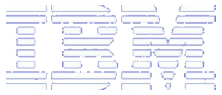


Advanced Mediation System – Session 2

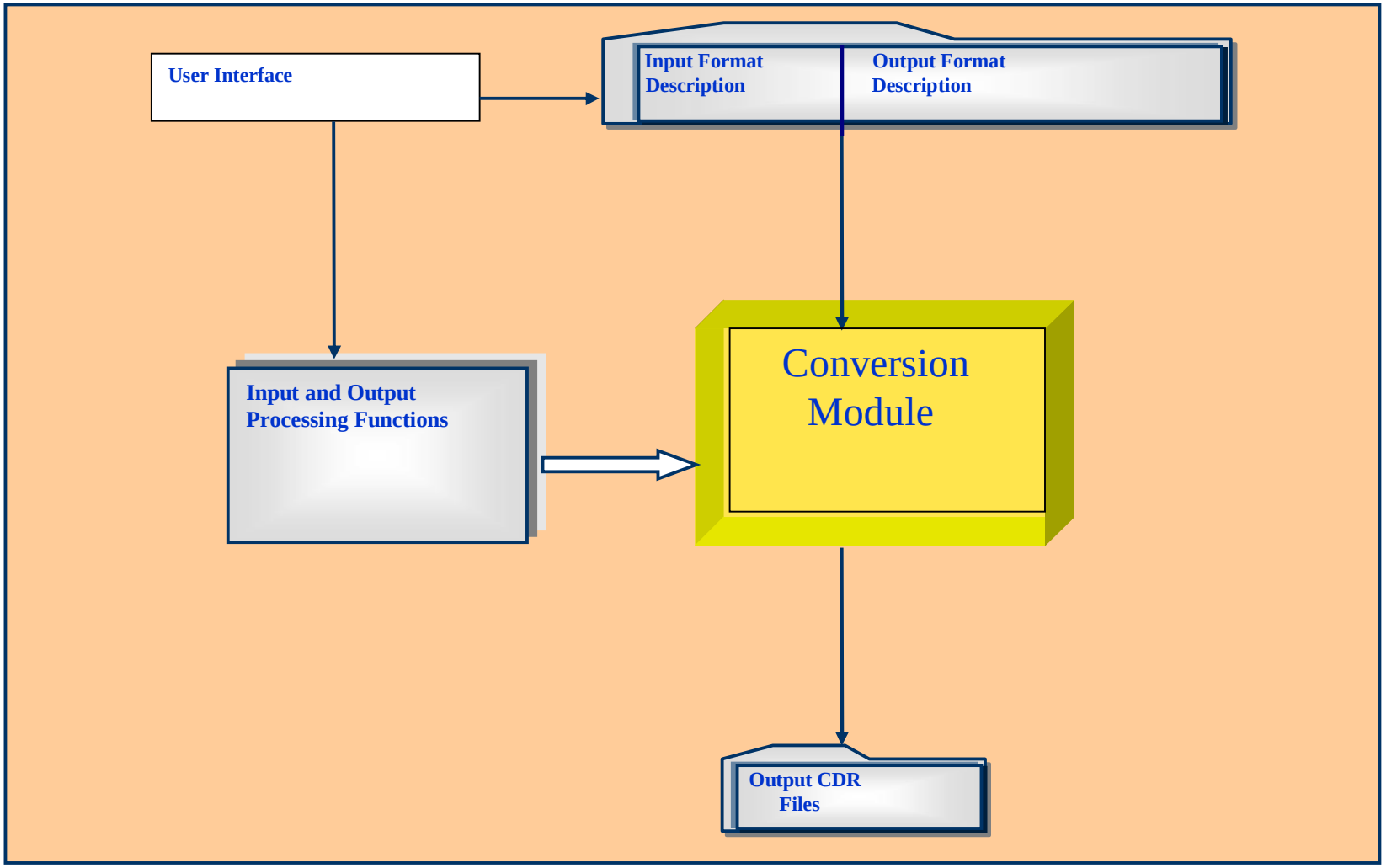
(for Mobility Line of Business)

Duration: 1 Day

Author: Ujjwal Barman

Conversion Module

Conversion in Mediation System



Conversion Functions

The Conversion Module supports following types of Processing Functions:

- Filtration, which is applied either on input or output
- Sequence Validation, which is applied only on input
- Duplicate CDR detection, which is applied only on input
- Partial CDR Aggregation, which is applied only on output. However, if multiple converters are configured for same NE and Application combination, the aggregation feature will not be available.
- Correlation

Conversion Functions

Filtration

This processing function filters CDRs based on configurable criteria. The operator specifies the filtration criterion to filter out either input CDRs or output CDRs. If a CDR matches the filtration criteria then it is filtered out, otherwise it is allowed to go to output stream.

Conversion Functions

Sequence Validation

This processing function validates the sequence of CDRs in a CDR file collected from an NE. The validation is done on the basis of a given record sequence number. This processing function raises an alarm on detection of such violation and/or terminates further processing of the stream, as specified by the user.

Conversion Functions

Partial CDR Aggregation

Based on the time interval to generate CDR, the switch may generate partial CDRs, which may span through different CDR files. The Aggregation processing function determines whether the CDR is a partial CDR and aggregates the partial CDRs to a single billing record. The partial CDRs are stored in a separate location with their cumulative time durations until the last partial CDR of the set is received by the system. Then they are aggregated and sent as a single billing record to the billing system.

Conversion Functions

Duplicate CDR Detection

This processing function detects duplicate CDRs based on configurable criterion, which is a list of fields to be checked for detecting duplication. On detection of duplication, Mediation System generates:

- Logs containing filename in which duplicate CDR is detected
- Details of the duplicate CDR

The Mediation System continues processing with other CDRs. Duplicate CDRs are not sent to downstream applications.

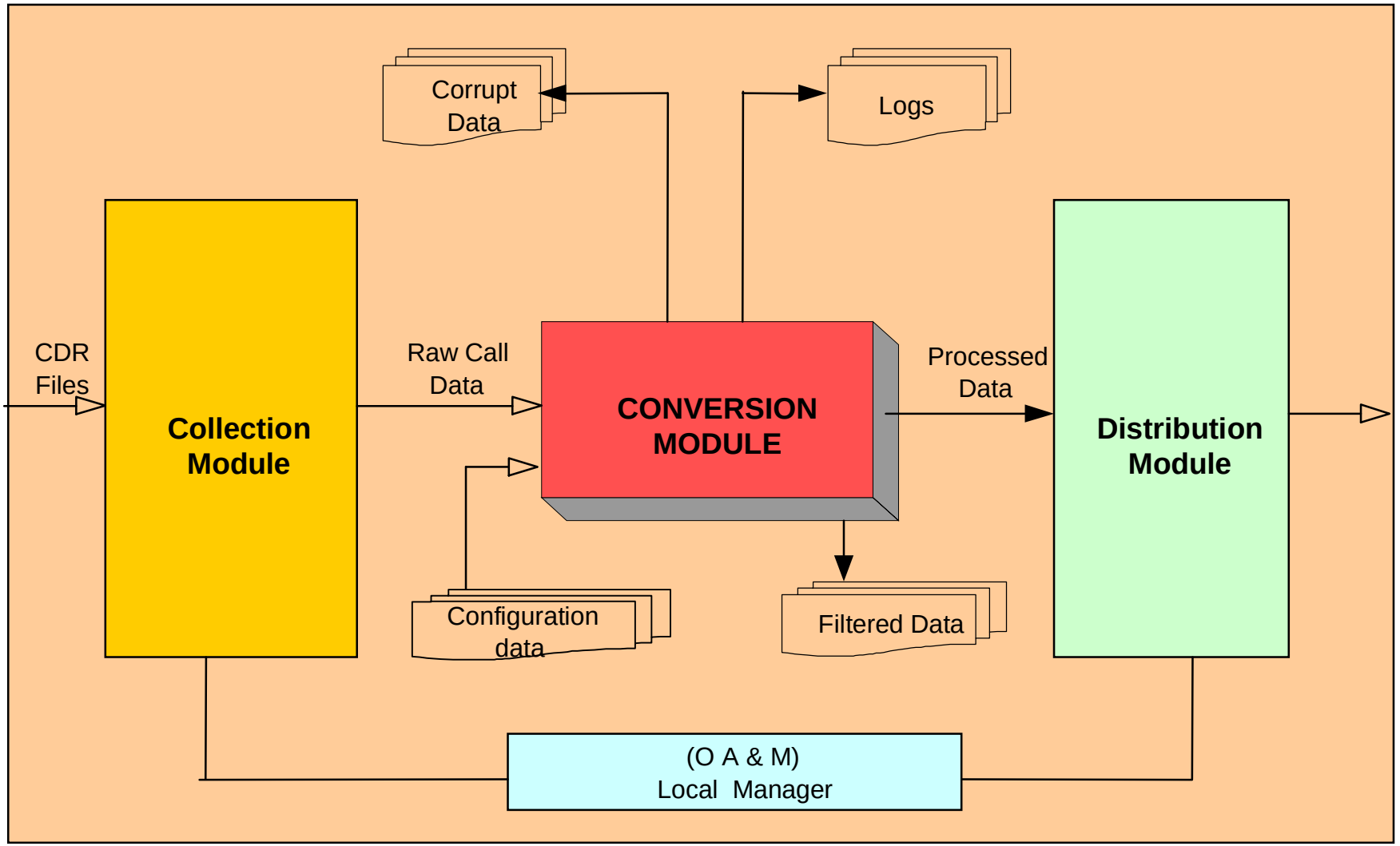
Conversion Functions

Correlation

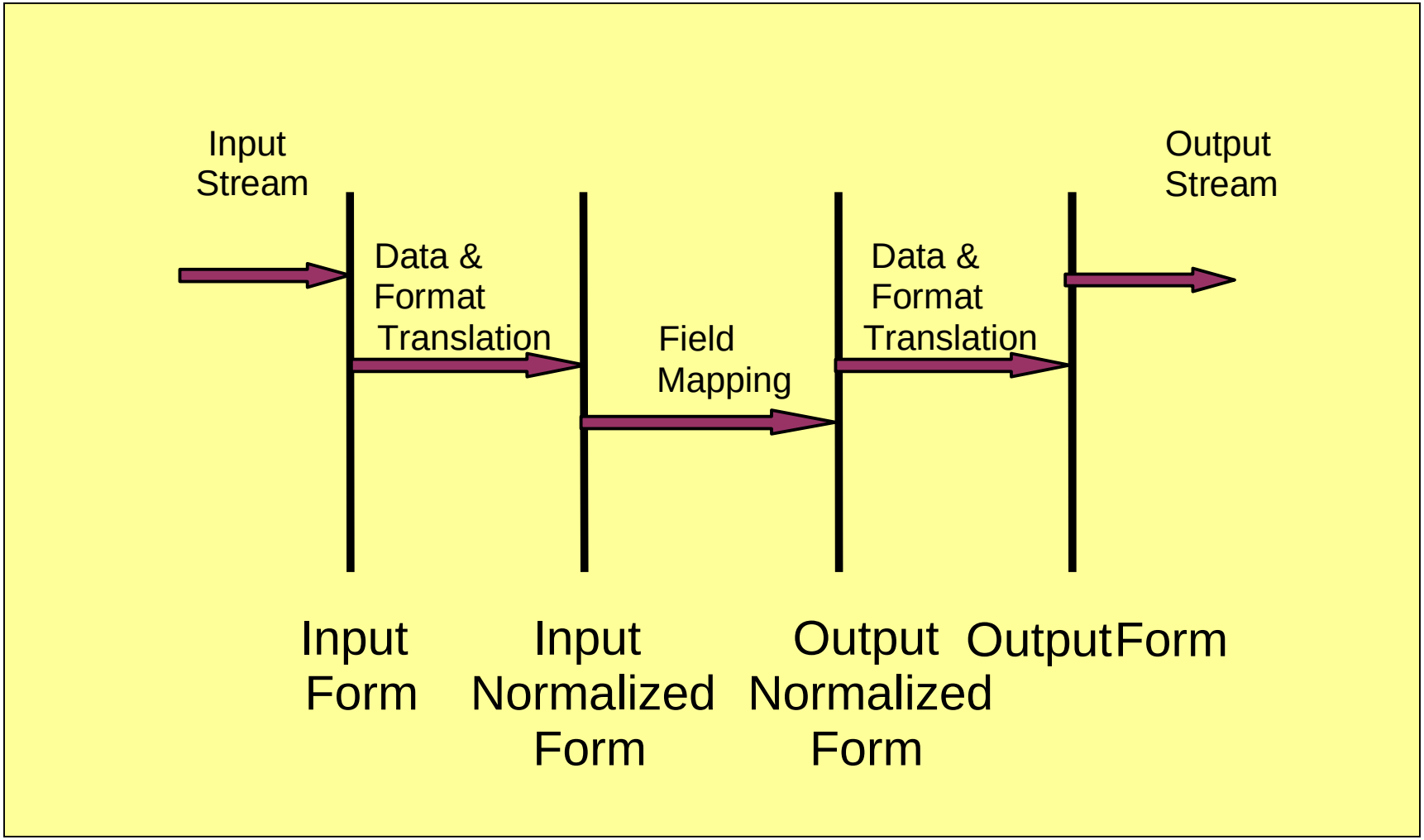
This processing function correlates (compares) usage records from different streams on the basis of one or more common field values. These correlated streams form a virtual stream of consolidated record. Basically it correlates two or more usage records to generate a consolidated usage record.

Mediation allows Multi level correlation, i.e. the virtual stream from one level can be configured for correlation with other real or virtual streams. Mediation will also allow more than one group of correlation.

Position of Conversion Module



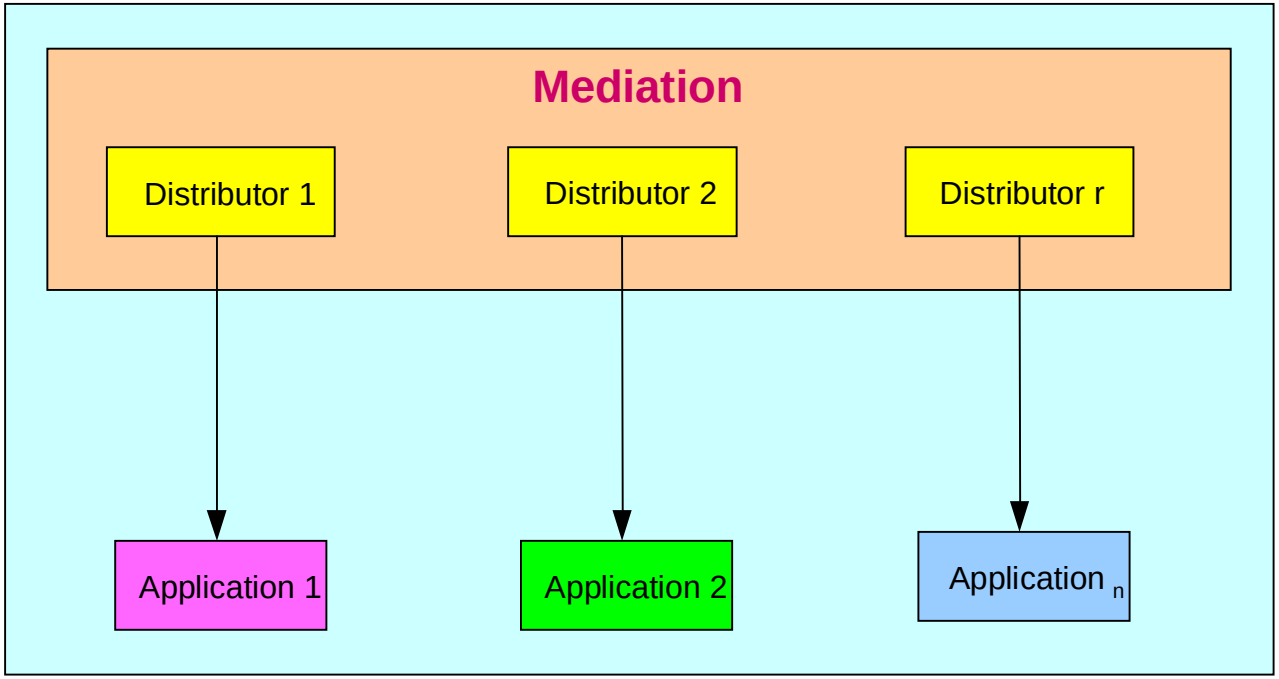
Conversion Stages



Various Stages in Conversion Process

Distribution Application Interface

The Distribution Module of the Mediation System transfers the converted file to the application host by using a number of bulk data transfer protocols. An instance of the Distribution process transfers data files for a single application as shown



Distribution-Application Interface

Distribution Application Interface

The Mediation System supports FTP for bulk data transfer.

The Distribution Module also supports a secondary interface so that if the connection with the primary interface fails, then the Distribution Module will connect to that application via the secondary interface. After transferring the CDR files to the application, Distribution Module deletes the translated files from the host machine.

Other Mediation Activities

Cloning

Cloning is the process of creating an identical copy of CDR.

Sorting

Sorting is process of arranging CDRs in some sequence and/or in different sets, and accordingly, it has two common, yet distinct meanings:

Ordering: Arranging CDRs of the same kind, class, nature, etc. in some ordered sequence,

Categorizing: Grouping and Labeling CDRs with similar properties together (by sorts).

Buffering

A process that stores CDR data in memory for a set period of time before transmitting it to the recipient.

Error Messaging and Alarms

An alarm is a notification that warns the user of a divergence from the normal functioning of processes. Alarm Manager displays all the alarms with their severity levels. Alarms are color-coded based on severity. Alarm Manager performs the following:

- Listing Alarms
- Sorting Alarms
- Filtering Alarms
- Acknowledging and Clearing Alarms
- Trap Messages

Error Messaging and Alarms

Listing Alarms

The Alarm display shows all the outstanding alarms generated by Mediation System. The Alarms are color-coded to indicate the severity of the particular alarm. The Alarm Manager also provides details about each alarm.

Sorting Alarms

The User can specify the criteria for sorting the displayed alarms.

Filtering Alarms

Filtering implies specifying criteria or conditions that restrict the display of alarms. The User can specify the criteria for filtering the displayed alarms.

Acknowledging and Clearing Alarms

The User can clear alarms so that, the display is not cluttered with alarms that have already been managed. The User has to acknowledge an alarm before clearing it.

Auditing and Reporting

The Mediation System maintains the Audit Log files for all events in the system and these can be audited anytime by the system administrator.

The Log Viewer of Mediation System provides a useful and convenient feature to view the log files generated by Mediation System. The logs maintained by the system provide detailed records about the messages resulting from the processes running in the system.

Types of Logs

Audit Log

An Audit log contains the information regarding number of CDRs received, number of CDRs processed, and number of corrupt CDRs. It also contains the information regarding number of CDRs filtered, number of partial CDRs, start time of processing and end time of processing for each CDR file.

Error Log

It maintains error messages generated from all Mediation processes.

User Log

It maintains the record of all user operations and activities.

Service Log

It maintains the record of status of all service provisioning request.

Host Log

It maintains the record of all host monitoring data. Host monitoring includes CPU usage, Memory Usage, and Disk Usage.

Report Generation

The Report Generation feature of Mediation System is used to generate detailed reports about Configuration Manager, Software Manager, Alarm Manager, Performance Manager, and Audit Trail report.

The report generator can generate following types of report:

Configuration Manager Report

The user can specify any combination of the following three criteria to generate the Configuration Manager Report:

- Configuration Type
- Action Taken
- Time Interval

Software Manager Report

The Software Management Report is generated to show the states of processes over a specified time interval. The user can specify any combination of the following three criteria to generate a Software Manager Report:

- Process Instance
- Process Status
- Time Interval

Report Generation

Alarm Manager Report

The user can specify any combination of the following four criteria to generate the Alarm Manager Report:

- Process Instance
- Alarm Severity
- Specific Problem
- Time Interval

Performance Manager Report

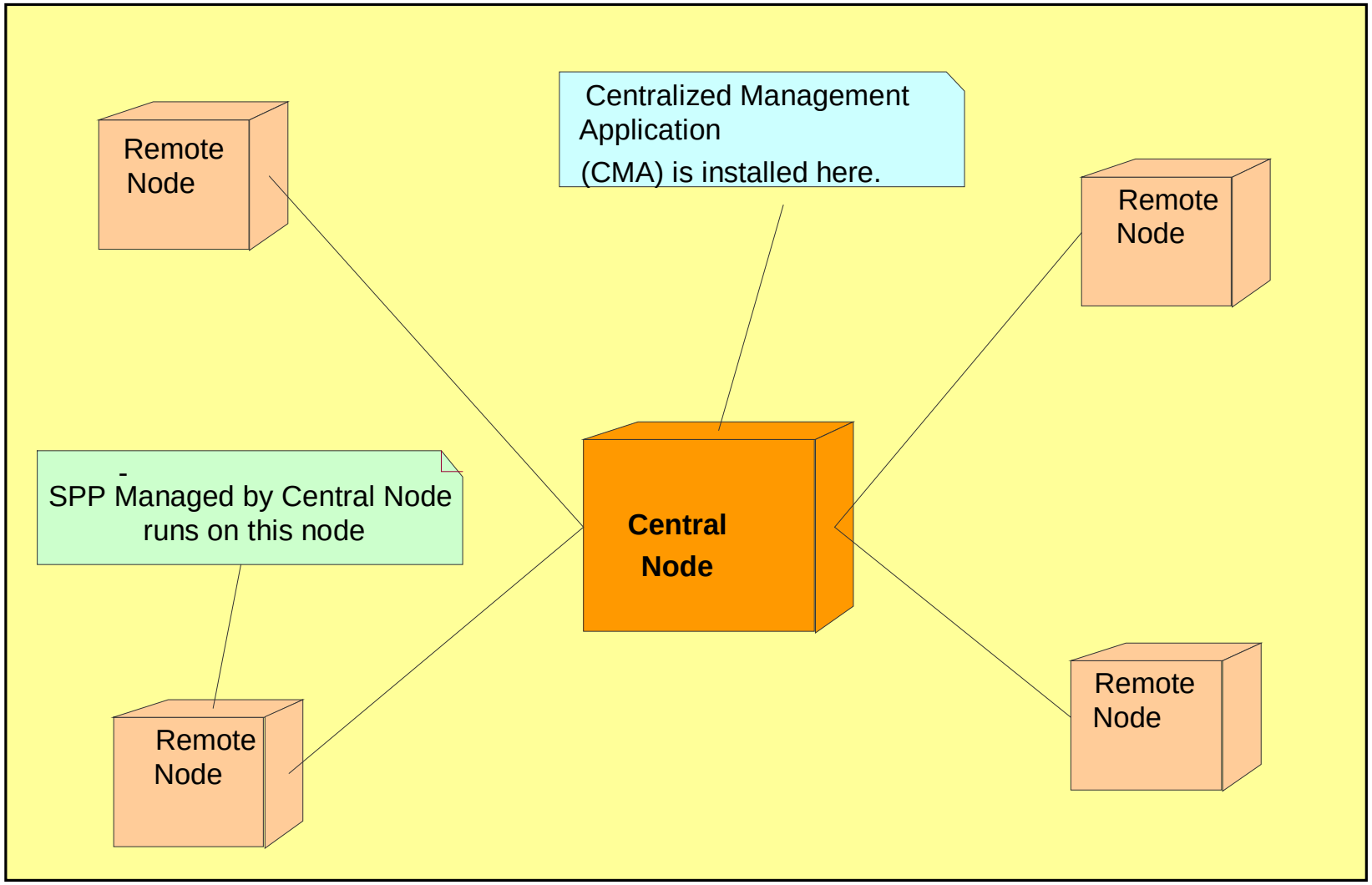
The user can specify any combination of the following four criteria to generate the Performance Manager Report:

- Host Performance
- Mediation System Performance
- Printer/Link Status
- Time Interval

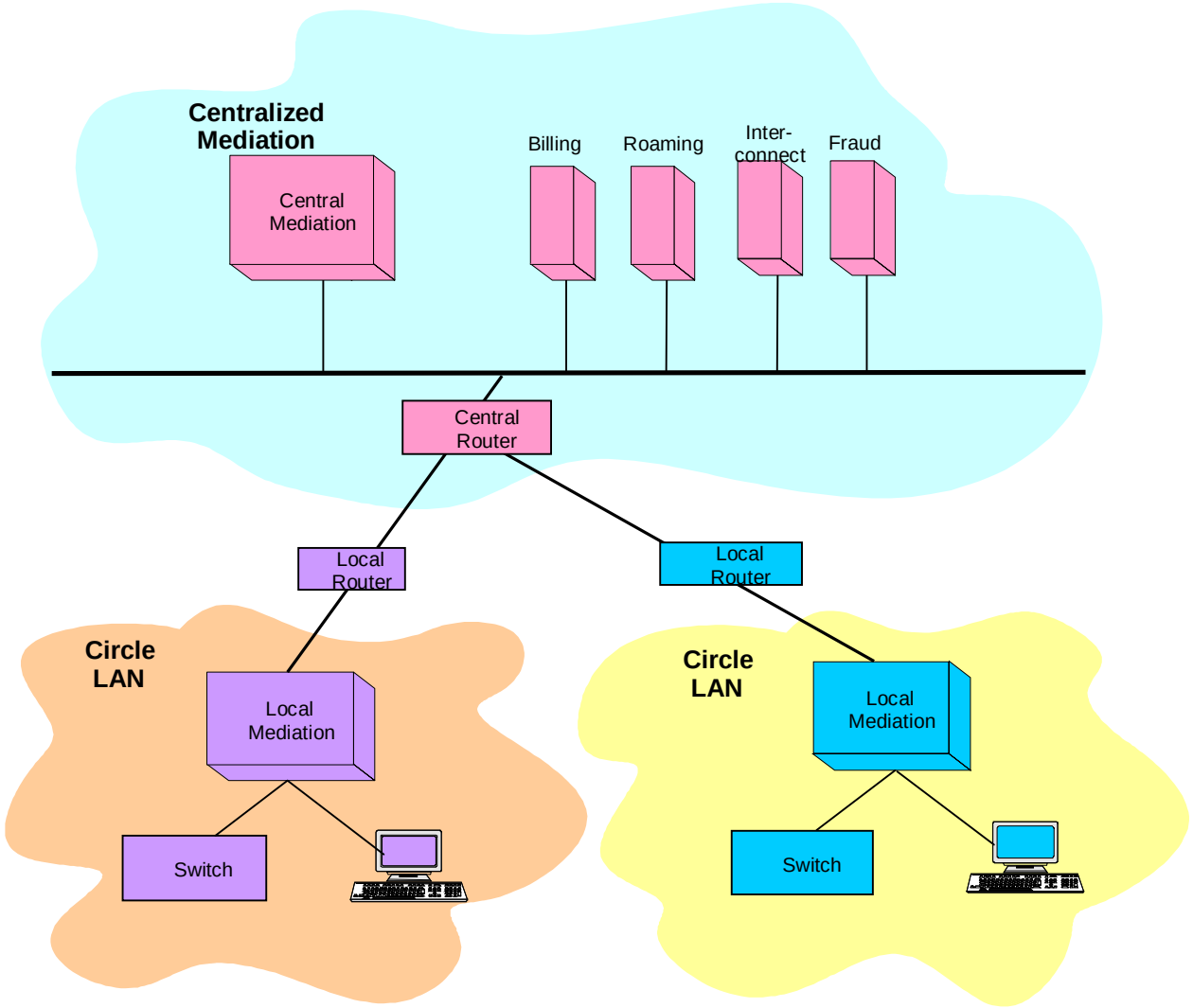
Audit Trail Report

The user can select any NE Name and Application Name combination by highlighting the pair and specify the date to generate the Audit Trail Report

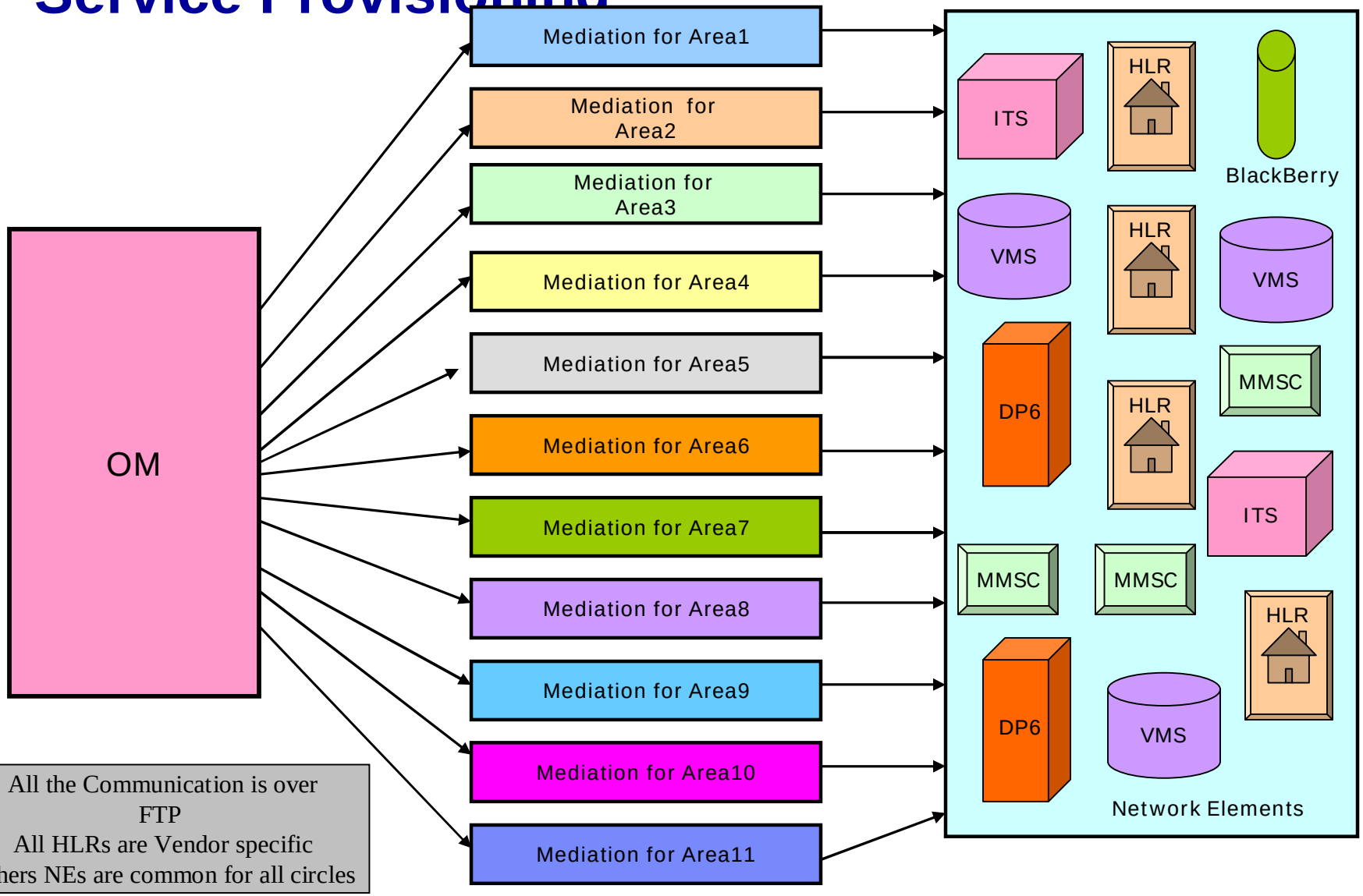
Centralized Management Application



Centralized Mediation Deployment



Service Provisioning



All the Communication is over FTP
All HLRs are Vendor specific
Others NEs are common for all circles

Thanks