



- d) Proposed solution should be secure and in compliance to relevant industry standard security requirements. The BSNL shall suggest and help in deploying various policies at various levels to prevent any intrusion/attacks in the wireless network.

**Testing & Commissioning;**

**I.) FAT of Hardware/Software installed;**

- a) FAT of Hardware/Software like Access point installed at various locations will be deemed commissioned on discovery of the Access point in the NMS along with all other last mile devices.
- b) BSNL in coordination with the TPA and representatives from the KCG is required to conduct following test on minimum 10% of the total locations to verify the health of the installed Wi-Fi infrastructure:
- Signal Strength, file-transfer rate, and network authentication:** As per the TEC standards, these should be conducted by the TPA or any other representatives authorized by KCG
- SSID:** The SSIDs configured should be discoverable by any 802.11n/ac wireless enabled device.
- Download Speed:** TPA or any other authorized representative should conduct a file download test from any device to verify the effective bandwidth/throughput.
- c) BSNL shall be responsible for obtaining installation and commissioning certificate (Sign-off) on completion of the work as per the scope of work.
- d) The BSNL shall be responsible for rectification of discrepancies identified by the TPA/any other authorized representative while conducting FAT. Further on rectification of all the discrepancies identified during the FAT will be re-conducted or if agreed FAT will be signed.
- e) Documentation: The BSNL shall provide technical documentation with equipment installed.

**II.) Security;**

- a) The entire Wi-Fi network should be fully secure; data communication between devices should take place in encrypted form through multiple authentication mechanisms such as WPA should be implemented by the BSNL.
- b) The BSNL has to ensure compliance with all Regulatory and Legal guidelines issued by Department of Telecommunications/TRA from time to time.
- c) Logs: compliance of authentication, usage, URL's visited or any other compliance that may be required as per the guideline of TRAI/DoT.

**24.5 Operations and Maintenance:**

**Operations and Monitoring of the Project Infrastructure:**

- a) The BSNL shall be responsible for day to day operations and maintenance for a period of 5-years from the date of commissioning of the project.
- b) It shall be the responsibility of the BSNL to ensure that all software/firmware etc. should be updated for patches/release etc. periodically.
- c) BSNL is responsible for periodically security testing of the network to ensure any malware/unauthorized traffic flow from the network. The Report for the same has to be submitted to the KCG on half yearly basis.
- d) **NMS for Performance Reporting**
- The BSNL shall operate and maintain a Network Management System (NMS) and SLA and Performance Monitoring System for the complete Wi-Fi Network. The Access to the NMS has to be provided to the KCG with full admin Rights for monitoring of the Wi-Fi Infrastructure
  - The NMS system shall be configured to automatically discover all manageable elements through IP/SNMP at regular intervals in order to determine their status and working
  - System generated Reports by NMS:
    - Network Device Performance Report.

4-19-19



- d) The solution should have integrated security capabilities such as content filtering, blocking of malicious attacks, etc. to provide security to the overall network infrastructure.
- e) Solution should allow policy level blocking i.e. Initial policies to begin with should be to block pornography, torrents, pirated, poker/casino related website and contents.

#### 24.3 Role and Responsibilities

##### Of BSNL

- a) End-to-End creation of Wi-Fi Infrastructure Design, Supply, Installation, testing, Commissioning and O&M of the WiFi solution
- b) Detailed Survey/feasibility study report
- c) Provisioning of Internet Bandwidth at all the Institutes
- d) Provisioning of required and necessary manpower for The running of the project
- e) Obtain necessary clearances/ approvals from appropriate authorities
- f) Provisioning of WLAN Controller, User management system, SMS & Payment Gateway and other required Infrastructure
- g) Adherence to the regulatory requirements like keeping log of end user of Wi-Fi services
- h) Adherence and compliance to the defined SLA. Submission of MIS reports.
- i) Providing dashboard for the network monitoring and real-time status of the project.

##### Of KCG

- a) To provide the requisite access permission, space and raw power to the BSNL for installation of equipment's at site location's.
- b) Approval of feasibility study report for implementation of Wi-Fi infrastructure
- c) Payment to successful BSNL as per the payment schedule
- d) To help and coordinate with The BSNL to obtain necessary clearances/approvals from appropriate authorities

#### 24.4 Deliverables:

##### Wi-Fi Infrastructure:

- a) The BSNL shall provide an end-to-end solution including Design, built, operate and maintain all Infrastructures related to the provisioning of the Wi-Fi services under the project.
- b) The KCG shall not pay any extra cost for any other component/service required for successful running of the proposed solution other than those mentioned in the Work order.
- c) The Overall Ownership of the field assets (Access Point's, Switch, Router, UPS etc.) shall remain with the KCG even after the project completion.
- d) In case of default/un-timely exit, the KCG may appoint/bring onboard another agency for The completion of the project.

##### Standards and policies:

- a) The BSNL shall ensure a secure internet connection and access through OTP to all the subscribers with centralized authentication mechanism.
- b) BSNL shall ensure the uniqueness of mobile No. for the use under free session, multiple logins shall not be allowed in any case.
- c) Wireless access-points shall be configured with relevant cryptographic keys to ensure that only authorized and authenticated users can use the wireless service.

*Handwritten signature*  
7/9



- b) The Size should be a minimum of 2 Ft (L) x 1 Ft (B) or bigger for clearly informing users of the existence of Wi-Fi Hotspot/Zones.
- c) Min of 1 Nos. of such Sign Board/Banners has to be installed per Access. However the BSNL will have to consider the sizing ensuring complete coverage of the Hotspot/zone area.
- d) The Content to be printed on the banner/sign Board shall approved by the KCG.

**23. Help Desk Support:**

- a) The KCG will provide centralized Helpdesk for assistance or registration of user complaints through various medium like Voice Call/SMS/Email of ticket generation system. BSNL is responsible for coordination with the Helpdesk operator for early resolution of the complaints/request booked at the centralized helpdesk provided by the KCG.
- b) On ticket generation at the centralized helpdesk, the calls pertaining to the Wi-Fi infrastructure created under this RFP will be allotted to the BSNL for further resolutions of the complaints booked.
- c) After rectifying the said complaint, BSNL is required to update the resolution/call-closure on the centralized helpdesk and the confirmation for the rectification shall be done on visibility in the deployed NMS.
- d) The BSNL will further have to provide and publish a troubleshooting guide and necessary training for the existing Helpdesk Operators to provide L1 level support to the end user.

**24. Functional Requirement:**

**24.1 Access Point:**

- a) Access point shall allow wireless access through various types of devices like smart phones, laptops, tablets, desktops etc. Every Access point should support:
  - i. IEEE 802.11 ac standard with dual radio 2.4 Ghz and 5 Ghz
  - ii. Minimum data transfer rate of 150 Mbps
  - iii. Minimum 70 Meters radial coverage for Access Point
  - iv. Minimum 50 concurrent users @ each radio
  - v. Should support min 4 SSID
  - vi. Should provide seamless roaming within the network
  - vii. Interference detection and avoidance for both Wi-Fi and non-Wi-Fi interferers
  - viii. Should also allow Signal rejection for 3G/LTE/WiMAX in a co-located environment
  - ix. Operating ambient temperature for AP should be 0° to 55°C
- b) The Access point shall be IP66 or better rated for dust and water Ingress protection.
- c) The AP should provide Omni directional antenna as required.

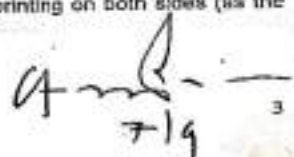
**24.2 Features of the WiFi Solution:**

- a) BSNL has to provide functionalities of all the components like WLAN Controller, Authentication, Authorization and Accounting (AAA), RADIUS, SMS Gateway, Payment Gateway, Captive Portal, customization and branding of services.
- b) The proposed solution should be able to manage the access points installed during the contract period and its concurrent users, with the subsequent expansion plan and coverage of the Wi-Fi Hotspot, the system should be able to cater to the increased no. of AP's and users accordingly.
- c) BSNL will have to ensure seamless integration of its AAA platform with the supplied Access points. The user Authentication should be done through SMS based OTP sent to the user's mobile number and email. SMS push to the telecom service provider should happen in less than 5 seconds.

4-10-19

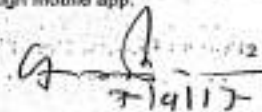


- e) It should allow customization like branding, Publication of information, payment options, user manual & FAQ etc. on captive portal/Mobile App throughout the contract period.
14. The WiFi solutions should be capable to cater to categories the users, as and when required by the KGG.
  15. The proposed solution should be capable of generating various MIS reports on a dashboard in graphical/ pictorial representation such as:
    - i. No. of Users with details: IP details, MAC ID, Access Point, Channel Wise etc.
    - ii. Internet Usage: User wise/ Access Point/ Location wise etc.
    - iii. Total Bandwidth Available on each AP/Hotspot and its Usage
    - iv. All Reports related to SLA & project Monitoring.
    - v. Change management reports: Configuration, firmware, patches, upgrades etc.
    - vi. Data usage and billing details
    - vii. Geography based grouping of all the reports i.e. Per Hotspot, Per City, Per Zone, Per District, Per Cluster, State etc.
    - viii. Any other reports that may be required from time to time
  16. Proposed wireless solution is intended to provide 24x7 wireless Internet access at all Site(s).
  17. The BSNL is responsible to ensure that the device is protected against any electrical surge/spikes. In order to achieve the same BSNL may install surge protector, have earthing, etc. if required.
  18. **Internet Bandwidth Provisioning:**
    - i. Internet bandwidth is to be provided as per the Annexure A
    - ii. The solution must be designed by the BSNL in such a way that the user gets download internet speed of at least thrice than the Upload Speed.
    - iii. The bandwidth provided in annexure refers to the download bandwidth.
    - iv. Last Mile: The internet Bandwidth has to be provided on fibre only.
    - v. The Third-party agency appointed by the KGG/GIL will randomly check the availability of the required bandwidth at any of the institute, in case if it is found to be less than the ordered bandwidth more than 3 times in any Quarter, the KGG may terminate the contract and forfeit the PBG.
  19. Proposed wireless solution should conform to applicable WPC regulations for use of license-free spectrums in terms of EIRP. A declaration to this effect must be submitted which must be supplemented by periodic compliance reports during the project period.
  20. The number of Site/locations mentioned in this RFP may increase during the duration of the project, therefore for the future orders, the BSNL may supply Access Points of any make and model from the OEM featured in Gartner Magic Quadrant for wired and wireless LAN, 2015 complying to the technical specification of the RFP at the discovered prices only. The BSNL shall adhere to all the technical as well as commercial terms irrespective of the location of the Site.
  21. The BSNL will have to carry out an initial assessment of the site locations. The tentative list of locations is mentioned in Annexure A.
  22. **Wi-Fi Zone Signage's:** The BSNL will have to provide and install and maintain Wi-Fi Hotspot/ Zone Signage/Banner at each AP/Hotspot as the case may be confirming minimum specifications mentioned below:
    - a) The sign board material should be made of Sun Board with UV printing on both sides (as the case may be) for greater visibility

  
7/19  
3



- i. To providing end- to -end solution for setting-up (required Hardware at central & edge locations, software, internet Bandwidth, SMS & Payment gateway) and O&M of Wi-Fi hotspots at multiple cities across the state.
  - ii. To design a State-Wide DEDN Wi-Fi Infrastructure across multiple cities with a single SSID
  - iii. The Wi-Fi Infrastructure shall include one or more zones/hotspots in every Institute/university. Each Hotspot shall contain 8-12 Access points (in multiple of 50) at various the locations specified in Annexure A
  - iv. Hotspot's shall provide seamless coverage within its range and provide seamless transition within the Hotspot as well as between different Hotspot of the Wi-Fi Infrastructure.
  - v. The Authentication periodicity of the internet users should be configurable based on policy such as time duration, no. of days etc.
7. The BSNL will have to install the Access Points of suitable location to receive the maximum coverage of the Hotspot, BSNL is responsible for supply, installation, commissioning and maintenance of such mounting structure for AP's (as per requirement) along with required clamp, cable (Active & Passive) and accessories at each site/location.
  8. The proposed solution should allow the KCG to have the user management and monitoring rights for the Wi-Fi network created for the project.
  9. The access to the User Management/Monitoring Module for the KCG or its authorized agency should be given as a part of the solution and should support features such as Dashboard, SLA Monitoring, MIS Reports, User authentication through OTP (One Time Password) on mobile no. and email.
  10. Initially, the plan is to provide internet access free of cost to the end users, however in future, the KCG may decide to charge beyond the capped usage limit, therefore the proposed solution should be capable to allow users to buy in the extra usage access.
  11. The BSNL will be responsible for end to end process and operations of Wi-Fi services including SMS & Payment Gateway and other associated services. The BSNL will also have to provide a centralized billing mechanism based on the Wi-Fi usage under this project.
  12. Logs of Wi-Fi usage:
    - i. The BSNL shall be responsible for keeping log of Wi-Fi services to be utilized by the end users such as IP details, URL Visited, time stamp/time details, End User Authentication, Mobile No. MAC & IP addresses, access time, duration, data consumed, etc. to meet the compliance with all Regulatory and Legal guidelines issued by Department of Telecommunications/TRAI from time to time.
    - ii. The KCG may at any time ask the BSNL to provide logs from the storage and maximum log retrieval time allowed is 8 hours.
    - iii. The BSNL is free to maintain the logs at the state/district/regional level, however the same has to be fetched and provided to the KCG on a single platform.
  13. The Web & Mobile App based user access Portal (Captive Portal) Solution:
    - a) The Wi-Fi login will be routed through the NAMO e-TAB App of Education Department.
    - b) User registration through NAMO e-TAB portal and NAMO e-TAB mobile application.
    - c) The Web/WAP page should support various handheld devices such as Smart Phone, Tablets etc.
    - d) For logging into the AP at client end, BSNL will make a mobile app (Android, ios, windows platform) to allow signing into the network through mobile app.

  
7/9/17



**Knowledge Consortium of Gujarat**

Department of Education, Government of Gujarat

No. KCG/2017-18/ 2717

Date: 07/09/2017

To,  
 General Manager (GR),  
 Bharat Sanchar Nigam Limited,  
 Ahmedabad Telecoms District

Sub: Work order for Providing Wi-Fi services (Design, Built, and Operations & Management) in various Government Colleges and Universities.

Ref: BSNL Proposal for providing Wi-Fi services across Gujarat State dated \_\_\_\_\_

Dear Sir,

With reference to the above-mentioned subject, we are pleased to award you the Work providing Wi-Fi services (Design, Built, and Operations & Management) in various Government Colleges and Universities as mentioned in Annexure A for and on behalf of Knowledge Consortium of Gujarat at 110 campuses across the state as per following unit rate:

Unit Hot- Spot at one Building Location:

Access Points	ILL BW Mbps	Fixed CAPEX in Rs.	Base ILL rate per annum in Rs.	Total for five years for 1 Hot Spots in Rs.
7	100	1,75,000/-	2,16,000/-	12,55,000/- (Excluding Taxes)

**Terms & Conditions:**

1. BSNL has to setup Wi-Fi infrastructure at 110 locations such as Government Educational Institutes, State Universities through deployment of wireless Access Point's (APs) for providing internet access.
2. The Wi-Fi setup should cover classrooms, corridor, library, laboratories, common rooms etc., in each institute as decided by a committee headed by the principal and two student representative and a representative of faculty.
3. The execution shall be based on the service model wherein the BSNL will have to provide Wi-Fi Services through such Hotspots which shall include all required Hardware, software and internet bandwidth.
4. To monitor the services, BSNL will appoint a Third-party agency which shall monitor the day to day operations of the project. To enable the same, the BSNL will have to provide the access to its NMS with admin rights at the State Data Center to monitor, check and generate various MIS reports like quantum of traffic, Bandwidth availability & utilization etc.
5. Contract Period : Five Years.
6. Design parameters:
  1. Development of Digital Education Development Network (DEDN) under Education Department, Government of Gujarat through Knowledge Consortium of Gujarat (KCG) for providing internet to the Students by setting up of public Wi-Fi Hotspots spread across multiple institutes in the state of Gujarat.

Pragna Puram, Opp. PRL, Near L D College of Engineering, Ahmedabad-380 015.

Ph. : 079-26302077 - Fax : 079-26302067 - Website : [www.kcg.gujarat.gov.in](http://www.kcg.gujarat.gov.in)

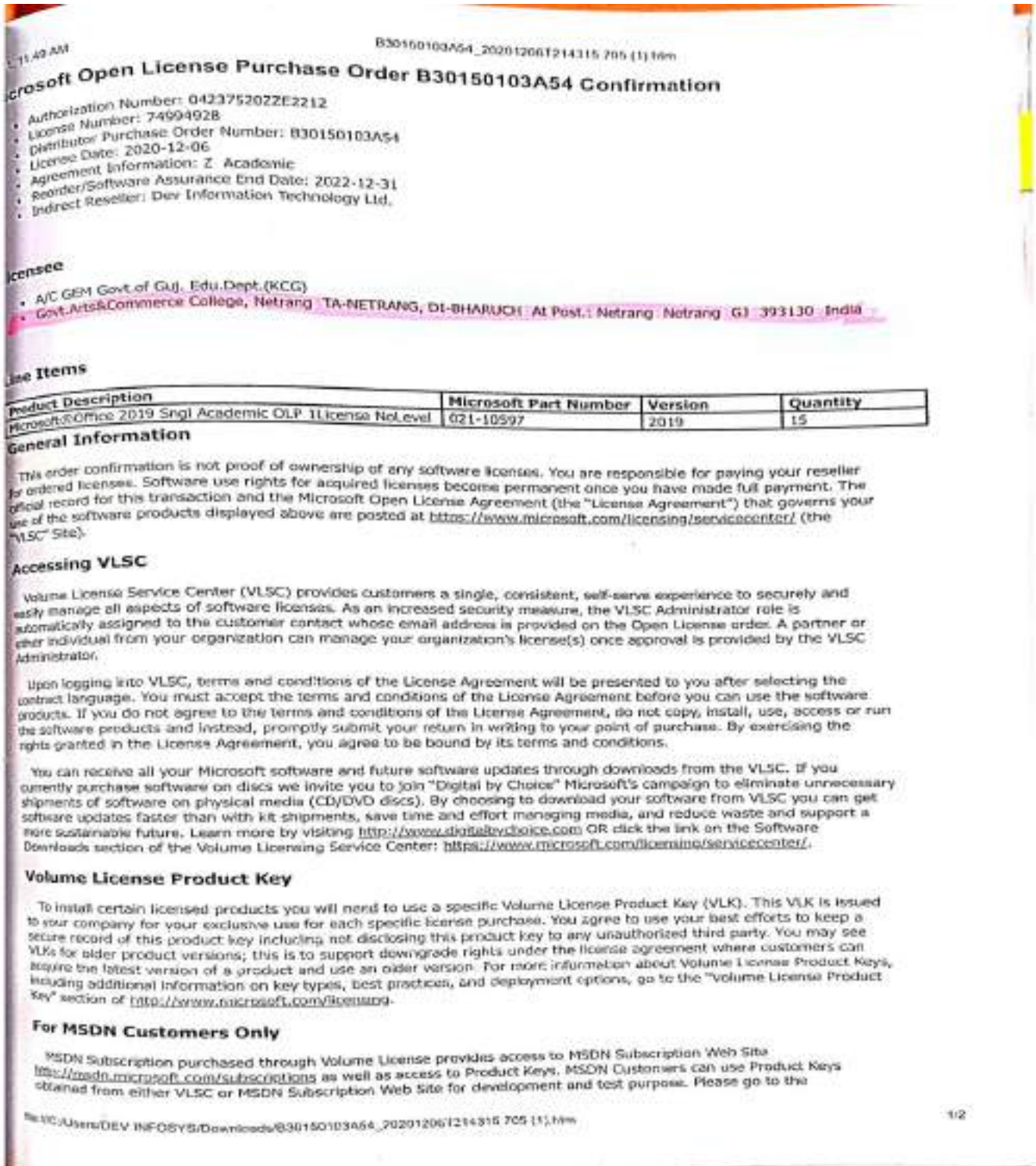
cc to HON. Director  
 Higher Education  
 Gandhinagar

4-19



## Namo Wi-fi









**RAMKABIR INTERNET SERVICES**

Phone no.: 7043666600

Email: ramkabisp@gmail.com

2021-08-23 11:50:00 AM  
ST/2021/08/23/001



**Invoice**

**Bill To:**

Gov. Arts and Commerce collage netrang

Invoice No.: 71

Date: 23-08-2021

Sl No	Item name	Quantity	Price/Unit	Amount
1	20 Mbps SME Plan	1	₹ 11,500.00	₹ 11,500.00
<b>Total</b>		<b>1</b>		<b>₹ 11,500.00</b>

**INVOICE AMOUNT IN WORDS:**

Eleven Thousand Five Hundred Rupees only

Sub Total ₹ 11,500.00

**Total** ₹ 11,500.00

**TERMS AND CONDITIONS**

Thanks for doing business with us!

Received ₹ 11,500.00

Balance ₹ 0.00

For, RAMKABIR INTERNET SERVICES

For Ram Kabir Internet Service

Proprietor

Authorized Signatory



**GOVERNMENT ARTS AND COMMERCE COLLEGE, NETRANG**  
**NETRANG, DI-BHARUCH TELE.NO. (O) (02643) 2**  
**mail: [gaccnetrang@gmail.com](mailto:gaccnetrang@gmail.com) Website: [www.gaccnetrang.ac.in](http://www.gaccnetrang.ac.in)**



Public Financial Management System-PFMS  
 (By the Controller General of Accounts, Ministry of Finance)

Financial Transaction Details

Account Number: 33110101000000000000000000

11 4 2 000 0 00 00

Account Code	Account Name	Account Type	Account	Account	Account	Account	Account	Account
GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG	GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG	GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG	GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG	GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG	GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG	GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG	GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG	GOVERNMENT ARTS AND COMMERCE COLLEGE NETRANG

PFMS Generated By: PFMS Admin/Authority

PFMS Version: 3.0.0.0

PFMS Date: 2019-07-23

PFMS Time: 11:11:11

PFMS User: admin





**Funds Transfer Bulk Uploading Details**

**To:** \_\_\_\_\_

**To:**  
**The Branch Head**  
**HDFC BANK LTD**  
**GANDHINAGAR BRANCH Branch:**

We authorize the bank to debit our undermentioned account maintained with the bank with bank amount and credit the beneficiary(ies) (BFT) as per ANNEXURE-1 uploaded to bank's central system through PFMIS (S/A) CDN.

Bank Account No. 50102100000001

Total Amount of BFT: Rs 158718156.00

(Amount in words - Fifty Five Lakhs Eighteen Thousand Seven Hundred Fifty Six.)

Bank No. 001701100472

*[Signature]*  
 OSD (A&A)  
 KCG, Ahmedabad

Agency Seal

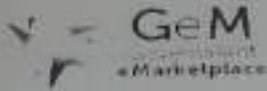
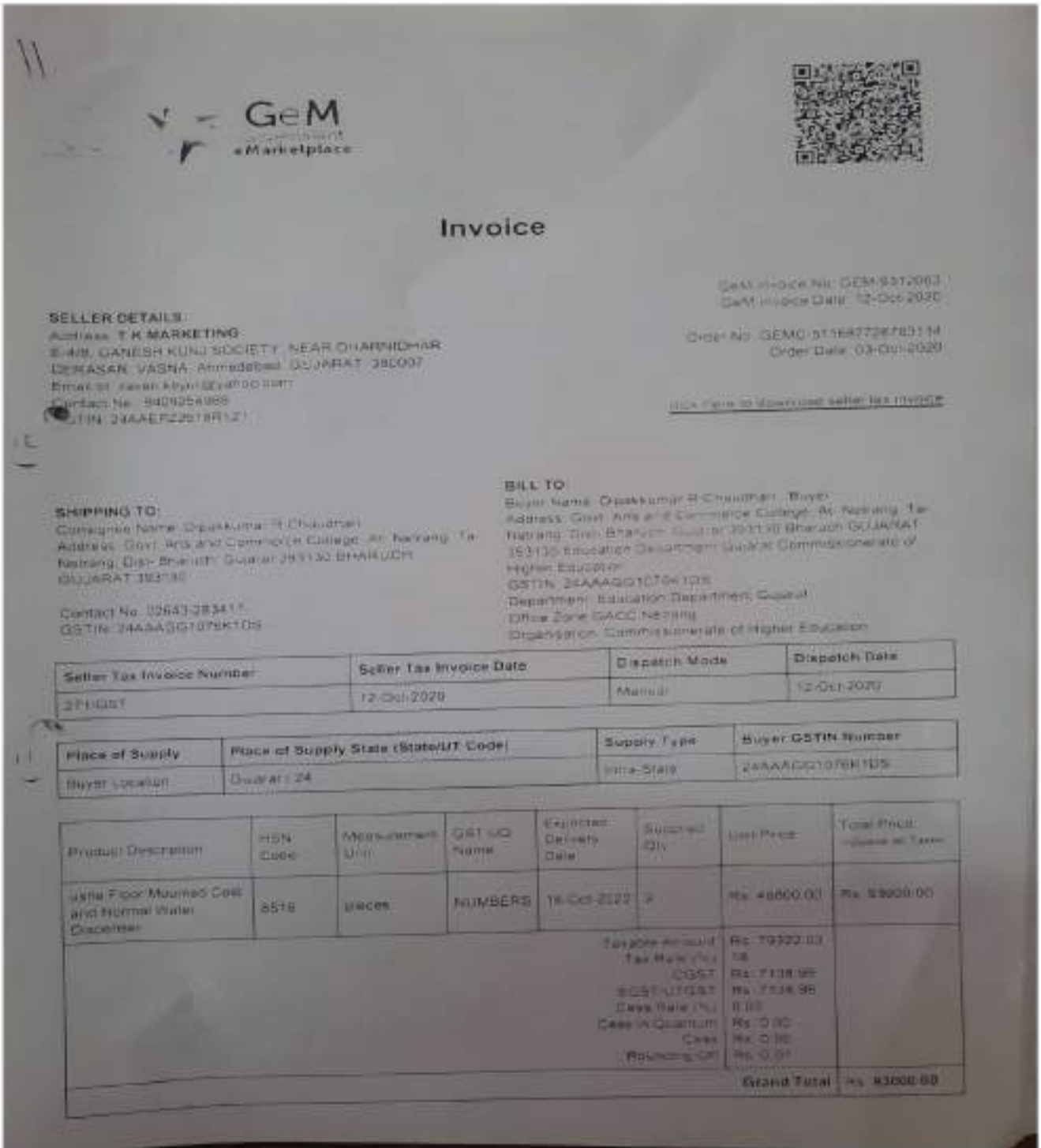
**Officer on Special Duty**  
**KCG, Ahmedabad.**

Name: \_\_\_\_\_  
 Designation: \_\_\_\_\_  
 Mobile No: \_\_\_\_\_

Name: \_\_\_\_\_  
 Designation: \_\_\_\_\_  
 Mobile No: \_\_\_\_\_

Approved For Branch Authentication

Site Map | Privacy Policy | Contact Us | ©2008 CENTRAL PLAT SYSTEM SOLUTIONS SYSTEM, All Right Reserved.



**Invoice**

GeM Invoice No: GEM-5112063  
 GeM Invoice Date: 12-Oct-2020

**SELLER DETAILS:**

Address: T.K. MARKETING  
 S-418, GANESH KUNJ SOCIETY, NEAR OHARPIDHAR,  
 DEHRASAN, VASNA, Ahmedabad, GUJARAT, 380007  
 Email: tkmarketing@yahoo.com  
 Contact No: 9409258968  
 GSTIN: 24AAEF22918R1Z1

Order No: GEMO-5116872876314  
 Order Date: 03-Oct-2020

[Click here to download seller tax invoice](#)

**SHIPPING TO:**

Consignee Name: Opakkumar R Chaudhari  
 Address: Govt. Arts and Commerce College, An. Netrang, Ta.  
 Netrang, Dist. Bharuch, Gujarat 393130, BHARUCH,  
 GUJARAT 393130

Contact No: 02643-283417  
 GSTIN: 24AAA5G1076K105

**BILL TO:**

Buyer Name: Opakkumar R Chaudhari, Buyer  
 Address: Govt. Arts and Commerce College, An. Netrang, Ta.  
 Netrang, Dist. Bharuch, Gujarat 393130, BHARUCH, GUJARAT  
 393130, Education Department, Gujarat Commissionerate of  
 Higher Education  
 GSTIN: 24AAA5G1076K105  
 Department: Education Department, Gujarat  
 Office Zone: GACC Netrang  
 Organization: Commissionerate of Higher Education

Seller Tax Invoice Number	Seller Tax Invoice Date	Dispatch Mode	Dispatch Date
2711GST	12-Oct-2020	Manual	12-Oct-2020

Place of Supply	Place of Supply State (State/UT Code)	Supply Type	Buyer GSTIN Number
Buyer Location	Gujarat: 24	Intra-State	24AAA5G1076K105

Product Description	HSN Code	Measurement Unit	GST NO Name	Expected Delivery Date	Supplier Qty	Unit Price	Total Price (Incl. of Tax)
1578 Floor Mounted Cell and Normal Water Dispenser	8518	pieces	NUMBERS	18-Oct-2020	2	Rs. 48500.00	Rs. 97000.00
						Taxable Amount	Rs. 79322.03
						Tax Rate (%)	18
						CGST	Rs. 7138.96
						SGST/UTGST	Rs. 7138.96
						Cess Rate (%)	0.00
						Cess in Quantum	Rs. 0.00
						Cess	Rs. 0.00
						Round-off	Rs. 0.00
						<b>Grand Total</b>	<b>Rs. 93000.00</b>