**Request For Budgetary Estimate of Queue Management System (QMS) Software, Server, Token Dispenser and associated work at Advanced Neuro Science Centre at PGIMER Chandigarh**

HSCC/PGI/ANSC/CDG/IT/QMS/2025 Date-21/11/2025

Supply, installation, testing and commissioning of QMS Software, Server & Token Dispenser equipment and associated work at Advanced Neuro Science Centre at PGIMER Chandigarh:

Technical Specifications and Bill of Quantity proposed for above are enclosed herewith. It is requested to submit the Budgetary Quotation of the same inclusive of all taxes & duties.

The quotation should be on Company Letter Head with sign and stamp as per the BOQ format enclosed and should be submitted in Hard Copy only in a sealed envelope within 7 days of issue of this Notice at the following address:

General Manager (IT)
IT Department
HSCC (India) Ltd.,
E-6(A), Sector-1,
Noida (U.P.) - 201301.

General Manager (IT),
HSCC (India) Ltd.

**Note-This is not tender & no work shall be awarded as per this advertisement, this is just a request for budgetary quotation for estimation purpose only.**

Queue Management System

*Background*

1. The number of seriously ill patients admitted to the hospitals has increased steadily over the years. Overcrowding of Out Patient Department (OPDs) and the wards is now a common scenario. This can largely be attributed to the number of the patients receiving care, healthcare professionals providing that care, and often people visiting the patients. Overcrowding may affect patient's symptoms, clinical outcome and satisfaction levels. It can also affect physician's effectiveness and lead to frustration and sometimes violence.

2. The Problem needs urgent redressal lest public may not rely on the quality of the care provided by the hospitals. The OPD in any hospital is considered as the mirror of the hospitals which reflects the functionality being first point of contact between the patient and the hospital staff.

3. As such, providing best OPD services are one of the primacies of the hospital. This can, to a great extent, be overcome by using IT, leading to enhanced productivity and reduction in waiting time. Queue Management system can be deployed in OPD and other services to streamline the patient flow in the hospitals.

*The System*

1. Queue Management System essentially comprises of Token Dispenser Unit with touch screen, Master Display (LED TVs), Computer desktops (each with a different operator software) installed at the registration counter connected through LAN, Counter Display, and virtual Server with Manager Console server software.

2. The location of these would, however, depend upon the current OPD setup in a hospital. The visiting patients could be categorized as – General, Ladies, Hospital Staff, Senior Citizens/Handicap.

3. Complete infrastructure for Queue Management System for all the OPD and doctor/Consultant's room in the entire hospital to be provided and this is to be linked with the Hospital Management Information System through Appointment module. All the customization and integration shall be done in the Application Software of the QMS as per the requirement of the Hospital.

   *Note-Software must be compatible to load in any desktop pc of basic configuration i5/i7 with 8 GB RAM. Please note no server should be required to install the QMS Software.*

**Functional and Technical Requirements**

1. QMS should also have detailed functionality like QMS working model (Centralized, decentralized or Hybrid), Web based/Web enabled, Level of integration with HMIS, functioning logic (i.e. the queue generated is invisible queue, visible queue, virtual queue or otherwise) along with their configurability features. It should also have process to issue Web based Tokens through QMS to support Registration & Appointment using HMIS along with Built in Redundancy (Hardware & Software), Upgradability & integration with SMS Gateway. Number of areas to be covered should include MS Office, DMS Office (building wise), Registration Counters, Lab Counters, Consultant Rooms, Waiting area etc.

2. QMS should also have facility to display Counter Nos. & their respective Queue Nos. along with expected waiting time for each patient, define priority, define patient distribution logic, facilitate queue enquiry.

3. Queue Management System shall be required for the OPD for waiting of the patient at OPD area and further required in each Consultant's room for waiting of the doctor/consultant in the hospital. Technology should be latest for all the equipment.

4. QMS shall also be linked with the OPD appointment module of the HMIS, if needed to cater all the patients who have already taken the appointment (online through web-portal etc.) for a particular consultant and visit to the OPD. QMS system will be used for both visiting patients and those who have taken the prior appointment.

**Technical Requirements:**

1. Intelligent QMS for Patient care Solution
2. Patient should get approximate wait time
3. Decongest Waiting Area
4. Prepare for the consult by using Patient Engagement Solution
5. Use the time to learn about patient condition

| **PART 1 – GENERAL** | |
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| 1. | QMS architecture should be planned in such a way that queues in various departments are managed with single token per patient maintaining its uniqueness per day. |
| 2. | Name of patients should be displayed in the TVs and LED/LCD display units outside consultant rooms and individual registration/reception counters & helpdesk etc. |
| 3. | Queue should be managed for new walk-in patients, patients with online appointments & follow-up patients. |
| 4. | The QMS system **covers services including Pharmacy, Laboratory & Radiology** |

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| | **services (such as blood test, X-ray, ECG, CT, MRI testing etc.)** with same token number assigned during entry/appointment of the patient. |
| 5. | Managing the queues so that queues in different departments are automatically prioritized depending on load on other departments. |
| 6. | Token dispensers should have capability of connecting with LAN as well as Wi-Fi of the Hospitals. |
| **WORK DESCRIPTION** | |
| | This specification covers the 'General Requirements' for the design, manufacture, supply, performance, inspection, testing and commissioning including supply Queue management System. Specific requirements shall be in accordance with single line diagram/specification & BOQ. |
| **SYSTEM ARCHITECTURE** | |
| 1. | The system shall integrate the entire Queue-Token system at the **Hospital Departments** through the Hospital's intranet. It shall provide all elements in a suitable configuration to be connected to the Hospital's LAN via the structured cabling (by others). The basic under floor network points shall be provided. However, any additional network point if deem necessary shall be provided by contractor. All additional cabling shall be strictly adhered to Hospital IT identical standards. The system should be scalable to support current and future operations. |
| 2. | All computers and workstations shall be interconnected using 10/100/1000BaseT using TCP/IP configuration.<br>a. All Queuing Display Board shall contain full decoding equipment for their displays and shall be connected to the system.<br>b. All registration counter and Dr. Room shall be browser-based interface to the virtual server system. |
| 3. | All Self-appointment ticketing machines shall be linked to the system using 10/100/1000 BaseT using TCP/IP.<br>At each department, one multimedia display PC shall be designated to display queue information on TV and share hospital info to patient. In addition, the multimedia PC supported by relational database to keep all the records and system configurations for that department. The main advantage of this architecture is that the operation of patient flow shall not be affected by external factors such as network link breakdown with other department or main DB-virtual Server or even shut down of Web- virtual Server / Application virtual Server. All browser calling terminal, Display, Hardware keypad and Ticketing machine (Kiosk) shall be communicating with multimedia PC through its LAN with TCP/IP with Department Hub. |
| **QMS APPLICATION Virtual SERVER** | |
| 1. | The main QMS Web application, QMS Appointment application, Database app & QMS Backup application shall be installed at proposed server room. |
| 2. | The **QMS Web application Virtual server** shall manage the QMS reporting for all |

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| | the departments. The Web app shall be supported by SQL database engine to maintain the QMS records. The database records shall be synchronized with the multimedia PC through scheduled background processes. It shall be handling the entire interface Applications data transfer to 3rd Party systems for data / patient record match. |
| 3. | The **QMS Appointment application Virtual Server** shall be designed to allow staff to allocate the necessary patient slots to be opened to public for medical appointment Booking. This appointment virtual server shall be open to the public internet for public Booking. It shall be designed to pre-alert patients of their up-coming appointments.<br>It shall also design to alert patients for their turn to consultation room. |
| 4. | The **QMS DB Virtual Server** shall have all the staff particulars and rights for them to Access the necessary modules within the Web-virtual Server. There also need to have Database backup from the entire department Queue-Token virtual Servers to this virtual server periodically for data backup efficiency. |
| 5. | The **QMS Backup Virtual Server** shall use in fail of QMS Web or Appointment or DB virtual Server. |
| | **QMS Web Application Virtual Server** |
| The web-based software shall be installed in the Web Virtual Server (HTTP Virtual Server) mainly to support the QMS reporting and database management of all users accounts and authentication. The main functions are as follows: | |
| 1. | The Web Virtual server is to provide Queue-Token information and to restrict access to Queue-Token information. The HTTP shall govern the rules of communications between QMS multimedia PC, and to handle lots of different types of data on different computers to achieve a browser-based community. |
| 2. | The software to build the Web virtual server shall be either IIS or Apache service. |
| 3. | A user-friendly web-based interface shall be designed for QMS administrator to manage the QMS configuration, Multimedia display and reporting. |
| 4. | The system must allow flexibility of changing system parameters, services type and configuration **"as and when"** needed. |
| 5. | The system MUST be able to handle a least 20000 transactions per day. |
| 6. | The system shall have load-levelling capability. The load levelling facility shall be user-definable such that at any point in time, the System Administrator should be able to distribute the Queue- Token load if a particular service is being over-loaded. |
| 7. | At any time during the Queue-Token-cycle, there should not be any duplication of numbers being appeared at the same time at two different counters. |
| 8. | Security measures shall be provided so that only authorized users shall have access to the system.<br>Different access levels are also to be provided for different types of users so that each type of user can only have access to the functions and information that are relevant and necessary to perform their roles and responsibilities. |

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| 9. | There should be an Online Administrative Panel (Software) for monitoring the Queue-Token-Flow / Workload for the all the departments and also to perform key-changes to the Queue-Token-Token-Flow / Workload from anywhere in the Hospital Department building intranet with different levels of Security rights for accessing the Panel. |
| 10. | The Administrator must be able to monitor the Queue-Token status ONLINE at any location that he / she is located by logging-on to the Administrator's Panel. The System Should allow him / her to make changes to the Queue-Token-flow, open / close Counters, linking of services and any change performed by the Administrator must be Immediately updated to the System real time. |
| 11. | The system shall have the capability to detect any system fault or breakdown and Informs the Administrator of the fault. Any malfunction of the system in one Operation section or hardware fault at any of the peripheral equipment should not Adversely affect the functioning of the system in other operational sections or lead to a total system failure. |
| 12. | The Queue-Token software shall be customized according to the Hospital's operational requirement. |
| 13. | The system shall have the facility to enable real-time monitoring and tracking of Waiting time and service time status. |
| 14. | The system must allow flexibility of enhancing multiple different 3rd Party System Interfaces if required to share DB data and code control. |
| 15. | The web-based service software shall be installed in the which shall be Enhanced as a gateway medium for QMS operation. |
| 16. | QMS application must have the capability of multiple-part tickets of different type of Patients. It must allow a Patient to be served at more than one counter or service one after another without taking a new ticket. Able to run 24 hours without shutting down and allow user to set the queue operation session time. |
| 17. | QMS Solution must be able to integrate with mobile apps solution. Mobile apps also can issue ticket for Patient. |
| 18. | QMS browser calling application should be compatible with Windows, Android, IOS and Linux. |
| 19. | QMS system administrator shall have the following rights:<br>User Administration<br>1. Add new user<br>2. View user<br>3. Remove user<br>4. Edit user<br>5. Assign user to Administrator |

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| | 6. Shall be able to create at least 200 users' ID/accounts<br>QMS Configuration<br>1. Link counter by Medical Service or Dept.<br>2. View linked services<br>3. Assign service to counter<br>4. Change ticket parameters<br>5. Create double tickets<br>6. Voice announcement in multiple language<br>7. Create priority and service management<br>General Administration<br>1. Online Monitoring by Clinic, Medical Service, or Department<br>2. View log report<br>3. View pre-user defined statistical reports<br>4. Search engine for selected records<br>5. Customize reports using BI Tools.<br>6. SMS & email alert to management exceeding service level waiting time |
| 20. | The minimum requirement for the hardware configuration for the Web-virtual Server shall be as follows:<br>A. Quad Core Intel Xeon Processor 2.66 GHz/800 MHz Dual Processors<br>B. Memory 8 GB DDR2<br>C. Storage capacity (2 x 500 GB SATA with 16MB cache)<br>D. S/RAID-1 with SATA 2<br>E. Gigabit Ethernet Adapter<br>F. 101 – Keyboard<br>G. DVD-ROM Combo Drive<br>H. 20" Ultra Sharp Flat Screen LCD<br>I. Optical Mouse<br>J. Windows server 2012 R2 |
| | **QMS Appointment & application Virtual Server**<br>The web-based software shall be installed in the Appointment virtual Server mainly to support the QMS appointment slots creation and for public to make the necessary appointment. The main Functions are as follows: |
| 1. | The Appointment virtual server is to provide patients appointment information and to allow them to make the necessary slots booking for their respective appointments. |
| 2. | The software to build the Appointment virtual server shall be either IIS or Apache service. |
| 3. | A user-friendly web-based interface shall be designed for QMS administrator to manage the QMS Appointment configurations. |
| 4. | The system must allow flexibility of changing patients appointment which has been made and also to indicate the necessary criteria if the appointment is unable to be made. |

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| 5. | The system MUST be able to handle a least20000transactions per day. |
| 6. | The system shall have load-levelling capability. The load levelling facility shall be user definable such that at any point in time, the System Administrator should be able to distribute the Queue-Token appointment load accordingly. |
| 7. | At any time during the Appointment locking-cycle, there should not be any duplication of numbers being appeared at the same time at the same rooms or same appointment being made to 2 different rooms. |
| 8. | Security measures shall be provided so that only valid patients shall have access to the system. There shall also require necessary firewall limitations when opening the environment to public. Recurring charges for external connection shall be borne by the users but the initial setup charges shall comprise part of the contract price. |
| 9. | There should be an Online Administrative Panel (Software) for monitoring the Appointment Queue-Token-Flow / Workload for the all the Department. |
| 10. | The system shall have the capability to detect any system fault or breakdown and informs the Administrator of the fault. Any malfunction of the system in one operation section or hardware fault at any of the peripheral equipment should not adversely affect the functioning of the system in other operational sections or lead to a total system failure. |
| 11. | The Appointment Queue-Token software shall be customized according to the Hospital Department's operational requirement. QMS appointment module should able to integrate to Government web centralized appointment. |
| 12. | QMS system administrator shall have the following rights: |
| 13. | User Administration<br>1. Add new user<br>2. View user<br>3. Remove user<br>4. Edit user<br>5. Assign user to Administrator<br>6. Shall be able to create at least 200 users' ID/accounts |
| 14. | QMS Appointment Configuration<br>A. Link counter by Medical Service or Dept.<br>B. View linked services<br>C. Assign available slots to a service to a clinic<br>D. Change doctors' parameters<br>E. Appointment slot change status in color code<br>F. Dr. able to view list of today's appointments |
| 15. | General Administration<br>1. Online Monitoring by Clinic, Medical Service, or Department<br>2. View log report<br>3. Appointment SMS & email Text |

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| | 4. Search engine for selected records<br>5. Others |
| 16. | The minimum requirement for the hardware configuration for the Appointment-Virtual Server shall be as follows:<br>A. Quad Core Intel Xeon Processor 2.66 GHz/800 MHz Dual Processors<br>B. Memory 8 GB DDR2<br>C. Storage capacity (2 x 500 GB SATA with 16MB cache)<br>D. S/RAID-1 with SATA 2<br>E. Gigabit Ethernet Adapter<br>F. 101 – Keyboard<br>G. DVD-ROM Combo Drive<br>H. 20” Ultra Sharp Flat Screen LCD<br>I. Optical Mouse<br>J. Necessary modem connections with Firewall Support for external public interface<br>K. Windows server 2012 R2 |
| | **QMS DB Virtual Server** |
| | QMS Application all transaction data shall be stored in MS SQL DB at centralized location. The minimum requirement for the hardware configuration for the Appointment- virtual Server shall be as follows: |
| 1. | Quad Core Intel Xeon Processor 2.66 GHz/800 MHz Dual Processors |
| 2. | Memory 8 GB DDR2 |
| 3. | Storage capacity (2 x 1 TB GB SATA with 16MB cache) |
| 4. | S/RAID-1 with SATA 2 |
| 5. | Gigabit Ethernet Adapter |
| 6. | 101 – Keyboard |
| 7. | DVD-ROM Combo Drive |
| 8. | 20” Ultra Sharp Flat Screen LCD |
| 9. | Optical Mouse |
| 10. | Necessary modem connections with Firewall Support for external public interface |
| 11. | Windows server 2012 R2 |
| 12. | Windows SQL 2012 R2 |
| | **QMS Backup Virtual Server** |
| | The contractor shall provide this redundant server configuration, which shall permit continued operation in the event when the Web-virtual Server or the Appointment virtual Server gives way due to hardware failure. |
| | The database is to support in terms of information provider and archiving. In the Queue-Token Management System, there shall be four main databases to support the online operation and reporting as follow: |
| 1. | Online database. The role is to support the daily activities such as transaction records, |

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| | system login status, etc. |
| 2. | System database. The design of this database is to setup the QMS configuration such as type of services, staff information, etc. |
| 3. | Hardware configuration database. The installation of hardware configuration shall be stored in this database such as Browser terminal, token dispenser, kiosk etc. |
| 4. | Archive database. The role is to archive Queue-Token records for reporting and analysis. |
| 5. | All configuration, sizing, installation and testing of the database shall be the responsibility of the respective SI. |
| 6. | The SQL database should be of Open License package for unlimited numbers of users. The minimum requirement for the hardware configuration shall be as follows:<br>A. Quad Core Intel Xeon Processor 2.66 GHz/800 MHz Dual Processors<br>B. Memory 8 GB DDR2<br>C. Storage capacity (2 x 500 GB SATA with 16MB cache)<br>D. S/RAID-2 with SATA 2<br>E. Gigabit Ethernet Adapter<br>F. 101 – Keyboard<br>G. DVD-ROM Combo Drive<br>H. 20” Ultra Sharp Flat Screen LCD<br>I. Optical Mouse<br>J. Windows SQL 2012 R2<br>K. Windows server 2012 R2 |
| | **QUEUE TOKEN MACHINE – TOUCH** |
| 1. | The Queue-Token Machine shall be installed at near registration counter with touch screen and button based. Each type of service shall have its unique series of Queue-Token number with an Alphabet embedded in-front such as Department A – A0001~A9999, Clinic B – B0001~B9999. |
| 2. | The general requirement of the ticketing machine shall be: |
| 2.1 | Compact and portable and durable for heavy usage; |
| 2.2 | Must be able to handle20000or more transactions per day; |
| 2.3 | Must be able to print bar-code; |
| 2.4 | Able to dispense tickets with neat edges; |
| 2.5 | Able to prompt users when ticket supply is running low; |
| 2.6 | Capable of high-speed printing (at least 30 tickets per minute) and in thermal paper format; |
| 2.7 | Ticket length can be programmable and the ticketing machine must be thermal dispenser |
| 2.8 | The machine spare parts shall be easily available for at least 5 years |
| 2.9 | One Ticket roll with20000tickets should be use for token number issuing |
| 2.10 | Ticket printout must be in blue color |

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| 2.11 | If required, card reader option should able to use with touch & button token dispenser |
| 2.12 | If required, patient should able to enter their name, contact details in touch dispenser |
| 2.13 | Hospital logo must printout on token. |
| 2.14 | Ticket finishing alert |
| 2.15 | Token machine able to restore previous token number after restart or power failure |
| 2.16 | Token machine able to print QR code. QR code will help patients to know current queue status. |
| 3. | The Queue-Token ticket shall contain the following information: |
| 3.1 | Hospital's and Department' name |
| 3.2 | Date and time of issue |
| 3.3 | Queue-Token number in numeric and bar-coded form (if required) |
| 3.4 | Counter numbers of the counters providing the services |
| 3.5 | Number of people waiting to be served / the next patients to be called to be served |
| 3.6 | Expected waiting time which shall be computed by the Queuing System; and<br>Cautionary and/or customized messages, e.g. "Season's Greetings", "Queue-Token numbers may not be called in sequence". These words should be edited through the Web-System real time as and when the user would want to change. |
| 4 | The Queue-Token ticket shall contain the following information:<br>1. Hospital's and Department' name<br>2. Date and time of issue<br>3. Queue-Token number in numeric and bar-coded form (if required)<br>4. Counter numbers of the counters providing the services<br>5. Number of people waiting to be served / the next patients to be called to be served<br>6. Expected waiting time which shall be computed by the Queuing System; and Cautionary and/or customized messages, e.g. "Season's Greetings", "Queue-Token numbers may not be called in sequence". These words should be edited through the Web-System real time as and when the user would want to change. |
| | **BROWSER BASED CALLING TERMINAL** |
| 1. | Patient browser-based calling terminal shall be residing in the Dr. Room & registration counter operating in an MS Windows environment. It shall be interfaced with the ticketing machine and has the ability to issue Queue-Token ticket by services.<br>The Patient browser-based calling terminal shall be connected to the Dr. Desktop system using 100BaseT using TCP/IP via RJ45 connection to the structured cable system and shall be equipped with internet browser software for use with Web based application. |
| 2. | The Patient browser-based calling terminal must have the following standards features and functions: |
| 3. | Activated by keying user identity and password |
| 4. | User friendly menu driven drop down window box |

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| 5. | QMS windows displays list of Queue-Token numbers to be served |
| 6. | Able to capture the statistics of the services provided |
| 7. | User friendly menu driven drop down window box |
| 8. | Calling a Queue-Token number sequentially and/or randomly |
| 9. | Calling the next Queue-Token number through scanning the bar-code |
| 10. | Queue-Token number on a Queue-Token ticket |
| 11. | Clearing an incorrectly keyed Queue-Token number when calling Queue- Token number randomly |
| 12. | Able to show waiting time of current patients and called-time statistics; |
| 13. | Change colour within the Queue-Token numbers to reflect the different state of the Queue-Token |
| 14. | Displaying the number of patients in the Queue-Token waiting to be served |
| 15. | Can transfer Queue-Token numbers between services within the Department; |
| 16. | Able to prompt staff if preset waiting time is exceeded either by pop-up alerts or by using a different colour change |
| 17. | Alerting the counter staff, through audio-visual means, when a patient has waited beyond a stipulated waiting time. The system shall have the facility to Allow the activation of separate 'alert' timeframe and for these to be reset or Changed by the user. |
| 18. | Storing and recalling (either manually or automatically) Queue-Token numbers for which no response has been received. The number of times a Queue-Token number can be stored in memory and automatically recalled later and the store duration shall be programmable to cater to different users' requirements; and<br>A. Providing log-on/off function to the Queuing System at specific counters.<br>B. Can change service and attend to patients with different transactions; |
| 19. | The transferred Queue-Token number shall be inserted in sequential order (First-In-First-Out) or based on Appointment Time slot.<br>The same Queue-Token number should be used for the patients through-out his her transaction until he/she leaves the place or stop the transaction at one particular counter which is the last place of visit. |
| 20. | 18 Patients notes or remark can entered into customer details using browser terminal to record patient history. |
| 21. | Patient previous appointment and today appointment details should be available in browser terminal. |
| 22. | Voice announcement calling must support multiple languages. |
| | **PATIENT SMS SOLUTION** |
| 1. | ***SMS Solution***<br>There shall also be integration of the QMS to a SMS Portal whereby the patients can request for their position of Queue-Token numbers through the SMS. Please refer to the following below for more information. |
| 2. | For a patient who has already registered for SMS and when his / her number has been a |

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| | "missed call", an SMS shall be automatically sent to the respective patients to indicate that he has been called. |
| 3. | A patient can also request for the Queue-Token length by sending an SMS to the SMS Gateway for the respective replies stating the actual Queue-Token length. |
| 4. | A patient can also SMS-In to register himself if has already made an appointment with the QMS Appointment System, whereby he shall be receiving his Queue-Token number through his mobile. |
| 5. | The System shall also automate the SMS process for Appointment alerts days prior to the respective patients' appointments. |
| | **WEB BASEDMANAGEMENT PORTAL** |
| 1. | The web-based management portal should contain report, Dashboard & Analysis module. |
| 2. | The Queue-Token System shall monitor the patients flow and generate valuable information. It shall give useful operating statistics to enable management to schedule and allocate optimal resources so as to maintain patients' satisfaction. It shall be able to generate statistical reports, and these reports shall be finalized after the award of the contract. Reports must be able to generate in PDF, EXCEL & CSV format. |
| 3. | Management portal should have BI Tools, users or management can configure reports template their self. Management portal reports requirements are: |
| 3.1 | System shall send out auto-schedule reports to management. |
| 3.2 | All service summary report |
| 3.3 | Counter & Dr. Room performance report |
| 3.4 | Staff performance report |
| 3.5 | Overview daily, weekly & monthly report |
| 3.6 | Waiting time report |
| 3.7 | Transaction time Report |
| 3.8 | Matter code report |
| 3.9 | Waiting time per time period |
| 3.10 | Transaction time per time period |
| 3.11 | Token number wise report |

# QUEUE MANAGEMENT SYSTEM

# 1. Token Dispensing Kiosks (3 Units)

- **Location:** Ground Floor Entrance.
- **Function:** Print OPD waiting tokens for both new and old patients.
- **Token Management:**
  - Unique, synchronized numbering system (same sequence for new/old patients).
  - Example: If Token #8 is issued, it cannot be re-issued to another patient.
  - Tokens range from 1 to 9999.
  - **Note:** Departments may or may not run OPDs (Outpatient Departments) in parallel. However, token numbers must remain unique across all departments.

# TOKEN Details Neurosurgery

Token No: NSN-01
NS: Neurosurgery
N: New Patient
01: Token No Series

Token No: NSO-02
NS: Neurosurgery
O: Old Patient
02: Token No Series

# TOKEN Details Neurology

Token No: NN-01
N: Neurology
N: New Patient
01: Token No Series

Token No: NO-02
N: Neurology
O: Old Patient
02: Token No Series

# 2. QMS Software at Registration Counters

- **Dashboard Functions:**
  - Displays total queue of printed tokens.
  - Staff uses **“Next Call”** to invite the next patient for OPD registration.

- **Registration Process:**
  - Patient arrives at the counter → Registration is done in **HIS (Hospital Information System)**.

- **Token Routing Post-Registration: ( For NeuroSurgery dept.)**
  - **New Patients:** Token number is transferred to the **Common Room (1st Floor)** for doctor/room assignment.
  - **Old Patients:** Token is forwarded directly to the **Consultant/Doctor’s Room**, via the QMS dashboard of that specific room.

- **Token Routing Post-Registration:  ( For Neurology dept.)**
  - **New Patients & Old Patient:** Token number is transferred to the **Common Room (1st Floor)** for doctor/room assignment.

# 3. QMS Display Systems

**a. Above Each Counter:**

- Displays the **current token** being served when the counter staff clicks “Next Call.”

**b. Common Waiting Area Displays:**

- Show **token status of all counters** to guide waiting patients.

**c. Outside Consultant/Doctor Rooms:**

- Displays the token number when the doctor/attendant clicks “Next Call” from their dashboard.

**d. 1st Floor Common Waiting Area Displays:**

- Show token status of **all Consultant/Doctor rooms** to guide patient movement.

# 4. QMS Software at 1st Floor Attendant Dashboard:

- Handles **new patient tokens** received from Ground Floor counters.

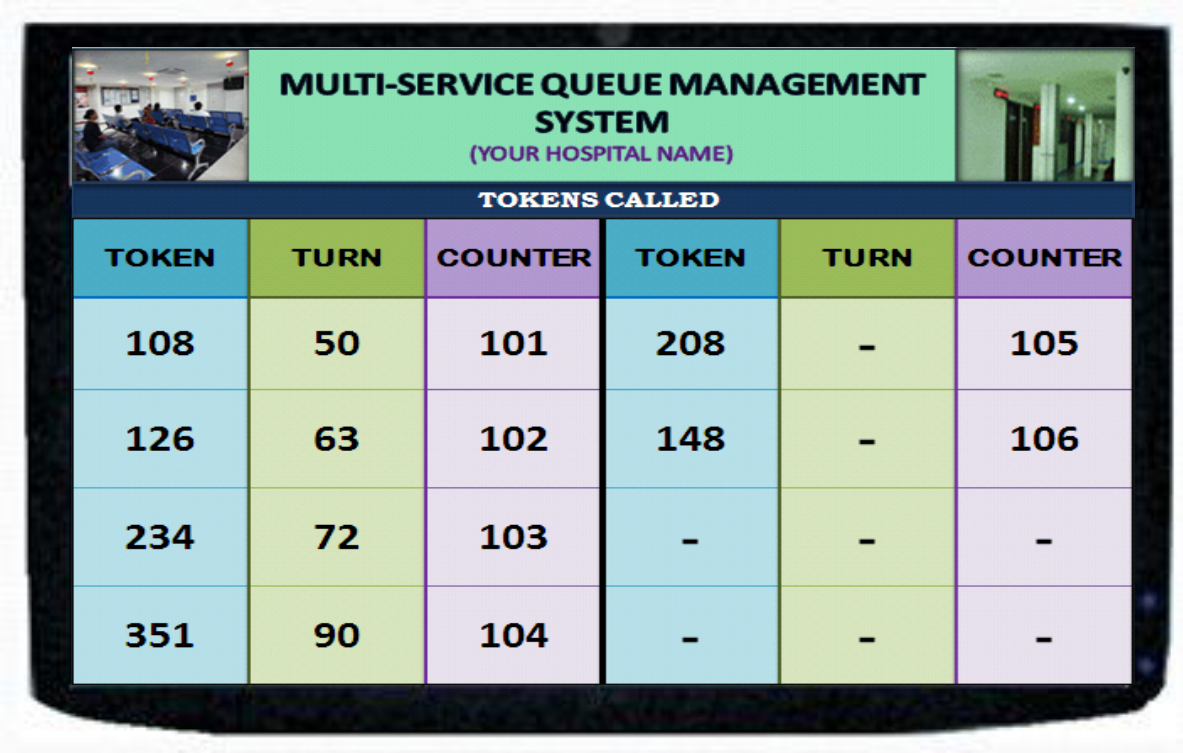
- Transfers them to the appropriate **Consultant/Doctor’s room** in the QMS dashboard based on the allocation process.

# 5. QMS Software at Consultant/Doctor’s PC Dashboard:

- Displays total queue of tokens forwarded to their room.
- Doctor/attendant clicks “Next Call” from their dashboard to invite the next patient for OPD consultation.

# WAITING HALL DISPLAY

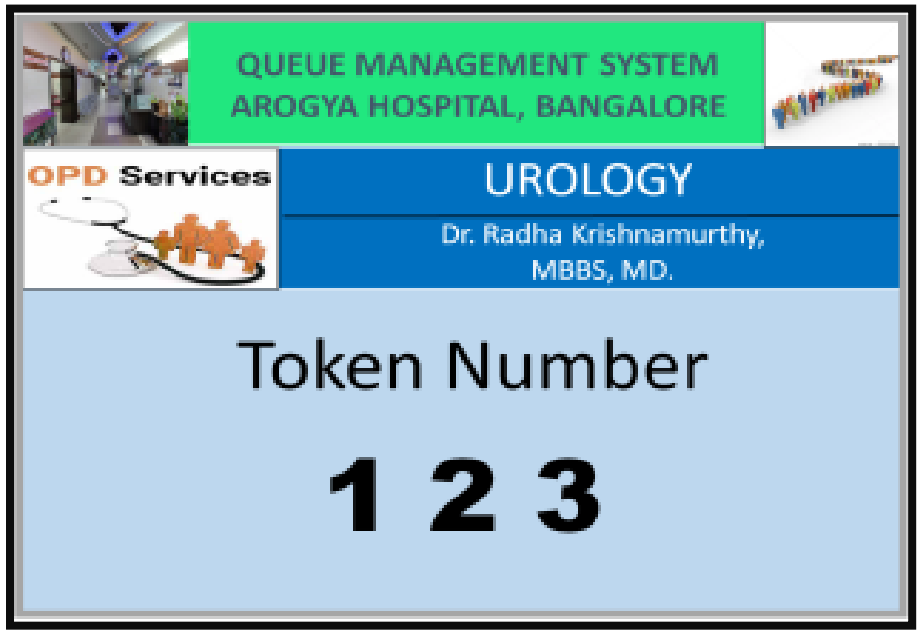
**TOKEN VIEW ON LCD TV**




| TOKEN | TURN | COUNTER | TOKEN | TURN | COUNTER |
|---|---|---|---|---|---|
| 108 | 50 | 101 | 208 | - | 105 |
| 126 | 63 | 102 | 148 | - | 106 |
| 234 | 72 | 103 | - | - | - |
| 351 | 90 | 104 | - | - | - |

# OPD DOOR DISPLAY

**TOKEN VIEW ON LCD TV**



# Flow Summary

1. **Patient** receives token from kiosk.
2. **Token queued** in QMS dashboard.
3. **Registration** at counter → token is routed:

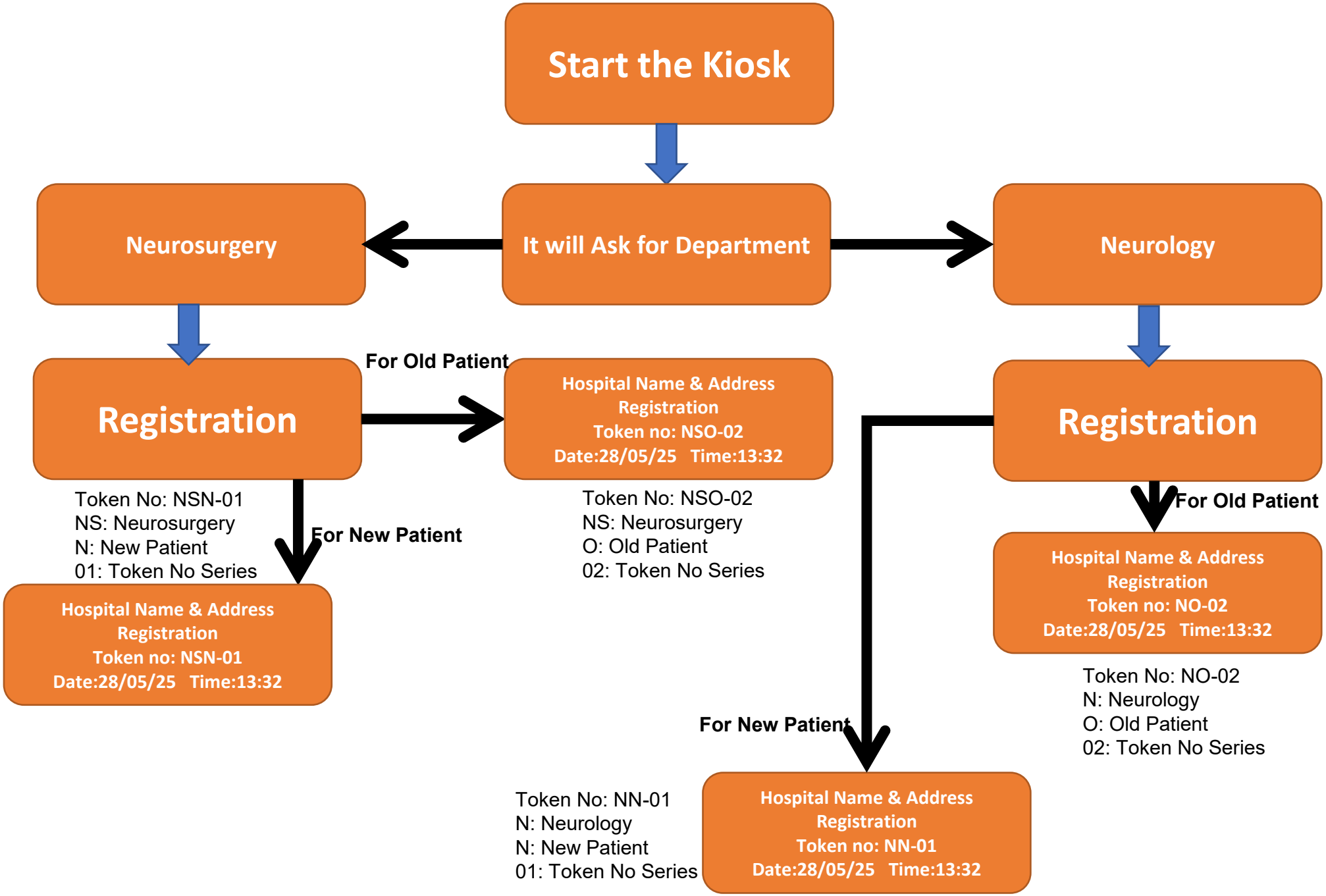
For NeuroSurgery-

- New → 1st floor common room.
- Old → directly to Doctor's room.

For Neurology-

- New & Old → 1st floor common room/s.

4. **Attendant/Doctor** calls token → displayed above room.
5. **Patient proceeds** accordingly based on token display and call status.


Start the Kiosk
It will Ask for Department
Neurosurgery
Neurology
Registration
For Old Patient
Hospital Name & Address
Registration
Token no: NSO-02
Date:28/05/25 Time:13:32
Token No: NSN-01
NS: Neurosurgery
N: New Patient
01: Token No Series
For New Patient
Token No: NSO-02
NS: Neurosurgery
O: Old Patient
02: Token No Series
Hospital Name & Address
Registration
Token no: NSN-01
Date:28/05/25 Time:13:32
Registration
For Old Patient
Hospital Name & Address
Registration
Token no: NO-02
Date:28/05/25 Time:13:32
Token No: NO-02
N: Neurology
O: Old Patient
02: Token No Series
For New Patient
Token No: NN-01
N: Neurology
N: New Patient
01: Token No Series
Hospital Name & Address
Registration
Token no: NN-01
Date:28/05/25 Time:13:32

PATIENT

Patient will get Token No from The KIOSK

For New Patient

Token No: NN-01
N: Neurology
N: New Patient
01: Token No Series

Hospital Name & Address
Registration
Token no: NN-01
Date:28/05/25 Time:13:32

For Old Patient

Token No: NO-02
N: Neurology
O: Old Patient
02: Token No Series

Hospital Name & Address
Registration
Token no: NO-02
Date:28/05/25 Time:13:32

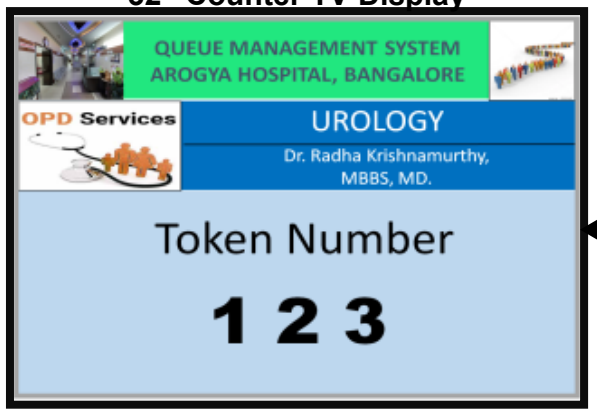
Token Nos. Will Register in All 4 Registration Counter's PC.

This Will go to **A** on Next Slide.

Patient will Proceed for the Registration Waiting Area. And Wait for his Token No.

Token No. / Queue No. Will Display on Related Counter TV & Waiting Area TV's.

**32" Counter TV Display**



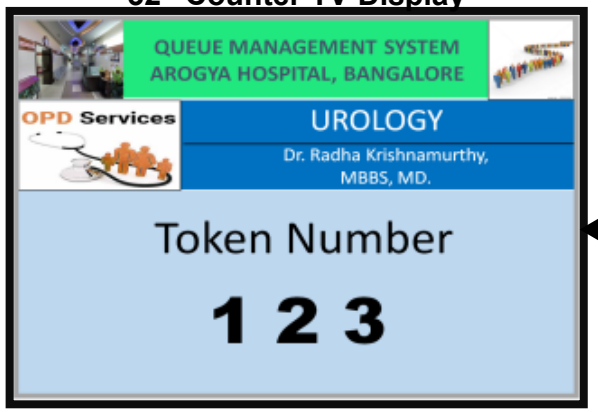

**55" Waiting Area TV Display**

MULTI-SERVICE QUEUE MANAGEMENT SYSTEM
(YOUR HOSPITAL NAME)

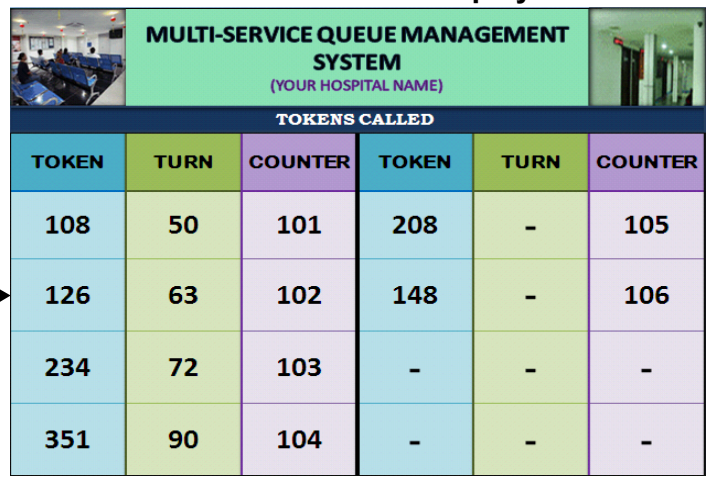
TOKENS CALLED

| TOKEN | TURN | COUNTER | TOKEN | TURN | COUNTER |
|---|---|---|---|---|---|
| 108 | 50 | 101 | 208 | - | 105 |
| 126 | 63 | 102 | 148 | - | 106 |
| 234 | 72 | 103 | - | - | - |
| 351 | 90 | 104 | - | - | - |

32” Counter TV Display




55” Counter TV Display




| TOKEN | TURN | COUNTER | TOKEN | TURN | COUNTER |
|---|---|---|---|---|---|
| 108 | 50 | 101 | 208 | - | 105 |
| 126 | 63 | 102 | 148 | - | 106 |
| 234 | 72 | 103 | - | - | - |
| 351 | 90 | 104 | - | - | - |

Token No. / Queue No. Will Display on Related Counter TV & Waiting Area TV’s.

This Point is Coming From Slide 1.

A

Teller Will get the Token Queue No. List in Database for Today.

Teller can CALL or Re-Call Token No from his Token Queue no. List Database, throw his PC.

Called Patient can Now Proceed to the Window / Counter’s.

After Registering all the patient Details. Teller will forward Token no. to a Common Counter. And inform to patient wait in Common waiting Area for Next Step

After Registering all the patient Details. Teller will forward Token no. to a Common Counter. And inform to patient wait in Common waiting Area for Next Step

Patient will Proceed for the Common Waiting Area. And Wait for his Token No.

All forwarded Token Nos. Will Register in Common Counter PC.

32” Counter TV Display


Token No. / Queue No. Will Display on Common Counter TV & Waiting Area TV’s.

MULTI-SERVICE QUEUE MANAGEMENT SYSTEM
(YOUR HOSPITAL NAME)

TOKENS CALLED

| TOKEN | TURN | COUNTER | TOKEN | TURN | COUNTER |
|---|---|---|---|---|---|
| 108 | 50 | 101 | 208 | - | 105 |
| 126 | 63 | 102 | 148 | - | 106 |
| 234 | 72 | 103 | - | - | - |
| 351 | 90 | 104 | - | - | - |

Called Patient can Now Proceed to the Common Counter.

Common Counter will call the token nos. and Allocate A OPD no. to All the Patients and tell him to go and wait 1st floor OPD Waiting Area’s.

Common Counter will call the token nos. and Allocate A OPD no. to All the Patients and tell him to go and wait 1st floor OPD Waiting Area's.

Patient will Proceed for the OPD Waiting Area.
And Wait for his Token No.

All forwarded Token Nos. Will Register in Related OPD's PC.

24" OPD Door TV Display


55" OPD Waiting Area TV Display

MULTI-SERVICE QUEUE MANAGEMENT SYSTEM
(YOUR HOSPITAL NAME)

TOKENS CALLED

| TOKEN | TURN | COUNTER | TOKEN | TURN | COUNTER |
|---|---|---|---|---|---|
| 108 | 50 | 101 | 208 | - | 105 |
| 126 | 63 | 102 | 148 | - | 106 |
| 234 | 72 | 103 | - | - | - |
| 351 | 90 | 104 | - | - | - |

Token No. / Queue No. Will Display on Door Display TV & Waiting Area TV's.

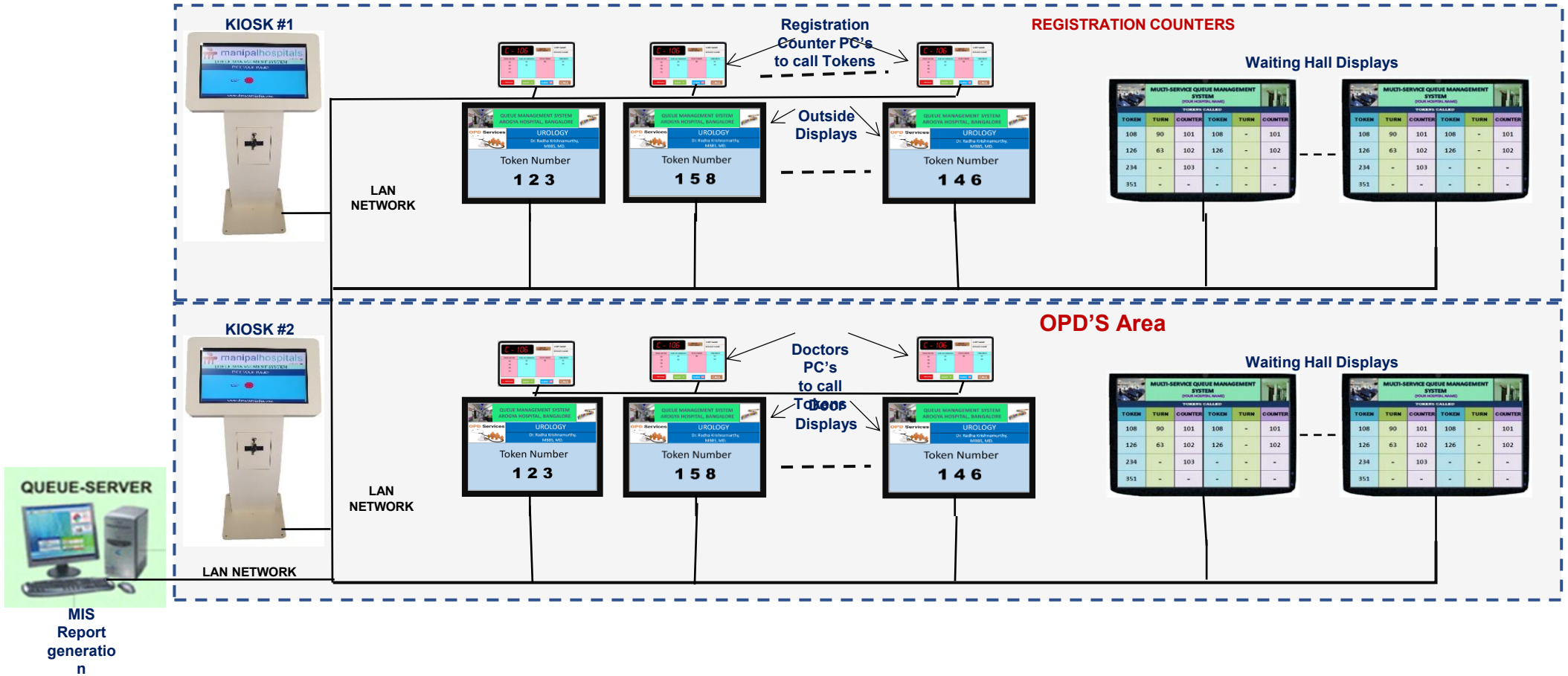
Called Patient can Now Proceed to the OPD.

Doctor's can CALL / Re-Call Token Nos. from his Token Queue no. List Database, throw his PC.

After Treatment of Patient, Doctor will close the Token From his PC. Then Token no will Disappear From Display's.

End

# QMS-Schematic diagram



| Item Number | Item Description | Item Quantity | Unit of Measure | Rate | Amount |
|---|---|---|---|---|---|
| 1 | Queue Management System Application Software | 1 | Number | | |
| 2 | Token Dispensing Kiosk | 1 | Number | | |
| 3 | Server for QMS Software | 1 | Number | | |
| 4 | AMC for 2nd Year | 1 | Number | | |
| 5 | AMC for 3rd Year | 1 | Number | | |
| 6 | AMC for 4th Year | 1 | Number | | |
| 7 | AMC for 5th Year | 1 | Number | | |

1. QMS Software Requirements: · The software should be configurable and flexible enough to modify workflows, change patient flow logic, and add new queues or services in the future without any additional cost. · The QMS software must be fully compatible with the existing Hospital Information System (HIS) for seamless integration of patient data and queue management, and it should also be compatible with the existing hardware already purchased for the QMS. · Any compatibility issues arising due to HIS or system upgrades must be resolved by the vendor at no additional cost. · All reports generated by the QMS should be fully customizable as per the requirements of PGIMER, including formats, fields, filters, and MIS summaries. · All licenses required for the proper functioning of the QMS software (including database, middleware, APIs, and integration components) must be included and valid for the entire guarantee/warranty period.

2. Warranty and Support: · A minimum 5-year comprehensive warranty shall be provided for all QMS components