TEST PROCEDURE

Overall Test Procedure
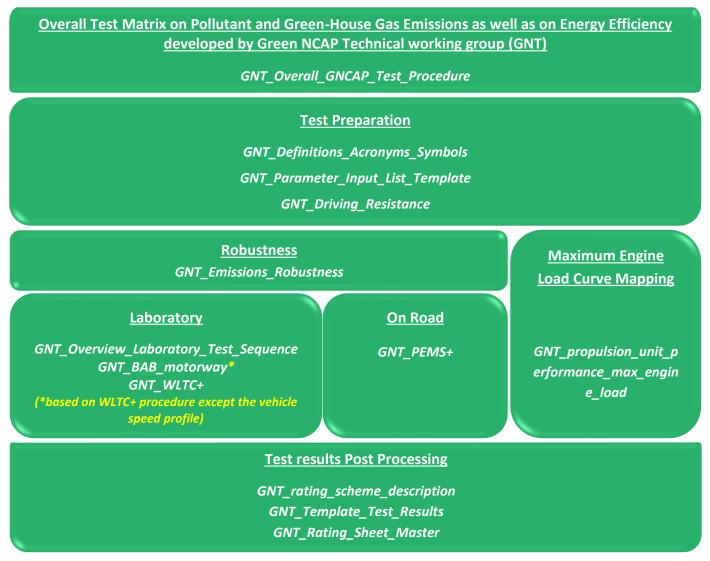
green
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GNT Overall GNCAP Test Procedure

GNT test procedure: Overview visualised

Overall Test Matrix on Pollutant and Green-House Gas Emissions as well as on Energy Efficiency developed by Green NCAP Technical working group (GNT)

GNT_Overall_GNCAP_Test_Procedure

Test Preparation

GNT_Definitions_Acronyms_Symbols

GNT_Parameter_Input_List_Template

GNT_Driving_Resistance

Robustness
GNT_Emissions_Robustness

Maximum Engine Load Curve Mapping

Laboratory

GNT_Overview_Laboratory_Test_Sequence
GNT_BAB_motorway*
GNT_WLTC+
(*based on WLTC+ procedure except the vehicle speed profile)

On Road

GNT_PEMS+

GNT_propulsion_unit_performance_max_engine_load

Test results Post Processing

GNT_rating_scheme_description
GNT_Template_Test_Results
GNT_Rating_Sheet_Master

The GNCAP Overall test procedure consists of five different work packages (WPs):

1) Specifications test vehicle
2) Emissions and efficiency testing (laboratory) with robustness testing (BAB)
3) PEMS testing and robustness testing
4) Maximum Engine Load Curve Mapping
5) Test analysis, rating

Each WP has to be tested in one go without insertion of parts of other WPs (except test analysis, WP 5).

It is recommended to follow the order shown below. It is also possible to switch some of the blocks as long as *Specification test vehicle* comes first and *PEMS testing* comes after *Laboratory emissions testing*.

Please note, that a successful *Vehicle preparation* and a successful *Maximum Engine Load Curve Mapping* are requirements for a valid Green NCAP test.

Please see regular updates of protocols on SharePoint.

Successful checks are always necessary for a valid test.

WP 1: Specifications test vehicle		
Tasks	**Annotations, underlying documents**	**Required documents for test documentation**
Vehicle selection and parameters	Current model year, homologation Euro 6c, Euro 6d-Temp, Euro 6d-Temp-EVAP or Euro 6d (Euro 6 with characters AD, AG, BG or AJ)	*GNT_Parameter_Input_List_Template_v1.0.0.xlsx*
Wheel alignment		Wheel alignment protocol
Driving resistance	According to COC documents If COC documents are not available: follow *GNT_Driving_Resistance_v1.0.0.docx*	Fill in *GNT_Parameter_Input_List_Template_v1.0.0.xlsx*
Weighing	- unladen mass (fuel tank filled up to maximum) - Test Mass TM from *GNT_WLTC+_v1.0.0.docx*	Weighing protocol or picture, TM filled in *GNT_Parameter_Input_List_Template_v1.0.0.xlsx*
reference fuel	- Diesel: reference fuel Euro 6 B7 - Petrol: Euro 6 E10 According to *GNT_WLTC+_v1.0.0.docx*	fuel certificate and specifications
Tyres, tyre pressure	- Summer, good condition (min. 50% pattern depth) - For safety reasons it is recommended to mount new tyres after chassis dyno use According to *GNT_WLTC+_v1.0.0.docx*	Pictures, type, pattern depth measurement, fill in *GNT_Parameter_Input_List_Template_v1.0.0.xlsx*
Maintenance check	Full service history, maximum 6 months or 5.000 km after maintenance mileage	Pictures, copies, protocols
Mileage	From 3.000 km up to 90.000 km	Mileage has to be recorded before each test
On Board Diagnostics	Error memory readout	OBD protocol
Documentation test vehicle	Vehicle data, documents etc., stand-alone pictures FL, RR	*GNT_Parameter_Input_List_Template_v1.0.0.xlsx*

WP 2: Emissions and efficiency testing (laboratory)		
Tasks	**Annotations, underlying documents**	**Required documents for test documentation**
Vehicle preparation for laboratory tests	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	See *GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx* Pictures from vehicle front left, rear right, according to *GNT_Footage_procedure_v1.0.0.docx*
WLTC_warm	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	Measurement report, pictures, fill in *GNT_Template_ Test_Results_v1.0.0.xlsx*
Coastdown on chassis dyno	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	Measurement report, fill in *GNT_Template_ Test_Results_v1.0.0.xlsx*
WLTC_precon	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	Measurement report, fill in *GNT_Template _Test_Results_v1.0.0.xlsx*
WLTC_cold_default_mode	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	Measurement report, fill in *GNT_Template _Test_Results_v1.0.0.xlsx*
BAB_default	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	Measurement report, fill in *GNT_Template _Test_Results_v1.0.0.xlsx*
WLTC_warm_eco_mode	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	Measurement report, fill in *GNT_Template_ Test_Results_v1.0.0.xlsx*
WLTC_warm_sport_mode	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	Measurement report, fill in *GNT_Template_ Test_Results_v1.0.0.xlsx*
WLTC_cold_default_mode_rep with PEMS correlation	*GNT_Overview_Laboratory_Test_Sequence_v1.0.0.docx, 4.*	Measurement report, fill in *GNT_Template_ Test_Results_v1.0.0.xlsx*

WP 3: PEMS testing an robustness testing		
Tasks	**Annotations, underlying documents**	**Required documents for test documentation**
PEMS preparation	According to protocol *GNT_PEMS+_v1.0.0.docx*	Pictures from vehicle front left, rear right, according to *GNT_Footage_procedure_v1.0.0.docx*
PEMS testing, PEMS+ cold start	According to protocol *GNT_PEMS+_v1.0.0.docx*	Measurement report, pictures, fill in *GNT_Template_Test_Results_v1.0.0.xlsx*
Emission Robustness: - PEMS_heavy_warm - PEMS_eco_warm	According to protocol *GNT_Emission_Robustness_v1.0.0.docx*	Measurement report, pictures, according to protocol *GNT_Emission_Robustness_v8.docx*, fill in *GNT_Template_Test_Results_v1.0.0.xlsx*
PEMS disassembly		

WP 4: Maximum Engine Load Curve Mapping		
Tasks	**Annotations, underlying documents**	**Required documents for test documentation**
Performance testing Engine speed/ engine load mapping	According to protocol *GNT_propulsion_unit_performance_max_engine_load_v1.0.0.docx*	Measurement report, fill in *GNT_Template_Test_Results_v1.0.0.xlsx*

WP 5: Test analysis, rating		
Tasks	**Annotations, underlying documents**	**Required documents for test documentation**
Test analysis	*GNT_Test_performance_limits_v1.0.0.xlsx*	Measurement reports from all tests. Plot engine speed and engine load graphs, including maximum engine load curve
Rating	*GNT_Rating_scheme_description_v1.0.0.docx*	Measurement reports from all tests, fill in *GNT_Rating_Sheet_Master_v1.0.0.xlsm*
Test report	According to template and *GNT_Rating_scheme_description_v1.0.0.docx*	Fill in *GNT_Rating_Sheet_Master_v1.0.0.xlsm*