

E3-E4 CM TECHNICAL

Mobile Billing

WELCOME

- This is a presentation for the E3-E4 Consumer Mobile Module for the Topic: Mobile Billing .
- Eligibility: Those who have got the Up-gradation from E3 to E4.
- This presentation is last updated on 15-3-2011.
- You can also visit the Digital library of BSNL to see this topic.

AGENDA

- Functions of Billing & Customer Care System
 - Connectivity of B&CCS with Customer Care Node (CCN) and MSC
 - Components of B&CCS
 - Service Provisioning System
 - SIM and Inventory Management System
-

Functions of B & CCS

Major functions of B&CCS:

- Collection of Call Detail Record (CDR) from Mobile Switching Centers (MSC).
- Timely and accurately invoicing of call details.
- Providing different Billing cycles for different category of subscribers with a support of differential Tariff.
- Support of charging for various types of existing and new services.

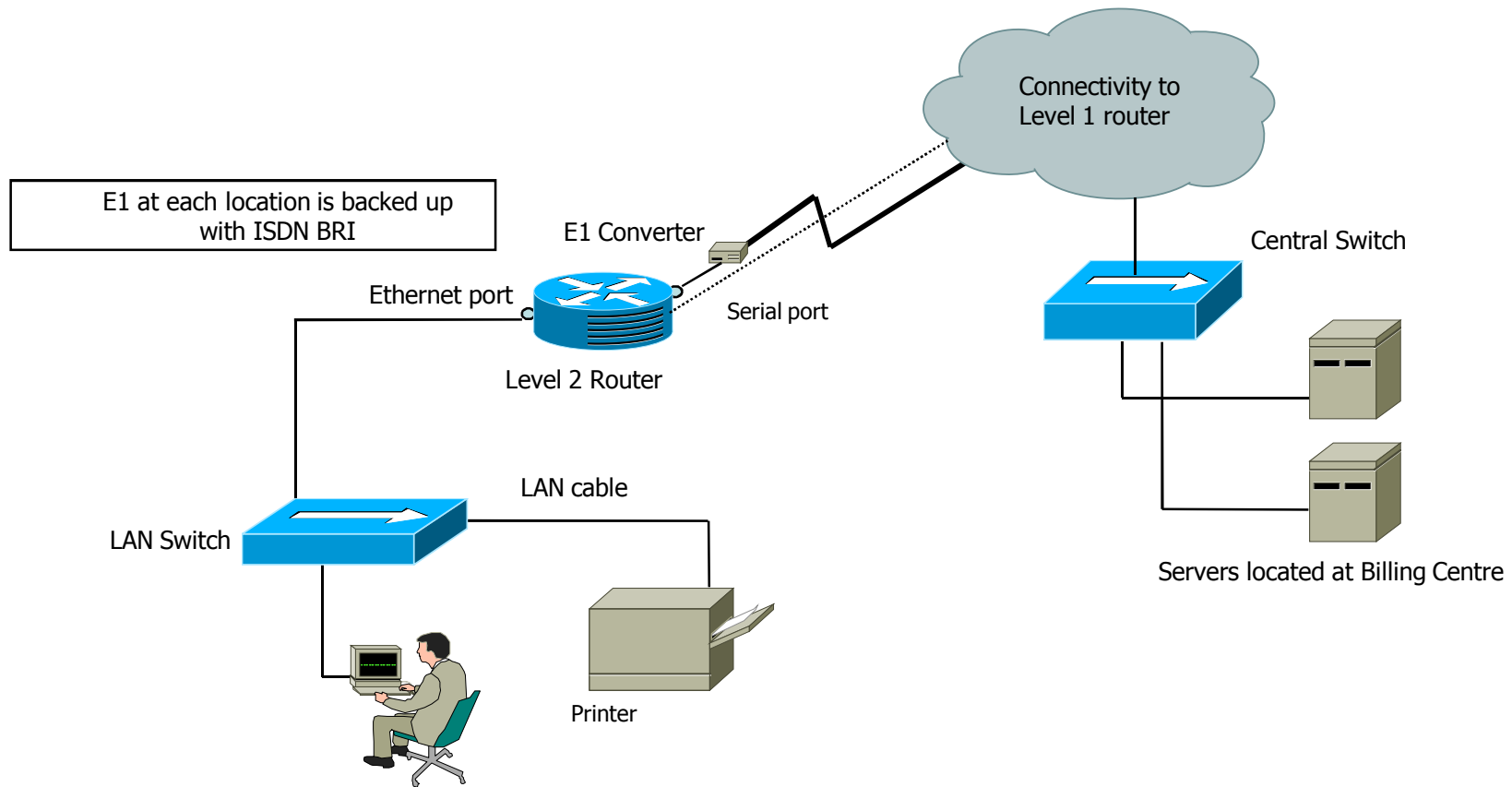
Functions of B & CCS

Major functions of B&CCS: (Continued)

- Provisioning of services for mobile subscribers.
- Customers care for services requests and bill inquiry.
- Number inventory and SIM management etc.

Connectivity of B&CCS

CCN Connectivity:



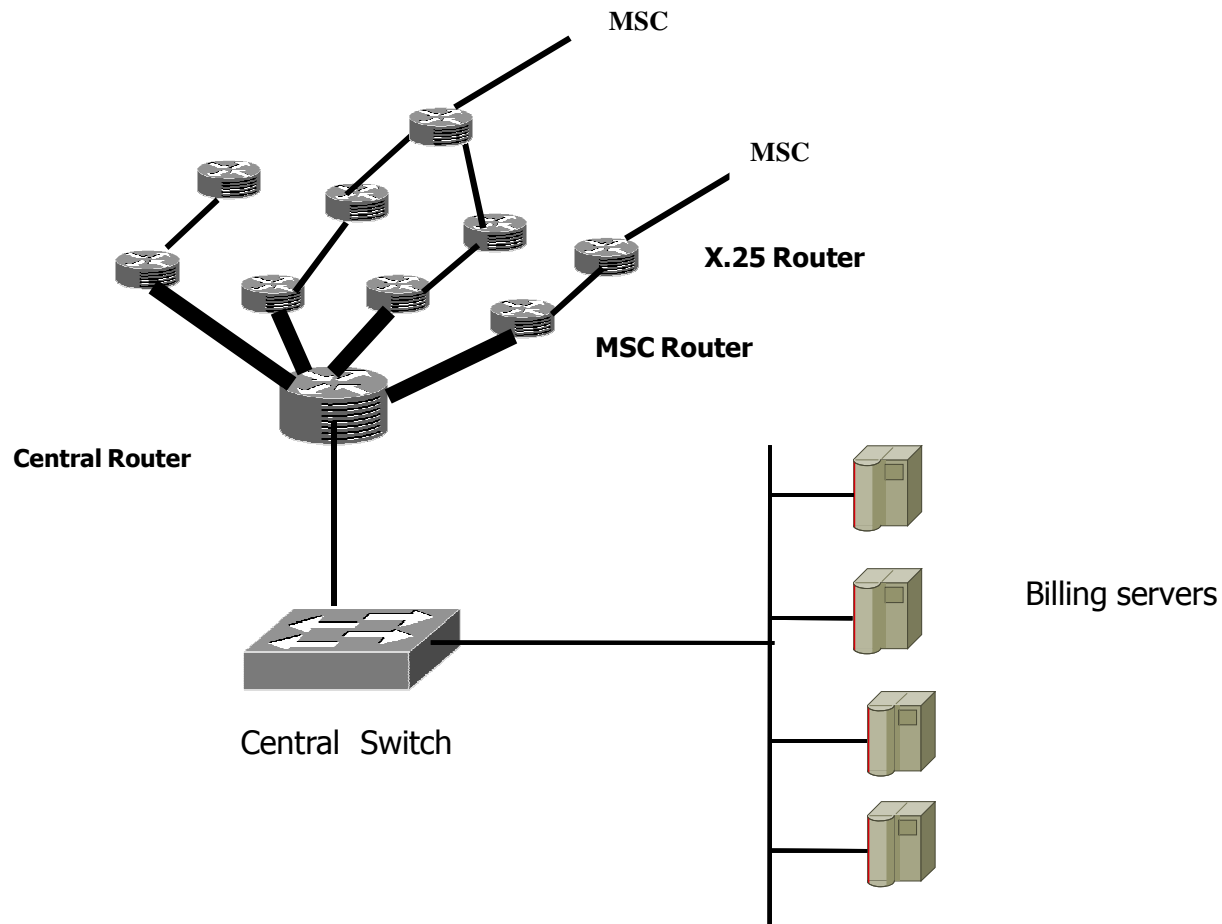
Connectivity of B&CCS

Salient Points for MSC Connectivity :

- Each MSC location is connected to B&CCS with E1 link & ISDN BRI backup
- The E1 link is connected to the MSC router and than connected to X.25 router.
- All the MSC locations from MSC router are connected to a Central Router at Billing Center.
- The Central Router is connected to the Billing Servers where all the CDRs are sent for BILL processing.

Connectivity of B&CCS

Connectivity of MSC to Billing Centre:



Components of B&CCS

Mediation Device:

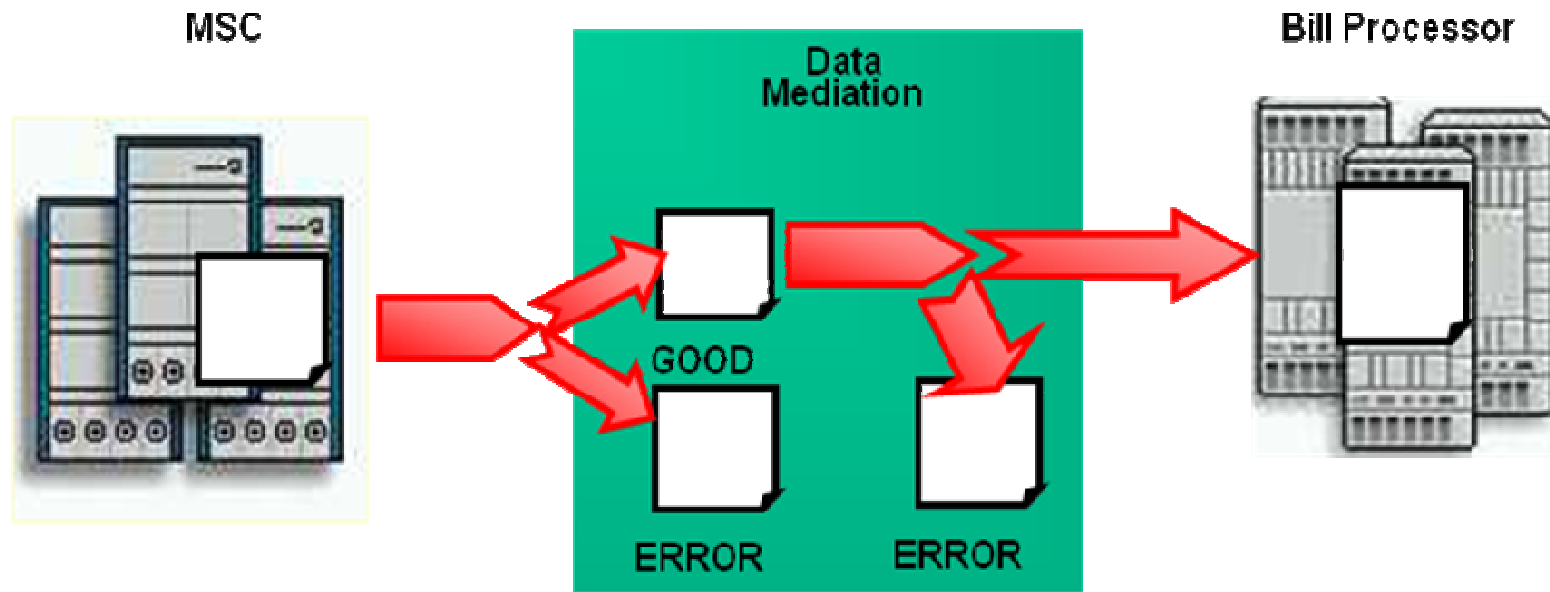
Mediation Device performs three main functions :

- Collection of (Call Data Record- CDRs)
- Mediation of CDRs and
- Distribution of CDRs

Mediation Device is connected to all the MSCs of number of PLMN Service Areas of a Billing Zone in CMTS

Components of B&CCS

Mediation Device :



Billing & Customer Care Module



Billing & Customer Care Module is a flexible and powerful platform to perform following functions:

- Billing
- Service Provisioning
- Customer care

Billing & Customer Care Module



B&CCM Sub-Modules:

- Customer Services Module
- Order Management Module
- Service Provisioning Module

Billing & Customer Care Module



Customer Services Module :

It provides Man-Machine interface to handle multiple types of services, administer customer services, process and distribute applicable exchange and field orders, etc.

Billing & Customer Care Module

Order Management Module:

The Customer Services Representative (CSR) can perform provisioning and activation of services in the GSM network. OM supports the work flow activities for Product and Services. Every service order is associated with a master account number.

An Order Manager supports the following activities:

- Order entry for new or existing account, including account creation.
- Reply to the query from CSR on existing orders.

Billing & Customer Care Module

Order Management Module:

Order Manager activities (Continued):

- Update the number inventory databases including MSISDN, MIN, IMSI, SIM Cards and IMEI.
- Update the billing database once the order is completed successfully.

Billing & Customer Care Module

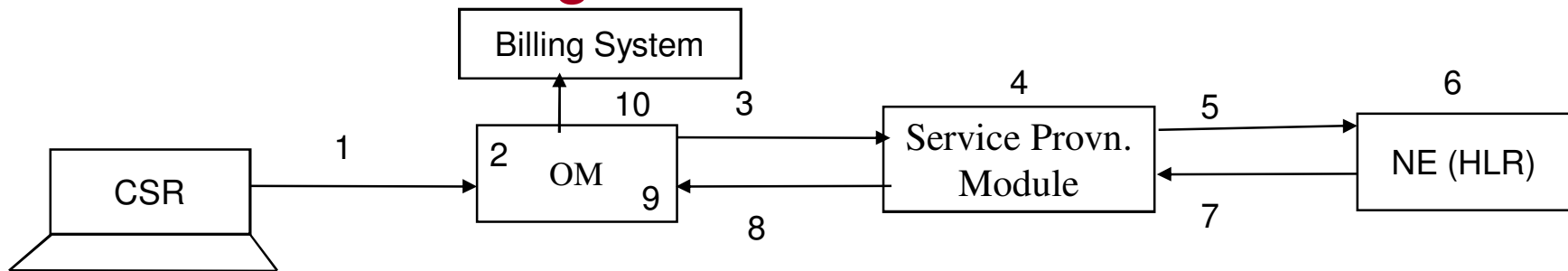
Service Provisioning Module:

It performs the functions like creation of subscriber, Mobile Number assignment, and assignment of supplementary services such as: Voice Mail Service, UMS, SMS, IN, GPRS etc, SIM allocation and activation, activation of new services and deactivation of assigned services etc.

The network provisioning process begins when the CSR commits an “order”.

Billing & Customer Care Module

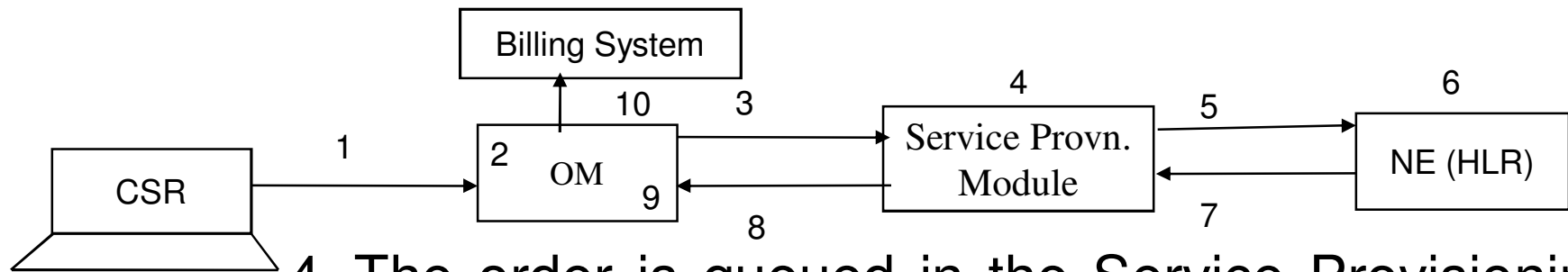
Service Provisioning Order flow:



1. CSR 'Commits' an order.
2. Order gets inserted into a table in Order Manager (OM) Database
3. 'Povmgr' in OM picks up the order and sends it to Service Provisioning Server

Billing & Customer Care Module

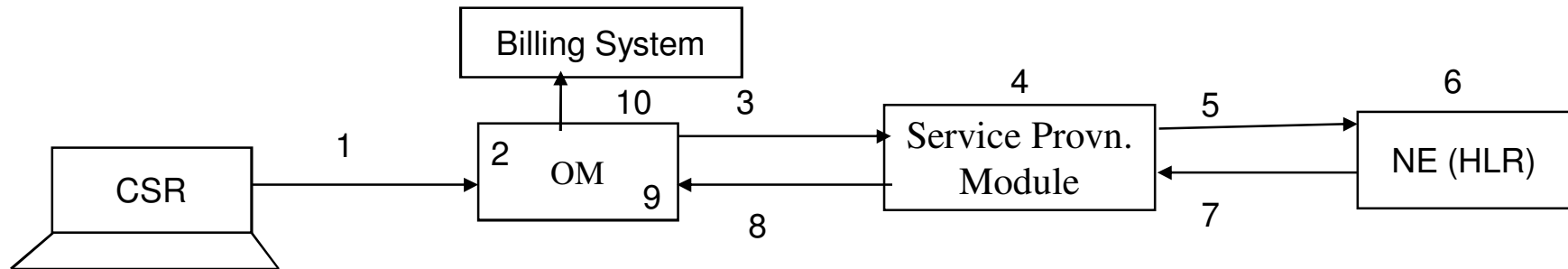
Service Provisioning Order flow: (Continued)



4. The order is queued in the Service Provisioning Server for respective Gateway.
5. Order is sent to the NE (HLR) for provisioning.
6. Service Provisioning Server gets the order executed in the Network Data base like HLR.
7. HLR sends an acknowledgement back to Service Provisioning Server.

Billing & Customer Care Module

Service Provisioning Order flow: (Continued)



8. Service Provisioning Server completes the order and sends acknowledgment to OM.
9. 'Provupdater' in OM updates the status of order as completed.
10. OM then updates the order in the BP database.

SIM & Inventory Management System

Due to a large number of subscribers in the GSM network, Management of SIM and maintaining is not possible to do it manually.

The activities performed by SIM and Inventory Management System

- An order is sent to the SIM manufacturer to manufacture and supply a new lot of SIM cards.
- SIM manufacturer sends the SIM cards to the sales channels (CCN, SIM distributors, franchises etc.).

SIM & Inventory Management System

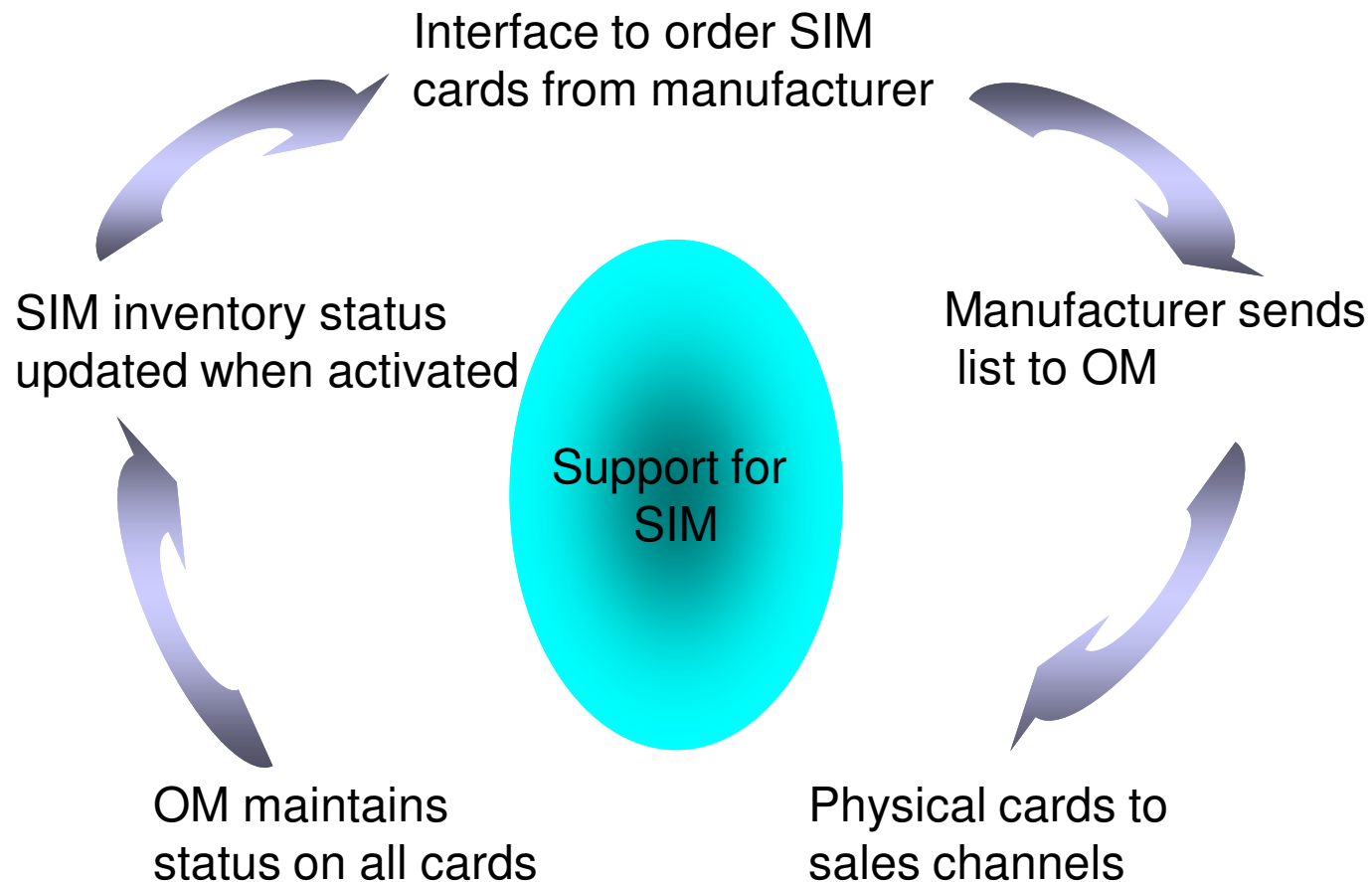


The activities performed by SIM and Inventory Management System: (Continued)

- The list of all the SIM cards sent in the market is up loaded in OM Server data base.
- The OM server always maintains the status of the SIM cards listed in the data base.
- Whenever any SIM is activated it updates the status.

SIM & Inventory Management System

The activities performed by SIM and Inventory Management System



SIM & Inventory Management System

The activities performed by SIM and Inventory Management System: (Continued)

- Inventory of SIM cards is continuously maintained in the OM database.
- Automatically an order for manufacturing and supply of fresh lot of SIM cards is sent to the manufacturer whenever the balance crosses the threshold.

