Process	System roles					
	Human	Non-computing Hardware	Computing hardware	Software	Database	Communication & Network
Basic Data Entry	**A. Data Collector:** 1. Gather air quality data from enlisted sources 2. Make a physical report of the collected raw data 3. Send the physical report to Data Entry Manager **B. Data Entry Manager:** 1. Request for compiled physical document 2. Receive compiled documents 3. Validate report 4. Log into AQM 5. Select appropriate data entry form 6. Enter the data in the system. User needs to provide location, AQI, air quality state and range 7. Click the save button to save the data in the system	**A. Paper and stationery** 1. Data collectors use it to manually jot down the data from the data sources 2. Papers can be used for printing purposes to keep a manual database. **B. File Holder** 1. It is used to organize the papers 2. To make physical reports 3. To send to the data entry managers **C. File Cabinet (Physical Archive)** 1. It is used for storing the printed data version as a manual backup.	**A. PC/ Laptop/ Other computing device** Various computing devices can be used to visualize, store and compile raw data **B. Printer** printer used to print data from data sources It is used to make manual pdf **C. Server** 1. Database uses the server to store the monthly air quality reports 2. AQM System is hosted in the server	**A. AQI system** 1. Interface which stores data and used by the Data Entry Manager to enter the data manually in the data entry form **B. Operating system** 1. Any operating system used by a Data Entry Manager. Eg : Mac, Windows, Linux etc	**A. Database of AQI** 1. System uses the Database to store the monthly air quality reports **B. Physical log book** 1. It is used to keep physical records of the monthly reports	**A. Telephone** 1. Can be utilized by data collectors to contact data providers. 2. Can be used by the Data Collectors to call the Data Entry Manager to notify about their task being done. 3. Can be used by the Data Entry Manager to delegate tasks to Data Collectors. **B. Internet** 1. Internet connection is required to use the AQI system and use it's functionalities like login, logout, data entry and viewing 2. Used by Data Entry Manager to enter data in AQI **C. Email** 1. Data Entry Manager can email other polapans to notify about any moner madhuri they want.
Data Validation & Update	**A. Data Collector** 1. Once received a request to recollect	**A. Paper and Stationary** 1. Data collectors use it	**A. PC/ Laptop/ Other computing device**	**A. AQI System** 1. The system verifies the users and shows	**A. Database of AQM** 1. System uses the Database to store	**A. Telephone** 1. Data entry manager can be used by the

	data from the Data Entry Manager, they start recollecting the data. 2. They gather air quality data from enlisted sources. 3. Make a physical report of the collected raw data. 4. Send the physical report to Data Entry Manager **B. Data Entry Manager** 1. Logs into AQM. 2. Receives request from Admin to recheck the data again via phone call, text , email etc 3. They start their verification process once a request is received. 4. Compares data present in the AQM system with the physical documents manually. 5. When identified faulty data in the physical document, they inform the Data Collector (via phone call / email) to gather data again from the data sources. 6. Once received the updated compiled physical document, Data Entry Manager will update the data in	to manually jot down the data from the data sources 2. Papers can be used for printing purposes to keep a physical record 3. Used by the Data Entry Manager to jot down the data which seemed faulty with the physical document. **B. Seal stamp** 1. Used by Data Entry Manager to stamp the verified physical document **C. Cabinet** 1. It is used for storing the printed data version (the physical document) as a manual backup **D. File Holder** 1. It is used by the Data Entry Manager to organize the documents 2. To make physical reports 3. To send to the data entry managers **E. Journal / Research Paper/ Books / Newspaper** 1. Data Entry Manager can use these to analyze when verifying the updated data again.	1. Used by Admin to observe the data trend. (If found faulty, the verification process starts once he requests Data Entry Manager to recheck the data) 2. Used by the Data Entry Manager to verify and update the new data in the AQM system. 3. Used by the users to log in the AQM system 4. Data Entry Manager can search for the faulty data in the system through a computing device. (while comparing with the physical document) 5. Data Entry Manager will also store the updated data in the computer as a backup. **B. Printer** 1. Admin can print the data trend in the paper and observe it to make a decision. **C. Pendrive**	the appropriate interface 2. The software used for viewing the monthly Air Quality Reports by the Admin 3. It is used to update the faulty data through a form 4. Data Entry Manager uses it to compare the data trend again with the physical document to identify the faulty data. **B. Operating System** 1. Any operating system used by a Data Entry Manager. Eg : Mac, Windows, Linux etc **C. Application Software** 1. Data Entry Manager can initially make a draft of the form in MS Word/ Ms Excel and then finalize it in the AQM system. **D. PDF Viewer** 1. Admin can view the data trend in the pdf version. 2.	the updated monthly air quality reports **B. Physical log book** 1. It is used to keep physical records of the monthly reports 2. The record of data being updated is kept here	Data Collectors to call the Data Entry Manager to give updates about their task. **B. Internet** 1. Internet connection is required to use the AQI system and use it's functionalities like login, logout, data entry, viewing and updating 2. Used by Data Entry Manager to update data in AQI System **C. Email** 1. Data Entry Manager can notify Admin about the updates in the data after an anomaly request. 2. Admin can email the data entry manager to let them know about anomalous data.

	the system 7. Select appropriate data entry form 8. Enter the data in the system. Data Entry Manager enters the location, AQI, air quality state and range 9. Click the save button to save the data in the system 10. Informs the Admin about the data being updated 11. Logs out from AQM system 12. Sign and seal the updated compiled physical document to mark that these files have been verified. **C. Admin of ministry of environment and forest** 1. Logs into AQM system 2. Observes the data trend (from online) to identify any anomaly present in the data or not 3. If found faulty, inform the Data Entry Manager via email/phone call to verify the data again from the data source. 4. They will be informed about the updated data trend by the Data		1. Data Entry Manager can keep the updated physical document in the pendrive to store it as a backup. **D. Server** 1. Database uses the server to store the updated air quality reports. 2. The AQM System is hosted on the server. 3. The data in the AQM System is provided from the server.			

	Entry Manager once the verification is done. 5. They again observe the data trend from AQM 6. Logs out from AQM.					
Air Quality Report Generation of Certain Timeframe	**A. Policy Maker** 1. Send a request to the admin for a report. 2. Receive the report 3. Analyze the report after receiving 4. Seal and stamp the analyzed reports 5. Store the sealed reports in the physical archive **B. Admin** 1. Receives request from the policy maker for generating a report. 2. Logs into AQM System 3. Search for the necessary documents from the archive 4. Download the documents individually 5. Compile the downloaded reports using third party softwares. 6. Make a copy of the compiled report 7. Send the compiled report to the policy	**A. Paper and stationery** 1. It can be used to make the reports by the Admin 2. Used by policy maker to manually jot down the points after the analysis 3. Paper can be used by the policy maker to print the reports for analysis **B. File Holder** 1. Can be used by admin to organize the compiled reports 2. Used by policy maker to organize the analyzed report sent by the admin **C. File Cabinet (Physical Archive)** 1. It is used for storing the printed data that is received from the version as a manual backup. **D. Seal stamp** 1. Used by admin to seal and stamp the	**A. PC/ Laptop/ Other computing device** 1. Used by policy makers to send requests of reports to Admin. 2. Admin uses the computer to write reports, download the files and send the reports to the policy maker. 3. Policy maker uses computer to check the reports sent by the Admin . **B.Printer** 1. Admin can print the report individually for manual backup. 2. Policy Maker can print the compiled reports which were sent to him by the Admin for physical backup. **D.Server** 1. Database uses the	**A. AQI System** 1. The system verifies the users. 2. AQM system provides an appropriate interface for the users. 3. The software used for viewing the monthly Air Quality Reports by the Admin **B. Operating System** 1. Any operating system used by the admin and the policy maker. Eg : Mac, Windows, Linux etc **C. PDF Viewer** 1. Admin can view the compiled reports using a pdf viewer. 2. Policy makers can view the analyzed reports using a pdf viewer. **D. Application Software** 1. Admin can initially make a draft of the	**A.Database of AQM** 1. System uses the Database to retrieve the monthly air quality reports **B.Physical log book** 1. It is used by Policy Maker and Admin to keep physical records of the reports as a manual backup.	**A.Telephone** 1. Can be utilized by policy makers to contact admin for requesting the reports. 2. Admin uses it to contact the policy makers about the work being done **B.Internet** 1. Internet connection is required to use the AQI system and use it's functionalities like login, logout, data entry and viewing 2. Used by Admin to download report 3. Used by Policy Maker to view Journal / Research Paper/ Books /

	maker for analysis. 8. Store the copy of the report in the physical archive. 9. Store and sealed the compiled reports in the physical archive	compiled report 2. Used by Policy Maker to seal and stamp the analyzed report **E. Cabinet** 1. It is used by Admin for storing the copy of the report as a manual backup 2. Used by Policy Maker for storing analyzed reports as a manual backup. **F. Journal / Research Paper/ Books / Newspaper** 1. Policy makers use these to analyze the reports effectively. 2. After analyzing, make policy level decisions.	server to retrieve the air quality reports. 2. The AQM System is hosted on the server. 3. Hosts and provides the time stamped data needed for report generation. **E**. **Pendrive** 1. It can be used by the Admin to download and save all the soft copy of the report and the softwares required for report compilation. 2. Admin can keep the compiled report in the pendrive to store it as a backup. 3. Used by the Admin to deliver the final compilation	report in MS Word. 2. Policy Maker manually uses it to note down notes of the analyzed report in MS Word.		Newspaper to analyze the reports effectively and make policy level decisions. **C.Email** 1. Can be utilized by policy makers to contact admin for requesting the reports. 2. Admin uses it to contact the policy makers about the work being done

			of reports to the Policy Maker.			
Enforcing policy	A. Policy Maker 1. They analyze the report received from the admin 2. Take decision whether to add new policy or not 3. If new policy is required, make list of changes in policy 4. Send the list to the Admin B. Admin 1. Get the request from the policy maker to make changes in policy. 2. Organize the changes according to the category. 3. Send the software changes to the system developer. 4. Get the change log from the software developers. 5. Provide feedback on the software changes. 6. Make a hard copy of the change log 7. Seal and store the copies in the physical archive	**A . Paper and stationery** 1. Admin uses it to manually jot down the changes to make as directed by the policy maker. 2. Papers can be used for printing purposes to keep a manual list. 3. Software developers can use it to make a list of the changes and brainstorm with the team. **B. File Holder** 1. It is used to organize the papers 2. To make physical lists. 3. To send to the system developer **C. File Cabinet (Physical Archive)** 1. It is used for storing the change logs of the system as a manual backup.	**A. PC/ Laptop/ Other computing device** 1. Various computing devices can be used to make changes in the policy. 2. Used to view and analyze the reports. 3. Used in making new policies by Policy Maker. 4. Admin uses computers to make reports on policy updates. 5. Admin uses a computer to login to the system to upload the report on the system. 6. System developers use computers to add changes to the system as	**A. AQI System** 1. The system verifies the users. 2. AQM system provides an appropriate interface for the users. 3. System developers update the AQI System by applying changes to it. 4. Provides the updated system for the System Developers to view and test. **B. Operating System** 1. Any operating system used by the admin, the policy maker and the system developers. Eg : Mac, Windows, Linux etc **C. Printing Softwares** 1. Printer softwares used to view and print various policy change lists, reports and change logs by	**A. Physical Logbooks as database** 1. The printed hardcopies of the change logs made by the System Developers are filed and kept as manual record of the updates. 2. Printed policy lists from the Policy Maker are kept as physical backups. **B. Database of AQM** 1. System uses the database to store the uploaded policy update reports by the Admin 2. System fetches the report from the databases for the Admin to print them and send them to the Policy Maker.	

	8. Inform policy makers about the changes made. C. System Developer 1. Get the request for software change from Admin. 2. Discuss and delegate the tasks among the team members 3. Add the changes in the system. 4. Test and verify the changed version. 5. Notify admin about the updated version. 6. Get feedback from the Admin and make followup changes if required		requested by the Admin, test the changes and write change logs to send to the Admin if satisfied. **B. Printer** 1. Printer used to print a list of changes in policy by the Policy Maker. 2. Admin uses a printer to print the uploaded reports on the policy updates from the system and send manual copy to Policy Maker. 3. Admin prints out a list of changes needed to send the list to System developers. 4. System developer prints the change logs for the updated system to	Policy Maker, Admin and System developers. **D. Application Softwares** 1. System developers use various IDEs, software testers, UI/UX designing softwares to implement changes to the system. 2. Softwares such as MS Office, Excel etc. are used by the System Developers, Admin and the Policy Maker to type policy listings, reports and update logs/ patch notes.		

			send the physical copy to the Admin. **C. Server** 1. Can be used to store the update policy changes to the system 2. System developers can use the server to store change logs/ patch notes.			