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# Basic Mediation System Overview Session 1

(for Mobility Line of Business)

Duration:

1 Day

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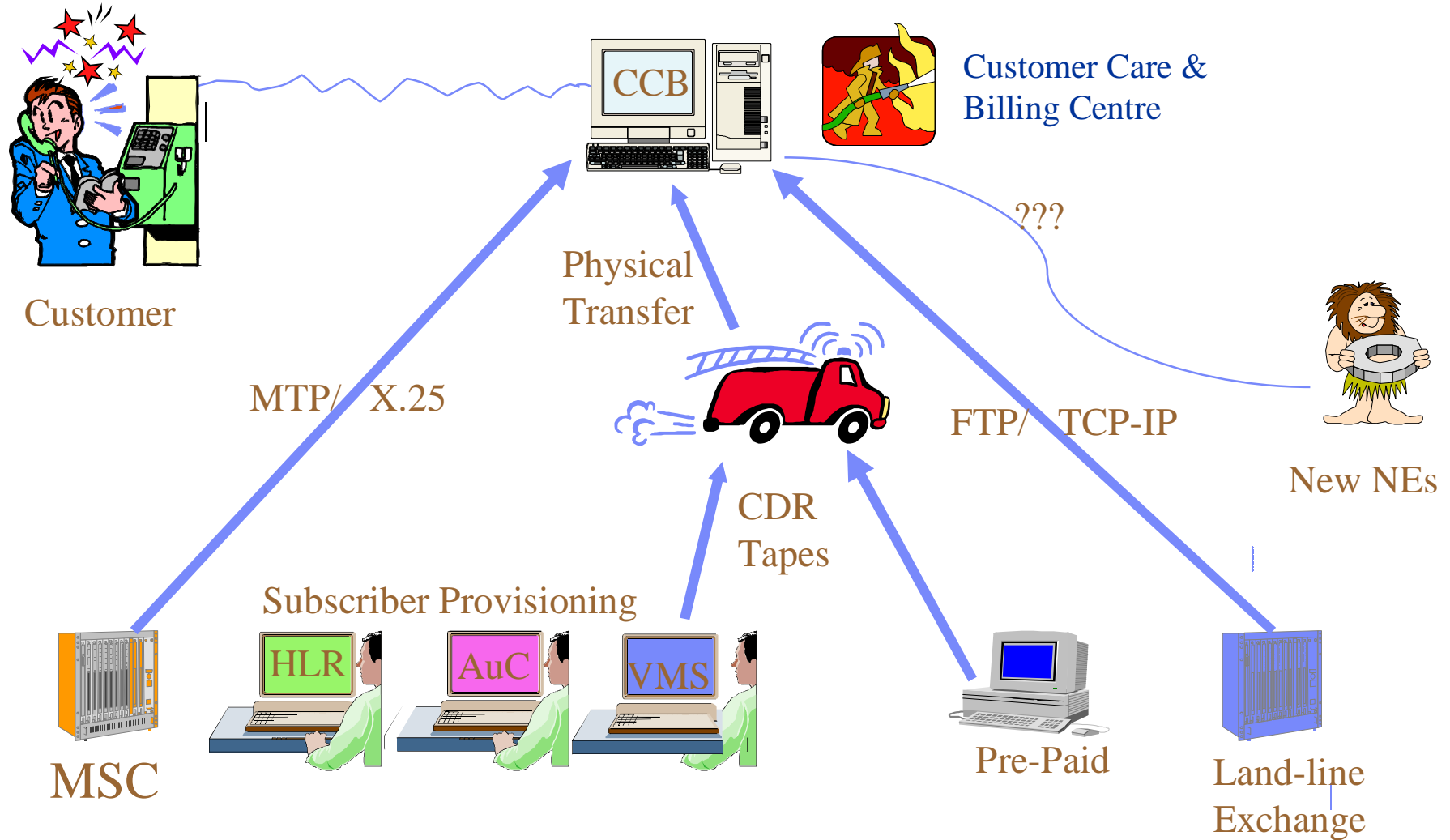
# Agenda

- **Mediation:**
  - Functionality
  - Need for Mediation
  - CDR Collection – Mediation Components
    - Collection Module
    - Conversion Module
    - Distribution Module

# Mediation Functionality

- Information conversion between the network and the user application
- Maintenance of the communications context between the network and the user application
- Data translation
- Data storage

## Need for Mediation



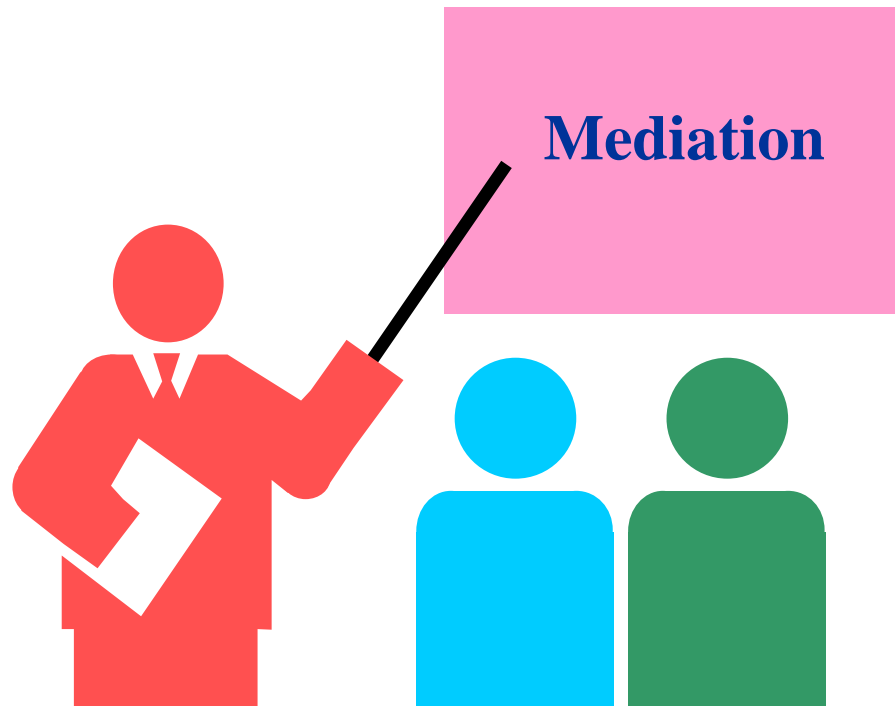
## Traditional functioning of Telecom Network

## Problem w/o Mediation System



- Delay in Billing and Service Provisioning
- Prone to error
- Addition of new Network Elements / Applications is a problem

# Mediation Solution



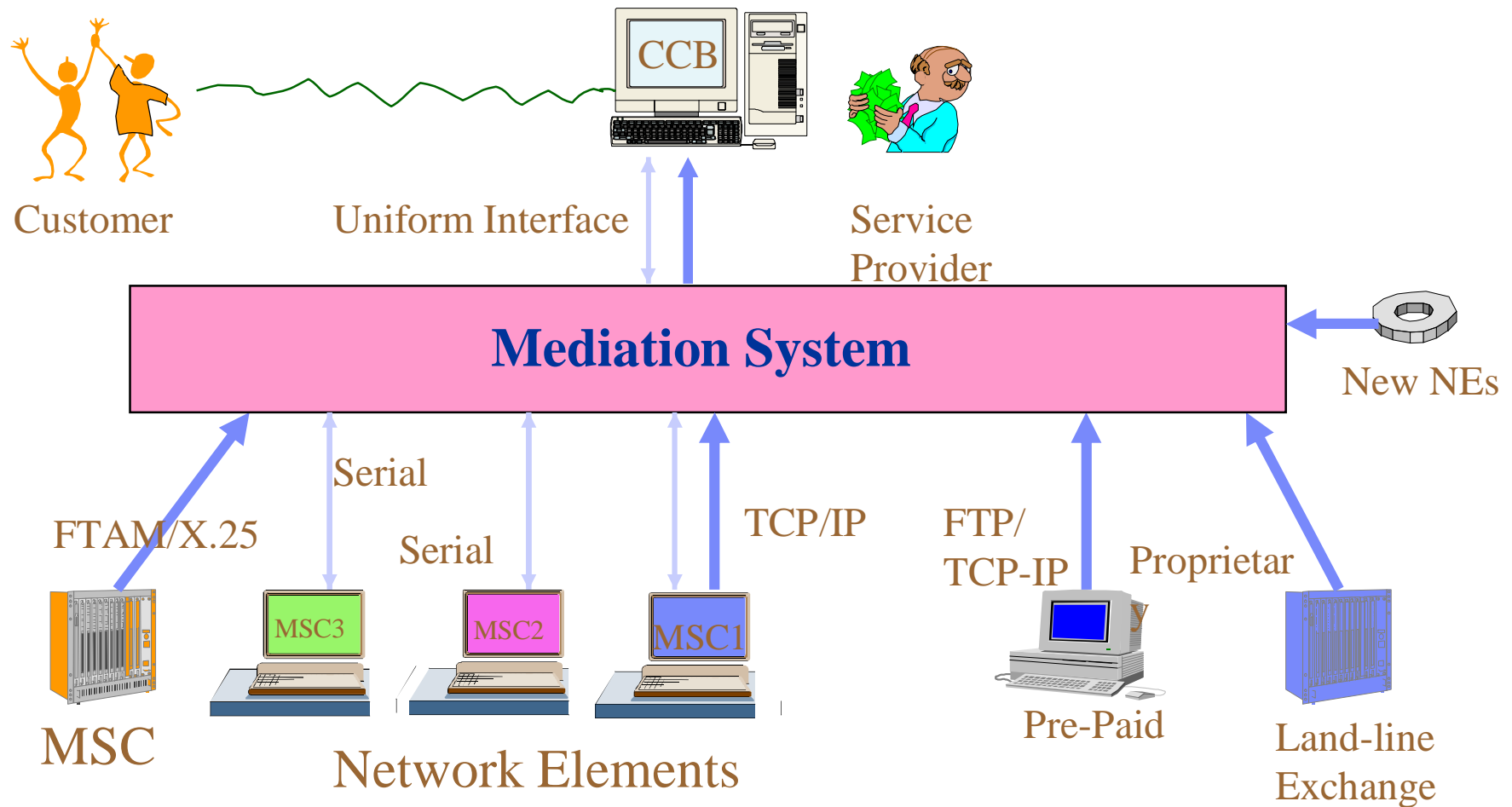
- Complete Automation
- Vendor Independence
- Technology Independence
- Scalability
- Redundancy

# Mediation Solution



- Data Integrity
- Installation Independence
- Support For Multiple Language
- User Authentication
- Remote Monitoring

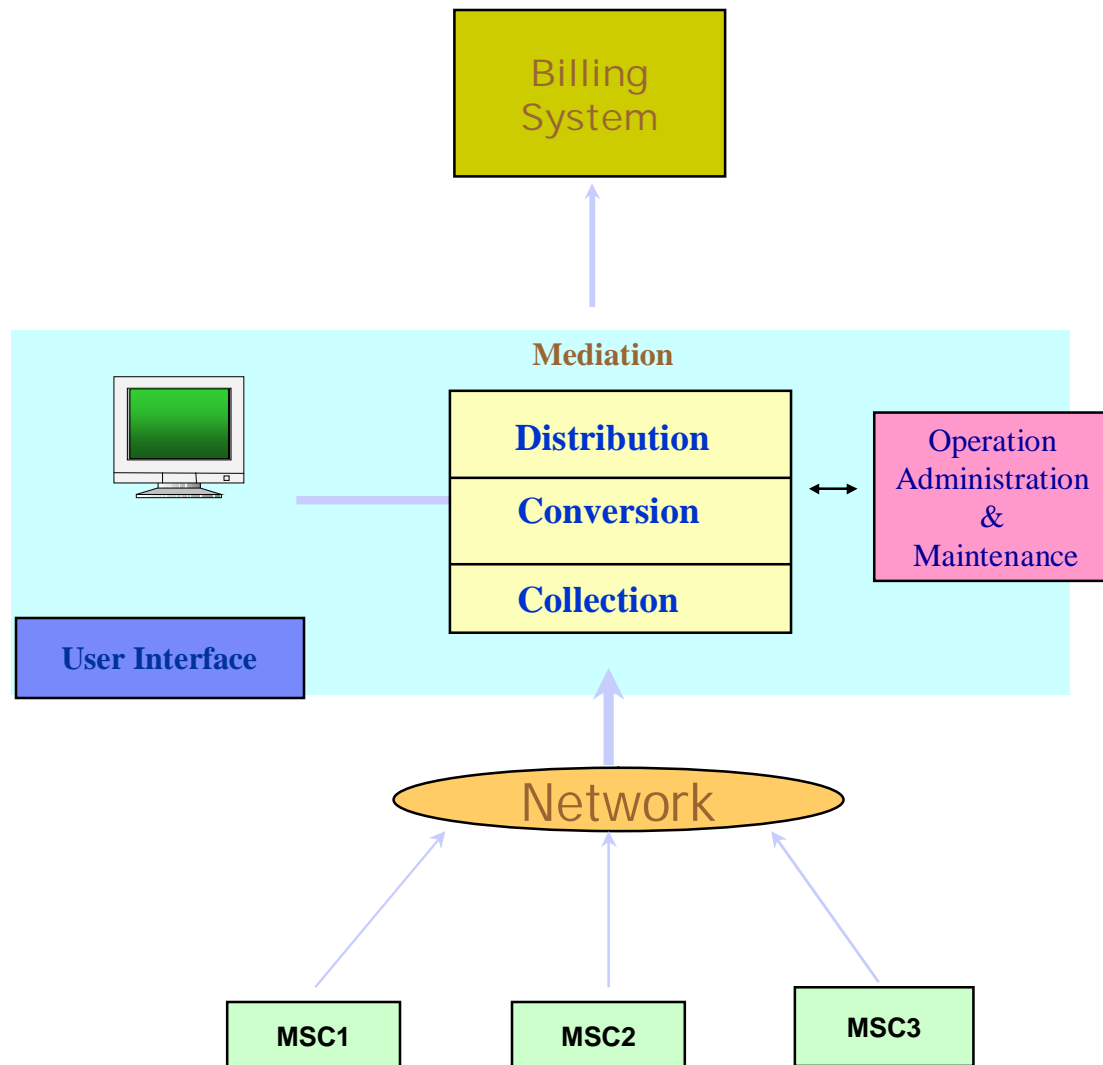
## Placement of Mediation



### Position of BMS in Telecom Network

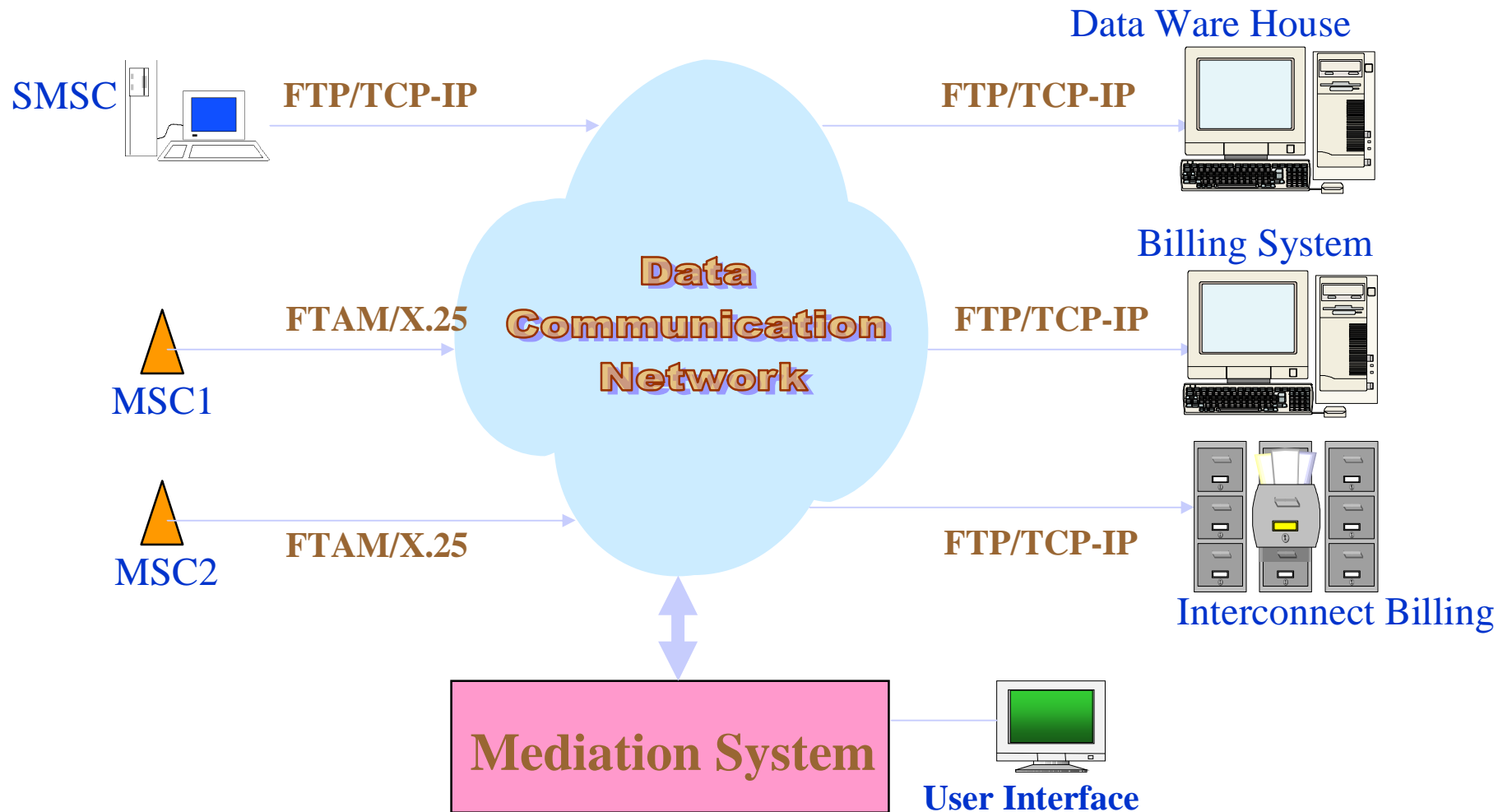


# Mediation Components



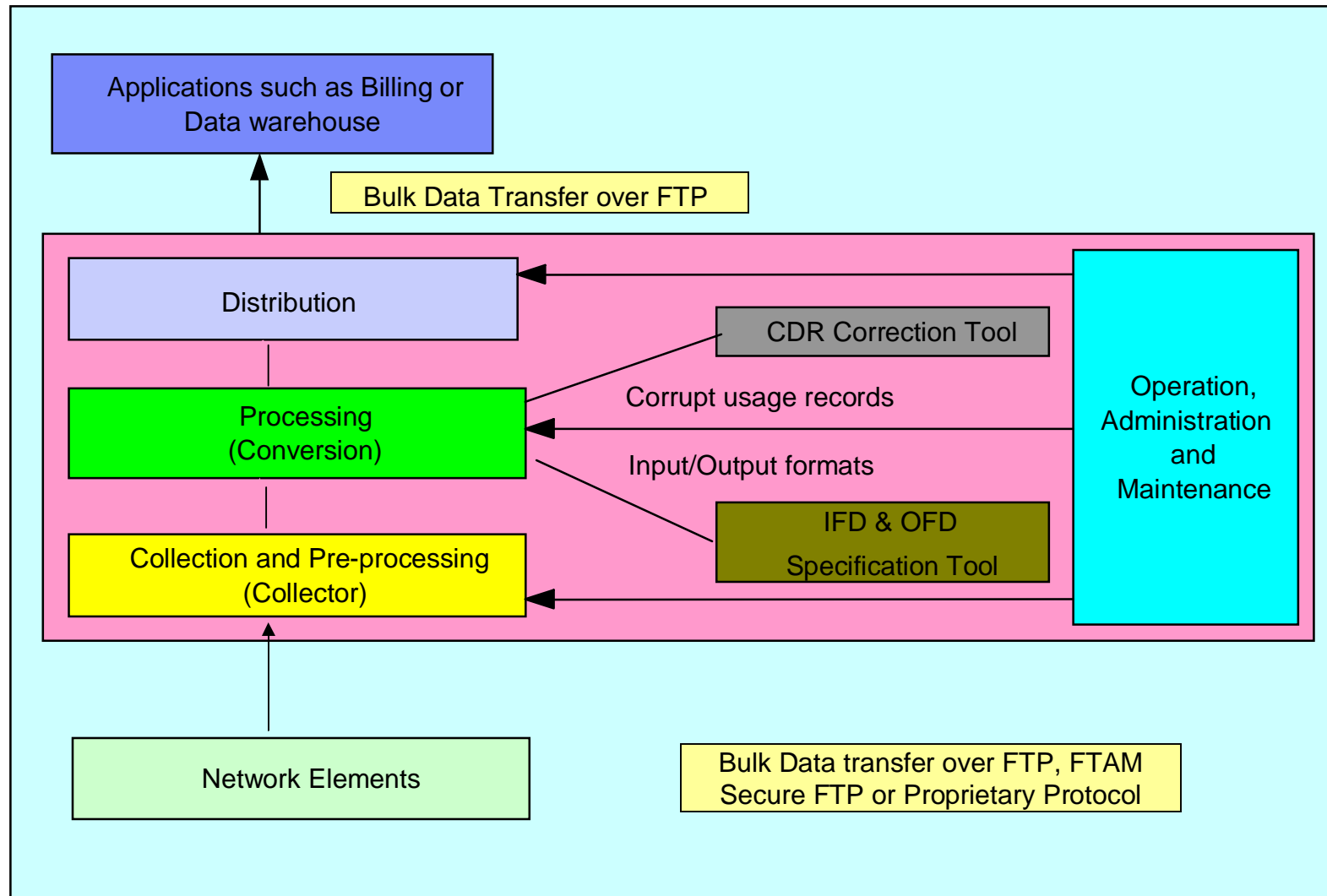
## Mediation Modules

# Collection & Distribution



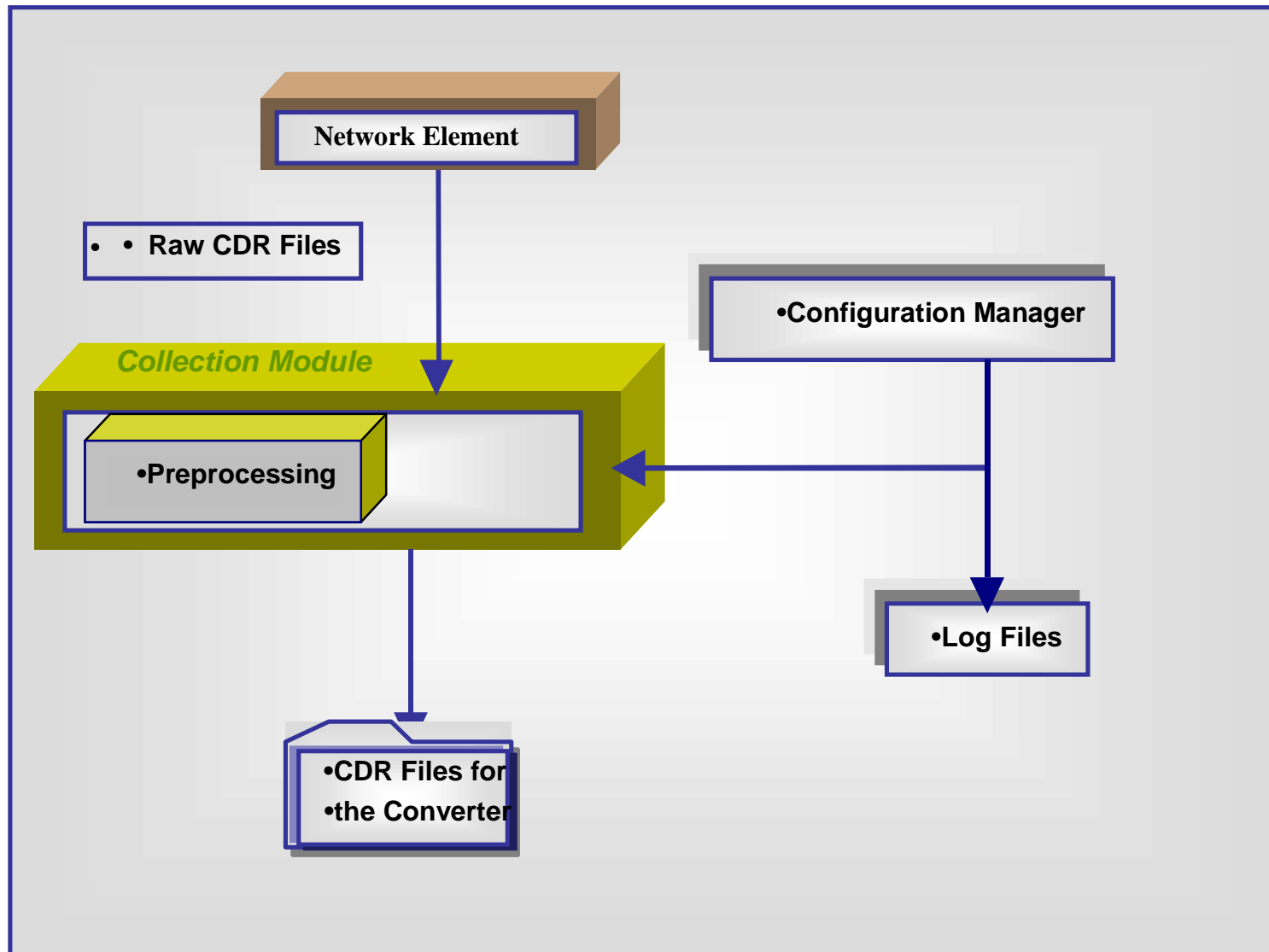
**Interfaces of Collection & Distribution Module**

# Mediation Architecture



# Collection Module

# Collection in Mediation System



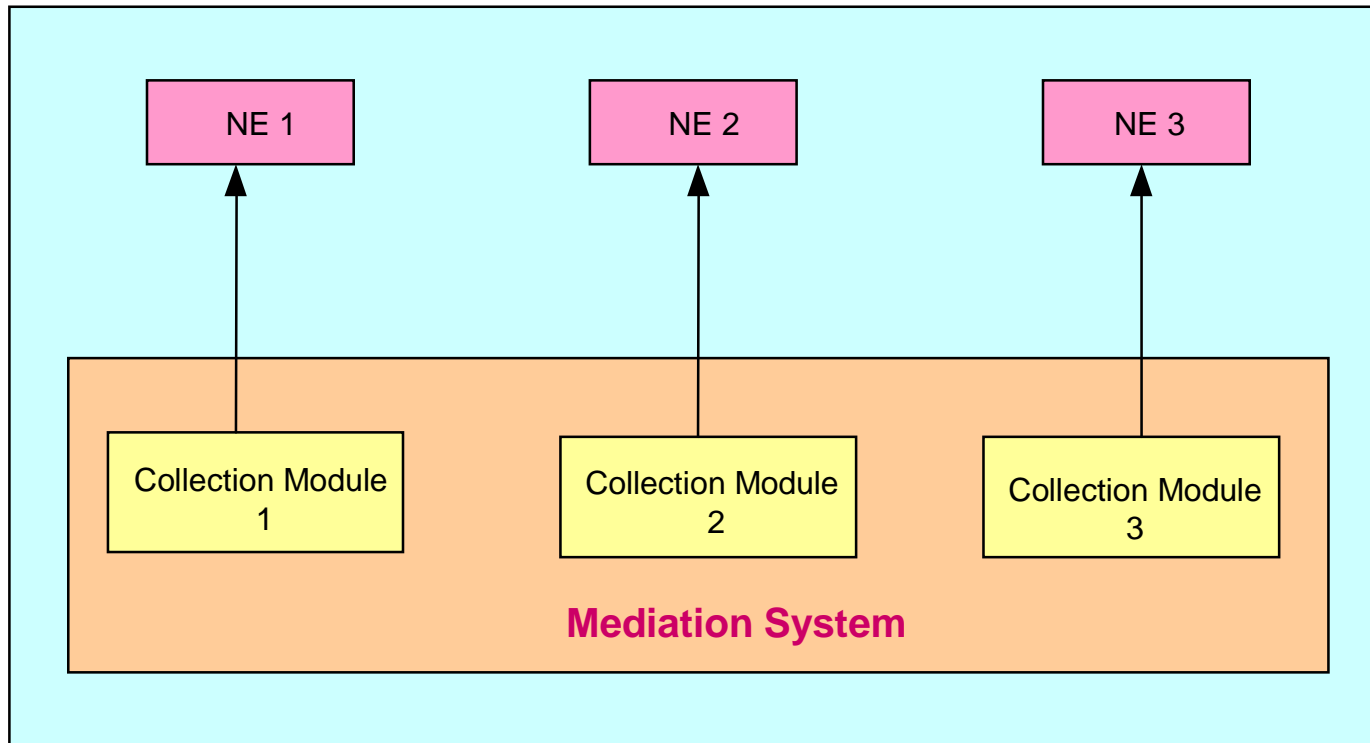
## Collection in Mediation System

- The bulk data transfer protocols supported by the Mediation System are:
  - Serial Port (X25/BX25) asynchronous and synchronous, operating at 2400 bps to 64 Kbps
  - 802.3 LAN interface operating at 10/100 Mbps
- An NE can also support a standby interface so that if the connection with the primary interface fails, then the Collection Module can connect to that NE through the standby interface.
- The Collection Module provides two different modes of collection for CDRs:
  - **Pull mode**
  - **Push mode**

In the Push mode, the NE writes into the Mediation System. In the Pull mode, Mediation System pulls the data via interfaces, such as FTP, FTAM or MTP. The collection function is either activated based on the time or manually initiated by the operator.

## Collection in Mediation

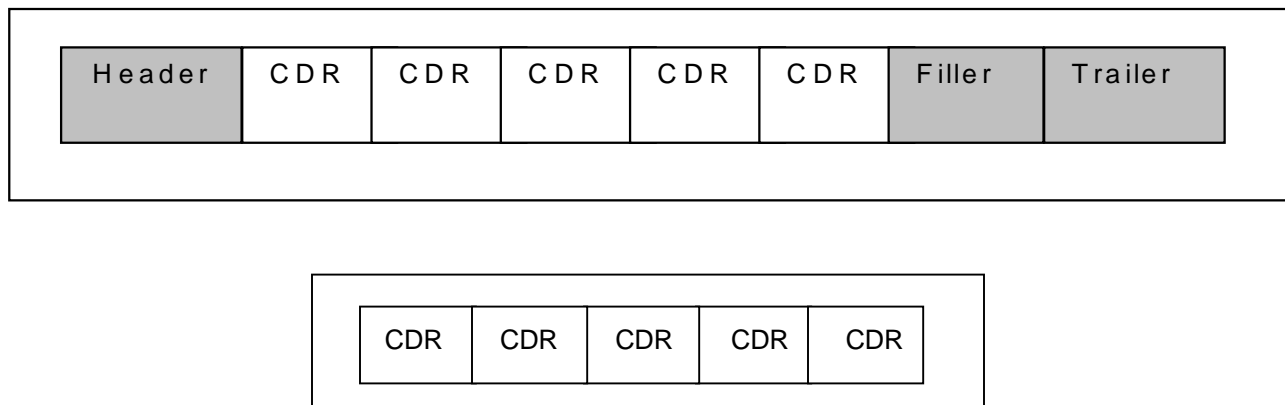
- Several instances of the Collection module can run on the system depending on the NEs in a network. One collection process instance however can collect CDR files from only one NE as shown below.



# Mediation Preprocessing

## Preprocessing

Preprocessing is used to process raw CDR files before these files are sent to the converter. The CDR files are collected from the NEs that are configured in Mediation System. User can configure any CDR stream for preprocessing.

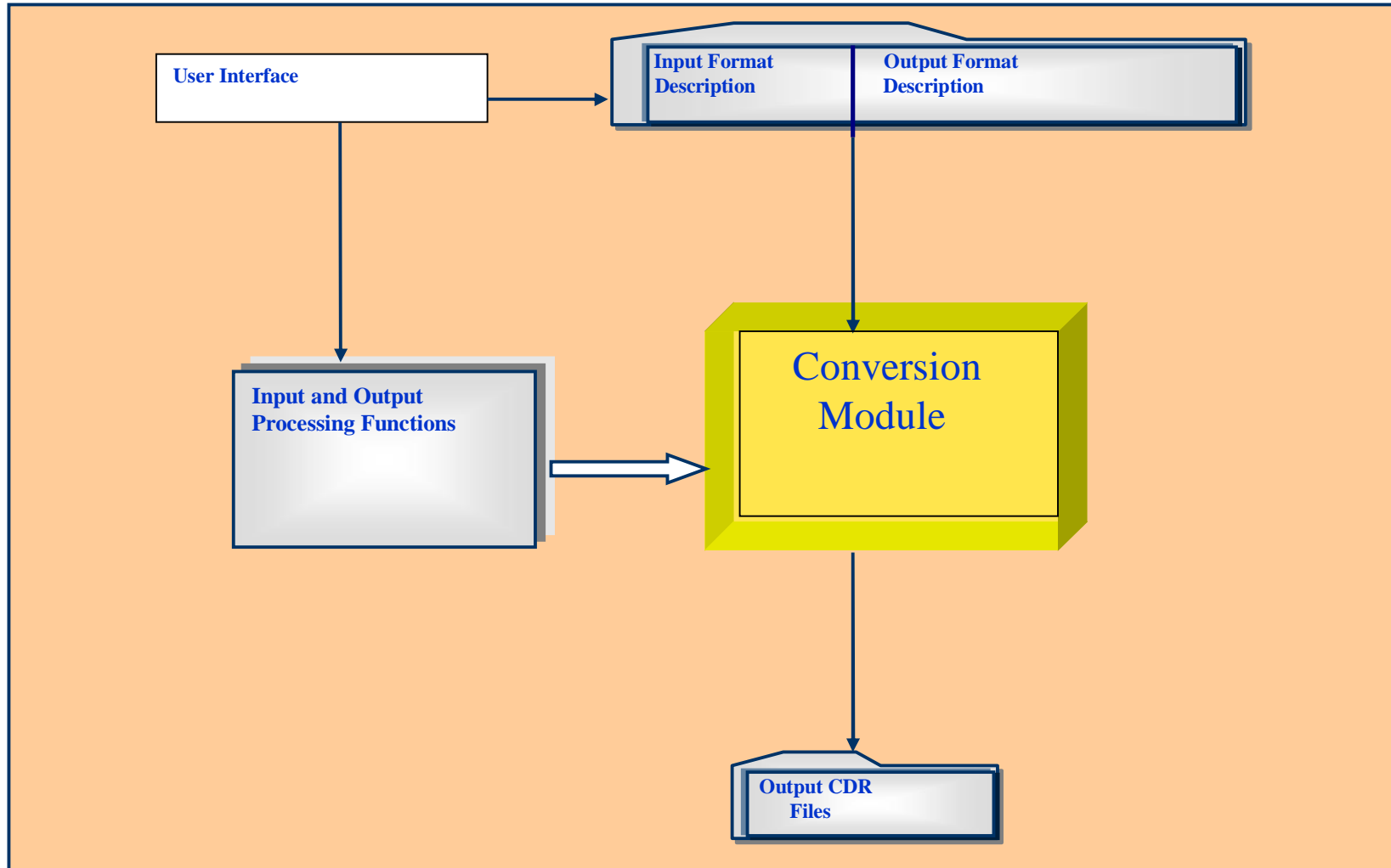


**CDR File Structure**



# Conversion Process

# Conversion in Mediation System



# Introduction to Mediation Conversion

## Conversion Process

- The Mediation System has an extensive processing feature that copies, formats, merges, filters and streams raw information. Most of these processing functions are predefined. The Mediation System can also customize user-defined processing functions to enhance the processing requirements.
- The Conversion Module performs the processing of call data collected by Mediation System . Processing of CDRs is performed on streams, which is a virtual flow of call data. Stream specifies the flow of CDRs from a network element to an application.

# Mediation Conversion

## Conversion Process

- The output fields of a stream are mapped to input fields within Conversion. During mapping, it is possible to change the order of the fields, introduce new fields based on user-definable rules, remove fields, change fields and change data representation, if required.
- The Conversion Module defines two points along a CDR conversion stream at which different processing functions, such as filtration can be applied. One of these relates to input normalized form and the other relates to output normalized form. Processing functions applied on input normalized form are called input processing functions and processing functions applied on output normalized form are called output processing functions.

# Aggregation Module

- Aggregation: Combining of partial CDRs of a long duration call.
- This is done according to predefined aggregation rules.
- Here partial CDRs belongs to Same Network element.

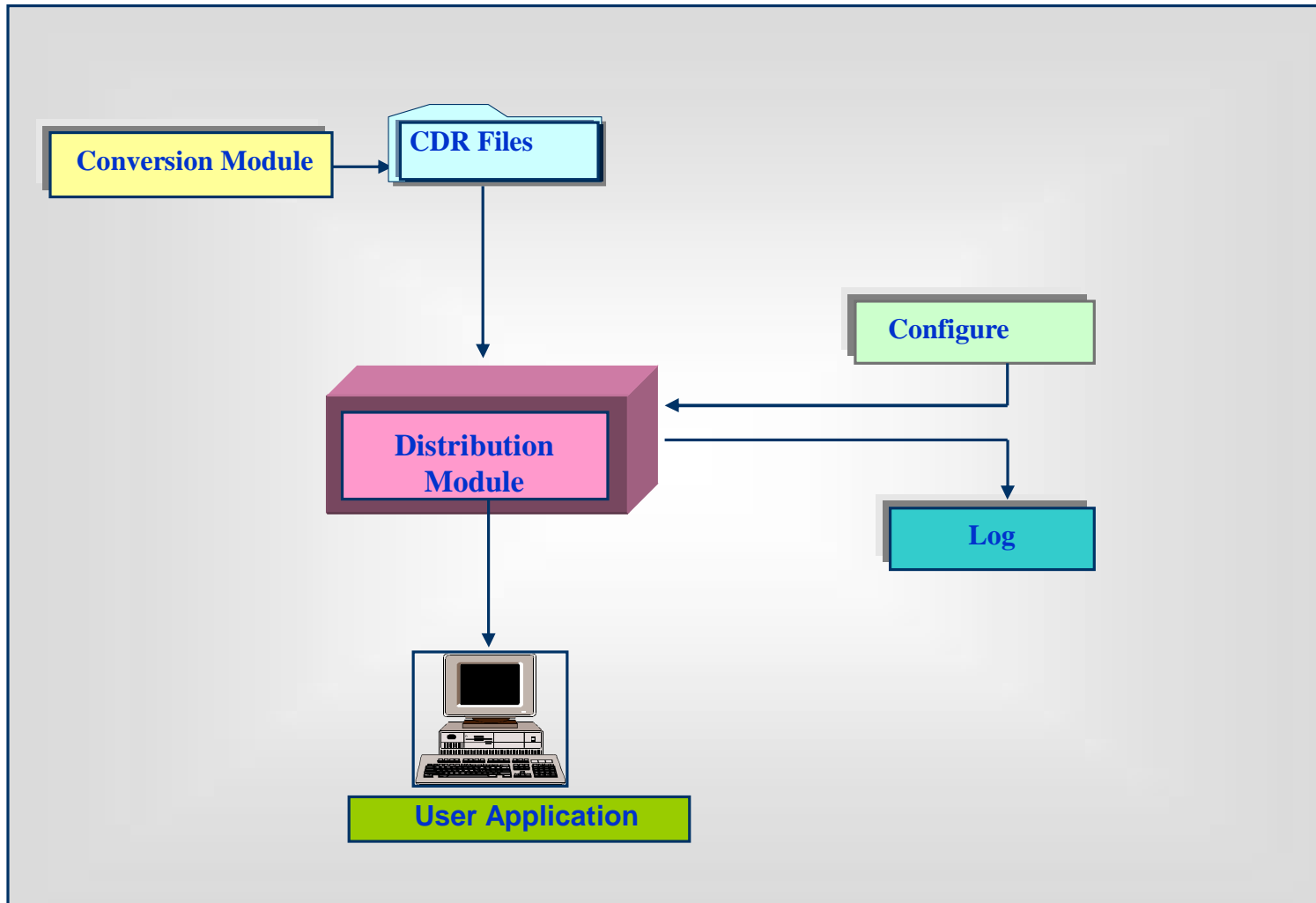
# Filtration Module

Filtering of data. e.g. filter of usage records based on :

- Network elements
- Filtering of CDR from toll free number.
- Calls made to customer services etc..

# Distribution Module

# Distribution Module in Mediation



## Distribution Module



## Distribution in Mediation System

The converted CDRs have to be distributed from the Mediation host machine to Application as given in the configuration of the Mediation System. The Distribution Module takes care of the distribution of CDRs from Mediation host machine to the Application.

- The converted files are stored in the directory that has been specified for the converter.
- The File Manager takes the files from the directory and puts them in a directory specified for the Distributor.
- The Distribution directory contains subdirectories with names corresponding to application names.

## Distribution in Mediation System

- The Distributor takes all the files from the subdirectory corresponding to an application name and transfers them to the destination application.
- The Distributor also supports a standby interface so that if the connection with the primary interface fails, then the Distributor can connect to that application via the standby interface.
- After transferring the CDR files to the application, the Distributor deletes the translated files from the Distribution directory.
- The Distribution function is activated based on a time-driven, event-driven or manually initiated prompt by the operator.

Thanks

