

Public Food Distribution System Using QR Code

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ABSTRACT

Public distribution system is also called as rationing distribution system is one the widely controversial issues that involves corruption and illegal smuggling of the grains and goods. All this happens because every job in this system involves manual working but nowadays there are high technologies to automate such job. Because of manual work there are various illegal activities occurs. The illegal activities are like, wrong entry in the database about the amount of products given to the people; sometimes there is a chance of distribution of low quality product than the actual one provided for poor people. In this paper we analyze the traditional PDS system, problem with such system and its upgraded version i.e. automated rationing system.

Index Terms- Tracking System, Messaging System, QR code, e-bill, GCM.

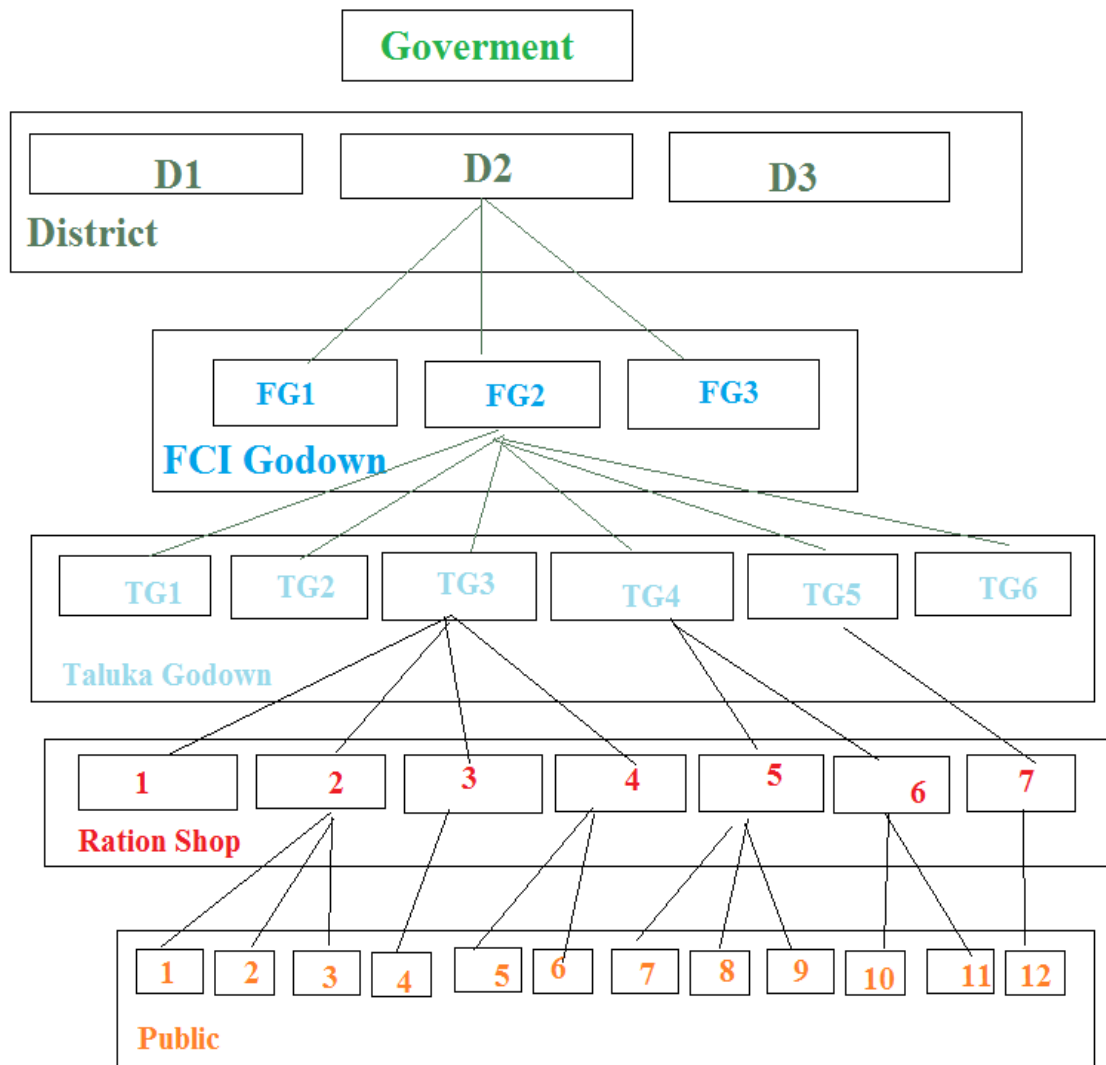
1. INTRODUCTION

Public distribution system (PDS) i.e. Rationing distribution system. Public Distribution System is an Indian food security system. It is established by the Government of India under Ministry of Consumer Affairs, Food, and Public Distribution and handled jointly with state governments in India. It is one of the widely controversial issues that involve corruption and illegal smuggling of goods. Goods mainly include wheat, rice, sugar etc.

It is very difficult to maintain this overall system under manuals without any supervised automated system. This present system works manually and there are no specific high-tech technologies to automate the job. So there are lots of chances of illegal activities to happen. In this paper we propose an automated system. This will help us to remotely monitor ration material till it reaches the storage areas and also the distribution at local people will be done centralize through this automated system. This will also provide the QR code for the authentication of the details of the ration shops as well as automate the billing of the purchased good by the ration shopkeepers.

In India the maximum population is in economical backward category. So there are different categories of beneficiaries are arranged by government. Those are APL (household above poverty line), BPL (household below the poverty line), Antyodaya Anna Yojana (AAY) and Pradhanya kutumb. In each month Maharashtra state allots approximately 11 corers Rupees for this public ration system. Each month Maharashtra state allots approximately 24 lack's Rupees for this ration. But the ration not actually reaches to people who need it due to lot of malpractices. The system is proposed for preventing the malpractices and provides transparency.

In this system we have five modules namely, admin module, purchase module, incoming load module, responsive message system and tracking system.



2. EXISTING SYSTEM

Existing Public Food distribution i.e. is rationing system is totally carried out manually i.e. on paper. All the register like E (1), H and Stack are maintained on paper. But this system is very time consuming. In this system there is lot of wastage of the paper. In this system there is lot of corruption to avoid this new system is proposed.

Y.P.P. 22.10.000 (22.100 Bks. 100 lbs.) - S-2000 - PAF* - S (R) 629

MFA—FORM H
[See Paragraph 13 (4)]
Register of Permits
(Issues made from Godown)

Godown..... Kind and Variety of Grain.....

Serial No.	Permit No. and date of issue	To whom issued	Stack No.	Quantity issued			Reference to Serial No. and date of previous issue, if any, made on the permit	Reference to Serial No. and date of subsequent issue, if any	Signature of purchaser in acknowledgment of receipt of grain
				Days	Weight				
1	2	3	4	5	6	7	8	9	10
		01/07/15			Quintals	kg			
		24/07/15		16	08	-			
		08/08/15		18	09	-			
		20/08/15		20	05	-			
		15/09/15		15	09	50			
		09/09/15		09	09	50			
		10/09/15		10	09	50			
		8/12/15							
		20/12/15		07	03	50			
		30/12/15		30	17	-			
		14/01/16		14	07	-			
		20/01/16		09	02	50			
		15/07/16		15	07	50			
		15/07/16		15	07	50			
		9/12/15							
		24/12/15		10	05	-			
		09/01/16		09	04	50			
		07/01/16		07	03	50			
		07/01/16		07	03	50			
		09/04/16		09	04	50			
		09/04/16		09	04	50			

Note.—Col. 7 (a) will not appear in the extract to be sent to taluka office.

Forwarded to the Tahsildar of.....

Date.....

Signature of Godown-keeper / Manager.....

Y.P.P. 22.10.000 (22.100 Bks. 100 lbs.) - S-2000 - PAF* - S (R) 629

MFA—FORM H
[See Paragraph 13 (4)]
Register of Permits
(Issues made from Godown)

50

Godown..... Kind and Variety of Grain.....

Serial No.	Permit No. and date of issue	To whom issued	Stack No.	Quantity issued			Reference to Serial No. and date of previous issue, if any, made on the permit	Reference to Serial No. and date of subsequent issue, if any	Signature of purchaser in acknowledgment of receipt of grain
				Days	Weight				
1	2	3	4	5	6	7	8	9	10
					Quintals	kg			
		09/04/16		09	04	50			
		17/08/15		17	08	50			

Note.—Col. 7 (a) will not appear in the extract to be sent to taluka office.

Forwarded to the Tahsildar of.....

Date.....

Signature of Godown-keeper / Manager.....

MFA-FORM E (1)

[See paragraph 9 (3)]

[Extract of Register of receipts by imports to R.R.s in case of Rail transport and according to transport passes in case of Road transport issued from despatching Godown

Godown Wagahara, C. & B. Road 2014 Kind and Variety of grain W. G. S. - 1135 Supplier R. P. W. D.

Date	R.R. No. and date of Transport pass No. and date in case of motor transport from the despatching Godown or Godown Keepers receipt No. and date issued to the Government of India representative	Wagon No.	From Whom Received	Despatches as per R.R.					Railway Shortages					Road Shortage					Dropping of grain collected at the station	Net Weight to be recorded in From E	Stack No. in which stacked	value of column 12	Reference to register D at the district office	Reference to register C at the district office	Remarks regarding condition of grain office
				Weight (net R.R. weight)	Value	Shortage in full bage as per form (Item 8)	Total shortage in weight total item (12) of From B (Exclusive of weight of bags in col 7)	Value of total shortage on rail	Weight	Value															
(1)	(2)	(3A)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(11A)	(12)	(13)	(14)	(15)	(16)	(17)							
11/12/14	1498972	384	W/H	117	70	400							117	50	-										
11/12/14	1498968	421	W/H	240	116	50	400						116	10	-										
11/12/14	1498959	365	W/H	210	100	80	350						100	30	-										
11/12/14	1498960	404	W/H	210	100	80	350						100	30	-										
11/12/14	1498957	362	W/H	240	162	48	900						162	30	-										
11/12/14	1498973	248	W/H	234	136	23	100						136	07	-										
11/12/14	1498041	696	W/H	340	161	33	500						161	15	-										
11/12/14	1498042	267	W/H	340	164	23	900						164	05	-										
11/12/14	1498028	2014	W/H	340	162	43	900						161	40	-										
11/12/14	1498906	578	W/H	340	163	03	900						160	-	-										
11/12/14	1498917	607	W/H	340	163	73	900						163	50	-										
11/12/14	1498907	529	W/H	420	201	80	700						201	60	-										
11/12/14	1498044	198	W/H	200	93	47	-						94	60	-										
11/12/14	1498151	344	W/H	340	162	78	900						162	80	-										
11/12/14	1498155	202	W/H	340	164	98	900						164	80	-										
11/12/14	1498180	319	W/H	340	165	23	900						165	05	-										
11/12/14	1498172	608	W/H	340	162	93	900						162	73	-										
11/12/14	1460843	478	W/H	340	169	33	900						169	50	-										
11/12/14	1460865	696	W/H	340	162	53	900						162	40	-										

Forwarded to - (1) The Tahsildar of
(2) The Collector of

Godown Keeper / Manager 28.12.14 Date 28.12.14

Stack No. 93115 M.F.A. REG
Godown Wagahara, C. & B. Road 2014 STACK
Kind of grain and variety W. G. S. - 1135
Standard weight per standard bag 50 lbs

Date	From whom received (R.R. No. and date of Transport pass No. and date in case of motor transport from the despatching Godown or Godown Keepers receipt No. and date issued to the Government of India representative)	Unstandard bag				Standard bag				Excess or Shortage (Weight in excess or short of standard bag)	Excess or Shortage (Weight in excess or short of standard bag)
		Weight	Number of bags	Weight	Number of bags	Weight	Number of bags	Weight	Number of bags		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
11/12/14	1464287	210	101	60	350	162	50	-			
11/12/14	1464256	210	101	60	350	160	53	-			
11/12/14	1464258	210	101	60	350	164	51	-			
11/12/14	1464260	210	101	60	350	163	52	-			
11/12/14	1464254	340	166	83	900	166	70	-			
11/12/14	1464252	340	167	84	900	165	70	-			
11/12/14	1464253	210	102	60	350	161	50	-			
11/12/14	1464254	210	101	60	350	162	50	-			
11/12/14	1464255	210	101	60	350	163	50	-			
11/12/14	1464256	210	101	60	350	164	50	-			
11/12/14	1464257	210	101	60	350	165	50	-			
11/12/14	1464258	210	101	60	350	166	50	-			
11/12/14	1464259	210	101	60	350	167	50	-			
11/12/14	1464260	210	101	60	350	168	50	-			
11/12/14	1464261	210	101	60	350	169	50	-			
11/12/14	1464262	210	101	60	350	170	50	-			
11/12/14	1464263	210	101	60	350	171	50	-			
11/12/14	1464264	210	101	60	350	172	50	-			
11/12/14	1464265	210	101	60	350	173	50	-			
11/12/14	1464266	210	101	60	350	174	50	-			
11/12/14	1464267	210	101	60	350	175	50	-			
11/12/14	1464268	210	101	60	350	176	50	-			
11/12/14	1464269	210	101	60	350	177	50	-			
11/12/14	1464270	210	101	60	350	178	50	-			
11/12/14	1464271	210	101	60	350	179	50	-			
11/12/14	1464272	210	101	60	350	180	50	-			
11/12/14	1464273	210	101	60	350	181	50	-			
11/12/14	1464274	210	101	60	350	182	50	-			
11/12/14	1464275	210	101	60	350	183	50	-			
11/12/14	1464276	210	101	60	350	184	50	-			
11/12/14	1464277	210	101	60	350	185	50	-			
11/12/14	1464278	210	101	60	350	186	50	-			
11/12/14	1464279	210	101	60	350	187	50	-			
11/12/14	1464280	210	101	60	350	188	50	-			
11/12/14	1464281	210	101	60	350	189	50	-			
11/12/14	1464282	210	101	60	350	190	50	-			
11/12/14	1464283	210	101	60	350	191	50	-			
11/12/14	1464284	210	101	60	350	192	50	-			
11/12/14	1464285	210	101	60	350	193	50	-			
11/12/14	1464286	210	101	60	350	194	50	-			
11/12/14	1464287	210	101	60	350	195	50	-			
11/12/14	1464288	210	101	60	350	196	50	-			
11/12/14	1464289	210	101	60	350	197	50	-			
11/12/14	1464290	210	101	60	350	198	50	-			
11/12/14	1464291	210	101	60	350	199	50	-			
11/12/14	1464292	210	101	60	350	200	50	-			
11/12/14	1464293	210	101	60	350	201	50	-			
11/12/14	1464294	210	101	60	350	202	50	-			
11/12/14	1464295	210	101	60	350	203	50	-			
11/12/14	1464296	210	101	60	350	204	50	-			
11/12/14	1464297	210	101	60	350	205	50	-			
11/12/14	1464298	210	101	60	350	206	50	-			
11/12/14	1464299	210	101	60	350	207	50	-			
11/12/14	1464300	210	101	60	350	208	50	-			
11/12/14	1464301	210	101	60	350	209	50	-			
11/12/14	1464302	210	101	60	350	210	50	-			
11/12/14	1464303	210	101	60	350	211	50	-			
11/12/14	1464304	210	101	60	350	212	50	-			
11/12/14	1464305	210	101	60	350	213	50	-			
11/12/14	1464306	210	101	60	350	214	50	-			
11/12/14	1464307	210	101	60	350	215	50	-			
11/12/14	1464308	210	101	60	350	216	50	-			
11/12/14	1464309	210	101	60	350	217	50	-			
11/12/14	1464310	210	101	60	350	218	50	-			
11/12/14	1464311	210	101	60	350	219	50	-			
11/12/14	1464312	210	101	60	350	220	50	-			
11/12/14	1464313	210	101	60	350	221	50	-			
11/12/14	1464314	210	101	60	350	222	50	-			
11/12/14	1464315	210	101	60	350	223	50	-			
11/12/14	1464316	210	101	60	350	224	50	-			
11/12/14	1464317	210	101	60	350	225	50	-			
11/12/14	1464318	210	101	60	350	226	50	-			
11/12/14	1464319	210	101	60	350	227	50	-			
11/12/14	1464320	210	101	60	350	228	50	-			
11/12/14	1464321	210	101	60	350	229	50	-			
11/12/14	1464322	210	101	60	350	230	50	-			
11/12/14	1464323	210	101	60	350	23					

3. PROPOSED SYSTEM

DSO demands the quantity of grains from the government depending on the number of ration cards in that district. This food grains are stored in the FCI godown. The taluka officer will demand the quantity of grain from FCI godown depending on the number of ration cards in taluka. These demanded grains are transported by the vehicles from FCI godown to the taluka godown mean while the entry of the vehicle is made by the gatekeeper and all the details of the vehicles are stored in the it and in between if the vehicle is out of track then tracking system is used to track the vehicle and it give the detail location of the vehicle to the tahsilder and DSO by messaging system. These grains are stored in taluka godown. Here the E(1),Stack, H report are maintain, updated and viewed. These grains are further distributed in the ration shop depending on number of ration card then these grains are purchased by the ration shopkeeper in the tahasil office and the e-bill is generated in the office itself in the same office instead of the permit the QR code is generated thi QR code is read in the taluka godown and then grains are purchased. User purchases the grain from the ration shop.

4. MODULES

Module 1: **Admin**-He is centralized person of the system for updating all the information.

Sub module:

- 1: Insert:-It will insert all the information in the reports i.e. H register, Stack register, E1 register. Information is inserted at equal interval of time in these registers.
- 2: Delete:-It can delete information which is not in use, it can also delete the information and fill the corrected information.
- 3: Update:-It adds the information whenever needed. It updates the report after equal interval of time.

Module 2: **Purchase**-Maintain the database for purchase the food grains according to demands.

Sub module:

- 1: DSO:-He monitors all the purchase. He can visit to any report at any time.
- 2: DSO clerk:-He maintains all the information of the purchase. He inspects all the godowns in his area and gets all the information about quantity of grains, type of grains and accordingly he adds the information in purchase table.

Module 3: **Incoming Load**-This module design and maintain all databases of following.

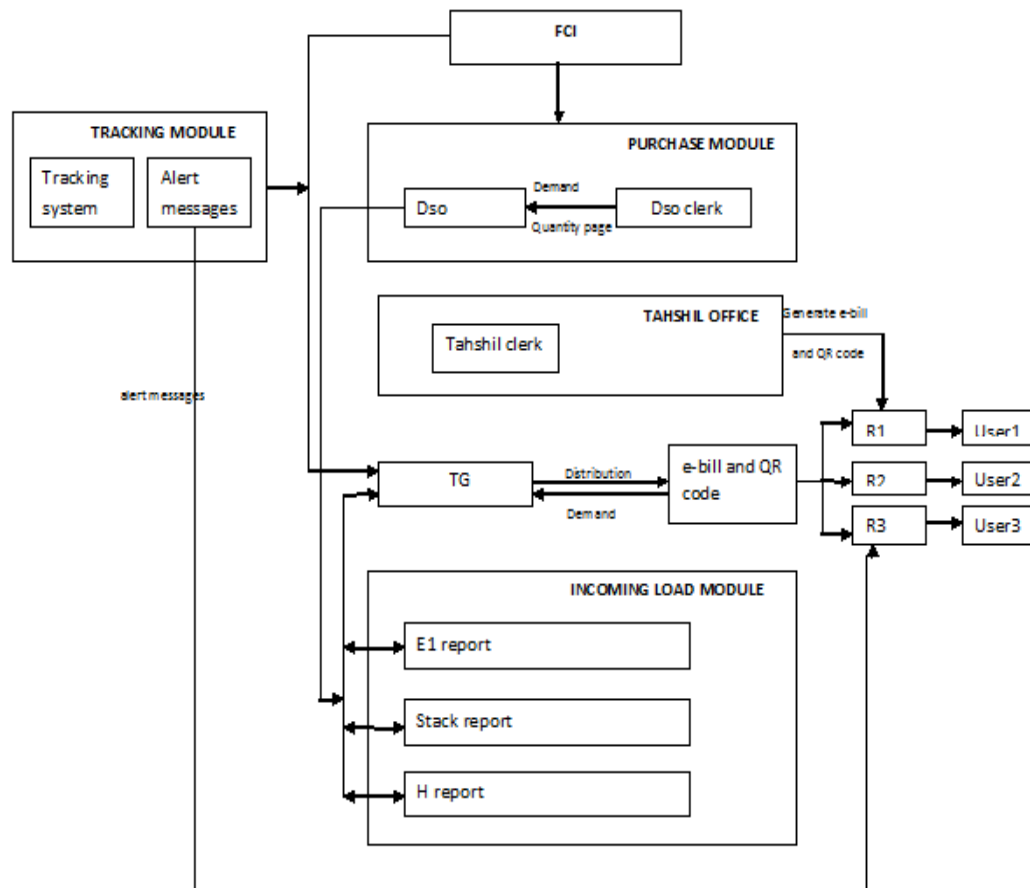
Sub module: All Register:

- 1: Stack Register:-It will sort the quality of the grain according to the stacks. Each stack contain the all the sack of same quality of grains.
- 2: H Register:-It will keep all the information to whom the grains are distributed, name of the shops and quantity of the grains allotted to that shop.
- 3:E1 Register:- It calculate the difference between actual quantity of grain allotted by the FCI and the quantity of grain arrived at the destination.

Module 4: **Bill Generation**-It generate e-bill and QR code.

Sub module:

- 1: e-bill generation-When the ration shopkeeper goes to the tahasil office to purchase the grain e-bill is generated.
- 2: QR Code-When this bill is shown to the tahasildar clerk then the QR Code is generated instead of the permit which contain all the details of the ration shop



5. QR Code

This paper introduces the concept of QR images, an automatic method to embed QR Codes into color images with bounded probability of detection error. These embeddings are compatible with standard decoding applications can be applied to any color image with full area coverage. The QR information bits are encoded into the luminance values of the image, taking advantage of the immunity of QR readers against local luminance disturbances.

To mitigate the visual distortion of the QR image, the algorithm utilizes halfoning masks for the selection of modified pixels and nonlinear programming techniques to locally optimize luminance levels. A tractable model for the probability of error is developed and models of the human visual system are considered in the quality metric used to optimize the luminance levels of the QR image. To minimize the processing time, the optimization techniques proposed to consider the mechanics of a common binarization method and are designed to be amenable for parallel implementations. Experimental results show the graceful degradation of the decoding rate and the perceptual quality as a function the embedding parameters. A visual comparison between the proposed and existing methods is presented.

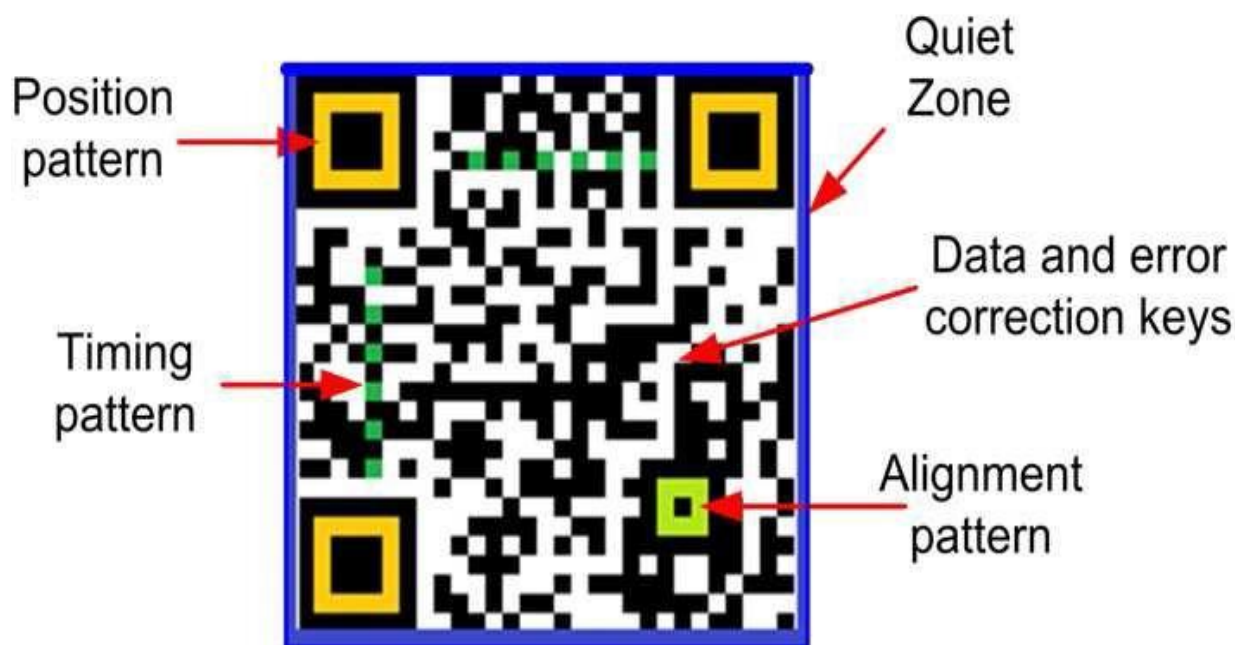


Fig: Structure of QR code.

7. CONCLUSIONS

This Project will provide a safe, secure and efficient way of public distribution system. By using this QR code based automated PDS system, it solves the problem of manual process in public distribution system. This QR code based technology gives solution and this research work will make a great change in public distribution system and provides benefit to the government by sending the current information and public is benefited by this system.

8. REFERENCES

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9. BIOGRAPHIES

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