इ रि से ट
टेलिफोनी प्रयोगशाला
प्रयोग नं. टीई – 20

I R I S E T
Telephony Laboratory
Experiment No. TE - 20

नाम **Name** _____

अनुक्रमांक **Roll No.** _____

पाठ्यक्रम **Course** _____

दिनांक **Date** _____

प्राप्त अंक **Marks Awarded**

अनुदेशक का अधाक्षर **Instructor Initial**

Purpose : Study of the wiring and Hardware architecture of IRIS – IVDX system.

Objective : After the experiment the trainee shall be able

1) To identify the different circuit cards available.

2) To discriminate between the local extension cards, CO line cards, ISDN cards and Control cards

3) To identify the power supply connections and protections.

4) To locate the wiring of different line circuits and trunk circuits on the MDF.

INTRODUCTION: IRIS – IVDX system is fully digital electronic exchange that can handle voice and data communication. The modular design of IRIS-IVDX ensures easy up gradation of the network capacity. This system contains removable printed circuit assemblies or cards. This system is built with a distributed processor and distributed power supply architecture.

The active circuitry of the IRIS-IVDX is divided into two major functions, common control and peripheral control. The common control circuitry directs call traffic through the system, establishing connections between peripheral ports.

The peripheral circuitry provides the hardware necessary to establish those connections. The peripheral circuitry is further divided into shared service and peripheral interface functions. The shared service circuitry provides the resources required that could be used by any of the peripheral cards. The peripheral interface circuitry provides standardized electrical connections to external telephone station equipment and network facilities. The cabinet of IRIS-IVDX with 1024 ports configuration is floor-mounted mode. The cabinet has two doors one on the front and the other at the back for accessing the MDF and other cables.

Procedure :

I) Identify the power supply arrangement and observe the power supply extended from outside.

    a) Input Power supply to the system.

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b) Observe and draw the power supply arrangement and note down the switches provided on the PSU panel.

c) Observe and write the battery connections to the system in case of power failure.

II) The system cabinet is made up of two shelves. Each shelf consists of metallic cage with a mother board fitted at the back. Note down the no. of slots in each shelf.

a) Control shelf:

b) Peripheral shelf:

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III) Identify the different PCB's and observe the connections.

a) Observe the following hard ware and note down their slot nos, in which end the connectors are provided and what type of connector is used.

S.No.	Card Name	Front end/Rear end Connector	Type of connector	Slot No.
1.	MCC 32			
2.	FLC			
3.	DCC			
4.	FTC			
5.	PRI			
6.	BRI			
7.	E1			
8.	BWT			
9.	ENM			
10.	MTC			
11.	VOIP			

b) What is the type of cable used and where is the other end of the cable connected from the following cards? Also indicate the purpose of the connection.

S.No.	From	To	Type of Cable	Purpose of the connection
1.	MCC 32			
2.	FLC			
3.	FTC			
4.	PRI			
5.	DCC			
6.	E1			
7.	BRI			

III) Study carefully and give your observations :

1) How the different PCB's are connected to the Mother Board.

2) Are there any fixed slots ? If so what are those cards.

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3) Observe and write the type of storage device used for storing the exchange data.

4) Observe the control cards carefully and note the type of redundancy adopted in control circuits?

5) Identify the ISDN circuit boards and note down the details.

6) What is the cable used between the exchange and MDF.

7) Observe the rear side of the cabinet and note how the main shelf and peripheral shelves are inter connected.

Review Questions :

1) Which unit generates different tones required for the working of the exchange.

2) What is the loop resistance allowed for a normal telephone and digital telephone.

3) How many CO lines can be connected to one FTC card.

4) To which card the Personal Computer is connected for programming.

5) What is the purpose of the switch provided on the top of the control shelf.

Date :   Signature of Trainee

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Experiment No. TE - 21

नाम **Name** _____

अनुक्रमांक **Roll No.** _____

पाठ्यक्रम **Course** _____   प्राप्त अंक **Marks Awarded**

दिनांक **Date** _____   अनुदेशक का अधाक्षर **Instructor Initial**

Objective: To study the software programming of IRIS IVDS exchange

Introduction: The program interface is a detailed menu-driven interface for programming the IRIS IVDX. It also provides access to the diagnostic facilities of the system software. The MCC card of the IRIS IVDX has got two serial ports. The first port on the top of the card is used for connecting the system to the data terminal for programming.

The terminal displays prompts and instructions in English, which are generated by the IRIS IVDX. Entries are made using a standard keyboard and the software supports standard keyboard strokes like DELETE, BACKSPACE etc. Entries are displayed as they are keyed in. All the commands are case insensitive. However the password, which you enter is case sensitive. All the changes made into the system through the programming interface are real time (it means the changes are made to the system as the command is executed)

The software for the program interface is inbuilt in the MCC card of IRIS IVDX. There is no need for installing any special software for this purpose.

Some short steps to use the programming terminal
      User can log in by pressing the ' CTRL + L '
      A logged in user can be logged out by pressing the ' CTRL + P '
      If you want to see the level of the logged in user, press ' Ctrl + G '
      To enter the last command press ' CTRL + L '

The following table presents the programming functions that can be applied to the Program Interface. After logging in successfully, you can start to enter the required programs. For entering any program, the first word of the program must be any one of the following words.

Function	Description
Set	- Instructs the system to set a parameter
Reset	- Resets a parameter already set in the system
Add	- Instructs the system to make an addition to the existing Parameter
Delete	- Deletes a parameter from the database
Show	- Displays any feature setting of the system
Copy	- Copies a feature or parameter from one port to another Port
Date	- sets the date for the system
Time	- sets the time for the system

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1. **Set the date and time of the system**
        a) Log in:

        b) Time: This command is used for setting the system time. The format of the commands is
                M>TIME HH MM SS
        Where hh is for hours, mm is for minutes and ss is for seconds

write down the time you have set.

        c) Date: This command is used for setting the system date. The format of the command is,
              M>DATE DD MM YY W
        Where mm is for month, yy is for year and w is for weekday (0 for sun, 1 for mon etc)

        d) Log out and log in to verify the time and date set.

2. **To see the status of the exchange**
This command diplays a list of cards, which are programmed in the system. If a card is not present in a slot, it will be displayed as A. If a card has been registered by the system and it is removed while it is running, it will be displayed as X, otherwise P will be displayed. This command will display the status of all the slots in the system.
        M>SHOW CARD

3. **To check the Telephone Directory No's available in the system**
        SHOW FLEX <slot no.>

Now IRIS shows all the ports of the card no you have entered and also the next card
Note down any six telephone nos and their port nos.

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4. **To check the facilities of any extension**

    a) To check the COS pattern number.

        SHOW EXT <ext no.>

    b) To check the facilities under the cos pattern number.

        SHOW COS <cos no.>

5. **To make an extension activate or deactivate**

    a) To deactivate extension number

        RESET EXT <ext no.> ACTIVE

    b) **To activate extension number**

        SET EXT <ext no.> ACTIVE

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6. **Programming a trunk**

　　To define a trunk card

　　　　M>ADD CARD 7 PRIT
　　　　M>REPEAT 30 4 5 SET PORT 7 00 7000

　　Apply Qsig to PRI trunks
　　M>REPEAT 30 3 SET PNT 7000 QSIGRT 1

　　Assign dial Nos. to the PRI trunks
　　M>SET QSIG 1 NUM 100 199 1
　　where QSIG 1 is the line No., 100 199 are the remote exchange telephone numbers and last
　　1 is the trunk card No.

　　See the QSig output results
　　M>SHOW QSIG
　　　　QSIG GROUPS
　　　　01.　　100　　199　1 [3] ECMA　INT

Review questions:

1) What is the command used to check the status of a particular card ?

Signature of the Trainee