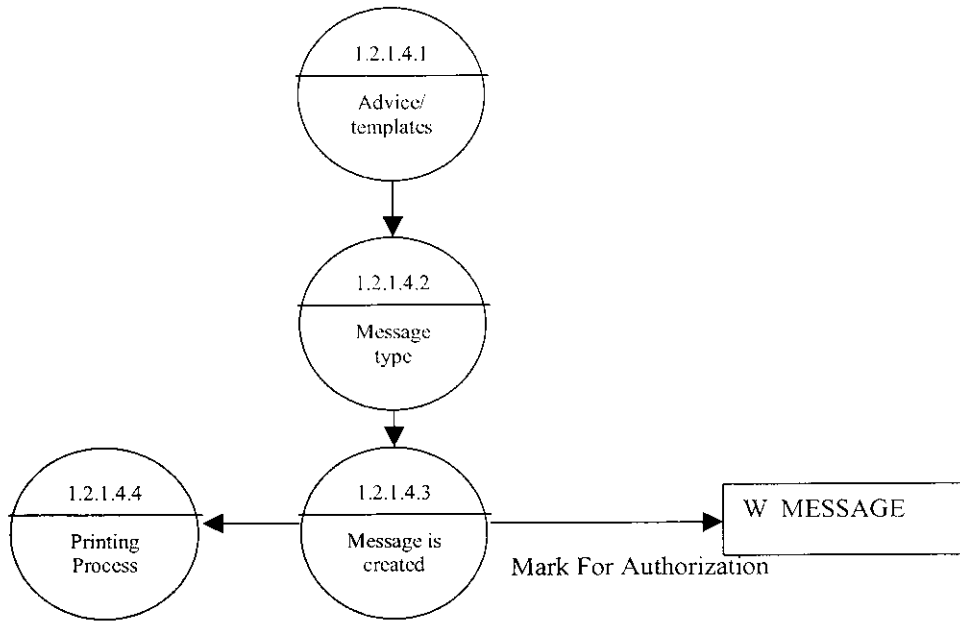


**LEVEL 1.2.1.3 [ Document Weight Table & Enclosure Code ]**

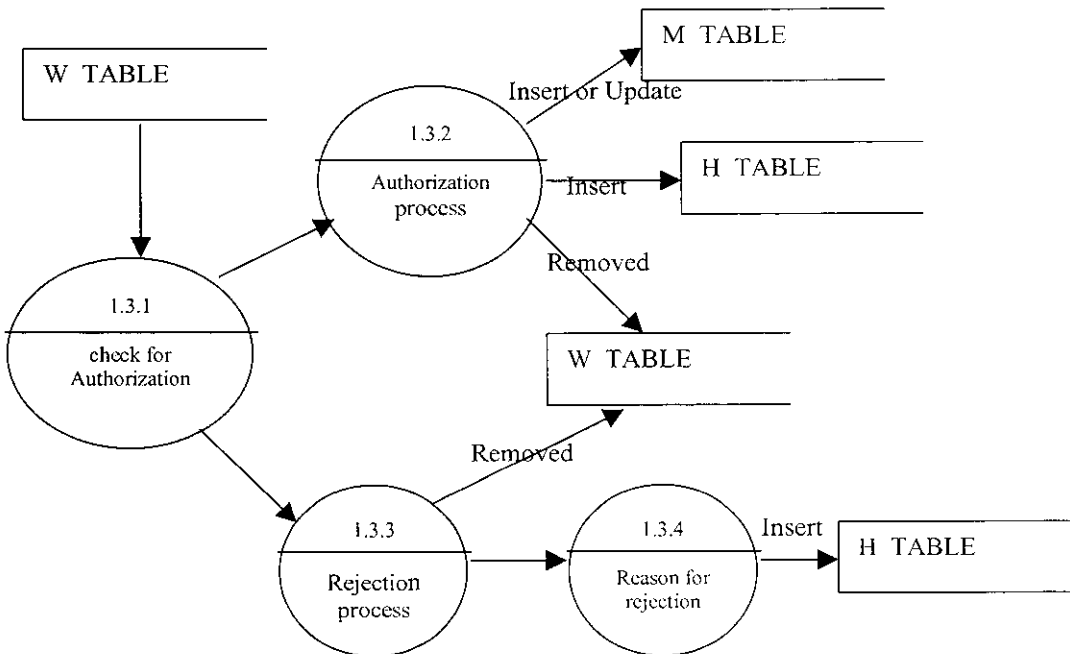




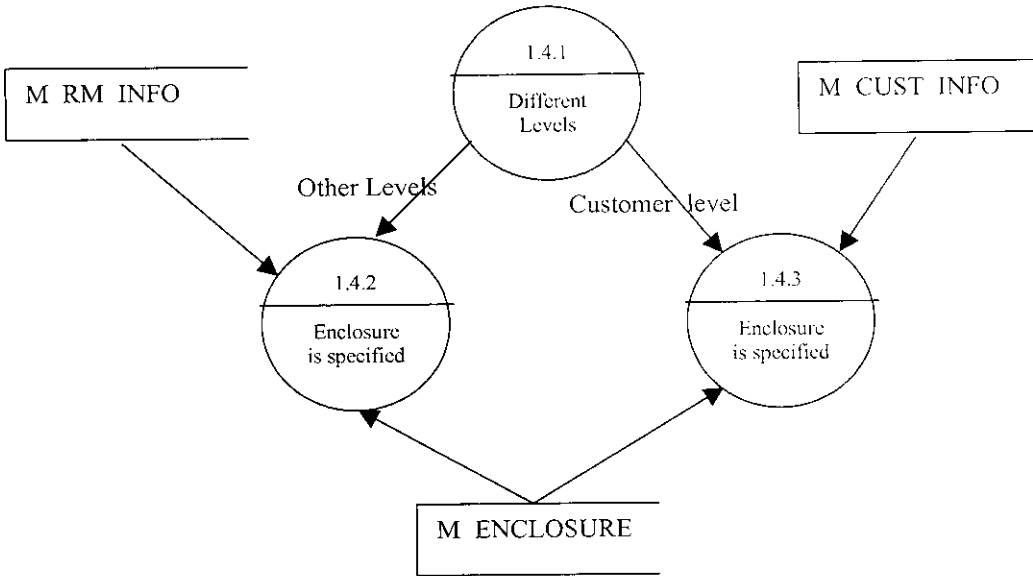
**LEVEL 1.2.1.4 [ Messages & Note Disclaimers ]**



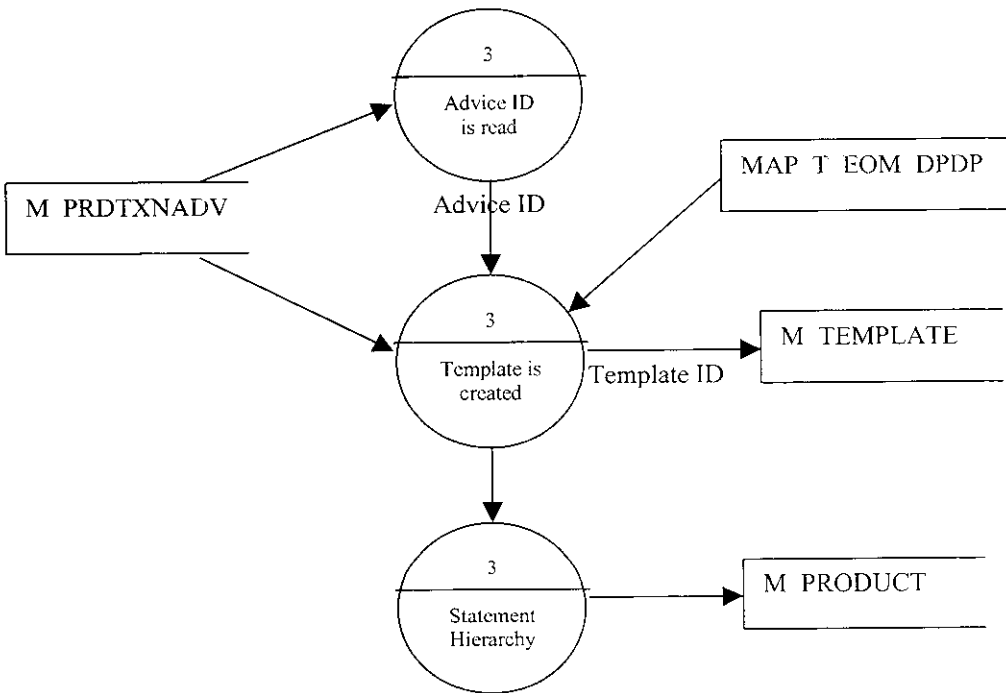
**LEVEL 1.3 [ Parameter Authorization]**



### LEVEL 1.4 [ Monthly Enclosure Control ]

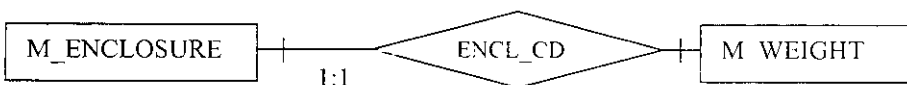
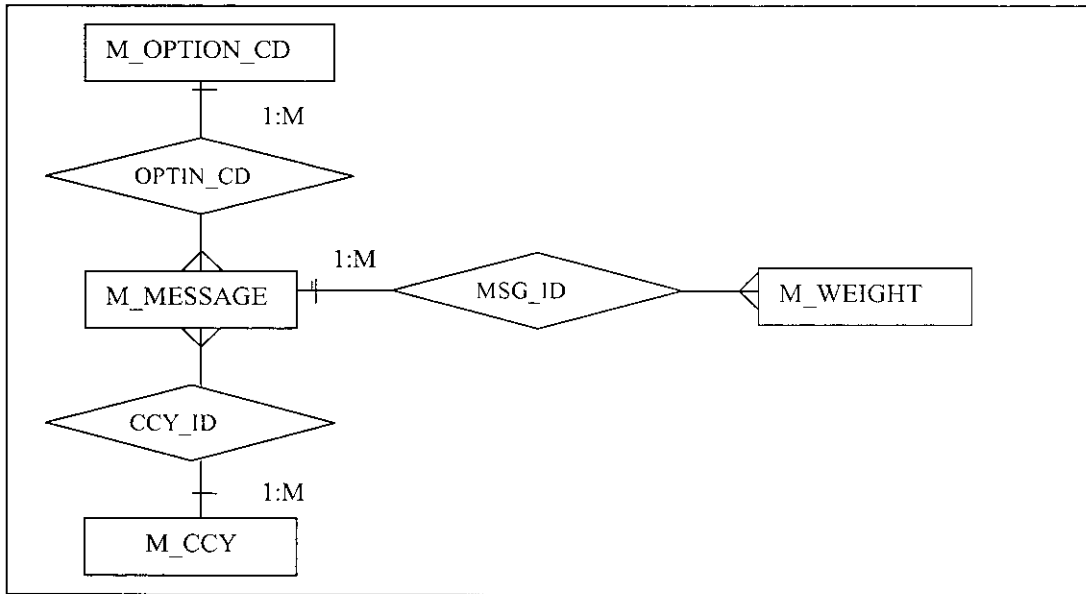
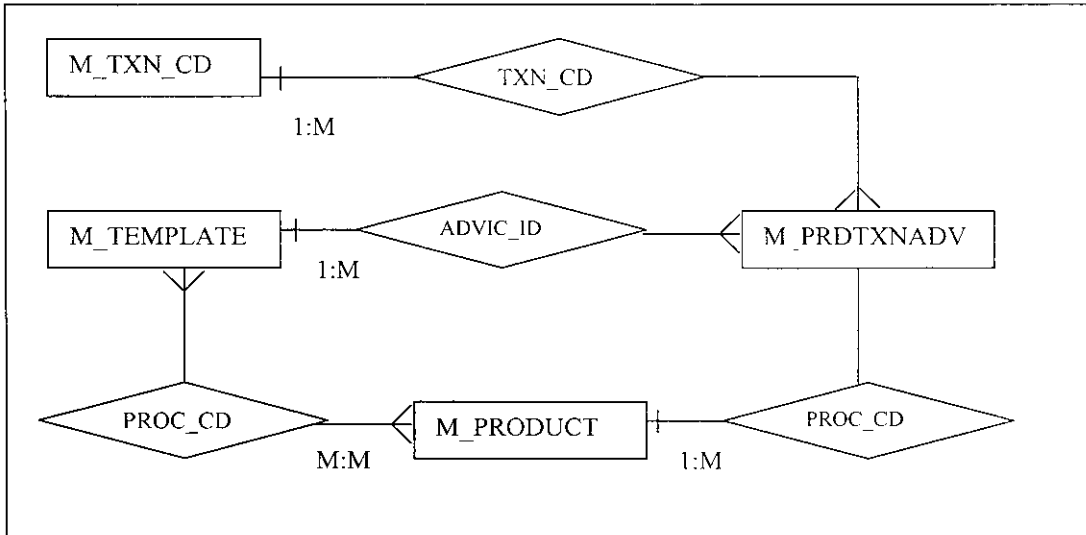


### LEVEL 1.5 [ Advice Templates & Statement Hierarchy ]



## 6.2 ARCHITECTURAL SPECIFICATION

### 6.2.1 Entity Relationship Diagram



## 6.2.2 Database Design

Tables involved in this particular module are given below

TABLE NAME	TABLE DESCRIPTION
1 . M_PRDTXNADV	Product Transaction Advice
2 . M_BRANCH	Branch details
3 . M_ENCLOSURE	Enclosure details
4 . M_CCY	Currency details
5 . M_WEIGHT	Weight details
6 . M_OPTION	Option details
7 . M_PRODUCT	All Product details
8 . M_SPLHANDLING	Special handling details
9 . M_TXN_CD	Transaction details
10 . M_RM_INFO	Relationship Manager details
11 . M_MESSAGE	Message details
12 . M_TEMPLATE	Templates details
13 . M_CUST_INFO	Customer Information details
14 . M_CUST_ADD	Customer Address details

Each tables specified above have work table and history table, work table start with **W\_** and History table start with **H\_** . For example **M\_BRANCH** have **W\_BRANCH** has working table and **H\_BRANCH** has History table.

Detailed description about the tables specified above is given below.

**Table Name : M\_ENCLOSURES**

**Primary Key - M\_ENCLOSURES\_PKEY (ENCLOSURE\_CODE)**

FIELD NAME	DATA TYPE & LENGTH	NULLABLE	DESCRIPTION
ENCLOSURE_CODE	VARCHAR2(3)	NULL	ENCLOSURE CODE
ENCLOSURE_NUMBER	NUMBER (1,0)	NULL	
ENCLOSURE_DESC	VARCHAR2(80)		ENCLOSURE DESCRIPTION
FROM_DATE	DATE	NULL	
TO_DATE	DATE	NULL	
LAST_UPDATED_DT	DATE	NULL	LAST UPDATED DATE
LAST_UPDATED_BY	VARCHAR2(20)	NULL	LAST UPDATED BY
CHECKER_AUTHORIZED_DT	DATE	NULL	
CHECKED_BY	VARCHAR2(20)	NULL	

**Table Name : M\_PRODUCT**

**Primary Key - M\_PRODUCT\_PKEY (PROD\_CD)**

FIELD NAME	DATA TYPE & LENGTH	NULLABLE	DESCRIPTION
PROD_CD	VARCHAR2(6)	NOT NULL	
GROUP_CD	VARCHAR2(6),	NULL	
ENG_PROD_GROUP_DESC	VARCHAR2(20),	NULL	
KANJI_PROD_GROUP_DESC	VARCHAR2(9),	NULL	
ENG_PROD_SUBGRP_DESC	VARCHAR2(10)	NULL	
KANJI_PROD_SUBGRP_DESC	VARCHAR2(4),	NULL	
ENG_PROD_TYPE_DESC	VARCHAR2(20),	NULL	
KANJI_PROD_TYPE_DESC	VARCHAR2(9),	NULL	
CCY_ISO_CD	NUMBER (3,0)	NULL	
GW_ON_OFF_SHORE	VARCHAR2 (3)	NULL	
MESSAGE_IND	VARCHAR2 (1)	NULL	
GROUP_MESSAGE_ID	VARCHAR2 (5)	NULL	
SUBGROUP_MESSAGE_ID	VARCHAR2 (5)	NULL	
GROUP_CD	VARCHAR2(6),	NULL	
SUBGROUP_CD	VARCHAR2(6),	NULL	
PRODTYPE_CD	VARCHAR2(6),	NULL	
GROUP_MESSAGE_ID	VARCHAR2(4),	NULL	
PP_ID	VARCHAR2(4)	NULL	
UPLOADED_BY	VARCHAR2(20)	NULL	
UPLOADED_DATE	DATE	NULL	
MAKER_ID	VARCHAR2(20),	NULL	
MAKER_DT	DATE,	NULL	
CHECKER_ID	VARCHAR2(20),	NULL	
CHECKER_DT	DATE	NULL	

**Table Name : M\_BRANCH****Primary Key -M\_BRANCH\_PKEY (BRANCH\_CD)**

FIELD NAME	DATA TYPE & LENGTH	NULLABLE	DESCRIPTION
H_CD	NUMBER(3)	NOT NULL	BRANCH CODE
ENG_BRANCH_NAME	VARCHAR2(20)	NULL	BRANCH NAME IN ENGLISH
KAN_BRANCH_NAME	VARCHAR2(20)	NULL	BRANCH NAME IN KANJI
KAN_ADDR_LINE1	VARCHAR2(32)	NULL	KANJI ADDRESS LINE 1
KAN_ADDR_LINE2	VARCHAR2(32)	NULL	KANJI ADDRESS LINE 2
KAN_ADDR_LINE3	VARCHAR2(32)	NULL	KANJI ADDRESS LINE 3
KAN_ADDR_LINE4	VARCHAR2(32)	NULL	KANJI ADDRESS LINE 4
ENG_ADDR_LINE1	VARCHAR2(32)	NULL	ENGLISH ADDRESS LINE 1
ENG_ADDR_LINE2	VARCHAR2(32)	NULL	ENGLISH ADDRESS LINE 2
ENG_ADDR_LINE3	VARCHAR2(32)	NULL	ENGLISH ADDRESS LINE 3
ENG_ADDR_LINE4	VARCHAR2(32)	NULL	ENGLISH ADDRESS LINE 4
TELEPHONE_NUMBER	VARCHAR2(20)	NULL	TELEPHONE NUMBER
FAX_NUMBER	VARCHAR2(20)	NULL	FAX NUMBER
LAST_UPDATED_DT	DATE	NULL	
LAST_UPDATED_BY	VARCHAR2(20)	NULL	
CHECKER_AUTHORIZED_DT	DATE	NULL	
CHECKED_BY	VARCHAR2(20)	NULL	
PP_ID	VARCHAR2(4)	NOT NULL	
UPLOADED_BY	VARCHAR2(20)	NOT NULL	UPLOADED BY
UPLOADED_DATE	DATE	NOT NULL	UPLOADED DATE

**Table Name :M\_PRDTXNADV**

FIELD NAME	DATA TYPE & LENGTH	NULLABLE	DESCRIPTION
ADVICE_ID	VARCHAR2(4)	NOT NULL	
PROD_CD	VARCHAR2(6)	NOT NULL	
PP_ID	VARCHAR2(4)	NOT NULL	
ADVICE_NO	NUMBER(1)	NOT NULL	
ADVICE_DESC	VARCHAR2(40)	NULL	
ENG_TEMPLATE_ID	VARCHAR2(4)	NULL	
JAP_TEMPLATE_ID	VARCHAR2(4)	NULL	
JAP_NO_OF_PAGES	NUMBER(1)	NULL	
MAKER_ID	VARCHAR2(20)	NULL	
MAKER_DT	DATE	NULL	
CHECKER_ID	VARCHAR2(20)	NULL	
CHECKER_DT	DATE	NULL	
HOLD_FLAG	CHAR (1)	NULL	
HOLD_DATE	DATE	NULL	
CUSTOMER_TYPE	CHAR (1)	NULL	
HOLD_REASON	VARCHAR2 (80)	NULL	

## **6.3 DETAILED DESIGN SPECIFICATIONS**

### **1 Customer Master**

#### **1.1 Customer Basic Maintenance**

This module holds the customer information at Base level for PBG customers. All information required for advice & statement printing will be maintained in GRB System (Systematics) and provided to ASMS as one onetime upload. Thereafter any changes to existing customers or addition of new customers will be provided on an incremental basis.

#### **1.2 Customer Statement Grouping Information**

This module will enable maintenance of all address specific customer statement preferences. A customer can have multiple address records. The statement language, number of copies, Special handling codes, Mailing name and Contact person name will be maintained in the Combined Statement (CS) system of Systematics and will be provided on a incremental basis to ASMS.

#### **Rules & Validation:**

1. Search criteria will be any of the fields input, search result will be a list of all values that match the search criteria.
2. Users will input the customer name in Japanese or English as maintained in the Customer title field in Layout CSBA of the DFM. Partial Name search function is also available.
3. Users will input the GRBS Customer no as maintained in the Customer No field in Layout CSBA of the DFM.
4. Users will input the RM Code as maintained in the RM Code field in Layout CSBA of the DFM.

5. Users will input the RM full name as maintained in the RM Full Name field in Layout CSRM of the DFM. The user can input a partial name also as search criteria.
6. Customer Search results will be displayed alphabetically and ascending order of Customer Numbers
7. ASMS will allow only updates/edits on existing CSBA records and will not allow new records to be inserted; this is to maintain consistency with the host systems.
8. ASMS will not allow edit of GRBS Customer Number & the TBS account number.
9. DWU flag will be set when 3 statements in a row are returned undelivered. When this indicator is set statement returned information capture screen should be popped up and Statement month, Year & reason for return are captured. When this flag is set Printer classification code D1 will be assigned for Statement and for Advices generated. Printed Statements for DWU customers will be returned to Marunouchi branch.
10. Default values for all fields will be values inherited from the Host system.
11. The modification of the customer basic record information can be authorized from this screen or the user may click on the customer no to see the details of the modification and then authorize the modification.
12. Maker-Check validation is in-built. A user who modified the record cannot authorize the modification made by him. The record will not be displayed in the list of records pending for authorization.
13. Users will input the customer name in Japanese or English as maintained in the Customer title field in Layout CSBA of the DFM. Partial Name search function is also available.
14. Users will input the GRBS Customer no as maintained in the Customer No field in Layout CSBA of the DFM.



15. Users will input the RM Code as maintained in the RM Code field in Layout CSBA of the DFM.
16. Users will input the RM full name as maintained in the RM Full Name field in Layout CSRM of the DFM. The user can input a partial name also as search criteria.
17. Customer Search results will be displayed alphabetically and ascending order of Customer Numbers.
18. The customer search result will consist of only those customers for whom customer statement grouping record is found. As at least one customer grouping record must be found for every customer. If no record is found for statement grouping, the system will throw an error message, stating no statement grouping record found for the specified customer.
19. Address reference will be an input field displaying all address references available for selected customer. On selecting address reference, the address in English will be displayed.
20. User can enter Mailing name, contact address in both English and Kanji or in any one language.
21. The Mailing Name is to be used for printing as the header of the statement/advice.
22. Statement preferences will be maintained at copy level (also referred as address reference level). The fields that can be maintained are Use Indicator, Language preference, Mailing Name and Contact person, Hold Flag, No of copies, Special Handling.
23. The Statement preference table should have at least one record for every customer. This will ensure that at least one copy of Advice required and one copy of monthly statement is generated.
24. Language preference at the copy-level (Address reference level) can be edited. Language Preference means the language to be used for the Statement/Advice.

## 2 Parameter Tables

Systematics will provide onetime data to setup the required parameter tables. Thereafter any new additions or modifications will be done through incremental upload from Systematics. Code translation will be provided by Systematics in English & Japanese in all transaction files. But maintenance will need to be provided for Parameter Tables to allow modifying descriptions etc.

Following is a suggested list of Parameter Tables:

- Advice Matrix
- Branch Code
- Currency Master
- Enclosure Code
- Document weights Table
- Notes, Disclaimers & Messages
- Printer Classification Code
- Product Code
- Special Handling Codes
- Transaction Codes

### 2.4 Advice Matrix

Users can create and maintain unique Advice ID's in the Advice Maintenance module, Each unique id is mapped to a product processor, product code, Transaction code & Customer type. An advice ID is a combination of Product Processor, Product Code, Transaction Code and Customer Type. The Advice ID is generated by the system based on the above said parameters.

## 2.4.1 Map Templates

Every advice ID needs to be mapped to a template id, which is the actual format of the advice and contains all the data elements to be printed in the advice. At the time of creating a template, the advice id to which it is to be mapped will be provided. This option of mapping advice id to a template id is used for scenarios where several advice ids use the same template id.

### Rules and Validations

1. The combination of product processor, product code, transaction code and customer type is unique. So, there will be only one advice ID with this combination.
2. The Advice ID plays a crucial role in generating the advice. All combinations of product code, transaction code and customer type needs to be maintained in this matrix to enable the advice generation for that combination.
3. The Advice Description maintained in English and in Kanji will be used as the advice header during advice generation.
4. Based on the search criteria provided, a corresponding list of records matching the search criteria will be displayed. Partial entry also will be taken for searching an advice id.
5. If the English template or the Japanese template is alone selected and maintained, irrespective of the customer language preference, the available (English/Japanese) template will be used for advice generation.
6. Based on the search criteria provided, a corresponding list of records matching the search criteria will be displayed. Partial entry also will be taken for search in advice id.
7. The edit function allows the user to modify only the following fields namely advice description English and Kanji along with the templates mapped to the advice id.

8. Hold back at advice level can be made by activating the hold indicator. If the hold indicator is set to yes, the advice is not generated for the particular combination of product code, transaction code and customer type to any customer.
9. Hold back set at advice level can be released by de-activating the hold indicator
10. The Drop down boxes for English template ID and Japanese template ID will consist of only those templates created for the product processor specified in the advice id.

## **2.2 Branch Code**

The Branch address and Telephone numbers printed in all statements and advices will be available in this table. New branch opened must be added to this table by an incremental upload from Systematics. However, ASMS will also provide maintenance of Branch codes by allowing inserting of new branch codes and editing existing information in branch codes.

### **Rules & Validations**

1. Search can be based on branch code provided or on the branch name. The Branch Name can also be accepted in partial and the search result can be provided.
2. All the information other the branch code will be editable.
3. Any modification of branch details will be through EOD incremental feed. This provision of maintaining branch information within ASMS is only an additional source for maintenance.

## **2.3 Currency Master**

This option will provide the user to maintain the currency codes that will be used within ASMS. ASMS will allow only the maintenance of currency short code in Kanji. All other information will be accepted as an EOD incremental upload from Systematics.

## **2.4 Enclosure Code**

This option provides the user to maintain enclosures that will be sent out along with the customer statement for the month. Enclosures to be sent to customers along with the statement should be maintained here. The Enclosures have to be maintained on a monthly basis.

### **Rules and Validations**

1. Maximum of three enclosures can be maintained for a particular period. In case of particular enclosure no is maintained for a particular period, no other enclosure code can be maintained in that enclosure no.
2. The Enclosure maintained will be common for all RMs. The RMs can maintain their specific enclosures only among the ones specified here.
3. This option will be used only in case of an enclosure being sent out for the first time. In case the user wants to send an existing enclosure, the edit option has to be used.
4. Enclosure no will be unique. No two enclosures can have the same enclosure no. In case of the user assigning the same enclosure no for two enclosure codes, the system will pop up an error message. The user can use the edit option to deselect the original enclosure maintained and maintain the new enclosure to be sent.

5. In case the user does not want to send the enclosure during the current month, 'The Enclosure No, If it has to be sent for the current month' field has to be blank.
6. Search will be allowed on partial entry on Enclosure Desc.
7. This option is used to maintain enclosures to be sent during the month.
8. Maximum of three enclosures can be maintained for a particular period. In case of particular enclosure no is maintained for a particular period, no other enclosure code can be maintained in that enclosure no.
9. The Enclosure maintained here would be common for all RMs. The RMs can maintain their specific enclosures only among the ones specified here.
10. This option will be used in case of an enclosure being sent out subsequently.
11. Enclosure no will be unique. No two enclosures can have the same enclosure no. In case of the user is assigning the same enclosure number to two enclosure codes, the system will pop up an error message. The user can use the edit option to deselect the original enclosure maintained and maintain the new enclosure to be sent.
12. In case the user does not want to send the enclosure during the current month, 'The Enclosure No, If it has to be sent for the current month' field has to be blank.

## **2.5 Document Weights Table**

Advice & statements will be mailed in a single envelope when they are going to a particular address reference. Generated advice and Statement will need to be sorted by address reference and envelope sequence assigned. For each envelope the weight of the contents and the envelope will have to be computed to determine the Printer classification code. For this purpose this weight table will be maintained in ASMS.

### **Rules and Validations**

1. Enclosure code can be selected only when the document type is 'Enclosure' and the enclosure description will also be displayed only in that scenario.
2. Size can be selected only when the document type is 'Envelope'.
3. The document weight specified here will be used to calculate the total weight of the packed envelope and will be subsequently used for assigning the printer classification code.
4. Document weight and maximum weights will be the only fields that can be edited using this option.

### **2.6 Notes, Messages and Disclaimers**

All the text required to be printed in the statement and the advices will be pre-formatted and stored in this table. The text is classified into six categories namely Notes, Messages, Disclaimers, Product Specific, Option specific note and Base currency specific notes. The last said two categories are used for printing in structured deposit advices where the notes depend upon the base currency and the option index. The Product specific notes are basically used for Mutual Funds. Note, Message or a disclaimer can be stored either in English or in Kanji. Insert and Editing of messages will be allowed.

### **Rules and Validations**

1. All the notes, messages and disclaimer, which will be used in the advices or in statement generation process, will have to be maintained here.
2. Option index note and Base currency note will be used for printing in structured deposit advices where these options index and base currency specific notes need to be maintained.

3. Product/Fund Code specific notes can be maintained and these will be used during the statement generation. These notes are used for mutual funds. For all the fund codes for which these notes have to be printed, they have to be maintained here.
4. The option specific, base currency specific and product/fund code specific notes will be populated into corresponding fields during data upload process using IB and will be printed in corresponding statements/advice.

## 2.7 Printer Classification Codes

This is a very important table. All **Advices** and **Statements** are required to be sorted by this code and based on this code a Bar code will be generated for the purpose of quality control at the point of automated Envelope stuffing. Inserts and Edits will be allowed on this table. Every advice / statement page generated will need to be assigned this printer classification code. The code assigned will depend on the number of pages going into a single envelope and Total weight of the mailed out packet. (I.e. Weight of Page + weight of enclosures + weight of envelope to be used).

## 2.8 Product/Fund Code

ASMS will allow maintenance (Edit) of product codes. Any new Product codes introduced will be taken as an incremental download from Systematics, Cosmos, BPS-Nikko and Orbit.



## **Rules and Validations**

1. The search will be on only the product codes. Partial Product/Fund Name can be provided as a search criterion.
2. Product Code edits will be allowed for Systematics, Cosmos, BPS-Nikko and Orbit.
3. Edit will be allowed on Product/Fund Name, Product Group, and Product Sub-Group and product type.
4. Transactions with product code that are not in this Table will be flagged for errors during Feed upload.
5. The table shows the values that will be displayed in the dropdown boxes of Group code and sub-group code based on the product processor selected.

## **2.9 Transaction Codes**

ASMS will allow the transaction codes to be maintained within ASMS for the following transaction source.

- ALS (Loans)
- Structured Deposits
- Orbit
- Cosmos
- BPS-Nikko

ASMS will allow the users to input new transaction codes. Transaction codes from Systematics (other than the ones specified above) will be accepted as an end of day incremental upload. Once these transaction codes are maintained here, the concerned transaction sources / product processors will incorporate these transaction codes in their EOD transaction files. If the transaction code specified in the EOD transaction files is not available within ASMS, the record will be rejected.

## **Rules and Validations**

1. The Transaction description accepted here will not be used during the statement generation process. The product processors will provide the transaction descriptions as a part of the EOD/EOM feeds.
2. The New additions to transaction codes under Systematics will be updated within ASMS through an EOD incremental feed. No front-end interface will be provided for transaction codes under Systematics.

### **2.10 Special Handling Code**

Currently special handling indicates packing in white envelopes only. To accommodate special handling with more than one option this table will be maintained. Customer preference feed file will indicate special handling code. While modifying customer preferences special handling field will accept codes provided in this table. ASMS will provide maintenance of these special handling codes. Currently only two codes will be used. '0', which indicates ordinary handling and '1' which, indicates the customer's statement needs to be sent in a white envelope. The codes 2 – 9 are reserved for future use. ASMS will provide insert and edit options for this table.

#### **Rules and Validations**

Special handling currently indicates only usage of White Envelope.

1. While generating Advices and Statements the Special Handling code in the Customers master will be moved to the mail flag to indicate that the customer is not to be treated as a Domestic or Overseas customer. His mails need to be specially handled.
2. The appropriate printer classification code to be assigned for such special handling will be available here.

### **3 Authorize Parameter Table Maintenance**

Any modifications/insertions made to the parameter table needs to be authorized. Unless the modification/insertion are authorized or rejected, the record modified will not be available for further modification by the user other than the one who originally modified the record. Modifications to the following tables can be modified using this option.

#### **3.1 Advice Matrix**

The following details are shown in the authorization screen to enable the user to authorize the transaction.

- Advice ID
- Product Processor
- Product Code
- Transaction Code
- Advice Description
- Customer Type
- User ID who modified the record
- Date and time of modification

#### **3.2 Branch Data**

The following details are shown in the authorization screen to enable the user to authorize the modifications made.

- Branch Code
- Branch Name
- Branch Address
- Telephone No
- Fax No
- User Id who modified the record

### **3.3 Currency Master**

The following details are available to the user for authorization purposes.

- Currency ISO Code
- Currency Short Description (in English)
- Currency Short Description (in Kanji)
- Currency Description (in English)
- Currency Description (in Kanji)

### **3.4 Enclosure Code**

The Following details are available to the user for authorization purpose

- Enclosure Code
- Enclosure Description
- Enclosure No (Blank in case it is not used during the current cycle)
- User ID
- Date and Time of modification.

### **3.5 Notes, Messages and Disclaimers**

The following details are available to the users for authorization purpose

- Message ID
- Message Type (Displays Notes, Message, Disclaimer, Option index note or base currency note based on the type of text)
- Message Text ( 1- 4)
- User ID
- Date and Time of Creation/Modification

### **3.6 Document Weight Table**

The following details are displayed to the user for authorization purposes.

- Advice/Statement (Depending upon advice/statement indicator)
- Document Type (Enclosure, Paper or Envelope)
- Enclosure code (In case of an enclosure)
- Enclosure Description
- Size (In case of an envelope)
- Weight
- Max Weight
- Date and Time of modification/insertion

### **3.7 Printer Classification Code**

The following details will be displayed for the user for authorization purposes

- Classification Code
- Mail Flag
- Advice/Statement depending upon indicator
- Sorting order
- Envelope Size
- Max Weight
- Max no of pages
- Lot Code for Bar coding
- User ID
- Date and time of modification/insertion

### **3.8 Product/Fund Code**

The following information will be provided for the user for authorization purposes

- Product Processor
- Product/Fund Code
- Product/Fund Name
- Group Code
- Sub-Group Code
- Product Type
- User ID
- Date and Time of modification/insertion

### **3.9 Transaction Code**

The following information will be displayed for the user to authorize an insertion of new transaction code

- Transaction Source
- Transaction Code
- Transaction Type
- Transaction Desc
- User ID
- Date and Time of Insertion

### **3.10 Special Handling Code**

The following information will be provided for the user for authorization purposes

- Special Handling Code
- Printer Classification Code
- Special Handling Description
- User ID

## **4 Maintain Monthly Enclosures**

Enclosures are sent out along with the statements every month. Maximum of three enclosures can be maintained for a month to be sent out along with the statements. The monthly enclosures that are available to be sent out will be maintained under the menu "Parameter Tables – Enclosure Code". Once the enclosures are maintained for the month, then based on the RM's preference the enclosures can be mailed along the statement. This option allows the user to maintain enclosure at the following five levels namely Group, Function, Unit, RM and Customer. The user has to maintain these enclosures for each RM every month.

### **4.1 Maintain Enclosures at Group Level**

The Enclosures can be maintained at the highest level of the hierarchy, the Group level. Once, an enclosure is maintained at this level, all the RMs under this Group are automatically marked with these enclosures selected.

#### **Rules & Validations:**

1. ASMS displays the enclosures maintained for the month in the list. The user selects the enclosure and marks it to be sent across for all customers under the group.
2. The enclosure assignment has to be done for every statement generation period (month).
3. Once the enclosures are maintained at the group level, all the customer records under this group are updated with corresponding enclosure flags. However, if the enclosure is maintained at any lower level, such customer records will not be updated.
4. Once the enclosure maintenance is accepted, the corresponding customer records are updated.

## 4.2 Maintain Enclosures at Function Level

### Rules and Validations

1. ASMS displays the enclosures maintained for the month in the list. The user selects the enclosure and marks it to be sent across for all customers under the Function.
2. The enclosure assignment has to be done for every statement generation period (month).
3. Once the enclosures are maintained at the Function level, all the customer records under this Function are updated with corresponding enclosure flags. However, if the enclosure is maintained at any lower level, such customer records will not be updated.
4. Once the enclosure maintenance is accepted, the corresponding customer records are updated.

## 4.3 Maintain Enclosures at Unit Level

### Rules and Validations

1. ASMS displays the enclosures maintained for the month in the list. The user selects the enclosure and marks it to be sent across for all customers under the Unit.
2. The enclosure assignment has to be done for every statement generation period (month).
3. Once the enclosures are maintained at the Unit level, all the customer records under this Function are updated with corresponding enclosure flags. However, if the enclosure is maintained at any lower level, such customer records will not be updated.
4. Once the enclosure maintenance is accepted, the corresponding customer records are updated.



## **4.4 Maintain Enclosures at RM Level**

### **Rules and Validations**

1. ASMS displays the enclosures maintained for the month in the list. The user selects the enclosure and marks it to be sent across for all customers under the RM
2. The enclosure assignment has to be done for every statement generation period (month).
3. If the maintenance had been done at any level above RM, the assignments are displayed at the RM level also. To maintain RM preferences, the user has to overwrite the maintenance made at the higher level.
4. Once the enclosures are maintained at the RM level, all the customer records under this Function are updated with corresponding enclosure flags. However, if the enclosure is maintained at the Customer level, such customer's records will not be updated.
5. Once the enclosure maintenance is accepted, the corresponding customer records are updated.

## **4.5 Maintain Enclosures at Customer Level**

### **Rules and Validations**

1. Based on the search criteria provided in the search screen, the system provides a list of records matching the search criteria. The list is sorted on the customer no. The user has to click on the hyperlink provided on the customer no, to make a customer specific enclosure assignment.
2. ASMS displays the enclosures maintained for the month in the list. The user selects the enclosure and marks it to be sent across for the customer specified.

3. The enclosure assignment has to be done for every statement generation period (month).
4. If the maintenance had been done at the customer level, it overrides all the assignments done at any level above it.
5. Once the enclosure maintenance is accepted, the corresponding customer records are updated and during the statement generation process, the enclosures are sent across with the statement.

## **5 Maintain Advice Templates**

Advice Templates are the actual formats of advices containing data elements sent across to customers. ASMS will provide for a front-end interface through which the user can customize advices that will be sent across to the customers. Each Template will be linked to an Advice ID. An Advice Template can have a one to many relationships with the Advice ID. (i.e.) Multiple advice ids can use the same template. This will be particularly useful when a combination of more than one product code and transaction code generates the same advice. For example, for standing instruction advice irrespective of the nature of transaction whether it is a Domestic transfer of funds or Internal transfer of funds (both different transaction codes) same advice is generated. This mapping of advice templates to an advice id, for more than one advice ids use the same templates can be done through the "Parameter table maintenance menu – Advice Matrix – Map Advice Templates."

ASMS will allow Creation and Modification of Advice Templates.

## 5.1 Create An Advice Template

An Advice Template is divided into six sections namely

- **Header Details** – Data Consisting of the Customer Name, Customer Address, Zip code, Branch Name, Branch Address, RM Name, Telephone No, Fax etc. This data will be common for all templates and user will not be able to modify these. This area will not be available for edit.
- **Message section** – This section consists of messages that are to be printed in the advice. The message Ids displayed here are from the Notes, Messages and Disclaimer Table.
- **Data Section** – This section consists of the data elements that need to be printed in the advice. Based on the Advice ID (and the product processor from the advice ID), the available data elements that can be printed in the advice are populated.
- **Notes Section** – This section consists of the notes that need to be printed in the advice. The Notes displayed here are from the Notes, Messages and Disclaimers Table.
- **Option Index Specific Notes/Base Currency specific Notes section** – This section is specific to structured deposits advices. For some structured deposit advices based on the option index or on the base currency, specific notes need to be printed. These notes will be maintained in the Notes, Messages and Disclaimers Table. Based on the option index/base currency, during the EOD Feed file data loading using IB program, corresponding option index note and base currency note field in the table will be populated with values and these fields will be used during advice generation.
- **Disclaimer Section** – This section consists of the disclaimers that need to be printed on the advice. The values displayed here are from the Notes, Messages and Disclaimers Table.

## **Rules & Validations**

1. For creating an advice template, the prerequisite is that at least one advice id (combination of product code, transaction code and customer type) has to be maintained in the parameter tables.
2. Once an advice ID is generated, the advice id can be used for generating the advice templates. Based on the advice ID provided by the user, ASMS will modify the list of data element available for the user to be printed on the advice.
3. Once the user enters the advice ID, ASMS will display the details of the advice ID such as the Product Processor, Product code, Transaction Code and Customer Type. The user has to confirm the details displayed and only on his confirmation the user will be taken to the 'Create template screen.
4. An Advice ID can also be mapped to several templates. This option will be used when for a particular transactions, two advices are generated. For e.g. in case of Citiplus product rollover, two advices are generated. In such a scenario when the user provides an advice ID, which already has a template, attached to it, a user confirmation will be obtained stating whether multiple advices have to be sent out for the transaction.
5. The Template ID will be generated automatically by the system and once the template is saved, the Template ID will be displayed to the user.

## **5.2 Edit Advice Template**

ASMS will allow the user to edit an existing template. Search screen will be provided for selecting the template ID for edit. Once the template is selected, a screen similar to the template creation screen will be displayed for the user with the existing values and the user can edit the existing template.

### **5.3 Preview Advice Template**

ASMS will provide suitable search screens for identifying the template. Once the template is selected, the system provides a preview of how the advice would be printed.

### **5.4 Authorize Advice Template**

ASMS will provide a list of advice templates pending authorization. The details displayed on this screen would be Advice ID, Product Processor, Product Code, Transaction Code and the customer type along with the Template ID. Hyperlink will be provided on the template ID to pre view the advice template from where the template can be authorized or rejected.

## **6. Statement Hierarchy Table**

This option will enable the user to arrange the product groups in the Statement. This option allows the user to determine the order in which the product groups, product sub-groups and the product types will be printed in the statement.

### **Rules and Validations**

1. This option will be provided as an interface for the user to determine the order in which the product groups, product sub-groups under a product group and the product types under the product sub-groups will be printed in the statement.
2. The list of values displayed in the product group hierarchy will depend upon the no of product groups available in the system.

3. The list of values displayed in the product sub-group hierarchy will depend upon the no of product sub-groups available for the product group selected under level I.
4. The list of values displayed in the product type hierarchy will depend upon the no of product types available for the product sub-type selected under level II.
5. The value selected in the Product Group once will not be available for selection in the other lines. The same applies for the product sub-groups and the product sub-types.
6. The value selected in the hierarchy drop down for one product group will not be available for selection for the other product groups. The same applies for the product sub-group and the product type levels also.
7. The product group level and subgroup level messages/notes need to be specified here. The user will enter the message/note id that will be picked during the statement generation process. Based on the language preference of the customer, the messages specified as kanji note and English note will be picked up. No validation is done to ensure that the note is in Kanji or in English. It will be the user's responsibility to provide appropriate notes/messages at this level.

## 7 CODING AND TESTING

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Coding converts the design models into executable product. A server side scripting language along with client side language is used to establish the various data and control flow. JSP is the ideal choice for implementation since it inherits all the functionalities and power of JAVA. This makes this project modules easy to extend or improved.

### 7.1 CODING STANDARDS

#### 7.1.1 CODING FORMAT

Begin each file with a comment including the file name and/or related identifying information including, a history table listing dates, authors and summaries of changes.

The templates of a file header as follows

```
/******  
*CREATED BY  
*REVISION HISTORY  
*NAME, DATE, PURPOSE  
*PROJECT  
*Operating environment  
*Compiler  
*DESCRIPTION  
*Write the overview and the purpose of the content of the file here  
*Provide the overview of the approach and the underlying  
*Concepts  
*IMPORT PACKAGE  
*****/
```

## 7.1.2 CODING RULES

- ☞ Descriptive names for all variables, function names, constant, and other identifiers are used.
- ☞ Single letter identifier is only for the counter in loops.
- ☞ Variable names are started with lower case.
- ☞ Multi-word identifiers are internally capitalized
- ☞ Brackets begin and end on a new line and are exist even for one-line statement.
- ☞ Import statement must be fully qualified for clarity.
- ☞ In-line comments are used to explain complicated sections of code, such as loops.
- ☞ Two blank spaces are used to separate each method within a class definition.
- ☞ One blank space is used to separate logical section of code within a method.
- ☞ All the classes are begin with a capital letter and all packages are started with lower case.
- ☞ Methods begin with a lower case letter.
- ☞ Class data member and member functions are prefixed with m Opening and closing braces are aligned to matching conditional keyword.

## 7.2 TESTING

Testing of software extends throughout the coding phase and it represents the ultimate review of specification, design and coding. A series of test cases are created with an intention of testing the software. Based on the way the software reacts to these tests, we can decide whether the product that has been built is robust or not.



### **7.2.1 Unit Testing**

- ☞ Each of the modules developed were tested independently. The following were considered during the unit test.
- ☞ The module interface is tested to ensure that information properly flows in and out of the unit under test.
- ☞ The local data structure is examined to ensure that data stored temporarily maintains integrity throughout the unit's lifetime.
- ☞ Boundary condition are tested
- ☞ All independent paths through the control structure are exercised to ensure that all the statements in the modules have been executed at least once.
- ☞ All error-handling paths are tested.

### **7.2.2 Validation testing**

Its said that validation is successful when the software function in a manner that can be reasonably expected by the customer. This type of testing is very important, because it's the only way to check whether the requirement given by the user has been completely fulfilled. Validation testing is done for all the interface modules. All client side validation codes are tested before they incorporated with the modules or subsystem.

### **7.2.3 Integration testing**

Once the modules are tested individually under the unit testing strategy. It is necessary to put all these modules together. It is here that the data can be lost across the interface. One module can have an inadvertent, adverse effect on another.

Integration testing is a systematic technique for constructing the program structure while at the same time conducting test to uncover errors associated with interfacing. The objective is to take unit-testing modules and build a program structure that has been dictated by design.

## 8 CONCLUSION & FUTURE ENHANCEMENT

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### 8.1 CONCLUSION

**Advice and Statement Management system** has been designed and developed for the satisfaction of the end users. The system has been built with latest technology to make best of all resources. Its is very user friendly, simple and interactive system, making the work more easier. The end user can able to adjust the completed transactions and the application can be accessed in any terminal within the bank in Japan through Intranet. This will help in reducing the work to prepare statement and advice manually. All the reports in this application can be printed in printers, acrobat pdf writers and acrobat distillers. Once printing is completed, Dai Nippon(printer) will upload back to the ASMS server and the final image files are sent to the customer. The final image files will be stored in the ASMS server for a period of time and the system is provided with tight security.

## 8.2 FUTURE ENHANCEMENTS

The system has been developed flexible enough to support future enhancements. The system has been designed such that it accepts the modifications without affecting the presently developed system.

Some of the enhancements are given below

- ☞ Compatible with different browsers.
- ☞ Currently this application is used by only two languages, English and Kanji (Japanese), In future this can be used by different languages.
- ☞ Dynamic statement generation can be possible.
- ☞ Global access is possible by converting Intranet to Internet.
- ☞ If a new application has been developed it can be easily added without any modification of existing system.
- ☞ The application is so developed that if new forthcoming applications are implemented with latest technology, then the old ones will not become problem for adopting new technologies.

## 9 APPENDIX A – TEST CASES

## UNIT TEST PLAN

Project ID : GSUT34

Date :06/03/2003

Module ID : Maintenance

Project/Module Name : ASMS

Program Name : AtrmReq.java

UNIT ID : Programmer: Ram Prakash . R

Test ID : ST Prepared by: Ram Prakash . R

Start date : 07/03/2003 Reviewed by : Sekhar

End date : 08/03/2003

	Test Condition	Test Data	Expected Result	Actual Result
1.	Click Maintenance → Parameter Maintenance → Advice Matrix → Create	Nil	Control should be transferred to atrm (advice template reference matrix) create screen wherein new advice ids can be created	Control is getting transferred to advice template reference matrix create screen wherein new advice ids can be created
2.	In Atrm create screen click on cancel button	Nil	Control should get transferred to home screen	Control is getting transferred to home screen
3.	In Atrm create screen click in reset button	English description = 'Testing'	All the values in the fields should get reverted back to their original values	All the values in the fields are getting reverted back to their original values
4.	In Atrm create screen leave both English and kanji description as blank and click "Mark For Authorization" button	Nil	Alert stating "Advice description cannot be null" should be raised.	Alert stating "Advice description cannot be null" is getting raised.
5.	In Atrm create screen leave product code as blank and click "Mark For Authorization" button	Nil	Alert stating "Product code cannot be null" should be raised.	Alert stating "Product code cannot be null" is getting raised.
6.	In Atrm create screen leave transaction code as blank and click "Mark For Authorization" button	Nil	Alert stating "Transaction code cannot be null" should be raised.	Alert stating "Transaction code cannot be null" is getting raised.
7.	In Atrm create screen leave product processor id as blank and click "Mark For Authorization" button	Nil	Alert stating "PP Id cannot be null" should be raised.	Alert stating "PP Id cannot be null" is getting raised.

8.	Click Maintenance → Parameter Maintenance → Advice Matrix → Map Template	Nil	Control should be transferred to atrm (advice template reference matrix) map search screen	Control is getting transferred to advice template reference matrix map search screen
9.	In Atrm Map search screen enter invalid search condition and click "Search" button.	Advice id = 'A5880' Product code = 2311985	Alert stating "No Matching data found for this search criteria" should get displayed and the control should remain in the same screen	Alert stating "No Matching data found for this search criteria" getting displayed and the control remains in the same screen
10.	In Atrm Map search screen enter valid search condition and click "Search" button.	Product code='BILL'	Control should get transferred to atrm map search result screen where there should be links available on the advice id.	Control is getting transferred to atrm map search result screen where there are links available on advice id.
11.	In Atrm Map screen Click OK button on the confirmation box	Nil	Control should stay in the same atrm map screen	Control is staying in the same atrm map screen
12.	In Atrm Map screen click Cancel button on the confirmation box	Nil	Control should get transferred to Atrm Map search result screen.	Control is getting transferred to Atrm Map search result screen
13.	In Atrm Map screen click on Cancel button	Nil	Control should get transferred to atrm map search result screen.	Control is getting transferred to atrm map search result screen
14.	In Atrm Map screen click on Reset button	Nil	All the fields in the screen should get reverted back to their original values	All the fields in the screen getting reverted back to their original values
15.	Click Maintenance → Parameter Maintenance → Advice Matrix → Edit Template	Nil	Control should be transferred to atrm (advice template reference matrix) edit search screen	Control is getting transferred to advice template reference matrix edit search screen
16.	In Atrm edit search screen leave all input fields blank and click search button	Nil	Alert stating "Atleast one field has to be filled up for search" should get displayed and the control should remain in the same screen	Alert stating "Atleast one field has to be filled up for search" getting displayed and the control remains in the same screen
17.	In Atrm edit search screen click Cancelbutton	Nil	Control should get transferred to the home screen	Control is getting transferred to the home screen.
18.	In Atrm Edit search result screen click on Cancel button	Nil	Control should get transferred to atrm edit search screen	Control is getting transferred to atrm edit search screen
19.	In Atrm Edit search screen click on the link available on pp_id	Nil	All the advice pp's available to the system which are stored in the table ib840pb should get displayed in a new window with links on them clicking on which, the corresponding pp id should get displayed in the pp id text box.	All the advice pp's available to the system which are stored in the table ib840pb are getting displayed in a new window with links on them clicking on which the corresponding pp id is getting displayed in the pp id text box.

20.	In Atrm Edit search screen click on the link available on product code	Nil	All the product codes available (that are stored in the table m_product ) should get displayed in a new window with links on them clicking on which, the corresponding product code should get displayed in the product code text box.	All the product codes available (that are stored in the table m_product ) are getting displayed in a new window with links on them clicking on which, the corresponding product code are getting displayed in the product code text box.
21.	In Atrm Edit search screen click on the link available on transaction code	Nil	All the transaction codes available (that are stored in the table m_txn_cd) should get displayed in a new window with links on them clicking on which, the corresponding transaction code should get displayed in the transaction code text box.	All the transaction codes available (that are stored in the table m_txn_cd) are getting displayed in a new window with links on them clicking on which, the corresponding transaction code is getting displayed in the transaction code text box.
22.	In Atrm Edit search screen enter invalid search condition	Advice id = 'A5880' Product code = 2311985	Alert stating "No Matching data found for this search criteria" should get displayed and the control should remain in the same screen	Alert stating "No Matching data found for this search criteria" getting displayed and the control remains in the same screen
23.	In Atrm Edit search screen enter valid search condition	Product code='BILL'	Control should get transferred to atrm edit search result screen where there should be links available on the advice id.	Control is getting transferred to atrm map search result screen where there are links available on advice id.
24.	In Atrm Edit search result screen Click on the link available in Advice Id	Nil	Control Should get transferred to atrm edit screen	Control is getting transferred to atrm edit screen.
25.	In Atrm edit screen click on Cancel button	Nil	Control should get transferred to atrm edit search result screen.	Control is getting transferred to atrm edit search result screen.
26.	In Atrm Edit screen click on Reset button	Nil	All the fields in the screen should get reverted back to their original values	All the fields in the screen getting reverted back to their original values
27.	Click Maintenance → Parameter Maintenance → Advice Matrix → Delete	All records in master table (m_prdtxnavd) with recordtype='U' only	Control should get transferred to atrm delete screen with only one frame showing all modified records.	Control is getting transferred to atrm delete screen with one frame showing all modified records.
28.	Click Maintenance → Parameter Maintenance → Advice Matrix → Delete	All records in work table (w_prdtxnavd) with recordtype='I' only	Control should get transferred to atrm delete screen with only one frame showing all inserted records.	Control is getting transferred to atrm delete screen with one frame showing all inserted records.
29.	Click Maintenance → Parameter Maintenance → Advice Matrix → Delete	Records in master table (m_prdtxnavd) with recordtypes 'U' or 'I'	Control should get transferred to atrm delete screen with two frames showing both inserted records and modified records.	Control is getting transferred to atrm delete screen with two frames showing both inserted records and modified records.

30.	In Atrm delete screen, don't check any check boxes and click "Mark For Authorization" button	Nil	Alert stating "Select record(s) to delete" should get displayed.	Alert stating "Select record(s) to delete" is getting displayed
31.	In Atrm delete screen, check one or more check boxes and click "Mark For Authorization" button	Nil	A confirmation stating "Are you sure you want to delete the selected record(s)" should get popped up.	A confirmation stating "Are you sure you want to delete the selected record(s)" is getting popped up.
32.	In Atrm delete screen, click "OK" button in the confirmation box	Nil	An alert stating "Record(s) Marked for Authorization" should get popped up and the control should remain in the same atrm delete search result screen. Corresponding record should get inserted in the work table (w_prdtxnav)	An alert stating "Record(s) Marked for Authorization" is getting popped up and the control remains in the same atrm delete search result screen. Corresponding record getting inserted in the work table (w_prdtxnav)
33.	In Atrm delete screen, Click "Cancel" button in the confirmation box	Nil	Control should remain in the same atrm delete search result screen.	Control remains in the same atrm delete search result screen.
34.	In Atrm delete screen, Click "reset" button	Nil	All controls in the screen should get reverted back to their original state.	All controls in the screen should be getting reverted back to their original state.
35.	In Atrm delete screen, Click "Cancel" button	Nil	Control should get transferred to home screen	Control is getting transferred to home screen
36.	Click Maintenance → Parameter Maintenance → Advice Matrix → ViewTemplate	Nil	Control should be transferred to atrm (advice template reference matrix) view search screen	Control is getting transferred to advice template reference matrix view search screen
37.	In Atrm view search screen leave all input fields blank and click search button	Nil	Alert stating "Atleast one field has to be filled up for search" should get displayed and the control should remain in the same screen	Alert stating "Atleast one field has to be filled up for search" is getting displayed and the control remains in the same screen
38.	In Atrm view search screen click Cancel button	Nil	Control should get transferred to the home screen	Control is getting transferred to the home screen.
39.	In Atrm View search result screen click on Cancel button	Nil	Control should get transferred to atrm view search screen	Control is getting transferred to atrm view search screen
40.	In Atrm View search result screen click Print button	Nil	View search result screen should get printed to local printer.	View search result screen is getting printed to local printer
41.	In Atrm view search screen click View In Excel button	Nil	View search result should get opened in Excel sheet	View search result is getting opened in Excel sheet

42.	Click Parameter Authorization → Advice Matrix	All records in work table (w_prdtxnadv) with record_type='I' only	All new inserted records that are marked for authorization, available in the work table (w_prdtxnadv) should be displayed in the screen in a single frame.	All new inserted records that are marked for authorization, available in the work table (w_prdtxnadv) are getting displayed in the screen in a single frame.
43.	Click Parameter Authorization → Advice Matrix	All records in work table (w_prdtxnadv) with record_type='U' only	All modified records that are Marked for authorization, Available in the work table (w_prdtxnadv) should be displayed in the screen in a single frame.	All modified records that are marked for authorization, available in the work table (w_prdtxnadv) are getting displayed in the screen in a single frame.
44.	Click Parameter Authorization → Advice Matrix	All records in work table (w_prdtxnadv) with record_type='D' only	All deleted records that are Marked for authorization, Available in the work table (w_prdtxnadv) should be displayed in the screen in a single frame.	All deleted records that are marked for authorization, available in the work table (w_prdtxnadv) are getting displayed in the screen in a single frame.
45.	Click Parameter Authorization → Advice Matrix	Records in work table (w_prdtxnadv) with record_type='D' or 'I'	All deleted and newly inserted records that are Marked for authorization, Available in the work table (w_prdtxnadv) should be displayed in the screen in two different frames.	All deleted and newly inserted records that are Marked for authorization, Available in the work table (w_prdtxnadv) are getting displayed in the screen in two different frames.
46.	Click Parameter Authorization → Advice Matrix	Records in work table (w_prdtxnadv) with record_type='U' or 'I'	All modified and newly inserted records that are Marked for authorization, Available in the work table (w_prdtxnadv) should be displayed in the screen in two different frames.	All modified and newly inserted records that are Marked for authorization, Available in the work table (w_prdtxnadv) are getting displayed in the screen in two different frames.
47.	Click Parameter Authorization → Advice Matrix	Records in work table (w_prdtxnadv) with record_type='D' or 'U'	All deleted and modified records that are Marked for authorization, Available in the work table (w_prdtxnadv) should be displayed in the screen in two different frames.	All deleted and modified records that are Marked for authorization, Available in the work table (w_prdtxnadv) are getting displayed in the screen in two different frames.
48.	Click Parameter Authorization → Advice Matrix	Records in work table (w_prdtxnadv) with record_type='D' or 'U' or 'I'	All newly inserted, deleted and modified records that are Marked for authorization, Available in the work table (w_prdtxnadv) should be displayed in the screen in three different frames.	All newly inserted, deleted and modified records that are Marked for authorization, Available in the work table (w_prdtxnadv) are getting displayed in the screen in three different frames.
49.	In atm authorization result screen, click Cancel button	Nil	Control should be transferred to home screen	Control is getting transferred to home screen
50.	In atm authorization result screen, don't check any of the check boxes available	Nil	Alert stating "Select record(s) to authorize" should get displayed.	Alert stating "Select record(s) to authorize" is getting displayed.



## UNIT TEST PLAN

<b>Project ID : PBG-2002-PS</b>		<b>Date : 06/03/2003</b>		
<b>Module ID : Maintenance</b>				
<b>Project/Module Name : ASMS</b>				
<b>Program Name : CustMaintain.java</b>				
<b>UNIT ID : 4.1.1</b>		<b>Programmer: Ram Prakash . R</b>		
<b>Test ID : ST</b>		<b>Prepared by: Ram Prakash . R</b>		
<b>Start date : 07/03/2003</b>		<b>Reviewed by : Sekhar</b>		
<b>End date : 08/03/2003</b>				
#	Test Condition	Test Data	Expected Result	Actual Result
1	Click Maintenance → customer master → customer master maintenance → edit	Nil	Customer master maintenance search screen should get displayed.	Customer master maintenance search screen is getting displayed.
2	In customer master search screen enter alphanumeric characters for customer number and click search button	Asdfgf	Alert stating "Enter Numeric Values Only" should get displayed and the control should remain in the same customer master search screen	Alert stating "Enter Numeric Values Only" is getting displayed and the control remains in the same customer master search screen
3	In customer master search screen enter alphanumeric characters for RM number and click search button	Asdfgf	Alert stating "Enter Numeric Values Only" should get displayed and the control should remain in the customer master same search screen	Alert stating "Enter Numeric Values Only" is getting displayed and the control remains in the same customer master search screen
4	In customer master search screen leave all fields blank and click search button	Nil	Alert stating "Atleast one field has to be filled up for search" should get displayed and the control should remain in the same customer master search screen	Alert stating "Atleast one field has to be filled up for search" is getting displayed and the control remains in the same customer master search screen
5	In customer master search screen enter invalid customer number and click search button	2133549	Alert stating "No Matching Data Found For This Search Criteria" should get displayed and the control should remain in the same customer master search screen	Alert stating "No Matching Data Found For This Search Criteria" is getting displayed and the control remains in the same customer master search screen
6	In customer master search screen enter invalid RM number and click search button	546	Alert stating "No Matching Data Found For This Search Criteria" should get displayed and the control should remain in the customer master same search screen	Alert stating "No Matching Data Found For This Search Criteria" is getting displayed and the control remains in the same customer master search screen

7	In customer master search screen enter invalid Customer name and click search button	Asdfgf	Alert stating "No Matching Data Found For This Search Criteria" should get displayed and the control should remain in the same customer master search screen	Alert stating "No Matching Data Found For This Search Criteria" is getting displayed and the control remains in the same customer master search screen
8	In customer master search screen enter valid customer number and click search button	800011122	Customer master Search result screen for the given search condition should get displayed with anchor links on customer number	Customer master search result screen for the given search condition is getting displayed with anchor links on customer number
9	In customer master search screen enter valid RM number and click search button	93	Customer master Search result screen for the given search condition should get displayed with anchor links on customer number	Customer master Search result screen for the given search condition is getting displayed with anchor links on customer number
10	In customer master search screen enter valid Customer name and click search button	MR. HIDEO NAKABAYAS HI	Customer master Search result screen for the given search condition should get displayed with anchor links on customer number	Customer master Search result screen for the given search condition is getting displayed with anchor links on customer number
11	In customer master search screen enter valid RM name and click search button	AKIHIKO KITAMURA	Customer master Search result screen for the given search condition should get displayed with anchor links on customer number	Customer master Search result screen for the given search condition is getting displayed with anchor links on customer number
12	Click on Cancel button in customer master search screen	Nil	Control should get transferred to home screen	Control is getting transferred to home screen
13	In customer master edit screen, Click on Set Button	DWU Indicator = 'NO'	Calendar should not pop up.	Calendar is not popping up
14	In customer master edit screen, Click on Set Button	DWU Indicator = 'YES'	Calendar should pop up displaying months only and months greater than the current business date should be disabled.	Calendar is popping up displaying months only and months greater than the current business date are disabled
16	In customer master edit screen, Click on DWU Reason text box	DWU Indicator = 'YES'	User should be able to enter text in the input box	User is able to enter text in the input box
17	In customer master edit screen, Click Reset button	Nil	All the fields in customer master edit screen should be reset to their original values	All the fields in customer master edit screen are reset to their original values
18	In customer master edit screen, Click "Mark For Authorization" button	Nil	Record should get saved in the work table (w_cust_info) and an alert should be raised stating "Record Marked For Authorization"	Record gets saved in the work table (w_cust_info) and an alert is raised stating "Record Marked For Authorization"
19	Click Maintenance → customer master → customer master maintenance → Authorize	Nil	All records that are available in the work table (w_cust_info) should be displayed in the screen with anchor link on customer number	All records that are available in the work table (w_cust_info) are displayed in the screen with anchor link on customer number

20	In the detailed customer master authorization screen, click cancel button.	Nil	Control should be transferred to customer master authorization result screen	Control is getting transferred to customer master authorization result screen
21	In customer master Reject screen, Click Save button	Reject reason=null	Alert stating "Reject reason cannot be null" should be raised and control should remain in the same screen	Alert stating "Reject reason cannot be null" is getting raised and control remains in the same screen
22	In customer master Reject screen, Click Save button	Reject reason = testing	Alert stating "Record rejected" should be raised and control should get transferred to customer master authorization result screen	Alert stating "Record rejected" is getting raised and control is getting transferred to customer master authorization result screen
23	Click Maintenance → customer master → Statement Grouping → edit	Nil	Customer statement grouping search screen should get displayed.	Customer statement grouping search screen is getting displayed.
24	In statement grouping search screen enter alphanumeric characters for customer number and click search button	Asdfgf	Alert stating "Enter Numeric Values Only" should get displayed and the control should remain in the same statement grouping search screen	Alert stating "Enter Numeric Values Only" is getting displayed and the control remains in the same statement grouping search screen
25	In statement grouping search screen enter invalid customer number and click search button	2133549	Alert stating "No Matching Data Found For This Search Criteria" should get displayed and the control should remain in the same statement grouping search screen	Alert stating "No Matching Data Found For This Search Criteria" is getting displayed and the control remains in the same statement grouping search screen
26	In statement grouping search screen enter invalid RM number and click search button	546	Alert stating "No Matching Data Found For This Search Criteria" should get displayed and the control should remain in the same statement grouping search screen	Alert stating "No Matching Data Found For This Search Criteria" is getting displayed and the control remains in the same statement grouping search screen
27	In statement grouping search screen enter invalid Customer name and click search button	Asdfgf	Alert stating "No Matching Data Found For This Search Criteria" should get displayed and the control should remain in the same statement grouping search screen	Alert stating "No Matching Data Found For This Search Criteria" is getting displayed and the control remains in the same statement grouping search screen
28	In statement grouping search screen enter invalid RM name and click search button	Asdfgf	Alert stating "No Matching Data Found For This Search Criteria" should get displayed and the control should remain in the same statement grouping search screen	Alert stating "No Matching Data Found For This Search Criteria" is getting displayed and the control remains in the same statement grouping search screen
29	In statement grouping search screen enter valid customer number and click search button	800011122	Statement grouping search result screen for the given search condition should get displayed with anchor links on customer number	Statement grouping search result screen for the given search condition is getting displayed with anchor links on customer number

30	In statement grouping search screen enter valid RM number and click search button	93	Statement grouping search result screen for the given search condition should get displayed with anchor links on customer number	Statement grouping search result screen for the given search condition is getting displayed with anchor links on customer number
31	In statement grouping search screen enter valid Customer name and click search button	<b>MR. HIDEO NAKABAY ASHI</b>	Statement grouping search result screen for the given search condition should get displayed with anchor links on customer number	Statement grouping search result screen for the given search condition is getting displayed with anchor links on customer number
32	In statement grouping search screen enter valid RM name and click search button	AKIHIKO KITAMURA	Statement grouping search result screen for the given search condition should get displayed with anchor links on customer number	Statement grouping search result screen for the given search condition is getting displayed with anchor links on customer number
33	In statement grouping edit screen leave number of copies blank and Click "Mark For Authorization" button	<b>NIL</b>	Alert stating "Number of copies cannot be null" should be raised.	Alert stating "Number of copies cannot be null" is getting raised.
34	In statement grouping edit screen enter alpha characters in number of copies input field and Click "Mark For Authorization" button	<b>D</b>	Alert stating "Enter numeric values only" should be raised.	Alert stating "Enter numeric values only" is getting raised.
35	In statement grouping edit screen enter valid number of copies and click "Mark for Authorization" button	<b>1</b>	Alert stating "Record Marked For Authorization" should be raised and values should get stored in the work table (w cust address)	Alert stating "Record Marked For Authorization" is getting raised and values are getting stored in the work table (w cust address)
36	In statement grouping edit screen click on reset button	<b>NIL</b>	All the values that are changed should get reverted back to their original values	All the values that are changed are getting reverted back to their original values
37	In statement grouping edit screen click on Cancel button	<b>NIL</b>	Control should get transferred to the statement grouping search result screen	Control is getting transferred to the statement grouping search result screen
38	In statement grouping authorization result screen, click Cancel button	<b>Nil</b>	Control should be transferred to home screen	Control is getting transferred to home screen

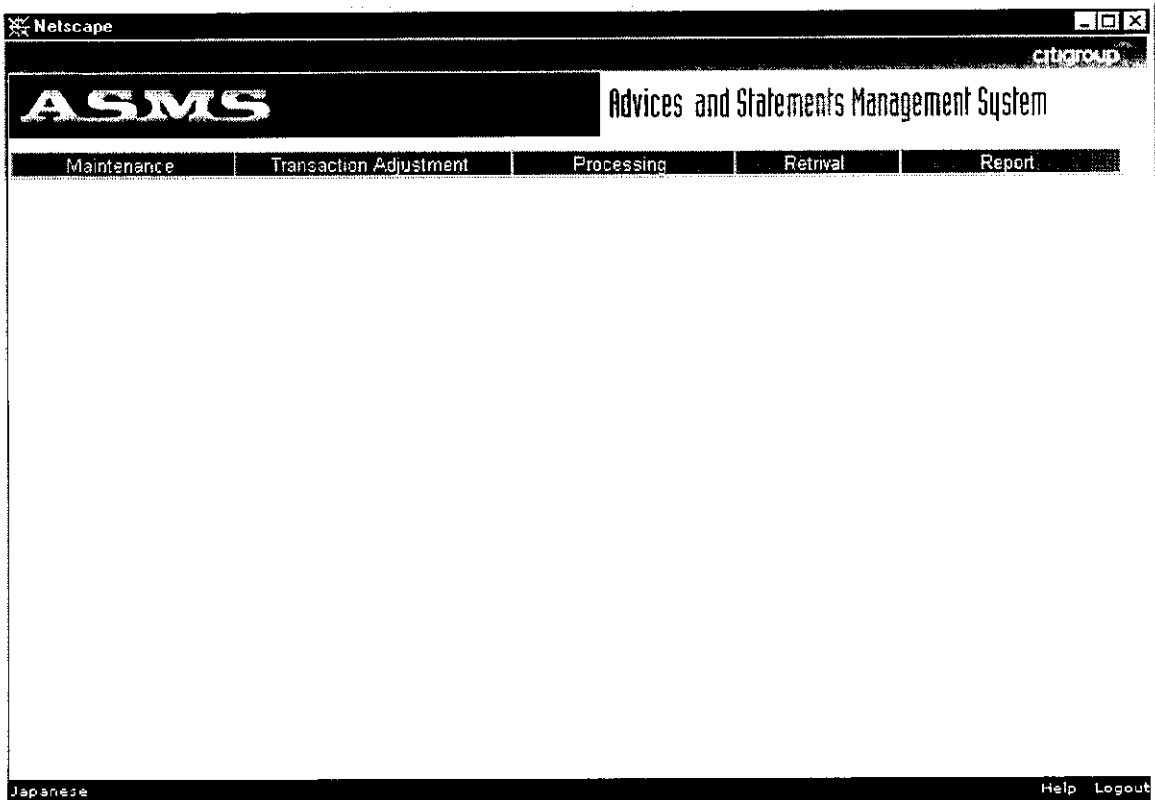
## APPENDIX B – SCREEN SHOTS

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### INPUT SCREEN

#### Screen Description:- Home Page

When login is successful the Home screen of ASMS as shown below will be displayed.



## Screen Description:- Customer Basic Maintenance screen

All customer information required for advice & statement printing will be maintained in GRB System and provided to ASMS as one onetime upload. Thereafter any changes to existing customers or addition of new customers will be provided on an incremental basis.

Netscape

Advices and Statements Management System

**ASMS**

Search Customer for Maintenance

Customer No.	<input type="text" value="100"/>	Customer Name	<input type="text"/>
RM No.	<input type="text"/>	RM Name	<input type="text"/>

Home Japanese Help Logout

## Screen Description:- Customer Basic Information screen

Clicking on the relevant Customer A/C Number of the screen, will display the customer basic information for that particular customer and users may edit this information.

The screenshot shows a Netscape browser window displaying the ASMS (Advices and Statements Management System) Customer Master screen. The interface includes a header with the ASMS logo and the system name. Below the header, there is a form titled 'Customer Master' with various input fields and buttons.

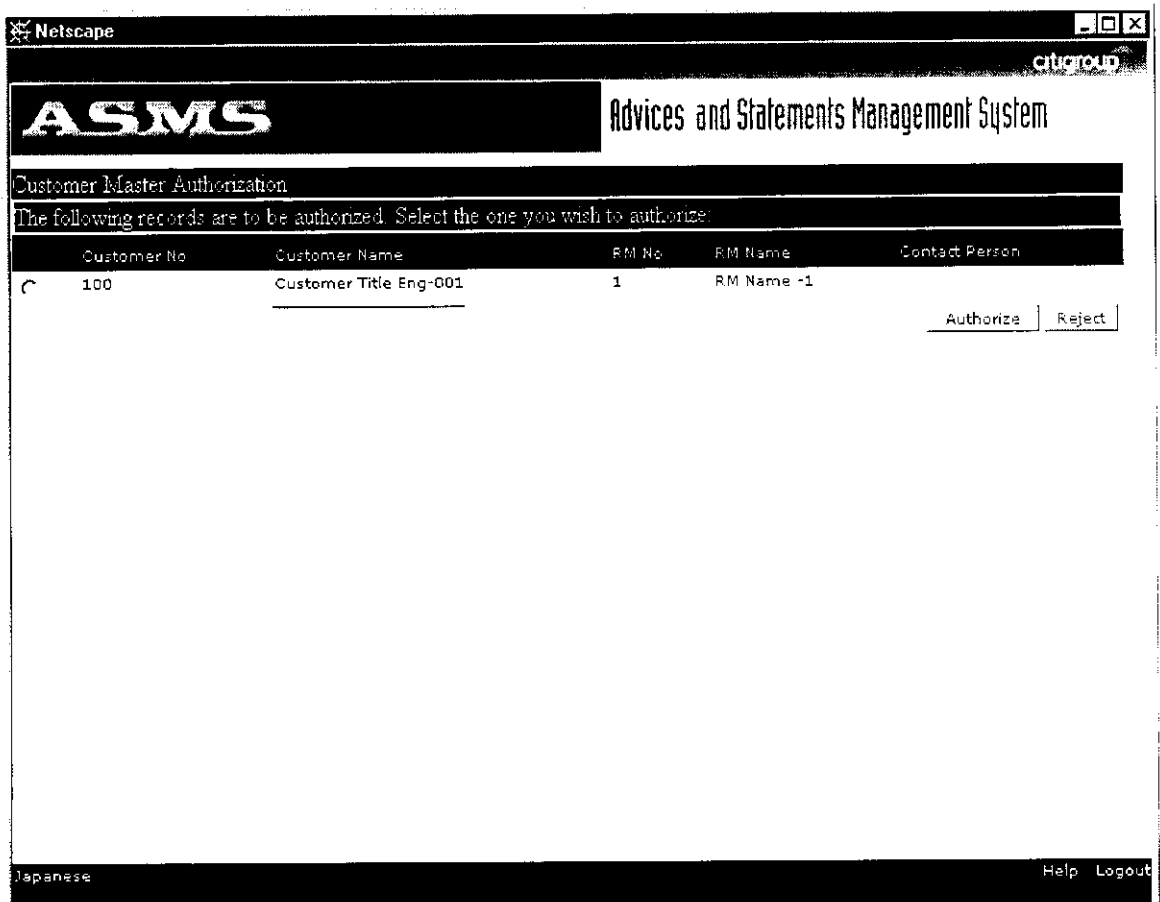
Customer No.	100	TBS Customer No.	
Customer Name	Customer Title Eng-001		
Kanji Customer Name	Customer Title Jap-001		
RM Code	I	RM Name	RM Name -1
MTM frequency in days	120	Statement Hold Indicator	NO
Advice Hold Indicator	YES	Advice Hold Till Date	10-AUG-2030 Set
Advice Hold Reason	d:fsdfsd		
DWU Indicator	NO	DWU Month	01-AUG-2000 Set
DWU Reason	d jkj sdfsd		

Buttons: Mark For Authorization, Cancel, Reset

Footer: Home Japanese Help Logout

## Screen Description:- Authorize Customer Basic Information

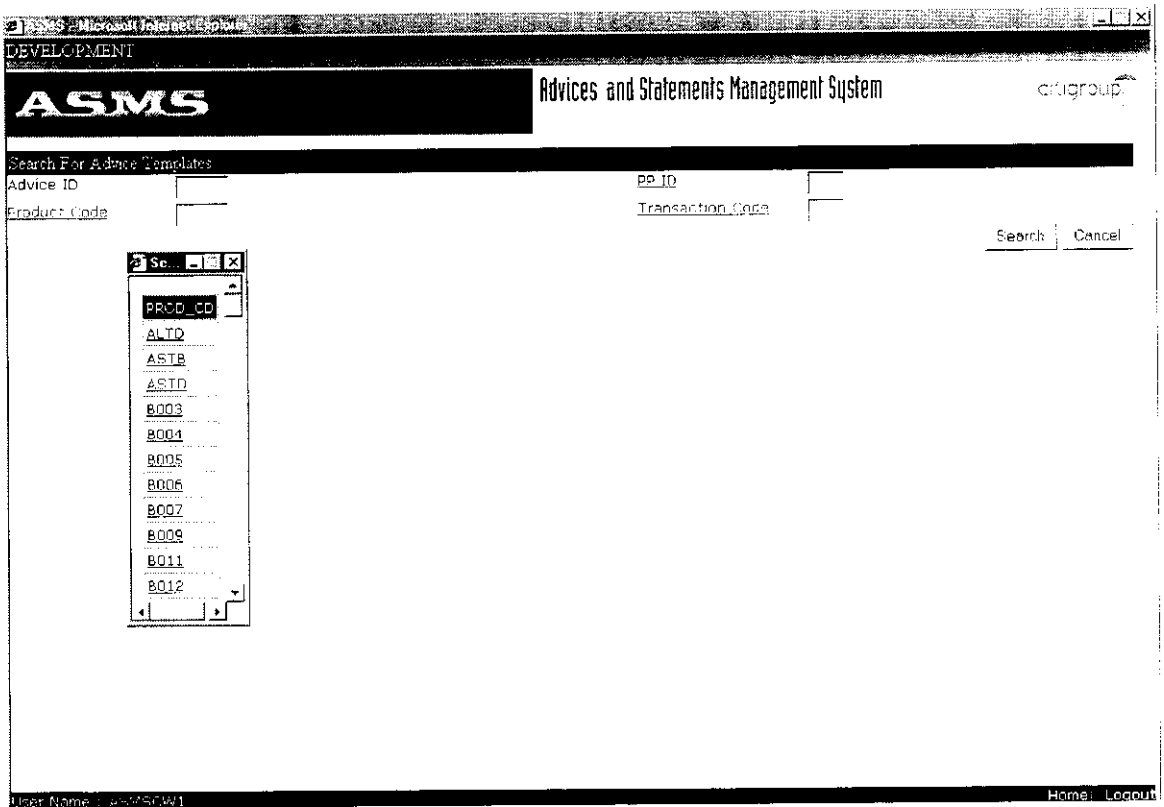
Users will use this screen to authorize the edits made on Customer basic records, once a change has been authorized the record flag changes from 'Pending Authorization' to 'Authorized'.





## Screen Description:- Create Advice ID

Users can create and maintain unique Advice ID's in the each unique id may be mapped to a product processor, product code, Transaction code & Customer type. An advice ID is a combination of Product Processor, Product Code, Transaction Code and Customer Type.



## Screen Description:- Map Templates

Every advice ID needs to be mapped to a template id, which is the actual format of the advice and contains all the data elements to be printed in the advice. At the time of creating a template, the advice id to which is mapped will be provided. Below screen shows advice Template Search Screen

The following transactions match your search criteria. Select the transaction you wish to adjust.

Advice ID	Product Code	Transaction Code	PP ID	Advice Description
<a href="#">A11</a>	P1	T1	DETX	english advice description of A11
<a href="#">A12</a>	P2	T002	DETX	english advice description1
<a href="#">A13</a>	P3	T003	DETX	english advice description2
<a href="#">A13</a>	P3	T003	DETX	english advice description2
<a href="#">A842</a>	1	T001	DETX	cc
<a href="#">A842</a>	1	T001	DETX	cc
<a href="#">A843</a>	1	T001	DETX	cc
<a href="#">A862</a>	111111	T001	DETX	fhfgh
<a href="#">A862</a>	111111	T001	DETX	fhfgh
<a href="#">A862</a>	111111	T001	DETX	fhfgh
<a href="#">A902</a>	133	T002	DETX	sdfsd
<a href="#">A902</a>	133	T002	DETX	sdfsd
<a href="#">A922</a>	SAV	T005	DETX	x x x

Home Japanese Help Logout

## Screen Description:- Detailed Advice ID view screen

This screen provides a detailed view screen of the advice ID from which template id can be mapped to an advice ID. Template ID is the actual format of the advice that has to be generated for the transaction and contains all the data elements that are to be printed in the advice.

The screenshot shows a web browser window titled 'Advices and Statements Management System'. The main content area is titled 'Map Advice Templates' and contains a form with the following fields:

Advice ID	A842		
English Description	cc		
Kanji Description	vbcvb		
Product Processor ID	DET	Product Code	1
Transaction Code	T001	Customer Type	Individual
English No. Of Pages		Kanji No. Of Pages	
English Template ID	E1	Kanji Template ID	J1
Last Updated date	14-Aug-2000	Last Updated by	ASMSCW1

At the bottom of the form, there are three buttons: 'Mark For Authorization', 'Cancel', and 'Reset'.

The footer of the page contains the text 'Home Japanese' on the left and 'Help Logout' on the right.

## Screen Description:- Document weight screen

Advice & statements will be mailed in a single envelope when they are going to a particular address reference. Generated advice and Statement will need to be sorted by address reference and envelope sequence assigned. For each envelope the weight of the contents and the envelope will have to be computed. For this purpose this screen is used.

The screenshot shows a web browser window titled 'ASMS - Microsoft Internet Explorer'. The page header includes the ASMS logo, the text 'Advices and Statements Management System', and a 'cdgroup' logo. The main content area is titled 'Weights Table - Insert' and contains a form with the following fields:

Advice/Statement Indicator	Statement	Document Type	Enclosure
Enclosure Code	ML7	Size	Envelope Printed Page Enclosure
Enclosure Description		Max Weight	
Weight(in grams)	23	Updated By	ASMS00W1
Last Updated Date	06-Jan-2003		

At the bottom right of the form, there are three buttons: 'Mark For Authorization', 'Reset', and 'Cancel'. The footer of the page shows 'User Name : ASMS00W1' on the left and 'Home Logout' on the right.

## Screen Description:- Authorization Screen for Message/Disclaimers

Any modifications/insertions made to the parameter table needs to be authorized. Unless the modification/insertion are authorized or rejected, the record modified will not be available for further modification by the user other than the one who originally modified the record. Below screen is used to authorize Notes/Messages/Disclaimers.

The screenshot shows the ASMS web application interface. At the top, there is a header with the ASMS logo and the text 'Advices and Statements Management System'. Below the header, there are two main sections for authorization:

**Notes/Messages/Disclaimers - Authorization of Modified Records**

Message Id	Message Type	Message Desc.	Maker Date	Maker Id
<input type="checkbox"/> M0014	Messages		06-jan-2003	ASMS0CW3
<input type="checkbox"/> M0053	Disclaimers	SEFOS_E? (MID-JPY) DIS?	06-jan-2003	ASMS0CW3
<input type="checkbox"/> M0003	Disclaimers	???	06-jan-2003	ASMS0CW3
<input type="checkbox"/> M0033	Disclaimers	www	06-jan-2003	ASMS0CW2

Buttons:

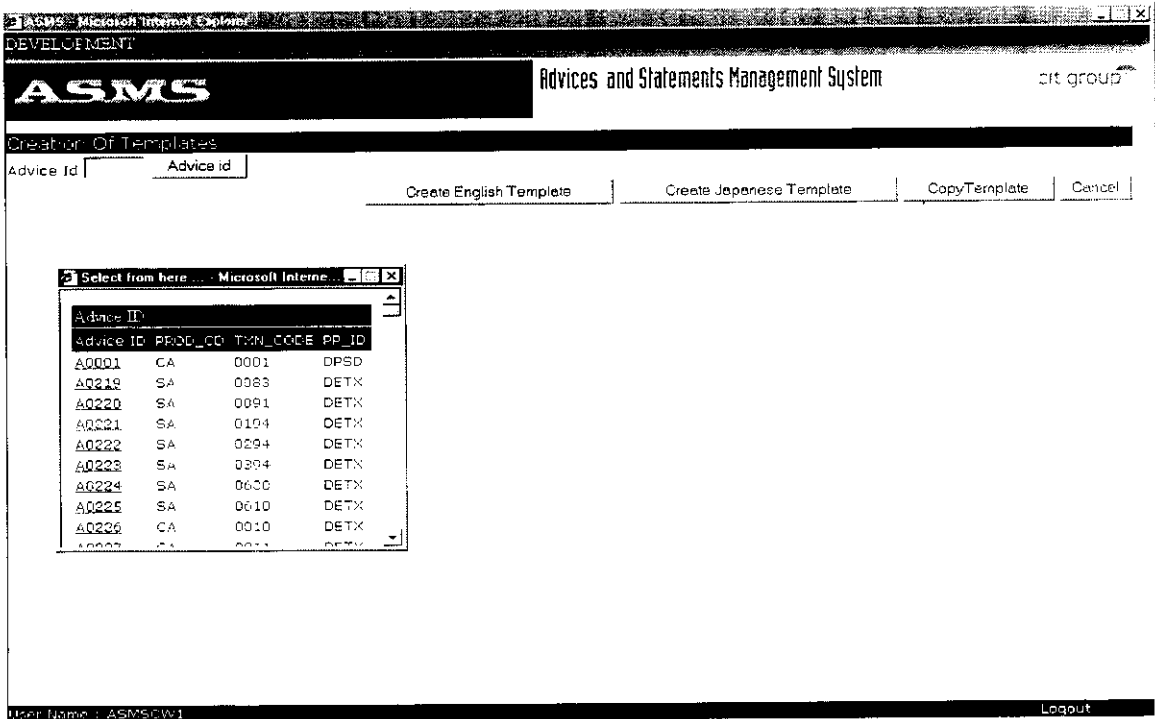
**Notes/Messages/Disclaimers - Authorization of Deleted Records**

Message Id	Message Type	Message Desc.	Maker Date	Maker Id
<input type="checkbox"/> M0303	Messages	test?	06-jan-2003	ASMS0CW3

Buttons:

## Screen Description:- Maintain advice template screen

Advice Templates are the actual formats of advices containing data elements sent across to customers. Advice Template can have a one to many relationships with the Advice ID. (i.e.) Multiple advice ids can use the same template. This will be particularly useful when a combination of more than one product code and transaction code generates the same advice. This mapping on advice templates to an advice id, if more than one advice ids use the same templates can be done through this screen



## Screen Description:- New advice template screen

ASMS will provide for a front-end interface through which the user can customize advices that will be sent across to the customers. Each Template will be linked to an Advice ID, below screen is used to create a new template.

**ASMS - Microsoft Internet Explorer**

**DEVELOPMENT**

**ASMS** Advices and Statements Management System cit group

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**Maintain Advice Template** Current Template ID [ E4500 ]

**CUSTOMER INFORMATION** **CITIBANK NA**

Customer Name: Private Bank Marunouchi Branch  
 Customer Address: Tokyo Ginko Kyuka Bldg  
 Customer Address: 1-3-1 Narunuchi

---

<input type="checkbox"/> TYPE OF LOAN	REFERENCE NUMBER
<input type="checkbox"/> #English Product Description#	#Account Number#
<input type="checkbox"/> #Number of Payment (remaining) (Regular)#	
<input type="checkbox"/> TERM OF LOAN	INITIAL LOAN AMOUNT #Loan disbursement ccy# #Line Ar
<input type="checkbox"/> #LOAN START DATE# - #LOAN END DATE#	(BONUS AMOUNT) #Loan disbursement ccy# #Line Amc
<input type="checkbox"/> #Number of Payment (remaining) (Bonus)#	
<input type="checkbox"/> #Number of Payment (remaining) (Regular)#	
<input type="checkbox"/> LOAN INTEREST	NEXT PAYMENT DATE
<input type="checkbox"/> #Current Interest Rate# % #Number of Payment (remain:	#Next Re-pricing Date#
<input type="checkbox"/> CURRENT OUTSTAN	
<input type="checkbox"/> DEBIT ACCOUNT	#Number of Payment (remaining) (Regular)#

---

Select Disclaimers to be incorporated in the Advice

Option Index Code Message  Base Currency Message

User Name : ASMSCW1 Home Logout

## Screen Description:- Maintain Statement Hierarchy

This screen will enable the user to arrange the product groups in the Statement. This screen allows the user to determine the order in which the product groups, product sub-groups and the product types will be printed in the statement.

The screenshot shows a web browser window titled "ASMS - Microsoft Internet Explorer provided by Polaris Software Lab Ltd". The page header includes "DEVELOPMENT", the "ASMS" logo, and the text "Advices and Statements Management System" with the "ongroup" logo. The main content area is titled "Maintain Statement Hierarchy" and contains a form with the following fields and controls:

- Product Group:** WRAP ACCOUNT DETAIL
- English Message Id:** M0007
- Kanji Message Id:** M0137
- Statement Hierarchy:** 1
- Product Sub-Group:** ON SHORE
- English Message Id:** M0008
- Kanji Message Id:** M0143
- Statement Hierarchy:** 1
- Product Type:** GW
- Statement Hierarchy:** 1

At the bottom of the form are buttons for "Mark For Authorization", "Preview From Master", "Preview From Work", "Next", "Reset", and "Cancel". The footer of the page shows "User Name : ASMSCW1" and "Home Logout" links.



## REPORTS

### Maintenance Control Report

This report contains all the changes made in the maintenance module. Specifying start date and end date generates this report.

ASMS - Microsoft Internet Explorer provided by Polaris Software Lab Ltd

DEVELOPMENT

**ASMS** Advices and Statements Management System catigroup

**Maintenance Control Report**

From Date : 01-Jan-2003 To Date : 06-Jan-2003

Maintenance Master : CLASS\_CD

Key Value	Field Name	Updated By / Date	Checked By / Date	Type of Change	Status
CLASS_CD:87 Old Value : New Value : Standard	ENV_SIZE	ASMSCW1 / 06-Jan-2003	/	DELETE	Rejected
CLASS_CD:87 Old Value : New Value : 25	NO_OF_PAGES	ASMSCW1 / 06-Jan-2003	/	DELETE	Rejected
CLASS_CD:87 Old Value : New Value : 53	TOTAL_WT	ASMSCW1 / 06-Jan-2003	/	DELETE	Rejected
CLASS_CD:87 Old Value : New Value : 8	DOC_ID	ASMSCW1 / 06-Jan-2003	/	DELETE	Rejected
CLASS_CD:87 Old Value : Domestic New Value : 2	MAIL_FLAG	ASMSCW1 / 06-Jan-2003	/	DELETE	Rejected
CLASS_CD:87 Old Value : New Value : 2	SORT_ORD	ASMSCW1 / 06-Jan-2003	/	DELETE	Rejected
CLASS_CD:87 Old Value : New Value : N	LOT_CD	ASMSCW1 / 06-Jan-2003	/	DELETE	Rejected
CLASS_CD:87 Old Value : New Value : N	ENV_SIZE	ASMSCW1 / 06-Jan-2003	/	DELETE	Rejected

User Name : ASMSCW1 Logout

Cancel Print

## Advice Report

This report describes about the advice created and which template its related. This report is prepared in the XL format.

ASMS - Microsoft Internet Explorer									
DEVELOPMENT									
ASMS				Advices and Statements Management System				© group	
F22	=								
1	A	B	C	D	E	F	G	H	I
2	Advice ID/	Advice N	English Templa	Kanji Templat	Product Code/	PP ID/	Hold Fla	Maker Id/	Checker Id/
3	English Advice Description/				Transaction Co	Customer Ty	RTF Fla	Maker Date	Checker Date
4	Kanji Advice Description								
5	A5975	1	E4500	J4501	B007/ PAYP	AMLN/ Individual	N/ N	ASMSCW2/ 13-DEC-2002	ASMSCW1/ 13-DEC-2002
6	LOAN PAYMENT FOR UNPAID PRINCIPAL / INT								
7	AS976	1	E4500	J4501	B007/ PAYR	AMLN/ Individual	N/ N	ASMSCW2/ 13-DEC-2002	ASMSCW1/ 13-DEC-2002
8	LOAN PAYMENT ADVICE/								
9	A5977	1	E4503	J4502	B007/ PDPD	AMLN/ Individual	N/ N	ASMSCW2/ 13-DEC-2002	ASMSCW1/ 13-DEC-2002
10	LOAN PAST DUE NOTICE/								
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

AtmReq?req=viewSearchResultInE/

User Name : ASMSCW1 Home Logout

## Template Report

This report specifies the format in which template is created to a particular advice. In this format advice will be prepared for the customer.

Adobe Acrobat - [2.pdf]

ファイル(F) 編集(E) 文書(O) ツール(T) 表示(V) ウィンドウ(W) ヘルプ(H)

wysiwyg://previewframe.387/http://pbgc.9003/templates/prev\_ewdetails.htm

Customer Name	CITIBANK NA	
Customer Address	Private Bank Marunouchi Branch	
Customer Address	Tokyo Ginko Kyokai Bldg	
Customer Address	1-3-1 Naruno-chi	
Customer Address	Chiyoda-ku, Tokyo 100-0005	
Customer Address	Tel: 03-5223-9602	

ORDER NUMBER	9999999999	TYPE OF DEPOSIT	XXXXXX Privilege
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TRANSACTION TYPE:	RENEWAL	PRINCIPAL AMOUNT:	XXX 999999999999.99
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START DATE	DD-MON-YYYY	INTEREST RATE:	99999.999999%
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MATURITY DATE	DD-MON-YYYY	INTEREST AMOUNT	XXX 999999999999.99
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NATIONAL TAX	99999.999999%	INTEREST AMOUNT AFTER TAX:	
NATIONAL TAX AMOUNT	999999999999.99	XXX	XXX
NATIONAL TAX AMOUNT IN JPY	JPY 999999999999.99		
LOCAL TAX	99999.999999%		
LOCAL TAX AMOUNT	999999999999.99	XXX	XXX
LOCAL TAX AMOUNT IN JPY	JPY 999999999999.99		

161% 1/2 8.26 x 11.69 インチ

## BOOKS

- ☞ **Java complete reference**
- ☞ **Java NIIT Materials**
- ☞ **Introduction to JavaServerPages**
- ☞ **Java Servlet 2.0**
- ☞ **HTML complete reference**
- ☞ **Master in Oracle 8.0**
- ☞ **Introduction to WebLogic Server**
- ☞ **Basic of Javascript**

## WEBSITES

- ☞ [www.sun.java.com](http://www.sun.java.com)
- ☞ [www.jguru.com](http://www.jguru.com)
- ☞ [www.java.util.com](http://www.java.util.com)
- ☞ [www.oracle.com](http://www.oracle.com)