



NSAI Annual In Service Conformity (ISC) Report of its finalised ISC investigations for 2022

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) 2020/49}.

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 Commission Regulation (EU) 2017/1151 in its current form ((EU) 2020/49), 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 vehicle selection and ISC testing.

This report is NSAI's third 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) 2020/49}. There are five steps involved 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) 2020/49}.

ISC Period	Manufacturer
2022	BMW

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, NSAI selected two ISC families consisting of three vehicles per family.
2. In total fourteen vehicle tests were carried out on six 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 19.07.2022 and 01.12.2022.
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.
- Both 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, NSAI closed both Statistical Folders on 14 December 2022.

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

As per the ISC established rules for vehicle manufacturers, BMW performed its vehicle manufacturer ISC activities.

(1) Information gathering by the manufacturer:

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

For 2022 the external service provider was Fa. FAKT GmbH.

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.



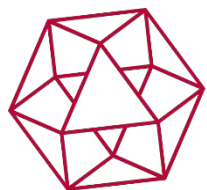
NSAI

(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 2022:

Vehicle										test data										final test results										Evaluation of Results	
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	Date of Test (DD.MM.YYYY)	Test Facility	Fuel Petrol or Diesel	Certified Standard	reported to authority	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NMHC (mg/km)	PM (mg/km)	PN (#/km)	Specific Vehicle pass / fail									
1-WBA-07	2 (141880)	1	1	E30A15A	MINI One	Man.	Germany	17.06.2020	31.744	30.09.2022	Fak	Petrol	EU6d	11.11.2022	242.9	9.7	7.5	8.8	0.0	0.08	7.94E+09	PASS									
			2	E30A15A	BMW 118i	Aut.	Germany	31.01.2020	31.000	05.10.2022	Fak	Petrol	EU6d	11.11.2022	234.7	7.4	5.5	9.1	0.0	0.22	8.02E+09	PASS									
			3	E30A15A	BMW 118i	Aut.	Germany	25.02.2020	21.155	11.10.2022	Fak	Petrol	EU6d	11.11.2022	297.8	13.8	11.1	10.5	0.0	0.44	8.91E+09	PASS									
1-WBA-011	1 (14271)	1	1	B57D00C	BMW X5 M50d	Aut.	Germany	25.02.2020	27.229	11.05.2022	Fak	Diesel	EU6d	08.10.2022	188.2	0.0	0.0	48.9	124.0	0.06	0.00E+00	PASS									
			2	B57D00C	BMW X5 M50d	Aut.	Germany	24.03.2020	28.992	01.09.2022	Fak	Diesel	EU6d	08.10.2022	319.2	0.0	0.0	60.7	140.2	0.39	5.41E+11	PASS									
			3	B57T	BMW 540i xDrive	Aut.	Germany	29.05.2020	30.005	23.09.2022	Fak	Diesel	EU6d	08.10.2022	86.1	0.0	0.0	35.1	64.3	0.40	4.77E+11	PASS									
1-WBA-013	1 (25903)	1	1	B57D00A	BMW X4 xDrive30d	Aut.	Germany	18.07.2020	30.949	26.08.2022	Fak	Diesel	EU6d	11.11.2022	167.3	0.0	0.0	17.0	55.7	0.05	0.00E+00	PASS									
			2	B57D	BMW X5 xDrive 30d	Aut.	Germany	04.06.2020	55.959	21.10.2022	Fak	Diesel	EU6d	11.11.2022	224.4	0.0	0.0	24.5	72.3	0.21	1.53E+10	PASS									
			3	B57D	BMW x1 xDrive 30d	Aut.	Germany	12.03.2020	40.899	07.10.2022	Fak	Diesel	EU6d	11.11.2022	154.2	0.0	0.0	27.1	67.0	0.34	1.85E+11	PASS									
1-WBA-09	1 (52098)	1	1	B47C00B	BMW 320d	Aut.	Germany	10.02.2020	41.742	30.08.2022	Fak	Diesel	EU6d	11.11.2022	137.8	0.0	0.0	37.7	72.8	0.15	7.12E+08	PASS									
			2	B47C00B	BMW 318d	Aut.	Germany	24.01.2020	43.519	26.10.2022	Fak	Diesel	EU6d	11.11.2022	126.6	0.0	0.0	34.3	59.2	0.08	3.54E+08	PASS									
			3	B47C00A	BMW 218d Coupe	Man.	Germany	22.02.2020	43.231	26.09.2022	Fak	Diesel	EU6d	08.10.2022	66.8	0.0	0.0	33.0	41.7	0.18	4.18E+10	PASS									
1-WBA-05	1 (voluntary) (15111)	-	1	N40B44D	BMW M550i	Aut.	Germany	29.01.2020	96.310	26.09.2022	Fak	Petrol	EU6d	08.10.2022	243.6	14.7	11.4	10.4	0.0	0.30	1.29E+10	PASS									
1-WBA-011	1 (voluntary) (1248)	-	1	B40A02F	MINI Cooper S	Man.	Germany	10.09.2020	19.991	23.02.2022	Fak	Petrol	EU6d	11.11.2022	358.3	13.9	11.3	20.2	0.0	0.70	1.02E+10	PASS									
1-WBA-08	1 (55864)	1	1	B40A01A	MINI Cooper S	Man.	Germany	04.09.2020	22.395	08.09.2022	Fak	Petrol	EU6d	11.11.2022	248.4	3.3	1.5	7.7	0.0	0.25	2.07E+09	PASS									
			2	B40B00B	BMW 330i	Aut.	Germany	24.01.2020	30.592	26.10.2022	Fak	Petrol	EU6d	11.11.2022	252.2	26.7	23.2	13.7	0.0	0.11	7.44E+09	PASS									
			3	B50B00A	BMW 440i xDrive	Aut.	Germany	12.02.2020	31.380	22.09.2022	Fak	Petrol	EU6d	15.02.2023	183.5	2.8	0.0	8.3	0.0	0.93	9.30E+09	PASS									
1-WBA-09	1 (11027)	1	1	B50B00A	BMW M540i xDrive	Aut.	Germany	10.09.2020	199.37	08.11.2022	Fak	Petrol	EU6d	15.02.2023	283.4	20.4	17.0	10.7	0.0	0.30	1.24E+09	PASS									
			2	B50B00A	BMW X4M	Aut.	Germany	08.02.2020	71.309	03.11.2022	Fak	Petrol	EU6d	11.11.2022	145.2	10.4	8.3	8.8	0.0	0.32	1.87E+10	PASS									
			3	B50B00A	BMW X3M	Aut.	Germany	14.01.2020	88.970	26.10.2022	Fak	Petrol	EU6d	11.11.2022	158.5	11.1	8.8	7.8	0.0	0.32	1.74E+10	PASS									
1-WBS-010	1 (8945)	-	1	B50B00A	BMW X4M	Aut.	Germany	08.02.2020	71.309	03.11.2022	Fak	Petrol	EU6d	11.11.2022	145.2	10.4	8.3	8.8	0.0	0.32	1.87E+10	PASS									
24-WBA-022	1 (37595)	1	1	B37D15	BMW 216d Active Tourer	Man.	Germany	23.07.2020	62.420	22.09.2022	Fak	Petrol	EU6d	23.08.2022	90.8	0.0	0.0	32.0	50.6	0.17	3.49E+10	PASS									
			2	B47C001	BMW X2 xDrive 18d	Aut.	Germany	15.12.2020	15.525	05.05.2022	Fak	Diesel	EU6d	23.08.2022	43.9	0.0	0.0	17.8	47.2	0.10	1.97E+09	PASS									
			3	B47C001	BMW X2 xDrive 20d	Aut.	Germany	29.06.2020	199.25	05.05.2022	Fak	Diesel	EU6d	23.08.2022	43.9	0.0	0.0	21.0	59.7	0.18	1.87E+09	PASS									
24-WBA-029	1 (86375)	1	1	B47C00B	BMW X1 xDrive 18d	Aut.	Germany	21.09.2020	79.880	13.06.2022	Fak	Diesel	EU6d	23.08.2022	49.3	0.0	0.0	18.3	47.8	0.09	1.27E+08	PASS									
			2	B47C00B	BMW X1 xDrive 18d	Aut.	Germany	19.05.2020	41.775	21.10.2022	Fak	Petrol	EU6d	11.11.2022	176.9	19.0	16.3	13.9	0.0	0.11	1.09E+10	PASS									
			3	B47C00B	BMW X1 xDrive 18d	Aut.	Germany	10.03.2020	37.707	27.10.2022	Fak	Diesel	EU6d	11.11.2022	87.3	0.0	0.0	34.9	67.9	0.14	4.79E+09	PASS									
24-WBA-017	1 (voluntary) (40301)	1	1	B40B00A	BMW X3 xDrive30d	Aut.	Germany	19.05.2020	41.775	08.04.2022	Fak	Diesel	EU6d	11.11.2022	135.1	0.0	0.0	25.0	47.9	0.87	3.47E+09	PASS									
			2	B40B00A	BMW X3 30d	Aut.	Germany	12.11.2020	21.144	07.12.2022	Fak	Diesel	EU6d	11.11.2022	195.4	0.0	0.0	40.8	67.4	0.47	1.27E+09	PASS									
			3	B40B00A	BMW 220d xDrive A	Aut.	Germany	04.11.2020	15.786	24.02.2022	Fak	Diesel	EU6d	17.05.2022	94.2	0.0	0.0	24.5	60.2	0.12	8.34E+08	PASS									
24-WBA-013	1 (55078)	1	1	B47C00B	BMW X2 xDrive20d	Aut.	Germany	05.10.2020	29.645	10.05.2022	Fak	Diesel	EU6d	17.05.2022	80.9	0.0	0.0	22.7	62.3	0.19	3.07E+10	PASS									
			2	B47C00B	BMW X2 xDrive20d	Aut.	Germany	18.11.2020	16.708	10.05.2022	Fak	Diesel	EU6d	17.05.2022	128.1	0.0	0.0	20.4	55.4	0.15	2.63E+09	PASS									
			3	B47C00B	BMW X2 xDrive20d	Aut.	Germany	27.01.2020	40.864	27.10.2022	Fak	Diesel	EU6d	11.11.2022	106.9	0.0	0.0	36.9	83.6	0.17	5.14E+08	PASS									
24-WBA-019	1 (10307)	1	1	B47C00B	BMW 320d xDrive	Aut.	Germany	27.01.2020	97.992	25.11.2022	Fak	Petrol	EU6d	18.01.2023	221.0	16.5	14.7	15.5	0.0	0.96	9.19E+08	PASS									
			2	B40A15F	MINI Countryman Cooper	Man.	Germany	27.10.2020	88.644	07.12.2022	Fak	Petrol	EU6d	18.01.2023	238.9	20.5	18.8	13.4	0.0	0.30	1.29E+09	PASS									
			3	B40B00A	BMW X3 xDrive	Aut.	Germany	26.11.2020	22.025	23.02.2022	Fak	Petrol	EU6d	11.11.2022	198.3	12.8	11.0	10.3	0.0	0.17	5.03E+09	PASS									
24-WBA-030	1 (28807)	1	1	B40B00A	BMW 220i	Aut.	Germany	09.11.2020	21.215	12.10.2022	Fak	Petrol	EU6d	11.11.2022	180.3	10.2	8.9	10.0	0.0	0.11	5.73E+08	PASS									
			2	B40A02F	BMW 125i	Aut.	Germany	01.12.2020	26.343	26.10.2022	Fak	Petrol	EU6d	11.11.2022	127.1	9.7	7.7	11.5	0.0	1.90	5.10E+08	PASS									
			3	B40E	BMW M135i xDrive	Aut.	Germany	03.11.2020	27.022	21.10.2022	Fak	Petrol	EU6d	11.11.2022	89.5	12.8	10.8	13.1	0.0	0.53	2.79E+09	PASS									
24-WBA-038	1 (5615)	1	1	B40E	BMW M125i	Aut.	Germany	16.11.2020	36.132	20.10.2022	Fak	Petrol	EU6d	11.11.2022	149.1	10.9	9.4	11.9	0.0	0.96	1.28E+11	PASS									
			2	B40E	BMW X5 45e xDrive	Aut.	Germany	29.08.2020	20.959	25.10.2022	Fak	Petrol	EU6d	11.11.2022	153.9	8.3	7.0	9.1	0.0	0.59	3.94E+10	PASS									
			3	B57D00B	BMW M540d xDrive A	Aut.	Germany	21.07.2020	25.779	24.09.2022	Fak	Diesel	EU6d	08.10.2022	148.0	0.0	0.0	47.3	59.2	0.40	3.09E+09	PASS									



NSAI

Production Year 2019:

Vehicle										test data					final test results								Evaluation of Results	
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 (DD.MM.YYYY)	Test Facility	Fuel Petrol or Diesel	Certified Standard	reported to authority (DD.MM.YYYY)	Test Result	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)	Exclusion	Specific Vehicle pass / fail
1-WBA-07	1 (209237)	3	1	B38A15A	MINI One	Man.	Germany	14.05.2019	20.596	16.02.2022	Fakt	Petrol	EU6d	02.03.2022		292,8	12,4	9,3	6,7	0,0	0,20	7,13E+09		PASS
			2	B38A15A	MINI Clubman One	Man.	Germany	03.01.2019	44.206	16.02.2022	Fakt	Petrol	EU6d	02.03.2022		283,5	10,4	8,1	9,8	0,0	0,21	1,32E+10		PASS
			3	B38A15A	MINI ONE	Man.	Germany	09.01.2019	33.116	22.02.2022	Fakt	Petrol	EU6d	02.03.2022		258,4	10,3	8,3	10,0	0,0	0,14	5,71E+10		PASS
1-WBA-014	1 (42004)	1	2	B38B15A	BMW 218i	Man.	Germany	06.05.2019	22.822	11.05.2022	Fakt	Petrol	EU6d	20.10.2022		269,0	12,3	10,1	8,2	0,0	0,20	7,46E+10		PASS
			3	B38B15A	BMW 118i	Man.	Germany	29.03.2019	18.733	13.07.2022	Fakt	Petrol	EU6d	20.10.2022		220,8	7,2	4,6	4,0	0,0	0,16	4,35E+09		PASS
1-WBA-016	1 (11858)	1	1	B48A20E	BMW X2 M35i	Aut.	Germany	08.08.2019	51.537	14.10.2022	Fakt	Petrol	EU6d	20.10.2022		415,5	16,9	15,2	13,2	0,0	0,00	0,00E+00		PASS
			2	B48A20E	BMW X2 M35i	Aut.	Germany	08.06.2019	28.050	18.10.2022	Fakt	Petrol	EU6d	20.10.2022		453,4	18,3	15,2	12,9	0,0	0,00	0,00E+00		PASS
			3	B48A20E	BMW X2 M35i	Aut.	Germany	11.09.2019	40.057	14.10.2022	Fakt	Petrol	EU6d	20.10.2022		535,2	15,7	13,1	18,0	0,0	0,00	0,00E+00		PASS
1-WBA-P5	1 (28505)	1	3	B38A15A	BMW 225 Xe	Aut.	Germany	01.04.2019	35.039	25.04.2022	Fakt	Petrol	EU6d	30.04.2022		307,6	11,1	9,8	6,7	0,0	0,00	0,00E+00		PASS
1-WBA-P6	1 (28772)	1	1	B48B20A	BMW 530e iPerformance	Aut.	Germany	26.04.2019	33.214	23.08.2022	Fakt	Petrol	EU6d	26.10.2022		222,7	8,0	6,2	6,1	0,0	0,00	0,00E+00		PASS
			2	B48B20A	530e	Aut.	Germany	16.07.2019	51.583	20.10.2022	Fakt	Petrol	EU6d	26.10.2022		0,0	0,0	0,0	0,0	0,0	0,00	0,00E+00		PASS
			3	B48B20A	BMW 530e	Aut.	Germany	18.07.2019	51.630	21.10.2022	Fakt	Petrol	EU6d	26.10.2022		213,8	7,6	5,6	5,7	0,0	1,19	3,35E+10		PASS
1-WBS-010	1 (14732)	1	1	S55B30A	BMW M4 Cabrio	Aut.	Germany	05.02.2019	40.288	21.10.2022	Fakt	Petrol	EU6d	11.11.2022		215,5	26,3	22,1	11,3	0,0	0,00	0,00E+00		PASS
			2	S55B30A	BMW M4 Competition Cabrio	Aut.	Germany	25.03.2012	29.001	25.10.2022	Fakt	Petrol	EU6d	11.11.2022		162,3	24,1	20,5	19,4	0,0	0,00	0,00E+00		PASS
			3	S55B30	BMW M4	Aut.	Germany	28.02.2001	39.726	10.11.2022	Fakt	Petrol	EU6d	11.11.2022		308,6	31,6	25,5	21,1	0,0	0,00	0,00E+00		PASS
1-WBA-D2	1 (11666)	1	2	B37C15A	MINI Countryman One D	Man.	Germany	06.03.2019	75.829	17.10.2022	Fakt	Diesel	EU6d	20.10.2022		117,1	0,0	0,0	46,8	72,1	0,00	0,00E+00		PASS
			3	B37D15	BMW 216d	Man.	Germany	12.02.2019	44.336	18.10.2022	Fakt	Diesel	EU6d	20.10.2022		126,1	0,0	0,0	39,0	70,7	0,00	0,00E+00		PASS
1-WBA-D5	1 (43715)	1	3	B47D20A	BMW 320xd iDrive	Aut.	Germany	30.04.2019	92.276	22.03.2022	Fakt	Diesel	EU6d	01.04.2022		55,0	0,0	0,0	45,2	63,8	0,16	9,23E+10		PASS
1-WBA-D11	1 (27407)	1	3	B57D30C	BMW M550d iDrive	Aut.	Germany	20.03.2019	53.024	29.04.2022	Fakt	Diesel	EU6d	03.05.2022		227,8	0,0	0,0	34,7	117,6	0,43	9,49E+10		PASS
1-WBA-D13	1 (69444)	1	3	B57D	BMW X3 iDrive	Aut.	Germany	13.02.2019	63.530	10.02.2022	Fakt	Diesel	EU6d	22.02.2022		176,0	0,0	0,0	21,9	61,3	0,27	2,89E+11		PASS
24-WBA-D22	1 (21897)	1	1	B37C15A	BMW 116d	Man.	Germany	19.12.2019	56.773	06.10.2022	Fakt	Diesel	EU6d	16.02.2023		64,3	0,0	0,0	27,0	59,6	0,02	0,00E+00		PASS
			2	B37C15A	BMW 116d	Man.	Germany	30.08.2019	57.119	01.12.2022	Fakt	Diesel	EU6d	16.02.2023		141,2	0,0	0,0	29,5	60,9	0,02	0,00E+00		PASS
24-WBA-DH9	1 (5867)	1	2	B47D20B	BMW 520d iDrive	Aut.	Germany	05.12.2019	36.699	06.10.2022	Fakt	Diesel	EU6d	06.12.2022		87,0	0,0	0,0	32,1	64,9	0,10	0,00E+00		PASS
			3	B47D20B	BMW 520d iDrive	Aut.	Germany	27.11.2019	31.376	24.11.2022	Fakt	Diesel	EU6d	06.12.2022		91,5	0,0	0,0	48,7	84,6	0,10	0,00E+00		PASS
1-WBA-D6	1 (17942)	1	1	B47D20A	BMW X3 iDrive 20d	Aut.	Germany	25.02.2019	73.242	15.06.2022	Fakt	Diesel	EU6d	06.12.2022		73,9	0,0	0,0	54,6	81,1	0,00	0,00E+00		PASS
			2	B47D20A	BMW X3 iDrive 20d	Aut.	Germany	12.02.2019	72.498	14.07.2022	Fakt	Diesel	EU6d	06.12.2022		38,6	0,0	0,0	63,0	85,9	0,27	2,99E+09		PASS
			3	B47D20A	BMW X3 20d	Aut.	Germany	02.04.2019	60.371	29.11.2022	Fakt	Diesel	EU6d	06.12.2022		53,0	0,0	0,0	60,3	87,5	0,00	0,00E+00		PASS

Production Year 2018:

Vehicle										Test Results	test data					final test results								Evaluation of Results	
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		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)	Specific Vehicle pass/fail		
C001801	1 (26 599)	1	1	B37A	MINI One D	Man.	Germany	06.11.2018	59,739	11.02.2022	Fakel	Diesel	EU6c			115.0	0.0	0.0	72.7	116.6	0.11	6.32E+08	PASS		
			2	B37C15A	MINI Cooper D	Aut.	Germany	29.06.2018	67,378	13.07.2022	Fakel	Diesel	EU6c			167.7	0.0	0.0	79.2	134.9	0.23	6.88E+08	PASS		
			3	B37C15A	MINI Cooper D	Man.	Germany	24.10.2018	26,188	13.09.2022	Fakel	Diesel	EU6c			87.3	0.0	0.0	47.4	85.2	0.00	0.00E+00	PASS		
C001803	1 (41 540)	1	2	B47D2001	320d xDrive	Aut.	Germany	21.08.2018	71,560	19.01.2022	Fakel	Diesel	EU6d			24.9	0.0	0.0	47.9	65.8	0.29	1.87E+11	PASS		
			3	B47D	BMW 3200 A	Aut.	Germany	07.12.2018	82,816	04.02.2022	Fakel	Diesel	EU6d			35.9	0.0	0.0	55.3	71.0	0.14	3.76E+10	PASS		
C001804	3 (298 777)	1	1	B47C2001	X2 xDrive18d	Aut.	Germany	15.06.2018	30,395	20.01.2022	Fakel	Diesel	EU6d			63.3	0.0	0.0	41.0	65.7	0.15	1.39E+10	PASS		
			2	B47B	BMW X2 xDrive18d	Aut.	Germany	09.05.2018	46,179	21.01.2022	Fakel	Diesel	EU6d			102.1	0.0	0.0	42.1	66.8	0.15	5.65E+08	PASS		
			3	B47D	BMW X2 xDrive20d	Aut.	Germany	15.10.2018	41,863	21.01.2022	Fakel	Diesel	EU6d			54.5	0.0	0.0	42.4	69.1	0.18	2.70E+09	PASS		
		2	1	B47C2001	BMW X2 xDrive18d	Aut.	Germany	12.05.2018	65,159	09.02.2022	Fakel	Diesel	EU6d			91.8	0.0	0.0	32.6	59.0	0.09	1.01E+09	PASS		
			2	B47T	BMW X3 xDrive	Aut.	Germany	22.09.2018	92,049	11.02.2022	Fakel	Diesel	EU6c			96.7	0.0	0.0	56.8	84.2	0.11	3.39E+10	PASS		
			3	B47D2000	BMW X2 xDrive20d	Aut.	Germany	16.04.2018	88,242	11.02.2022	Fakel	Diesel	EU6c			48.4	0.0	0.0	60.2	82.1	0.18	5.24E+10	PASS		
		3	1	B47D200A	BMW X3 xDrive20d	Aut.	Austria	18.10.2018	71,642	16.09.2022	Fakel	Diesel	EU6c			67.3	0.0	0.0	50.5	61.7	0.15	2.29E+09	PASS		
			2	B57S	BMW M550i xD	Aut.	Germany	11.10.2018	87,262	08.02.2022	Fakel	Diesel	EU6b			125.2	0.0	0.0	50.7	98.1	0.27	1.93E+11	PASS		
			3	B57D3010	BMW 640i xDrive	Aut.	Germany	26.04.2018	47,572	09.02.2022	Fakel	Diesel	EU6c			162.3	0.0	0.0	76.4	105.4	0.17	1.96E+10	PASS		
P001801	2 (100 048)	1	1	B38B	MINI Mini	Man.	Germany	28.11.2018	42,571	26.01.2022	Fakel	Petrol	EU6d			243.9	17.1	14.5	6.2	0.0	0.19	1.87E+10	PASS		
			2	B38B	MINI ONE	Man.	Germany	19.09.2018	50,155	28.01.2022	Fakel	Petrol	EU6d			232.5	9.5	7.5	6.9	0.0	0.18	6.10E+08	PASS		
			3	B38M	BMW 118i	Man.	Germany	02.08.2018	68,564	27.01.2022	Fakel	Petrol	EU6d			210.5	6.1	4.2	5.7	0.0	0.24	3.88E+10	PASS		
P001802	1 (95 784)	1	1	B48A2001	MINI John Cooper S	Aut.	Germany	03.05.2018	41,948	04.02.2022	Fakel	Petrol	EU6c			271.6	13.9	9.6	23.4	0.0	0.14	2.15E+11	PASS		
			2	B48A20M0	BMW X1 xDrive 20i	Aut.	Germany	29.01.2018	41,093	18.03.2022	Fakel	Petrol	EU6b			408.6	32.2	26.2	26.3	0.0	0.42	5.61E+11	PASS		
			3	B48A20M1	X1 xDrive20i	Aut.	Germany	24.04.2018	36,628	24.04.2022	Fakel	Petrol	EU6c			234.4	19.8	16.0	15.2	0.0	0.01	2.01E+11	PASS		
P001803	1 (29 783)	1	1	B58M	BMW 340i xDrive	Aut.	Germany	15.05.2018	50,332	08.02.2022	Fakel	Petrol	EU6c			299.2	34.2	27.3	21.5	0.0	0.27	2.32E+11	PASS		
P001804	1 (voluntary) (4 511)	-	1	S63B44B	BMW X5M	Aut.	Germany	30.05.2018	58,346	28.04.2022	Fakel	Petrol	EU6b			383.2	48.4	41.2	16.0	0.0	0.02	9.03E+11	PASS		
P001807	2 (173 170)	1	1	B38M	BMW 118i A	Aut.	Germany	20.11.2018	15,550	28.01.2022	Fakel	Petrol	EU6d			163.4	6.6	4.8	3.7	0.0	0.22	1.54E+10	PASS		
			2	B38A15A	MINI Mini Countryman One	Man.	Germany	19.09.2018	45,794	03.02.2022	Fakel	Petrol	EU6d			261.5	11.6	9.3	6.9	0.0	0.69	7.62E+09	PASS		
			3	B38A15A	MINI Mini One	Man.	Germany	21.11.2018	61,326	03.02.2022	Fakel	Petrol	EU6d			243.3	9.6	7.6	10.6	0.0	0.16	1.86E+09	PASS		
P001808	2 (100 770)	1	1	B48B20	BMW 330i xDrive	Aut.	Germany	26.09.2018	47,798	18.02.2022	Fakel	Petrol	EU6d			269.1	16.0	14.2	13.5	0.0	0.52	1.32E+11	PASS		
			2	B48B20	BMW 420i	Aut.	Germany	11.07.2018	41,018	13.04.2022	Fakel	Petrol	EU6d			173.1	11.9	10.6	9.9	0.0	0.11	1.13E+11	PASS		
			3	B48A20F	MINI Clubman Cooper S	Man.	Germany	05.10.2018	33,142	08.09.2022	Fakel	Petrol	EU6d			439.0	0.0	0.0	10.3	0.0	0.00	0.00E+00	PASS		
P001809	1 (21 164)	1	1	B58M	BMW 440i xDR A	Aut.	Germany	13.11.2018	79,331	02.02.2022	Fakel	Petrol	EU6d			161.1	12.4	10.5	11.6	0.0	0.28	3.30E+10	PASS		
			2	B58M	BMW X3 M40i A	Aut.	Germany	22.09.2018	83,801	02.02.2022	Fakel	Petrol	EU6d			342.3	17.0	14.7	16.4	0.0	1.32	1.82E+09	PASS		
			3	B58M	BMW X5 xDrive	Aut.	Germany	27.09.2018	31,687	04.05.2022	Fakel	Petrol	EU6d			258.1	19.3	15.8	10.5	0.0	1.31	4.56E+10	PASS		
P001812	1 (6 380)	1	1	S55B30A	BMW M2 Competition	Medh	Germany	27.10.2018	40,522	04.05.2022	Fakel	Petrol	EU6d			273.4	36.1	30.1	29.4	0.0	0.11	1.56E+10	PASS		
			2	S55B30A	BMW M2 Competition	Aut.	Germany	06.11.2018	38,063	06.09.2022	Fakel	Petrol	EU6d			263.1	37.3	30.3	11.8	0.0	0.00	0.00E+00	PASS		

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

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

TNO Reference No	IP Family Name	PEMs Family		Notes
2022-STL-LTR-100344928N	IP_EU_F60_B48A20T1_AA_1	1-WBA-O16	Valid	N/A

(3) Information gathering and risk assessment:

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

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

(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.
 - 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:

- 24-WBA-O27
- 24-WBA-DH29

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) 2020/49), 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) 2020/49), and consists of two administrative criterion (GTAA, Manufacturer) and eleven technical criterion.

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

24-WBA-O27

Family Parameters:	24-WBA-O27
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:	liquid
Aspiration charger type:	single
Exhaust aftertreatment:	CAT MN + OPF UB
EGR:	--

Vehicle 1



Vehicle 2



Vehicle 3



24-WBA-DH29

Family Parameters:	24-WBA-DH29
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:	liquid
Aspiration charger type:	single
Exhaust aftertreatment:	NSC + DPF + SCR
EGR:	HP

Vehicle 1



Vehicle 2



Vehicle 3





Vehicle selection:

DEKRA Automobil GmbH sourced these vehicles from their respective ISC Families 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 24-WBA-027

Vehicle 1

Type / Variant / Version: F2GT / 6V11 / IHW500LT

Summary of test results from DEKRA Automobil GmbH test report: TR 202250720_ISC_T64104

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	103.77	No	No	43.8	No	No
THC (mg/km):	100	--	9.77	No	No	--	--	--
NMHC (mg/km):	68	--	8.10	No	No	--	--	--
NOx (mg/km):	60	80	7.16	No	No	3.5	No	No
THC+NOx (mg/km):	--	170	16.93	--	--	--	--	--
PM (#/km):	4.5	4.5	0.16	No	No	--	--	--
PN:	6.00×10^{11}	6.00×10^{11}	1.97×10^9	No	No	2.13×10^9	No	No
* PEL = Pollutant Emission Limit								

Vehicle 2

Type / Variant / Version: FMX / 41BR / IAW500BT

Summary of test results from DEKRA Automobil GmbH test report: 202250720_N45263

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	171.59	No	No	118.0	No	No
THC (mg/km):	100	--	16.79	No	No	--	--	--
NMHC (mg/km):	68	--	15.82	No	No	--	--	--
NOx (mg/km):	60	80	12.62	No	No	10.8	No	No
THC+NOx (mg/km):	--	170	29.41	--	--	--	--	--
PM (#/km):	4.5	4.5	0.20	No	No	--	--	--
PN:	6.00×10^{11}	6.00×10^{11}	3.52×10^9	No	No	1.08×10^9	No	No
* PEL = Pollutant Emission Limit								

Vehicle 3

Type / Variant / Version: FMX / 21BR / IAW500B0

Summary of test results from DEKRA Automobil GmbH test report: 202250720_M49432

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	162.40	No	No	119.10	109.7	No	No
THC (mg/km):	100	--	14.95	No	No	--	--	--	--
NMHC (mg/km):	68	--	13.70	No	No	--	--	--	--
NOx (mg/km):	60	80	10.85	No	No	11.3	9.0	No	No
THC+NOx (mg/km):	--	170	--	--	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.24	No	No	--	--	--	--
PN (#/km):	6.00x10 ¹¹	6.00x10 ¹¹	5.66x10 ⁹	No	No	3.04x10 ⁹	3.76x10 ¹⁰	No	No

* PEL = Pollutant Emission Limit

ISC Family 24-WBA-DH29

Vehicle 1

Type / Variant / Version: G3X / 35BG / IAV500BA

Summary of test results from DEKRA Automobil GmbH test report: 202250720_N093992

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	74.88	No	No	55.0	50.0	No	No
THC (mg/km):	100	--	--	--	--	--	--	--	--
NMHC (mg/km):	68	--	--	--	--	--	--	--	--
NOx (mg/km):	60	80	21.08	No	No	13.1	1.7	No	No
THC+NOx (mg/km):	--	170	--	--	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.23	No	No	--	--	--	--
PN (#/km):	6.00x10 ¹¹	6.00x10 ¹¹	6.05x10 ⁸	No	No	1.45x10 ⁹	8.77x10 ⁸	No	No
* PEL = Pollutant Emission Limit									

Vehicle 2

Type / Variant / Version: G3X / 35BG / IAV500BA

Summary of test results from DEKRA Automobil GmbH test report: 202250720_102090

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	94.04	No	No	65.0	No	No
THC (mg/km):	100	--	--	--	--	--	--	--
NMHC (mg/km):	68	--	--	--	--	--	--	--
NOx (mg/km):	60	80	25.04	No	No	13.4	No	No
THC+NOx (mg/km):	--	170	62.05	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.23	No	No	--	--	--
PN (#/km):	6.00×10^{11}	6.00×10^{11}	1.60×10^{10}	No	No	2.92×10^9	No	No

* PEL = Pollutant Emission Limit

Vehicle 3

Type / Variant / Version: G3X / 35BG / IAV500BA

Summary of test results from DEKRA Automobil GmbH test report: 202250720_75966

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	86.38	No	No	36.6	No	No
THC (mg/km):	100	--	--	--	--	--	--	--
NMHC (mg/km):	68	--	--	--	--	--	--	--
NOx (mg/km):	60	80	21.21	No	No	14.4	No	No
THC+NOx (mg/km):	--	170	56.47	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.18	No	No	--	--	--
PN (#/km):	6.00x10 ¹¹	6.00x10 ¹¹	8.91x10 ⁸	No	No	2.33x10 ⁹	No	No

* PEL = Pollutant Emission Limit

(7) Detailed investigations:

- 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:

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. NSAI closed both Statistical Folders on 14 December 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: 24-WBA-O27			ISC Family: 2-WBA-DH29		
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 2:	Pass	Pass	Vehicle 2:	Pass	Pass
Vehicle 3:	Pass	Pass	Vehicle 3:	Pass	Pass
*Intermediate outliers:			*Intermediate outliers:		
0			0		
**Extreme outliers:			**Extreme outliers:		
0			0		
Sample size "n":			Sample size "n":		
3			3		
"f" count:			"f" count:		
0			0		
ISC sample family 24-WBA-O27			ISC sample family 1-WBA-O7		
Overall result: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>			Overall result: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>		

ISC Family: 24-WBA-O27 WLTP Statistical Result

Figure B.2

Decision chart for the statistical procedure for vehicles type approved as of 1 January 2020 (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-O27 RDE Statistical Result

Figure B.2

Decision chart for the statistical procedure for vehicles type approved as of 1 January 2020 (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-DH29 WLTP Statistical Result

Figure B.2

Decision chart for the statistical procedure for vehicles type approved as of 1 January 2020 (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-DH29 RDE Statistical Result

Figure B.2

Decision chart for the statistical procedure for vehicles type approved as of 1 January 2020 (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) 2020/49).
- DEKRA Automobil GmbH ISC test reports:
 - TR 202250720_ISC_T64104
 - TR 202250720_N45263
 - TR 202250720_M49432
 - TR 202250720_N093992
 - TR 202250720_102090
 - TR 202250720_75966
- BMW EWIR (Emission Warranty Information Report) 2021.
- 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 report:
 - 2022-STL-LTR-100344928N

- EU exhaust emission type-approvals:
 - e24*715/2007*2018/1832AP*1238*00
 - e24*715/2007*2018/1832AP*1380*01
 - e24*715/2007*2018/1832AP*1381*01
 - e24*715/2007*2018/1832AP*1400*00