

| CMO  | KPIS | THRESHOLD      | SUKKUR | BAHAWALPUR | CHARSADDA | GWADAR | QUETTA | ISLAMABAD |
|--|------|----------------|--------|------------|-----------|--------|--------|-----------|
| <b>Jazz</b>  | NA   | $\geq 99\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CSSR | $\geq 98\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CCT  | $\leq 7.5$ sec | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CCR  | $> 98\%$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | MOS  | $\geq 3$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | ISHO | $\geq 98\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | RSSR | $> 98\%$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
| <b>Telenor</b>   | NA   | $\geq 99\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CSSR | $\geq 98\%$    | No     | Yes        | Yes       | Yes    | No     | No        |
|  | CCT  | $\leq 7.5$ sec | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CCR  | $> 98\%$       | Yes    | Yes        | Yes       | Yes    | Yes    | No        |
|  | MOS  | $\geq 3$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | ISHO | $\geq 98\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | RSSR | $> 98\%$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
| <b>Ufone</b>   | NA   | $\geq 99\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CSSR | $\geq 98\%$    | Yes    | No         | Yes       | Yes    | Yes    | Yes       |
|  | CCT  | $\leq 7.5$ sec | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CCR  | $> 98\%$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | MOS  | $\geq 3$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | ISHO | $\geq 98\%$    | Yes    | No         | Yes       | Yes    | Yes    | No        |
|  | RSSR | $> 98\%$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
| <b>ZonG</b>  | NA   | $\geq 99\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CSSR | $\geq 98\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CCT  | $\leq 7.5$ sec | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | CCR  | $> 98\%$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | MOS  | $\geq 3$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | ISHO | $\geq 98\%$    | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
|  | RSSR | $> 98\%$       | Yes    | Yes        | Yes       | Yes    | Yes    | Yes       |
| * Note Voice QoS KPIS: Network Accessibility (NA) $> 99\%$ , Service Accessibility (SA) $> 98\%$ , Call Connection Time (CCT) $\leq 7.5$ Seconds, Call Completion Ratio (CCR) $\geq 98\%$ , Mean Opinion Score (MOS) $> 3$ , Inter System Hand Over (ISHO) $> 98\%$ & RAB Setup Success Rate (RSSR) $> 98\%$ |      |                |        |            |           |        |        |           |

**Table 5.2: Voice QoS KPIS Compliance Level**

## SMS SERVICE

6.1. A total of **19,720 SMS sending attempts** were conducted, out of which **19,658 SMS** were **successfully transmitted** by A-Party while **19,396 SMS** were **successfully received** at B-Party. The company wise SMS Statistics are shown in **Table 6.1: SMS Statistics**. The compliance level of threshold values of SMS QoS KPIs in each surveyed city is shown in **Table 6.2: SMS QoS KPIs Compliance**

| DESCRIPTION                           | JAZZ  | TELENOR | UFONE | ZONG  |
|---------------------------------------|-------|---------|-------|-------|
| <i>SMS SEND REQUEST</i>               | 4961  | 4815    | 4961  | 4943  |
| <i>SMS SUCCESSFULLY TRANSMITTED</i>   | 4956  | 4792    | 4945  | 4927  |
| <i>SMS SUCCESSFULLY RECEIVED</i>      | 4926  | 4611    | 4937  | 4885  |
| <i>SMS RECEIVE SUCCESS RATE (%)</i>   | 99.29 | 95.76   | 99.52 | 98.83 |
| <i>END-TO-END DELIVERY TIME (Sec)</i> | 3.61  | 5.68    | 2.9   | 2.56  |

**Table 6.1: SMS Statistics**

| SMS SERVICE     |                  |      |     |         |     |       |     |      |     |
|-----------------|------------------|------|-----|---------|-----|-------|-----|------|-----|
| Operator        |                  | Jazz |     | Telenor |     | Ufone |     | Zong |     |
| SMS QoS KPI     |                  | SR   | DT  | SR      | DT  | SR    | DT  | SR   | DT  |
| Surveyed Cities | SUKKUR           | Yes  | Yes | No      | Yes | Yes   | Yes | Yes  | Yes |
|                 | BAHAWALPUR       | Yes  | Yes | No      | Yes | No    | Yes | Yes  | Yes |
|                 | CHARSADDA        | Yes  | Yes | No      | Yes | Yes   | Yes | Yes  | Yes |
|                 | GWADAR           | Yes  | Yes | No      | Yes | Yes   | Yes | No   | Yes |
|                 | QUETTA           | Yes  | Yes | No      | Yes | Yes   | Yes | Yes  | Yes |
|                 | ISLAMABAD        | Yes  | Yes | No      | Yes | Yes   | Yes | Yes  | Yes |
|                 | KOT RADHA KISHAN | Yes  | Yes | Yes     | Yes | Yes   | Yes | Yes  | Yes |
|                 | SHEIKHUPURA      | No   | Yes | No      | Yes | Yes   | Yes | No   | Yes |
|                 | HANGU            | Yes  | Yes | No      | Yes | Yes   | Yes | Yes  | Yes |
|                 | KUCHLAK          | Yes  | Yes | Yes     | Yes | Yes   | Yes | No   | Yes |
|                 | ABBOTTABAD       | No   | Yes | Yes     | Yes | Yes   | Yes | No   | Yes |
|                 | LOWER DIR        | Yes  | Yes | No      | Yes | Yes   | Yes | No   | Yes |
|                 | MANSEHRA         | Yes  | Yes | No      | Yes | Yes   | Yes | No   | Yes |
|                 | MATIARI          | Yes  | Yes | No      | Yes | No    | Yes | No   | Yes |
|                 | MACH             | No   | Yes | Yes     | Yes | Yes   | Yes | Yes  | Yes |
|                 | PASROOR          | Yes  | Yes | No      | Yes | Yes   | Yes | Yes  | Yes |
|                 | PISHIN           | Yes  | Yes | No      | Yes | Yes   | Yes | Yes  | Yes |
|                 | SARGODHA         | Yes  | Yes | Yes     | Yes | Yes   | Yes | Yes  | Yes |
|                 | UMERKOT          | Yes  | Yes | No      | Yes | Yes   | Yes | Yes  | Yes |

\* Note SMS QoS KPIs: Success Rate (SR)  $\geq 99\%$ , Delivery Time (DT)  $\leq 12$  Seconds

**Table 6.2: SMS QoS KPIs Compliance**