



UNIVERSAL SERVICE FUND

MINISTRY OF INFORMATION TECHNOLOGY

GOVERNMENT OF PAKISTAN

Methodology for USF OFC Project OPEX Subsidy Confirmation

1. Preamble

The objective of this document is to present the Monitoring Methodology for OPEX disbursement to verify that Service Providers (SPs) are meeting their contractual obligations of USF Services and Subsidy Agreement (SSA) regarding OPEX claim.

Schedule D of the SSA defines payment mode for OPEX subsidy.

2. Methodology for OPEX Subsidy disbursement

Service Provider's (SP) NOC/NMS will be visited along with SP representative to obtain the required NOC data, directly from NOC terminal/database. NOC data will be collected from SP NOC on monthly basis, for all USF sections/links/nodes, based on KPI's listed below.

NOC data which will be collected includes the following but not limited to:

- a) System generated reports and analysis:
 - Topology/Connectivity Diagram (mentioning interfaces providing connectivity to BTS)
 - Unplanned Outage details of USF OFC Network (Sections/Links/Nodes) not limited to Downtime, Uptime, Duration, Reasons and RCA (Availability trends)
 - Traffic and BW allocation and utilization logs (Provisioning of MRTG graphs)
 - Fault logs & Active alarms
 - Cross-connect detail with client info/tag
 - Interface-wise launch power & optical RX levels
 - NMS extracted OTDR traces
 - NMS extracted backups
 - Inventory details (TELCO)
 - Provisioning of L-14 diagram to track repair work of OFC sections
 - Details of used and unused OFC pairs
- b) The required data shall be submitted in agreed formats (other formats should be intimated to USF Company and a prior approval taken before submission of data).
- c) Non-provision of the required data in required format in any of the subsequent quarters will result in a corresponding payment deduction.
- d) A field visit may also be carried out if required to verify the network statistics.

2.1. System generated logs for calculation of downtime

The Service Provider shall ensure that system generated data portraying downtime status of all sections/links/nodes/services etc. of USF OFC Project pertaining to the Milestone of the quarter for which OPEX subsidy is being claimed is provided to USF QAM department.

These reports shall include but not limited to attributes listed above for which outage duration of the OPEX quarter in question would be calculated based on USF OFC Network & Services availability data. All system generated data is to be saved monthly on 1st day of each month for lasted month. If there are system limitations in data extraction like data truncation, buffer size capacity issues or otherwise, SP shall make sure to extract and submit data twice a month (15th day of ongoing month and 1st day of next). The data shall be archived to be accessible during the quarter in question and thereafter for a period of thirty-six months, till validity of OPEX subsidy duration.

2.2. OPEX Subsidy Deduction Calculation

For the case of OPEX subsidy for OFC Network, if the cumulative downtime/outage in days of Node exceeds two (02) days in a quarter for which the OPEX Subsidy is being given, USFCo shall be entitled to deduct proportionate amount on per Node per day basis, on number of days exceeding two (02), from the current installment of OPEX Subsidy. This includes, but is not limited to, the Node isolation due to Fiber outage. The method of calculation of per Node per day shall be to divide the OPEX subsidy for OFC Network of that quarter by the total number of Nodes and then by the number of days in that quarter.

For the case of OPEX subsidy for BTS Connectivity, Per BTS connectivity outage will be determined by calculating cumulative downtime/outage of an interface/port of the Node, providing connectivity to BTS, exceeds two (02) days in a quarter for which the OPEX Subsidy is being given, USFCo shall be entitled to deduct proportionate amount on per BTS per day basis, on number of days exceeding two (02), from the current installment of OPEX Subsidy. The method of calculation of per BTS per-day shall be to divide the OPEX subsidy for BTS Connectivity of that quarter by the total number of BTS connected sites and then by the number of days in that quarter.

In addition, USF will have the right to verify and validate the KPIs and Statistics provided. SP will be requested to provide support in Root Cause Analysis, where requested.

Formula details for both OPEX cases are given below:

OFC Network OPEX Deduction:

$$\begin{aligned} & \text{OPEX Per Node Per Day} \\ &= \left[\frac{\text{Total OPEX subsidy for OFC Network of a Quarter in MS (X)}}{\text{Total number of nodes}} \right] \div \text{No. of Days in Quarter} \end{aligned}$$

Per Node Deduction = Per node outage in days exceeding 02 × OPEX Per Node Per Day

Total Node OPEX Deduction = Sum of all Per Node Deductions of a Quarter in MS (X)

BTS Connectivity OPEX Deduction:

$$\begin{aligned} & \text{OPEX Per BTS Per Day} \\ &= \left[\frac{\text{Total OPEX subsidy for BTS Connectivity of a Quarter in MS (5)}}{\text{Total number of BTS in MS (5)}} \right] \\ & \div \text{No. of Days in Quarter} \end{aligned}$$

Per BTS Deduction = Per BTS connectivity outage in days exceeding 02 × OPEX Per BTS Per Day

Total BTS connectivity OPEX Deduction = Sum of all Per BTS Deductions of a Quarter in MS (5)

2.3. System generated logs and traffic stats for USF OFC Networks

NOC data which will be collected includes the following but not limited to:

- System generated reports will be analyzed for KPI(s) listed above in section 2.

Deductions in OPEX subsidy shall be calculated on the basis of system generated reports for the OPEX duration as given in Schedule D of the SSA.

2.4. Inspection of Nodes & Fiber

USF will regularly perform monitoring audits of the OFC network for which SP shall arrange a separate visit to a sample of the sections/nodes, for USF resource or associated partner, as mentioned in Schedule C. The following but not limited to, will be checked:

- Sections/Nodes health check.
- Verification of installed BOQ as per contract
- Verification of operational status of connectivity/services/BOQ/nodes as per contract.
- Ensuring that there are no service affecting alarms on the nodes.

2.5. NMS / NOC Visit

NMS / NOC visit will be conducted at the end of Technical Audit of a Milestone or Monitoring visit in addition to monthly visits, in which not limited to the following will be collected.

- NMS visibility status of each USF OFC sections/nodes.
- Operational status of USF OFC sections/nodes/services and alarm status shall be checked.

- If major alarms exist, these shall be conveyed to the Service Provider who shall rectify these alarms and send a report to USF or his designated officer.
- These snags shall be checked during subsequent monitoring visits.

3. Reporting

OPEX quarter will start immediately after completion of each of the Milestone and issuance of Project Implementation Milestone Certification. Once the OPEX quarter is due, OPEX quarterly report shall be submitted to USF within 30 days of quarter due date. Report shall contain data mentioned in section 2 above. In case any outage minutes are claimed under FM/Node inaccessibility, they shall be clearly mentioned in the report together with the duration and inaccessibility certificates validated by District administration/ relevant authorities. The report along with all supporting documents mentioned in Section 2 and sub clauses shall form part of OPEX payment file/case

In case of outage of an interface/port, providing connectivity to BTS, occurs due to unavailability of BTS site, for reasons beyond the control of USF SP, this shall be clearly mentioned in the report together with duration and supporting evidence.