WMTC Shift Table Calculator Tool Documentation

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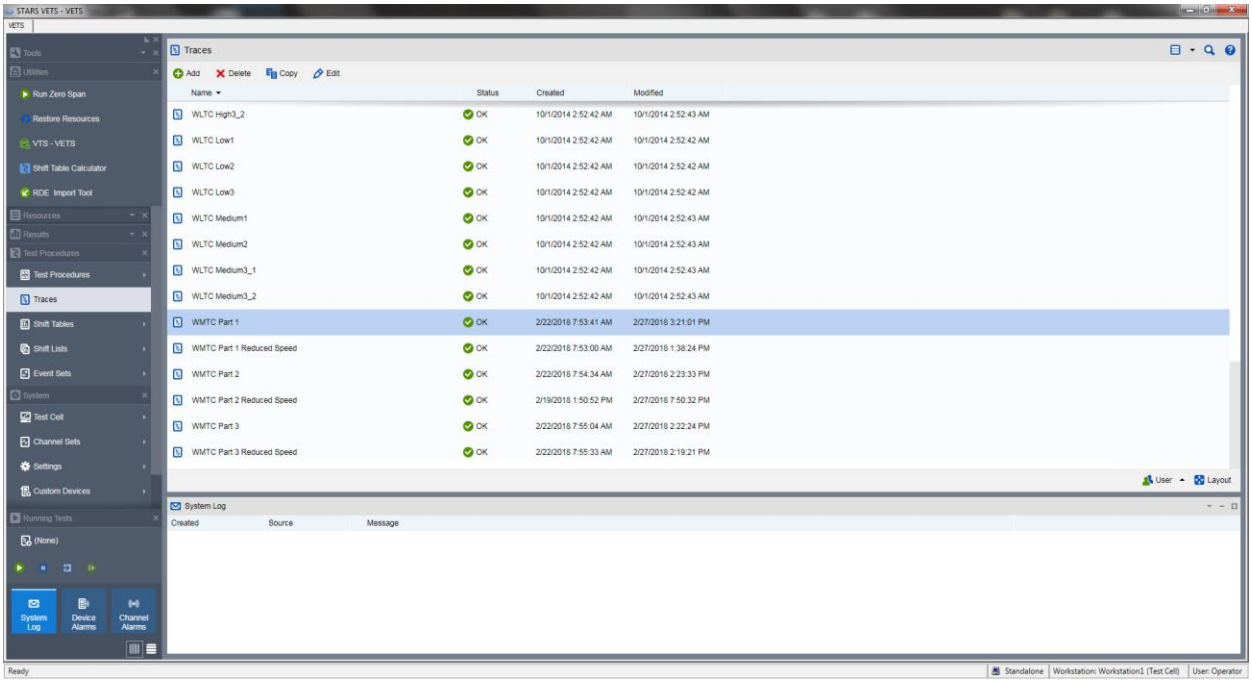
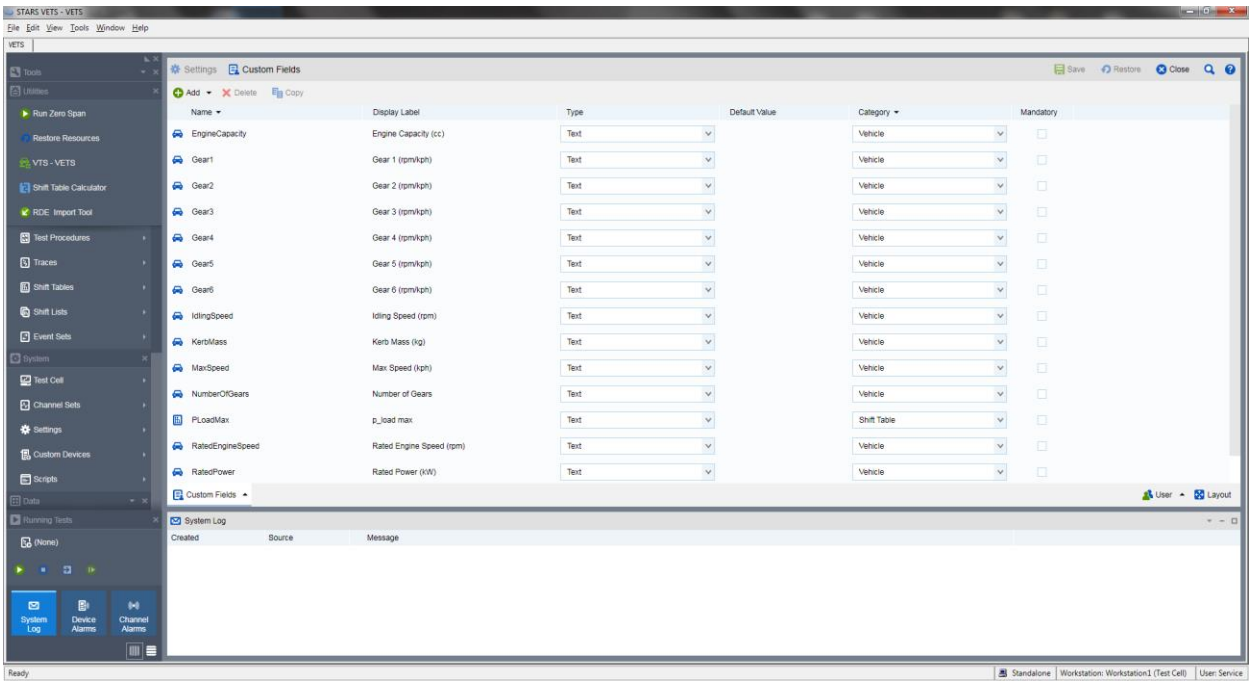
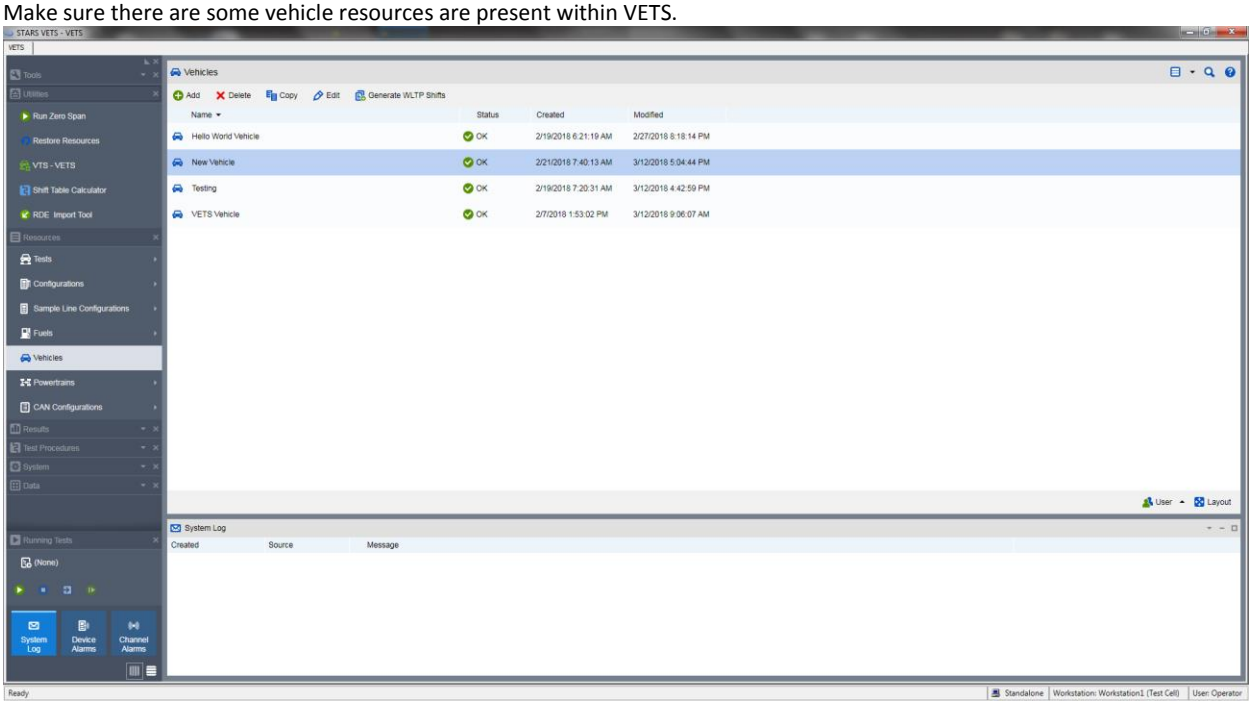
Open VETS, make sure WMTC Part 1, WMTC Part 1 Reduced Speed, WMTC Part 2, WMTC Part 2 Reduced Speed, WMTC Part 3, and WMTC Part 3 Reduced Speed traces are present.



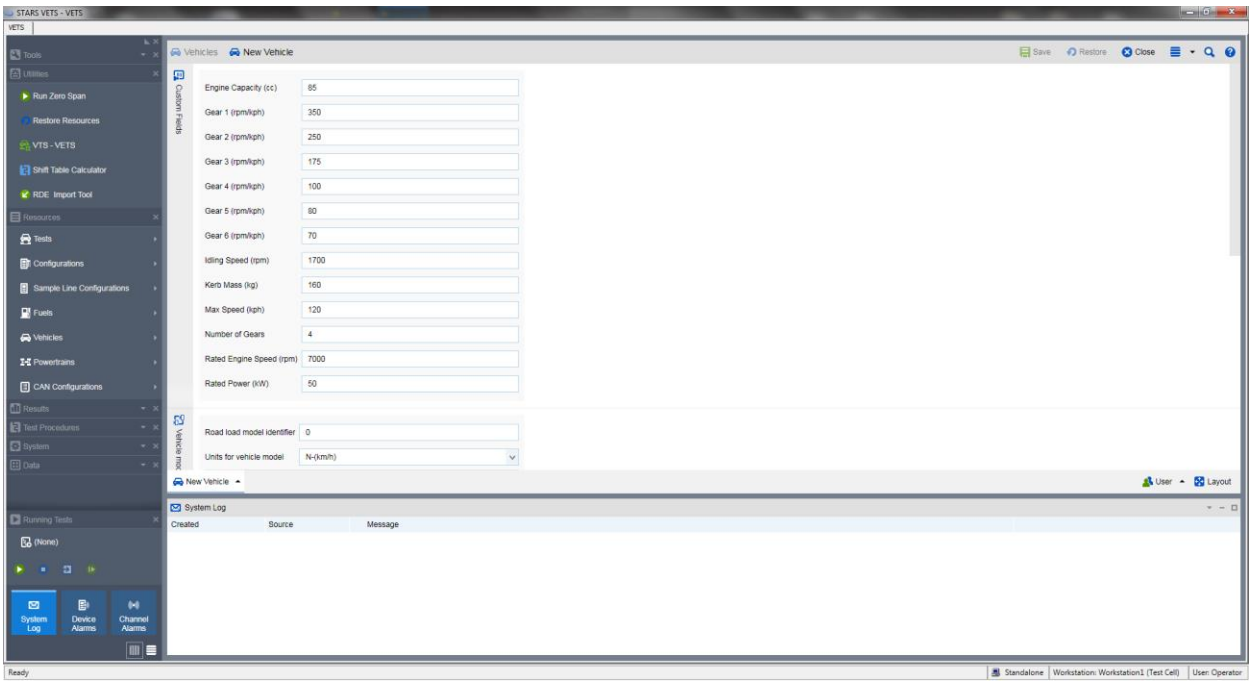
The following 14 custom fields are required for the Shift Table Calculator tool functionality. Display Label, Default Value, and Mandatory entries can be customized as desired, however, Name, Type, and Category values must match the image.



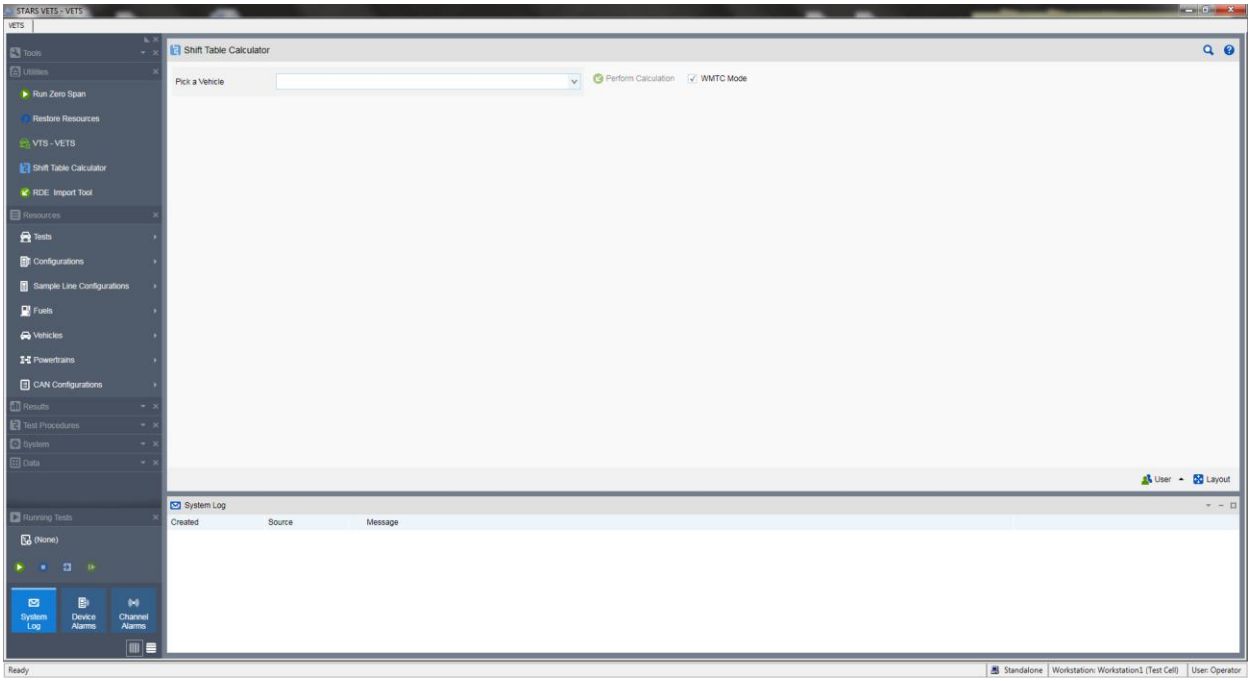
Make sure there are some vehicle resources are present within VETS.



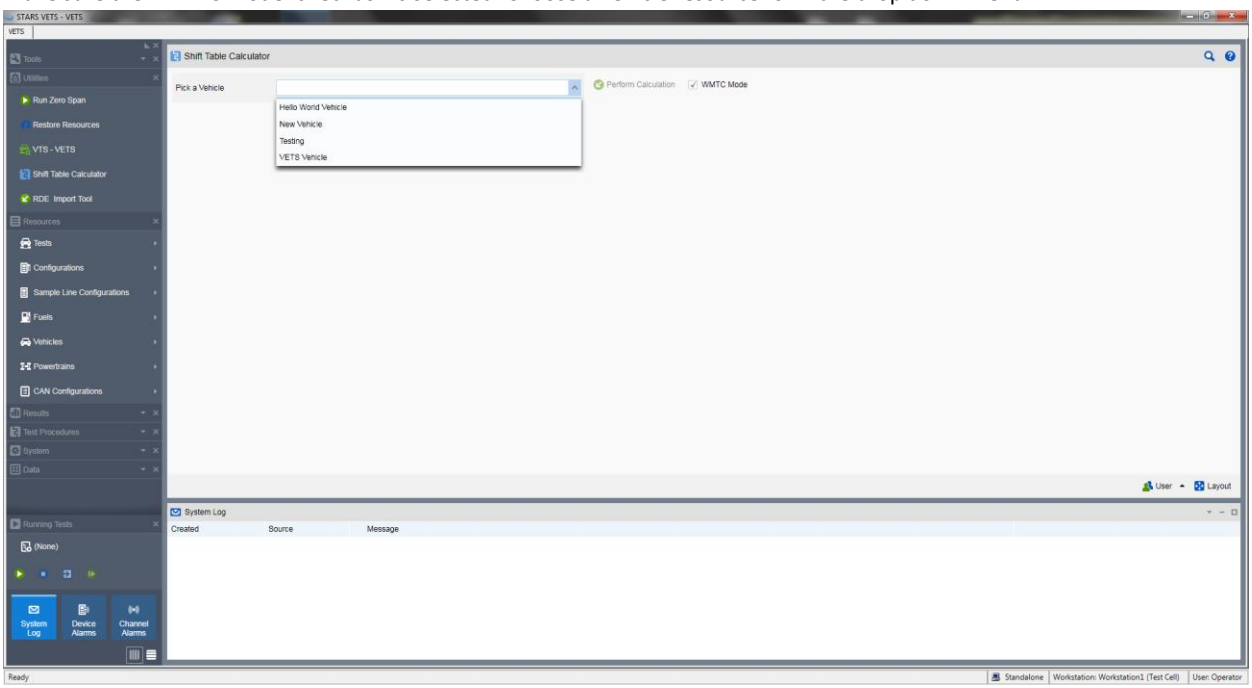
Add some values to the custom fields on the vehicle resources.



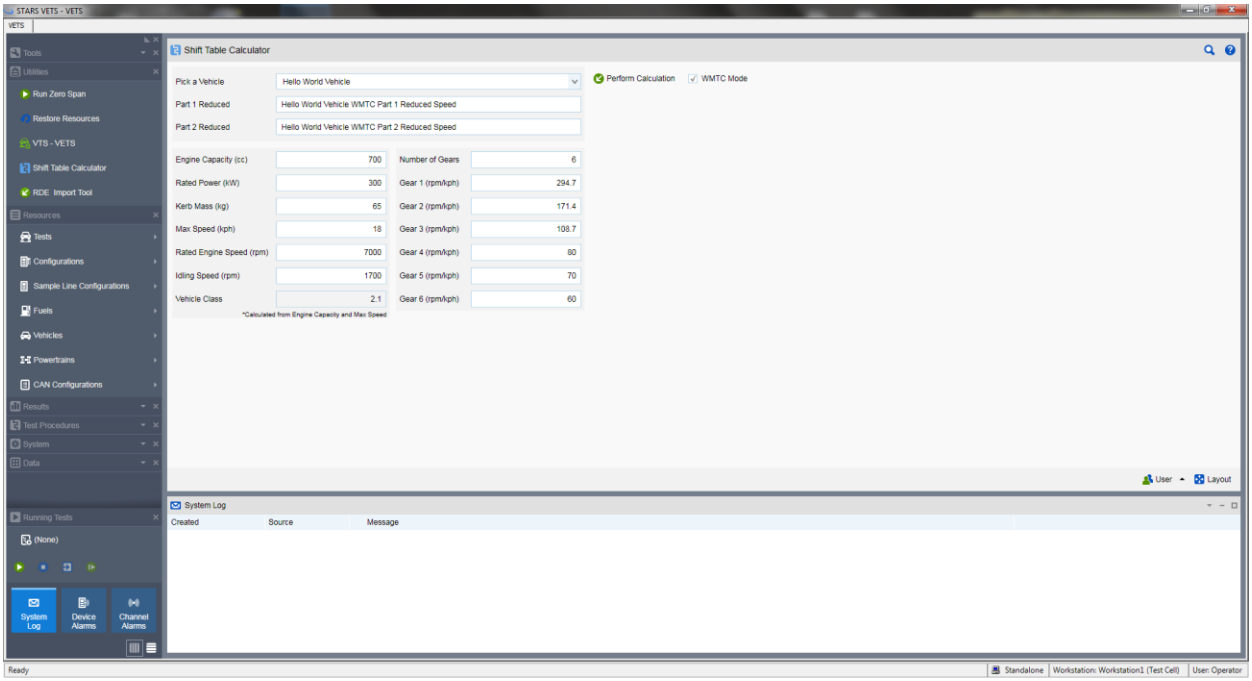
Open the Shift Table Calculator tool found in the utilities menu.



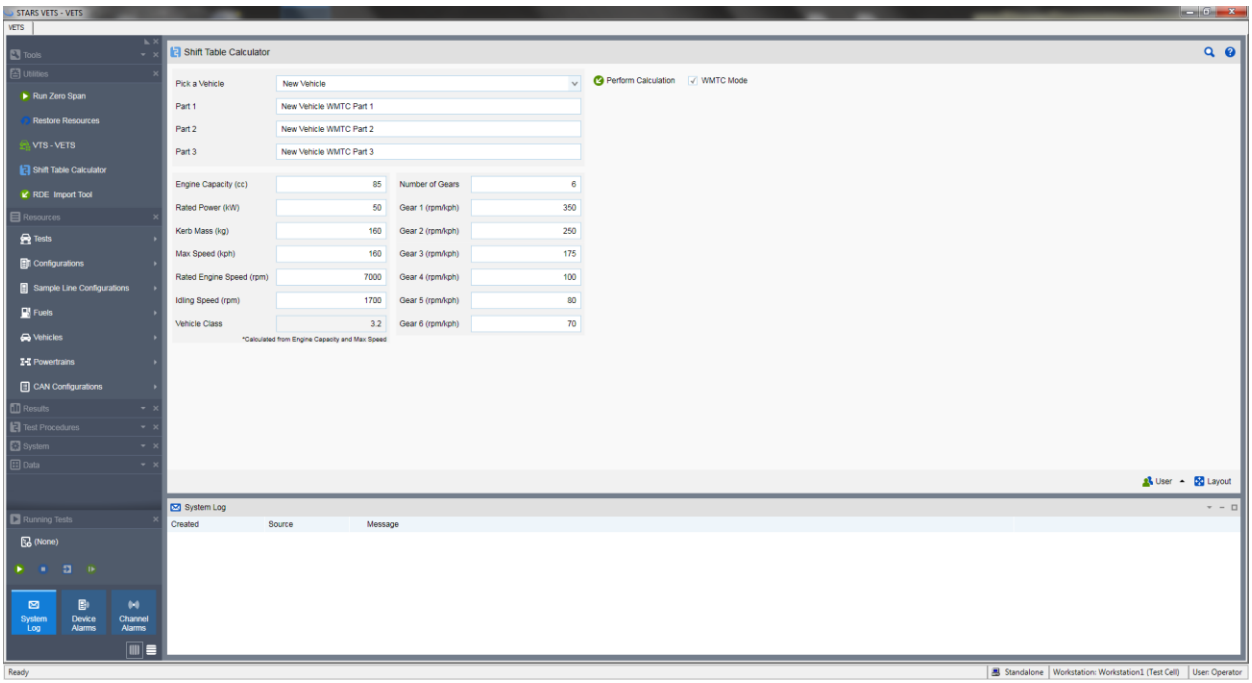
Make sure the 'WMTC Mode' checkbox is selected. Choose a vehicle resource form the drop down menu.



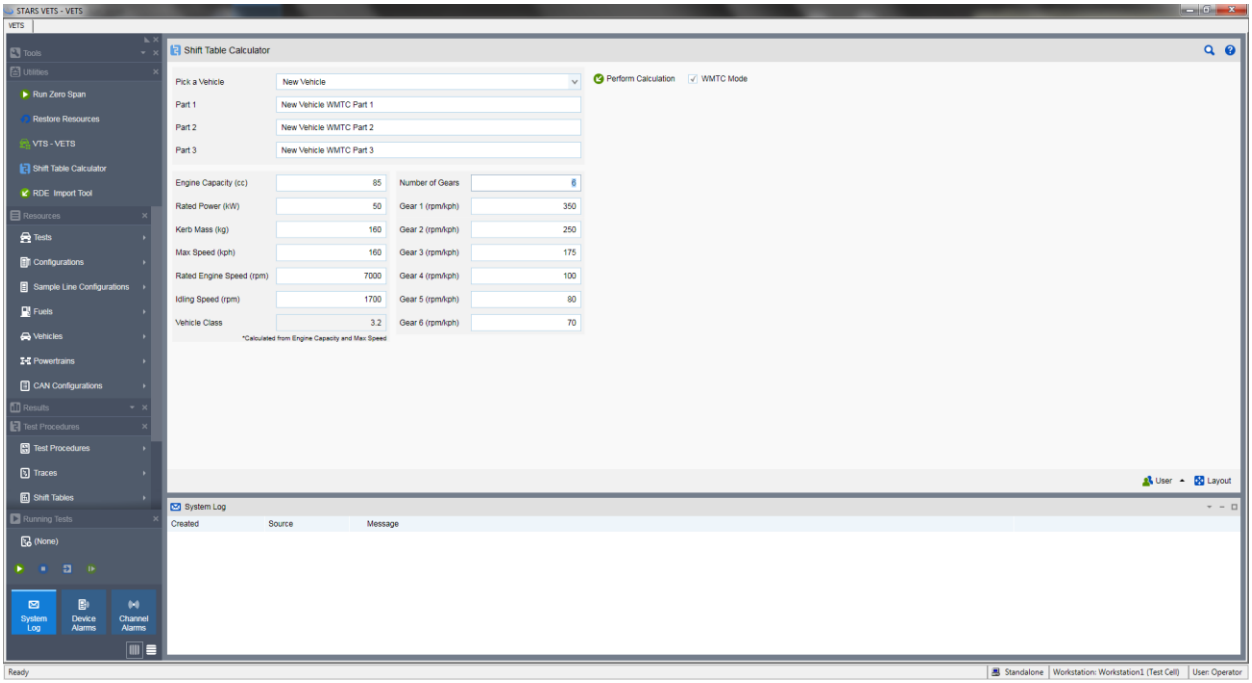
The tool will populate textboxes with the information contained in the custom fields of the selected vehicle resource. The ‘Vehicle Class’ value is auto-calculated using the values of ‘Engine Capacity’ and ‘Max Speed’. Vehicle class can be: ‘1’, ‘2.1’, ‘2.2’, ‘3.1’, or ‘3.2’. The vehicle class determines which parts of the WMTC trace will be tested against, and therefore which parts of the trace a shift table will be calculated for. Class 1 -> Part 1 Reduced; Class 2.1 -> Part 1 Reduced, Part 2 Reduced; Class 2.2 -> Part 1, Part 2; Class 3.1 -> Part 1, Part 2, Part 3 Reduced; Class 3.2 -> Part 1, Part 2, Part 3.



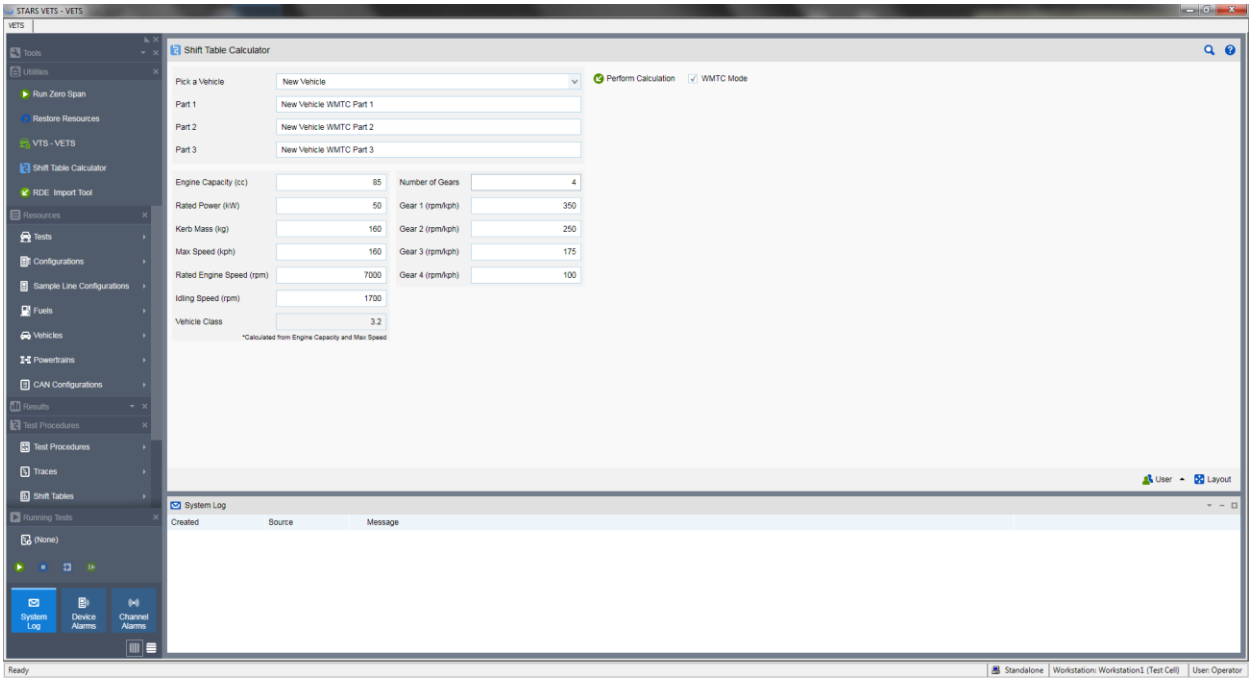
The names of the shifts to be created are auto-generated using the name of the vehicle resource, but these can be changed as desired.

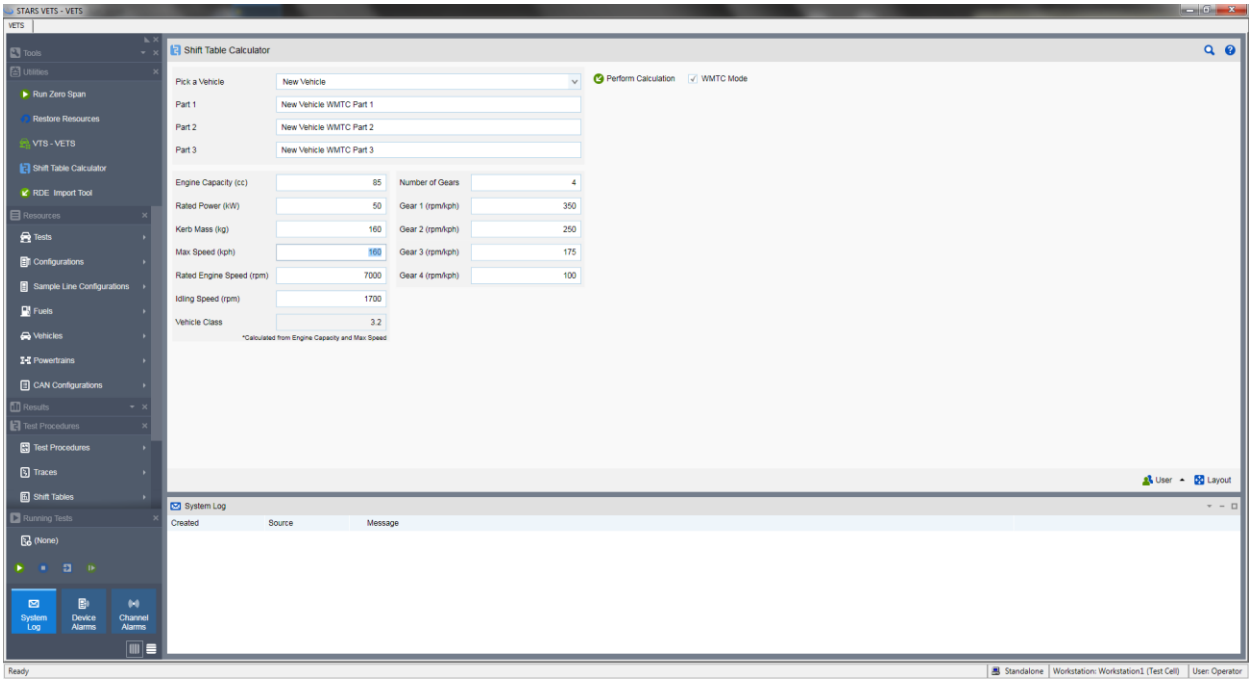


The textboxes which are linked to the custom fields of the vehicle resource can be edited from the tool view.

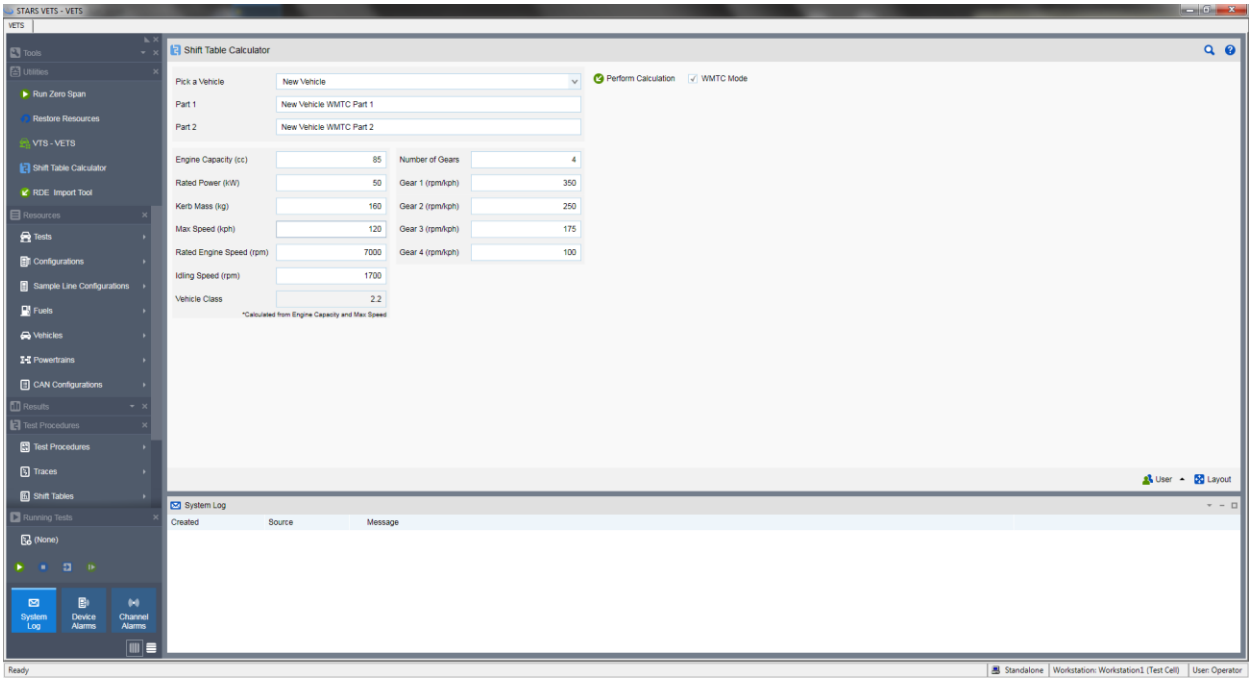


Changes to the textboxes will automatically update and save the custom field values.

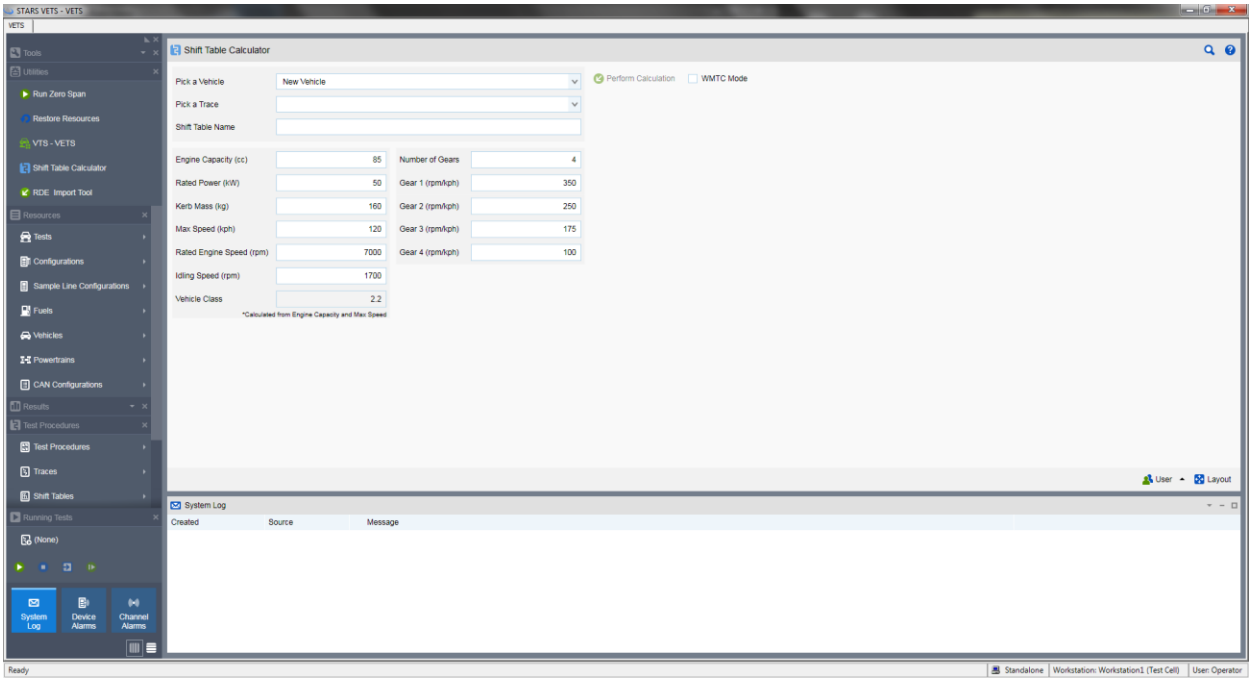




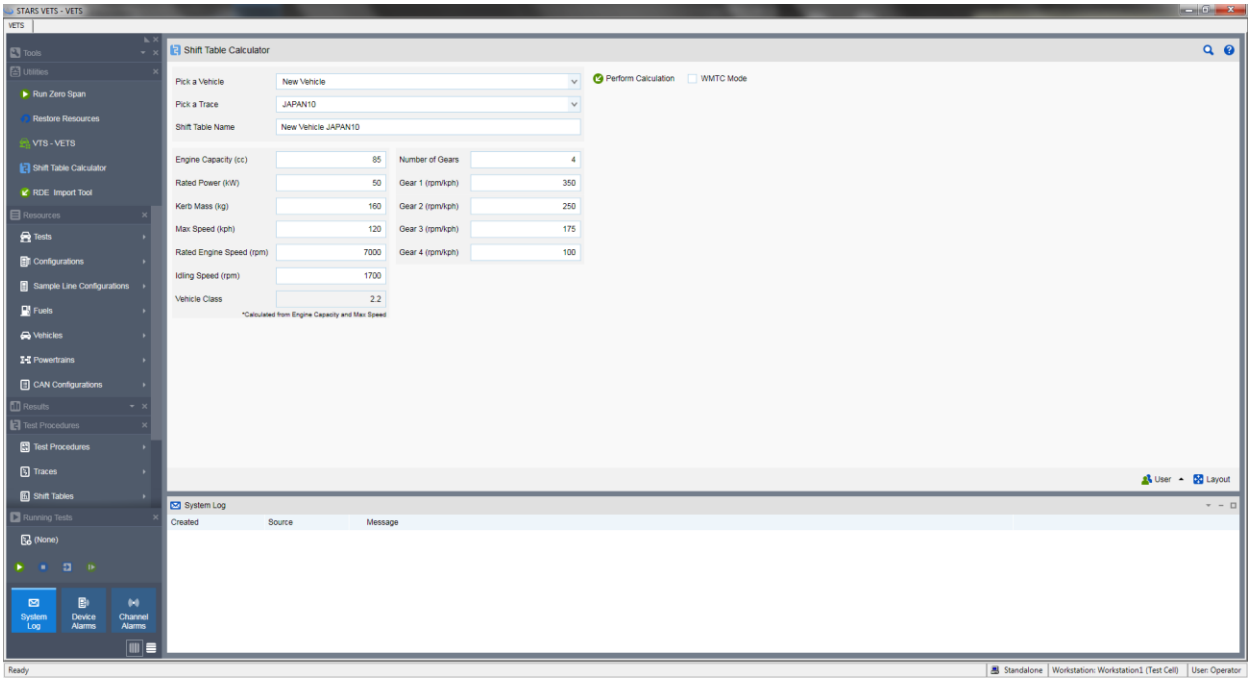
Notice how changing ‘Max Speed’ also causes ‘Vehicle Class’ to change.



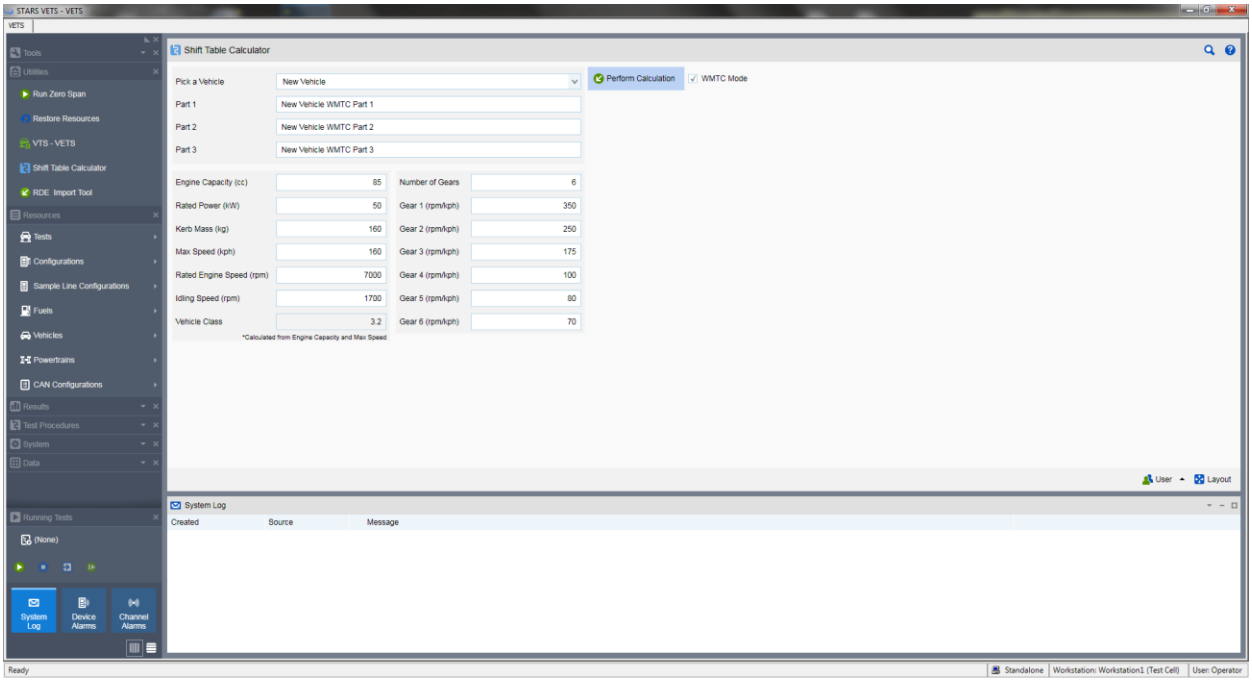
Disabling ‘WMTC Mode’ allows for any trace to be chosen for shift table calculation.



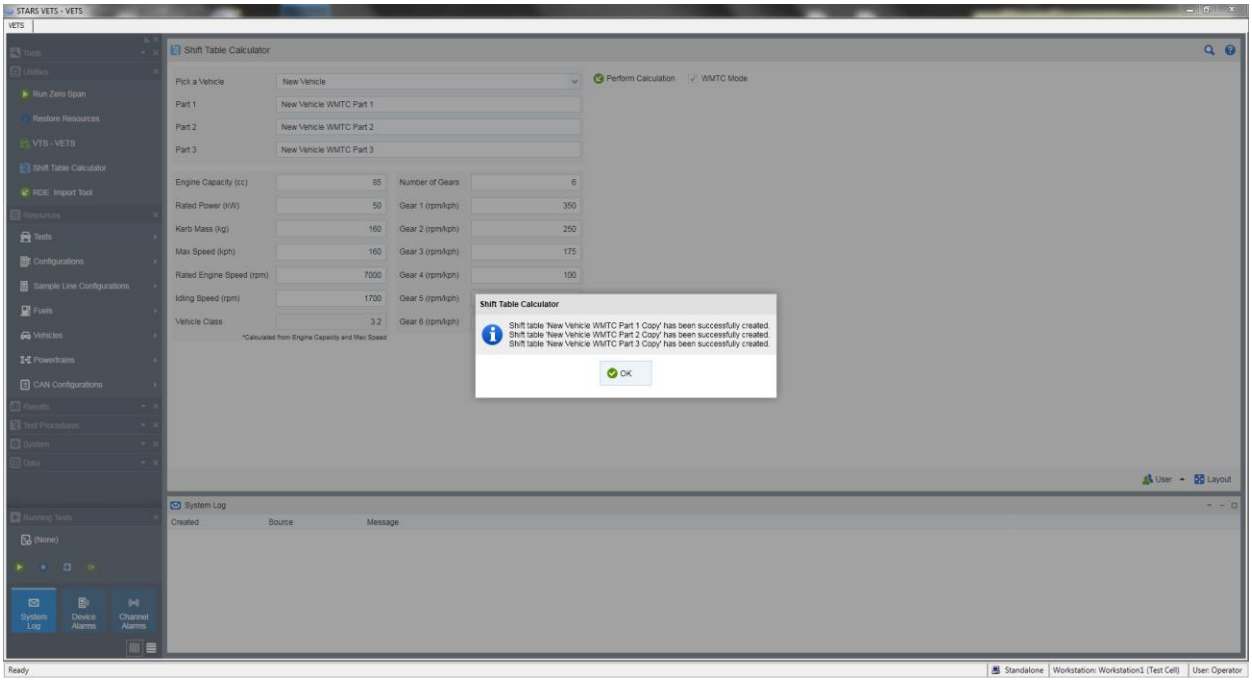
Keep in mind however that the underlying code performs shift calculations using methodologies pertaining to WMTC regulations, so this may not produce desired results.



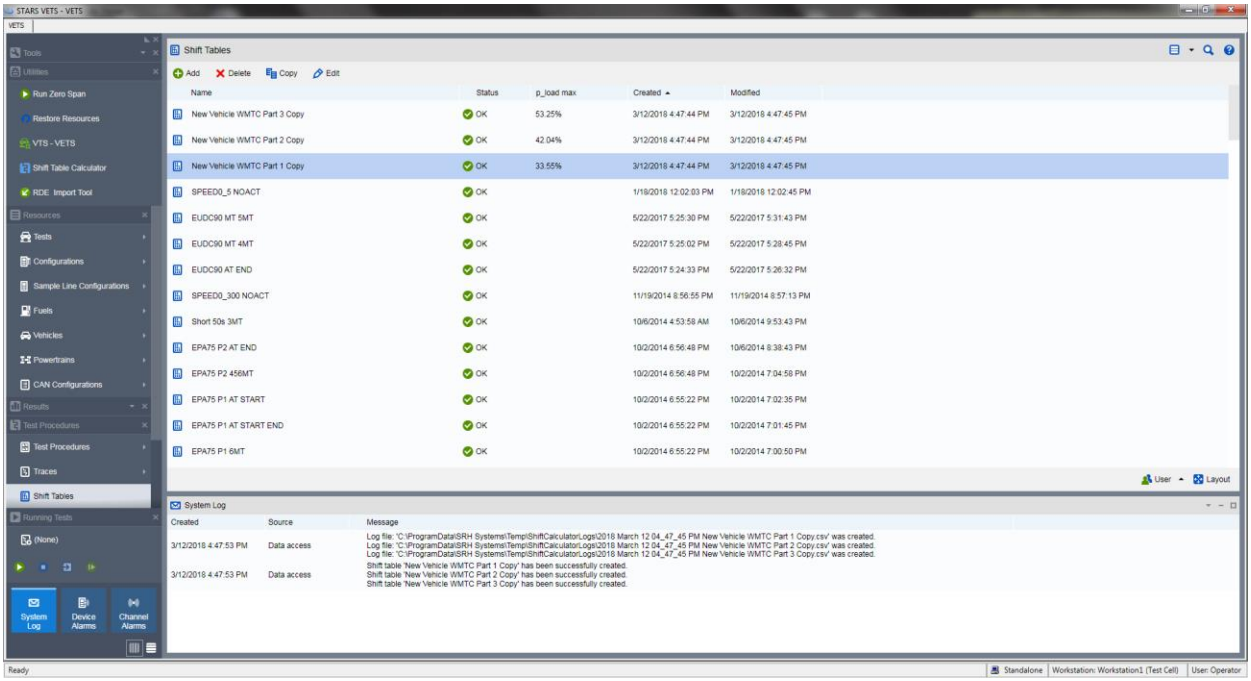
Once the values on the custom fields and names of the shift tables are set, click ‘Perform Calculation’.



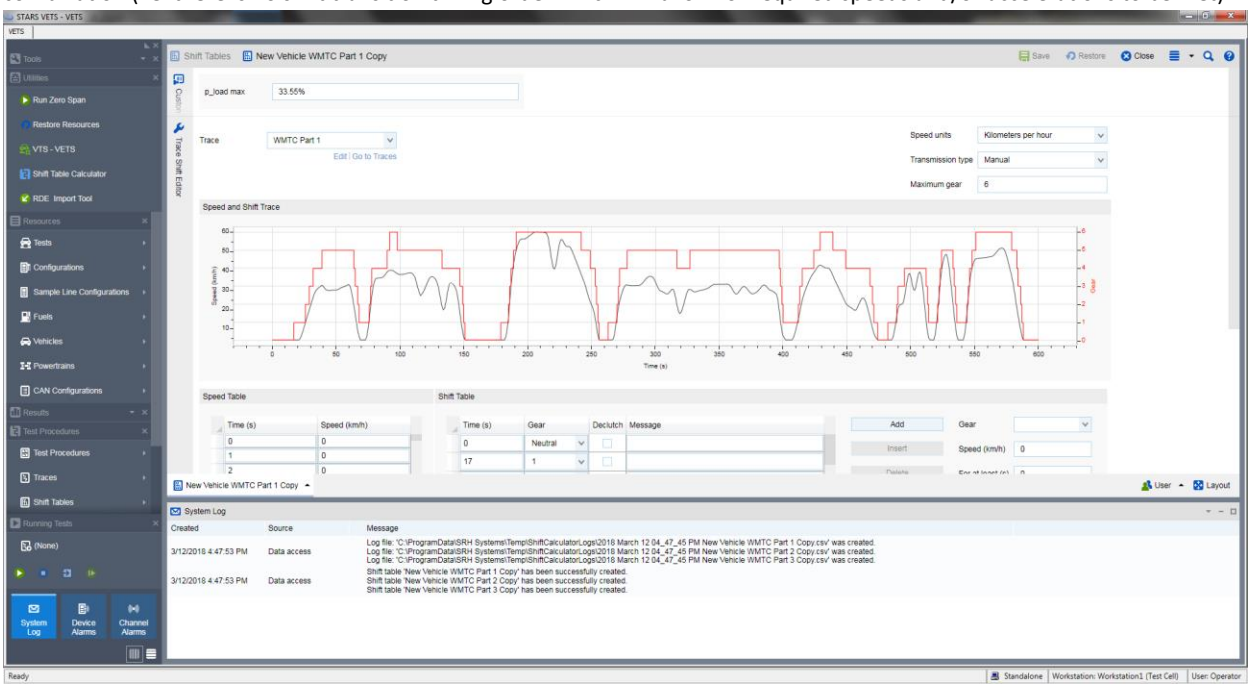
The shift tables will be calculated and created. The tool will automatically alter a chosen name to make it unique (such as by adding ‘Copy’ to the end) if a shift table resource with that name already exists within VETS.



The newly generated shifts will now be present within the Shift Tables view.



p_load max is an indicator of drivability. If p_load max > 100% then drivability issues are to be expected for the vehicle-trace combination (i.e. there is no shift transition timing order which will allow for required speeds and/or accelerations to be met).



If a value of p_load max > 100% is determined during shift table calculation, the tool will present a warning and ask if you wish to go ahead with the creation of the shift table anyways.