R4.5 Measurements Handbook Change History

Section 1
- Updated to match the Requirements Handbook including the section noting that "*Certification to TL 9000 includes a demonstrated conformance to the TL 9000 Quality Management System Requirements Handbook, TL 9000 Quality Management System Measurements Handbook, and clarifications communicated through QuEST Forum Information Alerts*."
- All references here and throughout the Handbook to ISO 9001:2000 have been changed to simply ISO 9001.

Section 2
- No additional changes

Section 3
- Changed references here and throughout the Handbook from "Normalized Units" to "Normalization Units"
- Item 3.2 d) has been modified to reflect the requirement in 3.5.2 for the TL 9000 certified organization to provide data to its suppliers.
- 3.4.2 Customer Base has been changed to indicate data for the TL 9000 Measurements may come from the organization's monitoring systems in addition or instead of input from the customer.
- Changed "registrars" to "Certification Bodies" here and throughout the Handbook.
- Changed the web link reference here and throughout the Handbook to http://tl9000.org/links.html
- In 3.5.2 h) clarified that the minimum three months of data to be submitted when adding a new product category must be consecutive.

Section 4
- Changed Table 4.1-1 to note that the new Handbook is recommended for use from January 2011 on and mandatory for use from July 2011.
- Removed the obsolete reference in 4.1.2 to the implementation of monthly data submission with the R4.0 edition.
- Modified 4.2.1 to clarify that data must be unavailable for a customer before that customer is excluded entirely from the data being submitted. If the customer does not submit data to the organization, but the organization has the needed data from its own monitoring systems, then the data is still included. The same it true at the all-customer level. The data must not be available from any customer or any of the organization's internal systems before the organization can claim exemption for submitting the data.
- The wording in 4.2.5 was modified to clarify that Product Exclusions include generic or specific software releases.

- Modified the diagram and notes in Figure 4.2.6-1 to clarify what types of early life tests are to be included in the TL 9000 Measurements reporting and which are excluded.

Section 5
Section 5.1
- Removed from 5.1.4 b) 7) the words "*regardless whether found in service of in a customer test environment*". This clause was no longer needed after the modifications to Figure 4.2.6-1.
- Clarified wording in 5.1.4 c) 4) concerning the exclusion of routine events
- Added a new exclusion 5.1.4 c) 8) to note that problems external to the organization's product such as customer procedural errors or third party products are not counted in NPR.

Section 5.2
- In 5.2.4 b) 3), clarified what is to be considered an incomplete fix. Also clarified that an incomplete fix is to be treated as if a fix had never been delivered.
- Standardized on the word "excessive" instead of "extraordinary" in 5.2.4 b) 7) and elsewhere in the Handbook.
- Made explicit the need for customer agreement to the determination of excessive delay.
- Added 5.2.4 b) 12) "*Time delays attributable to inability to exercise a disaster recovery plan due to government restrictions and/or concern for safety of personnel are not counted.*"
- In 5.2.4 d) 1) added the following objectives for problem report resolution for products in Product Category 9 – "*For products in Product Category 9 the due threshold time is*
    - *2 working days for major problem reports and*
    - *5 working days for minor problem reports.*
  The above threshold times shall be modified to reflect the SLA obligations if a formal service level agreement exists between the customer and the organization."

Section 5.3
- No changes except general changes already noted above.

Section 5.4
- Added wording to 5.4.4 b) 9) to note "*Where customer authorized early shipment(s) apply, delivery intervals may be adjusted to accommodate for the early shipment(s).*"
- Removed the note concerning the OTIS measurement, which was dropped with the publication of the R4.0 release.
- Modified Table 5.4-1 OTD Notation to clarify that some products in Product Category Family 7 report OTI, while others report OTS. The data submission templates for the specific product category will indicate which is to be reported.

Section 6.0
- Section 6.0.1 has been changed to reflect the conversion of the Engineering or Installation Caused Outage Measurement (EIO), which was applicable only to the Networking Engineering and Installation Services product categories, to the Support Service Caused Outage Measurement (SSO), which will be applicable to any network support service.

Section 6.1
- Added a new counting rule 6.1.4 b) 4) which states: "*An outage shall be classified as a customer-attributable outage if it is caused by a problem for which there is a fix available at no cost and the customer has decided not to deploy the fix. Any outage due to the problem, which occurs while the fix is being deployed, shall still be counted as product-attributable subject to Rule 7, which covers excessive delays*."
- Added "the customer not contacting the organization in a timely manner to aid in the restoration of a non-alarmed outage" to the list of examples of excessive delay in 6.1.4 b) 7).
- Expanded the reference to Appendix A, Table A-2 here and throughout the document to include the full title of the table, "Measurements Applicability Table (Normalization Units)", if it was missing.
- 6.1.5 Sources of Data have been expanded to include the organization's own monitoring systems or direct access to the data itself.

Section 6.2
- Expanded the reference to Appendix A, Table A-3 here and throughout the document to include the full title of the table, "Network Element Impact Outage Definitions", if it was missing.
- In 6.2.4 b) 1) added the new rule 4 added in 6.1.4 b).
- Made the same change to Sources of Data as was made in Section 6.1

Section 6.3
- The Engineering or Installation Caused Outage Measurement (EIO), which was applicable only to the Networking Engineering and Installation Services product categories, has been changed to the Support Service Caused Outage Measurement (SSO), which will be applicable to any network support service. This includes:

> 7.1.1 Installation
> 7.1.2 Provisioning
> 7.2.1 Network Engineering
> 7.3.1 Network Maintenance
> 7.3.2 Network Operations Center
> 7.5 Customer Support

This change is reflected in the wording throughout Section 6.3. The measurement itself is unchanged. It is still the number of outages caused by the support activity over the number of service transactions.

- One difference from the basic outage rules listed in Section 6.1 and 6.2 is that SSO events are reported in the data for the month during which the outage started as stated in new rule 6.3.4 b) 4).
- Made the same change to Sources of Data as was made in Section 6.1

Section 7.0

- The wording of 7.1.1 2) and 3) has been changed to indicate directly the age of the units to be included in the YRR and LTR populations instead of referencing another return rate period. This is "*units shipped seven to eighteen months prior to the reporting month*" for YRR and "*units shipped nineteen or more months prior to the reporting month*" for LTR.
- The second note in 7.1.3 has been modified to add the caution that ERI may also be unstable from month to month as a product matures and shipments begin to decline.
- The third note has been clarified with wording to indicate LTR may become inaccurate due to products being taken out of service "*without the knowledge of the organization*". As noted in 7.1.4 c) 6), the organization shall remove any units it knows have been permanently removed from service from its FR return and population data.
- Rule 7.1.4 b) 9) has been reworded to make it clear that there is an issue with the reporting of data for units used in multiple products only if the products are reported in different product categories. There is no issue if the products are in the same product category.
- A new rule 7.1.4 b) 10) has been added. It states "If a returned product contains multiple FRU's, each individual FRU shall be counted separately".
- The wording of exclusion rule 7.1.4 c) 6) was simplified for clarity. It now simply states "units that have been permanently removed from service by the customer" should not be counted in the FR returns or population.
- A new exclusion rule has been added:

    7) *shipments to customers for products where*

    a) *defective units are not returned for repair by the customer or*
    b) *units are repaired by a 3rd party or the customer and the return data is not made available after solicitation by the organization*

- 7.1.4 d) 2) has been changed to note that the alternative method for determining the normalization factor for mature products has been expanded to include products where the normalization factor is based on traffic capacity in addition to those where it is network elements or systems. The method itself is in the examples on the web.
- 7.1.4 d) 5) and 6) were modified to duplicate the language used in 7.1.1 to describe the unit ages to be included in YRR and LTR.

Section 8

- The wording in Section 8.0.1 has been clarified to identify when the code in a programmable device is to be treated as software and when it is not with regards to the tracking and reporting of the TL 9000 Software Measurements.

Section 8.1
- To caution about the month to month variability of the SFQ measure, the following was added to the Purpose statement in 8.1.2:

  "*When using the SFQ measurement to set goals and drive continuous improvement, it is important to consider the TL 9000 Performance Data Reports smoothing rules (see Section 4.2.10 TL 9000 Performance Data Reports) and the use of smoothed averages. Monthly snapshots may demonstrate too much variability to provide an accurate representation of the software fix quality trend.*"
- Counting rules 8.1.4 b) 1), 2), 3), 4), and 6) have been modified for clarity. There has been no change in the intent of the rules themselves.
- The definition of a defective fix has been moved from the glossary into the counting rules. It has also been modified to clarify that a fix with any one of the characteristics listed is to be classified as defective.
- Counting rule 8.1.4 c) 1) has been reworded for clarity. There is no change to intent.
- Counting rule 8.1.4 c) 2) that excluded generic releases from the SFQ measure has been removed. All fixes delivered in a general available release are now included in SFQ.

Section 9.0
- In 9.1.2, Engineering/Installation Caused Outages has been changed to Support Service Cause Outages.

Product Category Tables

General Changes
- Updated all applicable tables to reflect change from EIO to SSO
- Changed "Normalized Units" to "Normalization Units" throughout
- Added watermark to all pages noting the latest version of the tables are on the web
- Changed web link references to point to tl9000.org/links.html and associated note in all cases
- Add implied "used" to all applicable product category definitions

Table A-1
- Added reference to the Product Category Selection White Paper in the preface

- Added new category 3.3.2.3 for 4G Base Transceiver Systems and revised existing 3.3.2.2 Advanced Base Transceiver Systems accordingly
- Changed 3.3.5 Wireless Location Services to 3.4.1 Location Services and included VoIP location services in the definition
- Created new family 3.4 Ancillary Products
- Added new category 3.4.2 Lawful Intercept
- Added new category 6.2.1.2.3 Radios
- Added new category 6.2.1.2.4 Wireless Terminal Software Applications
- Added DSL/VoIP/Cable combined box and DSL/VoIP/Satellite combined box to the examples for 6.2.3.1 Wired Modems and 6.2.3.2 Wireless Modems
- Changed the name of 6.2.6 to "Set Top Box" from "Multi-play Equipment" and modified the definition and examples.
- Added DSL/VoIP/Cable/Router (wired and/or wireless) combination box and DSL/VoIP/Satellite Router (wired and/or wireless) combination box to the examples for 6.2.7 CPE Routers
- Added new category 7.1.3 for Construction services
- Noted that category the 7.2.1 Network Engineering Services activities includes buildings and outside plant infrastructure.
- Split category 7.2.1 Network Engineering Services into 7.2.1.1 Fixed Network (Engineering Services) and 7.2.1.2 Mobile Network (Engineering Services)
- Added new category 7.3.3 Network Performance Services
- Add "technical support" to the list of activities provided under 7.5 Customer Support Services
- Added cellular telephones and customer premise equipment to examples for 7.7.4 Electromechanical Assembly
- Added new category 7.7.5.3 Reverse Logistics

Table A-2
- Added a reference to the on-line example files for tips and techniques concerning normalization unit estimation
- Made name and number change to 3.3.5 as noted above
- Added new category 3.3.2.3 as noted above
- Added new category 3.4.2 as noted above
- Added new categories 6.2.1.2.3 and 6.2.1.2.4
- Made name change to 6.2.6 noted above
- Added new category 7.1.3 as noted above
- Split category 7.2.1 into 7.2.1.1 and 7.2.1.2 as noted above.
- Added new category 7.3.3
- Added new category 7.7.5.3 Reverse Logistics
- Added SSO measure as required for 7.1.2 Provisioning, 7.3.1 Network Field Maintenance, 7.3.2 Network Operation Center, and 7.5 Customer Support Services

Table A-3
- Modified partial outage definition for category 3.4.1 Location Services (formerly Wireless locations Services (see above)

Glossary
- Removed the definition of "Defective Software Fix". This is now contained in Section 8.1.
- Added "*See Appendix A Table A-2 for specific defective service transaction details for applicable product categories.*" to the definition of "Defective Service Transaction".
- Added a definition for "Network Support Service". It is "*Any service product involved with the creation, installation, operation, or maintenance of a communications network*"
- Added a definition for "Normalization Unit". It is "*The unit of measure used to make measurements comparable based on the product category population or capacity.*"
- Revised the definition of "Defective Customer Support Service Transaction" to include SSO reportable events.