FUNCTIONAL REQUIREMENTS SPECIFICATION
for
FPS AUTOMATION

VERSION 1.0

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Document Control Record

Version	Description of Change	Author	Date
0.1	Initial Draft	NIC	5th August 2015
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Convention Description

Convention Used	Purpose
Bold font	Titles, captions and examples
Blue font	Cross references
Courier new font	Codes or web services
Green font	Formulae
Red font	Notes
Italics	Related information

1 Introduction

PDS is an important constituent of the strategy for policy, to ensure availability of food grains to the public at affordable prices, for enhancing the food security for the poor, to aid in poverty eradication and is intended to serve as a safety net for the poor whose number is more than 330 million and are nutritionally at risk. PDS evolved as a major instrument of the Government's economic PDS with a network of over 5 lakhs FPSs (FPS) and is the largest distribution network of its type in the world. PDS is operated under the joint responsibility of the Central and the State Governments. The Central and State Governments have the responsibility for procurement, storage, transportation and bulk allocation of food grains to their respective Godowns. The responsibility for distributing the same to the consumers through the network of FPSs (FPSs) rests with the State Governments. The operational responsibilities including allocation within the State, issue of ration cards, supervision and monitoring the functioning of FPSs rest with the State Governments. [1]

Large scale pilferages resulting from diversion and leakages of food grains meant for the poor populace of this country is the bane of the Targeted Public Distribution System. Manual processes related to PDS operations and specifically FPS sale are manual in nature which lead to a lot of diversions as it is not possible to probe whether actual sale happened at FPS or not. The solution is to ensure the fair Last Mile Delivery of essential commodities.

The solution lies in distributing the essential commodities using electronic device with biometric authentication of any member of beneficiary in order to restraint the diversion at the FPS level.

FPSs provide the only touch point for the end beneficiary in the total Public Distribution System (PDS). Thus, having transparency in the functioning of FPS is critical for having greater transparency in the overall PDS value chain.

Therefore, Component–II of the "End-to-End computerization of PDS - (FPS Automation)" involves electronic transactions at the FPS level. This automation provides a medium to record and transmit the transactions made at the FPS. FPS Automation also intends to authenticate the beneficiary to ensure that the commodity issuance is happening to the intended beneficiary by biometric authentication with UIDAI server.

As per Chapter-V of the NFSA act, point no. 12 (2):

"(b) application of information and communication technology tools including end-to-end computerization in order to ensure transparent recording of transactions at all levels, and to prevent diversion;
(c) leveraging "aadhaar" for unique identification, with biometric information of entitled beneficiaries for proper targeting of benefits under this Act;"

Further, as per Chapter – III of the Aadhaar (TARGETED DELIVERY OF FINANCIAL AND OTHER SUBSIDIES, BENEFITS AND SERVICES) Act, 2016, point no. 7:

"The Central Government or, as the case may be, the State Government may, for the purpose of establishing identity of an individual as a condition for receipt of a subsidy, benefit or service for which the expenditure is incurred from, or the receipt therefrom forms part of, the Consolidated Fund of India, require that such individual undergo authentication, or furnish proof of possession of Aadhaar number or in the case of an individual to whom no Aadhaar number has been assigned, such individual makes an application for enrolment: Provided that if an Aadhaar number is not assigned to an individual, the individual shall be offered alternate and viable means of identification for delivery of the subsidy, benefit or service."

FPS automation with biometric authentication can be achieved in following ways:-

- ***FPS Automation - Fully Online model:*** In this model, the entire application shall be functioning from server and application shall be accessible using browser and through any device which supports HTML5 compliance browser. Finger print scanner, IRIS scanner and printer shall be integrated with the device for biometric authentication (finger print or IRIS) with UIDAI and printing receipt of sales. This requires uninterrupted, redundant and full time network connectivity. The application shall be independent of device, browser and Operating system. The application follows open standards viz. a viz. HTML5, CSS3 and JavaScript.

- ***FPS Automation – Occasionally Online Model (Buffered Authentication) [Subject to the approval of State Food Department]:*** In this model the application shall have a capability to function online as well as offline, depending on the availability of connectivity. There will be a piece of application software (FPS Automation Sales), which shall be installed in every device. Alternatively, the application may be developed by the SI/Vendor based on the FRS published and installed in the supplied devices.
    - Whenever connectivity is available the biometric authentication shall be performed seamlessly and the sale transaction shall be posted to PDS server as and when transactions are made.
    - When connectivity ceases or unavailable then the application shall function by storing the sale transactions in the local device along with the biometrics as per the UIDAI guidelines for Buffered authentication. In this case the FPS dealer may have to carry the device to network hot zone and push all the transactions made.

Decisions and Policies by GoI for implementing FPS Automation Application:

i. ***Inclusion of NFSA:*** As passed by the Parliament, Government has notified the National Food Security Act, 2013 on 10th September, 2013 with the objective to provide food and nutritional security, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity. For more details, refer http://dfpd.nic.in/nfsa-act.htm[2]

ii. ***UIDAI Authentication:*** The sale of commodities to beneficiary shall be done using Aadhaar based biometrics authentication. [3]

iii. ***No denial of Service (nDoS):*** The transactions are to be authenticated by beneficiary's biometrics. There shall be no denial of Service of ration to the beneficiary in case authentication is unsuccessful. The number of trials shall be configured (e.g. 3 or 5 trials). Ration will be delivered, however all the waiver cases and authentication failure cases shall be candidates for audit by State food department.

The different modes of Authentication, in the suggested sequence, are as follows:

a) **Finger Print based Authentication (using UIDAI)**
b) **IRIS based Authentication (using UIDAI)**
c) **Other alternate authentication adopted by a State/UT*, like:**
    a. **OTP (on Registered Mobile Number with PDS)**
    b. **OTP (on Registered Mobile Number with UIDAI)**
    c. **Any other mechanism to establish identity of beneficiary**

If any state/ UT desires to consider non-Denial of Service, the methodology is as defined in the Appendix-D.

1.1 Authentication - Role of Aadhaar in Public Distribution System

As per the policy, commodities shall be delivered to beneficiary using biometrics authentication with Aadhaar. Aadhaar Authentication API 1.6 is used for the authentication. For more details refer, https://uidai.gov.in/images/FrontPageUpdates/aadhaar_authentication_api_1_6.pdf. [3]

***To adopt alternate authentication option, requisite Certificate needs to be produced by the State/UT from the Telecom Department (GoI) for non-availability of fulltime network coverage.

1.2 Objective

This document defines the process flow, web services, data dictionary and limitations to perform sale transactions at the FPSs using Point of Sale/Mobile tablets with UIDAI based biometric authentication and transferring the data to the PDS Server.

2 FPS Automation - Models

2.1 FPS Automation - Fully Online

The PoS/Mobile tablet terminal or any computing devices with biometric scanner and printer connected shall access the FPS Automation sales application (Web or app) and data will be served from PDS Server using the network connectivity. The PDS server in turn authenticates the beneficiaries through the UIDAI server. The process flow is as shown in the figure 2. All transactions will happen in real-time.

Requirements for this model to function are:

- Digitized Ration Card data with Aadhaar number seeded.
- Reliable, redundant full time network connectivity with sufficient bandwidth.
- Functionality in POS/Mobile tablet (as per the published specifications) [5] or other device for online biometric authentication with UIDAI Server
- Browsers in the device should be HTML5, CSS 3 and JavaScript compliant in case.

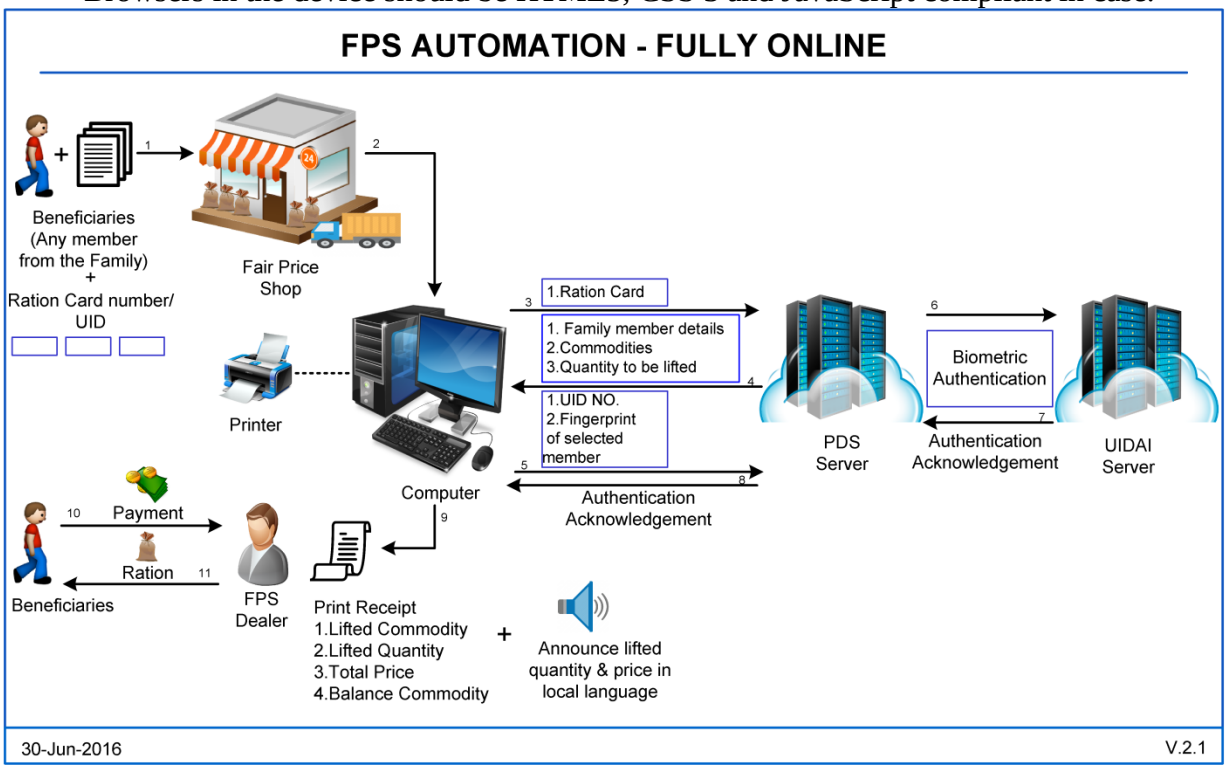


Figure 1: FPS Automation - Fully Online

A. Process Workflow

S#	Process flow for FPS Automation - Fully Online model	Detailed Description
1	Payment and Stock	FPS dealer makes payment against the allocation received. FPS receives stocks (after release order is received). The details of stock with the FPS are updated in PDS server.
2	Commencement of Sale	FPS commences sale of food grains for the month. Distribution of commodities is as per the beneficiary's entitlement.
3	Beneficiary Details	When the beneficiary approaches FPS to lift the commodity his Ration card number/Aadhaar Number /RMN is entered into the FPS Sales application. The Ration Card details along with the member details, entitlement and stock details are populated from the server. After successful transaction, the beneficiary lifts the commodity as per the balance left in his entitlement of the month.
4	Authentication	Beneficiary authentication is performed using Finger print/IRIS/OTP. Initially authentication shall be tried with Finger print. After exhausting the number of pre-defined trials due to failure in authentication, IRIS authentication shall be performed. If the beneficiary is not enrolled with UIDAI or didn't receive UID, OTP shall be used for authentication. (*as per State/UT policy for authentication*)
5	Sale reports and Closing Balance	The sale transactions are performed real time. Therefore, at the end of sale cycle, the closing balance is generated at PDS server and is used for next month allocation.

Table 1: FPS Automation - Fully Online Workflow

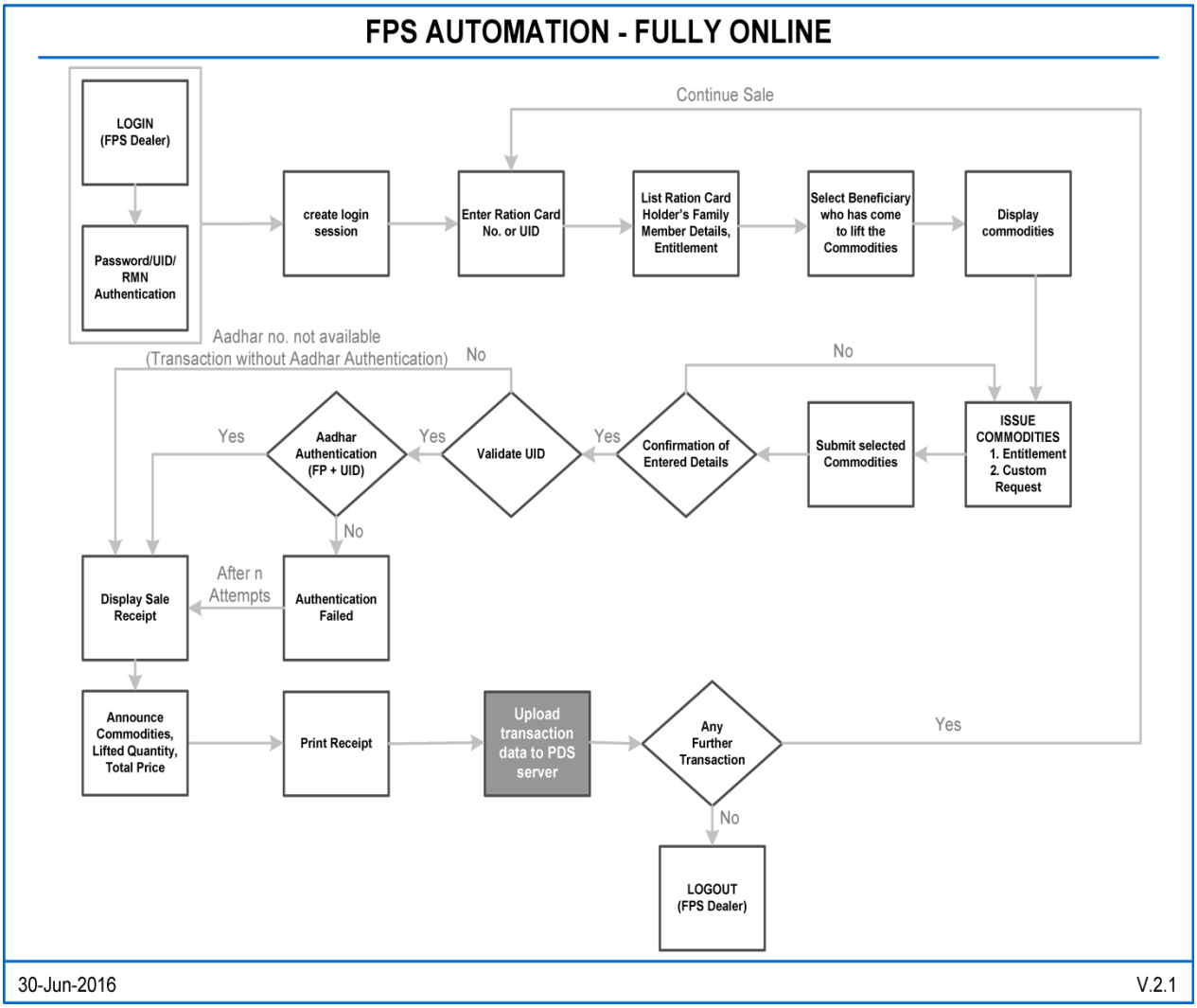


Figure 2: FPS Automation- Fully Online Workflow

2.2 FPS Automation - Occasionally Online *[Subject to the approval of State Food Department]*

It is challenging to implement Fully Online FPS automation model in those regions where connectivity is un-reliable. To mitigate this challenge, another model for FPS automation has been envisaged where the FPS gets occasional connectivity and gets connected with the PDS server as and when connectivity is established but still should be able to perform sale transactions using a POS or mobile tablet.

Requirements for this model to function:

- POS or Mobile Tablet (as per the published specifications) [5] with secure application and encrypted local database
- Transactions shall be stored in encrypted form
- Tampering of application or data results in corruption of application.
- The network is required at least once for receiving entitlement, beneficiary details, and upload sale transactions along with closing balance. If there is an option for Buffered authentication opted, then the biometrics as per the UIDAI guidelines.

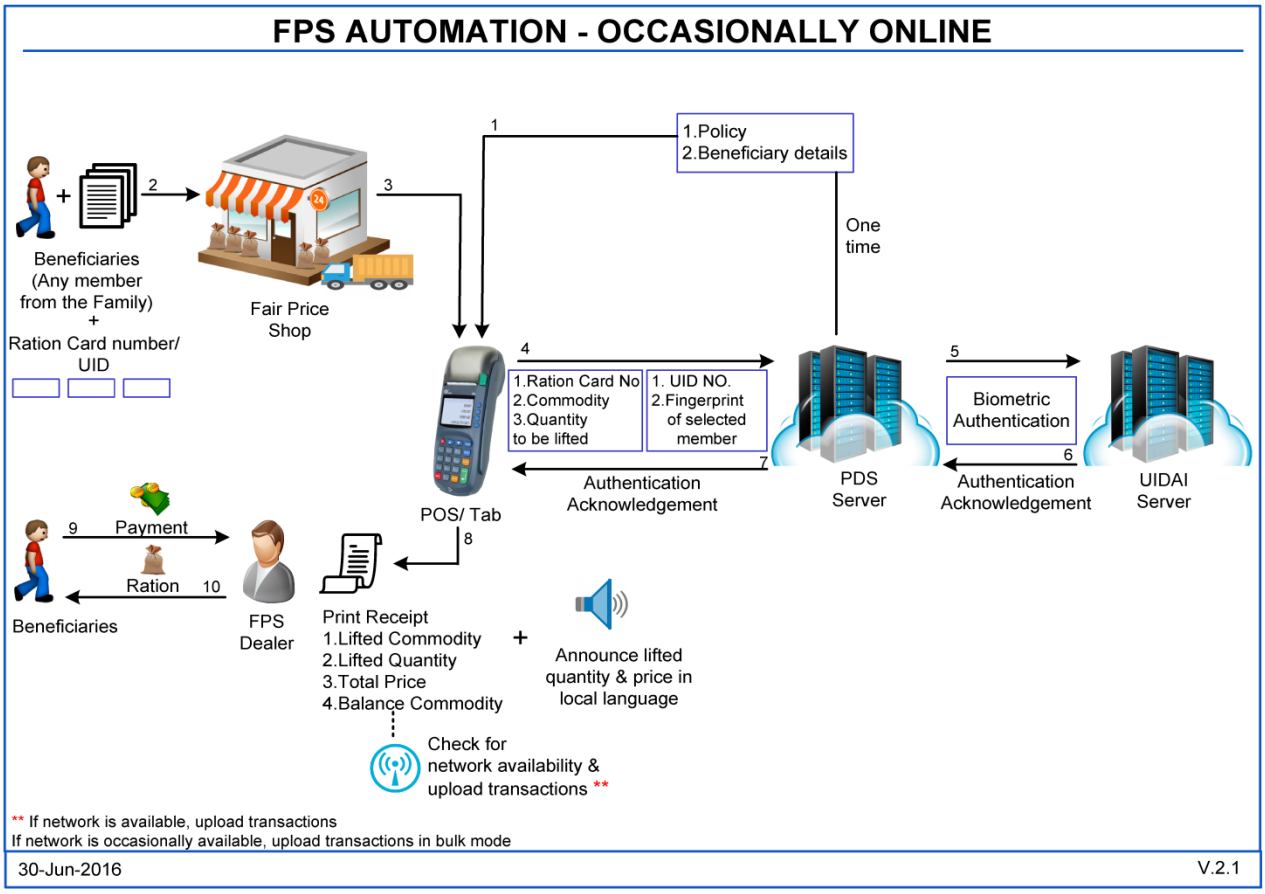


Figure 2: FPS Automation - Occasionally Online

A. Process Workflow

#	Process flow for FPS Automation – Occasionally Online Model	Detailed Description
1	Beneficiary and Entitlement Details	At the start of every month, FPS dealer connects POS/mobile tablet device (at the nearest TSO/FSO/AFSO office where connectivity is available) to fetch latest beneficiary details and entitlement policy.
2	Authentication	In case network is available, Beneficiary's biometric authentication is carried out. If network is not available, then Buffered authentication shall be performed as per UIDAI guidelines. The beneficiary is not denied ration due to authentication failure.
3	Payment and Stock	FPS dealer makes payment against the allocation received. FPS receives stocks (after release order is received). The details of stock with the FPS are updated in PDS server.
4	Commencement of Sale	FPS commences sale of food grains for the month as per the allocation policy of the month.
5	Sale reports and Closing Balance	When the sale transactions are performed during the presence of the connectivity immediately the same shall be updated immediately. In case of network unavailability, the device need to be brought to the nearest FSO/TSO/AFSO and uploaded through the utility. The closing balance thus obtained shall be used for the next month allocation.

Table 2: FPS Automation - Occasionally Online Workflow

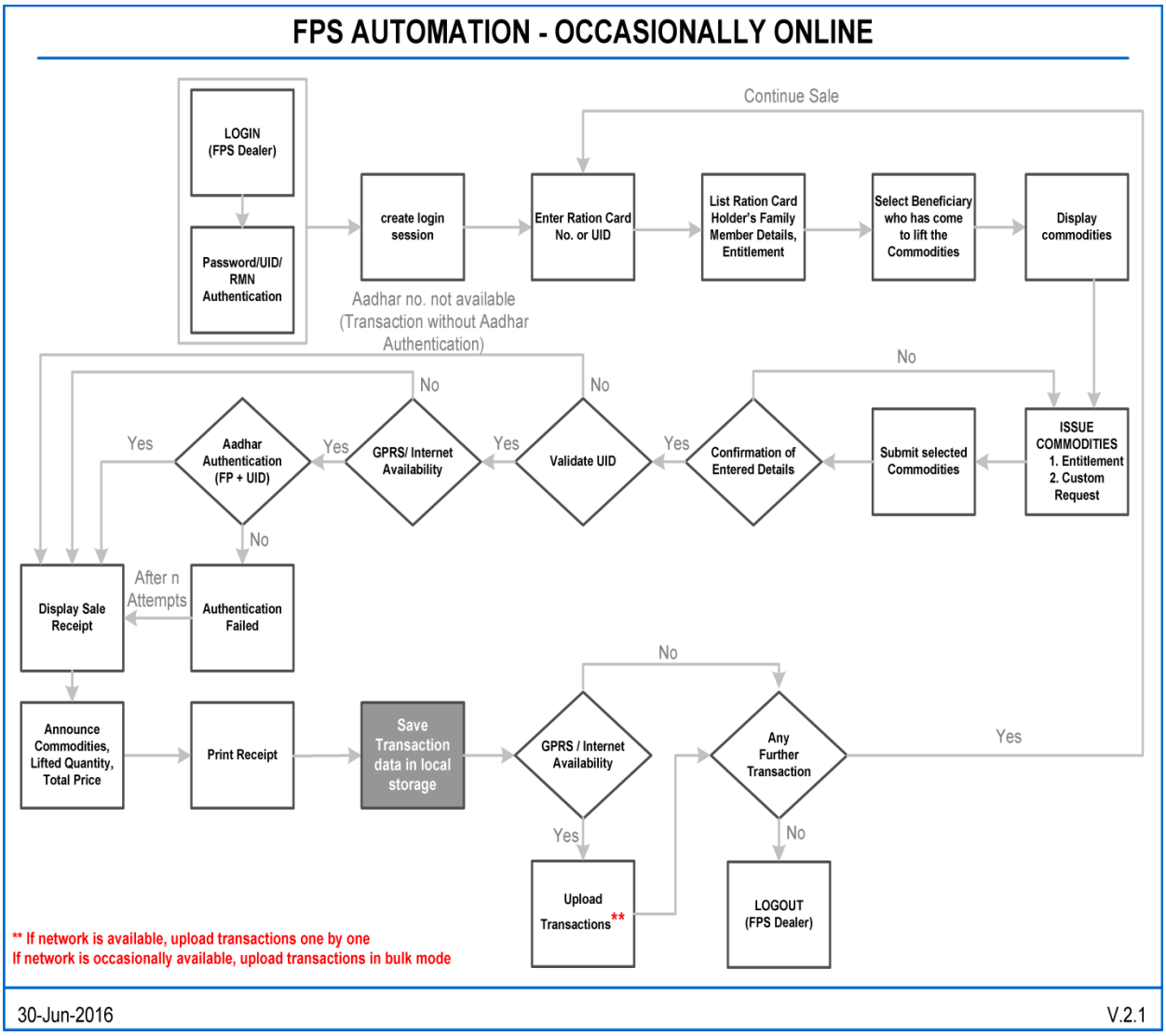


Figure 4: FPS Automation - Occasionally Online Workflow

2.3 Ration Card Portability

A. **Intra-State (Online Model):** In this model, **b**eneficiary shall lift commodity from any FPS (which is functioning online) within State/UT, upto the maximum of his entitled quantity, subject to the state government's policy decision.

B. **Intra-State (Occasionally Online Model):** It is not recommended to implement portability in this model, since synchronization with the PDS server may not be there due to network unavailability. Hence, challenges like beneficiaries lifting more than their entitled quantity, can be faced.

C. **Inter-State/ National Portability**

The feature is not covered and depends on the policy decision & business rules of the central & state government.

3 Functionalities

App developed using the FRS guidelines should have the capability to enable the sales of commodities allocated to the FPS based on the Commodity-distribution-policy, and number of ration cards linked to a particular FPS. This application may help in areas such as tracking of commodity sales, stock maintenance, aadhaar seeding for beneficiaries, Inspection Feedback, Hardware complaint and various MIS reports.

3.1 Major Functionalities

A. Downloading of the Commodity Sales Application by the FPS dealer

FPS dealer needs to run the required application on their device to facilitate sale of commodities.
For this, FPS dealer sends the details like FPS id, MAC id, location details, etc., to the PDS server and after successful verification, it gets the application (in '.apk' format) in response, and acknowledgement for success/failure (along with the reason).

B. Application Login by FPS dealer

The FPS dealer needs to login before commencing the sale of commodities. One time registration with the PDS server is required, post which FPS dealer can login in a normal fashion.

PDS Server receives FPS login details after using following methods:

a) The FPS dealer can provide FPS id/ password as their login details.
b) FPS dealer can authenticate via Aadhar verification with biometric details
c) By requesting OTP on the RMN.

C. Downloading of the beneficiary data by FPS dealer

The beneficiary details, along with the member details and entitlement, can be downloaded by the FPS dealer from the PDS server. The FPS dealer has to provide the RC no./ Aadhaar no. to get the details from the PDS sever.

Through this functionality, FPS dealer requests the PDS beneficiaries' data from PDS server based on its details (as shared with PDS server).

D. FPS Sale Transactions

The FPS dealer performs sales transactions by getting the data from the PDS server. The sale transaction details, after Aadhaar authentication, are uploaded to the PDS server.

PDS server recieves data packet from FPS dealer in the form of Sale Transactions data (containing details pertaining to the FPS, device and transactions).

E. Time Synchronisation between PDS server & PoS device

There needs to be perfect syncing of time between the PDS server and FPS dealer device to avoid/ detect any mismatch between transactions/ data.

FPS dealer provides timestamps for each & every transaction cycle, for verification of valid time frame.

F. Device Health Statistics

The various parameters related to PoS device performance need to be tracked and monitored on a regular basis to prevent transaction failure, transaction data mismatch, etc. during a sale event.

For proper transaction, the details of device are tested for the following parameters:

a) Battery percentage
b) Sims connected
c) SD card usage percentage
d) Flash memory usage
e) Timestamp
f) Network Type code

G. Mobile Number Seeding

Other than the biometric authentication, OTP mode of authentication is performed using the mobile number of the beneficiary. It needs to be registered with PDS server, post which OTP is received on this number, also known as RMN (Reghistered Mobile Number).

H. Aadhaar Number Seeding

As per the policy, commodities shall be delivered to beneficiary using biometrics authentication with Aadhaar number.

This functionality will facilitate the beneficiary to seed their Aadhaar number with the Ration Card. FPS dealer sends beneficiary's Aadhar number to PDS server to register Aadhar number (after verification through Aadhar server).

For detailed explanation of various components of above listed functionalities, please refer Appendix-F.

3.2 Required Reports

A. Summary stock register

i. Monthly/date wise stock register report- minimum following field must be captured in this report:

a) FPS id
b) FPS name
c) Month name
d) From date
e) To date
f) Opening Balance
g) Received Quantity
h) Sold Quantity
i) Closing Balance
j) Commodity Name
k) Measurement Unit

B. Summary sales register

i. Date wise/monthly sales report -minimum following field must be captured in this report

a) FPS id
b) FPS name
c) Month name
d) From date
e) To date
f) Opening Balance
g) Received Quantity
h) Transaction id
i) Ration card number
j) Beneficiary name
k) Authentication mode
l) Authentication status
m) Sold Quantity
n) Commodity Name
o) Measurement Unit

C. Issue of food grains receipt (with option of duplicate receipt)

i. Transaction complete receipt

a) Transaction id
b) FPS name
c) Date
d) Opening Balance
e) Received Quantity
f) Ration card number
g) Beneficiary name
h) Authentication mode

i) Authentication status
j) Commodity Name
k) Measurement Unit
l) Amount paid

D. Stock receipt

i. Stock receipt while delivery at FPS doorstep

a) FPS id
b) FPS name
c) Month name
d) Opening Balance
e) Received Quantity
f) Commodity Name
g) Measurement Unit
h) RO details
i) Authorization from FPS dealer Status
j) Authorization from Route officer Status
k) Authorization mode

E. Monthly closure report

a) FPS id
b) FPS name
c) Month name
d) Date
e) Opening Balance
f) Received Quantity
g) Sold Quantity
h) Closing Balance
i) Commodity Name
j) balanced commodity
k) Amount received against commodity wise

F. Month wise food grains lifted and distributed report

i. Month to month wise food grains status report

a) FPS id
b) FPS name
c) Month name
d) Year
e) Date
f) Opening Balance
g) Received Quantity
h) Sold Quantity
i) Closing Balance
j) Commodity Name

k) balanced commodity
l) Amount received against commodity wise

G. Authentication report

i. Month wise authentication report
a) FPS id
b) FPS Name
c) Month name
d) Date
e) Authentication mode
f) Number of Aadhaar based Finger print authentication
g) Number of Aadhaar based IRIS authentication
h) Number of any other authentication mode adopted by State/UTs

Suggested report formats were provided at Appendix-G.

4 Allocation Workflow

4.1 Closing Balance (CB)

Closing balance means the leftover quantity of commodities lying unsold after the closure of the sale against an allocation. The closing balance quantity is made minus to the total entitlement quantity for getting the final amount of allocation in next allocation cycle(s). Ideally for generation of allocation for next allocation cycle the closing balance of previous month must be considered. If state decides to close the sales transaction by mid of the month, the closing balance of this month can be considered for allocation of the next month.
However, sometimes the sales are kept on till late in the month in parallel to the allocation & lifting preparations for the next month, in this case the CB could not be made available for generation of just next allocation cycle but for next-to-next cycle. And sometimes there is sale validity period is for multiple months, then CB is not available for some months till the expiry validity of sale. So, the CB utilization is done at server side.

Closing balance is the Cumulative Received Quantity Minus Sold quantity at the end of sale period (at allocation order validity expiry).

Sometimes, the FPS Dealer receives the quantity less than what has been given in Truck Challan and sometimes more than that. This differential becomes the transit loss/gain and to be recovered from the transport agency. This differential component must also be considered in calculation of CB.

Closing balance = Cumulative Received Quantity (TCs' quantities +/- transportation gain/loss) – Sold Quantity
Where,
Cumulative Received Quantity is the quantity of commodity lifted for a month against an Allocation Order
Sold quantity for a commodity = $\sum_{commodity}$ Transactions quantity against that Allocation Order

Closing balance is calculated from the encrypted transactions only.

FPS Automation - Fully Online Mode: In case of Fully Online model, the uploaded Sales transactions summation is used for calculating closing balance and there is no need to upload closing balance explicitly.

FPS Automation - Occasionally Online Mode: However, in FPS Automation - Occasionally Online model, there might be a delay in transactions reaching the server. Hence, all the transactions and closing balance need to be uploaded before next month allocation order can be generated. Closing balance upload marks the end of transactions for that month.

Authentication: An FPS sends closing balance after biometric authentication. Authentication is mandated to prevent repeated sending of CB by mistake. Therefore, only the authenticated person can send the Closing balance of commodities.

Constraint: Closing balance can be uploaded after the closure of sales only.

Sale Closure: Closing balance is calculated once all the transactions are uploaded to the PDS server and sale is frozen for that month. After sending the closing balance from FPS device, no sale can be made on same allocation order number.

Security: In order to ensure that multiple Closing balance are not sent by FPS,

- ***Separate Menu***: Closing balance upload shall be in a separate menu.
- ***Selection of details:*** Provision to upload commodity and month/year shall be given
- ***Popup:*** Popup shall be displayed to ensure that FPS is not doing the same by mistake.
- ***Biometrics Authentication:*** FPS owner shall perform biometric authentication to verify the locking of the closing balance. Authentication makes FPS liable for the same e.

Logger: PDS Server shall log the date of receiving Closing Balance.

No manual Intervention: Closing balance is calculated from the encrypted transactions only. Closing balance is uploaded from the device using a web service only.

Note: With each transaction, closing balance is calculated and stored in encrypted form in the device. This is because in case closing balance is calculated at the end of sale, some or all of the transactions might already be uploaded to the server.

4.2 Payment and Stock Delivery at FPS

Payment: Once the allocation order is generated FPS goes to the depot holder to make payment. The entitlement of FPS is referred from the allocation order of the month.

Stock Delivery: This is the process of physical delivery of essential commodities to the FPS owner based on the payment made by him (after release order is generated).

FPS dealer makes payment at the depot. Stock details are entered by Depot holder in PDS application after receiving payment from the FPS owner. On the basis of the payments made by the FPS dealer, the FPS receives stocks both physically and in POS after authentication of route officer.

Pre-requisite: FPS makes payment for being eligible to receive fresh stock of commodities.

Modes of Receipt: Stock can be received through:

- *Periodic Stock Poll*: FPS device polls PDS Server for receiving stock details.
- *Allocation Order Unicast on request:* PULL Stock functionality.

Logger: PDS Server shall log the date of sending the stock details to FPS.

Stock Receipt while delivery at FPS doorstep: Necessary provisions be made for counting on the damage and pilferage while transportation of allocated quantity to FPS. The stock received by FPS might be lesser and hence has to be taken in account before starting the sale. Necessary checks to be ensured for misuse of the feature. Stock receiving shall be done through Route Officer authentication.

4.3 Sale transaction upload and Reconciliation

Transactions Upload scenarios

Fully Online Mode:

- ***Real time transfer:*** FPS device sends transactions through web service to PDS Server one by one as and when network is available.

Occasionally Online Mode:

- ***Bulk Transfer:*** In bulk transfer mode, sale transactions are uploaded for an FPS in a single session to PDS server for sales against one allocation order.
- ***Network Non-availability:*** Device can be taken to upload the transactions data backup to server through a utility.
- ***Device Failure:*** SIM placed in SAM slot can be used to upload the encrypted transactions and closing balance to the PDS server

Logger: PDS Server shall log the date of receiving the sale transactions.

5 Suggested Web Services

5.1 JSON Services

1.1. FPS Dealer authentication

The FPS dealer is authenticated before he/she performs the FPS sales operation. The steps in dealer authentication are as follows:

a) The FPS application in the start screen displays prompts to enter dealer username (FPS dealer-id) and password.
b) Dealer enters Username and password.
c) The application connects to NIC server and verifies the credentials.
d) On successful verification the FPS sales screen is opened.
e) On failure, he/she has to re-enter the password.
f) If the dealer could not able to authenticate him/her then he/she cannot continue the sale operation.
g) Forgot password and pin generation.

1.1.1. FPS Dealer Login and Authentication (URL):

http://gaman-aagman.nic.in/ PDSReceiveFPSAuthentication

1.1.2. FPS Dealer Login and Authentication (JSON object)

```
{
  " PDSReceiveFPSAuthentication ":
        [{
        "fps": "",
        "lat": "",
        "lon": "",
        "cc": "",
        "mac": "",
        "ver": "",
        "reqts": "",
        "req": "",
        "bid": "",
        "reccnt": "",
        "totcnt": "",
        "logints ": "",
        "authstatus ": "",
        "aadhaarflag ": "",
        "localpasswordflag ": "",
        "serverpasswordflag ": "",
```

```
        "otpflag ": ""
        }]
}
```

1.1.3. FPS Dealer Login and Authentication (Metadata)

Packet Header : FPSH1							
Header from FPS							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required**	**Unique**	**Range**
FPSH1.1	fps_id	fps	varchar(12)	Fair Price shop Id : DDDDAAASSSSS	Y		FPS Id is of fixed length and permissible value is numeric [0-9] as per the following pattern DDDDAAASSSSS DDDD - DFSC code AAA - AFSO code SSSSS - FPS Shop sequence number covered by AFSO where DDDD -First 4 digit makes a DFSO/DFSC/DSO code (First digit is a sequence number within the district , for example , 1 means first dfsc/dfso within the district and Next 3 digits are District code (Reference: 2011 census code for districts) AAA - 3 digits AFSO/ TSO / FSO Code sequence number within the DFSO /DFSC/DSO SSSSS - 5 digits Sequence number within AFSO/TSO/FSO

FPSH1.2	Latitude	lat	double	Latitude of FPS geographic location			Latitude of FPS geographic location
FPSH1.3	Longitude	lon	double	Longitude of FPS geographic location			Longitude of FPS geographic location
FPSH1.4	company_code	cc	varchar(2)	Device Company Code	Y		The list shall be released and updated as and when vendor devices are registered. Permissible value is numeric [0-9]
FPSH1.5	device_mac_id	mac	varchar(64)	MAC Id of the FPS device.	Y	Y	Shall be either 48 or 64 bits. And has to be registered with Server. Permissible value is numeric [0-9]
FPSH1.6	app_version	ver	varchar(5)	Version of Distribution application	Y	Y	xx.yy where xx is major and yy is minor version where x,y E [0-9)

FPSH1.7	request_ts	reqts	date with timestamp	Date and timestamp when the request is made	Y		ddMMyyyyhhmmss format
FPSH1.8	request_id	req	varchar(31)	Uniquely identifies the transaction	Y	Y	FpsId(12)+Reqcode(4)+D or F+Date of request with Timestamp(ddMMyyyyhhmmss) D-delta F- Full where Request Code = RCMD for Member Details Data ,FPSD = FPS detail Data ,ENTR = Entitlement Regular, ENTO = Entitlement Adhoc, ENTA = Entitlement Additional, STKR = Stock Regular, STKO = Stock Adhoc, STKA = Stock Additional, ORDR = Active allocation Orders, FULL=Full app db ,APP= Application with database,L=LOGN for Login,TRAN=Transactions
FPSH1.9	batch_id	bid	Integer	Batch ID of the response lot.	Y	(res, id) is unique	[0,9]
FPSH1.10	records_in_current_batch	reccnt	Integer	Records in current batch.	Y		[0,9]
FPSH1.11	total_record_count	totcnt	Integer	Total records	Y	(res, id) is unique	[0,9]

Response Packet Header : PDSD6
Response Header from PDS Server : PDSReceiveFPSAuthentication

Field Id	Field Name	xml tag name	Type	Purpose	Required	Unique	Range
PDSD6.1	login_ts	logints	date with timestamp	Date and timestamp when the login request is made	Y		ddMMyyyyhhmmss format
PDSD6.2	Authentication status	authstatus	varchar(100)	Authentication status	Y		[a-zA-Z](0-9)
PDSD6.3	Aadhaar flag	aadhaarflag	varchar(1)	Aadhaar Authentication flag	Y		(0-1)
PDSD6.4	Password flag	localpassword flag	varchar(1)	Password flag	Y	Y	(0-1)
PDSD6.5	Serverpassword flag	serverpasswordflag	varchar(1)	Password flag	Y	Y	(0-1)
PDSD6.6	OTP flag	otpflag	varcahr(1)	Otp flag	Y		(0-1)

1.1.4. FPS Dealer Login Authentication Acknowledgement: (JSON)

```
{
  " PDSReceiveFPSAuthentication Ack":
        [{
        "fps": "",
        "req": "",
        "ackr": "",
        "acks": ""
        }]
}
```

1.1.5. FPS Dealer Login Authentication Acknowledgement: PDSA1 (Metadata)

Refer PDSA1

1.2. Selection of beneficiary

After successful dealer authentication the FPS sales screen opens. The steps in selecting the beneficiary are as follows:

a) 12-digit beneficiary ration card number is entered.
b) The card number is verified in the database and the complete family member details are displayed on the screen.
c) The person who has visited the FPS and ready to perform the authentication is selected.

1.2.1 Selection of commodities

After the selection of the beneficiary the selection of commodities screen opens. The steps in selecting commodities are as follows:

a) Entitlement of the family for the particular month is shown on the screen with total entitled quantity per commodity, unit price and total cost.
b) He/she can lift the complete entitlement or can select the denomination as per his/her choice.
c) The confirmation page displays the selected commodities with total cost he/she has to pay to the dealer.

1.3. Beneficiary authentication

The beneficiary is authenticated using Aadhaar finger print verification method as follows:

a) The beneficiary's finger print is captured and sent to the PDS server, which in turns checks with the UIDAI repository.
b) On successful authentication, "SUCCESS" message appears on the screen with  mark.

c) On failure of authentication, the process is repeated 5 (five) times till he/she authenticates successfully.

d) Even after the fifth attempt if failure occurs, then an option to authenticate through OTP is shown on the screen.

e) If the OTP authentication is chosen, the request is send to PDS server to generate OTP and send it to RC registered mobile, RMN.

f) On successful receipt of OTP and entered in the POS the OTP is sent for validation in OTP server.

g) If OTP is validated then the beneficiary authentication is SUCCESS.

h) If OTP validation failed then the option to re-enter the OTP is given. After 3 (three) failed attempts the beneficiary authentication is FAILED.

i) If the OTP is not received on the registered mobile, an option to resend the OTP is given. Even after resend if the OTP is not received, the beneficiary authentication is FAILED.

j) If the OTP authentication is not opted then the beneficiary authentication is FAILED.

k) Validity of OTP within given time period.

1.3.1. **Beneficiary Authentication (URL):**

http://gaman-aagman.nic.in/PDSReceiveBeneficiaryAuthentication

1.3.2. **Beneficiary Authentication (JSON):**

```
{
   " PDSReceiveBeneficiaryAuthentication ":
[{
      “fps”:””,
      “lat”:””,
      "cc": "",
      "mac": "",
      "ver": "",
      "reqts": "",
      "req": "",
      "cnt": "",
      "bid": "",
      "reccnt": "",
      "lon": "",
      " bio ": "",
      "mid": "",
      "sid": "",
      "uid": "",
```

```
      “txnid”:””
      }]
}
```

1.3.3. Beneficiary Authentication (Metadata): FPSBA (Metadata)

Packet Header : FPSH1							
Header from FPS							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required?**	**Unique?**	**Range**

FPSH1.1	fps_id	fps	varchar(12)	Fair Price shop Id : DDDDAAASSSSS	Y		FPS Id is of fixed length and permissible value is numeric [0-9] as per the following pattern DDDDAAASSSSS DDDD - DFSC code AAA - AFSO code SSSSS - FPS Shop sequence number covered by AFSO where DDDD -First 4 digit makes a DFSO/DFSC/DSO code (First digit is a sequence number within the district , for example , 1 means first dfsc/dfso within the district and Next 3 digits are District code (Reference: 2011 census code for districts) AAA - 3 digits AFSO/ TSO / FSO Code sequence number within the DFSO /DFSC/DSO SSSSS - 5 digits Sequence number within AFSO/TSO/FSO
FPSH1.2	Latitude	lat	double	Latitude of FPS geographic location			Latitude of FPS geographic location

FPSH1.3	Longitude	lon	double	Longitude of FPS geographic location			Longitude of FPS geographic location
FPSH1.4	company_code	cc	varchar(2)	Device Company Code	Y		The list shall be released and updated as and when vendor devices are registered. Permissible value is numeric [0-9]
FPSH1.5	device_mac_id	mac	varchar(64)	MAC Id of the FPS device.	Y	Y	Shall be either 48 or 64 bits. And has to be registered with Server. Permissible value is numeric [0-9]
FPSH1.6	app_version	ver	varchar(5)	Version of Distribution application	Y	Y	xx.yy where xx is major and yy is minor version where x,y E [0-9)
FPSH1.7	request_ts	reqts	date with timestamp	Date and timestamp when the request is made	Y		ddMMyyyyhhmmss format

FPSH1.8	request_id	req	varchar(31)	Uniquely identifies the transaction	Y	Y	FpsId(12)+Reqcode(4)+D or F+Date of request with Timestamp(ddMMyyyyhhmmss) D-delta F- Full where Request Code = RCMD for Member Details Data ,FPSD = FPS detail Data ,ENTR = Entitlement Regular, ENTO = Entitlement Adhoc, ENTA = Entitlement Additional, STKR = Stock Regular, STKO = Stock Adhoc, STKA = Stock Additional, ORDR = Active allocation Orders, FULL=Full app db ,APP= Application with database,L=LOGN for Login,TRAN=Transactions
FPSH1.9	batch_id	bid	Integer	Batch ID of the response lot.	Y	(res, id) is unique	[0,9]
FPSH1.10	records_in_current_batch	reccnt	Integer	Records in current batch.	Y		[0,9]
FPSH1.11	total_record_count	totcnt	Integer	Total records	Y	(res, id) is unique	[0,9]

Packet Data : FPSBA

Request Acknowledgement from PDS Server

Field Id	Field Name	xml tag name	Length	Purpose	Required ?	Unique?	Range
FPSBA.1	bio	bio	varchar(255)	Encrypted authentication code in Xml format	Y	Y	(0-9,A-Z,a-z,Special Symbols)

FPSBA.2	mid	mid	varchar(14)	Uniquely identifies the member with id.	Y		(0-9)
FPSBA.3	sid	sid	varchar(42)	Uniquely identifies the transaction	Y		(0-9 with Time stamp)
FPSBA.4	uid	uid	varchar(12)	Unique Aadhar number	Y		(0-9)
FPSBA.5	txnid	txnid	varchar(42)	Unique Transaction id	Y		(0-9 with Time stamp)

1.3.4. Beneficiary Authentication Acknowledgement (JSON):

```
{
   " PDSReceiveBeneficiaryAuthentication Ack":
[{
      “fps”:””,
      “”req”:””,
      “acks”:””,
      “ackr”:””,
      “txnid”:””,
      "authcode": "",
      "mid": "",
      "uiderrcode": "",
      "uid": "",
      }]
}
```

1.3.5. Beneficiary Authentication Acknowledgement (Metadata):

Refer PDSA1

Packet Data : PDSA1
Response Acknowledgement from PDS Server

Field Id	Field Name	xml tag name	Length	Purpose	Required ?	Unique?	Range
PDSA1.1	authcode	authcode	varchar(20)	Authentication response in String format with Code if any.	Y	Y	(0-9,A-Z,a-z,Special Symbols)
PDSA1.2	mid	mid	varchar(14)	Uniquely identifies the member with id.	Y		(0-9)
PDSA1.3	txnid	sid	varchar(42)	Uniquely identifies the transaction	Y		(0-9 with Time stamp)
PDSA1.4	uid	uid	varchar(12)	Unique Aadhar number	Y		(0-9)
PDSA1.5	uiderrcode	uiderrcode	varchar(255)	Authentication response in String format with Error Code if any.	Y		(0-9,A-Z,a-z,Special Symbols)

1.4. Uploading of transaction

After the successful beneficiary authentication, the transaction data is uploaded to the NIC PDS server as explained in the following steps:

a. The transaction data are uploaded to the PDS server online if the network connection is available.
b. In case of network interruption the transactions are stored locally and pushed to the PDS server automatically when network connection is available.
c. The pending transactions can also be uploaded to the server manually at the end of the day by bringing the POS to a nearby location having good network strength.
d. In each case, the authentication status per transaction is sent along with the transaction.

1.4.1. Transactions (URL):

http://gaman-aagman.nic.in/ PDSReceiveFPSTransactions

1.4.2. Transactions (JSON)

```
{
   " PDSReceiveFPSTransactions ":
         [{
         "fps": "",
         "lat": "",
         "lon": "",
         "cc": "",
         "mac": "",
         "ver": "",
         "reqts": "",
         "req": "",
         "bid": "",
         "reccnt": "",
         "totcnt": "",
         "orderno ": "",
         "txnid ": "",
         "txndate ": "",
         "rcno ": "",
         "rctype ": "",
         "commcode ": "",
         "memid ": "",
         "authstatus ": "",
         "authcode ": "",
         "lqty ": "",
```

```
            "munit ": "",
            "price ": "",
            "month ": "",
            "year ": ""
            }]
}
```

1.4.3. Fair Price Shop Request/Response Header Frame: Metadata of Mandatory Parameters to be sent by FPS with each Packet:

Packet Header : FPSH1							
Header from FPS							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required?**	**Unique?**	**Range**
FPSH1.1	fps_id	fps	varchar(12)	Fair Price shop Id : DDDDAAASSSSS	Y		FPS Id is of fixed length and permissible value is numeric [0-9] as per the following pattern DDDDAAASSSSS DDDD - DFSC code AAA - AFSO code SSSSS - FPS Shop sequence number covered by AFSO where DDDD -First 4 digit makes a DFSO/DFSC/DSO code (First digit is a sequence number within the district , for example , 1 means first dfsc/dfso within the district and Next 3 digits are District code (Reference: 2011 census code for districts) AAA - 3 digits AFSO/ TSO / FSO Code sequence number within the DFSO /DFSC/DSO SSSSS - 5 digits Sequence number within AFSO/TSO/FSO

FPSH1.2	Latitude	lat	double	Lattitude of FPS geographic location			Lattitude of FPS geographic location
FPSH1.3	Longitude	lon	double	Longitude of FPS geographic location			Longitude of FPS geographic location
FPSH1.4	company_code	cc	varchar(2)	Device Company Code	Y		The list shall be released and updated as and when vendor devices are registered. Permissible value is numeric [0-9]
FPSH1.5	device_mac_id	mac	varchar(64)	MAC Id of the FPS device.	Y	Y	Shall be either 48 or 64 bits. And has to be registered with Server. Permissible value is numeric [0-9]
FPSH1.6	app_version	ver	varchar(5)	Version of Distribution application	Y	Y	xx.yy where xx is major and yy is minor version where x,y E [0-9)

FPSH1.7	request_ts	reqts	date with timestamp	Date and timestamp when the request is made	Y		ddMMyyyyhhmmss format
FPSH1.8	request_id	req	varchar(31)	Uniquely identifies the transaction	Y	Y	FpsId(12)+Reqcode(4)+D or F+Date of request with Timestamp(ddMMyyyyhhmmss) D-delta F- Full where Request Code = RCMD for Member Details Data ,FPSD = FPS detail Data ,ENTR = Entitlement Regular, ENTO = Entitlement Adhoc, ENTA = Entitlement Additional, STKR = Stock Regular, STKO = Stock Adhoc, STKA = Stock Additional, ORDR = Active allocation Orders, FULL=Full app db ,APP= Application with database,L=LOGN for Login,TRAN=Transactions
FPSH1.9	batch_id	bid	Integer	Batch ID of the response lot.	Y	(res, id) is unique	[0,9]
FPSH1.10	records_in_current_batch	reccnt	Integer	Records in current batch.	Y		[0,9]
FPSH1.11	total_record_count	totcnt	Integer	Total records	Y	(res, id) is unique	[0,9]

1.4.4. Transactions FPSD1 (Metadata)

Packet Data : FPSD1 Transactions Data from FPS							
Field Id	**Field Name**	**xml tag name**	**Length**	**Purpose**	**Required ?**	**Unique?**	**Range**
FPSD1.1	fps_id	fps	varchar(12)	Fair Price shop Id : DDDDAAASSSSS	Y		Refer FPSH1.1
FPSD1.2	allocation_no_with_ts	orderno	varchar	Allocation Number with Timestamp	Y		Allocation number with timestamp
FPSD1.3	transaction_id	txnid	varchar(42)	Sale transaction unique Id	Y	Y	FPS ID(12) + Rc Id(12) + DD+MM+YYYY+hh+mm+ss +.mmm FPS Id - Refer FPSH1.1 RC Id - Refer PDSD1.2 DD - Date of Transaction MM - Month of Transaction YYYY - Year of Transaction hh - Hour of Transaction mm - Minutes of Transaction ss - seconds of Transaction .mmm - DOT delimiter for milliseconds followed by milliseconds
FPSD1.4	transaction_date	txndate	ddMMyyyy	Date of transaction	Y		TRANSACTION DATE without timestamp
FPSD1.5	ration_card_no	rcno	varchar(12)	Ration Card number	Y		Refer PDSD1.1

FPSD1.6	ration_card_type	rctype	varchar	Ration card Type based on economic status of the family	Y		Refer PDSD1.2
FPSD1.7	commodity_code	commcode	Varchar(2)	Commodity code for which stock is received	Y		premissible value is numeric (0-99) . Refer ePDS Metadata Draft List
FPSD1.8	authenticated member_id	memid	varchar(14)	Member who lifted the commodity	Y		Refer PDSD1.3
FPSD1.9	authentication status	authstatus	varchar(1)	Success or failure	Y		0 = Not verified 1 = verified
FPSD1.10	authentication response code	authcode	varchar(5)	Authentication Response code from UIDAI	Y		Authentication Response code from UIDAI. Refer Error_Codes sheet
FPSD1.11	quantity_lifted	lqty	double	quantity lifted	Y		Up to 2 decimal places
FPSD1.12	measurement_unit	munit	Varchar(2)	Sale unit	Y		[0-9]. Refer ePDS Metadata Draft List
FPSD1.13	Price	price	double	Price	Y		Upto 2 decimal places
FPSD1.14	Month	month	integer	Month of Entitlement	Y		(1,12)
FPSD1.15	Year	year	integer	Year of Entitlement	Y		[0-9]$^{4 \text{ times}}$

1.4.5. **Transactions Acknowledgement (JSON)**

```
{
   " ":
            [{
            "fps": "",
            "req": "",
            "acks": "",
            "ackr": ""
            }]
}
```

1.4.6. Transactions Acknowledgement PDSA1 (Metadata)

Packet Data : PDSA1 Request Acknowledgement from PDS Server							
Field Id	**Field Name**	**xml tag name**	**Length**	**Purpose**	**Required ?**	**Unique?**	**Range**
PDSA1.1	fps_id	fps	varchar(12)	12 digit unique ration card number as in electronic PDS system	Y	Y	Refer PDSD1.1
PDSA1.2	request_id	req	varchar(31)	Uniquely identifies the transaction	Y		Refer FPSH1.7
PDSA1.3	ack_status	acks	varchar(1)	Acknowledgement Status	Y		S-Success F-Failure
PDSA1.4	ack_remarks	ackr	varchar(250)	Acknowledgement Remarks(Exception/Error Statement)	Y		(0-9,A-Z,a-z,Special Symbols)

1.5. Issue of Receipt (Print out)

a) After the successful authentication, commodities are issued as per selection.

b) A print receipt is issued to the beneficiary detailing the commodities lifted with cost indicating each items price and total cost.

c) The print out shows the balanced commodities belonging to the beneficiary's ration card.

1.6. Device registration

The POS devices have to be registered to the NIC PDS server with the following details:

1. FPS ID
2. FPS address
3. Device serial number
4. Device mac-id

1.7. Monthly FPS DB download

The POS device has to be prepared for every month sale by downloading the beneficiary database with monthly entitlement for each family and the latest application. NIC will provide a web service for downloading FPS shop wise database.

a) POS devices have to download the particular FPS DB by providing the FPS details and the same has to be stored in the device for the next sale operation.
b) Entire DB for the particular shop will be sent with changes and modifications in the beneficiary details.
c) DB schema will not be altered.
d) Monthly policy file with RC entitlement will be part of DB.
e) Along with the DB, the current version of the application also will be sent to the POS device.
f) In case of network interruption, the downloading of the database will resume from where it is interrupted.
g) Time sync of device with PDS Server.

1.7.1. PDS Data Download (URL)

http://gaman-aagman.nic.in/ FPSReceivePDSData

1.7.2. PDS Data Download (JSON)

```
{
```

```
    " FPSReceivePDSData ":
            [{
            "fps": "",
            "lat": "",
            "lon": "",
            "cc": "",
            "mac": "",
            "ver": "",
            "reqts": "",
            "req": "",
            "bid": "",
            "reccnt": "",
            "totcnt": ""
            }]
}
```

1.7.3. PDS Data Download Acknowledgement (JSON)

```
{
  "fps": "",
  "req": "",
  "res": "",
  "rests": "",
  "bid ": "",
  "reccnt ": "",
  "totcnt ": "",
  " FpsReceiveRcMemberDetail ":
 [{
      "rcno": "",
      "rctype": "",
      "memid": "",
      "memen": "",
      "memll": "",
      "rel": "",
      "age": "",
      "uid": "",
      "mob": ""
          } ],
  "FpsReceiveEntitlementDetail":
[{
      " rcno ": "",
      " ano ": "",
      " atype ": "",
      " commcode ": "",
      " uprice ": "",
      " munit ": "",
      " eqty ": "",
      " adate ": "",
      " month ": "",
      " year ": "",
      " ctype ": "",
      " uflag ": ""
 }],
  "FpsReceiveFpsDetail":
```

```
[{
      "fps": "",
      "fpsen": "",
      "fpsll": "",
      " fpsmac ": "",
      " fpspwd ": "",
      " fpsmob ": "",
      " fpsuid ": "",
      “villEn”:””,
      “villCd”:””,
      “villLl”:””
  }],
  "FpsReceiveCardTypeDetail": [
    {
      " cttype ": "",
      " ctypell ": "",
      " ctypeen ": ""
    }
  ],
  "FpsReceiveCommodityDetail": [
    {
      "commcd ": "",
      " commll ": "",
      " commen": "",
    }
  ],
  "FpsReceiveMeasurementDetail":
[{
      " mucd ": "",
      " mull ": "",
      " muen ": ""
    } ],
  "FpsReceiveRelationshipDetail":
[{
      " rscode ": "",
      " genderTypeId ": "",
      " rsNamell ": "",
      “ rsNameEn”:””
    } ]

}
```


1.7.4. PDS Data Download Header (PDSH1)(Metadata)

Refer FPSH1. Fair Price Shop Request/Response Header Frame: Metadata of Mandatory Parameters to be sent by FPS with each Packet.

Response Packet Header : PDSH1							
Response Header from PDS Server							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required ?**	**Unique?**	**Range**

PDSH1.1	fps_id	fps	varchar(12)	FPS id	Y	Y	Refer FPSH1
PDSH1.2	request_id	req	varchar(31)	Uniquely identifies the transaction	Y		Refer FPSH1.7
PDSH1.3	response_lot_id	res	integer	Lot number of the response. It is an integer indicating a unique response number to each request id. This number will be same for all the batches of a lot. By default Lot Id is 1	Y		(1,n)
PDSH1.4	response_ts	rests	varchar(14)	Timestamp of the response. It will vary with each batch	Y	Y	ddmmyyyyhhmmsss format
PDSH1.5	batch_id	bid	integer	Batch ID of the response lot.	Y	(res, id) is unique	[0,9]
PDSH1.6	records_in_current_batch	reccnt	integer	Records in current batch.	Y		[0,9]
PDSH1.7	total_record_count	totcnt	integer	Total records	Y		[0,9]

1.7.5. PDS Data Download Data (PDSH1)(Metadata)

Packet Data : PDSD1							
Response form PDS Server for ReqCode = RCMD data							
Field Id	**Field Name**	**xml tag name**	**Length**	**Purpose**	**Required ?**	**Unique?**	**Range**

PDSD1.1	ration_card_no	rcno	varchar(12)	12 digit unique ration card number as in electronic PDS system	Y		Ration Card number of the beneficiary. It is unique for each beneficiary throughout India.
PDSD1.2	ration_card_type	rctype	varchar(2)	Card type indicating Economical status of a family	Y		Card type code for a family indicating economic status.
PDSD1.3	member_id	memid	varchar(14)	Member Id as in elctronic PDS	Y	Y	Member Id is 12 digit Ration Card Id(PDSD1.1) + 2 digit sequence number of family member id.
PDSD1.4	member_name_en	memen	varchar(99)	Name of Member in English	Y		[a-z, A-Z]
PDSD1.5	member_name_ll	memll	varchar(99)	Name of Member in Local Language	Y		
PDSD1.6	relation_with_hof	rel	varchar(2)	Relation of member with Head of Family. SELF means HOF	Y		Relation code
PDSD1.7	age	age	integer	Member age	Y		(0-120)
PDSD1.8	member_uid	uid	varchar(12)	UID number of Member	Y	Y	12 digit Aadhar number seeded and verified.
PDSD1.9	mobile_no	mob	varcahr(10)	Mobile Number	Y	Y	Mobile number of Member

1.7.6. **Metadata of Entitlement Data: PDSD4**

Packet Data : PDSD4 Response from PDS Server for ReqCode = ENT*							
Field Id	**Field Name**	**xml tag name**	**Length**	**Purpose**	**Required ?**	**Unique?**	**Range**
PDSD4.1	ration_card_no	rcno	varchar(12)	12 digit unique ration card number as in electronic PDS system	Y	Y	Refer PDSD1.1
PDSD4.2	allocation_no with_timestamp	ano	varchar	Allocation Number	Y	Y	[0-9]
PDSD4.3	allocation_type	atype	varchar(1)	Allocation Type	Y		0-Regular 1-Adhoc 2-Additional/Special
PDSD4.4	comm_code	commcode	varchar(2)	Commodity Code	Y		premissible value is numeric (0-99) . Refer ePDS Metadata Draft List
PDSD4.5	unit price	uprice	double	Unit price of that commodity	Y		Up to 2 decimal places
PDSD4.6	measurement_unit	munit	varchar(1)	Measurement Unit	Y		[0-9] . Refer ePDS Metadata Draft List
PDSD4.7	entitled_quantity	eqty	double	Entitled quantity for that commodity	Y		Up to 2 decimal places
PDSD4.8	allocation_date	adate	date	Allocation date	Y		Date
PDSD4.9	month	month	integer	Month	Y		(1,12)

PDSD4.10	year	year	integer	Year	Y		[0-9]$^{4 \text{ times}}$
PDSD4.11	card_type	ctype	smallint	Card Type	Y		[0-9]
PDSD4.12	unit_flag	uflag	varchar(1)	Unit Flag	Y		Member based - m, Cardbased - c, Unit based - u

1.7.7. Metadata of FPS Details: PDSD5

Response Packet Header : PDSD5							
Response Header from PDS Server : FPS Details							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required ?**	**Unique?**	**Range**

SD5.1	fps_id	fps	varchar(12)	Fair Price shop Id : DDDDAAASSSSS	Y		FPS Id is of fixed length and premissible value is numeric [0-9] as per the following pattern DDDDAAASSSSS DDDD - DFSC code AAA - AFSO code SSSSS - FPS Shop sequence number covered by AFSO where DDDD -First 4 digit makes a DFSO/DFSC/DSO code (First digit is a sequence number within the district , for example , 1 means first dfsc/dfso within the district and Next 3 digits are District code (Reference: 2011 census code for districts) AAA - 3 digits AFSO/ TSO / FSO Code sequence number within the DFSO /DFSC/DSO SSSSS - 5 digits Sequence number within AFSO/TSO/FSO ***For testing purpose, the FPS id is SS1111111111 where SS = 2 digit state code***
PDSD5.2	fps_name_en	fpsen	varchar(12)	FPS name in English	Y		[a-zA-Z]
PDSD5.3	fps_name_ll	fpsll	varchar(12)	FPS name in Local Language	Y		
PDSD5.4	fps_device_mac_id	fpsmac	varchar(64)	MAC id of FPS device	Y	Y	(0-9)
PDSD5.5	fps_password	fpspwd	varcahr(20)	FPS Password	Y		(0-9 A-Z a-z *!@#$%^&*)

PDSD5.6	fps_mobile_no	fpsmob	varchar(10)	FPS Mobile Number	Y		(0-9)
PDSD5.7	fps_uid	fpsuid	varchar(12)	FPS Uid	Y	Y	(0-9)
PDSD5./8	villEn	villEn	varchar(255)	FPS Village Name(English)	Y		(A-z a-z)
PDSD5.9	villLl	villLl	varchar(255)	FPS Village Name(Local Language)	Y		(A-z a-z)
PDSD5.10	villCd	villCd	varchar(16)	FPS Village Code	Y	Y	(0-9)

1.7.8. Metadata of Master Tables

Measurement Unit			
Field Name	**tag name**	**Type**	**Purpose**
measurement_unit_code	mucd	smallint	Uniquely idenitfies a measurment unit code
measurement_unit_name_in_ll	mull	varchar(25)	Measurment unit code name in local language
measurement_unit_name_in_en	muen	varchar(25)	Measurment unit code name in english

Card Type			
Field Name	**tag name**	**Type**	**Purpose**
card_type_id	cttype	smallint	Uniquely idenitfies a card description code
card_description_ll	ctypell	varchar(150)	Card description name in local language
card_description_en	ctypeen	varchar(150)	Card description name in english

Commodity Code			
Field Name	**tag name**	**Type**	**Purpose**
comm_code	commcd	integer	Uniquely idenitfies a card description code
comm_en	commll	varchar	Commodity name in local language
comm_en	commen	varchar	Commodity name in english

Relationship Code			
Field Name	**tag name**	**Type**	**Purpose**
rs_code	rccode	integer	Uniquely idenitfies a relation description code
rsNameEn	rsnameen	varchar	Relationship name in english
rsNameLn	rsnamell	varchar	Relationship name in local language
gendertypeid	gendetypeid	integer	Uniquely idenitfies a gender description code

1.8. Full Application and Database Download

1.8.1. Application Dowload (URL):

http://gaman-aagman.nic.in/FpsAppDownload

1.8.2. Application Dowload (JSON object):

```
{
   "FpsAppDownload":
[{
      "fps": "",
      "lat": "",
      "lon": "",
      "cc": "",
      "mac": "",
      "ver": "",
      "reqts": "",
      "req": "",
      "bid": "",
      "reccnt": "",
      "totcnt": ""
      }]
}
```

1.8.3. Application Dowload (Metadata):

Same as FPSH1 with request type code as ‘APP’.

1.8.4. Application Dowload Acknowledgement: (JSON):

```
{
   " FpsAppDownload ":
[{
      "fps": "",
```

```
      "req": "",
      "ackr": "",
      "acks": "",
      "filesize": ""
      Application will be downloaded along with this frame as acknowledgement
      }]
}
```

5.2

1.8.5. Application Dowload Acknowledgement: (Metadata):

Refer PDSA1: Request Acknowledgement from PDS Server. FileSize is included in Kilobytes. Also application will be downloaded when acknowledgement is received.

PDSD7							
App Download : FpsAppDownload							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required**	**Unique**	**Range**
PDSD7.1	Filesize	filesize	double	File Size in Kilobytes	Y		

1.9. Stock Upload: FPS stock receipt entry

a) Dealer has to enter the stocks received as and when the stock arrives at the FPS.

b) Only the authenticated person can send the FPS stock receipt of commodities to the PDS server after authenticating himself by Aadhaar authentication or OTP.

c) The sale has to occur only based on availability of the stocks.

d) Only additions of the stocks are allowed and deletion or updation of the already listed stocks should not be allowed.

e) At any point of time stock should not be a negative value.

1.9.1. Stock Upload (URL):

http://gaman-aagman.nic.in/PdsReceiveStockDetail

1.9.2. Stock Upload (JSON object):

```
{
   "PdsReceiveStock":
[{
      "ats": "",
      "atype": "",
      "commcd": "",
      "rdate": "",
      "stckqty": "",
      “fps”:””,
      “munit”:””
      }]
}
```

1.9.3. Stock Upload (Metadata):

FPSD2							
Health Statistics from FPS : PdsReceiveStock							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required**	**Unique**	**Range**
FPSD2.1	Fps_id	fpsid	Varchar(12)	Unique Fps id	Y		(0,9)

FPSD2.2	Allocation_time_stamp	ats	Varchar()	Allocation time stamp	Y		[0-9,a-z,A-z]
FPSD2.3	Allocation_type	atype	Varchar()	Allocation type			[0-9,a-z,A-z]
FPSD2.4	Commodity_code	commcd	integer	Commodity code	Y		(0,100)
FPSD2.5	Reciept_date	rdate	date	Reciept date			Time stamp
FPSD2.6	Stock_qty	stckqty	double	Stock qty	Y		Real values
FPSD2.7	_munit	munit	integer	Measurment Unit of Commodity	Y		integer values

1.9.4. Stock Upload Acknowledgement: (JSON):

```
{
   " PdsReceiveStockAck":
[{
      "fps": "",
      "ackr": "",
      "acks": "",
      "req": ""
      }]
}
```

1.9.5. Stock Upload Acknowledgement PDSA1 (Metadata):

Refer PDSA1

1.10. **Monthly closing of sales**

Closing balance means the declaration of leftover stock per commodity to GOI so that the Allocation Order of next month can be generated after re-conciliation of the sale and stocks.

a) The monthly sale can be closed after end of every calendar month at midnight (automated closure).
b) The dealer can also close the monthly sale (force closure) if the stocks are sold out and commodities are distributed to all the beneficiaries.
c) In both cases the database is backed up and all the remaining transactions will be pushed to the server.
d) The left out (un-lifted) commodities of the beneficiaries will not be carried forward to the next month.
e) The closing balance (CB) is pushed to the NIC server. The POS terminal is connected to the PDS server or is brought to the nearest AFSO/ DSO/ TSO office for submitting the data to the backend server.
f) Closing balance for a commodity can be sent only once by an FPS.
g) Popup shall be displayed to confirm and ensure that FPS dealer is not doing the same by mistake.
h) Only the authenticated person can send the closing balance of commodities after authenticating himself by Aadhaar authentication or OTP.
i) Extention of the distribution shall be based on the automated services.

1.10.1. Closing Balance Upload (URL):

http://gaman-aagman.nic.in/PDSReceiveClosingBalance

1.10.2. Closing Balance Upload (JSON object):

```
{
   "PDSReceiveClosingBalance_Detail ":
[{
      "fps": "",
       "lat": "",
       "cc": "",
      "mac": "",
      "ver": "",
      "reqts": "",
      "req": "",
      "totcnt": "",
```

```
      "bid": "",
      "reccnt": "",
      "lon":
       "ats": "",
      "adate": "",
      "txncnt": "",
      "commcode": "",
      "cqty": "",
      "munit": ""
      }]
}
```


1.10.3. Closing Balance Upload (Metadata):

FPSD2							
Closing Balance from FPS : PdsReceiveClosingBalance							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required**	**Unique**	**Range**
FPSD2.1	Allocation_time_stamp	ats	Varchar()	Allocation time stamp	Y		[0-9,a-z,A-z]
FPSD2.2	Allocation_Date	adate	Varchar()	Allocation Date			[0-9]
FPSD2.3	Commodity_code	commcode	integer	Commodity code	Y		(0,100)
FPSD2.4	txncnt	txncnt	integer	Transaction Count			(0-9)
FPSD2.5	closing_qty	cqty	double	Stock qty	Y		Real values
FPSD2.6	_munit	munit	integer	Measurment Unit of Commodity	Y		integer values

1.10.4. Closing Balance Upload Acknowledgement: (JSON):

```
{
   " PdsReceiveFPSAck":
[{
      "fps": "",
      "ackr": "",
      "acks": "",
      "req": ""
      }]
}
```

1.10.5. Closing Balance Upload Acknowledgement PDSA1 (Metadata):
Refer PDSA1

2. Other services

2.1. Time synchronization

a) Time synchronization web service will be used in the POS devices to synchronize the time with NIC server.

b) The transactions exceeding the permissible time difference will be dropped by the PDS server and will not be accepted.

2.1.1. Time Synchronization (URL):
http://gaman-aagman.nic.in/PdsReceivePDSTS

2.1.2. Time Synchronization (JSON object):

```
{
   " FPSReceivePDSTS ":
[{
      "fps": "",
      "lat": "",
      "lon": "",
      "cc": "",
      "mac": "",
      "ver": "",
      "reqts": "",
      "req": "",
      "bid": "",
      "reccnt": "",
      "totcnt": "",
      }]
}
```

2.1.3. Time Synchronization (Metadata):
Same as common header PDSH

2.1.4. Time Synchronization Acknowledgement: (JSON):

```
{
   " FPSReceivePDSTSAck ":
         [{
         "fps": "",
         "req": "",
         "ackr": "",
         "acks": "",
         "ts": "",  }]
}
```

2.1.5. Time Synchronization Acknowledgement PDSA1 (Metadata):

PDSD8							
Health Statistics from FPS : FPSReceivePDSTS							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required**	**Unique**	**Range**
PDSD8.1	Timestamp	ts	Date with timestamp	Timestamp of the server	Y	Y	'Yyyy-mm-dd hh:MM:ss.mmm' Year-month-date hours:minutes:seconds.milliseconds

2.2. Aadhaar Seeding

a) e-KYC service will be provided by NIC to verify the beneficiary and after successful verification the Aadhaar number will be seeded to the particular beneficiary in the ration card.

b) The service will be invoked by the FPS dealer through application.

2.2.1. Aadhaar Seeding (URL)
http://gaman-aagman.nic.in/PDSReceiveAadhaar

2.2.2. Aadhaar Seeding (JSON)

```
{
   " PDSReceiveAadhaar ":
[{
      "fps": "",
      "lat": "",
      "lon": "",
      "cc": "",
      "mac": "",
      "ver": "",
      "reqts": "",
      "req": "",
      "bid": "",
```

```
      "reccnt": "",
      "totcnt": "",
      "rcno": "",
      "memid": "",
      " memen ": "",
      "aadhaar: ""
      }]
}
```

2.2.3. Aadhaar Seeding (Metadata)

FPSD5							
Aadhaar Seeding in PDS Server : PDSReceiveAadhaar							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required?**	**Unique?**	**Range**
FPSD5.1	aadhaar	aadhaar	varchar(12)	Aadhaar number	Y	Y	(0-9)
FPSD5.2	ration_card_no	rcno	varchar(12)	Ration Card number	Y		Refer PDSD1
FPSD5.3	member_id	memid	varchar(14)	Member id	Y		Refer PDSD1
FPSD5.3	member_name	memen	varchar(99)	Member Name	Y		Refer PDSD1

2.2.4. Aadhaar Seeding Acknowledgement: (JSON)

```
{
   " FPSReceivePDSAck ":
[{
      "fps": "",
      "req": "",
      "ackr": "",
      "acks": ""
}]
}
```

2.3. **Mobile Number Seeding**

a) Mobile number seeding service will be provided by NIC to enter the mobile number of the beneficiary against his name in the ration card.

b) The service will be invoked by the FPS dealer through application.

2.3.1. Mobile Number Seeding (URL)
http://gaman-aagman.nic.in/PDSReceiveMobileNumber

2.3.2. Mobile Number Seeding (JSON)

```
{
   " PDSReceiveMobileNo ":
[{
      "fps": "",
      "lat": "",
      "lon": "",
      "cc": "",
      "mac": "",
      "ver": "",
      "reqts": "",
      "req": "",
      "bid": "",
      "reccnt": "",
      "totcnt": "",
      "rcno": "",
      "memid": "",
      ""mob: ""
      }]
}
```

2.3.3. Mobile Number Seeding (Metadata):

FPSD3							
Mobile Seeding in PDS Server : PDSReceiveMobileNo							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required?**	**Unique?**	**Range**
FPSD3.1	mobileno	mob	varchar(10)	Mobile number of the beneficiary	Y	Y	(0-9)
FPSD3.2	ration_card_no	rcno	varchar(12)	Ration Card number	Y		Refer PDSD1

FPSD3.3	member_id	memid	varchar(14)	Member id	Y		Refer PDSD1

An OTP Is sent to beneficiary's mobile. The user sends that OTP to the server for verification. If the OTP is correct then the mobile number is registered in the server.

2.3.4. OTP URL

http://gaman-aagman.nic.in/PDSReceiveOTP

2.3.5. OTP (JSON)

```
{
   " PDSReceiveMobileOTP ":
[{
            "fps": "",
            "lat": "",
            "lon": "",
            "cc": "",
            "mac": "",
            "ver": "",
            "reqts": "",
            "req": "",
            "bid": "",
            "reccnt": "",
            "totcnt": "",
            ""otp: "",
            "rcno": "",
            "memid": "",
            "mob": ""
            }]
}
```

OTP will be sent through a webservice to PDS server for verification. If OTP is correct mobile number is seeded.

2.3.6. OTP (Metadata)

FPSD4							
Mobile Seeding in PDS Server : PDSReceiveOTP							
Field Id	**Field Name**	**xml tag name**	**Type**	**Purpose**	**Required?**	**Unique?**	**Range**

FPSD4.1	otp	otp	varchar(10)	One time password	Y		(0-9 a-z A-Z)
FPSD4.2	ration_card_no	rcno	varchar(12)	Ration Card number	Y		Refer PDSD1
FPSD4.3	member_id	memid	varchar(14)	Member id	Y		Refer PDSD1
FPSD4.4	mobileno	mob	varchar(10)	Mobile number of the beneficiary	Y	Y	(0-9)

2.4. Centralized Device Management System

a) A web portal should be developed by System Integrated to get the information about the POS devices such as active status, network condition and other device statistics.

b) The web portal will be hosted in the NIC server and a link will be provided in the PDS portal to access the CDMS.

3. Web Services Describtion

The following web services are required to implement the FPS automation model:

a) **FPS dealer login web service**

The web service will receive FPS dealer username and password from POS and returns login success or failure.

b) **Monthly DB download web service**

To receive monthly ration card data mapped to an FPS along with entitlement for the current month. The service returns the FPS DB and current version of the application.

c) **Finger print authentication**

The finger print verification web service is used to verify the beneficiary finger print captured in POS with UIDAI. The finger print is encoded and encrypted

according to Aadhaar authentication API version 1.6. After due verification the service returns authentication success or failure as a response.

d) **OTP generation**

If the Aadhaar authentication fails, the Generate OTP web service is used to request the PDS server to generate OTP and send it to the registered mobile number.

e) **Verify OTP**

The verify OTP web service checks the validation of the OTP and authenticates a person and sends a response YES or NO.

f) **Upload Transaction**

The upload transaction web service pushes the transaction from the POS device to the PDS server. The server response with Success or Failure.

g) **Time synchronization**

This web service is used to sync the timestamp of the POS device with the NIC server. Whenever a request comes from the POS device the PDS server sends the time details.

h) **Aadhaar Seeding**

If a particular member's Aadhaar number is not included in the RC card details, then the Aadhaar seeding web service is used to include the same. This is done after verifying with the NIC e-KYC web service.

i) **Mobile number seeding**

Mobile number seeding web service inputs the mobile number against the RC card to include it as a registered mobile number where transaction information and OTP request will be sent for a particular ration card.

4. Getting RC details online

An alternative FPS automation model shall be getting the RC details and allotment details as and when required through a web service. This model ensures PDS server and POS will be in sync.

4.1. Process flow

a) FPS dealer enters the RC number.

b) A web service is invoked to fetch the beneficiary details of the RC along with the current balance commodities of the month.

c) Selection of beneficiary

d) Selection of commodities

e) Beneficiary authentication

f) Uploading of transaction

g) Issue of receipt (print out)

6 Application requirements for FPS Convenience

6.1 One-page application:

The FPS automation application shall be as simple as possible. It shall be a one-page application if there is no need otherwise.

6.2 No Forced Session Logouts:

For the FPS convenience, forced session logouts be not there before end of the day (00:00:00 Midnight).

6.3 No intervention from FPS:

As and when network connectivity is available, the sale transactions shall be uploaded without any need to trigger the sending of the un-sent transactions.

7 Application and Data Security

7.1 Device Binding:

FPS device numbers are added / deleted from PDS server only. Only registered FPS MAC Ids can function within PDS system.

7.2 Application Encryption:

The release version of the application shall be encrypted by algorithm and key given by NIC before deployment in the devices. In case the transactional data/application is tried to be tampered, the application shall get corrupt.

7.3 Audit Trails:

The result codes of transactions are logged for each FPS, indicating the reason of success or failure. It will also be logged whether the device has a SIM inserted or not along with the timestamp and duration thereof.

7.4 Distribution Officer Binding:

Registered Distribution Officer/Inspector can deliver commodity to FPS owner within PDS system.

8 Version Management

The vendor FPS application source code and the application configuration management will be with NIC. The registered version will be able to perform operations with PDS server.

9 Device Backup and Data Recovery

9.1 SAM Slot and DR:

SAM slot shall be used for data recovery and all transactions shall be stored in SIM/DIM/SD card for backup purpose in case the device goes faulty. It is mandatory to have a provision of backup without which application shall not function. Necessary alerts shall be included in the application to ensure the same.

10 Hardware Specifications

10.1 POS Specifications

Sl. No.	Description	Specifications
1	Processor	**Secure Processor** capable of performing at least 10 transactions per minute in laboratory environment (Each Transaction consists of 1. Perform Biometric Authentication of the PDS beneficiary with UIDAI server 2. Generate Encrypted pay load for maximal Sales data. 3. Store Encrypted transaction data in the local storage 4. Transmit the Encrypted transaction sales data to PDS server. 5.Remove the locally stored sales data only after getting acknowledgement from the server)
2	OS	**Secure OS** having an inbuilt web browser supporting HTML5, CSS3, Java Scripts. (Source code of OS shall be CC compliant at least EAL level 2 certified or OS hardened and tested by an independent lab with a declaration of equivalence to CC EAL2)
3	Memory	256MB or Higher RAM and 1GB or higher Flash memory

4	Expansion slot	Micro SD Slot to support SD card with minimum 8 GB high speed SD card
5	Communication	Should support GSM Network with GPRS, Wi-Fi, Ethernet, PSTN
6	Interface	USB 2.0 or higher. The USB port should support device battery charging through any other USB charging source, RS-232 (optional)
7	Display	2.75 inch or higher color TFT Display supporting QVGA (320 x240) or better resolution.
8	Key Pad	Hard (Optional) QWERTY keypad
9	Battery	Swappable &Dry/Rechargeable 2600mAH or higher, Li-ion or Li Polymer battery capable of providing minimum 6 hours of operation while all function of device active.
10	Power Adaptor	Power Adaptor with surge protection and operating range 100 to 240V, 50Hz. AC input.
11	SIM & SAM slot	One or more GSM SIM slot and minimum one SAM slots for software up-gradation in device.
12	Printer	2” or higher Thermal / Non-Thermal Printer
13	Audio (Optional)	Good quality Speaker with 1W or higher output for announcements.
14	Finger Print Scanner	STQC certified Finger Print Module
15	IRIS Scanner (Optional)	STQC certified IRIS scanner Module
16	Smart Card (contact type) (Optional)	1 or 2 Number of Smart Card Reader & Writer (ISO 7816 Complaint)
17	Status Indications	Status indicator provides ease of use, Indicators for connectivity (presence/absence), signal strength, battery status.
18	Other Accessories	Durable Carry Case and user manual etc.
19	SDK	Appropriate SDK need to be provided along with the devices
20	Terminal Management	Device should be remotely manageable in secured mode
21	Environment, Health & Safety Durability, Humidity, EMI/EMC Compliance	Dry heat test- Operating (50 ±2˚C for 2 hrs) Cold test – Operating (0 ±3˚C for 2 hrs) Dry heat test (55 ±2˚C for 2 hrs) Damp heat Cyclic (40˚C for (12+12 hrs)), No. of cycles: 2 Cold Test (-10 ±3˚C for 2 hrs) Drop/Free Fall Test, in unpacked, switched off and normal handling conditions (Height: 100mm, Total no. of falls: 2)

		Vibration Test should be in packed condition, switched off conditions (10-150Hz, 0.15mm/2g, 10 sweep, cycles/axes) Bump test should be in packed condition, switched off condition.(1000Bumps, 40g, in vertical position)
22	Add-On Antenna	May be provisioned for the POS devices which will be used in remote locations and hilly areas for better signal reception and seamless transactions
23	Warranty	Suitable Warranty support

10.2 Mobile Terminal Specifications

Sl. No.	Feature	Specifications
1	Display	7” inches or higher scratch resistant multi point capacitive touch screen with minimum WSVGA resolution (1024 X 600)
2	Processor Speed	1 GHz Dual Core or higher ARM /x86 processor or equivalent
3	RAM	1 GB or higher
4	Inbuilt Storage	4 GB or higher flash memory
5	Expansion Slot	At least a micro SD slot supporting up to 32 GB memory card
6	Audio	Good quality Speaker with 1W or higher output for announcements.
7	External Keyboard support (optional)	Device should support keyboard through USB or Bluetooth interface.
8	Connectivity	Device should support both 3G, GPRS and Wi-Fi, should support GPS feature
9	USB ports	At least one free USB port shall be available after setting up the entire solution including peripheral devices
10	Battery	Rechargeable 4000mAH or higher, Li-ion or Li Polymer battery capable of providing minimum 6 hours of operation while all function of device active.
11	Operating System	Operating system should be Linux (Latest Stable Kernel)/Android 4.0 or higher/Windows. Device operating system which supports HTML5 based web browser and CSS 3
12	Certification	RoHS (Restriction of Hazardous substance) CE or UL
13	Camera Barcode Reader	Capable of reading 1D line barcode and QR codes with minimum 5Mp auto-focus camera
14	Indicators	Status indicator provides ease of use, Indicators for connectivity

		(presence/absence), signal strength, battery status etc.,
15	SAM slot	Device should have at least a SAM slot to support secure loading of signed applications
16	Biometric Sensor	STQC certified Finger Print Module
17	IRIS Scanner (Optional)	STQC certified IRIS scanner Module
18	Smart Card Reader (Optional)	ISO 7816 Compliant
19	Environment & Durability	Dry heat test- Operating (50 ±2˚C for 2 hrs) -Storage-55 ±2˚C for 16hrs.in accordance with IS:9000/part-3/section-5/1977(reaffirmed in 2007). Cold test – Operating (0 ±3˚C for 2 hrs) Storage-minus10degC for 4 hrs. at a temp. of 0-degree C in accordance with IS:9000/part-2/section-4/1977 (reaffirmed in 2007). Damp heat Cyclic --0perating-40˚C, 95%RH for (12+12 hrs)), No. of cycles: 2 in accordance with IS: 9000/part-5/section-1/1981 (reaffirmed in 2007). During last half an hour of each environmental conditioning as above and after recovery period of two hours the product be checked for 1:1 authentication Drop/Free Fall Test, in unpacked, switched off and normal handling conditions (Height: 100mm, Total no. of falls: 2) Vibration Test should be in packed condition, switched off conditions (10-150Hz, 0.15mm/2g, 10 sweep, cycles/axes) Bump test should be in packed condition, switched off condition.(1000Bumps, 40g, in vertical position)
20	Printer	Integrated or external
21	Antenna (mandatory)	Internal
22	Terminal Management	Device should be remotely manageable in secured mode
23	Warranty	Suitable Warranty support

NOTE:

Mobile tablet devices should be preferred devices over POS devices for reasons of its cost, interoperability and easy maintenance. NIC will provide a working application based on Android. Vendor has the option to deploy and run NIC application in the device for its complete functionality or build an application with same functionality (exactly similar to

NIC application) in their device. In such a case the source code, every revised version of the source code and application, shall be copyright of NIC.

11 Error Codes

Web Services Errors	
API Error Code	**Description**
1000	FPS Id not registered
1001	Invalid PLC code
1002	Invalid company code
1003	Device not registered
1004	Application version mismatch
1005	Date greater than current date
1006	Data type mismatch
1007	Value out of range
1008	Invalid ration card number
1009	Invalid ration card type
1010	Commodity code does not exist
1011	Member id does not exist
1012	Invalid relationship code
1013	Invalid measurement unit code
1014	Timestamp not unique

Device Error codes	
API Error Code	**Description**
2000	SIM card not available
2001	No network in SIM
2002	Invalid SIM card
2003	Printer not connected
2004	Low battery for UIDAI authentication
2005	Mobile data off
2006	Driver not loaded
2007	Paper not available
2008	Device internal problem
2009	Options not supported

Login Errors	
API Error Code	**Description**
3000	Invalid Username or Password.
3001	Account Suspended due to some reason.
3002	Account Deactivated/Expired.

UIDAI Authentication Errors	
API Error Code	**Description**
100	“Pi” (basic) attributes of demographic data did not match
200	“Pa” (address) attributes of demographic data did not match
300	Biometric data did not match
310	Duplicate fingers used
311	Duplicate Irises used
312	FMR and FIR cannot be used in same transaction
313	Single FIR record contains more than one finger
314	Number of FMR/FIR should not exceed 10
315	Number of IIR should not exceed 2
400	"OTP" validation failed
401	"Tkn" validation failed
500	Invalid Skeyencryption
501	Invalid value for “ci” attribute in “Skey” element
502	Invalid Pid Encryption
503	Invalid HMac encryption
504	Session key re-initiation required due to expiry or key out of sync
505	Synchronized Skey usage is not allowed
510	Invalid Auth XML format

511	Invalid PID XML format
520	Invalid device
521	Invalid Finger device (fdc in Meta element)
522	Invalid Iris device (idc in Meta element)
530	Invalid authenticator code
540	Invalid Auth XML version
541	Invalid PID XML version
542	AUA not authorized for ASA.
543	Sub-AUA not associated with “AUA”
550	Invalid “Uses” element attributes
561	Request expired (“Pid->ts” value is older than N hours where N is a configured threshold in authentication server)
562	Timestamp value is future time (value specified “Pid->ts” is ahead of authentication server time beyond acceptable threshold)
563	Duplicate request (this error occurs when exactly same authentication request was re-sent by AUA)
564	HMAC Validation failed
565	License key has expired
566	Invalid license key
567	Invalid input (this error occurs when some unsupported characters were found in Indian language values, “lname” or “lav”)
568	Unsupported Language
569	Digital signature verification failed (this means that authentication request XML was modified after it was signed)
570	Invalid key info in digital signature (this means that certificate used for signing the authentication request is not valid – it is either expired, or does not belong to the AUA or is not created by a well-known Certification Authority)
571	PIN Requires reset (this error will be returned if resident is using the default PIN which needs to be reset before usage)
572	Invalid biometric position (This error is returned if biometric position value - “pos” attribute in “Bio” element - is not applicable for a given biometric type - “type” attribute in “Bio” element.)
573	Pi usage not allowed as per license
574	Pa usage not allowed as per license
575	Pfa usage not allowed as per license
576	FMR usage not allowed as per license
577	FIR usage not allowed as per license

578	IIR usage not allowed as per license
579	OTP usage not allowed as per license
580	PIN usage not allowed as per license
581	Fuzzy matching usage not allowed as per license
582	Local language usage not allowed as per license
584	Invalid Pin code in Meta element
585	Invalid Geo code in Meta element
710	Missing “Pi” data as specified in “Uses”
720	Missing “Pa” data as specified in “Uses”
721	Missing “Pfa” data as specified in “Uses”
730	Missing PIN data as specified in “Uses”
740	Missing OTP data as specified in “Uses”
800	Invalid biometric data
810	Missing biometric data as specified in “Uses”
811	Missing biometric data in CIDR for the given Aadhaar number
812	Resident has not done “Best Finger Detection”. Application should initiate BFD application to help resident identify their best fingers. See Aadhaar Best Finger Detection API specification.
820	Missing or empty value for “bt” attribute in “Uses” element
821	Invalid value in the “bt” attribute of “Uses” element
901	No authentication data found in the request (this corresponds to a scenario wherein none of the auth data – Demo, Pv, or Bios – is present)
902	Invalid “dob” value in the “Pi” element (this corresponds to a scenarios wherein “dob” attribute is not of the format “YYYY” or “YYYY-MM-DD”, or the age of resident is not in valid range)
910	Invalid “mv” value in the “Pi” element
911	Invalid “mv” value in the “Pfa” element
912	Invalid “ms” value
913	Both “Pa” and “Pfa” are present in the authentication request (Pa and Pfa are mutually exclusive)
930-939	Technical error that are internal to authentication server
940	Unauthorized ASA channel
941	Unspecified ASA channel
980	Unsupported option

997	Invalid Aadhaar Status
998	Invalid Aadhaar Number
999	Unknown error

12 Constraints

12.1 Allocation

- ***Allocation Order Generation***: Allocation Order can be generated after receipt of closing balance from all the FPS.
- ***Sales Closure:*** After sales closure, and transmitting the closing balance to PDS server, device shall not perform sale transactions.
- ***Closing Balance:*** Closing balance can be uploaded once in a month for a commodity.
- ***Closing balance and transactions count****:* Closing balance calculated at PDS Server from uploaded transactions shall vary from the actual closing balance in case some transactions are not uploaded due to network failure. Therefore, closing balance is also calculated and submitted from each FPS device in encrypted format.

12.2 Allocation and Ration Card

- ***Reflection in PDS cycle of new, modified or deleted Ration Cards:*** The modifications in Ration Card will be reflected in next month allocation and distribution cycle.

12.3 Device

- ***Device Failure***: Department officials need to take appropriate decisions in case of device failure.
- ***Minimum battery requirement:*** Minimum battery requirement for UIDAI authentication is 15-25%.

12.4 Network

- ***Network requirement:*** In FPS Automation – Occasionally Online mode, the network is required at least once for receiving entitlement policy and beneficiary details, performing Buffered authentication, uploading sale transactions and closing balance. Redundant full-time connectivity is required in Fully Online mode.
- ***Signal Boosters:*** Whip Antenna and signal booster might be required to ensure reasonable signal strength.

12.5 Miscellaneous

- **Weighing machine**: If weighing machine is used along with the Point of Sale device it needs to be calibrated at regular intervals.

13 Appendix-A GLOSSARY

Acronym	Acronym Full Form
AO	- Allocation Order
AFSO	- Assistant Food and Supplies Officer
CB	- Closing Balance
DFSO	- District Food Supply Office
DoFPD	- Department of Food and Public Distribution
FPS	- Fair Price Shop
FSO	- Food Supply Office
NIC	- National Informatics Centre
PDS	- Public Distribution System
POC	- Proof of Concept
PoS	- Point of Sale
RC	- Ration Card
RMN	- Registered Mobile number
TSO	- Tehsil Supply Office
UID	- Unique Identification
UIDAI	- Unique Identification Authority of India

14 Appendix-B Preferable/Popular Matrix (Indicative)

OS Type	Device Type	App Type	App Mode	Aadhaar Support
Windows OS till 8.1	PC/Laptop	Web (HTML5.0/CSS3)	Online	Yes
Linux OS	PC/Laptop	Web (HTML5.0/CSS3)	Online	Yes
iOS	iMac PC/Laptop	Web (HTML5.0/CSS3)	Online	Not Available
Linux OS Kernal6.0	PoS	Native	Online +Offline	Yes
Windows 10	PC/Tablet/PoS/Mobile Phone	Native	Online + Offline	Yes
Android	Tablet/PoS/Mobile Phone	Native	Online + Offline	Yes
iOS	Tablet/Mobile Phone	Native	Online + Offline	Not available

15 Appendix-C Suggested Methodology for No Denial of Service

S. No.	Case	Mode of Authentication	Status	Available Waiver Counts	Service	Action
1.	Offline Sale	Buffered	First time no auth required	>=0	nDoS	-
2.	Offline Sale	Buffered	Auth failed in previous transactions	=0	DoS	-
3.	Offline Sale	Buffered	Auth failed in previous transactions	>0	*nDoS*	Reduce waiver count by 1
4.	Offline Sale	Buffered	Auth successful in previous transactions	>=0	nDoS	-
5.	Online Sale	Real-time	Auth failed in current transactions	=0	DoS	-
6.	Online Sale	Real-time	Auth failed in current transactions	>0	*nDoS*	Reduce waiver count by 1
7.	Online Sale	Real-time	Auth Successful in current transactions	>=0	nDoS	-

Authentication may be considered to happen only in following cases:

S. No.	Attempt 1		Attempt 2		Attempt 3		Status	Action
	Auth	No. of Trials	Auth	No. of Trials (configurable)	Auth	No. of Trials (configurable)		
1.	Finger	configurable	Iris	configurable	Aadhaar based OTP	configurable	Failed due to mismatch	Reduce waiver count by 1
2.	Finger	configurable	Iris	configurable	Aadhaar Based OTP	configurable	Failed due to any other issue like expiry of deferring period, network failure etc.	-
3.	Finger	configurable	Iris	configurable	Aadhaar Based OTP	configurable	Successful	-

In case of no Aadhaar seeded Ration Cards, the positive number of waiver counts (configurable) will be used to allow the transactions to happen. Initially it may be set to a respectable size and meantime beneficiaries may be asked to get their Aadhaar seeding done at the earliest. Warning needs to be issued on reducing number of waiver counts. Once the waivers are finished, DoS will start to happen. It is to be noted that Waiver count is valid for the Ration Card, not on a member and will be reduce if the successful transaction is performed.

16 Appendix-D Aadhaar Seeding- eKYC

Aadhaar number is seeded after biometric authentication of the beneficiary with the UID number. In addition, the textual and demographic details are also matched with the details from UID server corresponding to the Aadhaar number. Once the demographic and biometric is authenticated, the UID number shall be seeded in PDS Server.

A demo of UID seeded is available at http://164.100.72.83/AadharComparison

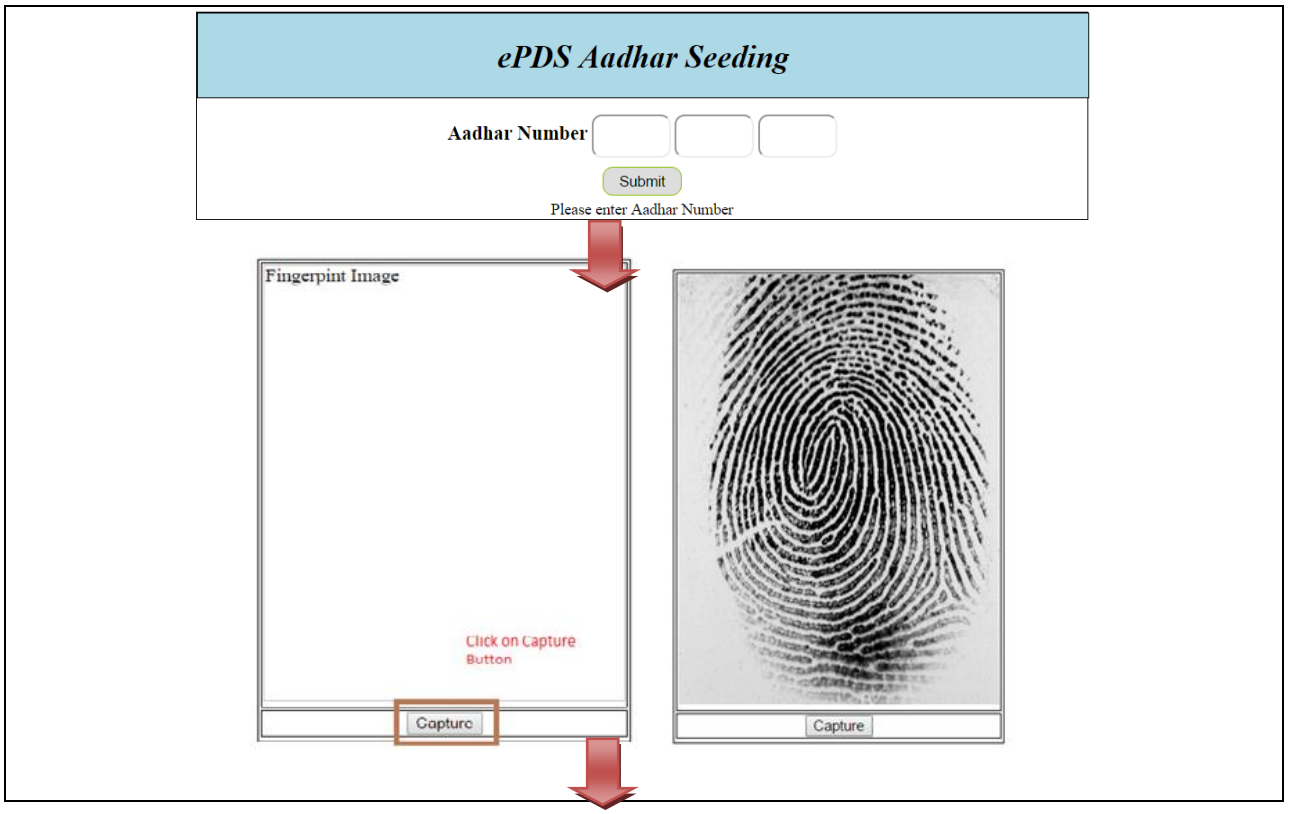


Figure 3: Aadhaar Seeding in PDS – eKYC

17 Appendix-E Design Considerations (Indicative)

- FPS user can make the transactions both online and occasionally offline (for both sales and commodity receiving) based on the configuration set at the backend. Mode of transactions, i.e., occasionally offline or online, depends on the availability of internet connection.
- When occasionally offline sale happens, required sales details are saved in local database. For the sale to happen offline, there are many essential details to be retrieved from main server and stored locally for that particular FPS like:
    - FPS details, credentials & available features for FPS
    - User configuration details – preferred language, form captions in selected language, state logo, sale options (e.g.-will be able to make online sale only or online-offline sale), aadhaar seeding options (e.g.: eligible for Organic or Inorganic Seeding or both).
    - Commodity allocation, Commodity Sales Validity Period, Ration card details and member details belonging to that particular FPS.
    - Commodity Master Data, Scheme Master Data, Measurements Unit Master.
    - For field inspection, Inspector's credentials will also be made available. The inspector can login through its credentials and make the complaint of any FPS dealer.
- At the end of the allocation month (validity date & time of sale) App should de-activate the sale corresponding to such allocation number. After the sales is closed the backup will be maintained securely on PoS. Also, there will be a feature in App to close the sale manually (event driven). Thus, sale closure will be done both ways either time-driven or event-driven whichever is earlier.
- At the end of the allocation cycle (validity date & time of sale) all the sales data have to be synchronized to main server.
- Database, Bio-metric and Printer SDKs may be part of the App. Accordingly, if the App is uninstalled the transaction data will get erased and SDKs will get uninstalled. If there are any pending records for synchronization, uninstallation / updation should not be allowed.
- Across the application date and time needs to be synchronized between POS device and PDS Server.
- Listed STQC certified biometric devices (finger & iris) have to be supported for authentication.

18 Appendix-F Detailed Functionalities

18.1 Essential Functionality

a. **User Management:** User management module shall enable registration process, FPS, management of password, User Access and Authorization Management. Following functionalities shall be covered under this module

1	Functional Requirements of User Management
1.1	**Registration**
	System must allow user to register FPS during/after installation of PoS software
	Facility to register the FPS Owner
	FPS owner shall be allowed to create other users (operators) [subject to approval of state government]
	Aadhaar number shall also be recorded for Aadhaar authentication
1.2	**Access Control**
	System shall provide role-based access for application modules
1.3	**Password Management [may also be managed at PDS Server level)**
	System shall allow textual password /biometric based login
	Biometric based login shall be done through Aadhaar authentication
	System shall allow a maximum of three/ configurable attempts to login.
	System shall allow the user to regenerate a lost password/reset password
	System shall encrypt the user passwords
1.4	**Exceptions** [subject to approval of state government]
	System shall allow limited functionality (like reports) to FPSs which are temporarily suspended
	User to be blocked beyond unsuccessful attempts
	Provision to be given for unblocking the user
	Biometric authentication to be enabled for user login if network connectivity is available

b. **Master Data and Entitlement download in case of occasionally online mode:** For occasionally online mode, the input data for sales & receipts at FPS has to be downloaded to the PoS device in a secured and consistent manner.

2	Master Data and Allocation Download & Upload in offline mode
2.1	**Master Data Download**
	Data related to Ration card number and beneficiary shall be downloaded once in a month in PoS device for the FPS
	Downloading of master data not to be allowed if it is already stored for current allocation month
	Following data may be downloaded: FPS Details Commodity Master (only active commodities)

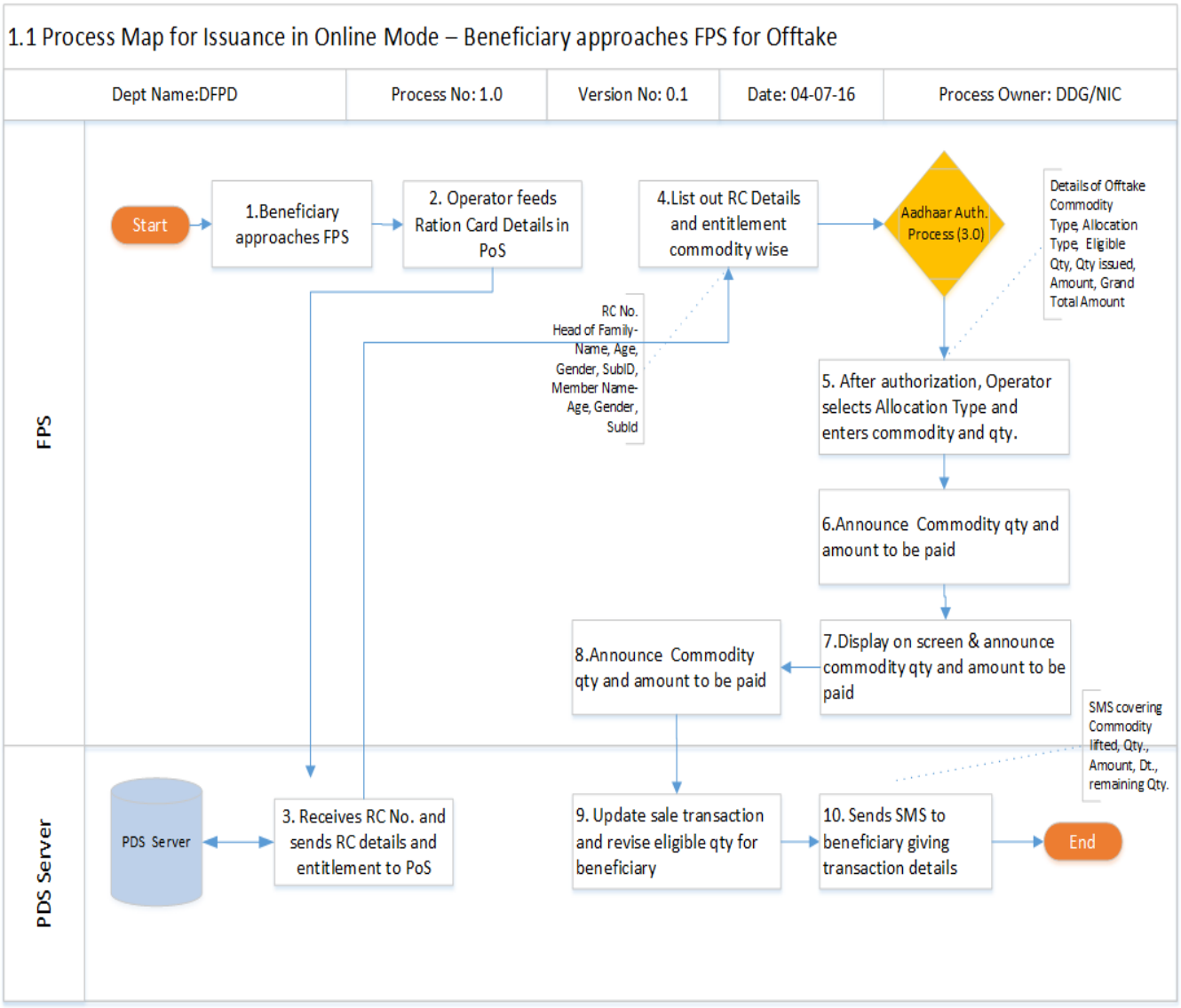
	Scheme Master (only active schemes) Measurement Units Master (only active units) Ration Card Details Member Details Month-wise Commodity Entitlement Details Configurable Parameters as per requested preferences of
2.2	**Allocation Data Download**
	System to initiate download of Regular allocation data if current month sale is closed
	System shall not allow download Regular allocation if it is already available in the PoS device
	System shall permit to download Additional or Ad-hoc allocation as and when it is available
	System shall allow to download data for multiple Additional/ Ad-hoc allocations
	Regular Allocation data shall be uploaded to PDS server and further removed once sale of the month is closed
2.3	**Data Upload**
	Transactions shall be uploaded as and when network connectivity is restored
	The transactions may be uploaded in bulk mode from a location where network is available.
2.4	**General Requirement**
	System shall check completeness of downloaded data in the PoS after download operation
	Progress of downloading shall be shown on the screen
	The downloaded data will be accessible only through app. The downloaded data will be encrypted and stored in local DB.
2.5	**Exceptions**
	System shall remove entire RC data from PoS if downloading is failed midway
	Battery backup may be more than 50% before starting downloading
	Master data to be removed immediately if someone/external software process tries to tamper it
	If master data needs to be removed from PoS due to unauthorized access then provision to be made for restoring data in the PoS device

c. PoS Boot up Operation

3	**PoS boot up Operation**
3.1	**Boot up of PoS Device**
	System shall diagnose the availability of SIM in the SIM slot, signal strength, battery backup, memory status, etc. (Exceptions to be notified and handled as listed in error code section).
	Check availability of Printer, biometric scanner and other connected or configured hardware devices.
	Allow below operations if results of diagnose operation is positive

	If Network is available then sync the time of PDS Server and PoS machine else sync whenever connectivity is restored
	Create Unique Token number for PoS device considering Hardware Mac ID, IP Address, FPS Unique ID at PDS Server and communicate to PoS device
	Login Screen to be shown to the user Allow user to login (as per Use Case No. 2.3 Login)
	Upload saved data of PoS device to the PDS Server
	After login following operations to be available on the screen: • Sale of commodity • Receipt of commodity • Stock Management • Aadhar Seeding • User Management • System Setting • Opening & Closing Sale against Allocation • Reports
3.2	**Exceptions**
	System shall remove entire RC data from PoS if downloading got failed
	Battery backup must be more than 50% before starting downloading
	Master data to be removed immediately if someone/external software process tries to temper it
	If master data has been removed from PoS due to corrupt/tempered event, then provision to be made for restoring master data.
	Trying to download allocation data without closing current month sale.

d. Sale of Commodity in Online Mode

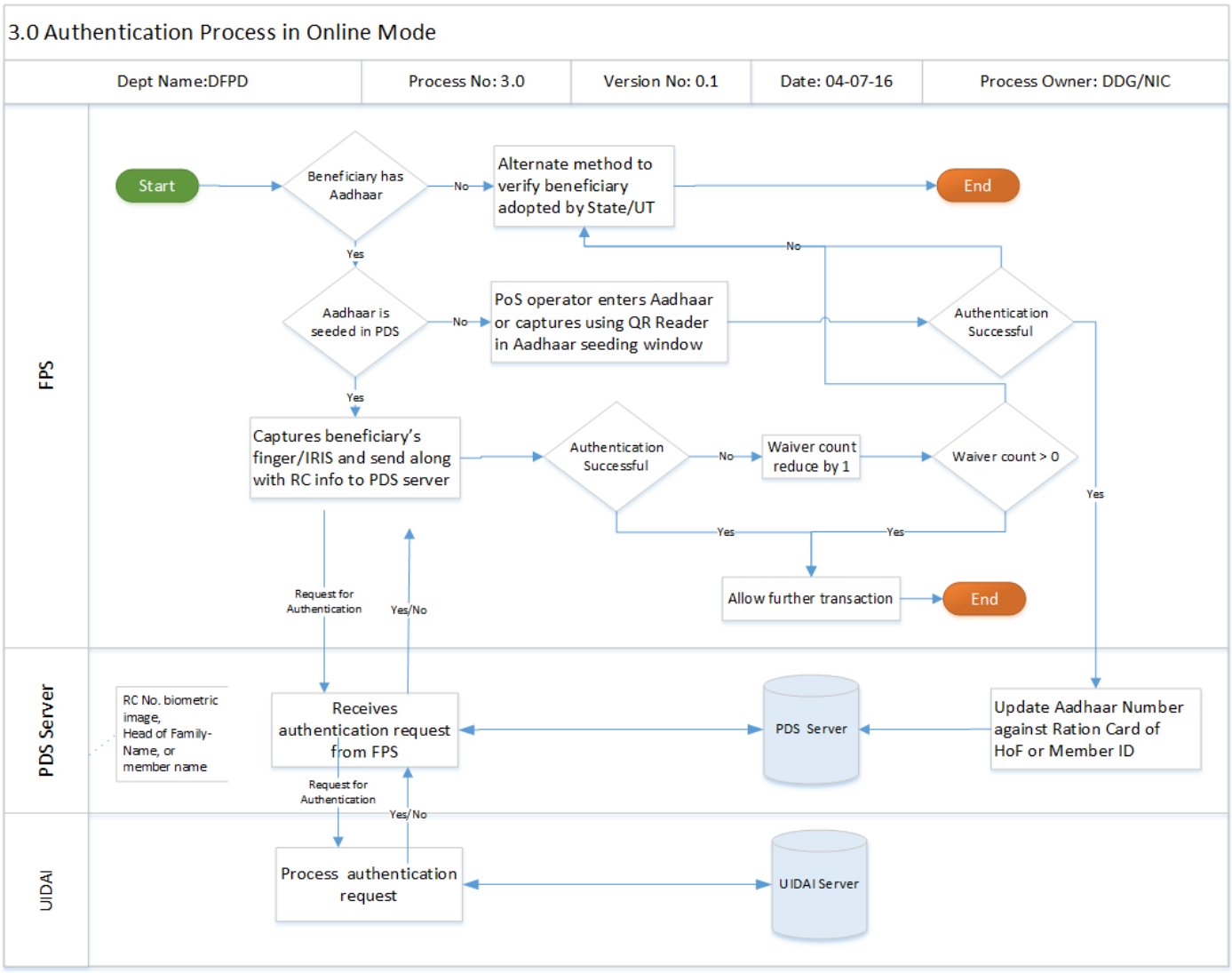


4	**Sale of Commodity [subject to approval of state government]**
4.1	**After successful login of FPS operator, below operation to be performed for the distribution of food grain to beneficiary**
	Allow to select issuance menu based on the role of logged in user
	Check pre-condition such as o Sale is not closed for the month o Sufficient stock is available for sale o Network connectivity is available
	Allow operator to enter Ration Card Number of beneficiary
	Transmit Card number to PDS Server
	System shall fetch entitlement and ration card details and show it in the respective user control (text, label, drop down, etc.) • Name & Age of Head of Family and members • Entitlement details like eligible commodity and quantity (consumed/balance) as per the regular allocation • Fetch Best Finger Detection details if same is available against Ration Card If **issuance is not** for **Regular Allocation,** then • Fetch entitlement details like eligible commodity and quantity (consumed/balance) as per the selected allocation type
	Allow the user to select name of beneficiary from list of HoF & members
	System shall show entitled & balance commodity and quantity
	Price of each commodity per unit shall also be shown
	System shall allow to enter quantity of the commodity that beneficiary wants to lift (within the range of eligible quantity)
	After entering details, system shall display and announce (in speaker) the commodity type, quantity, total cost of lifting
	If beneficiary agrees to off take, then system shall allow the user to press authentication button else allow the user to modify offtake details or cancel the transaction.
4.2	**Authentication of Beneficiary**
	System shall show the authentication window and allow the beneficiary to put the finger (may be best finger or fusion finger)
	Authentication to be performed as per the process defined at UC 3.0
	If authentication successful or allowed then below transaction details to be sent to PDS server else transaction shall be cancelled and display main window
	Following fields to be transmitted to PDS server for the sale transaction • Unique transaction ID • Token number • FPS Number

	• Original FPS of Ration card in case of Portability • Name of beneficiary/Member • RC Number • RC Member Id • Online/ Offline status of PoS while transaction is done • Type and quantity of each commodity purchased • Total amount paid for the transaction • Date and Time of Transaction • Authentication Status (Fingerprint, IRIS, Auth. failed but allowed, name of other mode of Authentication, etc.)
4.3	Print of Receipt and SMS – Option to be available to print the below receipt, send SMS and announce content in local or other preferred languages
	Following receipt shall be printed from PoS after completing the transaction • Ration Card Id • Date & Time of Transaction • HoF Beneficiary Name • Member ID (who have lifted commodity) • Unique Transaction ID • FPS name and code • Original FPS Name and Code (in case of portability) • Type and quantity of commodity delivered • Total amount paid by beneficiary • Balance entitlement
	Following data shall be sent through SMS from PDS Server to registered mobile number of beneficiary • Ration Card Id • Date & Time of Transaction • Member ID (who have lifted commodity) • Unique Transaction ID • FPS name and code • Total Quantity lifted • Balance commodity wise entitlement
4.4	**Exceptions**
	If battery life is less than 20 min then not to allow sale transaction
	If network goes down suddenly during data entry in the PoS (before beneficiary authentication or committing transaction to server) then user to be asked to switchover on offline mode for Buffered/buffered authentication of beneficiary.
	If commit transaction gets failed or network goes down during transmitting data to

	server then entire transaction data to be saved in PoS device and sync with PDS Server whenever it gets connected to server.
	Provision to be made to integrate with weighing machine if available
	In case of Network connectivity is not available, • All transactions to be recorded and stored in PoS device. These transactions shall be transmitted to PDS server whenever connectivity is restored. • Auto-Syncing and event-driven syncing features shall be given for uploading data to PoS device.

e. Aadhar Authentication



5	**Aadhar Authentication**
5.1	
	In Online Mode • Beneficiary approaches FPS for lifting food grain • If beneficiary has Aadhaar and seeded in PDS Server o Enter Aadhar number in PoS device o Capture beneficiary's biometric o Sends biometric and beneficiary name to PDS Server o PDS Server further sends details to UIDAI server for authentication o If Authentication is successful, then ▪ "Yes" message will be passed to PDS Server and PoS device ▪ Beneficiary will be allowed to lift commodity as per the eligibility ▪ Waiver Count of Ration Card to be increase by 1 (maximum limit of waiver count is configurable and may be decided by State/UT) o If Authentication gets failed, then ▪ "No" message will be sent to PDS Server and PoS device ▪ Three attempts to be allowed for Finger Print and IRIS authentication for each beneficiary ▪ If all attempts failed, then waiver count to be decrease by 1 ▪ If Waiver count of Ration Card is more than Zero then offtake operation will be allowed else, operation will be denied. • If beneficiary have Aadhar but not seeded in PDS database o System shall allow to enter Aadhar number in PoS device or have provision to read QR code of Aadhar card through QR code reader o Authentication of beneficiary is required before seeding Aadhar in PDS database o Aadhar seeding process to be followed as described in o If Authentication is successful, then ▪ "Yes" message will be passed to PDS Server and PoS device ▪ Beneficiary will be allowed to lift commodity as per the eligibility ▪ Waiver Count of Ration Card to be increase by 1 (maximum limit of waiver count is configurable and may be decided by State/UT) o If Authentication gets failed, then ▪ "No" message will be sent to PDS Server and PoS device ▪ Three attempts to be allowed for Finger Print and IRIS authentication for each beneficiary

	▪ If all attempts failed, then waiver count to be decrease by 1 ▪ If Waiver count of Ration Card is more than Zero then offtake operation will be allowed else, operation will be denied. o After successful authentication, Aadhar seeding shall be done in PDS Server o SMS to be sent to beneficiary for successful seeding of Aadhar in PDS database. o Default value of Waiver count shall be set for the Ration Card o Offtake operation shall be allowed for the beneficiary • If beneficiary doesn't have Aadhar then o Authentication of beneficiary to be done as per alternate method adopted by State o After taking necessary steps, offtake operation to be allowed. **In Offline Mode** • PoS device has limited or no connectivity • Beneficiary approaches FPS for lifting food grain • If beneficiary has Aadhaar and seeded in PDS Server o FPS Operator to capture Aadhar number of HoF/ Member of Ration Card o Capture beneficiary's biometric and keep it in memory device with the time stamp. o Distribute food grains to beneficiary as per his/her entitlement available in the PoS device o Whenever connectivity is restored, PoS shall send biometric & beneficiary name to PDS Server which are stored in the device with the age of less than 24 hours (or window defined by UIDAI for buffered authentication) o PDS Server receives bulk/single buffered authentication requests and it further sends these details to UIDAI server for authentication o If Authentication is successful for a beneficiary, then ▪ "Yes" message will be passed to PDS Server and PoS device ▪ PDS sever shall set a flag for buffered authentication of the respective offtake transaction. ▪ Similarly, flag to be set in PoS device for successful buffered authentication ▪ Waiver Count of Ration Card to be increase by 1 (maximum limit of waiver count is configurable and may be decided by State/UT)

	○ If Authentication gets failed, then ▪ "No" message will be sent to PDS Server and PoS device ▪ PDS sever shall set a flag for buffered authentication of the respective offtake transaction. ▪ Similarly, failed authentication flag to be set for the transaction in the PoS device ▪ Waiver count to be decrease by 1 • If beneficiary have Aadhar but not seeded in PDS database ○ System shall allow to enter Aadhar number in PoS device or have provision to read QR code of Aadhar card through QR code reader ○ Capture biometric of beneficiary and store it in PoS device ○ Distribute food grains to beneficiary as per his/her entitlement available in the PoS device ○ Buffered authentication shall be followed once network connectivity is available. (buffered authentication to be done within 24 hours or as per the window defined by UIDAI) ○ Aadhar seeding process to be followed as described in ○ After successful authentication, Aadhar seeding shall be done in PDS Server ○ SMS to be sent to beneficiary for successful seeding of Aadhar in PDS database ○ Default value of Waiver count shall be set for the Ration Card • If beneficiary doesn't have Aadhar then ○ Authentication of beneficiary to be done as per alternate method adopted by State ○ After taking necessary steps, offtake operation to be allowed.
5.2	**Exceptions**
	If receipt transaction couldn't be completed due to network failure, then entire transaction data to be saved in PoS device and sync with PDS Server whenever it gets connected to server.
	Provision to be made to integrate with weighing machine if available

f. Receipt of Commodity against Allocation

6	**Receipt of Commodity at FPS**
6.1	
	During Online operation:

- Allow to choose receipt operation against allocation type such as Regular, Ad-hoc and Additional
- Check pre-condition such as
    - Closure of Sale for previous month.
    - All sale transactions of previous month need to be uploaded to PDS server (performed during offline operation)
- Show commodity and quantity issued from Godown (Truck Challan details)
- After weighment of commodities, allow FPS operator to enter actual quantity received from Route Officer
- Aadhar authentication to be carried out for FPS operator and Route Officer
- After successful authentication, commodity and quantity shall be added into the stock of the FPS
- Brief Summary report for receipt of food grains shall be printed from PoS
    - Unique Transaction ID of Receipt Operation
    - Date and time of transaction
    - Commodity & Quantity
    - Allocated quantity and actual quantity received
    - Name of FPS operator and Route Officer

During Offline operation:

- Allow to choose receipt operation against allocation type such as Regular, Ad-hoc and Additional
- If Truck Challan for incoming commodity couldn't be downloaded in the PoS device, then provision to be given to record details of Truck Challan in offline mode.
- After weighment of commodities, allow FPS operator to enter actual quantity received from Route Officer
- Buffered Aadhar authentication to be carried out for FPS operator and Route Officer
- After authentication operation, commodity and quantity shall be added into the stock of the FPS
- Brief Summary report for receipt of food grains shall be printed from PoS
    - Unique Transaction ID of Receipt Operation
    - Date and time of transaction
    - Commodity & Quantity
    - Allocated quantity and actual quantity received
    - Name of FPS operator and Route Officer
- Upload details of truck challan and receipt operation to PDS server whenever network connectivity is restored.

6.2	**Exceptions**
	If battery life is less than 15% then not to allow receipt operation
	If receipt transaction couldn't be completed due to network failure, then entire transaction data to be saved in PoS device and sync with PDS Server whenever it gets connected to server.
	Provision to be made to integrate with weighing machine if available

g. Sales Closure

7	**Closure of Sale**
7.1	
	• Allow to select closure operation against allocation type such as Regular, Ad-hoc and Additional • Check pre-condition such as ○ All sale transactions of previous month have been uploaded to PDS server (performed during offline operation) • Show commodity and quantity sold against selected Allocation and also show balance commodity & quantity • Aadhar authentication of FPS Operator to be carried out (in case of offline, Buffered authentication to be done) • Sale operation to be stopped for the calendar month & corresponding allocation type
7.2	**Exceptions**
	Distribution may be extended beyond the calendar month
	In some cases, entitlement and receipt for multiple months may be clubbed into a single month and distribution may be carried out beyond the particular month.
	State policy for price of price, commodity and entitlement for each ration card type shall be updated as and when available on the server.

18.2 Additional Functionality

a. Aadhar Seeding

1	**Seeding of Aadhar Number**
1.1	**In Online Mode**
	Enter Ration Card number in the PoS
	Transmit Ration Card Number to PDS server for fetching RC details
	Display list of RC members in the list and allow to feed Aadhar number for visiting

	HoF/member.
	QR code is printed on Aadhar Card. PDS operator may use QR Reader to extract Aadhar details from Aadhar Card instead of manually feeding in the PoS device.
	Capture Finger Print/ IRIS (biometric) and send it to PDS Server for authentication.
	PDS Server further sends biometric and beneficiary name to UIDAI server for authentication
	If authentication gets successful, then Aadhar number is to be seeded in PDS server and confirmation message to be shown on PoS device else show failure message on PoS device.
	Provision to be made for seeding Aadhar number of each member of Ration Card as per the above process
	After successful seeding of Aadhar number in PDS server, SMS to be sent to beneficiary informing below information • Ration Card • Date of Aadhar Seeding • Aadhar Number (mask all numbers except last 4) • Member Name Above information may be given to beneficiary as a print receipt
1.2	**In Offline Mode**
	Buffered authentication shall be done for Aadhar seeding
	Biometric along with beneficiary name shall be sent to PDS server whenever network connectivity gets restored
	If buffered authentication gets successful then Aadhar is to be seeded in PDS Server and SMS to be sent to registered mobile number (as given in above section)
1.3	**Exceptions**
	• If beneficiary (HoF) wants to authorize other person to lift food grains behalf of him/her then system should allow to register that person along with his Aadhar number (may be required when HoF lives along and may not be able to visit FPS due to medical reason or old age factor)

b. Mobile Number Seeding

2	**Seeding of Mobile Number**
2.1	**In Online Mode**
	Ration Card number to be entered in PoS device
	Transmit Ration Card Number to PDS server for fetching RC details
	System shall capture mobile number for the Ration Card
	Transmit mobile details to PDS Server
	PDS server shall immediately send OTP to the mobile number through SMS
	Beneficiary shall enter OTP on the PoS
	If PDS server confirms matching of OTP then mobile number shall be registered with PDS system and confirmation message to be sent on his/her mobile number

2.2	**In Offline Mode**
	Mobile number can’t be registered when network connectivity is not available on PoS device

c. User Preference

- Language Selection
- Printer Selection

d. Field Inspection

e. Hardware Complaint

f. System Setting:

- Language setting 223

19 Appendix-G Suggested Report Formats

Daily Status Report/ Monthly Status Report:
(Monthly – For the Month of :)
(Daily – For the Date :)
For given range of dates (Date from : Date To:)

Commodity	Quantity (In KG)	Scheme	Amount (In. Rs.)
Wheat	3.0	AAY	6.00
Rice	3.5	AAY	10.50
Total Amount :Rs			16.50

Summary of Stock Register

FPS ID **FPS Name**
Date as on

Commodity	Opening Balance in the beginning of Month	Received Quantity during this month	Quantity of Sale during this month	Closing Balance (Balance as on date)
Rice				
Wheat				

Sale Register (MIS Report)

FPS ID **FPS Name**
Month **Date as on**
(Date From: Date To:) – For a given range of dates
Opening Balance in the beginning of the month : Rice -
Wheat -
Received quantity in the beginning of the month : Rice -
Wheat-

S.No.	Ration Card Number	Name of the Head of Family	Name of beneficiary Who lifted Food grains	Transaction ID	Mode of authentication	Status of authentication	Date & Time	Commodity Name	Qty. Sold	Amount (In. Rs.)
1.										
2.										

Receipt to Beneficiary

FPS ID : **Date :**
FPS Name : **Transaction ID**
Ration Card No.:
Name of HoF
Scheme Name (AAY/PHH)
Name who received food grains
Mode of Authentication
Status of authentication

S.No.	Commodity	Qty	Unit Price	Amount (In. Rs.)
1.				
2.				
Total				

Stocke Receipt

FPS ID : **Date:**
FPS Name & Address:
Month :
Allocation No. :

S.No.	Scheme	Commodity	Opening Balance (MT)	Qty. Received (MT)	Total Stock (MT)
1.	AAY	Rice	999.99	999.99	999.99
2.					

Truck Challan No: **Vehicle No:** **Driver Name**

Month wise food grains lifted and distributed report (MIS Report)

FPS ID:
FPS Name & Address
(with options Scheme wise/ commodity wise/ both scheme and commodity/ for a given range of period)

(Qty in MT)

S. No.	Month and Year	Scheme	Commodity Name	Opening Balance	Received Qty	Sold Qty	Closing Balance
1.	Apr 2015	AAY	Rice				
2.	May 2015						
3.	June 2015						
Total							

Status Biometric Authentication by the beneficiaries

(For a given period)

FPS ID : **Date :**

FPS Name & Address:

Month :

S.No.	Mode of Authentication	No. of Ration Cards
1.	Finger print	999
2.	IRIS	999
3.	Any Other Mode	999

20 References

[1] http://pdscvc.nic.in/report%20on%20computersisation%20of%20PDS.htm
[2] http://dfpd.nic.in/nfsa-act.htm
[3] https://uidai.gov.in/images/FrontPageUpdates/aadhaar_authentication_api_1_6.pdf
[4] http://www.nic.in/about-us
[5] http://pdsportal.nic.in/files/POS-MobileTab%20Specifications-2015-05-12-Approved.pdf
[6]http://www.pdsportal.nic.in/Files/Letter%20to%20StatesUTs%20and%20FPS%20automation%20guidelines%20dtd%2011Nov14.pdf
[7] http://www.pdsportal.nic.in/Files/Implementation%20Guidelines%20Finalised.pdf
[8]http://egovernance.gov.in/standardsandFramework/biometric-standards/fingerprint_image_data_standard_for_printing_Nov_10.pdf
[9] https://negp.gov.in/pdfs/c6.pdf
[10] http://fcamin.nic.in/