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SUBJECT:

TARIC3

Performance Test Plan

DOCUMENT HISTORY

EDI.	REV.	DATE	DESCRIPTION	ACTION	PAGES
0	01	21/01/2009	Initial pre-application version, Submission for Internal review.	Insert	All
0	10	19/02/2009	Implementation of internal review comments. Sent for Review.	Update	As requested
1	00	27/03/2009	Implementation of review comments. Sent for Acceptance.	Update	As required
1	01	04/05/2009	Update with FAT findings	Update	Some
1	10	04/06/2009	Minor corrections. Send for Review	Update	As required
2	00	15/07/2009	Implementation of review comments. Sent for Acceptance.	Update	As required

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1. INTRODUCTION

1.1. Objective of this document

This document defines the performance test plan to be followed in order to:

- Assess the current performances of the TARIC3 system;
- Check if the performances of the TARIC3 system are consistent under load and stress testing executions.

1.2. Structure of this document

This document has three chapters after chapter 1. Chapter 2 describes the test environment. Chapter 3 describes the various test cases. Finally, chapter 4 gives the template of the Test Report Form that must be filled in during performing TARIC3 performance test.

1.3. Intended audience

This document is intended for people responsible for the assessment of the performances of the TARIC3 system.

1.4. Abbreviations and acronyms

DG TAXUD	Directorate General Taxation and Customs Union
EC	European Commission
EU	European Union
MS	Member State
SQL	Structured Query Language
TARIC	*Tarif Intégré Communautaire*
UNIX	Unix operating system
XML	eXtensible Markup Language

Table 1: Abbreviations and acronyms

1.5. Reference documents

[TARIC3-FS]	"TARIC3 – Functional Specifications", version 2.00-EN
[TARIC3-FTS]	"TARIC3 – Functional Test Scenarios", version 1.10-EN

Table 2: Reference documents

1.6. Applicable documents

[TARIC3-PTS]	"TARIC3 – Performance Test Scenarios", Ref. TARIC3-PTS, version 1.01-EN.

Table 3: Applicable documents

2. TEST ENVIRONMENT

2.1. Test scenario coverage

The performance test plan covers the performance test scenarios defined in [TARIC3-PTS]. For each performance test scenario, one or several test cases are defined. The table in Annex1 clearly identifies which test cases implement each test scenario.

Please note that it is possible to have extra test cases (meaning not linked to any scenario).

2.2. Test strategy

The tests are in the form of single test cases intended for manual execution and manual recording of the results unless otherwise stated.

2.3. Test case structure

A scenario is composed of one or more test cases that are specified in the following way:

Test case no.:   The identification number of test case to be executed.

Purpose: A short description of what is performed by the test case.

Precondition: All the required conditions that must be fulfilled before the test case is executed. Please note that the default precondition is mentioned only once.

Content: The description of the actions to be performed, together with the data to be used, when deemed relevant.

Expected output: Time taken to perform the action.

2.4. Test data set

2.4.1. User data set

The following users who have all the rights applicable for a DG TAXUD user must be defined:

T3-U01, T3-U02, T3-U03, T3-U04, T3-U05

Please note that for all users, the password must be identical to the User ID.

2.4.2. TARIC reference data set

A copy of the required TARIC tables will be used as TARIC reference data set, in order to have full control of the contents of this data set.

2.5. How to measure the duration mentioned in test cases

2.5.1. Test cases 'insert_x'

- Go into the appropriate screen;
- Insert the appropriate data;
- Press the "xxxxx" button and start the timer;
- Wait until the task done, and stop the timer.

2.5.2. Test cases 'update_x' or 'stable_x'

- Go into the appropriate screen;
- Insert the appropriate data to be updated;
- Press the "xxxxx" button and start the timer;
- Wait until the task done, and stop the timer.

2.5.3. Test cases 'delete_x' or 'query_x'

- Go into the appropriate screen;
- If necessary, introduce the appropriate data as required for delete or query;
- Press the appropriate button and start the timer;
- Wait until the next screen is displayed, and stop the timer.

The Start and Stop timers should be performed simultaneously while pressing the appropriate button, to avoid time (seconds) gap in start or stop and to get accurate time measures.

2.6. Preliminary steps to complete before executing the test plan

2.6.1. General

Before executing the test plan, the tester must be aware of Business rules and logics for TARIC3 system.

At the moment, this is a pre-application test plan. Kindly inform the test manager for anything that seems irrelevant or changed in actual application.

2.6.2. Creation of the background activity

In order to simulate the background activity, several *ant files* will be created. The background activities have been defined as loops the following actions:

- Insert role regulations once;

- Insert measures once;

- Perform a simple query to retrieve a list of 500 measures data;

- Insert goods nomenclature codes;

- Perform a simple query to retrieve a list of 500 historical goods nomenclature codes;

- Delete role regulations;

- Make stable measures;

- Delete measures;

- Make stable goods nomenclature codes;

- Perform a simple query to retrieve a list of 500 role regulations contents;

- Delete goods nomenclature codes;

- Update role regulation with impacted measures;

- Delete role regulation with impact on other role regulations;

- Update role regulation with impact on other role regulations with impacted measures.

- Delete role regulation with impact on other role regulations with impacted measures.

3. TEST CASES

The data sets to be used are described at the beginning of each chapter. This data set can be enlarged or reduced if required.

3.1. Data Maintenance performance

The [TARIC3 data set] must be used to perform all the test cases mentioned in this chapter.

3.1.1. Role Regulations

The test cases defined in this section cover the test scenario PERF_MAINT_ROL defined in [TARIC3-PTS].

Test case no.: **001**

Purpose: Perform a number of "insertions" to check the response time.

Precondition: User to use: **T3-U01**

Content: Insert 1: a regulation of any type once (e.g., single value).

Insert 2: a regulation of any type twice with minimum time distance in between (e.g., two data values).

Insert 3: a regulation of any type with wrong value (e.g., incorrect data).

Expected output: Action accepted and time taken to perform the Insert 1:

Action accepted and time taken to perform the Insert 2:

Action rejected and time taken to perform the Insert 3:

Test case no.: **002**

Purpose: Perform number of "updates" to check the response time.

Precondition: User to use: **T3-U01**

Content: Update 1: Role regulation once *(e.g., single value).*

Update 2: Role regulations twice with minimum time distance in between *(e.g., two data values).*

Update 3: Role regulation with impacted measures.

Update 4: Role regulation with impact on other role regulations.

Update 5: Role regulation with impact on other role regulations with impacted measures.

Update 6: Make stable an existing unstable role regulation.

Update 7: Make stable an existing unstable role regulation that impact other role regulations and measures.

Expected output:

Action accepted and time taken to perform the update 1 :

Action accepted and time taken to perform the update 2 :

Action accepted and time taken to perform the update 3 :

Action accepted and time taken to perform the update 4 :

Action accepted and time taken to perform the update 5 :

Action accepted and time taken to perform the update 6 :

Action accepted and time taken to perform the update 7 :

Test case no.: **003**

Purpose: Perform "delete" to check the response time.

Precondition: User to use: **T3-U01**

Content: Delete 1: Role regulation once *(e.g., single value)*

Delete 2: Role regulations twice with minimum time distance in between *(e.g., two data values)*

Delete 3: Try to delete a role regulation when other role regulations and measures are impacted.

Expected output:

Action accepted and time taken to perform the Delete 1 :

Action accepted and time taken to perform the Delete 2 :

The action should be rejected with the following error message: "A role-regulation cannot be deleted if it is a non-draft regulation generating measures or if it is used as a justification regulation, except for draft regulations used only in measures as both measure-generating regulation and justification regulation" and time taken to perform the Delete 3 :

3.1.2. Measures

The test cases defined in this section cover the test scenario PERF_MAINT_MEAS defined in [TARIC3-PTS].

Test case no.: **004**

Purpose: Perform "insert, update, stable and delete" to check the response time.

Precondition: User to use: **T3-U01**

Content: Insert 1: Single measure insertion *(e.g., single value).*

Insert 2: Group measure insertions *(e.g., minimum two data values).*

Update 1: To perform on above "Insert1".

Update 2: To perform on above "Insert2".

Stable 1: Existing unstable measure to turn into stable *(e.g., minimum two data values).*

Delete 1: All above performed actions e.g., Insert 1 & 2, Update 1 & 2, Stable 1.

Expected output: Action accepted and time taken to perform the Insert 1:

Action accepted and time taken to perform the Insert 2:

Action accepted and time taken to perform the Update 1:

Action accepted and time taken to perform the Update 2:

Action accepted and time taken to perform the Stable 1:

Action accepted and time taken to perform the Delete 1:

3.1.3. Goods Nomenclature codes

The test cases defined in this section cover the test scenario PERF_MAINT_GOODS defined in [TARIC3-PTS].

Test case no.:   **005**

Purpose: Perform "insert, update, stable and delete" to check the response time.

Precondition: User to use: **T3-U01**

Content: Insert 1: Single insertion of goods nomenclature codes *(e.g., single value).*

Insert 2: Group insertions of goods nomenclature codes *(e.g., minimum two data values).*

Update 1: To perform on above "Insert1".

Update 2: To perform on above "Insert2" on reference level *(e.g. in a measure, goods nomenclature origin, successor, etc).*

Stable 1: Existing unstable goods nomenclature code to turn into

stable *(e.g., minimum two data values).*

Delete 1: above performed actions e.g., Insert 1 & 2, Update 1 & 2, Stable 1. *(e.g., minimum two data values).*

Expected output: Action accepted and time taken to perform the Insert 1:

Action accepted and time taken to perform the Insert 2:

Action accepted and time taken to perform the Update 1:

Action accepted and time taken to perform the Update 2:

Action accepted and time taken to perform the Stable 1:

Action accepted and time taken to perform the Delete 1:

3.2. Data Consultation performance

The [TARIC3 data set] must be used to perform all the test cases mentioned in this chapter.

3.2.1. Role Regulations

The test cases defined in this section cover the test scenario PERF_CONS_ROL defined in [TARIC3-PTS].

Test case no.: **006**

Purpose: Perform various "queries" to check the response time.

Precondition: User to use: **T3-U01**

Content:

Query 1: Perform a query on role regulations filling only one criterion field. This criterion must correspond to a mandatory field of the role regulation.

Query 2Perform a query on role regulations filling two criterion fields. One of these criteria must correspond to a mandatory field of the role regulations the other one must be the simulation date field.

Query 3: Perform a query on role regulations filling all criterion fields (except simulation date field).

Query 4: Perform a query on role regulations filling all criterion fields (including simulation date field).

Query 5: Perform a query on role regulations filling only one criterion field. This criterion must correspond to a non-mandatory field of the regulation roles.

Query 6: Perform a query on role regulations filling two criterion fields. One of these criteria must correspond to a non-mandatory field of the role regulations the other one must be the simulation date field.

Consult 1: For each previous performed query, choose randomly one of the result by clicking on view button. Start the timer when the button is pressed, stop the timer when the detail screen is reached (Add the six obtained times).

Expected output:

Action accepted and time taken to Query 1:

Action accepted and time taken to Query 2:

Action accepted and time taken to Query 3:

Action accepted and time taken to Query 4:

Action rejected and time taken to Query 5:

Action rejected and time taken to Query 6:

Action accepted and time taken to Consult 1:

3.2.2. Measures

The test cases defined in this section cover the test scenario PERF_CONS_MEAS defined in [TARIC3-PTS].

Test case no.:   **007**

Purpose: Perform various queries for "measures" to check the response time.

Precondition: User to use: **T3-U01**

Content:

Query 1: Perform a query on measures filling only one criterion field. This criterion must correspond to a mandatory field of the measure (e.g.Regulation Id).

Query 2: Perform a query on measures filling two criterion fields. One of these criteria must correspond to a mandatory field of the measure the other one must be the simulation date field. (e.g. Regulation Id + Simulation Date).

Query 3Perform a query on measures filling only one criterion field. This criterion must correspond to a non-mandatory field of the measure. (e.g. Additional Code)

Query 4: Perform a query on measures filling two criterion fields. One of these criteria must correspond to a non-mandatory field of the measure the other one must be the simulation date field. (e.g. Additional Code + Simulation Date)

Consult 1: For each previous performed query, choose randomly on of the result by clicking on view button. Start the timer when the button is pressed, stop the timer when the detail screen is reached (Add the four obtained times).

Expected output:

Action accepted and time taken to Query 1:

Action accepted and time taken to Query 2:

Action rejected and time taken to Query 3:

Action rejected and time taken to Query 4:

Action accepted and time taken to Consult 1:

3.2.3. Goods Nomenclature codes

The test cases defined in this section cover the test scenario PERF_CONS_GOODS defined in [TARIC3-PTS].

Test case no.: **008**

Purpose: Perform various queries for "goods nomenclature codes" to check the response time.

Precondition: User to use: **T3-U01**

Content: Query 1: Perform a query on goods nomenclature codes filling only one criterion field. This criterion must correspond to a mandatory field of the goods nomenclature codes.

Query 2: Perform a query on goods nomenclature codes filling two criterion fields. One of these criteria must correspond to a mandatory field of the goods nomenclature codes the other one must be the simulation date field.

Query 3: Perform a query on goods nomenclature codes filling all criterion fields (except simulation date field).

Query 4: Perform a query on goods nomenclature codes filling all criterion fields (including simulation date field).

Consult 1: For each previous performed query, choose randomly on of the result by clicking on view button. Start the timer when the button is pressed, stop the timer when the detail screen is reached (Add the four obtained times).

Expected output: Action accepted and time taken to Query 1:

Action accepted and time taken to Query 2:

Action accepted and time taken to Query 3:

Action accepted and time taken to Query 4:

Action accepted and time taken to Consult 1:

3.3. Load testing

The [TARIC3 data set] must be used to perform all the test cases mentioned in this chapter.

3.3.1. Load testing part 1

The test cases defined in this section are based on test scenarios as defined in [TARIC3-PTS].

In order to simulate the specified background activities "**5 users**" will simultaneously perform the following test steps non-stop until completion of *Test Case no. 009 (consists of 3 rounds)*:

- The users **T3-U02** and **T3-U03** will have to perform in loop the following actions:

    o   Insert role regulations once;

    o   Insert measures once;

    o   Insert goods nomenclature codes;

    o   Update role regulation with impacted measures;

    o   Update role regulation with impact on other role regulations;

- o Update role regulation with impact on other role regulations with impacted measures.

- The users **T3-U04** and **T3-U05** will have to perform rapidly in loop the following steps:

  - o Make stable, existing unstable role regulations;
  - o Make stable, existing unstable role regulations with impacting other role regulations;
  - o Make stable, existing unstable goods nomenclature code;
  - o Delete role regulation;
  - o Delete unstable goods nomenclature code;
  - o Perform a simple query to retrieve a list of 50 role regulations contents;
  - o Display the details of one query data;
  - o Perform a simple query to retrieve a list of 500 regulations group contents;
  - o Display the details of one query data;
  - o Perform a complex query involving a full text search to retrieve country and area contents;
  - o Perform a simple query to retrieve a list of 50 measures data;
  - o Display the details of one query data;
  - o Perform a simple query to retrieve a list of 50 historical measures data;
  - o Display the details of one query data;
  - o Perform a simple query to retrieve a list of 50 historical goods nomenclature codes;
  - o Display the details of one query data;
  - o Perform a simple query to retrieve a list of 50 goods nomenclature codes;
  - o Display the details of one query data;

  - o Delete role regulation when other role regulations and measures are impacted.

Test case no.:   **009**

Purpose: Perform "insert, update, stable and delete" to check the response time, while above mentioned stress test steps in process by group of users.

Precondition: User to use: **T3-U01**

**Content:**   Step 1: Insert role regulation once.

Step 2: Insert with wrong value.

Step 3: Update role regulation with impacted measures.

Step 4: Make stable existing unstable role regulations.

Step 5: Make stable existing unstable role regulations with impacting other role regulations and measures.

Step 6: Delete role regulations once.

Step 7: Delete role regulation when the other role regulations and measures are impacted.

Step 8: Insert measures once.

Step 9: Make existing unstable measures to stable.

Step 10: Insert goods nomenclature codes.

Step 11: Delete unstable goods nomenclature codes.

Step 12: Perform query randomly for any item.

"Above steps have to repeat 3 times in total and the registered time must be noted in table 4.2"

**Expected output:**   Time taken to execute Step 1:

Time taken to execute Step 2:

Time taken to execute Step 3:

Time taken to execute Step 4:

Time taken to execute Step 5:

Time taken to execute Step 6:

Time taken to execute Step 7:

Time taken to execute Step 8:

Time taken to execute Step 9:

Time taken to execute Step 10:

Time taken to execute Step 11:

Time taken to execute Step 12:

3.3.2. Load testing part 2

The test cases defined in this section are based on test scenarios as defined in [TARIC3-PTS].

The [TARIC3 data set] must be used to perform all the test cases mentioned in this chapter.

In order to simulate the specified background activities:

- The users **"T3-U02, T3-U03, T3-U04** and **T3-U05"** will have to perform rapidly in loop the following actions:

  - Insert role regulations once;

  - Insert measures once;

  - Perform a simple query to retrieve a list of 500 measures data;
  - Insert goods nomenclature codes;

  - Perform a simple query to retrieve a list of 500 historical goods nomenclature codes;
  - Delete role regulations;

  - Make stable measures;

  - Delete measures;

  - Make stable goods nomenclature codes;

  - Perform a simple query to retrieve a list of 500 role regulations contents;

  - Delete goods nomenclature codes;

  - Update role regulation with impacted measures;

  - Delete role regulation with impact on other role regulations;

  - Update role regulation with impact on other role regulations with impacted measures.

  - Delete role regulation with impact on other role regulations with impacted measures.

The following already defined test cases must be executed by **"T3-U01":**

Test case no.	Expected output
001	Time taken to perform the insert 1:
	Time taken to perform the insert 2:
	Time taken to perform the insert 3:
002	Time taken to perform the update 1:
	Time taken to perform the update 2:

Test case no.	Expected output
	Time taken to perform the update 3: Time taken to perform the update 4: Time taken to perform the update 5: Time taken to perform the update 6: Time taken to perform the update 7:
003	Time taken to perform the delete 1: Time taken to perform the delete 2: Time taken to perform the delete 3:
004	Time taken to perform the insert 1: Time taken to perform the insert 2: Time taken to perform the update 1: Time taken to perform the update 2: Time taken to perform the stable 1: Time taken to perform the delete 1:
005	Time taken to perform the insert 1: Time taken to perform the insert 2: Time taken to perform the update 1: Time taken to perform the update 2: Time taken to perform the stable 1: Time taken to perform the delete 1:
006	Time taken to perform the query 1: Time taken to perform the query 2: Time taken to perform the query 3: Time taken to perform the query 4: Time taken to perform the query 5: Time taken to perform the query 6: Time taken to perform the consult 1:
007	Time taken to perform the query 1: Time taken to perform the query 2: Time taken to perform the query 3: Time taken to perform the query 4: Time taken to perform the consult 1:
008	Time taken to perform the query 1: Time taken to perform the query 2: Time taken to perform the query 3: Time taken to perform the query 4: Time taken to perform the consult 1:

Table 4: Load testing scripts

4. TEST REPORT FORM

4.1. Environment description

Hardware platform	Sun
Operating system	Solaris version 9
Database (+version)	Oracle 10
Official release number[1]	1.0.0
ClearCase label[2]	TARIC3_CDCO-PERF_20091108_FAT3
Performance test file version	
Execution date	25/11/2009

Table 5: Environment description

4.2. Test case execution

Test case no.	Measure	Time
001	Time taken to perform the insert 1	00:00:03,28
	Time taken to perform the insert 2	00:00:01,90
	Time taken to perform the insert 3	00:00:02,67
002	Time taken to perform the update 1	00:00:01,21
	Time taken to perform the update 2	00:00:01,79
	Time taken to perform the update 3	00:00:02,62
	Time taken to perform the update 4	00:00:02,14
	Time taken to perform the update 5	00:00:02,10
	Time taken to perform the update 6	00:00:01,98
	Time taken to perform the update 7	00:00:01,87
003	Time taken to perform the delete 1	00:00:04,15
	Time taken to perform the delete 2	00:00:06,25
	Time taken to perform the delete 3	00:00:03,62
004	Time taken to perform the insert 1	00:00:02,51
	Time taken to perform the insert 2	00:00:04,31
	Time taken to perform the update 1	00:00:02,48
	Time taken to perform the update 2	00:00:02,35
	Time taken to perform the stable 1	00:00:02,28
	Time taken to perform the delete 1	00:00:03,42
005	Time taken to perform the insert 1	00:00:03,26
	Time taken to perform the insert 2	00:00:02,86
	Time taken to perform the update 1	00:00:03,79

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[1] This information must only be filled in when testing the official delivery (e.g. 1.0.0).

[2] This information is only available to the development team and identifies the tested internal version.

Test case no.	Measure	Time
	Time taken to perform the update 2	00:00:03,59
	Time taken to perform the stable 1	00:00:03,31
	Time taken to perform the delete 1	00:00:03,54
006	Time taken to perform the query 1	00:00:01,59
	Time taken to perform the query 2	00:00:01,34
	Time taken to perform the query 3	00:00:01,39
	Time taken to perform the query 4	00:00:01,00
	Time taken to perform the query 5	00:00:01,62
	Time taken to perform the query 6	00:00:01,39
	Time taken to perform the consult 1	00:00:00,52
007	Time taken to perform the query 1	00:00:16,59
	Time taken to perform the query 2	00:00:06,23
	Time taken to perform the query 3	00:00:06,67
	Time taken to perform the query 4	00:00:11,71
	Time taken to perform the consult 1	00:00:00,81
008	Time taken to perform the query 1	00:00:01,85
	Time taken to perform the query 2	00:00:01,54
	Time taken to perform the query 3	00:03:00,79
	Time taken to perform the query 4	00:01:00,64
	Time taken to perform the consult 1	00:00:00,31
009 - **Stress testing**		
Insert a unstable base regulation with Reg group = DIV Start date = 01/01/2001 Reg id = R1111111	R1 – Step 1 R2 – Step 1 R3 – Step 1	00:00:02,09 00:00:02,13 00:00:02,17
Reg group = ACC Start date = 01/01/1940	R1 – Step 2 R2 – Step 2 R3 – Step 2	00:00:01,45 00:00:01,87 00:00:01,37
Update the regulation with Reg id = A8500010 Swap between reg group DNC and DUM	R1 – Step 3 R2 – Step 3 R3 – Step 3	00:00:02,87 00:00:01,79 00:00:01,84
Update R1111111 to stable	R1 – Step 4 R2 – Step 4 R3 – Step 4	00:00:02,25 00:00:01,29 00:00:01,78
(Create a unstable modification regulation and a unstable measure for this regulation) Update the modification regulation to stable.	R1 – Step 5 R2 – Step 5 R3 – Step 5	00:00:00,87 00:00:00,94 00:00:01,15

Test case no.	Measure	Time
Delete a newly created base regulation	R1 – Step 6	00:00:04,97
	R2 – Step 6	00:00:01,86
	R3 – Step 6	00:00:02,28
Delete the previously inserted modification regulation	R1 – Step 7	00:00:02,23
	R2 – Step 7	00:00:03,87
	R3 – Step 7	00:00:04,10
Insert a measure with Measure type = 922 Start date = 01/01/2001 End date = 01/01/2100 Generating reg = the previously inserted modification regulation Goods code = 0100000000	R1 – Step 8	00:00:01,10
	R2 – Step 8	00:00:01,54
	R3 – Step 8	00:00:01,15
Update the previously inserted measure to stable	R1 – Step 9	00:00:01,65
	R2 – Step 9	00:00:01,53
	R3 – Step 9	00:00:01,51
Insert a goods code with product line suffix = 10	R1 – Step 10	00:00:02,59
	R2 – Step 10	00:00:02,21
	R3 – Step 10	00:00:02,31
Delete the previously inserted goods code	R1 – Step 11	00:00:01,68
	R2 – Step 11	00:00:01,61
	R3 – Step 11	00:00:01,67
Query all stable measures	R1 – Step 12	00:00:14,93
	R2 – Step 12	00:00:14,89
	R3 – Step 12	00:00:14,43
Load testing		
001	Time taken to perform the insert 1	00:00:02,20
	Time taken to perform the insert 2	00:00:01,86
	Time taken to perform the insert 3	00:00:01,95
002	Time taken to perform the update 1	00:00:01,76
	Time taken to perform the update 2	00:00:02,42
	Time taken to perform the update 3	00:00:01,81
	Time taken to perform the update 4	00:00:02,28
	Time taken to perform the update 5	00:00:01,76
	Time taken to perform the update 6	00:00:01,81
	Time taken to perform the update 7	00:00:00,89
003	Time taken to perform the delete 1	00:00:04,68
	Time taken to perform the delete 2	00:00:05,32
	Time taken to perform the delete 3	00:00:03,15
004	Time taken to perform the insert 1	00:00:02,21
	Time taken to perform the insert 2	00:00:03,17
	Time taken to perform the update 1	00:00:02,53

Test case no.	Measure	Time
	Time taken to perform the update 2	00:00:02,57
	Time taken to perform the stable 1	00:00:01,78
	Time taken to perform the delete 1	00:00:01,35
005	Time taken to perform the insert 1	00:00:02,67
	Time taken to perform the insert 2	00:00:03,23
	Time taken to perform the update 1	00:00:02,46
	Time taken to perform the update 2	00:00:04,15
	Time taken to perform the stable 1	00:00:02,43
	Time taken to perform the delete 1	00:00:01,38
006	Time taken to perform the query 1	00:00:01,32
	Time taken to perform the query 2	00:00:01,12
	Time taken to perform the query 3	00:00:01,09
	Time taken to perform the query 4	00:00:00,82
	Time taken to perform the query 5	00:00:01,29
	Time taken to perform the query 6	00:00:01,03
	Time taken to perform the consult 1	00:00:01,70
007	Time taken to perform the query 1	00:00:16,21
	Time taken to perform the query 2	00:00:06,75
	Time taken to perform the query 3	00:00:05,39
	Time taken to perform the query 4	00:00:07,59
	Time taken to perform the consult 1	00:00:01,85
008	Time taken to perform the query 1	00:00:01,32
	Time taken to perform the query 2	00:00:01,04
	Time taken to perform the query 3	00:02:42,87
	Time taken to perform the query 4	00:00:58,62
	Time taken to perform the consult 1	00:00:00,79

Table 6: Test report form