



Standard Operating Procedure (SOP)

For Implementation of

**Aadhaar Enabled Bio-Metric Attendance System
(AEBAS)**

in all Department's/Organization's in J&K



Prepared By

**Information Technology Department
Government of J&K
Civil Secretariat
Jammu & Kashmir**

&

**National Informatics Centre
Government of India, DEITY,
Ministry of Communications and Information
Technology
Civil Secretariat, Jammu**

Abbreviations Used

IT	Information Technology
ITD	Information Technology Department
GOI	Government of India
NIC	National Informatics Centre
NICSI	National Informatics Centre Services Incorporated
NICNET	National Informatics Centre Network
BAS	Bio-Metric Attendance System
AEBAS	Aadhaar Based Bio-Metric Attendance System
UIDAI	Unique Identification Authority of India
GeM	Government e-Market Place
AEC	Aadhaar Enrolment Centres
PEC	Permanent Enrolment Centres
IAD	Integrated Attendance Device
GPRS	General Packet Radio Service
TCO	Total Cost of Ownership
MIS	Management Information System
NDC	National Data Centre
CIDR	Central Identity Data Repository
SIM	Subscriber Identity Module
FES	Front End System
BES	Back End System
PC	Personal Computer
FAQ	Frequently Asked Questions
OTP	One Time Password
RMN	Registered Mobile Number
OS	Operating System
SMS	Short Messaging Service

Table of Contents

1.	Summary	5
2.	About Aadhaar Based Bio-metric Attendance (AEBAS).....	5
3.	Proposed Solution.....	6
4.	Salient Features of Cloud Based BAS Solution.....	6
5.	Summary of Requirements	7
6.	AEBAS Architecture	8
7.	On-Boarding (Implementation) Guidelines.....	10
7.1	Registration of Organization.....	10
7.2	Registration of Employees	10
7.3	Aadhaar Enrolment / Registration.....	11
7.4	eAadhaar access.....	11
7.5	Bio-Metric Terminals (Devices).....	11
7.6	Procurement of Devices.....	12
7.7	Network / Internet Connectivity	13
7.8	Site Identification and Preparation.....	13
7.9	Installation of Devices	13
7.10	Operations & Maintenance.....	14
8.	Roles & Functions of Nodal Officer	14
	Steps for on-boarding (Registering) an Organization in the attendance portal	15
	Procedure for registration of employees within Attendance portal.....	16
	How to mark Attendance using the common biometric attendance system on wall mounted terminals.....	18

1. Summary

As part of the "Digital India" Programme of Government of India, it has been decided to implement common Aadhaar Enabled Biometric Attendance System (AEBAS). The proposed system would enable an employee to register attendance by presenting his/her biometric (finger print / IRIS) which will be authenticated online by doing one to one match with the bio-metric stored in the UIDAI data base against the employee's Aadhaar number.

Government of Jammu and Kashmir, with the help of IT Department intends to install this Biometric Attendance System across all the departments/organizations, Government of J&K. The departments/organizations shall use the common biometric attendance portal, hosted at NIC data centre New Delhi and a fourth level sub domain (portal) shall be got allocated for each department for the said purpose, and also shall procure / maintain biometric attendance terminals and desktop fingerprint scanning devices / IRIS devices in a decentralized manner, through Open tenders, Govt e-MarketPlace (GeM) & NICS empanelled vendors. The state Government Departments/Organizations shall also procure if required Wi-Fi Access points for enabling wireless network connectivity in the biometric attendance terminals (Wall Mountable Terminals / Tabs)

2. About Aadhaar Based Bio-metric Attendance (AEBAS)

Government Organizations are operating across different locations. The major challenge is to enable and manage the attendance of the Government workforce across various locations keeping the Total Cost of Ownership (TCO) low.

Presently, various Government Organizations have deployed proprietary biometric attendance solutions, which lack uniformity in technical architecture due to which these solutions are difficult to scale up and integrate with each other.

Aadhaar based biometric Authentication for the purpose of attendance would ensure that the attendance of all the Government employees will be visible in real time on the common attendance portal ensuring transparency and accountability to bring efficiency.

AEBAS is an Online System where authentication of finger prints is done online, thus presence of Internet Connectivity is mandatory requirement wherever devices are installed. Internet Connectivity from all service providers is supported in AEBAS.

3. Proposed Solution

It has been decided to implement Aadhaar Based Biometric Attendance System (AEBAS) across various government offices in the state of J&K so that entire state can be monitored online through one single interface. A monitoring & registration portal has already been created for each state and for J&K state the portal is <http://jandk.attendance.gov.in>. Through this portal, all organisations registered with in the state can be monitored online. This also facilitates on-boarding process as well as addresses the queries of departments.

This system is envisaged to have the following features:

- Cloud-based attendance software installed and operated from NIC National Data Centre (NDC).
- Dedicated secure connectivity already exists between National Data Centre (NDC) and UIDAI Data Centre by NIC for bio-metric authentication
- Offices using the system will install biometric enabled terminals / finger print devices to mark attendance; the number and location of required devices will be assessed by the offices; the offices concerned will be responsible for day-to-day maintenance of the devices
- Connectivity of terminals / finger print devices will be established through Wi-Fi/GPRS as well as to desktop systems.

4. Salient Features of Cloud Based BAS Solution

Following features are envisaged for Common Bio-metric attendance System:

- This Biometric Attendance System is based on Aadhaar Authentication (Fingerprint and Iris Based Authentication).
- The BAS is highly secure as Bio-Metric devices can be installed only with the help of Bio-Metric Admin and activation code. This means that physical position of Bio-

Metric Devices can always be ascertained at any point of time.

- It is an attendance system with real time monitoring
- The system already has comprehensive MIS inbuilt and since it is a solution from Government of India, all the updates to the system will be available to all users.
- This is a lightweight system which does not requires any special additional hardware or algorithm
- It is compatible with multiple platforms (Windows, Android, etc.) and form factors (Laptop, Desktop and Tablets, etc.)
- Robust System- Self sustained for small power cuts as it uses tablets at the front end or a USB based finger print device attached to a simple desktop or laptop
- Employees can mark their attendance from any terminal / device connected to BAS system and location of attendance will also get recorded. This enables the

employee to mark his attendance from some other location also within the State / Domain, if deputed for some official work by his superiors.

- Time taken to Record Attendance is as low as 4-5 Seconds on Wi-Fi and 8-11 Seconds on GPRS (SIM) and almost equivalent time on desktop systems.
- System is tightly integrated with the communication channel of SMS. A user gets SMS's from the systems at various levels like after registration etc.
- The System has an in-built leave management system wherein an employee can be marked "on leave" so that the system recognizes him / her as on leave and does not send a late attendance SMS.
- The system maintenance is largely automated. Examples are: centralized monitoring of devices – through a dash-board, push-based updating of software on devices and PCs over the air, automatic fall back on SIM based connectivity once the Wi-Fi connectivity goes down and centralized scheduling of shut-down of devices during out of office hours. The efforts are on to make the system even smarter in future.

5. Summary of Requirements

- Identification of Nodal Officer within Department who is having Aadhaar Number.
- Web Portal for organization registration as well as identification of Nodal Officer.
- Aadhaar Card for every employee & Employee Registration
- BAS Compatible Bio-Metric Devices (Standalone i.e. Wall Mountable / Desktop Finger Print Scanner)
- Identification of Windows 7/8 based Personal Computer with dot net framework 3.5 and above.
- Internet Connectivity with sufficient bandwidth for Desktop Based Devices
- WiFi Internet Connectivity to Wall Mountable Terminals with Cellular Connectivity as failover
- Internet Connectivity through NICNET / Leased Line / Broadband / Cellular Data (3G/4G)

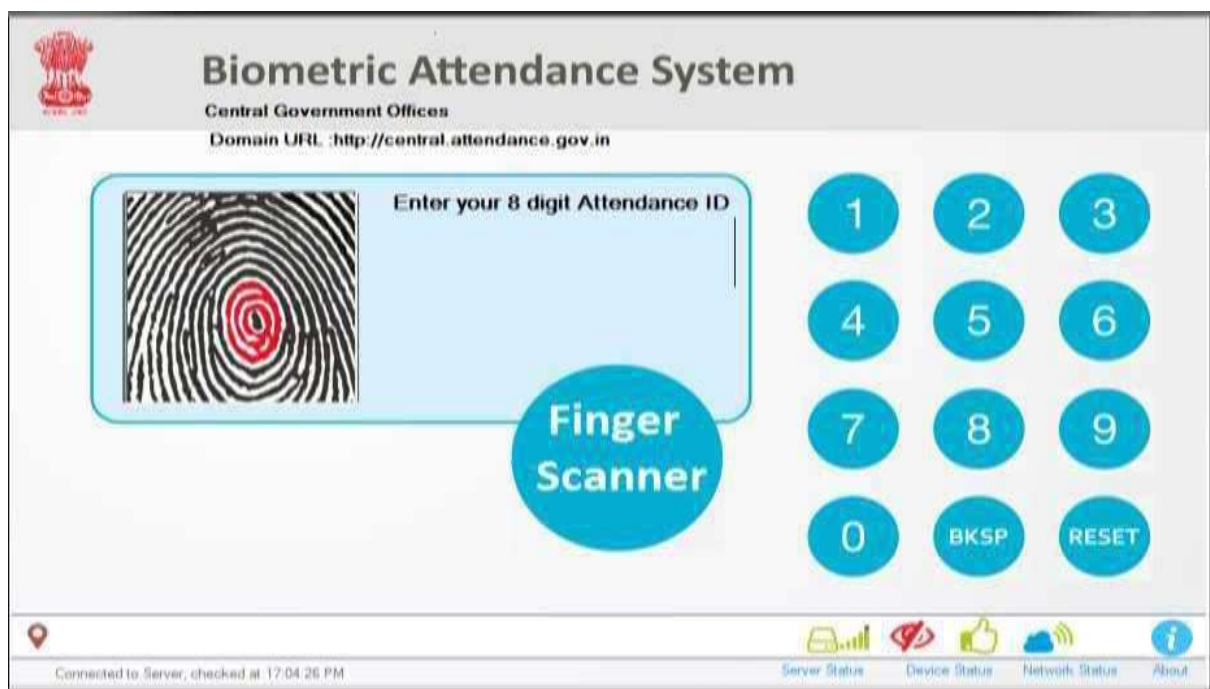
Better response time can be achieved with high speed internet connectivity.

6. AEBAS Architecture

At a high level the overall solution has two main

components **6.1 Front End System(FES)**

The Front End System (FES) or the attendance system would be a device having hardware and client attendance application. The client attendance module in the idle state would wait for user to enter his/her attendance id through touch screen in case of tablet based client or keyboard input in case of desktop based client. This attendance id would usually be first 6 digits or last 6 digits of the Aadhaar number of the employee. Once the attendance id is captured, the application would prompt user to provide the biometric data required for Aadhaar online authentication. It would then create the request in accordance with the Aadhaar Authentication API and send the request to the backend application at UIDAI Central Identity Data Repository (CIDR). **A sample screen shot of front end system is provided below, through which 8-digit Aadhaar number is requested from the user.**

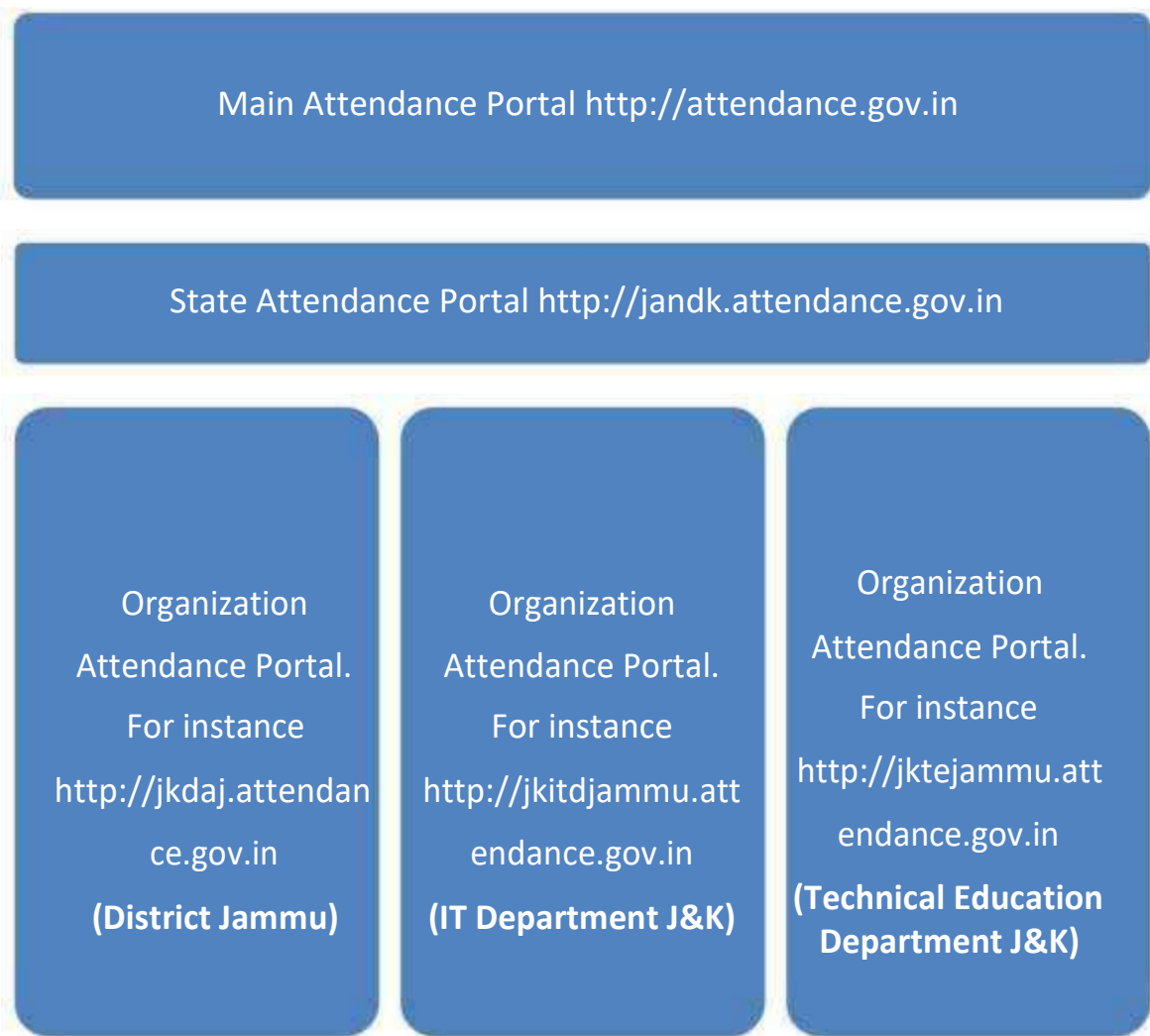


6.2 Back End System(BES)

The Back End System or attendance server would create Aadhaar Authentication request, submit the request and receive the response in accordance with Aadhaar Authentication API requirements and based on that it will mark in/out attendance of employees.

6.3 Portal Architecture

Every organization desiring to implement AEBAS is required to on-board (register) itself on <http://attendance.gov.in> and after data verification, a web portal is created for that organization. Username and Password is provided to Nodal Officer to manage that portal with respect to master data i.e. Office Divisions, Device Locations, and Designations etc. Architecture of portals created on attendance portal is as follows:



7. On-Boarding (Implementation) Guidelines

Departments/Organization in the state of J&K, interested in using BAS are required to follow process guidelines for smooth switchover to the modern and futuristic BAS. Departments / organizations are also requested to refer to Frequently Asked Questions (FAQs) available on the generic attendance or state centric portal.

Detailed Nodal Officer / Employee User manual as well as on-boarding manual have been made available online on ready reference on <http://attendance.gov.in> and <http://jandk.attendance.gov.in> under FAQs section.

7.1 Registration of Organization

The Departments / Organizations for making a shift to AEBAS are required to register themselves once on the portal for using <http://attendance.gov.in> services with the assistance of attendance team, Government of India. Identification of Nodal Officer is also one of the key requirements for AEBAS implementation. Once the registration of the organization is complete, a web portal will be created for the organization. Nodal Officer can access the portal created and build the master data for making the portal. Detailed guidelines are mentioned in **Annexure-“A”**.

Every portal will have its own dashboard for attendance monitoring. Complete Drill down reports will be available to the Nodal Officer of the organization. Portals can be accessed over public domain & dash board shall also be visible, however attendance of individual employees can be viewed by authorized users only, created by Nodal Officer.

Multiple offices of the same organization can also use the same web portal for registering employees and mark attendance and decision in this regard vests with the departments / organizations. **For instance, every District can get one portal registered and all the offices within the district can use the same portal for registering employees and marking attendance.**

7.2 Registration of Employees

Once the organization is registered with the attendance portal, employees of the organization are required to do online registration on portal for enabling them to mark attendance. The employees need to fill an online form using the link '**Employee Registration**' on the attendance portal. Once the details are filled, the employee data simultaneously goes to the quality check team of UIDAI and attendance ID is received over SMS. Immediately after registration individual can mark attendance through the devices installed. Detailed guidelines are mentioned in **Annexure-“B”**.

7.3 Aadhaar Enrolment / Registration

One of the mandatory requirements for registering on the common bio-metric attendance system is a valid Aadhaar Number of the employees for enabling him/her to mark attendance. In order to facilitate the BAS implementation, UIDAI can organize Aadhaar Enrolment Camps (AECs) for all such employees, who do not possess Aadhaar numbers. UIDAI shall also extend its support for the employees who have already enrolled but have not yet received their Aadhaar, or have lost their Aadhaar, or for those who need to update their Aadhaar data.

7.4 eAadhaar access

To enable downloading of the Aadhaar for the employees who have enrolled but have not yet received their Aadhaar, or have lost their Aadhaar or did not received Aadhaar due to any reason whatsoever, UIDAI has provides access to e-Aadhaar facility to HoD's of the NIC deputed in various Ministries/Departments. The employees UIDAI / Permanent Enrolment Centres who shall support if required for downloading their Aadhaar.

7.5 Bio-Metric Terminals (Devices)

It is mandatory to have devices aka Biometric Terminals installed for the purpose of attendance punching. These devices act as an interface for the end user to punch his attendance in the system. However, it must be ensured that only compatible devices are procured. The Biometric devices typically are available of following types:-

- a. Tablet** – Machines with the capability to run the BAS client software.
- b. Desktop** – Personal Computers or Laptops running Windows 7/8 to be used to run the BAS software.
- c. Iris scanner** – These are used to capture the IRIS image of the user and do iris authentication

The biometric devices can be setup using the following mentioned below:-

- i. **Tablet setup** - the wall mounted devices can be Android OS running tablets, with either finger print reader or iris scanner together housed in a cabinet to present an integrated device feel. The BAS software for android is readily available for download from the portal. Since network connectivity is mandatory for working these tablets, devices are connected through Wi-Fi access points and are also equipped with a 2G sim card for GPRS connectivity for network failover support.

- ii. **Desktop setup** - PCs on which the BAS windows version software application can be run and the finger print or iris scanner can be attached through USB ports will be used to mark the attendance. The PCs may be inter-connected through Office LAN / WiFi network having internet connectivity either through NICNET or broad band connections.

7.6 Procurement of Devices

The Departments/Organizations registering for BAS, can procure compatible wall mounted bio-metric attendance terminals / desktop finger print / iris scanning devices through the following methods:-

GeM - Compatible Devices are available on Government e-Market Place (GeM) portal for procurement. They can also be purchased from open market.

The organizations will have the option of selection of following Wall Mountable Bio-Metric Terminals for implementing BAS in addition to desktop finger print scanner devices.

1. Integrated Attendance Device (IAD) – Type 1: These are Android Tablet based devices integrated with Single STQC certified Fingerprint (FP) scanner. Both the Tablet and FP device are then housed in rugged casing so that the Integrated Attendance Device could be suitably mounted on the wall as single unit.

2. Integrated Attendance Device (IAD) – Type 2: These are the devices manufactured as a Single Unit with a capability of punching attendance number as well as scanning fingerprint for recording attendance.

Note: The Bio-metric attendance system is to be implement using wall mounted devices for the employees at large. However, for senior level officers or in a section, there is provision of installing Bio-metric attendance system using USB based finger print scanning device/IRIS with a Windows 7/8 Desktop PC.

It is estimated that for every 50 employees, one wall mounted bio-metric attendance terminal would be sufficient and for every 20 employees one finger print scanning device on a desktop would be sufficient. Therefore, the total requirement of wall mounted biometric terminals as well as desktop devices could be estimated based on total number of employees in the department. However, depending upon the on-

ground circumstances, the organizations can procure additional number of devices, if required, for smooth implementing BAS.

7.7 Network / Internet Connectivity

Wall mountable Biometric Attendance Terminals installed at client locations would need Wi-Fi connectivity through Internet connectivity / NICNET for communicating with the back-end attendance servers, which are installed at NIC data centres. The organizations would need to have alternate internet data connectivity in the form of 3G/4G from suitable service providers as fail over connectivity. However, for desktop based devices, Personal Computer on which device is connected must have internet connectivity with sufficient band width.

Looking the high traffic load during peak hours (8 AM-11.00 AM and 4PM – 7PM), the minimum 1Mbps of bandwidth connectivity would be required for proper functioning of Biometric attendance terminals.

7.8 Site Identification and Preparation

The wall mounted biometric terminals are to be preferably placed at the entry/exit points with 24 hours security for enabling easy access to the employees for marking attendance. The Department/organizations registering shall ensure the locations identified for installing biometric attendance terminals should have the following: -

- 220V/5A Electrical points
- Suitable security within the premises
- Protection from environmental conditions viz. rain, sun, etc.
- LAN point for connecting Wi-Fi access devices
- Good data connectivity through GPRS/3G as a backup connectivity

No special site preparation is required in case department plans to use desktop finger print scanner devices. In such cases, only a working desktop with internet connectivity would be required at the location for marking attendance.

7.9 Installation of Devices

The Departments/Organizations shall take up the installation, commissioning and maintenance of the Biometric attendance terminals in their premises with the help of vendors who are empanelled/registered with GeM, NICSI. Software for installing desktop finger print scanner device is available on the organization portal and can be downloaded by Nodal Officer.

7.10 Operations & Maintenance

The Organizations shall be responsible for maintenance of the devices installed in their premises. The agencies will also be responsible for taking suitable on-site warranty support for smooth functioning of AEBAS.

8. Roles & Functions of Nodal Officer

Nodal officer plays a very significant role in implementations & functionality of AEBAS. A detailed document regarding Nodal Officer functioning is readily available at <http://jandk.attendance.gov.in/assets/doc/Dashboard.pdf>. However, some of the key responsibilities of nodal officer are also listed below:-

- a) Nodal Officer preferably needs to be an IT knowing person and in case Nodal Officer needs is not a technical person then he can associate a person with good technical knowledge for managing the portal.
- b) Nodal officer can obtain training from NIC, if required for smooth implementation of AEBAS system.
- c) Monitoring and co-coordinating with the stakeholders for smooth functioning of the Bio-metric attendance system.
- d) Organizing special Aadhaar Enrolment Camps (AECs), if considerable numbers of employees are not able to register on the portal due to non-availability of Aadhaar numbers.
- e) Management of Master Data on the portal created for the department.
- f) Creation of Bio-Metric Admins for installing devices within portal.
- g) Creation of Device Locations within portal.
- h) Day to day attendance reporting to the HoD or any other authority of the department.
- i) Creating additional users within portal as per requirement.
- j) Facilitate users for registration.
- k) Updating employee data whenever required.
- l) Management of leave and tour module if required

Annexure-“A”

Steps for on-boarding (Registering) an Organization in the attendance portal

- a) Identification of Nodal Officer with Aadhaar Number within Department for management of portal data as well as reporting.
- b) Go to <http://attendance.gov.in> or <http://jandk.attendance.gov.in>
- c) Select the “**Organization Registration**” link in the attendance portal
- d) Download the on-boarding form from the link provided on the upper right corner of the web page. On-boarding form is also available as **Annexure-“D”**
- e) Fill the downloaded form with the required information. Ensure that all details in the form viz. Name, Address, NIC Co-ordinator details, Nodal Officer details along with his aadhaar number are properly filled up. Registration form is liable for rejection in case of any missing information.
- f) Get the filled in registration form signed and stamped by the Head of the organization / department.
- g) Scan the filled, signed & stamped form and save it in ".jpg" or "Pdf" format and eMail the form to helpdesk-attendance@gov.in
- h) Attendance team will create a web site / portal for your organization under parent portal i.e. <http://attendance.gov.in>. For instance incase your organization is J&K IT Department, portal created for your department may be <http://jkit.attendance.gov.in>
- i) In case the on-boarding is getting delayed, please get in touch with your NIC Co-ordinator or helpdesk team through mail at helpdesk-attendance@gov.in or through phone at 011-24305050, 011-24305059.
- j) Details on boarding guidelines are also available online on the web portal at http://jandk.attendance.gov.in/assets/doc/Phase-II_of_BAS.pdf.

Note:

- a) **After submitting the form, a One Time Password (OTP) will be sent to the nodal officer email and mobile, to verify the form data submitted (Presently this process is not required and may be required at a later stage.**
- b) **After your request is processed, you will receive an email with your account details.**
- c) **User Manuals etc. are available under FAQs on portal <http://attendance.gov.in> or <http://jandk.attendance.gov.in>.**

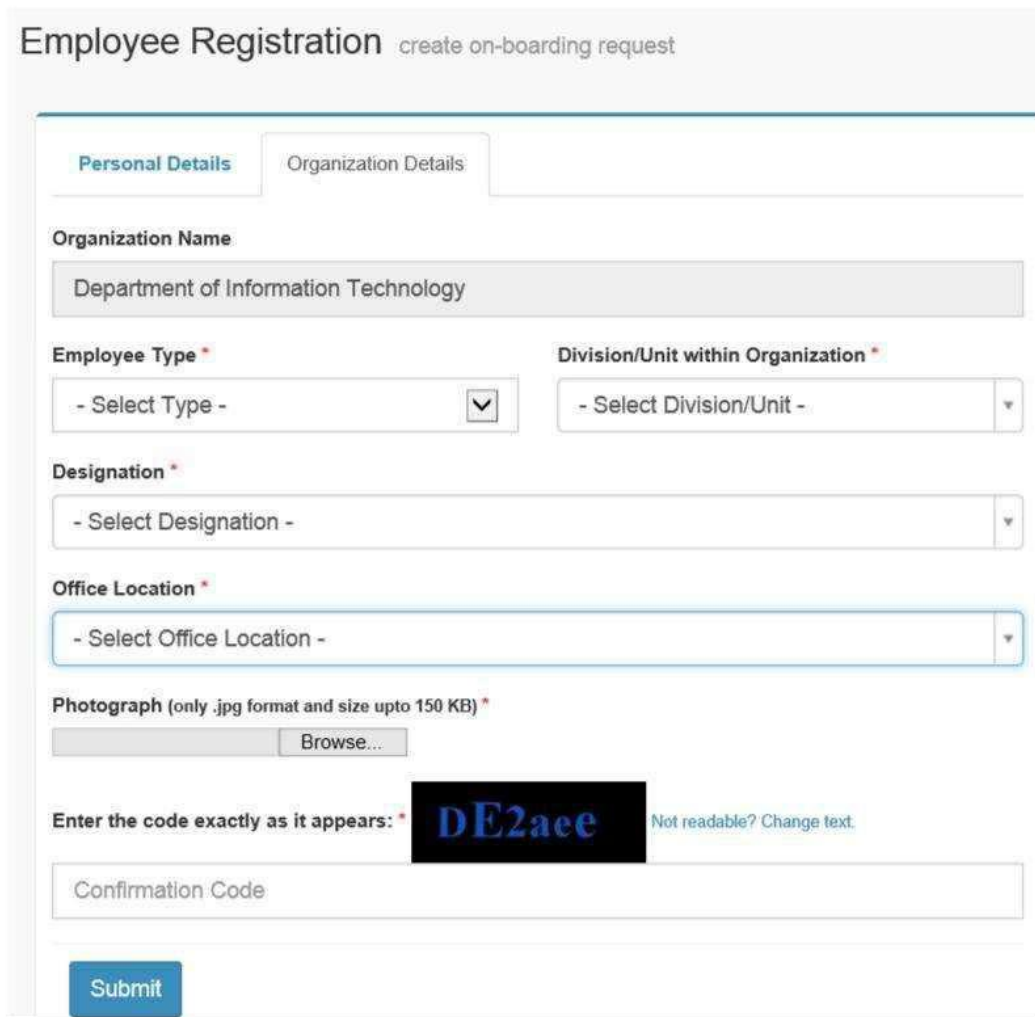
Annexure-“B”

**Procedure for registration of employees
within Attendance portal**

- a) Open the Web Site / Portal registered by your head of your organization
- b) Click on Employee Registration and a web form will get opened on the right side with two tabs (screens), one with personal details and one with organizational details. A screen shot of the online form is also mentioned below.
- c) Enter your full name
- d) Enter Date of Birth (format DD-MM-YYYY) and select Gender
- e) Please provide 12 digit Aadhaar number. In case your aadhaar number is incorrect, employee will not be able to mark his / her attendance
- f) Enter your personal eMail and personal 10 digits Mobile Number. Mobile Phone number is mandatory for an employee to receive One Time Password (OTP) to login into the portal and check their attendance on real time basis.
- g) Select Employee Type
- h) Enter the name of Division/Unit within the Organization (you can choose from suggestions)
- i) Select Designation
- j) Select office location. In case the Office location is not present in list, please get in touch with your Nodal officer for getting the Organization on-boarded in the Attendance system.
- k) Upload scanned/digital picture in ".jpg" format of max file size 150KB.
- l) Please enter the captcha code and please review the form before submission.
- m) After registration on the portal, employee can start marking his attendance immediately through the device installed at a specific place
- n) Employee can click on **“Employee Login”** link for login into the portal and see attendance reports pertaining to self.
- o) In case Nodal Officer has provided his Aadhaar Number in Reporting Officer ID of another employee, he can monitor the attendance of those employees also.
- p) Employee can also refer to online help manual available on web portal at http://jandk.attendance.gov.in/assets/doc/employee_um.pdf.

Note:

Employees will be able to register themselves only on the portal created by HoD of their department. They will not find any registration facility on portal <http://attendance.gov.in> or <http://jandk.attendance.gov.in>. Whenever any employee will open their portal, they will see the title of their department on the upper left corner of the portal.



The screenshot shows the 'Employee Registration' form with the following fields and options:

- Organization Name:** Department of Information Technology
- Employee Type:** - Select Type -
- Division/Unit within Organization:** - Select Division/Unit -
- Designation:** - Select Designation -
- Office Location:** - Select Office Location -
- Photograph:** (only .jpg format and size upto 150 KB) * with a 'Browse...' button.
- Confirmation Code:** DE2aee (with a 'Not readable? Change text.' link).
- Submit:** A blue button at the bottom.

(Screen Shot of Employee Registration)

Note:

- a. If Organization does not feature in the Organization Name list, please get in touch with your Nodal officer for getting the Organization on-boarded in the Attendance system.**
- b. If any of the pre-requisite information is not available in the form (select options only), please get in touch with the concerned officer in your department to get the details updated.**
- c. For any other assistance please get in touch with the Attendance Helpdesk at helpdesk-attendance@gov.in or through phone at 011-24305050, 011-24305059.**

Annexure-“C”

How to mark Attendance using the common biometric attendance system on wall mounted terminals

To get your Attendance ID, register online at attendance.gov.in. The Attendance ID will be generated from your Aadhaar number and sent as SMS to your registered mobile number (RMN). The 8 digit number will be generated based on the last 8 digits of your Aadhaar number

- a) Enter your 8-digit Attendance ID on Screen.
- b) A Red light will start to glow on Finger Print Scanner.
- c) Now put any one of your fingers on the Finger Print Scanner.
- d) DO NOT move your finger on scanner otherwise finger prints will not be properly scanned.
- e) DO NOT Press very hard on Finger Print Scanner.
- f) Once the screen shows “Authenticating, Please Wait”. Remove your finger from the scanner.
- g) A pop-up screen will show your Photo and Attendance Type as “Opening” for the first time you mark the attendance for that day.
- h) If Attendance Type is “Closing” then it will be counted as OUT Time. However, OUT time would be the LAST “Closing” time marked by you. Any “Closing” time in-between “Opening” time and Last “Closing” time would be ignored.
- i) If, you see a CROSS instead of your photo, then some ERROR has occurred while marking attendance.
- j) You will be able to mark your attendance in any bio-metric terminal installed in various State Government buildings.
- k) You can also mark your attendance in any of finger print devices, which have been connected on Windows 7 or Windows OS.
- l) If you are having difficulty in marking attendance-using fingerprints scanning devices, please try marking your attendance through Iris Device, which needs to be additionally procured by respective organization.
- m) A detailed manual for employees is also readily available at http://jandk.attendance.gov.in/assets/doc/employee_um.pdf for ready reference.

What each ERROR means:

- a) **Error 300 or 500 – Mark your attendance using other finger/thumb**
- b) **Error 997 – Your finger prints are not properly registered at UIDAI. Please get our Finger Prints and Iris re-scanned at permanent Aadhaar Centers near you. Don't forget to mention your Aadhaar number. UIDAI HELP LINE – 1800 300 1947**

Annexure-“D”**Appendix ‘A’ – Application format for Organization On-boarding**

Organization Type	<input type="checkbox"/> Ministry <input type="checkbox"/> Department under Ministry <input type="checkbox"/> Attached Office <input type="checkbox"/> Autonomous Bodies <input type="checkbox"/> Central Offices <input type="checkbox"/> Semi Government Office <input type="checkbox"/> State Government <input type="checkbox"/> Central Public Sector Unit
Organization Name	
Address	
District	
State	
NIC Coordinator Mobile	
NIC Coordinator e-Mail	
Website	
No. Of Employees	
Office Timings	

Nodal Officer Name	
Aadhaar No	
Designation	
Mobile	
E-Mail	

Date:

Name & Designation
Head of the department with Signature & Seal

Pictures of compatible Bio-Metric Devices

Myntra Finger Print Scanner



Startek Finger Print Scanner



Myntra-Integrated Attendance Device Type-I

