



NSAI Annual In Service Conformity (ISC) Report of its finalised ISC investigations for 2021

1. Analysis of legal requirements:

The analysis of legal requirements is according to Annex II of Commission Regulation (EU) 2017/1151 in its current form {(EU) 2018/1832}.

This Annex contains ISC obligations for both the Granting Type-Approval Authority (GTAA) and the vehicle manufacturer.

The ISC obligations for the emission GTAA applies on a rolling annual basis, with reporting of ISC results by 31 March each year, of the preceding year's finalised ISC investigations.

In case some ISC investigations of the GTAA from the previous year are still open by that date, they shall be reported as soon as the investigations are finalised.

Under the Commission Regulation (EU) 2017/1151 in its current form ((EU) 2018/1832), the commencement year for ISC investigations by GTAA's is 2020, investigating vehicles approved and in use from 1 January 2019; in accordance with the rules and criteria established for selecting vehicles for ISC testing. This annual report covers vehicles approved and in use from 1 January 2020.

This report is NSAI's second annual ISC investigations report.

2. ISC process steps:

The ISC process steps are as defined in item 2 of Part B to Annex II of Commission Regulation (EU) 2017/1151 in its current form {(EU) 2018/1832}. There are five steps involved in the ISC process and the GTAA has overall responsibility for three of these steps and combined responsibility with the vehicle manufacturer for two of these steps.

The ISC process steps are as follows:

| ISC Steps | Main Responsibility |
|---|-----------------------------|
| Step 1: Information gathering and risk assessment | GTAA |
| Step 2: ISC Testing | GTAA, Vehicle Manufacturer |
| Step 3: Compliance Assessment | GTAA + Vehicle Manufacturer |
| Step 4: Remedial Measures | GTAA + Vehicle Manufacturer |
| Step 5: Reporting | GTAA |

3. Annual Report Format:

The Annual Report format follows the prescribed format contained within Appendix 4 to the ISC Annex of Commission Regulation (EU) 2017/1151 in its current form {(EU) 2018/1832}.

| ISC Period | Manufacturer | Production Year |
|------------|--------------|-----------------|
| 2021 | BMW | 2020 |

A. Quick overview and main conclusions:

Quick overview:

1. Following the established rules prescribing the numbers of vehicle ISC families to be selected for ISC testing for vehicle types approved after 1 January 2020, NSAI selected three ISC families consisting of three vehicles per family.
2. In total eighteen vehicle tests were carried out on nine vehicles.
3. All vehicles were subjected to the WLTP Type 1 test and RDE test in accordance with the established ISC requirements for testing.
4. One vehicle from each ISC family was subjected to an additional RDE hot test.
5. All ISC tests for all selected ISC families were carried out in the period between 03.11.2021 and 18.02.2022.
6. All ISC testing was carried out by the ISO17025 and ISO17020 accredited laboratory, DEKRA Automobil GmbH.



Main Conclusions:

- All vehicles passed the WLTP Type 1 tests and RDE tests.
- The three vehicles subjected to an additional RDE hot test passed this additional test.
- No intermediate or extreme outliers were detected in either sample.
- No remedial measures were detected.
- As per the established ISC rules, as all selected vehicles passed all ISC tests, and with no detection of the need to apply remedial measures; following the Compliance Assessment with BMW NSAI closed both Statistical Folders on 15 March 2022.

B. ISC activities performed by BMW in the previous year (2020):

As per the ISC established rules for vehicle manufacturers, BMW performed in 2020 its vehicle manufacturer ISC activities⁵.

(1) Information gathering by the manufacturer:

BMW uses an external service provider to select and test vehicles for ISC compliance.

For 2020 the external service provider was FEV Aachen.

BMW has no involvement in the selection and testing of its vehicles for ISC compliance.

To assist the external service provider in its vehicle selections, BMW sends the external service provider two information files as follows:

1. ISC Planning file. This file is structured to provide the following information:

- ISC family identifier.
- Series.
- Model.
- Engine code.
- Type code.
- Steering.
- Transmission.
- Vehicle category.
- Drivetrain.
- Emission standard.
- Options code.
- Type SOP date.
- Fuel.
- Combustion process.
- Method of aspiration.
- Cylinder block configuration.
- Type of catalytic action.



- Exhaust after-treatment system.
- Particulate trap.
- Exhaust gas recirculation.
- Engine cylinder capacity.
- Approval type.
- Type-approval number.
- Sales per type.
- Sales per In Use Family .

2. Dealer Stock List file. This file is structured to provide the following information:

- VIN.
- Production date.
- First registration date.
- Type Code.
- Dealer.
- Fuel.
- Power.
- Kilometre.
- Model.
- Derived.
- Emission standard.
- Status.
- Options code.

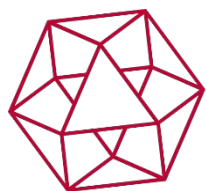
The external service provider uses this information as part of their selection criteria for BMW vehicles for ISC compliance testing.

(2) ISC testing (including planning and selection of families tested, and final results of tests):



The following tables are extracts from the full set of tables, which detail the planned and selected ISC families and their final ISC test results.
Production Year 2019:

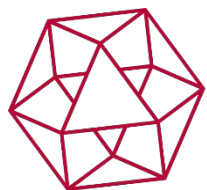
| In-Service Family | Amount of Samples based on sales (sales volume) | Sample | Vehicle | | | | | | distance indicated on odometer | Test Results | test data | | | | final test results | | | | | | | Evaluation of Results | | |
|-------------------|---|--------|-------------|-------------|-------------------|-------------------|----------------|------------------------------|--------------------------------|---------------|--------------------------|---------------|-----------------------|--------------------|------------------------------------|------------|-------------|--------------|-------------|-----------------|------------|-----------------------|------------|----------------------------|
| | | | No. Vehicle | Engine Type | Model | Transmission Type | Vehicle Origin | Production Date (DD.MM.YYYY) | | | Date of Test (DD.MM.YYY) | Test Facility | Fuel Petrol or Diesel | Certified Standard | reported to authority (DD.MM.YYYY) | CO (mg/km) | THC (mg/km) | NMHC (mg/km) | NOx (mg/km) | THC+NOx (mg/km) | PM (mg/km) | PN (#/km) | Exhaustive | Specific Vehicle pass/fail |
| I-WBA-07 | 3 (209237) | 1 | 1 | B36A15M1 | MINI COOPER | Man. | Germany | 03.05.2019 | 52,907 | Total Results | 13.10.2021 | RPZ | Petrol | EU6d | 11.11.2021 | 266.4 | 9.5 | 6.9 | 8.2 | 0.0 | 0.02 | 7.98E+09 | PASS | - |
| | | | 2 | B36A15U1 | MINI One | Man. | Germany | 15.02.2019 | 20,653 | | 28.10.2021 | RPZ | Petrol | EU6d | 11.11.2021 | 254.0 | 9.9 | 8.0 | 9.3 | 0.0 | 0.25 | 2.17E+10 | PASS | - |
| | | | 3 | B36A15M1 | BMW X2 18i | Man. | Germany | 31.07.2019 | 80,312 | | 25.11.2021 | RPZ | Petrol | EU6d | 11.11.2021 | 299.74 | 12.89 | 7.47 | 12.84 | 0.046 | 2.41E+00 | PASS | PASS | |
| | | 2 | 1 | B36A15M1 | BMW 118i | Aut. | Netherlands | 21.11.2019 | 25,481 | | 20.08.2021 | RPZ | Petrol | EU6d | 07.12.2021 | 208.2 | 13.1 | 10.6 | 16.3 | 0.0 | 0.06 | 5.49E+00 | PASS | - |
| | | | 2 | B36A15M1 | BMW 118i | Aut. | Netherlands | 11.12.2019 | 17,827 | | 11.09.2021 | RPZ | Petrol | EU6d | 07.12.2021 | 284.1 | 15.6 | 13.1 | 7.7 | 0.0 | 0.15 | 1.19E+10 | PASS | - |
| | | | 3 | B36A15M1 | MINI Cooper | Aut. | Netherlands | 24.05.2019 | 38,992 | | 08.11.2021 | RPZ | Petrol | EU6d | 07.12.2021 | 209.3 | 10.8 | 9.2 | 6.1 | 0.0 | 0.06 | 5.18E+09 | PASS | PASS |
| I-WBA-08 | 2 (183115) | 1 | 1 | B46A20M1 | BMW X2 xDrive20i | Aut. | Netherlands | 22.11.2019 | 16,347 | Total Results | 20.08.2021 | RPZ | Petrol | EU6d | 23.09.2021 | 270.1 | 11.2 | 9.4 | 9.4 | 0.0 | 0.00 | 6.79E+09 | PASS | - |
| | | | 2 | B46B20C1 | BMW 520i | Aut. | Netherlands | 14.06.2019 | 21,056 | | 02.09.2021 | RPZ | Petrol | EU6d | 23.09.2021 | 197.6 | 13.4 | 11.6 | 9.5 | 0.0 | 0.01 | 8.17E+10 | PASS | - |
| | | | 3 | B46A20M1 | BMW X2 xDrive20i | Aut. | Netherlands | 29.07.2019 | 19,820 | | 15.09.2021 | RPZ | Petrol | EU6d | 23.09.2021 | 347.2 | 10.8 | 8.6 | 10.5 | 0.0 | 0.23 | 1.10E+10 | PASS | PASS |
| | | 2 | 1 | B46B20M0 | BMW 120i | Aut. | Germany | 13.03.2019 | 31,551 | | 08.10.2021 | RPZ | Petrol | EU6d | 23.11.2021 | 164.8 | 10.4 | 9.4 | 21.5 | 0.0 | 0.14 | 3.40E+10 | PASS | - |
| | | | 2 | B46A20M1 | BMW X2 xDrive20i | Aut. | Germany | 08.07.2019 | 21,705 | | 21.10.2021 | RPZ | Petrol | EU6d | 23.11.2021 | 309.1 | 12.7 | 11.1 | 11.0 | 0.0 | 0.08 | 9.93E+00 | PASS | - |
| | | | 3 | B46B20C1 | BMW 330i | Aut. | Germany | 21.02.2019 | 47,716 | | 17.11.2021 | RPZ | Petrol | EU6d | 23.11.2021 | 146.6 | 14.4 | 9.0 | 9.3 | 0.0 | 0.05 | 4.82E+00 | PASS | PASS |
| I-WBA-09 | 1 (37381) | 1 | 1 | B56B30M0 | BMW 540i | Aut. | Germany | 01.03.2019 | 17,836 | Total Results | 21.08.2021 | RPZ | Petrol | EU6d | 08.10.2021 | 226.5 | 15.9 | 13.6 | 9.7 | 0.0 | 0.00 | 3.87E+09 | PASS | - |
| | | | 2 | B56B30M0 | BMW X4 M40i | Aut. | Germany | 08.02.2019 | 53,590 | | 24.09.2021 | RPZ | Petrol | EU6d | 08.10.2021 | 342.4 | 17.3 | 14.3 | 11.9 | 0.0 | 0.85 | 2.21E+09 | PASS | - |
| | | | 3 | B56B30C1 | BMW X3 M40i | Aut. | Germany | 14.11.2019 | 25,391 | | 06.10.2021 | RPZ | Petrol | EU6d | 08.10.2021 | 68.9 | 13.0 | 11.1 | 12.8 | 0.0 | 0.90 | 1.29E+10 | PASS | PASS |
| I-WBA-014 | 1 (42004) | 1 | 1 | B36B15M0 | BMW 318i | Aut. | Netherlands | 29.05.2019 | 48,273 | Total Results | 24.09.2021 | RPZ | Petrol | EU6d | | 179.3 | 8.4 | 6.8 | 5.6 | 0.0 | 0.08 | 4.91E+10 | PASS | - |
| I-WBA-15 | 1 (28505) | 1 | 1 | X82131M0 | BMW 225iE iP | Aut. | Germany | 12.09.2019 | 76,919 | | 03.12.2021 | RPZ | Petrol | EU6d | | 289.2 | 18.3 | 13.3 | 7.9 | 0.0 | 0.09 | 2.14E+11 | PASS | - |
| | | | 2 | X82131M0 | BMW 225iE | Aut. | Germany | 28.06.2019 | 40,349 | Total Results | 09.12.2021 | RPZ | Petrol | EU6d | | 343.2 | 17.7 | 12.4 | 12.6 | 0.0 | 0.26 | 8.42E+09 | PASS | - |
| I-WBA-16 | 1 (7702) | 1 | 1 | X81151M1 | BMW 745iL | Aut. | Germany | 09.09.2019 | 46,579 | | 08.11.2021 | RPZ | Petrol | EU6d | | 149.0 | 10.5 | 9.4 | 4.5 | 0.0 | 0.01 | 2.37E+10 | PASS | - |
| I-WBA-02 | 1 (11666) | 1 | 1 | B37C15U1 | BMW 216d | Aut. | Germany | 22.05.2019 | 39,536 | Total Results | 18.05.2021 | RPZ | Diesel | EU6d | | 44.6 | 0.0 | 0.0 | 22.5 | 54.8 | 0.07 | 7.10E+08 | PASS | - |
| I-WBA-05 | 1 (43715) | 1 | 1 | B47C20C0 | BMW 320d | Aut. | Germany | 23.02.2019 | 54,741 | | 13.10.2021 | RPZ | Diesel | EU6d | | 25.4 | 0.0 | 0.0 | 22.8 | 43.7 | 0.08 | 2.80E+10 | PASS | - |
| | | | 2 | B47C20C0 | BMW 116d | Aut. | Germany | 28.02.2019 | 50,801 | Total Results | 19.11.2021 | RPZ | Diesel | EU6d | | 40.0 | 0.0 | 0.0 | 23.5 | 0.0 | 0.01 | 2.94E+10 | PASS | - |
| I-WBA-09 | 3 (225953) | 1 | 1 | B47C20B | BMW 220d xDriveGT | Aut. | Germany | 18.02.2019 | 72,761 | | 14.08.2021 | RPZ | Diesel | EU6d | 08.09.2021 | 114.4 | 0.0 | 0.0 | 41.2 | 73.5 | 0.10 | 8.72E+08 | PASS | - |
| | | | 2 | B47C20C1 | BMW 320d xDrive | Aut. | Germany | 11.02.2019 | 50,222 | Total Results | 19.08.2021 | RPZ | Diesel | EU6d | 08.09.2021 | 96.4 | 0.0 | 0.0 | 23.3 | 96.2 | 0.05 | 5.09E+08 | PASS | - |
| | | | 3 | B47C20C1 | BMW 320d | Aut. | Germany | 02.04.2019 | 63,675 | | 03.09.2021 | RPZ | Diesel | EU6d | 08.09.2021 | 138.4 | 0.0 | 0.0 | 29.7 | 94.5 | 0.08 | 3.07E+00 | PASS | PASS |
| | | 2 | 1 | B47C20C1 | BMW 320d | Aut. | Netherlands | 09.09.2019 | 15,489 | Total Results | 03.09.2021 | RPZ | Diesel | EU6d | 22.09.2021 | 86.6 | 0.0 | 0.0 | 23.5 | 50.8 | 0.02 | 2.30E+09 | PASS | - |
| | | | 2 | B47C20C1 | BMW 320d | Aut. | Netherlands | 10.09.2019 | 19,675 | | 11.09.2021 | RPZ | Diesel | EU6d | 22.09.2021 | 108.0 | 0.0 | 0.0 | 22.9 | 52.6 | 0.17 | 8.09E+08 | PASS | - |
| | | | 3 | B47C20C1 | BMW 116d | Aut. | Netherlands | 29.08.2019 | 22,073 | Total Results | 18.09.2021 | RPZ | Diesel | EU6d | 22.09.2021 | 53.3 | 0.0 | 0.0 | 20.3 | 48.2 | 0.09 | 1.63E+09 | PASS | PASS |
| | | 3 | 1 | B47C20C1 | BMW X1 16d | Aut. | Germany | 14.05.2019 | 47,712 | | 28.10.2021 | RPZ | Diesel | EU6d | | 113.5 | 0.0 | 0.0 | 42.7 | 87.5 | 0.03 | 2.92E+00 | PASS | - |
| | | | 2 | B47C20C1 | BMW 320d | Aut. | Germany | 25.02.2019 | 55,111 | Total Results | 08.12.2021 | RPZ | Diesel | EU6d | | 118.5 | 0.0 | 0.0 | 31.5 | 83.2 | 0.06 | 3.30E+08 | PASS | - |
| | | | 3 | B47C20B | BMW X2 16d | Aut. | Germany | 06.08.2019 | 22,528 | | 14.12.2021 | RPZ | Diesel | EU6d | | 40.6 | 0.0 | 0.0 | 19.6 | 53.3 | 0.24 | 1.82E+09 | PASS | PASS |
| I-WBA-011 | 1 (27407) | 1 | 1 | B57D30D0 | BMW 540d xDrive | Aut. | Germany | 07.03.2019 | 39,096 | Total Results | 27.08.2021 | RPZ | Diesel | EU6d | | 332.0 | 0.0 | 0.0 | 36.1 | 72.6 | 0.15 | 6.78E+08 | PASS | - |
| | | | 2 | B57D30D0 | BMW 540d xDrive | Aut. | Germany | 05.02.2019 | 36,734 | | 02.12.2021 | RPZ | Diesel | EU6d | | 166.2 | 0.0 | 0.0 | 32.1 | 15.1 | 0.08 | 3.76E+09 | PASS | - |
| I-WBA-013 | 1 (69444) | 1 | 1 | B57D30D0 | BMW X3 30d xDrive | Aut. | Germany | 06.05.2019 | 37,808 | Total Results | 02.12.2021 | RPZ | Diesel | EU6d | | 203.5 | 0.0 | 0.0 | 15.2 | 4.7 | 0.20 | 1.61E+10 | PASS | - |
| | | | 2 | B57D30D0 | BMW 530d xDrive | Aut. | Germany | 22.01.2019 | 47,319 | | 17.12.2021 | RPZ | Diesel | EU6d | | 159.6 | 0.0 | 0.0 | 22.0 | 95.2 | 0.17 | 4.72E+10 | PASS | - |
| 24-WBA-040 | 1 (5867) | 1 | 1 | X05141D0 | BMW 530d xDrive | Aut. | Germany | 07.11.2019 | 20,070 | Total Results | 15.12.2021 | RPZ | Diesel | EU6d | | 83.2 | 0.0 | 0.0 | 23.9 | 58.7 | 0.20 | 6.72E+08 | PASS | - |



NSAI

Production Year 2018:

| Vehicle | | | | | | | | | Test data | | | | | Final test results | | | | | | | | Evaluation of Results | | Comments | |
|-------------------|---|--------|-------------|-------------|--------------------|-------------------|----------------|------------------------------|--------------------------------|------|---------------------------|---------------|-----------------------|--------------------|------------------------------------|------------|-------------|--------------|-------------|-----------------|------------|-----------------------|--------------|----------|------------------------------|
| In-Service Family | Amount of Samples based on sales (sales volume) | Sample | No. Vehicle | Engine Type | Model | Transmission Type | Vehicle Origin | Production Date (DD.MM.YYYY) | distance indicated on odometer | Test | Date of Test (DD.MM.YYYY) | Test Facility | Fuel Petrol or Diesel | Certified Standard | reported to authority (DD.MM.YYYY) | CO (mg/km) | THC (mg/km) | NMHC (mg/km) | NOx (mg/km) | THC+NOx (mg/km) | PM (mg/km) | PN (#/km) | End use (km) | | Specific Vehicle pass / fail |
| D201801 | 1 (26 599) | 1 | 1 | B37C15UD | 216d F46 | MT | Deutschland | 08.02.2018 | 35.136 | | 19.02.2021 | VNA | Diesel | EU6c (NEDC) | | 106,9 | 0,0 | 0,0 | 55,0 | 84,9 | 0,03 | 1,47E+00 | PASS | - | |
| | | | 2 | B37D15UD | 116d | AT | Deutschland | 23.02.2018 | 21.840 | | 18.03.2021 | VNA | Diesel | EU6c (NEDC) | | 39,6 | 0,0 | 0,0 | 37,2 | 56,0 | 0,01 | 4,05E+10 | PASS | - | |
| | | | 3 | B37C15UD | Mini One D Clubman | AT | Deutschland | 27.02.2018 | 49.338 | | 26.03.2021 | VNA | Diesel | EU6c (NEDC) | | 46,3 | 0,0 | 0,0 | 96,4 | 117,7 | 0,06 | 1,24E+00 | FAIL | UND | |
| | | | 4 | B37C15UD | Mini One D Clubman | AT | Deutschland | 27.02.2018 | 49.401 | | 30.03.2021 | VNA | Diesel | EU6c (NEDC) | | 69,6 | 0,0 | 0,0 | 86,4 | 108,1 | 0,05 | 1,56E+10 | FAIL | UND | |
| | | | 5 | B37D15UD | 116d | MT | Deutschland | 01.03.2018 | 24.308 | | 15.04.2021 | VNA | Diesel | EU6c (NEDC) | | 44,6 | 0,0 | 0,0 | 49,1 | 74,3 | 0,12 | 3,72E+00 | PASS | UND | |
| | | | 6 | B37C15U1 | Mini Cooper | AT | Deutschland | 23.03.2018 | 47.813 | | 17.06.2021 | VNA | Diesel | EU6c (NEDC) | | 112,5 | 0,0 | 0,0 | 29,1 | 51,9 | 0,06 | 1,21E+00 | PASS | PASS | |
| D201802 | 1 (38 919) | 1 | 1 | B37C15U1 | Mini One D F54 | AT | Deutschland | 30.05.2018 | 45.219 | | 10.02.2021 | VNA | Diesel | EU6c (WLTP) | | 59,9 | 0,0 | 0,0 | 17,0 | 44,9 | 0,32 | 4,18E+00 | PASS | - | |
| | | | 2 | B37D15UD | 116d | MT | Deutschland | 27.03.2018 | 21.184 | | 05.05.2021 | VNA | Diesel | EU6c (WLTP) | | 22,1 | 0,0 | 0,0 | 29,9 | 45,1 | 0,23 | 4,69E+10 | PASS | - | |
| | | | 3 | B37C15U1 | Mini One D F60 | MT | Deutschland | 29.05.2018 | 36.926 | | 15.06.2021 | VNA | Diesel | EU6c (WLTP) | | 41,0 | 0,0 | 0,0 | 23,7 | 36,8 | 0,41 | 1,09E+00 | PASS | PASS | |
| D201803 | 1 (41 545) | 1 | 4 | B47D20UD | BMW 218d | AT | Deutschland | 02.02.2018 | 49.220 | | 03.03.2021 | VNA | Diesel | EU6c (NEDC) | | 103,3 | 0,0 | 0,0 | 28,2 | 62,3 | 0,06 | 1,21E+10 | PASS | PASS | |
| | | | 5 | B47C20UD | BMW 218d | AT | Deutschland | 22.03.2021 | 76.606 | | 24.03.2021 | VNA | Diesel | EU6c (NEDC) | | 113,7 | 0,0 | 0,0 | 38,1 | 83,9 | 0,15 | 6,74E+10 | PASS | PASS | |
| | | | 6 | B47D20UD | BMW X4 20d | AT | Deutschland | 06.04.2018 | 57.963 | | 11.05.2021 | VNA | Diesel | EU6c (NEDC) | | 100,1 | 0,0 | 0,0 | 49,5 | 83,4 | 0,32 | 3,69E+00 | PASS | PASS | |
| D201804 | 3 (98 777) | 2 | 3 | B47D20UD | BMW 320d GT | AT | Deutschland | 24.05.2018 | 95.691 | | 11.02.2021 | VNA | Diesel | EU6c (WLTP) | | 94,0 | 0,0 | 0,0 | 59,6 | 78,4 | 0,19 | 4,31E+10 | PASS | PASS | |
| | | | 3 | B47D20UD | 120d | AT | Deutschland | 01.06.2018 | 39.664 | | 03.03.2021 | VNA | Diesel | EU6c (WLTP) | | 34,7 | 0,0 | 0,0 | 22,6 | 38,9 | 0,28 | 5,66E+00 | PASS | PASS | |
| P201801 | 2 (100 049) | 2 | 1 | B38A15U1 | Mini One F56 | MT | Deutschland | 01.03.2018 | 23.782 | | 21.01.2021 | VNA | Petrol | EU6c (NEDC) | | 188,7 | 20,3 | 15,3 | 14,0 | 0,0 | 0,26 | 5,29E+11 | PASS | - | |
| | | | 2 | B38A15UD | Mini One F60 | AT | Deutschland | 01.03.2018 | 22.872 | | 21.01.2021 | VNA | Petrol | EU6c (NEDC) | | 187,8 | 15,9 | 8,0 | 14,1 | 0,0 | 0,46 | 5,98E+11 | PASS | - | |
| | | | 3 | B38B15MD | BMW 118i | MT | Deutschland | 15.03.2018 | 51.430 | | 24.02.2021 | VNA | Petrol | EU6c (NEDC) | | 171,5 | 8,1 | 8,7 | 5,1 | 0,0 | 0,18 | 3,09E+11 | PASS | PASS | |
| P201803 | 1 (29 765) | 1 | 1 | B58B30MD | BMW 540i | AT | Deutschland | 16.05.2018 | 21.000 | | 05.02.2021 | RPZ | Petrol | EU6c (NEDC) | | 229,9 | 29,2 | 13,9 | 17,7 | 0,0 | 0,48 | 3,04E+11 | PASS | - | |
| | | | 2 | B58B30MD | BMW M140i | AT | Deutschland | 29.01.2018 | 54.201 | | 28.01.2021 | VNA | Petrol | EU6c (NEDC) | | 270,4 | 31,3 | 13,5 | 7,9 | 0,0 | 0,26 | 1,51E+11 | PASS | - | |
| | | | 3 | B58B30MD | BMW M240i | AT | Deutschland | 13.03.2018 | 40.329 | | 04.02.2021 | RPZ | Petrol | EU6c (NEDC) | | 185,0 | 25,4 | 19,2 | 17,9 | 0,0 | 0,07 | 1,46E+11 | PASS | PASS | |
| P201805 | 1 (voluntary) (708) | - | 1 | N74B66U1 | M760Li dDrive | AT | Deutschland | 12.03.2018 | 44.023 | | 26.06.2021 | VNA | Petrol | EU6b (NEDC) | | 283,3 | 54,2 | 35,2 | 46,1 | 0,0 | 0,77 | 9,71E+11 | - | - | |
| P201806 | 1 (5955) | 1 | 1 | W20K06UD | 13d Flex | AT | Deutschland | 04.09.2018 | 36.551 | | 13.01.2021 | VNA | Petrol | EU6c (WLTP) | | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,48 | 8,08E+00 | PASS | - | |
| | | | 2 | W20K06UD | 13d Flex | AT | Deutschland | 30.01.2018 | 16.402 | | 25.02.2021 | VNA | Petrol | EU6c (NEDC) | | 30,3 | 0,8 | 0,1 | 0,8 | 0,0 | 0,02 | 3,68E+00 | PASS | - | |
| | | | 3 | W20K06UD | 13d Flex | AT | Deutschland | 06.06.2018 | 17.562 | | 13.07.2021 | VNA | Petrol | EU6c (NEDC) | | 43,1 | 1,0 | 0,6 | 0,8 | 0,0 | 0,15 | 1,03E+10 | PASS | PASS | |
| P201807 | 2 (173 170) | 2 | 3 | B38A15M1 | 218i (F45) | AT | Deutschland | 23.07.2018 | 60.869 | | 20.01.2021 | VNA | Petrol | EU6c (WLTP) | | 344,3 | 16,1 | 10,6 | 13,2 | 0,0 | 0,29 | 3,36E+00 | PASS | PASS | |
| P201808 | 2 (100 770) | 2 | 1 | B48B30MD | X3 20i dDrive | AT | Niederlande | 28.11.2018 | 46.781 | | 28.01.2021 | VNA | Petrol | EU6c (WLTP) | | 232,7 | 12,1 | 11,9 | 10,7 | 0,0 | 0,36 | 2,87E+10 | PASS | - | |
| | | | 2 | B48B30MD | X3 20i dDrive | AT | Niederlande | 28.11.2018 | 36.195 | | 20.01.2021 | VNA | Petrol | EU6c (WLTP) | | 275,3 | 13,0 | 10,6 | 10,8 | 0,0 | 0,23 | 4,91E+00 | PASS | - | |
| | | | 3 | B48B20UD | X4 30i | AT | Deutschland | 06.11.2018 | 31.245 | | 28.01.2021 | VNA | Petrol | EU6c (WLTP) | | 339,0 | 17,5 | 15,8 | 14,9 | 0,0 | 0,47 | 4,05E+00 | PASS | PASS | |
| P201809 | 1 (21 164) | 1 | 4 | B58B30M1 | BMW X5 40i | AT | Deutschland | 12.12.2018 | 51.018 | | 11.02.2021 | VNA | Petrol | EU6c (WLTP) | | 308,3 | 17,7 | 12,5 | 14,5 | 0,0 | 0,48 | 3,94E+10 | PASS | PASS | |
| P201812 | 1 (5 380) | 1 | 1 | B55B30TD | M4 | AT | Deutschland | 10.04.2019 | 15.179 | | 18.05.2021 | VNA | Petrol | EU6c (WLTP) | | 206,2 | 16,9 | 10,7 | 13,5 | 0,0 | 0,11 | 3,71E+10 | PASS | - | |
| | | | 2 | B55B30TD | M4 | AT | Deutschland | 25.09.2018 | 82.508 | | 31.05.2021 | VNA | Petrol | EU6c (WLTP) | | 224,6 | 26,6 | 17,9 | 21,2 | 0,0 | 0,26 | 4,10E+00 | PASS | - | |
| | | | 3 | B55B30TD | M2 | AT | Deutschland | 17.09.2018 | 41.857 | | 17.09.2021 | RPZ | Petrol | EU6c (WLTP) | | 249,3 | 32,0 | 14,9 | 27,2 | 0,0 | 0,07 | 2,56E+10 | PASS | PASS | |



NSAI

Production Year 2018:

| In-Service Family | Amount of Samples based on sales | Sample | Vehicle | | | | | | distance indicated on odometer | test date | test data | | | | final tests results | | | | | | | | Evaluation of Results | | Comments |
|-------------------|----------------------------------|--------|-------------|-------------|---------------|-------------------|----------------|-----------------|--------------------------------|------------|--------------|---------------|------|--------------------|---------------------|-------------|--------------|-------------|-----------------------------|------------|-----------|---------------|------------------------------|-----------------------------------|----------|
| | | | No. Vehicle | Engine Type | Model | Transmission Type | Vehicle Origin | 1. Registration | | | Date of Test | Test Facility | fuel | Certified Standard | CO (mg/km) | THC (mg/km) | NMHC (mg/km) | NOx (mg/km) | THC+NO _x (mg/km) | PM (mg/km) | PN (#/km) | EU evaluation | Specific Vehicle pass / fail | Statistical Procedure pass / fail | |
| D201601 | 2 (116911) | 2 | 1 | B37C15UD | 216d AT | AT | Deutschland | 07.06.2017 | 51.100 | 05.02.2021 | RPZ | Diesel | EU6c | | 40,2 | 0,0 | 0,0 | 44,6 | 66,9 | 0,01 | 1,42E+10 | PASS | - | | |
| | | | 2 | B37C15UD | 216d GT | MT | Deutschland | 24.10.2016 | 82.976 | 04.02.2021 | RPZ | Diesel | EU6c | | 116,1 | 0,0 | 0,0 | 72,6 | 102,5 | 0,06 | 7,27E+08 | PASS | - | | |
| | | | 3 | B37D15UD | 116d | AT | Deutschland | 07.12.2016 | 44.111 | 26.02.2021 | VKA | Diesel | EU6c | | 25,8 | 0,0 | 0,0 | 49,8 | 68,4 | 0,13 | 5,85E+10 | PASS | PASS | | |
| D201602 | 3 (439299) | 2 | 4 | B47C2000 | Cooper SD | AT | Deutschland | 13.07.2016 | 78.222 | 15.01.2021 | VKA | Diesel | EU6c | | 206,5 | 0,0 | 0,0 | 49,0 | 97,6 | 0,17 | 7,24E+10 | PASS | PASS | | |
| D201603 | 1 (26436) | 1 | 1 | N47D20T1 | 525d | AT | Deutschland | 25.10.2016 | 62.979 | 11.02.2021 | RPZ | Diesel | EU6c | | 448,6 | 0,0 | 0,0 | 64,6 | 215,1 | 0,11 | 1,24E+11 | FAIL | - | | |
| | | | 2 | B47D20T0 | X5 25d | AT | Deutschland | 18.09.2017 | 36.178 | 17.02.2021 | RPZ | Diesel | EU6c | | 82,0 | 0,0 | 0,0 | 53,8 | 85,0 | 0,08 | 8,24E+08 | PASS | - | | |
| | | | 3 | B47D20T0 | X5 xdrive25d | AT | Deutschland | 09.06.2016 | 76.004 | 11.03.2021 | VKA | Diesel | EU6c | | 91,8 | 0,0 | 0,0 | 90,5 | 114,4 | 0,31 | 6,76E+09 | FAIL | UND | | |
| | | | 4 | B47D20A | BMW 520d | AT | Deutschland | 17.02.2017 | 59.670 | 19.03.2021 | VKA | Diesel | EU6c | | 92,8 | 0,0 | 0,0 | 38,3 | 61,3 | 0,43 | 1,87E+11 | PASS | UND | | |
| | | | 5 | B47D2000 | BMW 520d | AT | Deutschland | 16.08.2016 | 72.900 | 09.04.2021 | VKA | Diesel | EU6c | | 103,4 | 0,0 | 0,0 | 42,1 | 78,1 | 0,09 | 9,53E+10 | PASS | UND | | |
| | | | 6 | B47D2000 | BMW 520d | AT | Deutschland | 29.03.2016 | 53.468 | 06.05.2021 | VKA | Diesel | EU6c | | 95,0 | 0,0 | 0,0 | 38,2 | 56,1 | 0,09 | 1,86E+09 | PASS | PASS | | |
| D201606 | 1 (58367) | 1 | 3 | N57D3001 | 530d xDrive | AT | Deutschland | 29.11.2016 | 89.066 | 12.02.2021 | VKA | Diesel | EU6c | | 132,9 | 0,0 | 0,0 | 46,2 | 99,2 | 0,20 | 5,82E+09 | PASS | PASS | | |
| P201601 | 2 (182696) | 2 | 3 | B38B15MD | BMW 318i | MT | Niederlande | 26.02.2016 | 82.461 | 20.01.2021 | VKA | Petrol | EU6b | | 279,6 | 23,6 | 18,5 | 11,7 | 0,0 | 0,50 | 4,63E+11 | PASS | PASS | | |
| P201602 | 2 (134235) | 2 | 1 | B48B20MD | 220A | AT | Niederlande | 28.12.2016 | 71.673 | 25.01.2021 | VKA | Petrol | EU6b | | 204,4 | 36,8 | 26,6 | 17,7 | 0,0 | 1,19 | 8,90E+11 | PASS | - | | |
| | | | 2 | B48A20MD | Cooper Cabrio | AT | Niederlande | 14.03.2016 | 28.106 | 06.02.2021 | RPZ | Petrol | EU6b | | 313,1 | 33,5 | 27,1 | 14,7 | 0,0 | 0,16 | 9,99E+11 | PASS | - | | |
| | | | 3 | N18B16TD | Mini JCW A14 | MT | Niederlande | 16.03.2016 | 56.168 | 29.04.2021 | VKA | Petrol | EU6b | | 473,2 | 20,1 | 14,2 | 16,1 | 0,0 | 2,34 | 2,63E+12 | PASS | PASS | | |
| P201603 | 1 (7171) | 1 | 2 | N16B16MD | Countryman | MT | Niederlande | 08.09.2016 | 50.526 | 29.04.2021 | VKA | Petrol | EU6b | | 322,8 | 33,5 | 29,6 | 15,0 | 0,0 | 0,43 | 5,55E+11 | PASS | - | | |
| | | | 3 | N16B16MD | Countryman | MT | Deutschland | 02.08.2016 | 24.998 | 05.05.2021 | VKA | Petrol | EU6b | | 338,7 | 31,9 | 27,9 | 26,2 | 0,0 | 0,89 | 5,09E+11 | PASS | PASS | | |
| P201604 | 1 (36396) | 1 | 2 | N65B30T0 | M2 | AT | Niederlande | 15.04.2016 | 78.754 | 23.01.2021 | VKA | Petrol | EU6b | | 311,0 | 48,5 | 40,1 | 17,3 | 0,0 | 0,77 | 6,59E+11 | PASS | - | | |
| | | | 3 | S65B30T0 | M4 | AT | Deutschland | 06.11.2017 | 23.336 | 19.02.2021 | VKA | Petrol | EU6b | | 261,9 | 53,4 | 43,4 | 14,2 | 0,0 | 0,13 | 2,84E+11 | PASS | PASS | | |
| P201608 | 1 (5935) | 3 | 1 | B1P23MD | I3 (+ REX) | AT | Deutschland | 25.10.2016 | 44.965 | 24.02.2021 | VKA | Petrol | EU6b | | 25,2 | 0,7 | 0,7 | 0,2 | 0,0 | 0,03 | 1,76E+09 | PASS | - | | |
| | | | 2 | B1P23MD | I3 (+ REX) | AT | Deutschland | 22.09.2016 | 61.621 | 19.03.2021 | VKA | Petrol | EU6b | | 49,1 | 0,6 | 0,4 | 0,1 | 0,0 | 0,12 | 1,93E+10 | PASS | - | | |

C. ISC activities performed by accredited laboratories or technical services in the previous year:

NSAI received the following ISC RDE test reports from TNO innovation for life:

- (3) Information gathering and risk assessment:
- (4) ISC testing (including planning and selection of families tested, and final results of tests):

| TNO Reference No | IP Family Name | PEMs Family | | Notes |
|-------------------------|------------------------------|-------------|---------|--|
| 2020-STL-LTR-100335031R | IP_EU_G30_XD5141O0_mMAS_AR_1 | 24-WBA-DH9 | Valid | N/A |
| 2021-STL-LTR-100342433N | IP_EU_F48_F39_B38A15M1_AF_4 | 24-WBA-O27 | Valid | N/A |
| 2021-STL-LTR-100342008R | IP_EU_G21_XB1141M1_AR_1 | 24-WBA-P26 | Valid | N/A |
| 2020-STL-LTR-100336348 | IP_EU_F5x_B38A15M1_AF_3 | 1-WBA-O7 | Valid | N/A |
| 2020-STL-LTR-100336348 | IP_EU_F45_XB2131M0_AA_2 | 1-WBA-P5 | Valid | N/A |
| 2020-STL-LTR-100336348 | IP_EU_F40_F44_B47C20O1_AA_1 | 1-WBA-D9 | Invalid | It is permissible that 1 % of the total number of measurements exceeds the used span gas by up to a factor of two. - CO2 (span gas < perc. measurement points <= (2 * span gas)) <= 1% Value: 1.4% |
| 2021-STL-LTR-100339133N | IP_EU_G21_B57D30O0_AA_1 | 1-WBA-D13 | Invalid | The total trip distance as calculated from the corrected GPS data shall deviate by no more than 4 % from the reference. Value: 100000 % |

D. ISC activities performed by the granting type-approval authority in the previous year (2019):

(5) Information gathering and risk assessment:

The information gathering and risk assessment was carried out on the basis of:

- BMW's Emission Warranty Information Report (EWIR). This report details:
 - Emission related warranty claims.
 - Frequency and nature of faults for emission related components.
 - Numbers of vehicles affected by each fault.
- RDE emission performance of the vehicle type-approvals issued from 1 January 2019 onwards.
 - Provided the highest emitting vehicles during type-approval.
 - Combined with the minimum mileage of 15000km required for ISC vehicle selection these were seen as high risk vehicles.
- Exhaust aftertreatment system architecture.
 - The complexity of the exhaust aftertreatment architecture added to the risk.
- Sales volumes.
 - The most significant aspect to the risk assessment.

(6) ISC testing (including planning and selection of families tested and final results of tests):

Based on the criteria established during the information gathering process, NSAI selected the following ISC families for ISC testing:

- 1-WBA-D5
- 1-WBA-O7
- 24-WBA-DH9

These ISC families were among the highest in sales volumes and were representative of all emission related warranty claims.

These ISC families represented the highest pollutant emitting vehicles type-approved.

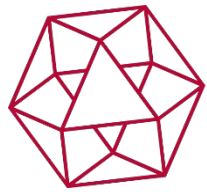
These ISC families contained complex exhaust after-treatment architecture.

Annex II of Commission Regulation (EU) 2017/1151 in its current form ((EU) 2018/1832), defines an ISC family as the PEMS (Portable Emission Measurement System) test family. The PEMS test family is itself defined in Annex IIIA, Appendix 7 of Commission Regulation (EU) 2017/1151 in its current form ((EU) 2018/1832), and consists of two administrative criterion (GTAA, Manufacturer) and eleven technical criterion.

For the three ISC families selected by NSAI the ISC Family parameters are tabulated as follows:

1-WBA-D5

| | |
|----------------------------------|-----------|
| Family Parameters: | 1-WBA-D5 |
| Approval authority: | NSAI |
| Manufacturer: | BMW |
| Propulsion type: | ICE |
| Fuel type: | diesel |
| Combustion process: | 4-stroke |
| Number of Cylinders: | 4 |
| Configuration of cylinder block: | in-line |
| max. Engine volume: | 1995 |
| Method of fuel injection: | direct |
| Cooling system: | water |
| Aspiration charger type: | single |
| Exhaust aftertreatment: | NSC + SCR |
| EGR: | HP |



NSAI

Vehicle 1



Vehicle 2



Vehicle 3



1-WBA-O7

| | |
|----------------------------------|-----------------|
| Family Parameters: | 1-WBA-O7 |
| Approval authority: | NSAI |
| Manufacturer: | BMW |
| Propulsion type: | ICE |
| Fuel type: | gasoline |
| Combustion process: | 4-stroke |
| Number of Cylinders: | 3 |
| Configuration of cylinder block: | in-line |
| max. Engine volume: | 1499 |
| Method of fuel injection: | direct |
| Cooling system: | water |
| Aspiration charger type: | single |
| Exhaust aftertreatment: | 3 way cat + OPF |
| EGR: | No |

Vehicle 1



Vehicle 2



Vehicle 3



24-WBA-DH9

| | |
|----------------------------------|------------|
| Family Parameters: | 24-WBA-DH9 |
| Approval authority: | NSAI |
| Manufacturer: | BMW |
| Propulsion type: | NOVC-HEV |
| Fuel type: | Diesel |
| Combustion process: | 4-stroke |
| Number of Cylinders: | 4 |
| Configuration of cylinder block: | in-line |
| max. Engine volume: | 1995 |
| Method of fuel injection: | direct |
| Cooling system: | water |
| Aspiration charger type: | Multi |
| Exhaust aftertreatment: | NSC + SCR |
| EGR: | HD |

Vehicle 1



Vehicle 2



Vehicle 3





Vehicle selection:

DEKRA Automobil GmbH sourced these vehicles from their respective ISC Family for vehicle owner interview and examination as per the established ISC rules.

For each selected vehicle the following documentation has been provided:

- Vehicle COC
- Vehicle Owner Interview as per Appendix 1 of the ISC Annex.
- Vehicle Examination and Maintenance report as per Appendix 1 of the ISC Annex.

Final results of the WLTP Type 1 and RDE tests:

ISC Family 1-WBA-D5

Vehicle 1

Type / Variant / Version: 3K / 8H71 / DAW50000

Summary of test results from DEKRA Automobil GmbH test report: TR 202150720_FH02175

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | |
|----------------------------------|-----------------------|-----------------------|--|---|--|--|---|--|
| Pollutants | Limit (Petrol) | Limit (Diesel) | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* |
| CO (mg/km): | 1000 | 500 | 43.45 | No | No | 19.6 | No | No |
| THC (mg/km): | 100 | -- | -- | -- | -- | -- | -- | -- |
| NMHC (mg/km): | 68 | -- | -- | -- | -- | -- | -- | -- |
| NOx (mg/km): | 60 | 80 | 37.45 | No | No | 32.4 | No | No |
| THC+NOx (mg/km): | -- | 170 | 56.26 | No | No | -- | -- | -- |
| PM (#/km): | 4.5 | 4.5 | 0.16 | No | No | -- | -- | -- |
| PN: | 6.00×10^{11} | 6.00×10^{11} | 1.25×10^9 | No | No | 2.25×10^9 | No | No |
| * PEL = Pollutant Emission Limit | | | | | | | | |

Vehicle 2

Type / Variant / Version: 3K / 8H71 / DAW50000

Summary of test results from DEKRA Automobil GmbH test report: 202150720_FH15826

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | |
|----------------------------------|-----------------------|-----------------------|--|---|--|--|---|--|
| Pollutants | Limit (Petrol) | Limit (Diesel) | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* |
| CO (mg/km): | 1000 | 500 | 42.93 | No | No | 0.0 | No | No |
| THC (mg/km): | 100 | -- | -- | -- | -- | -- | -- | -- |
| NMHC (mg/km): | 68 | -- | -- | -- | -- | -- | -- | -- |
| NOx (mg/km): | 60 | 80 | 51.53 | No | No | 52.9 | No | No |
| THC+NOx (mg/km): | -- | 170 | 69.58 | No | No | -- | -- | -- |
| PM (#/km): | 4.5 | 4.5 | 0.06 | No | No | -- | -- | -- |
| PN: | 6.00×10^{11} | 6.00×10^{11} | 8.42×10^9 | No | No | 1.63×10^9 | No | No |
| * PEL = Pollutant Emission Limit | | | | | | | | |

Vehicle 3

Type / Variant / Version: 3K / 8H71 / DAW50000

Summary of test results from DEKRA Automobil GmbH test report: 202150720_FH17831

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | | |
|------------------|-----------------------|-----------------------|--------------------------|--|---|-------------------------------------|------------------------------------|--|---|
| Pollutants | Limit (Petrol) | Limit (Diesel) | ISC Values | Intermediate Outlier <i>ISC Value \geq 1.3 x PEL *</i> | Extreme Outlier <i>ISC Value \geq 2.5 x PEL *</i> | ISC Values <i>RDE Cold Start</i> | ISC Values <i>RDE Hot Start</i> | Intermediate Outlier <i>ISC Value \geq 1.3 x PEL *</i> | Extreme Outlier <i>ISC Value \geq 2.5 x PEL *</i> |
| CO (mg/km): | 1000 | 500 | 27.54 | No | No | 16.1 | 29.4 | No | No |
| THC (mg/km): | 100 | -- | -- | -- | -- | -- | -- | -- | -- |
| NMHC (mg/km): | 68 | -- | -- | -- | -- | -- | -- | -- | -- |
| NOx (mg/km): | 60 | 80 | 24.93 | No | No | 53.6 | 42.9 | No | No |
| THC+NOx (mg/km): | -- | 170 | 46.82 | No | No | -- | -- | -- | -- |
| PM (mg/km): | 4.5 | 4.5 | 0.02 | No | No | -- | -- | -- | -- |
| PN (#/km): | 6.00x10 ¹¹ | 6.00x10 ¹¹ | 1.10x10 ¹¹ | No | No | 1.89x10 ¹⁰ | 5.13x10 ¹⁰ | No | No |

* PEL = Pollutant Emission Limit

ISC Family 1-WBA-O7

Vehicle 1

Type / Variant / Version: F1H / 7K31 / DAW500ZS

Summary of test results from DEKRA Automobil GmbH test report: 202150720_7F03395

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | |
|----------------------------------|-----------------------|-----------------------|---|---|--|---|---|---|
| Pollutants | Limit (Petrol) | Limit (Diesel) | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* |
| CO (mg/km): | 1000 | 500 | 298.35 | No | No | 262.7 | No | No |
| THC (mg/km): | 100 | -- | 13.10 | No | No | -- | -- | -- |
| NMHC (mg/km): | 68 | -- | 10.09 | No | No | -- | -- | -- |
| NOx (mg/km): | 60 | 80 | 9.16 | No | No | 9.3 | No | No |
| THC+NOx (mg/km): | -- | 170 | 22.26 | -- | -- | -- | -- | -- |
| PM (#/km): | 4.5 | 4.5 | 0.15 | No | No | -- | -- | -- |
| PN: | 6.00x10 ¹¹ | 6.00x10 ¹¹ | 1.65x10 ⁹ | No | No | 1.31x10 ⁹ | No | No |
| * PEL = Pollutant Emission Limit | | | | | | | | |

Vehicle 2

Type / Variant / Version: F1H / 7K31 / DAW500KS

Summary of test results from DEKRA Automobil GmbH test report: 202150720_7F10612

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | |
|----------------------------------|-----------------------|-----------------------|--|---|--|--|---|---|
| Pollutants | Limit (Petrol) | Limit (Diesel) | ISC Values <i>Compared against limit values</i> | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* | ISC Values <i>Compared against limit values</i> | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* |
| CO (mg/km): | 1000 | 500 | 236.80 | No | No | 250.5 | No | No |
| THC (mg/km): | 100 | -- | 11.66 | No | No | -- | -- | -- |
| NMHC (mg/km): | 68 | -- | 8.72 | No | No | -- | -- | -- |
| NOx (mg/km): | 60 | 80 | 12.72 | No | No | 8.4 | No | No |
| THC+NOx (mg/km): | -- | 170 | 24.38 | -- | -- | -- | -- | -- |
| PM (mg/km): | 4.5 | 4.5 | 0.17 | No | No | -- | -- | -- |
| PN (#/km): | 6.00x10 ¹¹ | 6.00x10 ¹¹ | 7.99x10 ⁸ | No | No | 4.12x10 ⁸ | No | No |
| * PEL = Pollutant Emission Limit | | | | | | | | |

Vehicle 3

Type / Variant / Version: F1H / 7K31 / DAW500LG

Summary of test results from DEKRA Automobil GmbH test report: 202150720_5R08436

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | | |
|----------------------------------|-----------------------|-----------------------|--------------------------|---|--|---|------------------------------------|---|--|
| Pollutants | Limit (Petrol) | Limit (Diesel) | ISC Values | Intermediate Outlier <i>ISC Value \geq 1.3 x PEL *</i> | Extreme Outlier <i>ISC Value \geq 2.5 x PEL *</i> | ISC Values <i>RDE Cold Start</i> | ISC Values <i>RDE Hot Start</i> | Intermediate Outlier <i>ISC Value \geq 1.3 x PEL *</i> | Extreme Outlier <i>ISC Value \geq 2.5 x PEL *</i> |
| CO (mg/km): | 1000 | 500 | 266.45 | No | No | 223.2 | 211.5 | No | No |
| THC (mg/km): | 100 | -- | 12.51 | No | No | -- | -- | -- | -- |
| NMHC (mg/km): | 68 | -- | 9.42 | No | No | -- | -- | -- | -- |
| NOx (mg/km): | 60 | 80 | 11.37 | No | No | 4.3 | 1.2 | No | No |
| THC+NOx (mg/km): | -- | 170 | -- | -- | -- | -- | -- | -- | -- |
| PM (mg/km): | 4.5 | 4.5 | 0.16 | No | No | -- | -- | -- | -- |
| PN (#/km): | 6.00x10 ¹¹ | 6.00x10 ¹¹ | 1.54x10 ⁹ | No | No | 1.24x10 ⁹ | 3.88x10 ⁸ | No | No |
| * PEL = Pollutant Emission Limit | | | | | | | | | |

ISC Family 24-WBA-DH9

Vehicle 1

Type / Variant / Version: G5K / 31DX / DAW50000

Summary of test results from DEKRA Automobil GmbH test report: 202150720_7F03395

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | |
|------------------|-----------------------|-----------------------|--|---|--|--|---|--|
| Pollutants | Limit (Petrol) | Limit (Diesel) | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* |
| CO (mg/km): | 1000 | 500 | 85.94 | No | No | 45.9 | No | No |
| THC (mg/km): | 100 | -- | -- | -- | -- | -- | -- | -- |
| NMHC (mg/km): | 68 | -- | -- | -- | -- | -- | -- | -- |
| NOx (mg/km): | 60 | 80 | 33.66 | No | No | 35.2 | No | No |
| THC+NOx (mg/km): | -- | 170 | 70.05 | No | No | -- | -- | -- |
| PM (mg/km): | 4.5 | 4.5 | 0.24 | No | No | -- | -- | -- |
| PN (#/km): | 6.00x10 ¹¹ | 6.00x10 ¹¹ | 6.26x10 ⁸ | No | No | 3.69x10 ⁹ | No | No |

* PEL = Pollutant Emission Limit

Vehicle 2

Type / Variant / Version: G5K / 11DX / DAW5000M

Summary of test results from DEKRA Automobil GmbH test report: 202150720_CD58514

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | | |
|------------------|-----------------------|-----------------------|--------------------------|---|--|-------------------------------------|------------------------------------|---|--|
| Pollutants | Limit (Petrol) | Limit (Diesel) | ISC Values | Intermediate Outlier <i>ISC Value \geq 1.3 x PEL*</i> | Extreme Outlier <i>ISC Value \geq 2.5 x PEL*</i> | ISC Values <i>RDE Cold Start</i> | ISC Values <i>RDE Hot Start</i> | Intermediate Outlier <i>ISC Value \geq 1.3 x PEL*</i> | Extreme Outlier <i>ISC Value \geq 2.5 x PEL*</i> |
| CO (mg/km): | 1000 | 500 | 55.63 | No | No | 46.5 | 34.9 | No | No |
| THC (mg/km): | 100 | -- | -- | -- | -- | -- | -- | -- | -- |
| NMHC (mg/km): | 68 | -- | -- | -- | -- | -- | -- | -- | -- |
| NOx (mg/km): | 60 | 80 | 26.03 | No | No | 11.8 | 20.3 | No | No |
| THC+NOx (mg/km): | -- | 170 | 59.41 | No | No | -- | -- | -- | -- |
| PM (mg/km): | 4.5 | 4.5 | 0.32 | No | No | -- | -- | -- | -- |
| PN (#/km): | 6.00x10 ¹¹ | 6.00x10 ¹¹ | 2.23x10 ⁰⁹ | No | No | 7.24x10 ⁰⁸ | 4.58x10 ⁰⁸ | No | No |

* PEL = Pollutant Emission Limit

Vehicle 2

Type / Variant / Version: G5K / 11DX / DAW5000M

Summary of test results from DEKRA Automobil GmbH test report: 202150720_CD58989

| Emission Limits | | | WLTP Type 1 Test Results | | | RDE Test Results | | |
|----------------------------------|------------------------------|------------------------------|---|---|--|---|---|---|
| Pollutants | Limit (Petrol) (mg/km) | Limit (Diesel) (mg/km) | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* | ISC Values Compared against limit values | Intermediate Outlier ISC Value \geq 1.3 x PEL* | Extreme Outlier ISC Value \geq 2.5 x PEL* |
| CO: | 1000 | 500 | 118.06 | No | No | 43.3 | No | No |
| THC: | 100 | -- | -- | -- | -- | -- | -- | -- |
| NMHC: | 68 | -- | -- | -- | -- | -- | -- | -- |
| NOx: | 60 | 80 | 36.73 | No | No | 31.6 | No | No |
| THC+NOx: | -- | 170 | 72.22 | No | No | -- | -- | -- |
| PM: | 4.5 | 4.5 | 0.16 | No | No | -- | -- | -- |
| PN: | 6.00×10^{11} | 6.00×10^{11} | 3.99×10^8 | No | No | 1.31×10^9 | No | No |
| * PEL = Pollutant Emission Limit | | | | | | | | |

(7) Detailed investigations:

As per item 6.1 of the ISC Annex, NSAI carried out Compliance Assessment with BMW at the conclusion of the ISC testing. The following was the outcome from the Compliance Assessment:

- All vehicles passed the WLTP Type 1 tests and RDE tests.
- One vehicle from each ISC family was subjected to an additional RDE hot test.
- All vehicles subjected to an additional RDE hot test passed this additional test.
- No intermediate or extreme outliers were detected in either sample.
- No remedial measures were detected.

(8) Remedial measures:

Based on the ISC test results of all vehicles and the Compliance Assessment carried out with BMW, no remedial measures were detected.

As all selected vehicles passed all ISC tests with no detection of the need to apply remedial measures, both ISC families were found to be ISC compliant. As per the established ISC rules, on foot of the Compliance Assessment with BMW, NSAI closed both Statistical Folders on 15 March 2022.

- E. Assessment of the yearly expected emissions decrease due to any ISC remedial measures: **Not Applicable.**
- F. Lessons learned (including for performance of instruments used):
- No instrumentation difficulties were reported by DEKRA Automobil GmbH.
 - Availability of vehicles.
 - Availability of test facilities.
- G. Report of other invalid tests: **Not applicable.**

Statistical analysis:

| ISC Family: 1-WBA-D5 | | | ISC Family: 1-WBA-O7 | | | ISC Family: 24-WBA-DH9 | | |
|--|-------------------------|-----------------|--|-------------------------|-----------------|--|-------------------------|-----------------|
| Vehicle | WLTP Type 1 Test Result | RDE Test Result | Vehicle | WLTP Type 1 Test Result | RDE Test Result | Vehicle | WLTP Type 1 Test Result | RDE Test Result |
| Vehicle 1: | Pass | Pass | Vehicle 1: | Pass | Pass | Vehicle 1: | Pass | Pass |
| Vehicle 2: | Pass | Pass | Vehicle 2: | Pass | Pass | Vehicle 2: | Pass | Pass |
| Vehicle 3: | Pass | Pass | Vehicle 3: | Pass | Pass | Vehicle 3: | Pass | Pass |
| | | | | | | | | |
| *Intermediate outliers: | 0 | | *Intermediate outliers: | 0 | | *Intermediate outliers: | 0 | |
| **Extreme outliers: | 0 | | **Extreme outliers: | 0 | | **Extreme outliers: | 0 | |
| Sample size “n”: | 3 | | Sample size “n”: | 3 | | Sample size “n”: | 3 | |
| “ f ” count: | 0 | | “ f ” count: | 0 | | “ f ” count: | 0 | |
| * = The presence of two intermediate outliers in a sample shall lead to a fail of the sample | | | | | | | | |
| ** = The presence of one extreme outlier in a sample shall lead to a fail of the sample | | | | | | | | |
| ISC sample family 1-WBA-D5 | | | ISC sample family 1-WBA-O7 | | | ISC sample family 24-WBA-DH9 | | |
| Overall result: Pass: ✓ Fail: <input type="checkbox"/> | | | Overall result: Pass: ✓ Fail: <input type="checkbox"/> | | | Overall result: Pass: ✓ Fail: <input type="checkbox"/> | | |

ISC Family: 1-WBA-D5 WLTP Statistical Result

Figure B.2.a

Decision chart for the statistical procedure for vehicles type approved until 31 December 2019 (where 'UND' means undecided)

| | | | | | | | | | | | |
|-------------------------|----|--------------------------|---|---|---|---|---|---|---|---|----|
| Failed result count "f" | 10 | | | | | | | | | | |
| | 9 | | | | | | | | | | |
| | 8 | | | | | | | | | | |
| | 7 | | | | | | | | | | |
| | 6 | | | | | | | | | | |
| | 5 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
| | 3 | | | | | | | | | | |
| | 2 | | | | | | | | | | |
| | 1 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | | Cumulative sample size n | | | | | | | | | |

| | |
|--|-----------------|
| | Pass |
| | UND (Undecided) |
| | Fail |

ISC Family: 1-WBA-D5 RDE Statistical Result

Figure B.2.a

Decision chart for the statistical procedure for vehicles type approved until 31 December 2019 (where 'UND' means undecided)

| | | | | | | | | | | | |
|--------------------------|----|---|---|---|---|---|---|---|---|---|----|
| Failed result count "f" | 10 | | | | | | | | | | |
| | 9 | | | | | | | | | | |
| | 8 | | | | | | | | | | |
| | 7 | | | | | | | | | | |
| | 6 | | | | | | | | | | |
| | 5 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
| | 3 | | | | | | | | | | |
| | 2 | | | | | | | | | | |
| | 1 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Cumulative sample size n | | | | | | | | | | | |

| | |
|--|-----------------|
| | Pass |
| | UND (Undecided) |
| | Fail |

ISC Family: 1-WBA-O7 WLTP Statistical Result

Figure B.2.a

Decision chart for the statistical procedure for vehicles type approved until 31 December 2019 (where 'UND' means undecided)

| | | | | | | | | | | | |
|--------------------------|----|---|---|---|---|---|---|---|---|---|----|
| Failed result count "f" | 10 | | | | | | | | | | |
| | 9 | | | | | | | | | | |
| | 8 | | | | | | | | | | |
| | 7 | | | | | | | | | | |
| | 6 | | | | | | | | | | |
| | 5 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
| | 3 | | | | | | | | | | |
| | 2 | | | | | | | | | | |
| | 1 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Cumulative sample size n | | | | | | | | | | | |

| | |
|--|-----------------|
| | Pass |
| | UND (Undecided) |
| | Fail |

ISC Family: 1-WBA-O7 RDE Statistical Result

Figure B.2.a

Decision chart for the statistical procedure for vehicles type approved until 31 December 2019 (where 'UND' means undecided)

| | | | | | | | | | | | |
|--------------------------|----|---|---|---|---|---|---|---|---|---|----|
| Failed result count "f" | 10 | | | | | | | | | | |
| | 9 | | | | | | | | | | |
| | 8 | | | | | | | | | | |
| | 7 | | | | | | | | | | |
| | 6 | | | | | | | | | | |
| | 5 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
| | 3 | | | | | | | | | | |
| | 2 | | | | | | | | | | |
| | 1 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Cumulative sample size n | | | | | | | | | | | |

| | |
|--|-----------------|
| | Pass |
| | UND (Undecided) |
| | Fail |

ISC Family: 24-WBA-DH9 WLTP Statistical Result

Figure B.2.a

Decision chart for the statistical procedure for vehicles type approved until 31 December 2019 (where 'UND' means undecided)

| | | | | | | | | | | | |
|--------------------------|----|---|---|---|---|---|---|---|---|---|----|
| Failed result count "f" | 10 | | | | | | | | | | |
| | 9 | | | | | | | | | | |
| | 8 | | | | | | | | | | |
| | 7 | | | | | | | | | | |
| | 6 | | | | | | | | | | |
| | 5 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
| | 3 | | | | | | | | | | |
| | 2 | | | | | | | | | | |
| | 1 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Cumulative sample size n | | | | | | | | | | | |

| | |
|--|-----------------|
| | Pass |
| | UND (Undecided) |
| | Fail |

ISC Family: 24-WBA-DH9 RDE Statistical Result

Figure B.2.a

Decision chart for the statistical procedure for vehicles type approved until 31 December 2019 (where 'UND' means undecided)

| | | | | | | | | | | | |
|-------------------------|----|--------------------------|---|---|---|---|---|---|---|---|----|
| Failed result count "f" | 10 | | | | | | | | | | |
| | 9 | | | | | | | | | | |
| | 8 | | | | | | | | | | |
| | 7 | | | | | | | | | | |
| | 6 | | | | | | | | | | |
| | 5 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
| | 3 | | | | | | | | | | |
| | 2 | | | | | | | | | | |
| | 1 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | | Cumulative sample size n | | | | | | | | | |

| | |
|--|-----------------|
| | Pass |
| | UND (Undecided) |
| | Fail |



Supporting documentation:

- Commission Regulation (EU) 2017/1151 in its current form ((EU) 2018/1832).
- DEKRA Automobil GmbH ISC test reports:
 - TR 202150720_FH02175
 - TR 202150720_FH15826
 - TR 202150720_FH17831
 - TR 202150720_7F03395
 - TR 202150720_7F10612
 - TR 202150720_5R08436
- BMW EWIR (Emission Warranty Information Report) 2020.
- Transparency Lists for all ISC families.
- Certificates of Conformity (COC) for each vehicle.
- Vehicle owner interviews for each vehicle.
- Vehicle examination and maintenance reports for each vehicle.



- TNO test reports:
 - 2020-STL-LTR-100335031R
 - 2021-STL-LTR-100342433N
 - 2021-STL-LTR-100342008R
 - 2020-STL-LTR-100336348
 - 2020-STL-LTR-100336348
 - 2020-STL-LTR-100336348
 - 2021-STL-LTR-100339133N
- EU exhaust emission type-approvals:
 - e24*715/2007*2018/1832DG*0486*03
 - e24*715/2007*2018/1832DG*1013*00
 - e24*715/2007*2018/1832DG*1084*00
 - e24*715/2007*2018/1832DG*1156*00
 - e24*715/2007*2018/1832DG*1157*00