

GOVERNMENT OF RWANDA • RWANDA TRANSPORT DEVELOPMENT AGENCY (RTDA)

**CONSULTANCY SERVICES FOR THE STUDY OF DEVELOPMENT
OF TOOLS FOR ANALYSIS OF RATES FOR ROAD AND BRIDGE
WORKS IN RWANDA AND A MEMENTO OF TRANSPORT
PROJECT**

Contract No. : 016/RTDA/015

TOOLSET MANUAL

SUBMITTED BY:



Partner



gruppo Atlantia 

Lead Consultant



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List of Acronyms

BoQ	Bill of Quantities
BQ	Basic Quantity
DBSR	Standard Database for Schedule of Rates
FUP	Front User Page
ID	Identification Number of each Work Item
PM	Periodic Maintenance
RM	Routine Maintenance
TDB	Toolset for Analysis of Rates and Database for Schedule of Rates
TS	Technical Specifications
UC	Unit Cost
UR	Unit Rate
WIC	Work Item Classification
xx	Excel row ref.
yy	Excel column ref.
(xx , yy)	Excel cell ref.

1 NEW BILL OF QUANTITIES (BOQ)


Step 1: Open MASTER-201605.xlm

Step 2: Select FUP worksheet

Step 3: Select the type of works from the drop-down menu (box in **green**) “Work Type” (NR - New & Rehabilitation; PM - Periodic Maintenance; RM - Routine Maintenance)

Step 4: Specify the expected percentage of Overheads to be applied at the overall BoQ


Step 5: Specify the expected profit of the contractors to be applied at the overall BoQ

Step 6:  Click on the “New BoQ” command: a new excel file will be created as the following example:

Project Title						Starting Date			
Contract Ref.						Completion Date			
Contractor						TOTAL COST		0	
Overheads (%)		10%							
Profit (%)		10%							
ID	Rif. PARSONS TS	Item Title	Description	UNIT	QUANTIT Y	UNIT COST (USD)	TOTAL		
A03090	203	Evacuation of Landslide Materials from the road	Removing the entire slide mass regardless of its nature or characteristics, manually or mechanically. The work includes hauling and disposing of removed material.	m3		3.659	0		
D00000	400	Pavement							
D01110	400	Patching	Unit cost given for each laid cube meter and thickness up to 10 cm. The unit cost includes: (i) the overall material supply (ii) laying, compacting and any other burdens needed to properly perform the above mentioned activities. (iii) squaring and finishing of patching edges (iv) finishing of bottom layer (v) preparatory spraying of the acidic bituminous (60%) emulsion	m2		11.961	0		
E09000	110	Road Asset Cleaning							
E09010	110	Cleaning of road side ditches	Cleaning side ditches, including clearing and disposal of removed material.	m		0.224	0		
E09020	110	Cleaning of drains	Cleaning drains and channels, removing debris, vegetation and earthen material that impedes channel flow, including clearing and disposal of removed material.	m		1.513	0		
E09030	110	Cutting of grass	Cutting grass on road platform areas at proper frequency, manually or mechanically, including clearing and disposal of cut material.						

Step 7: Fill in the header according to the specific BoQ. This step is not anyway mandatory.

Step 8: Fill the quantities in the F-column in relation to the work items of interest (not less than one item)

Step 9:  Click on the “Create and Print BoQ”: the toolset automatically removes all the empty records and print in pdf the selected BoQ. In case the user is not satisfied or prefers including further quantities, he can adjust the BoQ and launch again the confirmation command by repeating Steps no. 8 and no. 9: a new pdf will be generated.

Step 10: Close the new xls file generated at the Step no. 6 or save it as you want.

2 UPDATE WORK ITEM

Step 1: Open MASTER-201605.xlm

Step 2: Select FUP worksheet

Step 3: Select the item to be modified from the drop-down menu (box in **green**) “*Select the existing item to be updated*”. The toolset automatically gives the current description of the item.

Step 4: Write the new description in the box “*Updated Description*”

Step 5:



Click on the “*Update Work Item*” command and update the selected item with the new description. This procedure originates permanent changes to the DATABASE: for this reason it is restricted to the responsible staff and needs the PASSWORD.

In case the user does not have/remember the PASSWORD, close the file without savings and get in contact with the TOOLSET Administrator.

3 NEW WORK ITEM

Step 1: Open MASTER-201605.xlm

Step 2: Select FUP worksheet

Step 3: Select the item from the related drop-down menu (box in **green**) to be considered as starting point (for instance, if the user would like to create a new item under “Excavation” category, it shall select “A1000-Excavation”).

The Toolset automatically attributes a new code with the same level of the one selected into the drop-down menu (for example: selecting the code A01010 from the drop-down menu, the system will generate A01020 if available, otherwise A01030 and so on).

Within the same category (A, B, C, etc.), a new work item shall be created at any level namely no one new Category can be introduced.

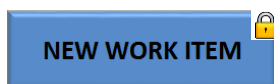
Step 4: Enter the code references to the PARSONS Standard Specifications (Ref. “STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS”- November 2014).

Step 5: Enter the Title for the new work item

Step 6: Enter the Description of the new work item

Step 7: Enter the Unit to be used for measuring the new work item

Step 8:



Click on the “New Work Item” command. This procedure originates permanent changes to the DATABASE: for this reason it is restricted to the responsible staff and needs the PASSWORD.

In case the user does not have/remember the PASSWORD, close the file without savings and get in contact with the TOOLSET Administrator.

3.1 Specify Work Type of the new Item

Once the new item is generated into the DATABASE, the type of works (New & rehabilitation (N), Periodic Maintenance (P) and Routine Maintenance (R)) shall be assigned to the new item according to the following steps. This procedure originates permanent changes to the DATABASE: for this reason it is restricted to the responsible staff and needs the PASSWORD.

Step 1: Select DATABASE worksheet

Step 2: Unlock the worksheet by using the standard Excel procedure and using the PASSWORD given by the Administrator.

Step 3: Indicate the work type by using N, P or R code system in the relevant columns EV, EW and EX.

Step 4: Copy the following formula in the EZ-column using the same row reference number (in **red**) of the new item:

= CONCATENATE (EV**xx**;EW**xx**;EX**xx**)

Step 5: Lock the worksheet by using the standard Excel procedure and using the PASSWORD given by the Administrator.

3.2 Update of Incidence Matrix

Once the new item is generated into the DATABASE, the relevant Basic Quantities shall be entered in the Incidence Matrix according to the following steps. This procedure originates permanent changes to the DATABASE: for this reason it is restricted to the responsible staff and needs the PASSWORD.

In case the user does not have/remember the PASSWORD, close the file without savings and get in contact with the TOOLSET Administrator.

- Step 1:** Select DATABASE worksheet.
- Step 2:** Unlock the worksheet by using the standard Excel procedure and using the PASSWORD given by the Administrator.
- Step 3:** Fill the basic quantities in the Incidence Matrix by using the relevant Basic Unit Rates (BUR) listed in the row no. 2, columns from H to EE.
- Step 4:** Update the “Unit Cost” cell (G-column) of the new item by copying the following formula using the same row reference number (in red) of the new item:
- $$=IF(SUMPRODUCT(H\$3:AA\$3;Hxx:AA\$xx)=0;"";SUMPRODUCT(H\$3:AA\$3;Hxx:AA\$xx))$$
- Step 5:** Lock the worksheet by using the standard Excel procedure and using the PASSWORD given by the Administrator.

3.2.1 Basic Rate Management

In case of the update of Incidence Matrix needs such Basic Quantity (BQ) items not included in the MASTER file (Ref. DATABASE worksheet, row no. 2), the user can modify the DATABASE and URA worksheets accordingly. This procedure originates permanent changes to the DATABASE and URA worksheets: for this reason it is restricted to the responsible staff and needs the PASSWORD.

- Step 1:** Select DATABASE worksheet.
- Step 2:** Unlock the worksheet by using the standard Excel procedure and using the PASSWORD given by the Administrator.
- Step 3:** Add new YY-column after H-column according to the following main categories:
- columns in YELLOW for MACHINERY;
 - columns in Grey for MANPOWER;
 - columns in BROWN for MATERIALS;
 - columns in GREEN for SITE INSTALLATION, INVESTIGATION, TESTING AND MITIGATION MEASURES.
- Step 4:** Specify the name of Basic Quantity in the cell (2 , YY)
- Step 5:** Select URA worksheet
- Step 6:** Unlock the worksheet by using the standard Excel procedure and using the PASSWORD given by the Administrator.
- Step 7:** Add new xx-row referred to the new BQ item by following the same order of DATABASE worksheet. For example: if the user adds a new machinery item after the “Concrete Mixer (500 It)” (Ref. DATABASE cell (2 , M)), he has to add a new row in URA worksheet after the 11th.
- Step 8:** Define the BASIC UNIT RATE (excluding VAT) referred to the new BQ item, cell (xx , E).
- Step 9:** Define the UNIT of the new BQ item, cell (xx , F).

- Step 10:** If available, fill in cells from (xx, G) to (xx, M).
- Step 11:** Update the “*ADJUSTED BASIC UNIT RATES excluding VAT (USD)*”, cell (xx, N) by copying the following formula using the same row reference number (in red) of the new item:
- $$=E_{xx}*(1+MATR.SOMMA.PRODOTTO(\$J\$2:\$M\$2;J_{xx}:M_{xx}))$$
- Step 12:** Select DATABASE worksheet.
- Step 13:** In relation to the new BQ item, update cell (3, YY) by copying and pasting the same formula of any cell of row no. 3, namely the following formula by using the same row reference number (in red) of the new BQ item specified in URA worksheet:
- $$=URA!N_{xx}$$
- Step 14:** Lock the DATABASE and URA worksheets by using the standard Excel procedure and using the PASSWORD given by the Administrator.

4 DELETE WORK ITEM

Step 1: Open MASTER-201605.xlm

Step 2: Select FUP worksheet

Step 3: Select the item from the related drop-down menu (box in **green**) to be removed from the DATABASE.

Step 4:



Click on the “Delete Work Item” command. This procedure originates permanent changes to the DATABASE: for this reason it is restricted to the responsible staff and needs the PASSWORD.

In case the user does not have/remember the PASSWORD, close the file without savings and get in contact with the TOOLSET Administrator.

5 UPDATE UR

Step 1: Open MASTER-201605.xlm

Step 2: Select FUP worksheet

Step 3: Enter the Updated Toolset Figure for the “*Annual Machinery Lending Interest Rate (%)*” according to the official referring source.

Step 4: Enter the Updated Toolset Figure for the “*Fuel Price (lt)*” according to the official referring source.

Step 5: Enter the Updated Toolset Figure for the “*Inflation (%)*” according to the official referring source.

Step 6: Enter the Updated Toolset Figure for the “*Import Duties (%)*” according to the official referring source.

Step 7:



Click on the “*Update UR*” command. This procedure originates permanent changes to the DATABASE: for this reason it is restricted to the responsible staff and needs the PASSWORD.

In case the user does not have/remember the PASSWORD, close the file without savings and get in contact with the TOOLSET Administrator.