UniQuE

TL9000 Metrics Handbook-7.2.2

(Engagement Name and Id)

(Client)

Document History

Version	Date	Author	Changes

Review And Approval

Company	Role	Name	Date	Signature

Distribution

Company	Name	Number	Media	Action

Storage

Location	Access	Administrator

Template Version Number: : Group Reference v1.0

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Chapter 1

Introduction

The TL 9000 Metrics Handbook 5.7 for Product Category 7.2.2 defines a minimum set of performance measurements.

The purpose of Metrics Handbook for Product Category 7.2.2 is to define effective performance-based measurements to guide progress and evaluate results of quality management system implementation, drive continual improvement, enhance customer-supplier relationships, and leverage industry conformity assessment processes.

This Handbook identifies all the applicable Metrics for Product Category 7.2.2, their purpose, applicability, and establishes Metrics Calculation Rules customized as per requirements of Capgemini organization.

1.1 Scope

Scope of applicability of this Metrics Handbook is limited to all the services offered under global information and communications technology (ICT)* for Telecom Industry by Capgemini organization under Product category 7.2.2 that includes Contracted Software Development Service offered by the organization to develop, support and maintain software programs or subroutines except Joint Development Projects**, Demo or Proof of Concept (PoC) Development Projects*** and Access Restricted Development Projects****.

- * - TL9000 Measurement Handbook 5.7 requirement applicable for all those projects which are executed for global information and communications

technology (ICT) for telecom industry. Please refer to the Appendix A for further details

- ** - The project where the Capgemini resources and Customer resources are together working on a software release. In such cases of maintenance type there are no SLAs defined. Typically, the problem reports are assigned to Capgemini on priority basis instead of severity.

- *** - Demo or Proof of Concept Development Projects is not commercially available product. The purpose of this is to verify that certain concepts or ideas or theories, have the potential for real-world application. POC is therefore a prototype that is designed to determine feasibility. A proof of concept is usually small and may or may not be complete.**** - Access Restricted Development Projects are those projects where Capgemini don't have data or deliverable access or customer doesn't allowed access to anyone outside its Offshore Development Facility (ODC) to measure performance.

Chapter 2

Number of Problem Report

2.1 Name

Number of Problem Reports

2.2 Identifier

NPR4

2.3 Metric

Number of Problems Reports NPR4 = Np4 / NPRs

Where, Np4 is number of problem reports in the reporting period

NPRs is the Normalizing factor

2.4 Description

Number of Problems Reports during a particular reporting period over number of Contracted Items Delivered. (Normalization factor)

* The contracted items delivered are likely to be those that you tracked for OTD.

2.5 Purpose

This measurement is used to evaluate the number of Customer originated problem reports that are indicative of the quality of the services delivered during the operating life cycle of a product that is under service contract.

2.6 Applicable

This metric is applicable for Maintenance Services Rendered to Capgemini Products that are deployed by Customers in their System.

2.7 Counting Rules

- Problem reports originated by direct customer only are counted.
- Problem reports where the reported problem cannot be duplicated during subsequent investigations are considered.
- Multiple reports of the same occurrence of the same problem at the same location at the same time are considered as one problem report.
- Same fault has occurred either at a different customer location or at a different time is considered as separate problem reports.
- Multiple problems recorded on the same problem report are counted separately, unless in the customer's view, these multiple problems are manifestation of the single problem.
- Problem reports are counted in the month they are received.
- Problem reports for these products are not reported by severity.
- Only for Capgemini Products used without modifications at Customer Systems are included.

2.8 Exclusions

- Problem report related to use of the product in a manner not defined in specification of the product is excluded.
- Customer report of routine events such as expected maintenance or software upgrades is excluded.
- Problem reports that are information request (IR) or enhancements are not to be counted.
- Problems on purely prototype products, such as release, which are not commercially available, are excluded from TL9000 Reporting.
- Problem Reports received from the indirect customers unless forwarded by the direct customer is not to be counted.
- Problem Reports for which there is a fix available at no cost and the customer has decided not to deploy the fix are excluded. It is a ‘fix’

provided by the Capgemini to all its customers as part of contractual warranty or business agreement without any cost.

2.9 Frequency

Monthly

2.10 Source

A customized Maintenance Datasheet or project specific tool is used as Data Source that calculates SLA on the SPR basis.

2.11 Calculation

- For NPR calculations, the data shall be extracted from the above identified data source for the total # of problems reported in a month according to its reporting date.
- Calculations are to be done with data inputs Defect No, Date Assigned, Date Fixed, Hold Duration, Severity, Project/Product Name, Project/Product Description, Release No., Customer, Contract and SLA Permitted Time. However, an automated tool may be used for calculation.
- The NPR measurements shall be calculated monthly by counting the total # of problems reported in a month and dividing it by Normalization Factor.
- Np4 represents # of Problems reported in a month identified by unique Defect No.
- No. of Contracted Items Delivered serves as Normalization factor.
- **Rules for Zero Denominator Data**: In TL 9000 it is possible for the denominator to be zero when calculating any metrics. There are two different cases:
  - Both numerator and denominator are 0 – that is 0/0
  - Numerator is not zero but denominator is 0 – that is n/0

Measurement	Defined value		Comments
	0/0	n/0	
NPR4	No data	n/1	Product Category 7 &8

Application of the rules is as follows:

No data: Ignore the data in monthly and summary data calculations

n/1: Treat as if the monthly data submission denominator had been 1.

n/n: Treat as if the monthly data submission denominator had been n.

2.12 Examples

S. No.	1
Month	**Mar**
Year	**2007**
No. of Problems Reported during the Month **(Np4)**	126
No. of Contracted Items Delivered in reporting month **(NPRs)**	42
NPR4	**3.0**

Example (Zero Denominator rules applied):

S. No.	2
Month	**Jan**
Year	**2014**
No. of Problems Reported during the Month **(Np4)**	0
No. of Contracted Items Delivered in reporting month **(NPRs)**	0
NPR4	**No data**

S. No.	3
Month	**Feb**
Year	**2014**
No. of Problems Reported during the Month **(Np4)**	10
No. of Contracted Items Delivered in reporting month **(NPRs)**	0
NPR4	**10***

* Applied n/1 rule

Chapter 3

Fix Response Time

3.1 Name

Fix Response Time

3.2 Identifier

FRT4

3.3 Metric

FRT4 (%) = 100 X (Fr4c / Fr4d)

Where, Fr4c equals number of problem reports closed on time

Fr4d equals number of problems due to be closed

3.4 Description

The problem report fix response time applies to the delivery of official fix in response to customer problem reports within due date as per the SLA defined by the customer.

3.5 Purpose

This measurement is used to quantify the responsiveness to problem reports and to facilitate prompt fixes and closures of problem reports.

3.6 Applicable

This metric is applicable for Maintenance Services Rendered to Capgemini Products that are deployed by Customers in their System.

3.7 Counting Rules

- Problem reports originated by customer only are counted.
- Only for Capgemini Products used without modifications at Customer Systems are included.
- The start of the interval for calculating FRT shall be the date the problem is reported to the organization. FRT interval is calculated from the date the problem is reported to the date when official fix is provided. Should the problem report originator later reject the fix as incomplete or causing side effects, the problem report shall be re-classified as open. All intervening time shall be included in determining on-time problem closure.
- If with customer consent, the implementation of a fix is deferred, such as waiting for the next software update versus a patch, then the deferral interval is not included. This deferral may be to an agreed scheduled date when fix is to be delivered or simply to a specific new product release that will contain the fix.
- With customer approval, the time between the application of a temporary fix and the commitment date for a permanent fix may be excluded in the fix response time calculation. The customer must agree that the temporary fix meets their needs. Failure to provide an acceptable resolution with a permanent fix by the negotiated commitment date will result in the restoration of all the excluded time.
- Problem reports are counted only in the month they are due and not in the month they are fixed or closed.
- When there are No Problem Reports due to be closed in a particular reporting period, the FRT value is 100%

3.8 Exclusions

- A problem report put on hold by the customer may be excluded from the overall closure time. Records of such delays with specific start and stop dates will be maintained.
- If a problem report misses its due fixed date, and time when required by an SLA, it is not counted in FRT again - even if a new due date is negotiated.
- If the deployment of the fix is delayed or does not occur specifically at the customer's request and not because of problems within Capgemini, the

interval is defined as ending when the official fix is first made available for delivery. The delay interval will not be included in the FRT calculation.

- All exclusions of NPR Metric hold valid and applicable for FRT too.

3.9 Frequency

Monthly

3.10 Source

A customized Maintenance Datasheet or project specific tool is used as Data Source that calculates SLA on the SPR basis.

3.11 Calculation

- The FRT measurements shall be calculated monthly by multiplying 100 by the number of # of problems due in a month that were fixed with in due date and dividing by the total # of problems due in a month.
- For FRT calculations, the data shall be extracted from the above identified data source for the no. of problems reported, reporting date, date of providing fix, hold duration (if any) and the SLA permitted by the customer.
- Calculations are to be done with data inputs Defect Number, Date Assigned, Date Fixed, Hold Duration, Severity, Project/Product Name, Project/Product Description, Release No., Customer, Contract and SLA Permitted Time. However, an automated tool may be used for calculation.
- FR4c represents # of problems closed in a month within Due Date that were due for that month identified by unique Defect ID, SLA Permitted Days, Due Date and On Time Decision.
- FR4d represents total # of problems that were due for that month identified by unique Defect ID, SLA Permitted Days and Due Date.
- **Rules for Zero Denominator Data**: In TL 9000 it is possible for the denominator to be zero when calculating any metrics. There are two different cases:
  - Both numerator and denominator are 0 – that is 0/0
  - Numerator is not zero but denominator is 0 – that is n/0

Measurement	Defined value		Comments
	0/0	n/0	
FRT4	100%	Not valid	

Application of the rules is as follows:

No valid: Failed for data submission

3.12 Examples

S. No.	1
Month	**Mar**
Year	**2007**
No of Problems closed on time during the Month **(Fr4c)**	59
No of Problems due to be closed during the month **(Fr4d)**	97
FRT4 %	**60.82%**

S. No.	2
Month	**Jan**
Year	**2014**
No of Problems closed on time during the Month **(Fr4c)**	0
No of Problems due to be closed during the month **(Fr4d)**	0
FRT4 %	**100%**

Chapter 4

Overdue Problem Report Fix Responsiveness

4.1 Name

Overdue Problem Report Fix Responsiveness

4.2 Identifier

OFR4

4.3 Metric

OFR4 (%) = 100 X (Of4c / Of4d)

Where, Of4c equals Number of overdue problem reports closed

Of4d equals Total number of overdue problem reports

4.4 Description

The overdue problem report fix response time measures the rate of closure of the problem reports that remain open (overdue) beyond the SLA allowed time.

4.5 Purpose

This measurement is used to quantify the responsiveness to overdue problem reports.

4.6 Applicable

This metric is applicable for Maintenance Services Rendered to Capgemini Products that are deployed by Customers in their System

4.7 Counting Rules

- Problem reports originated by customer only are counted.
- Only for Capgemini Products used without modifications at Customer Systems are included.
- Overdue problem reports are those that are open beyond the due threshold time defined as per the SLA.
- Open problem reports shall be counted as overdue in each month during which they are open and overdue including the month they are closed.
- In those cases where customer defers solution for an overdue problem, if the deferral date is missed for an Overdue Problem Report, the problem report is counted as overdue in all previously excluded months (*the OFR data is resubmitted for the quarter only*).
- When there are No Overdue Problem Reports due to be closed in a particular reporting period, the OFR value is 100%

4.8 Exclusions

- Problem report related to use of the product in a manner not defined in specification of the product is excluded.
- Customer report of routine events such as expected maintenance or software upgrades is excluded.
- A customer-approved deferral of an overdue problem removes it from subsequent months until the month that marks the end of the deferral interval and then the entire counting rules apply again.
- All exclusions of NPR Metric hold valid and applicable for OFR too.

4.9 Frequency

Monthly

4.10 Source

A customized Maintenance Datasheet or project specific tool is used as Data Source that calculates SLA on the SPR basis.

4.11 Calculation

- The OFR measurements shall be calculated monthly by multiplying 100 by the number of # of problems overdue at the beginning of the month that were fixed with in that month and dividing by the total # of problems overdue at the beginning of the month.
- For OFR calculations, the data shall be extracted from the above identified data source.
- Calculations are to be done with data inputs Defect Number, Date Assigned, Date Fixed, Hold Duration, Severity, Project/Product Name, Project/Product Description, Release No., Customer, Contract and SLA Permitted Time. However, an automated tool may be used for calculation.
- OF4c represents # of overdue problems closed in a month that were overdue at the beginning of that month identified by unique Defect ID, SLA Permitted Days, Due Date and 'Overdue Fixed or not' Decision.
- OF4d represents total # of overdue problems that were overdue at the beginning of that month identified by unique Defect ID, SLA Permitted Days and Due Date.
- **Rules for Zero Denominator Data**: In TL 9000 it is possible for the denominator to be zero when calculating any metrics. There are two different cases:
  - Both numerator and denominator are 0 – that is 0/0
  - Numerator is not zero but denominator is 0 – that is n/0

Measurement	Defined value		Comments
	0/0	n/0	
OFR4	100%	Not valid	

Application of the rules is as follows:

- **No valid**: Failed for data submission

4.12 Examples

S. No.	1
Month	**May**
Year	**2005**
No of Overdue Problems fixed during the Month **(Of4c)**	4
Total No of Overdue Problems at the month beginning **(Of4d)**	5
OFR4 %	**80%**

S. No.	2
Month	**Jan**
Year	**2014**
No of Overdue Problems fixed during the Month **(Of4c)**	0
Total No of Overdue Problems at the month beginning **(Of4d)**	0
OFR4 %	**100%**

Chapter 5

On-Time Service Delivery

5.1 Name

On-Time Service Delivery

5.2 Identifier

OTS

5.3 Metric

OTS % = 100 X (DVa / DVd)

Where, Dva is the Number of Service orders accepted on the CRD during the month

DVd is the Number of service orders for which the CRD occurred during the month

CRD is the Customer Requested Date & Service Orders

5.4 Description

On-Time Delivery measures the timelines of delivery of products to customers.

5.5 Purpose

This measurement is used to evaluate the organization's on-time delivery performance to meet the customer's need for timely product delivery and to meet end-customer expectations.

5.6 Applicable

This metric is applicable for products/services delivery and may be applicable to New Development (ND), Feature Enhancement (FE) and Maintenance (M) type projects.

5.7 Counting Rules

- Each Deliverable – as stated below shall be counted as one unit of order:
  - A Major or Minor Release in case of development Projects
  - Build/Patch Release in case of Maintenance Projects
- Due dates and delivery dates are considered to be one 24-hour period, the customer's calendar day.
- For Development Projects, the project's schedules for various phases are listed through – Project Plan, MPP Files, XL Tracking Sheets, etc. Typically, the date of final delivery of a Release or a Part of the Release as required by the Customer – shall be the final milestone in schedule tracking. This date will be the date the Customer has requested for delivery (or CRD).
- For Maintenance Projects, there could be projects where bunch of Customer Problems are delivered in the form of a build/patch release. The schedules for these build/patch releases could be covered in the project plan or a specific delivery date agreed to with the Customer – which will be the CRD.
- Acceptance shall be defined according to the Project Plans/Acceptance Criteria & Plans and/or contract terms and conditions unless notified by the customer. In many situations, delivery of the SW post testing or submission of a fix in the customer's defect tracking system could be considered as acceptance of the solution.
- In Software Development Services, the customers typically accept early deliveries. Schedules and Deliverables are typically done in line with Customer needs & hence early deliveries are not issues.
- Early deliverables will be accepted by the customer based on a simple blanket verbal agreement, which may be documented by e-mail or a memorandum of understanding or other such mechanism.
- The monthly OTD data shall include all service orders having the CRD occurring during the month being reported.
- Changes in dates of deliverables (either initiated by Customers or by Capgemini) are done after Customer acceptance

5.8 Frequency

Monthly

5.9 Source

5.9.1 For Development Projects

- Project Plan/MS Project Schedules/XL Based Schedule Tracking Sheets and/or the Project's SQA Tracking Sheets (Schedule Variance section)

5.9.2 For Maintenance Projects

- Project Plans or Other Specific Release Dates for Patch Releases

5.10 Calculation

- OTS is calculated on the basis of # of services that were delivered on the CRD divided by the total # of services that had CRD in that month.
- For OTS calculations, the data shall be extracted from the above identified data source.
- Calculations are to be done with data inputs a project name, contract/ purchase order, CRD, delivery date, acceptance date, quantity ordered, quantity delivered, CRD meeting decision column. However, an automated tool may be used for calculation
- **Rules for Zero Denominator Data**: In TL 9000 it is possible for the denominator to be zero when calculating any metrics. There are two different cases:
  - Both numerator and denominator are 0 – that is 0/0
  - Numerator is not zero but denominator is 0 – that is n/0

Measurement	Defined value		Comments
	0/0	n/0	
OTS	No data	Not valid	

Application of the rules is as follows:

- **No data**: Ignore the data in monthly and summary data calculations
- **No valid**: Failed for data submission

5.11 Examples

- **Data**

Deliverables	CRD (mm/dd)	Quantity Ordered	Quantity Delivered	Date Delivered	No. of On-Time

				(mm/dd)	Service Deliverables CRDs Met
Rel SST 1.2	03/10	1	1	03/10	1
SS7 4.5	03/13	1	1	03/15	0
DSS 6.2	03/19	1	1	03/19	1
Rel PPB 3.4	03/15	1	1	03/15	1
RSS 7.3	03/15	1	1	03/17	0
HNS 2.1	02/20	1	1	03/20	NA
GPRS 2.5	02/22	1	1	03/22	NA
No. of Deliverables= 7	No. of Deliverables CRDs due in month DVd=5				On – time delivery of items (DVa) = 3

- **Calculations**

S. No.	1
Month	**Mar**
Year	**2007**
No. of Deliverables delivered on time during the month **(DVa)**	3
No. of Deliverables that have CRD due in the month **(DVd)**	5
OTS%	**60%**

S. No.	2
Month	**Jan**
Year	**2014**
No. of Deliverables delivered on time during the month **(DVa)**	0
No. of Deliverables that have CRD due in the month **(DVd)**	0
OTS%	**No data**

Chapter 6

Metrics Interpretations

Refer attached '**Metrics Interpretations - based on the Nature of the Projects**' sheet

Metrics Interpretations - base

APPENDIX – A

INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

TL9000 Measurement Handbook 5.7 requirement applicable for all those projects which are executed for global information and communications technology (ICT) companies.

For TL9000, ICT (information and communications technology - or technologies) is an umbrella term that includes any communication device or application, encompassing three sectors, Equipment Sector (Hardware - manufacture telecom products), Software and Services Sector (operators and other service providers including vendors for equipment and infrastructure).

[A.] Telecommunications Equipment Sector: Satellite and broadcast network equipment, wireless telecommunications equipment, wireline telecommunications equipment and other telecommunications and computer networking equipment.

[B.] Telecommunications Services Sector: Telecom service providers, broadband service providers and intermediaries.
The telecommunications services sector can be divided into following categories:

- Wired Services (fixed telephone, broadband, and cable network, microwaves, and satellite link-ups & telegraph)
- Wireless Services (cellular mobile phone, paging, satellite, broadband communication, switching and transmission)
- Internet Services (All Internet service providers - ISPs)
- Resellers (transmission facilities provider, such as telephone lines or space on a satellite, from existing telecommunications networks, and then resell the service to other customers)
- Cable and Program Distribution (Direct broadcasting satellite (DBS) and pay television services transmit)
- Other Broadband Services (Internet Protocol television (IPTV), Voice over Internet Protocol (VoIP) and Internet Protocol virtual private network (IP VPN or VPN))

Note: Information and communications technology (ICT) Domain in TL9000 extending from service providers through ICT equipment manufacturers through the suppliers and contractors and subcontractors that provide electronic components and software components to those ICT equipment manufacturers