DSR Advisories – Version 4.0

1.0 Overview

The Measurements Repository System (MRS) compares submitted data from a TL 9000 certified organization to previous submissions from the same organization in the same product category without any compromise to data anonymity. The data checks are performed with every data submission and compare data across measurements within submissions as well as across submissions over time to better validate the integrity of the organization's submitted data. If possible problems are identified they are flagged and identified on the Data Submission Receipt (DSR) with Advisories.

2.0 Concept

A team of TL 9000 measurement experts reviewed data in the existing MRS system and identified several new integrity checks that could identify problems with data input. In general, these checks look for inconsistencies in the submitted data such as spikes or dips in the normalization units reported from month to month for a particular measurement. These checks do not prevent submission of the data, but result in advisories on the DSR. Note that flagged data may be accurate per the defined rules in the TL 9000 Measurements Handbook. For example, it is possible that an organization submits dramatically differing normalization units for their SONE measurements from month to month (if the population of customers providing input is changing significantly). Or when normalization units are common between measurements in a particular category, it is also possible that they will not be identical in the data submission (for example, NPR and SONE when customers don't report outage data but do report problems).

3.0 Data Submission Receipt Impacts

3.1 DSR Summary Status

There are 5 possible results for any data submission that are highlighted on the summary status in the DSR.

3.1.1 'Pass' - This results when the data submission is complete and none of the error or advisory checks identified potential problems. This, of course, is an acceptable DSR.

3.1.2 'Pass with Advisories' - This summary type is created when the submission is complete but one or more of the advisory checks identified potential issue(s) with the data. The submission is accepted and the data is incorporated into the MRS but the organization should review the measurement(s) highlighted with the advisory to assure the input was correct. In addition to flagging the DSR as "Passed with Advisory", the individual data sub-measurement(s) in question also show "Ok – Advisory". During certification and surveillance audits, the certification body is expected to follow up with the organization to insure data integrity, as appropriate, for any measurement flagged with an advisory.

3.1.3 'Pass with Exemptions Declared' - This summary category is used when an organization identifies one or more of their measurements as Exempt. This is outside the scope of this document and noted only for completeness.

3.1.4 'Pass with Advisories and Exemptions Declared' - This final summary category is when an organization identifies one or more of their measurements as Exempt and also has one or more of the advisories identifying potential issue(s) with the data. The submission is accepted and the data is incorporated into the MRS but the organization

should review the measurement(s) highlighted with the advisory to assure the input was correct. In addition to flagging the DSR as “Passed with Advisory and Exemptions Declared”, the individual data sub-measurement(s) in question also show “Ok – Advisory”. During certification and surveillance audits, the certification body is expected to follow up with the organization to insure data integrity, as appropriate, for any measurement flagged with an advisory.

3.1.5 ‘Fail’ - This summary type is when the submission is incomplete or one of the error checks has identified the input as invalid. In addition to flagging the DSR as “Fail”, the individual data sub-measurement(s) causing the failure will also show “Error #xx”, where xx is a number defined in a separate document. The data from this submission has not been accepted into the MRS and this DSR will not be acceptable for any certification or surveillance audit. If one or more of the advisory checks also identified potential issue(s) with the data, the individual data sub-measurement(s) in question will also show “Ok – Advisory”.

Submissions that return a DSR Status of “Fail” are excluded from the Submission History Report because it is not a successful status. This is the only submission status that is excluded from this report.

3.2 DSR Detailed Measurement Status

Any measurement that triggers an advisory is marked “Ok – Advisory # xx”, where xx is an integer identifying the specific check detailed in section 4, and a more complete explanation provided at the end of the DSR. If a sub-measurement triggers multiple advisories, all associated advisory message numbers are identified.

3.3 DSR Example with Advisories

Following is an example DSR that identifies advisory(s) associated with specific measurements. The example shown is extremely unlikely to occur as a result of a real submission but was assembled to illustrate where the advisories appear on the DSR.

TL 9000 Data Submission Receipt

Notice: This report was created by the Measurements Repository System at the University of Texas at Dallas. It satisfies requirement 3.5.3.d of the TL 9000 Quality Management System Measurements Handbook, Release 5.0.

/signed/ Richard F. Morrow
TL 9000 Measurements Administrator

Registration Information	
Registration ID	
Product Category Table	**4.1**
Product Category	**3.2.1.2**
Product Category Name	**Digital Cross Connect Systems**
Product/Location	**All**
Data Submission Information	
Date processed	**Thu Nov 12 15:21:18 CST 2016**
Submission Status	**Pass with Advisories**
Submission Type	**Revised**
TL 9000 Certification Status	**Certified to TL 9000**
Registration Option in RMS	**HSV**
Date Template Type	**HS**

TL 9000 Data for 01 /2016

Overall report:

Measurement ID	NPR
NPRa	Ok
NPRs	Ok, Advisory #14
Np1	Ok
Np2	Ok
Np3	Ok
Measurement ID	FRT
Fr2c	Ok
Fr2d	Ok
Fr3c	Ok
Fr3d	Ok
Measurement ID	OFR
Of2c	Ok
Of2d	Ok
Of3c	Ok
Of3d	Ok
Measurement ID	OTD
DSa	Ok
DSd	Ok
DIa	Ok
DId	Ok
Measurement ID	SO
SOa	Ok
SOs	Ok
SOea	Ok
SOda	Ok
SOep	Ok
SOdp	Ok
Measurement ID	SONE
NEOa	Ok
NEOs	Ok
NEOec	Ok
NEOdc	Ok
NEOep	Ok
NEOdp	Ok
Measurement ID	FR
FRa	Ok
FRs	Ok
FRri	Ok
FRsi	Ok
FRry	Ok
FRsy	Ok
FRrt	Ok
FRst	Ok
Measurement ID	SPR

```
Du0                 Ok
Us0                 Ok
Du1                 Ok
Us1                 Ok
Du2                 Ok
Us2                 Ok


Advisory Messages:
>>>>> Advisory #14 - Normalization units for NPRs and FRs should
probably not be equal because they are measured over different time
periods.
```

4.0 Specific Error Checks

4.1 Advisories

The Advisories code is applied to all data submissions for all product categories.

When a data submission is made in a product category, the Registration Management System (RMS) sends the Measurements Repository System (MRS) a series of dataset identifiers that allows the MRS to extract up to eleven previous month's data submissions corresponding to the submitted data. Any data submitted under an earlier version of the Product Category Table are automatically converted to the latest version of the Product Category Table prior to the checks being applied.

Note that all checks for a particular data submission are backwards looking. That is, if the MRS receives a data submission for data dated January 2014, the MRS extracts from its own database corresponding data submissions from February 2013 through December 2013 if they exist. The MRS then compares the data in the January submission to the prior months' submissions (5 or 11 months depending on the particular measurement).

Wherever advisories are triggered by a percentage change, there is a corresponding minimum number of normalization unit's or events, which must be satisfied prior to applying the advisory check.

4.1.1 Advisory #1 – If the calculated measurement over the smoothed period is perfect, the sub-measurement status is "Ok – Advisory #1" and the detailed report at the end of the DSR shows: "Advisory #1 - the calculated measurement over the smoothed period is perfect".

This check was applied to all measurements but was removed from the advisory code as of the August 2011.

4.1.2 Advisory #2 – If the data in this submission is completely identical to the data in an earlier submission Advisory #2 appears and the detailed report at the end of the DSR shows: "Advisory #2 – This submission is the same as *month, year*"

4.1.3 Advisory #3 – Not used

4.1.4 Advisory #4 – If the Normalization Unit changes > 25% (either up or down) from the prior month, the detailed sub-measurement status is "Ok – Advisory #4" and the detailed report at the end of the DSR shows: "Advisory #4 - Normalization Unit changed > 25% from the prior month".

This check applies to NPRs and SPRs.

4.1.5 Advisory #5 – If a data element is > 150% of the highest value reported over the previous 11 months, the detailed measurement status is “Ok – Advisory #5” and the detailed report at the end of the DSR shows: “Advisory **#**5 – Data Element > 150% of the highest value reported over the previous 11 months”.

This check applies to Np2 and Sp2.

4.1.6 Advisory #6 – If a data element is < 50% of the lowest value reported over the previous 11 months, the detailed measurement status is “Ok – Advisory #6” and the detailed report at the end of the DSR shows: “Advisory **#**6 – Data element < 50% of the lowest value reported over the previous 11 months”.

This check applies to Np2 and Sp2.

4.1.7 Advisory #7 – If a data element is > 125% of the highest value reported over the previous 11 months, the detailed measurement status is “Ok – Advisory #7” and the detailed report at the end of the DSR shows: “Advisory **#**7 – Data Element > 125% of the highest value reported over the previous 11 months”.

This check applies to Np3, Np4 and Sp3.

4.1.8 Advisory #8 – If a data element is < 75% of the lowest value reported over the previous 11 months, the detailed measurement status is “Ok – Advisory #8” and the detailed report at the end of the DSR shows: “Advisory **#**8 – Data Element < 75% of the lowest value reported over the previous 11 months”.

This check applies to Np3, Np4, and Sp3.

4.1.9 Advisory #9 – Not used

4.1.10 Advisory #10 – If the data element is > 120% of the highest value reported over the previous 11 months, the detailed measurement status is “Ok – Advisory #10” and the detailed report at the end of the DSR shows: “Advisory **#**10 – Data Element > 120% of the highest value reported over the previous 11 months”.

This check applies to DVd, ERI, LTR, YRR, and SQ.

4.1.11 Advisory #11 – If the data element is < 80% of the lowest value reported over the previous 11 months, the detailed measurement status is “Ok – Advisory #11” and the detailed report at the end of the DSR shows: “Advisory **#**11 – Data Element < 80% of the lowest value reported over the previous 11 months”.

This check applies to DVd, SOep, NEOep, ERI, LTR, YRR, and SQ.

4.1.12 Advisory #12 – SO – If the data element is > 120% of the highest value reported over the previous 11 months AND is > 3x the average value in the same 11 months, the detailed measurement status is “Ok – Advisory #12” and the detailed report at the end of the DSR shows: “Advisory **#**12 – Data Element > 120% of the highest value reported over the previous 11months AND is > 3x the average value in the same 11 months”.

This check applies to SOep and NEOep.

4.1.13 Advisory #13 – If the data element is > 125% of the highest value reported over the previous 11 months, AND is > 3x the average value in the same 11 months, the detailed measurement status is “Ok – Advisory #13” and the detailed report at the end of

the DSR shows: “Advisory #13 – Data Element > 125% of the highest value reported over the previous 11months AND is > 3x the average value in the same 11 months”.

This check applies to SOdp and NEOdp.

4.1.14 – Advisory #14 – If the value for NPRs and FRs are equal then the detailed measurement status is “Ok – Advisory #14” and the detailed report at the end of the DSR shows: - “Advisory #14 - Normalization units for NPRs and FRs should probably not be equal because they are measured over different time periods.”

This check applies to NPRs and FRs.

4.1.15 – Advisory #15 – If “Exempt” is submitted for a measure that is not listed as exempt in the organization’s TL 9000 Registration profile, then the detailed measurement status is “Ok – Advisory #15” and the detailed report at the end of the DSR shows – “Advisory #15 – Measurement submission exempted without declaring in registration profile measurement exemptions list”

This check applies to all measurements.

4.1.16 – Advisory #16 – If NEOdp>0 and NEOdp*A/NEOs<.05, then the detailed measurement status is “Ok – Advisory #16” and the detailed report at the end of the DSR shows – “Advisory #16 – Downtime reported less than minimum expected

This check applies to SONE.

4.1.17 – Advisory #17 – If NEOdp=0 and NEOs>120,000, then the detailed measurement status is “Ok – Advisory #17” and the detailed report at the end of the DSR shows – “Advisory #17 – Downtime reported less than minimum expected.”

This check applies to SONE.

4.1.18 – Advisory #18 – If NEOep>0 and NEO3<.0002, then the detailed measurement status is “Ok – Advisory #18” and the detailed report at the end of the DSR shows – “Advisory #18 – Outage frequency reported is less than minimum expected.”

This check applies to SONE.

4.1.19 – Advisory #19 – If NEOep=0 and NEOs>120000, then the detailed measurement status is “Ok – Advisory #19” and the detailed report at the end of the DSR shows – “Advisory #19 – Outage frequency reported is less than minimum expected.”

This check applies to SONE.

4.1.20 – Advisory #20 – If NPRs<=NEOs where NU=NE, then the detailed measurement status is “Ok – Advisory #20” and the detailed report at the end of the DSR shows – “Advisory #20 – NPRs should normally be greater than NEOs.”

This check applies to NPR.

4.1.21 – Advisory #21 – If NEOs<>SOs where NU=NE, then the detailed measurement status is “Ok – Advisory #21” and the detailed report at the end of the DSR shows – “Advisory #21 – NEOs and SOs should normally be equal for this product category.”

This check applies to SO.

4.1.22 – Advisory #22 – If NEOdp=0 and NEOs>10,000 (each of past 12 mos), then the detailed measurement status is “Ok – Advisory #22 and the detailed report at the end of the DSR shows – “Advisory #22” – Downtime reported less than minimum expected.”

This check applies to SONE.

4.1.23 – Advisory #23 – If NEOep=0 and NEOs>10,000 (each of past 12 mos), then the detailed measurement status is “Ok – Advisory #23” and the detailed report at the end of the DSR shows – “Advisory #23 – Outage frequency reported less than minimum expected.”

This check applies to SONE.

4.1.24 – Advisory #24 – If the value submitted is greater than 95% of the upper range value for the sub-element then the detailed measurement status is “Ok – Advisory #24” and the detailed report at the end of the DSR shows – “Advisory #24 – Input value greater than 95% of maximum value expected.”

This check applies to all measures with an upper range limit.

4.1.25 – Advisory #25 – If Np2 = 0 (for one month) and NPRs x NPR2 ind_avg>240, then the detailed measurement status is “Ok – Advisory #25” and the detailed report at the end of the DSR shows – “Advisory #25 – “Problem report frequency is less than the minimum expected”.

This check applies to NPR2.

4.1.26 - Advisory #26 - If Np2 = 0 (for six consecutive months) and NPRs x NPR2 ind_avg>20, then the detailed measurement status is “Ok – Advisory #26” and the detailed report at the end of the DSR shows – “Advisory #26 – “Problem report frequency for the past six months is less than the minimum expected”.

This check applies to NPR2.

4.1.27 – Advisory #27 - If Np3 = 0 and NPRs x NPR3 ind_avg>240, then the detailed measurement status is “Ok – Advisory #27” and the detailed report at the end of the DSR shows – “Advisory #27 – “Problem report frequency is less than the minimum expected”.

This check applies to NPR3.

4.1.28 – Advisory #28 - If Np3 = 0 (for six consecutive months) and NPRs x NPR3 ind_avg>20, then the detailed measurement status is “Ok – Advisory #28” and the detailed report at the end of the DSR shows – “Advisory #28 – “Problem report frequency for the past six months is less than the minimum expected”.

This check applies to NPR3.

4.1.29 – Advisory #29 - If Sp2 = 0 and SPRs x SPR2 ind_avg>20, then the detailed measurement status is “Ok – Advisory #29” and the detailed report at the end of the DSR shows – “Advisory #29 – “Software problem report frequency is less than the minimum expected”.

This check applies to SPR2.

4.1.30 – Advisory #30 – If Sp2 = 0 (for six consecutive months) and SPRs x SPR2 ind_avg>20, then the detailed measurement status is “Ok – Advisory #30” and the

detailed report at the end of the DSR shows – “Advisory #30 – “Software problem report frequency for the past six months is less than the minimum expected”.

This check applies to SPR2.

4.1.31 – Advisory #31 – If Sp3 = 0 and SPRs x SPR3 ind_avg>240, then the detailed measurement status is “Ok – Advisory #31” and the detailed report at the end of the DSR shows – “Advisory #31 – “Software problem report frequency is less than the minimum expected”.

This check applies to SPR3.

4.1.32 – Advisory #32 – If Sp3 = 0 (for six consecutive months) and SPRs x SPR3 ind_avg>20, then the detailed measurement status is “Ok – Advisory #32” and the detailed report at the end of the DSR shows – “Advisory #32 – “Software problem report frequency for the past six months is less than the minimum expected”.

This check applies to SPR3.

4.2 – Excluded Measurements – Due to the natural volatility of the data, there are no data value based advisory checks applied to the FRT, OFR, SSO, and SFQ measures.