

**Quality Excellence for Suppliers of
Telecommunications Forum
(QuEST Forum)**

**TL 9000
Quality Management System
Measurements Handbook**

EIO Examples

6.3 EIO Examples

6.3.1 – Engineering caused outages

An engineering company recorded 250 jobs completed in May, 300 completed in June, and 175 completed in July. Due to engineering supplier-attributable causes, three outages were recorded in May, five in June, and seven in July. This information is shown in Table 6.3.1-1.

Table 6.3.1-1 Example of Engineering Caused Outages

Item	May	June	July
Number of engineering supplier-attributable procedural outages (Neo)	3	5	7
Total number of completed engineering jobs (Ne)	250	300	175
Engineering Outage Frequency (EOF)	1.2%	1.7%	4%

The computation of EOF for the month of June is

$$\text{EOF} = 100 \times (\text{Neo}/\text{Ne}) = 100 \times 5/300 = 1.7\%$$

The Data Report for June is shown in Table 6.3.1-2.

Table 6.3.1-2 Engineering Caused Outages Data Table Report for June

Identifier	Value
Product Category	7.2.1
MeasurementID	EIO
Neo	5
Ne	300

6.3.2 – Installation caused outages

An installation company completed 198 jobs in May, 202 jobs in June, and 189 jobs in July. Due to installation-attributable causes, no outages were recorded in May, two in June, and one in July. This information is shown in Table 6.3.2-1.

Table 6.3.2-1 Example of Installation Caused Outages

Item	May	June	July
Number of installation supplier-attributable procedural outages (Nio)	0	2	1
Total number of completed installations (Ni)	198	202	189
Installation Outage Frequency (IOF)	0%	0.99%	0.53%

The computation of IOF for the month of June is

$$\text{IOF} = 100 \times (\text{Nio}/\text{Ni}) = 100 \times 2/202 = 0.99\%$$

The Data Report for June is shown in Table 6.3.2-2.

Table 6.3.2-2 Installation Caused Outages Data Table Report for June

Identifier	Value
Product Category	7.1.1
MeasurementID	EIO
Nio	2
Ni	202