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IT - ITeS SSC
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Participant Handbook

Sector
IT-ITES

Sub-Sector
Business Process Management

Occupation
Customer Relationship Mangagement

Reference ID: **SSC/Q2213, Version 0.1**
NSQF Level 4

Domestic Biometric Data Operator

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1. Introduction

Unit 1.1 – Introduction to IT-ITES Sector

Key Learning Outcomes

At the end of this unit, you will be able to:

1. explain the role and importance of the biometric Operator in supporting business operations;
2. describe the limits of your role and responsibilities in relation to biometric data capture and encoding;
3. your organization's policies, procedures and priorities for your area of work and your role and responsibilities in carrying out your work;
4. read instructions, guidelines, procedures, rules and service level agreements;
5. eork within the limits of your job role;
6. keep up to date with changes, procedures and practices in your role;
7. keep up to date with changes, procedures and practices in your field of expertise.

UNIT 1.1: Introduction to IT-ITeS Sector

Unit Objectives

At the end of this unit, you will be able to:

1. explain the role and importance of the biometric Operator in supporting business operations;
2. describe the limits of your role and responsibilities in relation to biometric data capture and encoding;
3. your organization's policies, procedures and priorities for your area of work and your role and responsibilities in carrying out your work;
4. read instructions, guidelines, procedures, rules and service level agreements;
5. eork within the limits of your job role;
6. keep up to date with changes, procedures and practices in your role;
7. keep up to date with changes, procedures and practices in your field of expertise.

1.1.1 Introduction to IT-ITeS Sector

Information Technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit or analyse data, often in the context of a business or other enterprise. The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones.

Today, a country's IT potential is paramount for its March towards global competitiveness, healthy gross domestic product (GDP) and meeting up energy and environmental challenges.

India is one of the fastest-growing IT services markets in the world. It is also the world's largest out sourcing destination. The country's cost competitiveness in providing IT services continues to be its USP in the global sourcing market.

India has the potential to build a US$ 100 billion software product industry by 2025, according to Indian Software Product Industry Round Table (ISPIRT). The software products market in India, which includes accounting software and cloud computing-based telephony services, is expected to grow at 14 per cent in 2014.

Why is the IT sector growing?

- Rapid industrialization
- Partial privatization of telecommunication
- Growth of IT parks in the country
- Development of SEZ; which also help IT companies get tax benefits
- A large number of resources readily available in the country
- Low operating costs
- Tax breaks and cooperative policies offered by the government

Major Companies in India

1. Tata Consultancy Services
2. Infosys
3. Wipro
4. Tech Mahindra
5. HCL Technologies
6. Mphasis
7. Oracle Financial Services
8. Mindtree
9. Polaris Technology
10. Rolta India

The IT industry can be broadly classified into three sectors:

- Software
- IT Services
- IT Enabled Services (ITeS) - BPO and Call Centers

Introduction to ITeS Industry

The CRM Non-Voice is a part of the ITeS sector. This sector aims at communicating with the customers to address his/her queries, requests and complaints or also to introduce company's products and services to him. These interactions are also used to market and sell the ITeS products and the service. The Indian IT Enabled Services industry represents one of the most successful industries showing consistent rapid growth over the past few years.

ITeS (Information Technology Enabled Services)

Information Technology Enabled Services (ITeS), is a form of outsourced service which has emerged due to involvement of IT in various fields such as telecommunication, banking, finance, telecom, insurance, travel among others. Some of the examples of ITeS are Chat based interactions, medical transcription, back-office accounting, insurance claim and credit card processing.

The Indian IT and Information Technology Enabled Services (ITeS) sectors go hand-in-hand in every aspect. The industry has not only transformed India's image on the global platform, but also fuelled economic growth by energising the higher education sector (especially in engineering and computer science). These industries employ over 10 million Indians and, hence, have contributed significantly to economic growth and social transformation in our country.

About ITeS in India

- Call Centres provide customer interaction and communication services
- Back office operations of various large Companies are done in BPOs, eg. British Airways has its reservation system running out of India.
- Most of the top international banks channel their data- churning needs to their units in India.
- ITeS sector includes services ranging from
  - Call Centres
  - Claims processing, eg. Insurance
  - Office operations such as accounting, data processing, data mining
  - Billing and collection, eg. Telephone bills
  - Internal audit and pay roll, eg. Salary bills on monthly basis
  - Cash and investment management, eg.
  - Routine jobs given to a third party and giving importance to core business.

Employment Trends

The IT and ITES sector has generated large employment in the past and continues to generate large number of jobs every year. With online shopping, social media and cloud computing flourishing more than ever before, there is great demand for IT professionals in e-Commerce and Business to Consumer firms. With the immense opportunities that this sector has to offer, a large number of Indian and MNCs are investing in expanding and setting up IT and ITES businesses in India.

Major ITeS Companies in India

HCL Technologies	Cognizant Technology Solutions
Tata Consultancy Services	Accenture
Capgemini	Amazon
Delloitte Consultancy	Microsoft Corporation
Wipro Technologies	

1.1.2 Introduction to the Training Program

Purpose of the Training Program

This training program is developed to impart specific skills to individuals who wish to perform as a **Domestic Biometric data Operator** the training program is intended for imparting basic skill and knowledge. It is based upon National occupation standards. The National occupation standards have been described in the following subsection of this chapter.

Domestic Biometric Data Operator in the IT-ITeS Industry is also known as Biometric Technician and Biometric Coordinator.

After successful completion of training and passing the assessment you will be issued a certificate. This will prepare you to get employed as a **Domestic Biometric Data Operator** in IT-ITeS companies. Individuals in this job will be assigned to manage proper capture and enrollment details of biometric data of customers and maintain biometric equipment

They will be responsible for assisting in performing the key activities and tasks involved in the assigned role.

This program is based on qualification pack called **Domestic Biometric Data Operator**. The Qualification Pack Code for **Domestic Biometric Data Operator** is SSC/Q2213. This is also called a QP. A QP consists of a set of National Occupational Standards (NOS). NOS specify the standard competency one must achieve when carrying out a function in the workplace. Under **Domestic Biometric Data Operator** QP, there are three numbers of NOSs which detail the functions to be performed at a **Domestic Biometric Data Operator**. The total duration of the course (including theory and practical) is 400 hours.

NOS Code	Major Function/Task
SSC/N3023	(Undertake bio-metric data entry and processing)
SSC/N9001	(Manage your work to meet requirements)
SSC/N9003	(Maintain a healthy, safe and secure working environment)

1.1.3 Role and Responsibilities of a Domestic Biometric Data Operator

Role and importance of the biometric Operator in supporting business operations

The Biometric Operator plays a crucial role in identity management process. He is finally responsible for capturing correct data that will be used for validating and authenticating identity. What this means for businesses? All organisations that have services that use biometric technology for their services finally depend on the customer data being captured correctly. An incorrectly captured data could create a domino effect impacting customer interaction and safety of transactions that depend on authenticated identities.

As such it's the duty of the Operator to do his job with utmost diligence. An organisation using the services of a Biometric Operator need to ensure that correct and frequent training is imparted to the Operator in all his functional and managerial areas. This training will be a long term investment that the organisation will make towards making the final system more sturdy and stable.

Fig. 1.1.1. Duties of a Biometric Operator

Duties of a Biometric Operator

A Biometric Operator wears many. He deals with multiple issues and actions on a daily basis. The Biometric Operators carries out the following duties when on job

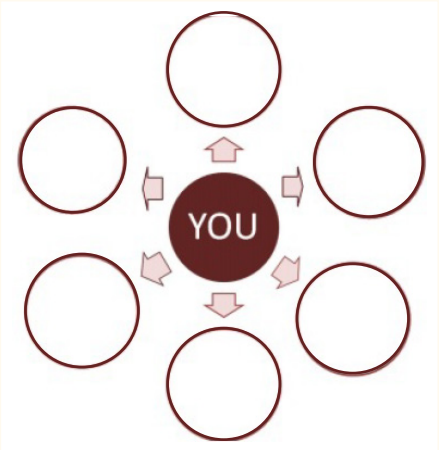
- Capture demographic (such as personal details, contact details etc) and biometric data (such as Facial image, IRIS, Fingerprint details)
- Handle exception cases during capture of data (i.e., missing of eyes, fingers etc.)
- Obtain consent letters and make corrections in data recorded, if required
- Provide acknowledgement slips to Enrolees. This slip will be required for future references such as tracking the status, not receiving the Biometric Identity Number
- Load pre-enrolment residents data on enrolment stations laptop, where applicable
- Helps the Enrolee fill out Know Your Resident/Enrolee form if required
- Handle issues and concerns of the Enrolees
- At the time of validating the captured data, read out the text on the screen if Enrolee can't read or is blind
- Export of data to memory stick and hand over to his supervisor
- Installation and configuration of the Biometric Data Capturing Software Client
- Setup enrolment station
- Registering Laptops, Enrolment Agency Operators and Supervisors with the requisite Centralised Authority
- Troubleshooting
- In case of a Government driven enrollment like Aadhar confirm the identity of the Enrollee by giving his/her Aadhar and fingerprints for verification in the case of Residents without documentary proof of identity

- Provide demographic and biometric information
- Provide authentic documentation (such as PoI, PoA & DoB) or be introduced by an Introducer

Limits of an Operator's role and responsibilities in relation to biometric data capture and encoding

The Operators responsibility starts from the moment the Enrolee enters the centre. It ends with the Enrolee confirming the data capture and Operator signing off on the same and giving the Enrolee a printed receipt for the enrolment. There can be another round of interactions with the Enrolee where data needs to be corrected.

My Family, My Responsibility



Role	Write the person or persons that you are serving in this role.	To what extent you are performing this role effectively?

To what extent you are performing this role effectively?
1. Effective
2. Not very effective
3. Would want to do some more

Define Your Work Area

Organizational policies, procedures and priorities for your area of work and your role and responsibilities in carrying out your work.

The Operator should be fully aware of the organisations policies and procedure that needs to be followed in his area of work. At the start of his job, it's important that he become knowledgeable of the same so that he can implement the same on day 1 he starts his job as a Biometric Operator. Indepth knowledge of the organisation and authority (UIDAI) guidelines on work outcome is a must as it will impact data capture and influence biometric system functioning in the long run.

Knowledge of instructions, guidelines, procedures, rules and service level agreements

The Operator should be aware of all functional guidelines and service level agreements related to his work. These would be established by relevant authorities and must be maintained at all times.

Understand limits of your job role

The Operator should work in the defined area as established by organisation and his Supervisor. It's important that he understand the deliverables very clearly and not deviate from this. A pre-defined work outcome is the single most important priority for the Operator – to capture high quality biometric data. The second most important area is processes that facilitate the capture of data. The Operator should keep track of both these areas and keep in mind all activities in the centre that can impact his work outcome.

The Operator should also ascertain proactively on a day to day basis if any additional responsibilities like answering phone calls, performing any admin duties, need to be undertaken. These would be specific responsibilities that could be time bound.

Complete the following:

Where do you work?
I work in / with . .....
What work do you do?
I work as a . .....
or
I work as an . .....

Keep Updated with Latest Practices

Keep up to date with changes, procedures and practices in your role & expertise

The Operator, as a matter of routine, should keep up to date with the organisations' policies and procedures with reference to his role and expertise. He or she should regularly attend all the training programs that he needs to go through mandatorily as part of his duties. He should also undertake training programs that will help him in his function role. Few areas where he can take training

- Computer Management
- Understanding Biometric devices
- Learning about customer service
- Do personality development courses
- Undertake grooming classes

Exercise

1. Name 5 players in the IT sector in India.

2. Name 5 players in the ITES sector in India.

3. The Indian Industry can be broadly divided into which of the 3 Sectors?

4. List down some of the major services offered by the ITES Sector?

5. List the name of the NOS covered in the QP of Domestic Biometric Data Operator.

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2. Core/Generic Skills

Unit 2.1 – Introduction to Biometrics

Key Learning Outcomes

At the end of this unit, you will be able to:

1. explain basics of Biometrics;
2. discuss why Biometrics is gaining importance;
3. describe real world applications of Biometrics.

UNIT 2.1: Introduction to Biometrics

Unit Objectives

At the end of this unit, you will be able to:

1. explain basics of Biometrics;
2. discuss why Biometrics is gaining importance;
3. describe real world applications of Biometrics.

2.1.1 Introduction to Biometrics

Basics of Biometrics

There are so many of us in this world! The following things about you set you apart – Name, Place of birth, Date of birth, Gender, Father's/Husband's/ Mother's/ , Wife's/ Guardian's name, School / College attended, Address, Your face .

In a number of situations it becomes difficult for you to establish your identity or for another person or agency to verify your identity. Today, technology helps us record some of the physical features that make each of us different from others.

These include: The photograph of our face is one thing used most commonly to identify us. Your finger prints are unique. The lines on the tips of our fingers are unique and can be photographed and stored for future reference. The iris in your eyes is unique. It is a section of the eye which has a unique structure for each person, just like the finger print When identity has to be verified, three things needs to be verified and authenticated - Information about Identity, Information about Address and Information about biometric details Demographic Information is related to a person, which can be obtained from official records like name, address, date of birth and so on, are referred to as 'Demographic' information. It is the information related to nationality, age, education, religion, employment status, and so on. Biometric Information is related to our body and its parts. Information related to physical characteristics like iris, finger print, face, etc., are referred to as 'Biometric' information. age, education, religion, employment status, and so on. Biometric Information is related to our body and its parts. Information related to physical characteristics like iris, finger print, face, etc., are referred to as 'Biometric' information.

Fig. 2.1.1. Finger Print

Fig. 2.1.2. Iris

Case Study – Impact of Lack of Identify Proof

- Sunil Kumar, a motor mechanic, who has migrated from another state.
- He wants to open a savings bank account in one of the nationalized banks.
- The bank asked him to submit his identity proof and address proof.

Fig. 2.1.3. Providing Identity

- Sunil Kumar does not have any identity proof
- Bank refuses to open the account.
- Now Sunil Kumar keeps the money that he earns on his person or in his house.
- He is constantly afraid of losing his money
- Cannot avail loans under Government schemes
- He had to setup up a motor cycle repair shop by putting up a roadside shelter

Benefits of Proving that You have a Unique Identity

What do you think will happen if all of us looked exactly alike and had the same name?

What benefits do you get if you are able to prove your identity?

- You can have a bank account which no one else can operate. This means that the money in your bank account cannot be withdrawn by anyone except you.
- You can get a phone connection, land line or mobile
- You can own a house, a shop or a business and no one can take that away from you.
- If you are marginalized and deprived the government can help you by providing subsidized food rations and other similar benefits for which you are eligible.

Biometric Technology

Biometrics technology uses automated systems to recognize a person based on behavioural and biological (anatomical and physiological) characteristics. Traditional data capturing mechanisms used for identification of individuals are filled with errors and data duplications. To remove these deficiencies, biometric technology uses an individual's identity to the his or her unique biometric identity. Biometric data represents a biometric characteristic such as image data, behavioural data or sensor data. This data is captured using camera, scanners and sensors and then stored using specific devices and appropriate individual documents are generated.

Reasons why Biometrics is Gaining Importance

Increasing the biometric technology is finding its way to become the basis for building extremely secure identification and personal verification solutions. Biometrics technology is implemented because of the following :

- Uniqueness of individuals: Generally every individual as unique characteristics. This uniqueness is the basis of identification.
- Permanency: The individual's unique characteristics remain unchanged with time.
- Performance: The technology should deliver same and accurate results in different environments.
- Circumvention: Is it not easy to deceive the technology.

More and more, using biometric technology for personal authentication is ever more convenient, quick and easy and comparatively more accurate than current methods like using passwords or pins, as biometric uses personal identifiers to conduct a transaction.

The digital environment now is fast paced and people have to remember number of passwords and PINs for email accounts, computer logins, ATMs, phones, secure sites etc. Biometrics can free people from this hassle. A password or pin can be forgotten or misused by someone else. However, biometric technology is convenient as there is nothing to carry or remember. The technology can provide for positive, trustworthy and low cost method of authentication for various applications. It can easily build an audit trail and is fast gaining wide social acceptance.

Real World Applications of Biometrics

Authentication applications that use biometric technology can include

- Workstation, computer network, and domain access
- Entity authentication, single sign-on, application logon
- Data protection
- Remote access to resources
- Confidential Financial Transaction security
- Web security.
- Entry devices for offices, buildings
- Law enforcement
- Personal data privacy
- In India, biometrics has found its application in many of the governments initiatives UIDAI (Aadhar)
- NPR (National Population Register)
- E-Passport
- PDS (Public Distribution System)
- RSBY (Rashtriya Swasthya Bima Yojna)
- Transport department for issuing or renewing Driving License, etc.

As biometric technologies mature, evolve, become more commercially acceptable and find increasing usage, users will find it easier to deal with multiple levels or instances of authentication. This is a positive and strong indication of the future for biometric activities.

The growth of a digital economy is dependent on how much trust we have in the electronic transactions. Whether used independently or in collaboration with other technologies like smart cards, encryption keys and digital signatures, biometrics will soon become part of every activity in the economy and our personal daily lives.

2.1.2 Computer Management

Computer Management and Maintenance

Basic and advance pc workstation configuration, maintenance, networking as well as trouble shooting

The Biometric system comprises of Biometric Devices as explained above and Non-Biometric Devices. An workstation comprises of both these components.

The biometric software is installed on the computer for collecting the demographic and biometrics data. Biometric Devices such as finger print scanner, iris capturing device and digital camera are connected to the computer through the USB port. The data captured using biometric devices is stored on computer. This data can then be transferred from the Enrolment Centre to Centralized Server that holds all the data.

Non-biometric devices are used to enter, read, store, print, scan and photocopy the data. These are Computer, Printer, Storage Devices (CD/DVD/Pen Drive/Portable hard disk, GPS Dongle, Scanner, Photocopier, Universal Serial Bus (USB) Hub , UPS/ Electrical Generator to deal with power related issues.

The Operator is expected to be familiar with the system he works on. He needs to undergo training for computer management that would be provided by the centre so that he is fully capable of maintaining it and carrying out any minor trouble shooting if necessary. For non-routine problems, the Operator should escalate it to his Supervisor or Technical team, which could be in the centre or be at a remote station.

Computer

A computer can be defined as an electronic machine that accepts input (data), processes it and gives out results (information). It is used to store the demographic and biometric data temporarily till it is transferred to the main server which holds all the data.

A computer is made up of hardware and software. Things you can see and touch on a computer or inside a computer are called hardware. Examples are the keyboard, the monitor, the mouse and the processing unit.

A basic computer consists of four major components:

- Input
- CPU (Central Processing Unit)
- Output
- Memory

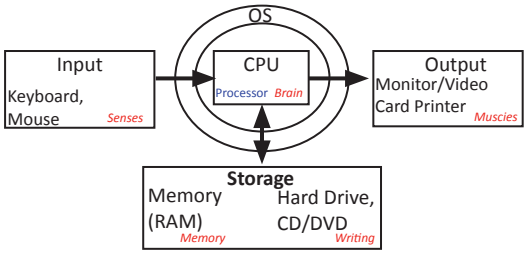

Fig. 2.1.4. Four major components

Fig. 2.1.5. Input - Keyboard and Mouse

The input into a computer can take a variety of forms, from commands you enter from the keyboard or mouse to data from another computer or device.

Processing is done inside the computer in an area called the central processing unit (CPU). Processor is the brain of a computer. Processing is the conversion of input to output.

Anything that comes out of a computer, which is the result of a computer process, can be viewed on a monitor screen, heard through speakers, printed on printers, and so forth.

All data that is processed is stored somewhere. Computer data storage is referred to as storage or memory. Examples are RAM, hard disks or removable memory sticks.

Software

Software is the programs (instructions) that tell the computer what to do. It is a non-physical entity. There are two kinds of software, systems software and applications software. System Software controls all processing activities. It includes operating system and all the utilities such as Language Processors that enable the computer to function.

Fig. 2.1.6. System unit

Slap Fingerprint Scanner, all the four fingers of the hand are captured, at a time. The fingerprints of both the thumbs are then captured, simultaneously.

Fig. 3.1.7. *Fingerprint Scanner*

Method of capturing 10-prints on live scan sensor and inkpads

When capturing the fingerprint image, the fingerprint of all ten fingers of two hands need to be captured. The fingerprints must be captured in the sequence of slaps of four fingers of left hand, right hand followed by the two thumbs.

The Operator should follow the below steps to capture the fingerprint image of the Enrollee.

1. Capture fingerprint of the left hand : First, capture the fingerprints of the four fingers of the left hand except the thumb simultaneously as shown in Figure 3.1.8

Fig. 3.1.8. *Capturing Fingerprints of the Left Hand*

The Enrolee should place the four fingers of the left hand on the platen and apply a little pressure with the right hand so that the fingers have a good contact with the glass surface.

2. Capture fingerprint of the right hand : First, capture the fingerprints of the four fingers of the right hand except the thumb simultaneously as shown in Figure 3.1.9.

Fig. 3.1.9. *Capturing Fingerprints of the Right Hand*

Fig. 3.1.10. *Capturing Thumb Print*

The Enrolee should place the four fingers of the right hand on the platen and apply a little pressure with the left hand so that the fingers have a good contact with the glass surface.

3. Capture the two thumb prints: Thumbprints of both the hands are scanned and captured simultaneously as shown in the Figure 3.1.10

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