

**Build, Operate, own and transfer
Agreement for Punjab Wide Area
Network (PAWAN)**

MEMORANDUM OF AGREEMENT

This Agreement is made and executed on thisday of(month) two thousand and..... at Chandigarh

BETWEEN

Punjab State eGovernance Society (PSEGS), Government of Punjab, having its office at represented by its Member Secretary of the Society, (hereinafter referred to as FIRST PARTY, PSEGS), on the ONE PART

AND

(PAWAN OPERATOR)..... a Company registered under the Companies Act 1956 and having its Registered office at (Hereinafter referred to as the SECOND PARTY, OPERATOR) on the OTHER PART.

Whereas PSEGS, Government of Punjab, invited tender for implementation of 'PAWAN' vide RFP No. _____ dated _____.

AND whereas _____ has given an offer for implementation of 'PAWAN' project and which has been duly accepted by the Govt. of Punjab through their letter _____ (LOI).

NOW, IN CONSIDERATION OF THE MUTUAL COVENANTS AND UNDERTAKINGS HEREIN, THE PARTIES AGREE AS FOLLOWS:

1 PROJECT PROFILE

- 1.1 The Government of Punjab wishes to establish a Punjab State Wide Area Network (PAWAN). This Wide Area Network (WAN) is envisaged as the backbone network for data, voice and video communications throughout the State. PAWAN would act as the vehicle for effective implementation of Electronic Governance (e-Governance) across the state.
- 1.2 The National e-Governance Plan (NeGP) has identified various Mission Mode Projects, which are to be implemented in a phased manner over the next 3-4 years by the Line Ministries/Departments concerned at the Central and State level, as applicable, in addition to the various other e-Governance initiatives being taken by the respective States and Central Ministries. Punjab State Wide Area Network (PAWAN) has been identified as an element of the core infrastructure for supporting these e-Governance initiatives. The Government of Punjab views NeGP as a chance to take its e-Governance vision to greater heights.
- 1.3 To specifically handle e-Governance projects and take the Government of Punjab's e-Governance vision forward, the PSEGS (Punjab State e-Governance Society) was formed. The primary objective of the Punjab State e-Governance Society (PSEGS) is to administer the implementation of E-Governance projects for the overall benefit of the citizens by setting up the necessary administrative, financial, legal and technical framework, implementation mechanism and resources in the State of Punjab.
- 1.4 Various departments in Punjab have separate applications pertaining to their specific usage and purpose, for providing services to the citizens. A typical government department having an e-governance application requires the following:
 - A delivery platform for e-Governance applications
 - A mechanism for fast internal communication
 - Increase access to services for the citizens and multiply usage
 - Carry progressively increasing data and applications
 - Speed up the transfer of information between employees in different locations and to allow them to share common files
 - Carriage of voice and data in an integrated manner rather than having separate networks for voice and data
 - Have a secure and reliable channel to transfer data across locations

To fulfill these requirements, implementation of a State Wide Area Network is required.

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- 1.5 PAWAN is expected to cater to the information communication requirements of the entire state government and its departments. Through implementing PAWAN, the GOP wishes to achieve the following:
- Provide reliable, vertical and horizontal connectivity within the state administration to make the Government more productive.
 - Reduce communication cost.
 - Provide a secure backbone for encouraging electronic transactions.
 - Provide efficient service management
 - Strengthen Disaster Management Capacity.
 - Provide the Government agencies, the ability to leverage a robust infrastructure to provide a complete array of Government services and information.
 - Ensure that every citizen in the state has access to Government services and information whenever and wherever they need it.
 - Make services available in a cost-efficient manner, offering public constituencies' equivalent access at an equivalent price, regardless of their location in the State of Punjab.
 - Move toward the provisioning of converged communication Services (voice, data and video) and the interconnection and interoperation of network platforms.
- 1.6 A number of e-Governance initiatives have been developed by PSEGS. PAWAN would enable cost effective and state-wide rollout of these e-Governance initiatives to take shape and transform the state of Governance in Punjab by providing timely and valuable information and help to the common people.
- 1.7 PAWAN would follow a 3 Tier structure through Point of Presence (POP) across the various levels:
- State Head Quarter or State Network Centre (SNC) – Tier I
 - District Head Quarter or District Network Centre (DNC) – Tier II
 - Sub Divisional Head Quarter or Sub Division Network Centre (SDNC) and the Block Head Quarters or Block Network Centres (BNC) – Tier III
- 1.8 Departmental offices of Government of Punjab shall be connected to these Points of Presence (POP) of PAWAN as Horizontal Office. PAWAN will be based on open standards, scalable with high capacity network to carry data, video and voice traffic between different offices of the Government of Punjab at the State, District and Block level. PAWAN is also expected to help in the rollout of central applications covered under NeGP through interconnection with the national backbone as envisaged by GoI as part of its PAWAN initiative.
- 1.9 The minimum bandwidth for PAWAN at each tier shall be of 2Mbps.

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1.10 The model of implementation for PAWAN is Build, Own, Operate and Transfer (BOOT) model. The services required by PSEGS under this model are listed later in the document. The PAWAN OPERATOR should carry out the activities mentioned below, and PSEGS will release payments against the services as prescribed in the Payment Terms of this document.

1. Supply, install and integrate the necessary hardware, software, and commission necessary bandwidth, etc. at SNC, DNC, SDNC, BNC.
2. Provide Facility Management Services & Operate PAWAN on BOOT basis.

1.11 PAWAN is aimed at serving the requirement of all state departmental applications and also shall enable access to central government applications through interconnectivity with NICNet. PAWAN OPERATOR shall have to study all the applications and analyse their requirement in terms of network & security along with present infrastructure and formulate their integration with PAWAN.

1.12 PAWAN Services

PAWAN shall cater to the information communication requirements of the entire state government and its departments. PAWAN shall facilitate the following minimum services to its entire user community:

1.12.1 Core Services

1. Converged Network Services (Data/Voice/video)

- Seamless end to end connectivity for all government offices across Punjab
- Inter departmental connectivity at each location
- Allow horizontal connectivity facilities at each POP of PAWAN
- Dedicated access to applications hosted at State and Central Govt Department.
- Providing Internet access to all PAWAN users through Internet Gateway at SNC
- Voice over IP for government offices through IP Phone
- Point-to-point and point-to-multipoint video conferencing through High quality video equipments & Multimedia PC

2. Security Services

- Secure data transmission between departmental offices.
- Secure access to centralized applications
- Access rule for departments to be connected to PAWAN
- Access rule for VPN access to departmental network on PAWAN

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- Gateway Level Antivirus protection for SNC/NOC
- Perimeter Security for SNC/NOC

1.12.2 Additional Services

- Help Desk Services for incident handling
- Provide VPN access to departmental network from remote sites
- Centralized Network Monitoring System

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

2 SCOPE OF WORK FOR THE PAWAN OPERATOR

The PAWAN OPERATOR's over all responsibility shall be to build, operate, manage the PAWAN for 5 years from the date of successful completion of Final Acceptance Test (FAT) and issuance of FAT certificate and transfer at the end of the specified service period. The minimum specified work to be undertaken by the PAWAN OPERATOR for setting up of PAWAN is mentioned below and is to be performed as per the specifications and conditions mentioned in the RFP issued for selection of PAWAN OPERATOR, any further amendments issued in this regard and the contract to be signed by the PAWAN OPERATOR subsequently. The minimum specified work for the PAWAN OPERATOR is under the following broad phases:

- Analyse & Design
- Procure
- Implement
- Maintain

The Wireless services as mentioned in the RFP, is subject to rejection and PSEGS holds the right to exclude the wireless equipment and services at the time of contract agreement. In case the wireless services are excluded from the scope of the RFP, than wireless related clause/conditions as mentioned shall not be applicable.

2.1 Analyse and Design

2.1.1 Site Survey and site preparation report

GOP shall handover the minimum constructed rooms/space permanent construction/prefabricated construction, as the case may be at respective site/s, to the PAWAN OPERATOR at the time of signing the contract. The PAWAN OPERATOR would be responsible for site survey to identify the exact situation of the site and for ensuring site readiness for the implementation of the PAWAN infrastructure. The PAWAN OPERATOR would prepare a site survey report detailing the current status of each site, enhancements to be made at the site (s) for establishment of PoPs.

2.1.2 Deployment schedule and design document

- (i) The PAWAN OPERATOR shall prepare detailed network (wired as well as wireless, data, voice, and video services) deployment schedule and design document and shall submit the same for approval within 3 weeks of the signing of the contract
- (ii) The PAWAN OPERATOR shall propose an IP address scheme based upon broad guidelines to be provided by GoI. The GOP shall review the IP scheme and if required, the PAWAN OPERATOR would have to change the IP addressing of the existing nodes wherever required. The PAWAN OPERATOR shall also design a suitable dial plan and submit the same to GOP for approval.

2.2 Procure

- (i) The PAWAN OPERATOR shall procure and supply all Network (Active as well as passive), security, IP EAPBX, UPS equipment, racks and software (Operating System, Network Management, Security etc.) as per requirements of the RFP/Contract.
- (ii) The PAWAN OPERATOR shall be responsible for end-to-end implementation and shall quote and provide/supply any items not included in the bill of materials but required for commissioning of the network. GOP shall not pay for any such items, which have not been quoted by the PAWAN OPERATOR in the bid but are required for successful completion of the project.
- (iii) The PAWAN OPERATOR shall procure all required transmission/connecting media as per the network design.
- (iv) The PAWAN OPERATOR would be responsible for delivering the equipments to the respective POP locations.
- (v) The PAWAN OPERATOR shall supply all the installation material/ accessories/ consumables (e.g. screws, clamps, fasteners, ties anchors, supports, grounding strips, wires etc.) necessary for the installation of the systems.

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- (vi) The PAWAN OPERATOR has to prepare and submit a state wide delivery report including details of components supplied in each office. The delivery report would be validated by the identified GOP resource person.
- (vii) PAWAN OPERATOR shall be responsible for carrying out any site survey if required for proposing the Wireless solution.
- (viii) PAWAN OPERATOR will do feasibility study for required MAST heights; the PAWAN OPERATOR shall procure masts as per specification given.
- (ix) Wireless base station shall have to cover 15km area with minimum 30 remote office connectivity
- (x) PAWAN OPERATOR shall be responsible for taking care of any geography specific requirements. (Like requirement of repeaters for hilly terrains for coverage of 15 KMS distance as per the requirement set)

2.3 Implement

2.3.1 Site preparation

PSEGS shall provide the necessary minimum constructed space as mentioned above, for locating all the POPs. After the Site survey and Site preparation report, the PAWAN OPERATOR would be responsible for Site preparation of all the POP's. General, Civil and Electrical specifications for the same are provided as Annexure 14.3 of the PAWAN RFP. The POP room, generator room including other infrastructure requirement (viz. power, lighting, etc) shall be constructed at the POP as per the requirement. The space cannot be used for any purpose other than for delivering PAWAN services. PSEGS shall arrange for necessary clearances which shall enable the Operator to undertake civil, electrical, and mechanical works including false ceiling, partitioning, installation of electrical equipment, cable laying etc at the respective sites.

PSEGS Shall handover the site to PAWAN OPERATOR within 1 week of contract agreement. It shall be the PAWAN OPERATOR's responsibility to secure the site through appropriate locking mechanism and other security measures.

The main purpose of the said PAWAN agreement as well as the tasks incidental or consequential thereto, is assured to be of the superior most quality which is guaranteed to be of credibility for t least 2 years after the net work is handed over to Govt. after expiry of the tenure of the agreement. All material used for site preparation (Civil and Electrical) should be of ISI quality material.

2.3.2 Implement Backbone

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- (i) The PAWAN OPERATOR shall implement PAWAN as per the requirement specified in the RFP. The PAWAN OPERATOR shall install and commission the active network equipment as per approved deployment design.
- (ii) It shall be the responsibility of the PAWAN OPERATOR to bring all the installation equipments and tools required for the installation of the system.
- (iii) The PAWAN OPERATOR shall install and commission transmission/connecting medium. All the work shall be done in a conscientious manner as per the OEM guidelines and best industry practices. The system shall be subjected to inspection at various stages.
- (iv) Local regulation/ codes shall be followed at all times. The PAWAN OPERATOR shall follow all Safety Regulations and practices.
- (v) The PAWAN OPERATOR shall not cause any damage to Government buildings /other premises and property and will perform restoration if any damage occurs. Trenches, path-cutting etc. will be back-filled and restored to the original condition immediately after laying of the conduit/cable. The PAWAN OPERATOR shall plug conduits and entrance holes where the cabling has been installed with suitable sealing material. For any such damages/civil/criminal action, the operator alone shall be responsible.
- (vi) The PAWAN OPERATOR shall configure the network equipment, transmission medium, IP telephony equipment, Security and servers/desktops etc for end-to-end user access to applications/services.
- (vii) The PAWAN OPERATOR is required to commission the structured cabling with in the POP's involving CAT5E/CAT6 cables, Surface Mount I/Os, 3' CAT 5E/CAT6 patch cord, 7' CAT 5E/CAT6 patch cords, Jack Panel, PVC conduit / casing / capping with accessories, any other required components such as labels, ferrules etc., and all associated civil works at all the PoPs.
- (viii) The PAWAN OPERATOR shall be responsible for the installation and configuration of software applications/modules for the Network Management and security management, IP telephony etc.

2.3.3 Implementing Wireless Solution

- (i) The PAWAN OPERATOR shall install all necessary wireless equipment at all PAWAN POPs and configure it accordingly as per requirement mentioned in the RFP.
- (ii) Any required civil work for implementation of wireless mast/antenna shall be carried out by the PAWAN OPERATOR.
- (iii) Base station and all other indoor equipments shall be placed in the PAWAN POP.

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- (iv) The PAWAN OPERATOR shall be responsible for integrating the wireless equipments with PAWAN backbone. Wireless equipments shall be configured to seamlessly work with PAWAN backbone.
- (v) Required wireless NMS for monitoring and managing the wireless infrastructure shall be implemented by the PAWAN OPERATOR. The wireless NMS shall be integrated with the PAWAN backbone NMS to seamlessly exchange information.
- (vi) For Wireless connectivity in intra-city/inter-city, an approval from Wireless Planning Commission (WPC) wing and Standing Advisory Committee for Frequency Allocation (SACFA), as required shall be obtained by the PAWAN OPERATOR for the range of frequencies that the equipment will be going to use.
- (vii) Any required civil work (mast base) for implementation of mast shall be carried out by the PAWAN OPERATOR.
- (viii) Any necessary electrical work required shall be done by the PAWAN OPERATOR.

2.3.4 Integration with existing and proposed Network

- (i) The PAWAN OPERATOR shall be responsible for integration of some existing/operational LANs and WAN links to provide enterprise wide access to resources and services. It would be the responsibility of the PAWAN OPERATOR to ensure that the network adheres to all the security, interoperability and interconnectivity guidelines issued by GoI. The current interconnectivity and interoperability guidelines issued by GoI are attached as Annexure in section 14.1 of the RFP issued for PAWAN OPERATOR selection. The service provider shall be responsible for integrating the following minimum networks with PAWAN:
 - Interconnectivity with any national network such as NICNet.
 - PAWAN shall be integrated with NICnet at each DNC and at Punjab Civil Secretariat and mini secretariat.
 - Integration with the existing Punjab Civil Secretariat and Mini secretariat LAN.
 - Integration of the Deputy Commissioner office LAN with PAWAN.
 - Interconnection with other significant departmental networks (to be identified in consultation with the PSEGS).
 - Integration of LAN at all special horizontal offices at Chandigarh.

For all the above mentioned integration the PAWAN OPERATOR shall be responsible for studying the network to take care of all necessary configuration issues.

- (ii) It shall be responsibility of the PAWAN OPERATOR to configure the systems to take care of all IP addressing or similar issues arising at the time of integration and should

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also ensure that all the existing applications run smoothly. For change of IP addresses the PAWAN OPERATOR will have to coordinate with the concerned national network OPERATOR including NIC officials.

- (iii) The PAWAN OPERATOR shall also be responsible for integration of PAWAN infrastructure or equipments with those that are procured later for the State Data Center.

2.3.5 Quality of Service and Network Management

- (i) The PAWAN OPERATOR shall configure quality of service parameters on network switching and routing devices for end-to-end QoS for voice, video and other critical traffic over the network.
- (ii) The PAWAN OPERATOR shall be responsible for integration of security components in the network to ensure a secured network access for users.
- (iii) The PAWAN OPERATOR shall configure network management policies for managing all the network and security devices using network management systems. It would also be responsible for adhering to such policies that are issued from time to time by various Government Bodies of PSEGS/GoI.

2.3.6 Liaison with stake holders

- (i) An agreement shall be signed between PSEGS and BSNL/any alternate Bandwidth Service Provider to avail bandwidth for the backbone. The PAWAN OPERATOR shall be responsible for liaising with BSNL/any alternate Bandwidth Service Provider for timely commissioning of leased circuit as per the agreement and later on maintenance of all bandwidths.
- (ii) A tripartite agreement between PSEGS, BSNL/any alternate Bandwidth Service Provider and PAWAN OPERATOR shall be made, so as to define the roles and responsibilities clear. Leased line bills would be raised against PSEGS, however the PAWAN OPERATOR would make the payment to BSNL/any alternate Bandwidth Service Provider and PSEGS would ensure to reimburse the same within 15 working days. In the event PSEGS is unable to pay the PAWAN OPERATOR within the above mentioned period, PAWAN OPERATOR would be paid interest @ 10% pa. over and above the aforesaid period of 15 working days, subject to the approval of the competent authority. The payment will be considered due after the receipt of bill(s) by PSEGS.
- (iii) All interest rates mentioned in this contract are simple interest
- (iv) The PAWAN OPERATOR shall be responsible for obtaining approvals for any Statutory & Regulatory requirements from any of the authorities. Further, the PAWAN OPERATOR

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shall be responsible to get required documentation completed for obtaining such approvals from time to time. PSEGS would provide all necessary support that may be required for obtaining such approvals. Any cost associated with obtaining such approvals would have to be borne by the PAWAN OPERATOR

2.3.7 Testing of network connectivity and performance

The acceptance test for the network shall be carried out in two phases by the third party Monitoring Agency to be appointed by PSEGS, as mentioned in Acceptance test criteria. The third party monitoring agency would be appointed by the PSEGS before the PAT (Partial Acceptance Test) as defined, and approved in the contract agreement.

2.3.8 Documentation

- (i) The PAWAN OPERATOR shall prepare detailed network (wired as well as wireless, data, voice, and video services) deployment schedule and design document and shall submit the same for approval within 3 weeks of the signing of the contract
- (ii) The PAWAN OPERATOR shall submit a complete cabling system layout (As installed) up to Block HQ level, including cable routing, telecommunication closets and telecommunication outlet/ connector designations. The layout shall detail locations of all equipment and indicate all wiring pathways.
- (iii) Manufacturer's technical documentation on all devices used in the system including user Manuals for configuring of switches, routers, firewall, IPS etc shall be provided by the PAWAN OPERATOR.
- (iv) The PAWAN OPERATOR shall be responsible for documenting configuration of all devices and Keeping back up of all configuration files, so as to enable quick recover in case of failure of devices.
- (v) Process documentation: The PAWAN OPERATOR shall be responsible for preparing process documentation relating to operation and maintenance of each and every services as mentioned in this section. The prepared process document shall be formally signed off by PSEGS before completion of final acceptance test.

The process documentation shall include but not limited to the following:

- Backbone Services : Processes for managing the PAWAN backbone and providing FMS services
- Multimedia Services: Process for providing voice and video conferencing services to PAWAN users.
- VPN Services: Process for providing VPN services

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- Wireless Connectivity Services: Process for providing wireless connectivity services for common services center and horizontal offices.
- Integration of Existing Networks with PAWAN: Process for Integration of other networks with PAWAN.
- Security Service process: This shall include Process for Managing security services ,e.g. - Process for maintaining Firewall/IPS, AV solution, etc
- Horizontal Connectivity Services: Process for providing various types horizontal connectivity services as mentioned in the RFP document.
- Messaging Services Processes
- Operation, Maintenance and Monitoring Service process: This shall include
 - Help desk management process shall capture the entire cycle of problem reporting, escalation and resolving issues.
 - SLA monitoring processes for each SLA parameter as defined in section 4 (monitoring mechanism and report proforma etc)

Each process map shall clearly define the roles and responsibilities, Detailed steps for execution the defined task, Detailed configuration steps etc.

2.4 Maintain

2.4.1 Facility Management Services and Operations

The PAWAN OPERATOR shall be responsible for operating and maintaining the network for 5 years from the date of completion of Final Acceptance test (90% of POPs completion and issuance of a certificate of completion by PSEGS) The services as per the scope of the contract shall include maintaining the system, ensure running of the services (Data, Voice, Video) with availability in line with the SLA & Round the clock Network monitoring. This shall include

- Equipment Configuration Management
- Upgrading IOS
- Maintaining access control list
- Regular review of routes
- Regular backup of configuration
- Upgrading Patches on all equipments including servers, security devices & Antivirus software.
- The PAWAN OPERATOR should keep the details of all the WAN Assets and document any changes in the assets including up gradation and/or replacement of assets. The BOM for the entire WAN architecture shall always be up to date and shall be made available to the PSEGS on demand within 2 working days.

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- Operational liaisoning with stake holders (link providers, state government, local bodies, third party agencies / consultants appointed/identified by PSEGS)
- The PAWAN OPERATOR will need to ensure that all software's deployed on the network are genuine licensed versions.
- The PAWAN OPERATOR should deploy the minimum prescribed resources as mentioned in the RFP at various PoPs to provide maintenance and support services.
- The PAWAN OPERATOR shall enter into an AMC contract for all the equipments, hardwares & softwares that has been procured by the PAWAN OPERATOR or supplied by the PSEGS. The AMC contracts for all the equipments of PAWAN which will be managed by the PAWAN OPERATOR shall be executed by the PAWAN OPERATOR on behalf of PSEGS at PAWAN OPERATOR's cost.
- The services as per the scope of the contract should be maintained five years from the date of completion of Final Acceptance certificate.
- Maintain the system , ensure running of the services (Data, Voice, Video) with high availability & performance requirements in line with the SLA described in section 4 of this document.

2.4.2 Network Management System

The PAWAN OPERATOR shall supply, install, operate & maintain Network Management System (NMS) for PAWAN backbone at SHQ NOC centrally. This network management system shall allow the third party agency appointed by PSEGS to perform PAT,FAT and there after help in monitoring the service level parameters defined in the RFP. Third Party agency shall have access to NMS for reports, service levels and monitoring. Third Party agency shall use the reports generated from NMS for audit also. PAWAN OPERATOR shall have to deploy adequate access policy and security on NMS for ensuring authenticity of reports.

The PAWAN OPERATOR shall be responsible for creating network monitoring environment through the following-

The NMS system shall be configured to automatically discover all manageable element of PAWAN.

All network components shall be configured snmp trap messages to centralized NMS server, So as to reflect real status of all network components and links across PAWAN.

The NMS system should be configured to generate the following reports-

- NMS should offer tabular information giving % of uptime of individual links on quarterly basis.
- Bandwidth utilization report.

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- Statistical report regarding resource utilization and Faults in network. (e.g – CPU and memory utilization for routers and switches)
 - Link wise Latency report (both one way and round trip) times.
 - The following Engineering reports available for troubleshooting, diagnosis, analysis and resolution purposes must conform the following:
 - Trend Report
 - At A Glance report
 - Top N report
 - Custom report
- Historical reporting facility that will allow for the generation of on-demand and scheduled reports of Business Service related metrics with capabilities for customization of the report presentation.
- Detailed Inventory report (hardware/software)
- Generate SLA violation alarms to notify whenever an agreement is violated or is in danger of being violated.
- Any other reports/format other than the above mentioned reports required by GOP shall also be provided by the PAWAN OPERATOR either through NMS (automated) or manually prepared.
- The PAWAN OPERATOR shall provide the NMS reports including Bandwidth utilization report & Link up-time report & network equipment health check report on a monthly basis. The PAWAN OPERATOR shall consult PSEGS for finalising the report format.
- PAWAN OPERATOR shall monitor the utilization of PAWAN links across the segments to verify the current utilization and the trends to ensure that enough bandwidth is made available for the applications and services to function with out performance issues. PAWAN OPERATOR shall provide fortnightly reports on the link utilization and in case the link utilization on a constant basis is exceeding 70 %, PAWAN OPERATOR shall provide recommendations to the State government on procurement of additional bandwidth.
- The PAWAN OPERATOR shall provide capacity planning services through network base lining and trending, to determine the resources required for PAWAN and to plan and complete network upgrades before a capacity problem causes PAWAN down time or performance problems. In addition to availability, latency, jitter and packet loss, PAWAN OPERATOR shall monitor the network and dependent infrastructure (resource) utilization during successive time periods (hour, day, week, month, and year) and shall provide recommendations to State government on PAWAN infrastructure up gradation. PAWAN OPERATOR shall perform the planned network

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upgrades with prior notification to the departments/users in the network segment (s) affected by the planned outages. PAWAN OPERATOR should ensure that all the planned outages are performed only in the Extended SLA Hours and only the emergency upgrades are performed in the Prime Business Hours.

2.4.3 Security

The PAWAN OPERATOR's responsibility would be to continuously manage a secure environment, monitor for anomalous events, implement appropriate mitigating controls, integrate with the core IT environment and escalate appropriately if events become incidents or emergencies. The PAWAN OPERATOR shall be responsible for 24/7 security monitoring of the PAWAN network. Major areas that the PAWAN OPERATOR would need to cover include:

- **Manage Security:** Execute recurring support processes, such as the administration of identities, management of standards and policies and operation of a centralized repository of security information.

For securing the PAWAN, the PAWAN OPERATOR shall be responsible for:

- Defining security policy for firewall & periodic review of the firewall configuration.
- Configure the Anti Virus Solution according to network requirements and ensure that the solution is up to date with the latest patches and upgrades.
- Implement access rules for departments to be connected to PAWAN, and for VPN access to department network on PAWAN
- Define access controls lists for VPN access through centralized VPN Gateway.
- Implement Gateway Level Antivirus (SMTP & HTTP) protection for SNC/ NOC
- Log generation, Analysis & Report for Firewall system & IDS/IPS
- Reports for firewall & IDS/IPS shall be submitted by PAWAN OPERATOR on monthly basis. The PAWAN OPERATOR shall discuss the format of reports & frequency of the report with PSEGS later on.
- Maintain a Secure Environment: Resolve security issues by maintaining an up-to-date environment, including patching vulnerable systems and applying incremental additions and security configuration updates to existing systems.
- Adherence to all security guidelines issued by PSEGS and GoI from time to time.

Upon completion of PAWAN Installation and as part of the final acceptance test a security audit shall be performed by a third party SLA monitoring agency from the perspective of compliance of PAWAN security policy and GoI security guidelines. The Third party SLA Monitoring Agency shall

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be appointed by PSEGS. Later on quarterly/six monthly audit shall also be performed by the same agency.

- **Incident Response**

Any security incident would need to be met by an appropriate security response by the PAWAN OPERATOR's team. A timely response would be essential in order to minimize loss. It would be the PAWAN OPERATOR's responsibility to put in place an appropriate response mechanism to take care of any security incidents. The PAWAN OPERATOR would need to adopt any practice necessary to reduce the impact of the incident, assess damage, and ensure that the network quickly recovers from the attack and provides all PAWAN services. In this respect, major areas which the PAWAN OPERATOR would need to look at include:

Detect Threats: Identify and isolate threats to minimize impact on protected assets of PAWAN.

Prevent Vulnerability Exposure: Actively identify vulnerabilities and address them before they are exploited.

Stabilize Incident: The PAWAN OPERATOR would need to ensure minimal damage by deploying an Incident Response Team (Helpdesk), which will attempt to limit the number of systems affected and the amount of processing that is interrupted.

Repair Vulnerabilities: Resolve, through technical or policy means, the inherent vulnerability from which the incident stemmed, thus preventing its recurrence.

Investigate Incident: Determine what happened, how the incident occurred, what systems were affected and what information was compromised, gathering evidence to pursue legal action if appropriate.

Report Incident: Any security incident occurring at PAWAN shall be reported to Computer Emergency Response Team of India (CERT-In). It shall be the responsibility of the PAWAN OPERATOR to coordinate with CERT-In for resolving any security incident.

Recover Operations: Ensure operational functionality is restored by reestablishing systems – applying patches, adding software/hardware and conducting other remediation as required.

VPN Services

- VPN connectivity should have suitable encryption scheme (DES/3DES).
- VPN connectivity should have suitable authentication method.
- SNC shall have VPN server which should support both Site to Site VPN and Remote VPN

Following are the process for connecting to PAWAN using VPN

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- Remote User connecting to PAWAN using Internet.
- User will purchase Dial-up or ADSL internet connection from BSNL/any alternate Bandwidth Service Provider or other OPERATOR.
- PAWAN OPERATOR shall facilitate necessary client software and configure the software at users laptop/desktop
- Remote User will connect to PAWAN through VPN with access rule defined in security services.
- PAWAN OPERATOR shall install and maintain VPN Connectivity for site to site and remote users.
- VPN users/clients are expected to be around 500 initially and scalable upto 5000 in five years. The PAWAN OPERATOR should keep provision for this while designing for VPN connectivity.

2.4.4 Software updates

The PAWAN OPERATOR shall provide all software updates for a period of five years from date of acceptance for all software components like operating systems, management software, security software, anti-virus software or any other software, which would be part of the supplies, at no additional costs.

2.4.5 Messaging Services

The PAWAN OPERATOR will provide messaging services to all the authorized users specified by PSEGS. The PAWAN OPERATOR shall be responsible for design, implementation and maintenance of Messaging solution. The responsibility of the PAWAN OPERATOR shall include:

- Maintaining the messaging application and individual mailboxes,
- Adding/removing/renewing e-mail ids on PSEGS request.
- Troubleshooting any problems in the messaging architecture.
- Monitoring the mailbox usage.
- Ensuring timely delivery of mails.
- Keeping a track on the mails getting dropped and taking backups of the mailboxes at regular intervals.
- Purging and compaction of mail boxes at regular intervals shall be done by the PAWAN OPERATOR for optimum utilization of resources as per the policies defined by PSEGS.

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- Monitoring the performance statistics including mail server utilization statistics, memory management, CPU utilization and disk space utilization according to the Service level agreement defined in the RFP.
- Deployment of SPAM filter and monitoring mechanism.
- Maintaining and troubleshooting spam/content filter applications
- Regular updation of Blacklist/white list and manual spam filter rules.
- Implement appropriate content filtering/mining mechanism,
- Prepare log report from Messaging system including Anti Spam & Content Filtering for reporting the incidents of SPAM mails, Virus Mails & Accessing the restricted sites/contents. The report will be submitted to PSEGS on periodic basis for review and taking corrective actions with consultation of the Project management consultant.
- Implement and maintain gateway level SMTP antivirus.
- All incoming and outgoing mail traffic shall be routed through gateway antivirus and checked/ verified to be malicious content free. Detailed Gateway AV solution specification is given in component specification section of the RFP.

2.4.6 Multimedia Services

PAWAN infrastructure should facilitate multimedia services along with the data services. The multimedia services shall include VOIP and Video conferencing facilities

- (i) The PAWAN OPERATOR shall configure the centralized call manager and MCU device to support end equipments.
- (ii) All QOS configuration for VOIP and Video shall be configured as per requirement.
- (iii) The PAWAN OPERATOR should implement and maintain Voice over Internet Protocol (VoIP) which shall provide voice facility to the users as per the SLA.
- (iv) The PAWAN OPERATOR shall procure and install VoIP phones along with their software licenses. For operation and maintenance of VoIP, a central VoIP call registration and management device will be procured, implemented and maintained by the PAWAN OPERATOR.
- (v) The VoIP services will be given at the primary PoPs. The PAWAN OPERATOR shall supply and install one IP phone at each POP till block Headquarter and each co-located offices of PAWAN.
- (vi) Video conferencing facilities shall be implemented and maintained by the PAWAN OPERATOR at all locations defined in the requirement section of RFP.

2.4.7 Help Desk

For servicing the PAWAN users, the PAWAN OPERATOR will establish a centralized online Help Desk with a toll free number, E-mail and call tracking mechanism. PAWAN users can log the queries / complaints, which should be resolved as per the Service Level requirements defined in the RFP. The helpdesk queries / complaints can be related to connectivity, messaging, security, multimedia, configuration and any other issues which relate to the usage of PAWAN. The Monthly Report of Call logged & resolved shall be submitted by PAWAN OPERATOR to PSEGS. The PAWAN OPERATOR shall have to consult PSEGS for finalising the report format.

To facilitate help desk function, Help Desk software shall be established by the PAWAN OPERATOR. The software should be able to take care of classification, automatic escalation, management, status tracking and reporting of incidents as expected by the service level requirements. Status tracking should be available to PAWAN users through a toll free number as well as online through software. The PSEGS or the third party appointed by it shall have online access to the Help Desk System information and historical data.

The OPERATOR shall be responsible for setting up of all necessary channels for reporting issues to help desk. The minimum incident reporting channels should be the following:

- Specific E-Mail account
- Toll free Number
- IP Phone
- Web based incident reporting form
- The Help Desk will respond to and resolve the problems as per the SLA. PAWAN OPERATOR will keep PAWAN management (PSEGS, PSEGS) informed about the progress by contacting the management at regular intervals.
- Problems shall be classified into various levels of priority mentioned in the SLA. The assigned priority for each problem shall dependent upon:
 - The extent of the problem's impact on the usability of the system
 - The percentage of PAWAN users affected by the problem.
- The initial assignment of priorities is the responsibility of the Help Desk's Problem Manager. However, the PSEGS can challenge the priority assigned to a particular problem and the procedures that exist for escalating a problem to progressively higher management levels.
- The precise definition of problem priorities should be documented in the PAWAN OPERATOR's Problem Management Procedures.

The helpdesk should briefly manage following:

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- Troubleshooting on systems (hardware), applications (software), mail related issues, network related issues, multimedia related issues, server administration, security policies, 3rd party coordination.
- There shall be provision of resident engineers as specified in the resource requirement section in the RFP. All the problems/queries at local offices will be reported to the resident engineer, in turn the resident engineer will log the problem in help desk. Resident engineer will resolve the problem on the basis of priority and within given SLA. After problem resolution, the logged problem in help desk will be closed and notification will be sent to user for confirmation and rate the customer service on defined parameter in helpdesk,
- Help Desk shall be responsible for change management like schedule upgradation of hardware and software components of PAWAN backbone etc. Help Desk will co-ordinate with all stake holders for change management and take approval from PSEGS for the same and will inform all users for such event in advance.
- Help Desk shall also be responsible for managing problems/incidents related to LAN at each POP of PAWAN. Help Desk shall ensure timely response and assigning the problem/incident to resident engineer at that POP on priority basis.

2.4.8 Horizontal Connectivity Services

- (i) For inter connecting the horizontal offices with PoPs, the following connectivity facilities should be present in the backbone–

Types of Horizontal Offices:

Type I: CAT 5 Ethernet – Offices within the range of 100 meters from PoP would be connected through Ethernet extension. Extensions can be given either from router Ethernet ports or from the switches.

Type II: Fibre - Offices with a distance of more than 100 meters and less than 500 meters from PoP shall be connected through this method.

Type III: Leased line – Offices beyond 500 meters distance would from PoP connect through BSNL/any alternate Bandwidth Service Provider leased lines.

Type IV: Wireless – Every primary POP shall have wireless base station for connecting co-located POPs. At all tiers, horizontal offices may also be connected through wireless links to these POPs.

- (ii) The various departments may or may not take the services from PAWAN OPERATOR for connecting to PAWAN backbone.

(iii) Horizontal Office Connectivity Service's Options

The horizontal offices will have the following services options to choose from:

a) Providing port, connectivity medium/ end equipment and service:

Under this option the PAWAN OPERATOR shall provide the connectivity port at PoP, the connectivity medium described above and network end equipments. The PAWAN OPERATOR shall install the connectivity medium including laying of cable, setting up wireless masts, connecting cables etc. The PAWAN OPERATOR shall use the resources at the nearest PoP as described under the section 'Resource requirement' of the RFP. The PAWAN OPERATOR shall procure, configure, install and maintain the connecting medium and the network end equipment.

b) Providing port and Service

Under this option the PAWAN OPERATOR shall provide the connectivity port at PoP, implement the connectivity and maintain. The concerned department will purchase the network end equipments and connectivity medium. However the PAWAN OPERATOR will help the concerned department in finalizing the equipment specification. The PAWAN OPERATOR shall install and maintain the connectivity medium including laying of cable, setting up wireless masts, connecting cables etc. The PAWAN OPERATOR shall use the resources at the nearest PoP as described under the section 'Resource requirement' of the RFP.

c) Providing port at PoP

Under this option the PAWAN OPERATOR shall provide the connectivity port at PoP. The connectivity medium described above and network end equipments will be purchased by the department. However the PAWAN OPERATOR will help the concerned department in finalizing the equipment specification. No additional service charge shall be paid for providing port for connection at PoP.

In all the options mentioned above, PAWAN OPERATOR shall provide following services:

The PAWAN OPERATOR shall configure the backbone equipments as per requirement.

The PAWAN OPERATOR shall extend full cooperation to the horizontal office in terms of:

Finalizing the CPE specification and configuration

Assigning IP address range for the horizontal office

2.4.9 PoP operations and Maintenance

It is the responsibility of the PAWAN OPERATOR to maintain the networking and the electrical infrastructure at the PoPs. All the networking equipment and spares shall be kept in good working condition and shall be repaired or replaced if required by the PAWAN OPERATOR at its

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own cost.

All the electrical equipment and accessories including lighting equipments, AC, backup power sources, plugs, wires etc. shall be maintained and if required replaced by the PAWAN OPERATOR at its own cost. The PAWAN OPERATOR shall also provide all material (Petrol, Diesel etc) for operating the POPs electrical components & civil components. The PAWAN OPERATOR shall deploy the minimum prescribed resources as given in resource requirement section of the RFP at various PoPs to provide maintenance and support services.

For ensuring desired uptime of all PAWAN pop, required Petrol/Diesel for running DG Set shall be provided by the PAWAN OPERATOR as much required, regardless of the number of hours.

2.4.10 Training

The PAWAN Operator shall provide training free of cost to PSEGS officers /persons identified by the State. Two separate training programmes shall be conducted by the OPERATOR. One shall be for the PAWAN nodal officers/officers identified (minimum 2 officers per district) by PSEGS at a location identified by the PSEGS within the State. The training duration should be of minimum two weeks (10 working days and 8 hrs daily) and should be extended to cover the course material as approved by PSEGS. The training should cover system design, installation, configuration, set-up, upgrade, administration, testing, management, and maintenance of all the equipment (hardware and software) supplied. The PSEGS reserves the right to decide the venue of this training. Separate training modules for the following components must be provided:

- Routers, WAN setup, configuration & documentation
- Switch, LAN components, configuration & documentation
- Firewall, IDS, their configuration & documentation
- Interconnection details of attached hardware, General Network Capabilities and technologies involved and configuration and troubleshooting of the equipment.
- Domain setup, configuration & documentation
- UPS, Structured Cabling, Power Cabling & documentation
- Servers, Workstations (hardware & configuration) & documentation
- Other supplied equipment.

District level training for local officers:

The PAWAN Operator shall provide training to PSEGS personnel and/or its representatives at each District Head quarter. This training shall include at least one representative from each POP in the concerned district. This training should cover the day-today maintenance, management, and operations related aspects of the Routers, Switches, Servers, Desktops, and UPS etc. The

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duration of training at each site should be of minimum 3 working days (8 hrs a day) and should be extendable to cover the course as approved by PSEGS.

The training modules and their duration shall be finalized in consultation with the PSEGS.

The PAWAN shall also supply detailed training material to PSEGS, to enable the PSEGS to train more number of officers independently.

The PAWAN Operator should also inform all the PSEGS officers during this training about the escalation matrix, if any problem arises in the commissioned network.

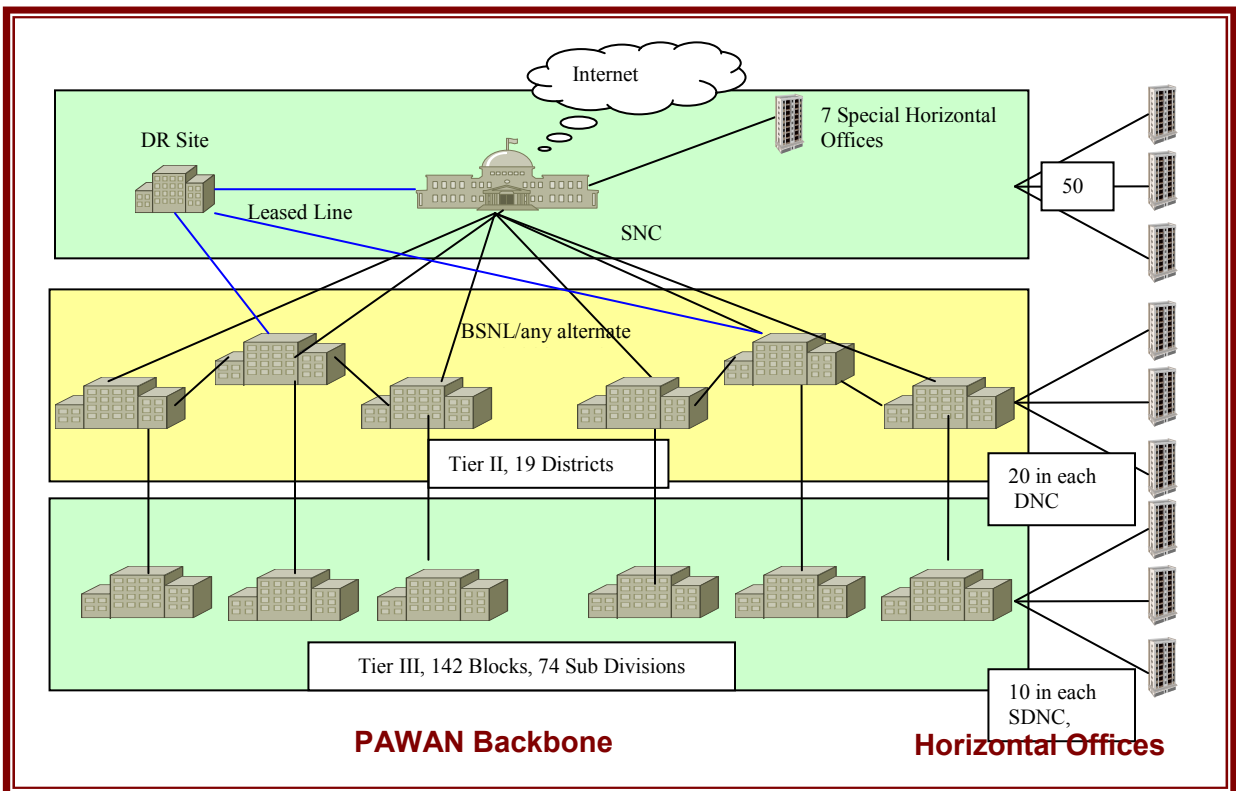
All the expenses related to travel, boarding and lodging, etc. of PSEGS officers/its identified personnel only shall be borne by PSEGS. All other expenses will be borne by the PAWAN Operator.

3 PROPOSED TECHNICAL REQUIREMENTS OF PAWAN

3.1 PAWAN Backbone Architecture

- PAWAN would consist of a three tiered architecture. At the top most tier, there would be the SNC. The 19 DNC's below would each have leased line connectivity to the SNC. In addition, there would be four aggregation points (4 of the 19 DNC's) at this second tier. The remaining 15 DNC's would have additional connectivity to their nearest aggregation point. The SDNC's and BNC's have been categorized as a single tier. They would connect to their respective DNC's. The detailed listing of Districts and their respective sub divisions and blocks is given in the POP List (Annexure I).

PAWAN Backbone Schematic





- All districts would be connected to a nearest aggregation point as given in the following Table through another minimum 2 mbps leased line.

District Aggregation Points	Districts to be connected
Jalandhar	Gurdaspur, Amritsar, Kapurthala, Hoshiarpur, Tarn taran
Bathinda	Muktsar, Firozpur, Faridkot,
Ludhiana	Moga, Nawan Shehar, Rupnagar, Fategarh Saheb, Mohali
Sangrur	Mansa, Patiala

- DR Site: PAWAN backbone shall have the provision for inclusion of DR site as and when required. The Backbone routers shall have the required ports for DR site connectivity. Four E1 leased line shall link the four aggregated points to the DR Site. Routers at the aggregation points (DNCs) should have the required port. The DR site shall also be connected to the SNC

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through another E1 Leased line. Thus the SNC router and district aggregation point routers shall have one extra port for DR site connectivity. The PAWAN OPERATOR shall be responsible for implementation of the DR site as and when required by PSEGS.

- Co-located BNC/SDNC: Some of the Offices (SDNC/BNC) are located within the same city of upper tier POP. In those cases these offices shall not be a primary POP of PAWAN and these Offices will not act as a further distribution point for lower tier POPs. These offices shall be known as co-located Offices and shall be connected to the local upper tier pops as a horizontal office. The basic principle for the architecture shall be to have only one PAWAN pop in a single city..
- Horizontal Office: All departmental offices are categorized as horizontal offices. At each tier, a number of these horizontal offices would connect to the POP, with the connectivity mechanism depending on the distance from the POP. All the POPs in the three tiers of the PAWAN backbone shall have the facility to connect departmental offices. Detailed Horizontal connectivity options are given in section 5.9 of the RFP.
- Special Horizontal Office: PSEGS wishes that 7 Horizontal offices within Chandigarh be connected with the SNC as part of the PAWAN backbone implementation. These offices are important locations in Chandigarh and require immediate connectivity. Requirements for these offices are given in section 5.10 of the RFP.
- The villages (at least one out of six) are expected to be connected to the BNCs in due course. The village connectivity is not within the scope of the RFP. However infrastructure including base station for providing wireless connectivity to village from BNC is part of the current RFP.
- BSNL/any alternate Bandwidth Service Provider would be the primary bandwidth provider for PAWAN. However PSEGS may incorporate services from other bandwidth providers at its own discretion. Details for WAN link and circuit termination types for each location as agreed by BSNL/any alternate Bandwidth Service Provider are provided in the Annexure 14.2 of the RFP. PSEGS would separately negotiate with BSNL/any alternate Bandwidth Service Provider and ensure availability of the links to the selected PAWAN OPERATOR for implementing PAWAN.
- Minimum Bandwidth requirement at each circuit of PAWAN is 2 mbps.
- Wireless base station shall be deployed in all primary pops of PAWAN (DNC and SDNC/BNC). Each radio should support at least 30 remotes. The base station primarily shall be used for village connectivity. The same base station shall also be used for connecting horizontal offices and co-located BNC/SDNC as required.

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3.2 Equipment Specifications

- (i) The PAWAN OPERATOR will offer equipments that will best accommodate and meet the present and future requirements of PAWAN.
- (ii) The PAWAN OPERATOR is required to supply the latest version of software, providing all the features enumerated in the specification section of the RFP. Equipments must be compatible with other Network equipment. The principal vendor of products/equipments supplied under this project should have relevant quality certifications such as ISO 9001. And all the products should be certified by the original manufacturers.
- (iii) "No product, which is out of market for sales and or is expected to stop the production in next one year, will be offered by the PAWAN OPERATOR. Further, the PAWAN OPERATOR OEM shall agree to provide warranty and support for six years for the products supplied under the AMC. Six years (5 yrs of Boot Period + 1 yr) would be from the date of FAT. In case product support is stopped prior to the period, the OEM should replace the equipment (with similar specification or higher) free of cost after taking prior permission of PSEGS."
- (iv) All equipments/services as mentioned in the RFP shall be provided by the PAWAN OPERATOR or its consortium only. No core work in this regard shall be outsourced. However for Non core business in peripheral activities may be outsourced. (site preparation, Electrical, AC, DG set fitting etc)
- (v) IPv6 and related protocols should be supported as and when required. However the PAWAN OPERATOR shall be responsible for implementation of IPv6 through the required hardware/software changes, whenever required by PSEGS/GoI without any cost implication to PSEGS.
- (vi) `The life and strength of POP building so constructed may be got verified from some Government agency like PWD

Detailed POP wise requirements and bill of material is given in ANNEXURE I of the Contract Document.

PAWAN Agreement

4 SERVICE LEVEL REQUIREMENT AND PAYMENT TERMS

4.1 Service level Agreements

Service Level Agreement (SLA) is the contract between the PSEGS and the PAWAN Implementation Agency (PAWAN OPERATOR). SLA defines the terms of the PAWAN OPERATOR's responsibility in ensuring the performance of the PAWAN based on the agreed Performance Indicators as detailed in the Agreement.

4.1.1 PAWAN SLA Terms & Definitions

S.No	SLA Terms	Description
1	PAWAN Backbone	'PAWAN Backbone' refers to Internet Protocol (IP) based routing infrastructure consisting network of selected PAWAN points of presence identified by the State at which, PAWAN OPERATOR has installed network devices ("Selected POPs") for Wide Area Network within the State.
2	Uptime	'Uptime' refers to PAWAN backbone availability across various segments i.e. between State Head Quarters to District Head Quarters and District Head Quarters to BlockHead Quarters. "%Uptime" means ratio of 'up time' (in minutes) in a month to Total time in the month (in minutes) multiplied by 100.
3	Latency	'Latency' refers to the average time required for round-trip packet transfers between Selected POPs on the selected portions of the PAWAN Backbone during a calendar month.
4	Packet Loss	'Packet Loss' refers to the average percentage of IP packets transmitted between Selected POPs during a calendar month that are not successfully delivered.
5	Average Jitter	'Average Jitter' refers to the average variation in delay for packet transfers between Selected POPs during a calendar month.
6	Maximum Jitter	'Maximum Jitter' refers to the maximum variation in delay for packet transfers between Selected POPs.
7	Prime Business Hours (PBH)	PBH refers to the prime network utilization period for PAWAN, which shall be typically starting from 08:00 hrs till 20:00 hrs Monday to Saturday or any other period to be defined by the state.

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S.No	SLA Terms	Description
8	Extended SLA Hours (ESH)	ESH refers to the lean network utilization period for PAWAN, which shall be typically starting from 20:00 hrs till 08:00 hrs on Monday to Saturday and 00:00 hrs to 23:59 hrs on Sunday or any other period to be defined by the state.
9	Planned Network Outage	'Planned Network Outage' refers to unavailability of network services due to infrastructure maintenance activities such as configuration changes, up gradation or changes to any supporting infrastructure. Details related to such planned outage shall be agreed with the State government and shall be notified to the DHQ's, THQ/BHQ's and related Departments in advance (at least five working working days).
10	Unplanned Network Outage	'Unplanned Network Outage' refers to an instance in which no traffic can pass in or out of the Selected POP through which Departments connects to the PAWAN Backbone for more than 5 consecutive minutes.

4.1.2 Network Availability

Network availability is defined as total time in a quarter (in minutes) less total down time (in minutes) in the quarter including planned downtime. The network is considered available when all the services mentioned in the requirement section in full capacity are available. Bandwidth downtime will not be considered as part of network downtime. PAWAN OPERATOR will take atleast 15 working days prior approval from the state for the network maintenance i.e. Planned down.

The PAWAN OPERATOR shall be paid QGR as per the services (i.e. availability) provided to PSEGS.

Service Level Requirement

Network Segment	Network Uptime	
	PBH	ESH
SNC	99.5 %	95 %
DNC	99%	90%
BNC/SDNC	95%	85%

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Penalty for non-achievement of Service Level Requirement as per required uptime mentioned above

Link	Availability during PBH	Penalty	Availability during ESH	Penalty
SNC – DNC	>= 99.5%	Nil	>= 95%	Nil
	Less by 1%	0.5% of the QGR	Less by 1%	0.25% of the QGR
	Less by >1% but < 2%	Additional 1% of the QGR	Less by >1% but < 2%	Additional 0.5% of the QGR
	Less by >2% but <5%	Additional 2% for every %age	Less by >2% but <5%	Additional 1% for every %age
	Less by >5% but <20%	Additional 2.5% for every %age	Less by >5% but <20%	Additional 1.25% for every %age
	>20%	No payment	>20%	No payment
DNC – SDNC/BNC	>/= 99%	Nil	>/= 90%	Nil
	Less by 1%	0.5% of the QGR	Less by 1%	0.25% of the QGR
	Less by >1% but < 2%	Additional 1% of the QGR	Less by >1% but < 2%	Additional 0.5% of the QGR
	Less by >2% but <5%	Additional 2% for every %age	Less by >2% but <5%	Additional 1% for every %age
	Less by >5% but <20%	Additional 2.5% for every %age	Less by >5% but <20%	Additional 1.25% for every %age
	>20%	No payment	>20%	No payment

4.1.3 PAWAN Backbone Latency

Definition	'Latency' refers to the average time required for round-trip packet transfers between Selected POPs on the selected portions of the PAWAN Backbone during a calendar month.
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PAWAN Agreement

Service Level Requirement	<table border="0"> <tr> <td>Network Segment</td> <td>Latency for backbone network</td> <td>Latency for</td> </tr> <tr> <td>Voice and Video</td> <td></td> <td></td> </tr> <tr> <td>SNC-DNC</td> <td>< 500 ms</td> <td>< 150 ms for voice and video (one way)</td> </tr> <tr> <td>DNC-BNC/SDNC</td> <td></td> <td></td> </tr> <tr> <td>DNC-Div HQ</td> <td>< 600 ms</td> <td>< 200 ms for Voice and Video (one way)</td> </tr> </table>	Network Segment	Latency for backbone network	Latency for	Voice and Video			SNC-DNC	< 500 ms	< 150 ms for voice and video (one way)	DNC-BNC/SDNC			DNC-Div HQ	< 600 ms	< 200 ms for Voice and Video (one way)																																																		
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Measurement of Service Level Parameter	<p>The latency should be monitored for:</p> <ul style="list-style-type: none"> ▶ Data latency ▶ Voice and Video latency <p>The selected PAWAN OPERATOR should provide tools / mechanisms to measure the same. The Network management system shall provide online information about the latency for data voice and video and historical information of the same. The average quarterly latency (per link basis) shall be calculated individually for data, voice & video.</p>																																																																	
Penalty for non-achievement of Service Level Requirement	<table border="0"> <tr> <td>SNC-DNC</td> <td><=500 ms</td> <td>Nil</td> <td><= 150 ms</td> <td>Nil</td> </tr> <tr> <td></td> <td>>500 ms but <=600 ms</td> <td></td> <td>Rs 1000</td> <td>>150 ms</td> </tr> <tr> <td>but <= 200 ms</td> <td></td> <td>Rs 1000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>>600 but <= 800 ms</td> <td></td> <td>Rs 2000</td> <td>>200 ms</td> </tr> <tr> <td>but <= 300 ms</td> <td></td> <td>Rs 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>> 800 ms</td> <td>Rs 4000</td> <td>> 300 ms</td> <td>Rs 4000</td> </tr> <tr> <td>DNC-BNC/SDNC</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DNC-Div HQ</td> <td><=600 ms</td> <td>Nil</td> <td><=200 ms</td> <td>Nil</td> </tr> <tr> <td></td> <td>>600 but <= 700 ms</td> <td></td> <td>Rs 1000</td> <td>>200 ms</td> </tr> <tr> <td>but <= 250 ms</td> <td></td> <td>Rs 1000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>>700 but <= 900 ms</td> <td></td> <td>Rs 2000</td> <td>>250 ms</td> </tr> <tr> <td>but <= 350 ms</td> <td></td> <td>Rs 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>> 900 ms</td> <td>Rs 4000</td> <td>> 350 ms</td> <td>Rs 4000</td> </tr> </table>	SNC-DNC	<=500 ms	Nil	<= 150 ms	Nil		>500 ms but <=600 ms		Rs 1000	>150 ms	but <= 200 ms		Rs 1000				>600 but <= 800 ms		Rs 2000	>200 ms	but <= 300 ms		Rs 2000				> 800 ms	Rs 4000	> 300 ms	Rs 4000	DNC-BNC/SDNC					DNC-Div HQ	<=600 ms	Nil	<=200 ms	Nil		>600 but <= 700 ms		Rs 1000	>200 ms	but <= 250 ms		Rs 1000				>700 but <= 900 ms		Rs 2000	>250 ms	but <= 350 ms		Rs 2000				> 900 ms	Rs 4000	> 350 ms	Rs 4000
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4.1.4 Helpdesk Resolution Time

Definition	Time in which a complaint / query is resolved after it has been responded to by the IT service management.
Service Level Requirement	<p>Any Help Desk query after being given a response should be classified for resolution in following three categories.</p> <ul style="list-style-type: none"> ▶ Resolution Level 1 (R1): Queries whose resolution requires additional investment in components or time. For example, purchase of printer, router, software bug fixing etc. ▶ Resolution Level 2 (R2): Queries whose resolution requires replacement of hardware or software parts, which will require significant interruption in working of that component. For example, installation of operating system, replacement of switch etc. ▶ Resolution Level 3 (R3): Queries whose resolution requires changes in configuration of hardware or software, which will not significantly interrupt working of that component. For example, installation of printer on a client, replacement of LAN chord etc. <p>The selected PAWAN OPERATOR should provide service as per the following requirements:</p> <p>R1 As mutually agreed by PSEGS and the selected PAWAN OPERATOR on case-to-case basis.</p> <p>R2 1 day from time of response logged.</p> <p>R3 2 hours from time of response logged.</p>
Measurement of Service Level Parameter	The selected PAWAN OPERATOR should provide help desk software / tools / mechanisms to measure the same. The tool / mechanism should be able to provide PSEGS online information about Help Desk Resolution Time, and historical information of the same. After categorizing the Response Type, this should be appropriately entered into the Helpdesk Log. The penalty shall be applicable on per incident basis.
Penalty for non-achievement of Service Level Requirement	R1 Within resolution time as mutually agreed by PSEGS and the selected PAWAN OPERATOR (This time would be T1) Nil

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	> T1 and < = 1.5 T1	Rs 1000	
	> 1.5 T1 and <=2 T1	Rs 2000	
	> 2 T1	Rs 3000 for every additional T1 time taken.	
	R2	<= 1 day from time of response logged.	Nil
		> 1 day and < =2 working days	Rs 1000
		> 2 working days	Rs 2000 per day for everyday thereafter
	R3	<= 2 hours from time of response logged.	Nil
		> 2 Hours and < = 4 Hours	Rs 1000
		> 4 Hours	Rs 2000 per hour for every hour thereafter

4.1.5 Wireless Connectivity SLA

Definition	Uptime would be measured as total time in minutes in a month minus the downtime in minutes in the month. However, in calculating downtime, scheduled downtime will not be considered. The PAWAN OPERATOR will take at least 15 working days prior approval from the state for the network maintenance i.e. Planned down time which shall not be considered as a part of down time.	
Service Level Requirement	Uptime should be more than 95% per month for every Wireless Link	
Measurement of Service Level Parameter	<p>The downtime should be monitored for:</p> <ul style="list-style-type: none"> ▶ Communication links monitoring <p>The selected PAWAN OPERATOR should provide tools / mechanisms to measure the same. The tool / mechanism should be able to provide PSEGS online information about downtime for the wireless components, and historical information of the same.</p>	
Penalty for non-achievement of Service Level Requirement	<p>Every single wireless link of PAWAN</p> <p>Less by 1%</p> <p>Less by >1% but < 2%</p> <p>QGR</p> <p>%age</p> <p>every %age</p>	<p>>= 99.5% Nil</p> <p>0.5% of the QGR</p> <p>Additional 1% of the</p> <p>Additional 2% for every</p> <p>Additional 2.5% for</p>

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	>20%	No payment
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** Penalty shall be applicable on per remote station QGR.

4.1.6 Security Services SLA

Definition	<p>Security being one of the most important aspects of PAWAN would be governed by stringent standards. All security incidents leading to disruption in network availability would be penalized heavily.</p> <p>Security incidents could consist of any of the following :</p> <ul style="list-style-type: none"> • Virus Attack – This shall include <p>Malicious code infection of any of the desktops/servers in use for PAWAN management or Unchecked virus infected mails passing through the Messaging solution.</p> • Denial of Service Attack <p>This shall include non availability of service (Internet bandwidth, messaging service and other web services due attacks that consumes related resources)</p> • Compromise/Defacement of website <p>This shall mean unauthorized alteration of web pages hosted at data centre.</p> • Data Theft <p>Compromise of any kind of data hosted by PAWAN</p> • Intrusion <p>Successful Unauthorized access to PAWAN information system, resulting in loss of confidentiality/Integrity/availability of data.</p> • SPAM: SPAM is unsolicited bulk mail received from unknown source.
Service Level Requirement	<p>Virus infection Should not be more than 15 in a quarter</p> <p>Any Denial of service attack should not lead to complete service non availability.</p> <p>Desired service level shall not allow single web defacement, data theft and Intrusion. Each occurrence of these three types of security violation shall lead to appropriate penalties as mentioned below.</p>

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	SPAM filter should block at least 95% of SPAMs.																							
Measurement of Service Level Parameter	<p>The network should be monitored for:</p> <ul style="list-style-type: none"> • Virus Attack Any virus infection and passing of malicious code through messaging solution shall be monitored at the gateway level or user complains of virus infection shall be logged at the help desk system and collated every quarter. • Denial of Service Attack Non availability of any services shall be analysed and forensic evidence shall be examined to check whether it was due to external DoS attack. • Compromise/Defacement of website Any Changes to web pages shall be tracked and monitored and unauthorized changes shall be analyzed. • Intrusion - (Compromise of any kind of data hosted by PAWAN) • SPAM statistics for a quarter shall be monitored through reports generated by Anti SPAM software. <p>The penalty shall be applicable on per instance basis.</p>																							
Penalty for non-achievement of Service Level Requirement	<table> <tr> <td>Virus Attack (more than 15 in a quarter)</td> <td>Rs 10,000</td> </tr> <tr> <td>Denial of Service Attack</td> <td>Rs 10,000</td> </tr> <tr> <td>Compromise/ Defacement of Website</td> <td>Rs 1,00,000</td> </tr> <tr> <td>Data Theft (Compromise of any kind of data hosted by PAWAN)</td> <td>Rs 50,000</td> </tr> <tr> <td>Intrusion</td> <td>Rs 1,00,000</td> </tr> <tr> <td>SPAM</td> <td></td> </tr> <tr> <td> >=95%</td> <td>Nil</td> </tr> <tr> <td> >=90 and <95 %</td> <td>Rs 10,000</td> </tr> <tr> <td> >=80% and < 90 %</td> <td>Rs 20,000</td> </tr> <tr> <td> >=70% and < 80%</td> <td>Rs 30,000</td> </tr> <tr> <td> < 70 %</td> <td>Rs 50,000**</td> </tr> </table>		Virus Attack (more than 15 in a quarter)	Rs 10,000	Denial of Service Attack	Rs 10,000	Compromise/ Defacement of Website	Rs 1,00,000	Data Theft (Compromise of any kind of data hosted by PAWAN)	Rs 50,000	Intrusion	Rs 1,00,000	SPAM		>=95%	Nil	>=90 and <95 %	Rs 10,000	>=80% and < 90 %	Rs 20,000	>=70% and < 80%	Rs 30,000	< 70 %	Rs 50,000**
Virus Attack (more than 15 in a quarter)	Rs 10,000																							
Denial of Service Attack	Rs 10,000																							
Compromise/ Defacement of Website	Rs 1,00,000																							
Data Theft (Compromise of any kind of data hosted by PAWAN)	Rs 50,000																							
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SPAM																								
>=95%	Nil																							
>=90 and <95 %	Rs 10,000																							
>=80% and < 90 %	Rs 20,000																							
>=70% and < 80%	Rs 30,000																							
< 70 %	Rs 50,000**																							

**In case the SPAM filter is unable to block at least 70% of SPAMs, the PAWAN OPERATOR shall be responsible for taking appropriate measure through either changing the SPAM filter product or through up gradation of product. Cost relating to this shall be borne by the PAWAN OPERATOR.

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4.1.7 Measurement of SLA

The Measurement of SLA shall be performed by a third party agency, independent of the PAWAN Operator, to be identified by the PSEGS.

The Operator shall establish an Enterprise/Network Management System for monitoring and measurement of the SLA parameters identified for the PAWAN. The NMS/EMS implemented for PAWAN shall conform to the open network management standards such as Simple Network Management Protocol and Remote Monitoring (RMON) features. State reserves the right to periodically change the measurement points and methodologies it uses without notice to the Operator.

4.1.8 SLA Reporting

For reports of performance of the PAWAN Backbone, the PAWAN OPERATOR is required to setup a portal solution available to the PSESG. This portal shall provide online performance and availability reports of PAWAN.

4.1.9 Penalties for delay in implementation

If the PAWAN OPERATOR fails to complete the Partial Acceptance Test within the time period (s) specified in the implementation plan, PSEGS may, without prejudice to its other remedies under the Agreement, levy as Penalties, a sum equivalent to 0.25 % of the arithmetic sum of the guaranteed revenue for 75% of the overall site (SNC,DNCs, BNCs and location connection) for the five years payable under the Agreement, for each week or part thereof of delay, until actual delivery of performance. The maximum penalty for delay shall not exceed 2% of the arithmetic sum of five years Guaranteed Revenue for 75% of overall site (SNC, DNC, BNC). If the delay continues beyond 18 weeks, PSEGS may terminate the Agreement.

Failure to complete the Final Acceptance Test as specified in the implementation plan, PSEGS may, without prejudice to its other remedies under the Agreement, levy as Penalties, a sum equivalent to 0.25 % of the arithmetic sum of the guaranteed revenue 95% of the overall site (SHQ, DHQs, BHQ) for the five years payable under the Agreement, for each week or part thereof of delay, until actual delivery of performance. The maximum penalty for delay shall not exceed 5% of the arithmetic sum of five years Guaranteed Revenue for overall site (SNC, DNCs, BNCs and local office). If the delay continues beyond 20 weeks, PSEGS reserves the right to terminate the Agreement.

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4.1.10 Operational Penalties

In the event the PAWAN OPERATOR is unable to meet any one of the SLA parameters defined in section 4 of this document for 10% or more of the operational POPs during two quarters in a year or five quarters during the five years of the contract, PSEGS reserves the right to terminate the contract.

4.1.11 Penalties for misuse

In case of misuse of bandwidth/ Internet at the instance of PAWAN OPERATOR, the penalty imposed on the PAWAN OPERATOR, without prejudice to PSEGS's other remedies under the Agreement, shall be 200% of the quarterly guaranteed revenue under the Agreement for all the centres. If the misuse continues for two quarters, PSEGS may terminate the Agreement.

The PAWAN OPERATOR shall realize returns on the costs incurred on creating the whole asset (Capital Cost), the operations cost for operating these assets (Operations Cost), for maintaining these assets (Maintenance Cost) and for providing the horizontal connectivity (Horizontal Cost is asked for as separate QGR). The payments shall be released by the Government on a Quarterly basis based on compliance of the services provided by the PAWAN OPERATOR against the SLA's entered into. This "site preparation" cost will be paid to the PAWAN OPERATOR separately by the PSEGS.

Other contingencies/lapses required to be performed but yet not/late performed by the operator would be tackled by the society in a specific manner.

4.1.12 Force Majeure

Penalties shall not be levied from PAWAN OPERATOR in case the SLA violation is the result of an event of Force Majeure. (Detailed force Majeure events are given in section 12.4 of the RFP)

4.2 Payment Terms

The PAWAN OPERATOR engaged shall be responsible to invest in the project to implement and operate the facilities, for a term of 5 years and on expiry of 5 years, the ownership of the Infrastructure will be transferred to PSEGS. During this period of 5 years, the PAWAN OPERATOR shall have full responsibility for the delivery of the services, including all operational, maintenance, and management activities, etc.

The PAWAN OPERATOR shall be paid Minimum Guaranteed Revenue on quarterly basis in arrears at the end of each quarter for the SNC, each DNC, each SDNC/BNC and each co-located &

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remote office which have been accepted in the Final Acceptance Test by PSEGS based on the certificate provided by the Third Party Agency, at the rates specified by the PAWAN OPERATOR.

4.2.1 Quarterly Guaranteed Payment for Backbone

- 4.2.1.1 The payment period will be through the contract period of five years, which would start from the date of issuance of Final Acceptance certificate after the Final Acceptance Test of the POP's as defined in section 12.3.2 of the RFP.
- 4.2.1.2 The PAWAN OPERATOR shall be paid Guaranteed Revenue on quarterly basis at the end of each quarter for each backbone POP which has been accepted in the Final Acceptance Test by PSEGS based on the certificate provided by the Third Party Agency, at the rates specified by the PAWAN OPERATOR.
- 4.2.1.3 Quarterly guaranteed payment for each POP shall include the procurement, implementation, operation and maintenance of equipments as specified in the requirements section (in the RFP) of each tier along with providing the specified services for the entire service period.
- 4.2.1.4 Eligible quarterly payments, for the POPs accepted in the Acceptance Test shall become due from the date of issuance of final Acceptance Certificate. The quarterly guaranteed revenue in the Agreement shall be adjusted in proportion to the actual number of POPs included in the Acceptance Test of PAWAN i.e. total revenue shall depend on the number of POPs.
- 4.2.1.5 Prices indicated for each POP should include cost of all equipments for the specified POP, cost of installation, configuring, erection, commissioning, making equipment and services fully operational, maintaining and providing service for the next five years thereafter.
- 4.2.1.6 A tripartite agreement between PSEGS, BSNL/any alternate Bandwidth Service Provider and PAWAN OPERATOR shall be made, so as to define the roles and responsibilities clear. Leased line bills would be raised against PSEGS, however the PAWAN OPERATOR would make the payment to BSNL/any alternate Bandwidth Service Provider and PSEGS would ensure to reimburse the same within 15 working working days. In the event PSEGS is unable to pay the PAWAN OPERATOR with in the above mentioned period, PAWAN OPERATOR would be paid interest @ 10% per annum over and above the aforesaid period of 15 working days. The payment will be considered due after r receipt of bill(s) to PSEGS.
- 4.2.1.7 Total number of Primary POPs and co-located POPs in each tier as mentioned in the table may vary depending on the actual distances and would be adjusted accordingly

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after the initial survey conducted by the PAWAN OPERATOR. PSEGS also reserves the right to exclude implementation of all the co-located offices at the time of contract assignment.

Sr. No	POP	Total POP
1	SNC	1
2	DNC	19
3	SDNC/BNC	121
4	Co-located office Type I	27
5	Co-located office Type II	12
6	Co-located office Type III	56
7	Special Horizontal Office	7
8	DR Site	1

- 4.2.1.8 Total Number of pops including number of districts may increase or decrease depending on any PSEGS declaration. In such situation the PAWAN OPERATOR shall be responsible for implementing the POP and incorporating that in the PAWAN backbone. Commercials shall be adjusted based on type and number of pops incorporated.
- 4.2.1.9 DR site shall not be implemented during the PAWAN backbone implementation. The PAWAN OPERATOR is expected to implement the DR site at quoted price, at site specified by PSEGS at later point of time. Payment for DR Site shall start after the DR site implementation only.
- 4.2.1.10 NTU rentals payable for MLLN link wherever applicable, will be borne by the PAWAN Operator
- 4.2.1.11 The PAWAN OPERATOR shall have to pay the electricity bill required for maintaining the PoP. The PAWAN OPERATOR shall install duly approved digital sub meter dedicated for each PoP.

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4.2.1.12 The charges quoted by PAWAN OPERATOR for horizontal office, DR Site and wireless equipments/services shall remain valid for the entire service period (5 yrs) and PSEGS reserves the right to ask the PAWAN OPERATOR to provide the mentioned equipments/services during the entire service period.

4.2.1.13 The PAWAN OPERATOR's request for payment shall be made at the end of each quarter by invoices along with the following supporting documents:

- Performance statistics
- Log of network parameters along with Service Down time calculation and Uptime percentage.
- Any other document necessary in support of the service performance acceptable to PSEGS.

The Third Party Agency shall verify all the supporting documents as prescribed and acceptable to PSEGS. On receipt of such invoice after verification by the Third Party Agency and after deducting Income Tax, other taxes and any Penalties, PSEGS shall pay the amount within a period of 15 working days. The PAWAN OPERATOR shall furnish all tax payment receipts to PSEGS.

4.2.1.14 PSEGS shall made QGR payment within 15 working days of end of each quarter. In the event PSEGS is unable to pay the PAWAN OPERATOR with in the above mentioned period, PAWAN OPERATOR would be paid interest @ 10% per annum over and above the aforesaid period of 15 working days. The payment will be considered due after receipt of bill(s) to PSEGS.

4.2.2 Quarterly Payment for horizontal connectivity

4.2.2.1 The PAWAN OPERATOR is expected to prepare the backbone for providing horizontal connectivity up to the upper limit of horizontal offices as specified for each tier without any additional cost.

4.2.2.2 Payment for inclusion of every new horizontal office shall be due from the date of final acceptance by third party.

4.2.2.3 Payment for the accepted horizontal offices shall accrue along with the next QGR.

4.2.2.4 Leased line Charges

Leased line charges for Type III horizontal connectivity shall be paid by the concerned department.

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4.2.2.5 In case the requirement for horizontal office connectivity goes beyond mentioned numbers at each Tier (50, 20, 10) in five years, the rate for horizontal connectivity shall remain same for the additional offices. However the cost for additional ports required at the backbone for additional connectivity shall be borne by PSEGS.

4.2.3 Site Preparation Cost

4.2.3.1 The site preparation cost should include the site preparation cost (civil and electrical work) including the cost of minimum indicative items as mentioned in site preparation requirement in the RFP and any other civil and electrical components/work deemed necessary for the operation of the NOC.

4.2.3.2 For site preparation, lowest rate among the quoted site preparation rates from various bidders will be taken, and will be negotiated with the lowest commercial bid (L1) bidder selected.

4.2.3.3 The bidder shall also provide item wise costing for site preparation as per the indicative item requirement given in site preparation guideline

4.2.3.4 PSEGS shall make 50% of the Site preparation payment for the completed POPs within 15 working days after receiving the report of inspection committee of PAT (Partial Acceptance Test) and complete payment for the completed and accepted sites shall be paid within 15 working days of successful completion of FAT (Final Acceptance Test). The remaining site payment would be made within 15 working days of completion of remaining site(s).

4.2.4 Currency of Payments

Payment shall be made in Indian Rupees (INR) only.

4.2.5 Enhancement of Equipment / Additional Equipment

PAWAN OPERATOR shall be entirely responsible for providing any equipment required for supporting the scope/functionality defined under the RFP, However in case of increase in scope of work, mutually agreed terms and condition shall be worked out using the unit rates available in the financial proposal of the selected PAWAN OPERATOR as benchmark

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PSEGS at their discretion during the currency of the Agreement, may arrange or request the Operator to enhance the equipments or to provide additional equipment (if required), to take care of increased bandwidth demand/ redundancy/ application requirements etc. PSEGS shall bear the cost of the additional equipment required.

The enhancement/ additional equipment shall be installed and be made operational within 10 working days of equipment being made available to the Operator by PSEGS. Any delay by the PAWAN OPERATOR shall render the PAWAN OPERATOR liable to the imposition of appropriate penalties.

PSEGS shall pay 3% of the cost of the aforesaid equipment to the Operator as operating charges per year which shall be added to the Quarterly Guaranteed Revenue.

4.2.6 Number of Centres

PSEGS at their discretion can increase or decrease the number of DNC, and SDNC/BNCs and wireless remotes after the signing of the Agreement and adjust the quarterly guaranteed revenue proportionately.

4.2.7 Payment for Inclusion of new POPs

In these cases, the service period shall be the remaining period (e.g. 4 yrs, in case the pop is included after one year), Capital cost payment shall be calculated based on Form F2 (page 149 of the RFP) (cumulative interest will depend on the remaining period i.e. 4 yrs) and will be divided in 48 month in this case.

In such a case the payment shall be made with in four years i.e 16 quarters (QGR- Quarterly Guaranteed Revenue). The Guaranty for the equipments installed in POP shall, however, remain for 6 years from the date of installation of the equipment (PAT or FAT). For this purpose the performance guarantee equivalent to 10% of the complete setting up cost of POPs shall be obtained in form of Bank Guarantee.

4.2.8 Performance Security

Within 7 working days of the issuance of LoI the PAWAN OPERATOR shall furnish revolving Performance Guarantee to PSEGS for an amount equal to 10% of the arithmetic sum of years (5 years) of the Quarterly Guaranteed Revenue according to the Agreement. The Performance Guarantee shall be valid initially for a period of one year. The guarantee shall be renewed year by year, at least 30 working days before expiry date, for a minimum period of one year and thus cover the balance period of the agreement. The guarantee amount for each year shall be calculated on the basis of Guaranteed Revenue for the remaining years of operation under the

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agreement subject to minimum Performance Guarantee based on sum of two years Guaranteed Revenue. The PSEGS may forfeit the Performance Guarantee for any failure on part of PAWAN OPERATOR to complete its obligations under the Agreement. The Performance Guarantee shall be denominated in Indian Rupees and shall be in the form of a Bank Guarantee issued by a scheduled bank located in India with at least one branch office in Chandigarh in the format provided in section 13.3 of the RFP. The Performance Guarantee shall be returned to the PAWAN OPERATOR within 30 days of the date of successful discharge of all contractual obligations at the end of the period of the Agreement by PSEGS. In the event of any amendments to Agreement, the PAWAN OPERATOR shall within 15 days of receipt of such amendment furnish the amendment to the Performance Guarantee as required. The format for the Bank guarantee would be provided subsequently to the selected bidder.

4.3 Period of Agreement

Post Implementation (completion of Final acceptance test), the period of agreement shall be considered 5 years for operation and maintenance of PAWAN. The PSEGS reserves the right to extend the period of this agreement beyond five years subject to mutually accepted terms and conditions.

4.4 Third Party Agency

PSEGS shall appoint a third party monitoring agency at least 15 working days before the partial acceptance test. This party will undertake the acceptance testing, leading to the issuance of acceptance certificate subsequent to the completion of final acceptance test. The third party agency will monitor the Service level Agreement and subsequent generation of quarterly report on SLA compliance. This agency shall also be responsible for verification, validation of all the invoices submitted and will recommend eligible payments according to milestones. The PAWAN OPERATOR shall cooperate with this third party agency.

4.5 Publicity

Any publicity by the PAWAN OPERATOR in which the name of PAWAN is to be used, should be done only with the explicit written permission from PSEGS.

4.6 Equipment

The equipment to be used for PAWAN by the PAWAN operator as per the scope of work defined in the RFP should be from leading industry players as specified in the Technical and Commercial Bid quoted by the PAWAN operator.

4.7 Application

These general conditions shall apply to the extent that they are not superseded by provisions in other parts of the contract.

4.8 Standard

The equipment and services supplied under this contract shall conform to the standards mentioned in the requirement specifications of the RFP, and, when no applicable standard is mentioned, to the authoritative standards, such standard shall be the latest issued by the concerned institution.

4.9 Use of Contract document and Information

The PAWAN OPERATOR shall not, without PSEGS's prior written consent, disclose the contract or any provision thereof, or any specification, design, drawing, pattern, sample or information furnished by or on behalf of PSEGS in connection therewith, to any person other than a person employed by the PAWAN OPERATOR in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

The PAWAN OPERATOR shall not without PSEGS's prior written consent, make use of any document or information forming a part of this tender except for purpose of performing the contract.

Any document forming a part of this tender, other than the contract itself shall remain the property of PSEGS.

4.10 Patent Rights

The PAWAN OPERATOR shall indemnify PSEGS against all third party claims of infringement of patent, trademark or industrial design rights arising from the use of the equipment and services or any part thereof.

4.11 Incidental Services

The PAWAN OPERATOR may be required to provide any or all of the following services:

1. Furnish detailed manuals for each appropriate unit of the supplied equipment and services.
2. Perform or supervise or maintain and/ or repair the supplied equipment and services, for a period of time agreed by PSEGS and the PAWAN OPERATOR, provided that this service shall not relieve the PAWAN OPERATOR of any warranty obligations under this contract.

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4.12 Delivery & Documents

Delivery of the equipment and services and associated documents shall be made by the PAWAN OPERATOR in accordance with the terms specified by PSEGS in their notification of award.

4.13 Change Orders

PSEGS may at any time, by a written order given to the PAWAN OPERATOR make changes within the general scope of the contract in any one or more of the following prior to the date of shipping:

- i. Configuration or specifications of the equipment.
- ii. The service to be provided by the PAWAN OPERATOR.
- iii. Change in POP address for delivery of equipment / provisioning of services.

PSEGS may at any time, by a written order given to the PAWAN OPERATOR, make changes within the general scope of the contract in any one or more of the following during the contract period:

- i. Change in POP address for provisioning of services.
- ii. Change in bandwidth required at any office location or across all office locations.
- iii. Change in QoS parameters at any office location or across all office locations.

If any such change causes an increase or decrease in the cost of, or the time required for the PAWAN OPERATOR performance of any part of the work under the contract, whether changed or not changed by the order, an equitable adjustment shall be made in the contract price or delivery schedule, or both and the contract shall accordingly be amended, based on mutual discussions. Any claims by the PAWAN OPERATOR for adjustment under this clause must be asserted within thirty working days from the date of the PAWAN OPERATOR receipt of PSEGS's change order.

4.14 Assignment

All equipments/services as mentioned in the RFP shall be provided by the PAWAN OPERATOR or its consortium only. No core work in this regard shall be outsourced. However for Non core business in peripheral activities may be outsourced. (site preparation, Electrical, AC, DG set fitting etc)

4.15 Sub Contract

The PAWAN OPERATOR shall notify PSEGS in writing of all subcontracts awarded under the contract if not already specified in this bid. Such notification, in his original bid or later, shall not relieve the PAWAN OPERATOR from any liability or obligation under the contract.

It is clarified here that any sub-contractor/employee appointed by PAWAN OPERATOR or sub contractor shall bring into existence the contractual relations in between the employer and employee or PAWAN operator and sub-contractor shall not effect any of the rights and liabilities

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of PSEGS and under all circumstances the PAWAN OPERATOR alone shall be deemed to be the immediate or principal employer as the case may be and it shall be the obligation of PAWAN OPERATOR to ensure that all the relevant laws in this regard are fully complied with and there is no chance of any involvement of PSEGS. In the event of there being any involvement of PSEGS in any such controversy, PAWAN OPERATOR undertakes to fully indemnify and keep PSEGS unaffected and unharmed. The loss if any sustained by PSEGS as claimed shall be deemed to be conclusive in between PSEGS and PAWAN OPERATOR.

4.16 Take Over

The client PSEGS or ANY agency authorized by PSEGS, may takeover the operation of the activities on the mutually agreeable terms and conditions even before the expiry of 5 years.

4.17 Inappropriate use of Network

The PAWAN OPERATOR shall not use the network facilities/ equipment installed for any other purpose/ use than that of the functions assigned to him by the clients department.

4.18 Termination for Default

PSEGS may, without prejudice to any other remedy for breach of contract by written notice of default sent to the PAWAN OPERATOR by giving not less than 30 days written notice of default sent to the Contractor, terminate the contract in whole or in part:

- i. If the PAWAN OPERATOR materially fails to deliver any or all of the equipment and services within the time period(s) specified in the contract, or any extension thereof granted by PSEGS in writing and fails to remedy its failure within a period of thirty (30) days after receipt of the default notice from PSEGS, OR
- ii. If the PAWAN OPERATOR fails to perform any other obligation(s) under the contract and fails to remedy its failure within a period of thirty (30) days after receipt of the default notice from PSEGS, OR
- iii. If the PAWAN OPERATOR fails to meet any of the SLAs listed in the section 4 of this document and fails to remedy its failure within a period of thirty (30) days after receipt of the default notice from PSEGS

4.19 Termination for Insolvency

PSEGS may at any time terminate the contract by giving written notice to the PAWAN OPERATOR, without compensation to the PAWAN OPERATOR, if the PAWAN OPERATOR becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to PSEGS.

4.20 Termination for Convenience

PSEGS will compensate the PAWAN OPERATOR by paying the Present Value of the remaining quarterly guaranteed payment (capital expenditure portion only) based on the Operator's past operational performance (Uptime availability) in the PAWAN Project. In an exceptional event if the termination occurs during the first two quarters from the date of Final Acceptance then the Present Value of the remaining quarterly guaranteed revenue (capital expenditure portion only) will be paid to the Operator. If the termination occurs after the first two quarters from the date of Final Acceptance then the Present Value of the remaining quarterly guaranteed revenue (capital expenditure portion only) based on the average of the preceding two quarter's Uptime for SHQ, DHQs, SDHQ/BLOCK & co-located & remote offices respectively and constructed/ pre-fabricated sites and laying of cables will be paid to the Operator.

If the termination occurs due to non payment by PSEGS to the Operator for the three consecutive quarters then the Present Value of the remaining quarterly revenue (capital expenditure portion only) based on the average of the preceding two quarter's Uptime for SHQ, DHQs, SDHQ/BLOCK & co-located & remote offices respectively and constructed/ pre-fabricated sites and laying of cables and the unpaid three quarterly payments with interest will be paid to the Operator. In the event of such termination, PSEGS will take over all equipment (without any liability) necessary for the proper and normal operation of the PAWAN including but not limited to all constructed/ pre-fabricated sites, laid cables, software, technical designs, technical & operational manuals and also all electrical, civil and mechanical works at SHQ, all DHQs, all SDHQ/BLOCK & all co-located & remote offices related to the PAWAN. The discounting interest rate for calculating the Present Value will be SBI's Long Term Prime Lending Rate (PLR) plus 350 basis points prevailing on the date of termination. An illustration of the working is provided in the Annexure 1.

4.21 PSEGS's event of Default

The PAWAN OPERATOR has the right to terminate the agreement by giving a Default notice of Thirty working days (30 working days) to PSEGS, if the payment to the OPERATOR is due for more than 3 quarters consecutively.

4.22 Arbitration

PSEGS and the PAWAN OPERATOR shall make every effort to resolve amicably by direct informal negotiation, any disagreement or dispute, arising between them under or in connection with the contract.

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If, after thirty (30) working days from the commencement of such informal negotiations, PSEGS and the PAWAN OPERATOR have been unable to resolve amicably a contract dispute, either party may require that the dispute be referred for resolution to the formal mechanism specified below.

In the case of a dispute or difference arising between PSEGS and the PAWAN OPERATOR relating to any matter arising out of or connected with this contract, such dispute or difference shall be referred to the award of arbitrators, which will be appointed by Department of IT, Government of Punjab.

The Indian Arbitration and Conciliation Act, 1996, all other relevant and applicable laws, rules there under and any statutory modification or re-enactments thereof made till the date of signing of contract, shall apply to the arbitration proceedings.

4.23 Governing Language

The contract shall be written in the language of the bid, as specified by PSEGS in the instructions to PAWAN operator, that language version of the contract shall govern its interpretation. All correspondence and other documents pertaining to the contract, which are exchanged by the parties, shall be written in that same language.

4.24 Applicable Law

The contract shall be interpreted in accordance with the Indian Laws.

4.25 Notices

Any notice by one party to the other pursuant to the contract shall be sent in writing by registered post only to the addresses as defined under this contract.

A notice shall be effective when delivered or on the notice's effective date, whichever is later.

4.26 Back up support

PAWAN OPERATOR shall furnish details of the back-up engineering and network support that will be available to PSEGS. If the maintenance of the equipment, after expiry of the contract period, is taken over either by PSEGS or any other person/ agency to be nominated by PSEGS, the PAWAN OPERATOR shall be responsible for provisioning of spare parts and back-up maintenance support required by PSEGS or that agency and shall continue to make available the spare parts.

4.27 Delivery

The equipment and services as part of the requirements in this document are required to be provisioned by the PAWAN OPERATOR within the period indicated in the notification of award.

4.28 Prices

The prices quoted for the equipment and services shall be firm throughout the period of contract and shall not be subject to any escalation. In case of decrease in the product/equipment market price, the benefit shall be passed on to the PSEGS for the products purchased during that period.

PAWAN OPERATOR as well as sub-contractors shall maintain regular and methodical accounts in respect of the purchases made during the period of a contract.

4.29 Deduction

Payments, shall be subject to any deductions (such as TDS etc) of any amount, for which the PAWAN OPERATOR is liable under the agreement against this tender.

4.30 Taxes and Duties

Prices quoted shall include all statutory taxes including service tax. Any subsequent increase in statutory taxes shall be borne by government. Similarly in case of any decrease in taxes, the benefit of cost reduction will go to Government. Any escalation in cost due to price rise, etc the additional burden would be borne by the PAWAN OPERATOR. The price quoted shall be the price for F.O.R.

4.31 Insurance

The equipment and services supplied under the contract shall be fully insured by the PAWAN OPERATOR against loss or damage incidental to manufacture or acquisition, transportation, storage, delivery and installation. The period of insurance shall be up to the date the supplies are accepted and the rights of the property are transferred to PSEGS.

4.32 Manuals, Data and Information

Complete information relating to installation, maintenance, service, support, and troubleshooting of equipment and services should be supplied by the PAWAN OPERATOR.

4.33 Inspection, Testing

If necessary, the PAWAN OPERATOR will be required to furnish such facilities as will be necessary for inspection of equipment before dispatch at his or his associate works and also for witnessing

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such tests, as are done at the works, as required by PSEGS. The PAWAN OPERATOR shall give sufficient notice regarding the dates proposed for such tests to the inspecting agency.

4.34 Limitation of Liability

PAWAN OPERATOR's cumulative liability for its obligations under the contract shall not exceed the contract value.

4.35 Confidentiality

PAWAN OPERATOR understands and agrees that all materials and information marked and identified by PSEGS as 'Confidential' are valuable assets of PSEGS and are to be considered PSEGS's proprietary information and property. PAWAN OPERATOR will treat all confidential materials and information provided by PSEGS with the highest degree of care necessary to insure that unauthorized disclosure does not occur. PAWAN OPERATOR will not use or disclose any materials or information provided by PSEGS without PSEGS's prior written approval.

PAWAN OPERATOR shall not be liable for disclosure or use of any materials or information provided by PSEGS or developed by PAWAN OPERATOR which is:

- a. possessed by PAWAN OPERATOR prior to receipt from PSEGS, other than through prior disclosure by PSEGS, as documented by PAWAN OPERATOR's written records;
- b. published or available to the general public otherwise than through a breach of Confidentiality; or
- c. Obtained by PAWAN OPERATOR from a third party with a valid right to make such disclosure, provided that said third party is not under a confidentiality obligation to PSEGS; or
- d. Developed independently by the PAWAN OPERATOR.

In the event that PAWAN OPERATOR is required by judicial or administrative process to disclose any information or materials required to be held confidential hereunder, PAWAN OPERATOR shall promptly notify PSEGS and allow PSEGS a reasonable time to oppose such process before making disclosure.

PAWAN OPERATOR understands and agrees that any use or dissemination of information in violation of this Confidentiality Clause will cause PSEGS irreparable harm, may leave PSEGS with no adequate remedy at law and PSEGS is entitled to seek to injunctive relief.

PSEGS does not wish to receive the Confidential Information of PAWAN OPERATOR, and PAWAN OPERATOR agrees that it will first provide or disclose information which is not confidential. Only to the extent that PSEGS requests Confidential Information from PAWAN OPERATOR will PAWAN OPERATOR furnish or disclose Confidential Information.

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Nothing herein shall be construed as granting to either party any right or license under any copyrights, inventions, or patents now or hereafter owned or controlled by the other party.

The requirements of use and confidentiality set forth herein shall survive the expiration, termination or cancellation of the tender.

Confidential Information disclosed under this contract shall be subject to confidentiality obligations for a period of two years following the initial date of disclosure.

Nothing contained in this contract shall limit the PAWAN OPERATOR from providing similar services to any third parties or reusing the skills, know-how, and experience gained by the employees in providing the services contemplated under this contract.

4.36 Use of Contract document and Information

The PAWAN OPERATOR shall not, without PSEGS's prior written consent, disclose the contract or any provision thereof, or any specification, design, drawing, pattern, sample or information furnished by or on behalf of PSEGS in connection therewith, to any person other than a person employed by the PAWAN OPERATOR in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

The PAWAN OPERATOR shall not without PSEGS's prior written consent, make use of any document or information forming a part of this tender except for purpose of performing the contract.

Any document forming a part of this tender, other than the contract itself shall remain the property of PSEGS.

4.37 Local Conditions

The PAWAN OPERATOR is expected to fully get acquainted with the local conditions and factors, which would have any effect on the performance of the contract and /or the cost.

The PAWAN OPERATOR is expected to know all conditions and factors, which may have any effect on the execution of the contract after issue of letter of Award as described in the bidding documents. PSEGS shall not entertain any request for clarification from the PAWAN OPERATOR regarding such local conditions.

It is the PAWAN OPERATOR's responsibility that such factors have properly been investigated and considered while submitting the bid proposals and no claim whatsoever including those for financial adjustment to the contract awarded under the bidding documents will be entertained by PSEGS. Neither any change in the time schedule of the contract nor any financial adjustments arising thereof shall be permitted by PSEGS on account of failure of the PAWAN OPERATOR to know the local laws / conditions.

4.38 Second hand Equipment

All the proposed equipments shall be new and no second hand or refurbished equipment shall be accepted, either during commissioning or during replacement of equipment during the period of contract.

4.39 PAWAN OPERATOR Team Profile

The PAWAN OPERATOR shall also submit a list of staff responsible for the installation along with their experience and skills details. Considering the magnitude of the project, the PAWAN OPERATOR shall be required to size the team appropriately. The PAWAN OPERATOR shall provide OEM certified engineers with 3-4 years of networking experience, for implementing the project. The PAWAN OPERATOR shall ensure that the engineers would be assigned on full time basis for the project to ensure proper implementation.

4.40 Acceptance Test

A Testing Committee shall be formed comprising of officers duly authorized by PSEGS and third party agency. The acceptance Tests shall be carried at each site by the committee. The acceptance test shall be done in two Phases.

4.40.1 Partial Acceptance test

After Successful installation of 75% of the site including SNC, DNCs, BNCs, and all co-located & remote offices in accordance with the requirements in Section 5 of RFP, a Partial Acceptance Test shall be conducted. After successful testing by the Third Party Agency a Partial Acceptance Test Certificate shall be issued by PSEGS to the PAWAN OPERATOR. The test shall include the following

1. All hardware and software items must be installed at particular site as per the specification.
2. Availability of all the defined services shall be verified. The PAWAN OPERATOR shall be required to demonstrate all the features/facilities/functionalities as mentioned in the RFP.
3. Detailed test plan shall be defined by the third party monitoring agency in consultation with PSEGS.
4. PAWAN OPERATOR will arrange the test equipment required for performance verification. PAWAN OPERATOR will also provide documented test results.

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4.40.2 Final acceptance Test

After successful installation of 90% (should include SNC and all DNCs) of all POPs and collocated offices in accordance with the requirements in Section 5 of the RFP, an Acceptance Test shall be conducted. After successful testing by the Third Party Agency a Final Acceptance Test Certificate shall be issued by PSEGS to the PAWAN OPERATOR.

Any delay by the PAWAN OPERATOR in the Partial/ Final Acceptance Testing shall render the PAWAN OPERATOR liable to the imposition of appropriate Penalties

In the event the PAWAN OPERATOR is not able to complete the installation linking SNC, all DNCs, all SDNCs/BLOCKS and all co-located & remote offices as defined by PSEGS due to non availability of bandwidth from the basic service providers, the PAWAN OPERATOR and PSEGS may mutually agree to redefine the Network so the PAWAN OPERATOR can complete installation and conduct the Partial Acceptance Test/ Final Acceptance Test within the specified time.

- √ All hardware and software items must be installed at particular site as per the specification.
- √ Availability of all the defined services shall be verified. The PAWAN OPERATOR shall be required to demonstrate all the features/facilities/functionalities as mentioned in the RFP for each site.
- √ Detailed test plan shall be defined by the third party monitoring agency in consultation with PSEGS.
- √ PAWAN OPERATOR will arrange the test equipment required for performance verification. PAWAN OPERATOR will also provide documented test results.
- √ The PAWAN OPERATOR shall be responsible for the security audit of the network to be carried out by a certified agency other than the PAWAN OPERATOR.
- √ All documentation as defined should be completed before the final acceptance test.

4.40.3 PAT shall be completed within 30 working days of completion of 75% of POPs and FAT shall be completed within 15 working days of completion of 90% pops. The PAWAN OPERATOR shall notify PSEGS at least 20 working days prior to the completion of both 75% and 90%.

4.40.4 On the successful completion of the final acceptance and after the committee so constituted to conduct the acceptance test and third party agency engaged by PSEGS are satisfied with the working of the system, the acceptance certificate signed by the authorized representative of PAWAN OPERATOR, the third party monitoring agency and PSEGS will be issued to the PAWAN OPERATOR.

4.40.5 The date on which final acceptance certificate is issued shall be deemed date of the successful commissioning of the PAWAN. Any delay by the PAWAN OPERATOR in the

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performance of its contracted obligations shall render the PAWAN OPERATOR liable to the imposition of appropriate liquidated damages, unless agreed otherwise by PSEGS.

4.41 Force Majeure

For purposes of this clause, "Force Majeure" means an event beyond the control of the PAWAN OPERATOR and not involving the PAWAN OPERATOR and not involving the PAWAN OPERATOR's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of PSEGS either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes. (Detail Force Majeure events are given below)

If a Force Majeure situation arises, the PAWAN OPERATOR shall promptly notify PSEGS in writing of such conditions and the cause thereof. Unless otherwise directed by PSEGS, the PAWAN OPERATOR shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

The PAWAN OPERATOR shall not be liable for forfeiture of his performance security, liquidated damages or termination for default, if and to the extent that, his delay in performance or other failure to perform his obligations under the contract is the result of an event of Force Majeure.

Force Majeure Events

The Force Majeure circumstances and events shall include the following events :

- PSEGS is unable to provide site and related clearance. However it shall be the responsibility of the PAWAN OPERATOR to conduct a survey of all the sites and submit a site readiness report for all the POPs as mentioned in PAWAN POP list.
- Non availability of Leased Circuit/ Failure of existing Leased Circuit from BSNL/any alternate Bandwidth Service Provider: The PAWAN OPERATOR shall be responsible for liaison with BSNL/any alternate Bandwidth Service Provider for timely commissioning of Leased circuit at each POP location and timely status updation to PSEGS.

Natural events ("Natural Events") to the extent they satisfy the foregoing requirements including:

- any material effect on the natural elements, including lightning, fire, earthquake, cyclone, flood, storm, tornado, or typhoon;
- explosion or chemical contamination (other than resulting from an act of war);
- epidemic such as plague;
- any event or circumstance of a nature analogous to any of the foregoing.

Other Events ("Political Events") to the extent that they satisfy the foregoing requirements including, but not limited to:

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- Political Events which occur inside the State of Punjab or involve directly the PSEGS and the Central Government ("Direct Political Event"), including:
- Act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, civil commotion, act of terrorism or sabotage;
- Strikes, work to rules, go-slows which are either widespread, nation-wide, or state-wide and are of political nature;
- Any event or circumstance of a nature analogous to any of the foregoing.

4.42 SLA Monitoring

GOP shall engage another third party vendor for SLA management and monitoring. This third party vendor shall monitor the SLA parameters and generate reports on regular basis. PSEGS reserves the right to periodically change the measurement points and methodologies used without notice to the OPERATOR.

The implementation agency shall establish an Enterprise/Network Management System for monitoring and measurement of the SLA parameters identified for the PAWAN. The NMS/EMS implemented for PAWAN shall conform to the open network management standards such as Simple Network Management Protocol and RMON.

4.43 Exit Management

4.43.1 Purpose

- a) This clause sets out the provisions which will apply upon completion of the contract period or upon termination of the agreement for any reasons. The Parties shall ensure that their respective associated entities, in case of PSEGS, any third party appointed by the PSEGS and in case of the PAWAN OPERATOR, the sub-contractors, carry out their respective obligations set out in this Exit Management Clause.
- b) The exit management period starts, in case of expiry of contract, on the date when the contract comes to an end or in case of termination of contract, on the date when the notice of termination is sent to the PAWAN OPERATOR. The exit management period ends on the date agreed upon by the PSEGS or one year after the beginning of the exit management period, whichever is earlier.
- c) The PAWAN OPERATOR shall divest all the project assets at the beginning of the Exit management period to PSEGS at zero value in case of expiry of contract and at a mutually agreed rate if there is a termination of contract.
- d) The PAWAN OPERATOR shall pay all transfer costs and stamp duty applicable on transfer of project assets except in case the Project is being terminated due to default of PSEGS, where

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PSEGS shall be responsible for transfer costs and stamp duty, if any. For clarification of doubt, transfer costs in this Clause relate to taxes and duties applicable at transfer of PAWAN project, if any. At the beginning of the exit management period, the PAWAN OPERATOR shall ensure that

- i. All Project Assets including the hardware, software, documentation and any other infrastructure shall have been renewed and cured of all defects and deficiencies as necessary so that the PAWAN Project is compliant with the Specifications and Standards set forth in the RFP, Agreement and any other amendments made during the contract period;
- ii. the PAWAN OPERATOR delivers relevant records and reports pertaining to the PAWAN Project and its design, engineering, operation, and maintenance including all operation and maintenance records and manuals pertaining thereto and complete as on the Divestment Date;
- iii. On request by PSEGS or any third party appointed by PSEGS, the PAWAN OPERATOR shall effect such assignments, transfers, licences and sub-licenses related to any equipment lease, maintenance or service provision agreement between PAWAN OPERATOR and any third party, in favour of PSEGS or any third party appointed by PSEGS if it is required by PSEGS or any third party appointed by PSEGS and is reasonably necessary for the continuation of services by PSEGS or any third party appointed by PSEGS; and
- iv. the PAWAN Operator complies with all other requirements as may be prescribed under Applicable Laws to complete the divestment and assignment of all the rights, title and interest of the PAWAN Operator in the PAWAN Project free from all Encumbrances absolutely and free of any charge or tax to PSEGS or its nominee.

4.43.2 Cooperation and Provision of Information

- a) During the exit management period:
 - (i) The PAWAN OPERATOR will allow PSEGS or any third party appointed by PSEGS, access to information reasonably required to define the then current mode of operation associated with the provision of the services to enable PSEGS or any third party appointed by PSEGS to assess the existing services being delivered;
 - (ii) Promptly on reasonable request by PSEGS or any third party appointed by PSEGS, the PAWAN OPERATOR shall provide access to and copies of all information held or controlled by them which they have prepared or maintained in accordance with the "Contract", the Project Plan, SLA and Scope of Work (as mentioned in annexure II), relating to any material aspect of the services (whether provided by the PAWAN

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- OPERATOR or sub contractors appointed by the PAWAN OPERATOR). PSEGS or any third party appointed by PSEGS shall be entitled to copy all such information. Such information shall include details pertaining to the services rendered and other performance data. The PAWAN OPERATOR shall permit PSEGS or any third party appointed by PSEGS to have reasonable access to its employees and facilities as reasonably required by PSEGS or any third party appointed by PSEGS to understand the methods of delivery of the services employed by the PAWAN OPERATOR and to assist appropriate knowledge transfer.
- (iii) Before the end of exit management period, the PAWAN OPERATOR will ensure a successful trial run of Network administration, Facility management including helpdesk management etc. by PSEGS or by any third party appointed by PSEGS.

4.43.3 Confidential Information, Security and Data

- a) The PAWAN OPERATOR will promptly, on the commencement of the exit management period, supply to PSEGS or any third party appointed by PSEGS the following:
- (i) Information relating to the current services rendered and performance data relating to the performance of sub contractors/ bandwidth providers in relation to the services; and
 - (ii) Documentation related to Intellectual Property Rights; and
 - (iii) All confidential information related to PSEGS ; and
 - (iv) Documentation relating to sub-contractors; and
 - (v) All current and updated PSEGS data as is reasonably required by PSEGS or any third party appointed by PSEGS for purposes of transitioning the services to the PSEGS or any third party appointed by PSEGS, in a format prescribed by PSEGS or any third party appointed by PSEGS; and
 - (vi) All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable PSEGS or any third party appointed by PSEGS, to carry out due diligence in order to transition the provision of the Services to PSEGS or any third party appointed by PSEGS, (as the case may be).
- b) Before the expiry of the exit management period, the PAWAN OPERATOR shall deliver to PSEGS or any third party appointed by PSEGS all new or up-dated materials from the categories mentioned above and shall not retain any copies thereof.
- c) Before the expiry of the exit management period, unless otherwise provided under the "Contract", PSEGS or any third party appointed by PSEGS shall deliver to the PAWAN OPERATOR all forms of "PAWAN OPERATOR's" confidential information which is in the possession or control of PSEGS or any third party appointed by PSEGS.

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4.43.4 General Obligations of the PAWAN OPERATOR

- a) The PAWAN OPERATOR shall provide all such information as may reasonably be necessary to effect as seamless a handover as practicable in the circumstances to PSEGS or any third party appointed by PSEGS and which the PAWAN OPERATOR has in its possession or control at any time during the exit management period.
- b) For the purposes of this Clause, anything in the possession or control of any PAWAN OPERATOR, associated entity, or sub contractor is deemed to be in the possession or control of the PAWAN OPERATOR.
- c) The PAWAN OPERATOR shall commit adequate resources to comply with its obligations under this Exit Management Clause.

4.43.5 Exit Management Plan

- a) The PAWAN OPERATOR shall provide PSEGS or any third party appointed by PSEGS with a recommended exit management plan ("Exit Management Plan") which shall deal with at least the following aspects of exit management in relation to the "Contract" as a whole and in relation to the Project Plan, SLA and Scope of Work.
 - (i) A detailed programme of the transfer process that could be used in conjunction with PSEGS or any third party appointed by PSEGS including details of the means to be used to ensure continuing provision of the services throughout the transfer process and of the management structure to be used during the transfer; and
 - (ii) Plans for the communication with such of the PAWAN OPERATOR's sub contractors, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on PSEGS's operations as a result of undertaking the transfer; and
 - (iii) Identification of specific security tasks necessary at termination; and
 - (iv) Plans for provision of contingent support to PSEGS or any third party appointed by PSEGS for a reasonable period after transfer for the purposes of seamlessly replacing the Services.
- b) The PAWAN OPERATOR shall re-draft the Exit Management Plan annually to ensure that it is kept relevant and up to date.
- c) Each Exit Management Plan shall be presented by the PAWAN OPERATOR to and approved by PSEGS or any third party appointed by PSEGS.
- d) In case of expiry or termination of contract, each Party shall comply with the Exit Management Plan.
- e) During the exit management period, the PAWAN OPERATOR shall use its best efforts to deliver the services.

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f) Payments during the Exit Management period shall be made in accordance with the Terms of Payment Clause.

This Exit Management plan shall be furnished in writing to PSEGS or any third party appointed by PSEGS within 90 working days from the Effective Date of "Contract".

4.44 Buy Back Policy

In case of incorporation of new services or termination of any existing services, any of the deployed PAWAN network components may have to be discarded or be replaced. In such a situation PAWAN OPERATOR shall buy back all such equipments at the value which ever higher of the following values:

- Future value of capital to be paid after deducting the paid principal through QGR
- Depreciated value of the asset as per the straight line depreciation method considering the life of asset as 5 years
- Current market price to be determined through independent quotes.

PSEGS reserves its right to arrive at a value based on the nature of assets to be disposed and it will be binding on the PAWAN OPERATOR to accept the same.

IN WITNESS whereof, the parties to this Agreement have signed on the date first above written in the presence of the following witnesses:

For and on behalf of

For and on behalf of

PSEGS

OPERATOR

Name :

Name :

Designation :

Designation :

Place :

Place :

Date :

Date :

Witnesses

Witnesses

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Annexure 1 : Illustrative Calculation				
Payment Guaranteed				
	QGR 1	100		
Year 1	QGR 2	100		
	QGR 3	100		
	QGR 4	100		
	QGR 5	100		
Year 2	QGR 6	100		
	QGR 7	100		
	QGR 8	100		
	QGR 9	100		
Year 3	QGR 10	100		
	QGR 11	100		
	QGR 12	100		
	QGR 13	100		
Year 4	QGR 14	100		
	QGR 15	100		
	QGR 16	100		
	QGR 17	100		
Year 5	QGR 18	100		
	QGR 19	100		
	QGR 20	100		
	Total	2000		
			Termination Date	
				Amount Payable
			QGR 8	100.00
			QGR 9/(1+15.5)^1	96.27
			QGR 10/(1+15.5)^2	92.68
			QGR 11/(1+15.5)^3	89.22
			QGR 12/(1+15.5)^4	85.89
			QGR 13/(1+15.5)^5	82.69
			QGR 14/(1+15.5)^6	79.60
			QGR 15/(1+15.5)^7	76.63
			QGR 16/(1+15.5)^8	73.78
			QGR 17/(1+15.5)^9	71.02
			QGR 18/(1+15.5)^10	68.37
			QGR 19/(1+15.5)^11	65.82
			QGR 20/(1+15.5)^12	63.37
			Net Present Value	1,045.35
SBI Long Term Prime Lending Rate		12.00		
Additional Loading		3.500		
Annual Discounting Rate		15.500		
Quarterly Discounting Rate		3.875		