



## **NSAI Annual In Service Conformity (ISC) Report of its finalised ISC investigations for 2023**

### **1. Analysis of legal requirements:**

The analysis of legal requirements is according to Annex II of Commission Regulation (EU) 2017/1151 as amended by ((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 as amended by ((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 fourth 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 as amended by ((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. There are also, other actors involved in the ISC process. Other actors may perform any number of ISC test each year. This information shall be collected by the GTAA when deciding which ISC families to test in a particular year. The GTAA must also make available, the results of annual ISC tests on the European Commission’s electronic platform.

The ISC process steps are as follows:

ISC Steps	Main Responsibility	Other Actors
Step 1: Information gathering and Risk Assessment	GTAA	Type-Approval Authority, Technical Service, European Commission, third parties
Step 2: ISC Testing	GTAA, Vehicle Manufacturer	Type-Approval Authority, Technical Service, European Commission, third parties
Step 3: Compliance Assessment	GTAA + Vehicle Manufacturer	-
Step 4: Remedial Measures	GTAA + Vehicle Manufacturer	-
Step 5: Reporting	GTAA	Type-Approval Authority, Technical Service, European Commission, third parties



### 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 as amended by ((EU) 2020/49).

ISC Period	Manufacturer
2023	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 03.08.2023 and 29.11.2023.
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 mild, 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 19<sup>th</sup> January 2024.



**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.

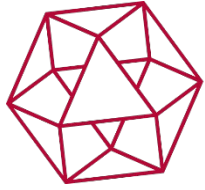
For 2023 the external service provider was Fa. FAKT GmbH.

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.



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- 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):**

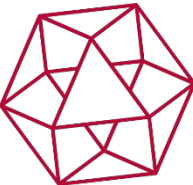
The following tables are extracts from the full set of tables, which detail the planned and selected ISC families and their final ISC test results.

**Production Year 2022:**

2022										test data										measured test results										final test results										Evaluation of	
IS-Service Family	Amount of Samples as denominator (order volume)	Sample	No. Vehicle	Engine Type	FaxNo.	Model	Vehicle Identification Number	Transmission Type	Vehicle Origin	Production Date (DD-MMM-YYYY)	Distance indicate in kilometers	Date of Test (DD-MMM-YYYY)	Test Number	Test Facility	Fuel Petrol or Diesel	Certified Standard	report to the authority	CO [g/kWh]	THC [mg/kWh]	PM10 [mg/kWh]	NOx [ppm]	THC+NOx [mg/kWh]	PM [mg/kWh]	PM10 [mg/kWh]	CO [g/kWh]	THC [mg/kWh]	PM10 [mg/kWh]	NOx [ppm]	THC+NOx [mg/kWh]	PM [mg/kWh]	PM10 [mg/kWh]	Specific Vehicle Pass/Fail	Procedure Pass/Fail								
24-WBA-028	1(47395)	1	2	B47C20B	04D	BPMW224(Ges.Taxer)	WBA432049F962169	Aut.	Germany	21/02/2022	21,569	23/02/2023	FAK-01-2023102-09	Fakt	Diesel	EUI4	04/03/2024	42.47	28.91	9.17	22.84	53.85			54.4	0.0	0.0	25.1	54.9	0.03	0.01E+00	PASS	-								
24-WBA-041	1(8723)	1	1	B57D20B	04D	BPMW1424(L.Drive)	WBA510104FFH1259	Aut.	Germany	03/04/2022	15,500	23/02/2023	FAK-01-2023101-03	Fakt	Diesel	EUI4	04/03/2024	192.14	16.03	11.55	44.40	60.54			154.7	0.0	0.0	49.1	63.2	0.01	0.01E+00	PASS	-								
24-WBA-042	1(8923)	1	1	B57D20B	04D	BPMW1524	WBA1A1A040H12424	Aut.	Germany	17/02/2022	25,442	23/02/2023	FAK-01-2023101-04	Fakt	Diesel	EUI4	04/03/2024	225.74	21.90	16.90	40.25	42.25			225.7	0.0	0.0	46.5	69.4	0.23	0.01E+00	PASS	-								
24-WBA-043	1(7923)	1	1	B47C20B	04D	BPMW2224	WBA10H0000X01289	Aut.	Germany	18/02/2022	25,517	09/02/2023	FAK-02-2023100-03	Fakt	Diesel	EUI4	04/03/2024	52.49	25.20	8.20	39.61	44.81			52.5	0.0	0.0	41.3	70.2	0.10	0.01E+00	PASS	-								
24-WBA-043	1(combustor)(2483)	-	1	B47C20B	10D	BPMW31(Drive.23)	WBA51EG095W0447	Aut.	Germany	21/02/2022	23,241	23/02/2023	FAK-01-2023101-01	Fakt	Diesel	EUI4	20/02/2023	55.57	6.45	4.40	24.27	30.72			51.3	0.0	0.0	24.0	32.9	0.06	0.01E+00	PASS	-								
24-WBA-027	2(14999)	2	2	B21A15P	6SP	BHM Casper	WFM10DH092T73193	Aut.	Germany	18/02/2022	16,799	09/02/2023	FAK-01-2023101-09	Fakt	Petrol	EUI4	04/03/2024	137.74	15.79	14.21	6.15	23.91			137.7	15.0	14.2	6.1	0.0	0.00	0.01E+00	PASS	-								
24-WBA-028	1(48999)	1	1	B46A20A	05P	BPMW120	WBA151007640223	Aut.	Germany	05/02/2022	19,495	09/02/2023	FAK-02-2023100-01	Fakt	Petrol	EUI4	20/02/2023	120.69	12.97	11.34	6.23	15.30			120.7	13.0	11.3	6.3	0.00	0.00	0.01E+00	PASS	-								
24-WBA-028	1(48999)	1	2	B46A20A	07P	120	WBA15100765219	Aut.	Germany	23/02/2022	16,424	09/02/2023	FAK-01-2023100-04	Fakt	Petrol	EUI4	20/02/2023	95.43	16.32	14.39	4.50	22.02			95.4	16.3	14.4	4.5	0.00	0.00	0.01E+00	PASS	-								
24-WBA-028	1(48999)	1	3	B46A20A	05P	BPMW31(Drive.20)	WBA1A1B095W04715	Aut.	Germany	18/02/2022	44,052	09/02/2023	FAK-01-2023100-05	Fakt	Petrol	EUI4	20/02/2023	273.49	25.12	22.17	13.95	20.67			273.5	25.1	22.2	13.9	0.00	0.00	0.01E+00	PASS	PASS								
24-WBA-038	1(13194)	1	1	B46A20E	02P	BPMW1211	WBA15100761577	Aut.	Germany	23/02/2022	27,265	02/02/2023	FAK-01-2023100-09	Fakt	Petrol	EUI4	04/03/2024	74.33	9.11	7.19	11.74	20.06			74.4	9.1	7.0	11.7	0.00	0.00	0.01E+00	PASS	-								
24-WBA-039	1(4243)	1	1	B31A15P	04P	BPMW216(Actio.Taxer)	WBA21B0907L5790	Aut.	Germany	25/02/2022	22,991	09/02/2023	FAK-02-2023100-02	Fakt	Petrol	EUI4	04/03/2024	294.96	8.40	6.36	5.94	14.24			297.0	8.4	6.9	5.9	0.00	0.00	0.01E+00	PASS	-								
24-WBA-039	1(4243)	1	2	B31A15P	04P	BPMW31(Drive.10)	WBA11E0089W0996	Aut.	Germany	29/02/2022	16,024	09/02/2023	FAK-02-2023104-04	Fakt	Petrol	EUI4	04/03/2024	190.51	9.92	8.03	6.79	16.72			190.5	9.9	8.0	6.8	0.00	0.00	0.01E+00	PASS	-								
24-WBA-039	1(4243)	1	3	B31A15P	04P	BPMW31(Actio.Taxer)	WBA21B0907L5273	Aut.	Germany	07/02/2022	20,862	09/02/2023	FAK-01-2023100-04	Fakt	Petrol	EUI4	04/03/2024	250.74	8.26	6.91	7.27	15.52			251.7	8.4	6.9	7.3	0.00	0.00	0.01E+00	PASS	PASS								
24-WBA-041	1(11941)	1	1	B51B30B	03P	BPMW440	WBA1A1A00K03809	Aut.	Germany	01/04/2022	22,893	18/02/2023	FAK-01-2023101-05	Fakt	Petrol	EUI4	04/03/2024	102.10	20.14	17.61	9.61	29.75			102.1	20.1	17.6	9.6	0.00	0.00	0.01E+00	PASS	-								
24-WBA-040	1(combustor)(4273)	-	1	B46A20P	12P	BPMW223(Actio.Taxer)	WBA1B0907K04950	Aut.	Germany	27/02/2022	17,720	23/02/2023	FAK-02-2023101-01	Fakt	Petrol	EUI4	20/02/2023	125.74	10.43	9.97	5.07	16.55			125.7	10.7	9.0	5.0	0.00	0.00	0.01E+00	PASS	-								
24-WBA-041	1(4199)	1	2	B46E20S	15P	BPMW520	WBA1B1000K07514	Aut.	Germany	30/02/2022	23,771	17/02/2023	FAK-02-2023101-08	Fakt	Petrol	EUI4	04/03/2024	116.99	9.12	7.50	10.90	19.92			117.0	9.1	7.5	10.9	0.00	0.00	0.01E+00	PASS	-								
24-WBA-041	1(4199)	1	3	B46E20A	14P	BPMW520	WBA1B1000K07515	Aut.	Germany	15/02/2022	23,120	13/02/2023	FAK-01-2023101-05	Fakt	Petrol	EUI4	04/03/2024	124.24	10.21	9.75	10.32	21.60			124.2	10.2	9.8	10.3	0.00	0.00	0.01E+00	PASS	PASS								







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## Production Year 2020:

In-Service Family	Amount of Sample based on order (total volume)	Sample	No. Vehicle	Engine Type	Exh.	Model	Vehicle					Distance indicator (km)	Date of Test [DD-MM-YYYY]	Test Number	Test Data	measured test results							CO (mg/km)	THC (mg/km)	NHHC (mg/km)	NO <sub>x</sub> (mg/km)	THC+NO <sub>x</sub> (mg/km)	PM (mg/km)	PN (#/km)	final test results				CO (mg/km)	THC (mg/km)	NHHC (mg/km)	NO <sub>x</sub> (mg/km)	THC+NO <sub>x</sub> (mg/km)	PM (mg/km)	PN (#/km)	Evolution of Specific Vehicle Pass/Fail	Statistics	Comments	
							Vehicle Identification Number	Transmission	Vehicle Origin	Production Date [DD-MM-YYYY]	Year of Registration					CO (mg/km)	THC (mg/km)	NHHC (mg/km)	NO <sub>x</sub> (mg/km)	THC+NO <sub>x</sub> (mg/km)	PM (mg/km)	PN (#/km)								CO (mg/km)	THC (mg/km)	NHHC (mg/km)	NO <sub>x</sub> (mg/km)											THC+NO <sub>x</sub> (mg/km)
13UBA-D9	1 (120981)	1	3	B47G20B	36D	BMW 118d	WBATW9104089R37384	Aut.	Germany	25/02/2020	19,271	24/02/2020	FAK-02-20230218-10	Faks	Diuzd	EU4d	12/04/2020	71.83	35.00	10.48	24.59	43.59	0.14	15.97E+03	87.6	0.0	0.0	23.4	44.8	0.16	1.59E+09	87.6	0.0	0.0	23.4	44.8	0.16	1.59E+09	PASS	PASS				



Production Year 2019:

In-Service Family	Amount of Samples used (ml or volume)	Sample	Vehicle				Transmission Type	Vehicle Origin	Production Date (DD.MM.YYYY)	Distance indicated on odometer	Date of Test (DD.MM.YYYY)	Test data				report-to authority (DD.MM.YYYY)	measured test results								Limit	Evaluation of							
			No. Vehicle	Engine Type	Fax No.	Model						Vehicle Identification Number	Test Facility	Fuel Petrol/diesel	Certified Standard		CO [mg/km]	THC [mg/km]	HMHC [mg/km]	NOx [mg/km]	THC+NOx [mg/km]	PM [mg/km]	PM [g/km]	CO [mg/km]		THC [mg/km]	HMHC [mg/km]	NOx [mg/km]	THC+NOx [mg/km]	PM [mg/km]	PM [g/km]	Specific Vehicle	Statistical Procedure
1-UBA-P3	7792	1	2	BSEB30C	4EP	B1W745c	WBATD4029C035149	Aut.	Germany	09/02/2019	43,407	16/02/2023	FAK-01-20230111-02	Fakt	Passel	EU6-d	20/02/2023	164.44	14.34	13.31	6.70	21.57			16.4	14.9	13.4	6.7	0.0	0.00+000	PASS	PASS	
1-UBA-P3	7792	1	3	BSEB30C	43P	B1W72548c	WBATD40498B04297	Aut.	Germany	01/02/2019	21,126	24/02/2023	FAK-02-20230124-08	Fakt	Passel	EU6-d	20/02/2023	243.40	16.94	14.90	6.02	22.86			243.4	16.5	14.9	6.0	0.0	0.00+000	PASS	PASS	
2-UBA-C02	21997	1	3	B37C18A	33D	B1W71164	WBATH710037E15134	Man.	Germany	20/02/2019	40,229	09/02/2023	FAK-01-20230209-03	Fakt	Diesel	EU6-d	16/02/2023	82.96	34.09	10.91	30.03	64.12			86.0	0.0	0.0	30.0	67.7	0.02	0.00+000	PASS	PASS



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

NSAI did not receive any information in 2023 relating to ISC performed by accredited laboratories or technical services.

(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-O30
- 24-WBA-P26

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 as amended by ((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 of Commission Regulation (EU) 2017/1151 as amended by ((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-O30**

Family Parameters:	24-WBA-O30
Approval authority:	NSAI
Manufacturer:	BMW
Propulsion type:	ICE
Fuel type:	Gasoline
Combustion process:	4-stroke
Number of Cylinders:	4
Configuration of cylinder block:	in-line
max. Engine volume:	1998
Method of fuel injection:	direct
Cooling system:	liquid
Aspiration charger type:	single
Exhaust aftertreatment:	2x CAT MN + OPF UB
EGR:	--

Vehicle 1



Vehicle 2





Vehicle 3



**24-WBA-P26**

Family Parameters:	24-WBA-P26
Approval authority:	NSAI
Manufacturer:	BMW
Propulsion type:	ICE + E-engine
Fuel type:	Gasoline
Combustion process:	4-stroke
Number of Cylinders:	4
Configuration of cylinder block:	in-line
max. Engine volume:	1998
Method of fuel injection:	direct
Cooling system:	liquid
Aspiration charger type:	single
Exhaust aftertreatment:	2 x CAT MN+OPF UB
EGR:	-

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-O30**

**Vehicle 1**

**Type / Variant / Version: G3L / 61FF / IAW500M0**

**Summary of test results from DEKRA Automobil GmbH test report: 202350720\_FN25300\_1**

Emission Limits			WLTP Type 1 Test Results			RDE Test Results				
Pollutants	Limit (Petrol)	Limit (Diesel)	ISC Values	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>	ISC Values <i>RDE Cold Start</i>	ISC Values <i>RDE Hot Start</i>	Mild Outlier <i>PEL &lt; ISC Value &lt; 1.3 x PEL*</i>	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>
CO (mg/km):	1000	500	167.62	No	No	136.3	--	No	No	No
THC (mg/km):	100	--	12.72	No	No	--	--	--	--	--
NMHC (mg/km):	68	--	10.73	No	No	--	--	--	--	--
NOx (mg/km):	60	80	5.48	No	No	6.9	--	No	No	No
THC+NOx (mg/km):	--	170	--	--	--	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.15	No	No	--	--	--	--	--
PN (#/km):	6.00x10 <sup>11</sup>	6.00x10 <sup>11</sup>	1.29x10 <sup>10</sup>	No	No	5.85x10 <sup>9</sup>	--	No	No	No

\* PEL = Pollutant Emission Limit

**Vehicle 2**
**Type / Variant / Version: G3K / 71FY / IAW500M0**
**Summary of test results from DEKRA Automobil GmbH test report: 202350720\_FN67964\_1**

Emission Limits			WLTP Type 1 Test Results			RDE Test Results				
Pollutants	Limit (Petrol)	Limit (Diesel)	ISC Values	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>	ISC Values <i>RDE Cold Start</i>	ISC Values <i>RDE Hot Start</i>	Mild Outlier <i>PEL &lt; ISC Value &lt; 1.3 x PEL*</i>	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>
CO (mg/km):	1000	500	175.98	No	No	77.7	80.0	No	No	No
THC (mg/km):	100	--	16.86	No	No	--	--	--	--	--
NMHC (mg/km):	68	--	14.52	No	No	--	--	--	--	--
NOx (mg/km):	60	80	15.60	No	No	26.9	7.4	No	No	No
THC+NOx (mg/km):	--	170	--	--	--	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.19	No	No	--	--	--	--	--
PN (#/km):	6.00x10 <sup>11</sup>	6.00x10 <sup>11</sup>	1.61x10 <sup>10</sup>	No	No	4.10x10 <sup>9</sup>	3.91x10 <sup>9</sup>	No	No	No
* PEL = Pollutant Emission Limit										



**Vehicle 3**
**Type / Variant / Version: G3K / 61FY / IAW500M0**
**Summary of test results from DEKRA Automobil GmbH test report: 202350720\_FN67520**

Emission Limits			WLTP Type 1 Test Results			RDE Test Results				
Pollutants	Limit (Petrol)	Limit (Diesel)	ISC Values	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>	ISC Values <i>RDE Cold Start</i>	ISC Values <i>RDE Hot Start</i>	Mild Outlier <i>PEL &lt; ISC Value &lt; 1.3 x PEL*</i>	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>
CO (mg/km):	1000	500	156.28	No	No	78.0	--	No	No	No
THC (mg/km):	100	--	13.99	No	No	--	--	--	--	--
NMHC (mg/km):	68	--	11.98	No	No	--	--	--	--	--
NOx (mg/km):	60	80	7.41	No	No	7.6	--	No	No	No
THC+NOx (mg/km):	--	170	--	--	--	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.13	No	No	--	--	--	--	--
PN (#/km):	6.00x10 <sup>11</sup>	6.00x10 <sup>11</sup>	2.03x10 <sup>10</sup>	No	No	9.69x10 <sup>9</sup>	--	No	No	No
* PEL = Pollutant Emission Limit										

ISC Family 24-WBA-P26

Vehicle 1

Type / Variant / Version: G3X / 61DP / IAW50000

Summary of test results from DEKRA Automobil GmbH test report: 202350720\_9K44031

Emission Limits		WLTP Type 1 Test Results			RDE Test Results					
Pollutants	Limit (Petrol)	Limit (Diesel)	ISC Values	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>	ISC Values <i>RDE Cold Start</i>	ISC Values <i>RDE Hot Start</i>	Mild Outlier <i>PEL &lt; ISC Value &lt; 1.3 x PEL*</i>	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>
CO (mg/km):	1000	500	399.89	No	No	208.9	--	No	No	No
THC (mg/km):	100	--	10.82	--	--	--	--	--	--	--
NMHC (mg/km):	68	--	8.85	--	--	--	--	--	--	--
NOx (mg/km):	60	80	10.31	No	No	6.2	--	No	No	No
THC+NOx (mg/km):	--	170	--	--	--	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.91	No	No	--	--	--	--	--
PN (#/km):	6.00x10 <sup>11</sup>	6.00x10 <sup>11</sup>	1.17x10 <sup>10</sup>	No	No	1.15x10 <sup>9</sup>	--	No	No	No
* PEL = Pollutant Emission Limit										

**Vehicle 2**
**Type / Variant / Version: G3X / 61DP / IAW50000**
**Summary of test results from DEKRA Automobil GmbH test report: 202350720\_9K66472**

Emission Limits			WLTP Type 1 Test Results			RDE Test Results				
Pollutants	Limit (Petrol)	Limit (Diesel)	ISC Values	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>	ISC Values <i>RDE Cold Start</i>	ISC Values <i>RDE Hot Start</i>	Mild Outlier <i>PEL &lt; ISC Value &lt; 1.3 x PEL*</i>	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>
CO (mg/km):	1000	500	375.93	No	No	290.1	336.0	No	No	No
THC (mg/km):	100	--	12.43	--	--	--	--	--	--	--
NMHC (mg/km):	68	--	10.78	--	--	--	--	--	--	--
NOx (mg/km):	60	80	11.45	No	No	5.5	9.4	No	No	No
THC+NOx (mg/km):	--	170	--	--	--	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.81	No	No	--	--	--	--	--
PN (#/km):	6.00x10 <sup>11</sup>	6.00x10 <sup>11</sup>	2.24x10 <sup>10</sup>	No	No	9.03x10 <sup>9</sup>	1.08x10 <sup>10</sup>	No	No	No

\* PEL = Pollutant Emission Limit

**Vehicle 3**
**Type / Variant / Version: G3X / 61DP / IAW50000**
**Summary of test results from DEKRA Automobil GmbH test report: 202350720\_9K43980**

Emission Limits			WLTP Type 1 Test Results			RDE Test Results				
Pollutants	Limit (Petrol)	Limit (Diesel)	ISC Values	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>	ISC Values <i>RDE Cold Start</i>	ISC Values <i>RDE Hot Start</i>	Mild Outlier <i>PEL &lt; ISC Value &lt; 1.3 x PEL*</i>	Intermediate Outlier <i>ISC Value <math>\geq</math> 1.3 x PEL*</i>	Extreme Outlier <i>ISC Value <math>\geq</math> 2.5 x PEL*</i>
CO (mg/km):	1000	500	391.37	No	No	404.2	--	No	No	No
THC (mg/km):	100	--	12.78	--	--	--	--	--	--	--
NMHC (mg/km):	68	--	11.01	--	--	--	--	--	--	--
NOx (mg/km):	60	80	8.79	No	No	8.4	--	No	No	No
THC+NOx (mg/km):	--	170	--	--	--	--	--	--	--	--
PM (mg/km):	4.5	4.5	0.00	No	No	--	--	--	--	--
PN (#/km):	6.00x10 <sup>11</sup>	6.00x10 <sup>11</sup>	2.54x10 <sup>10</sup>	No	No	2.83x10 <sup>10</sup>	--	No	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 mild, 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 19<sup>th</sup> January 2024.



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.**

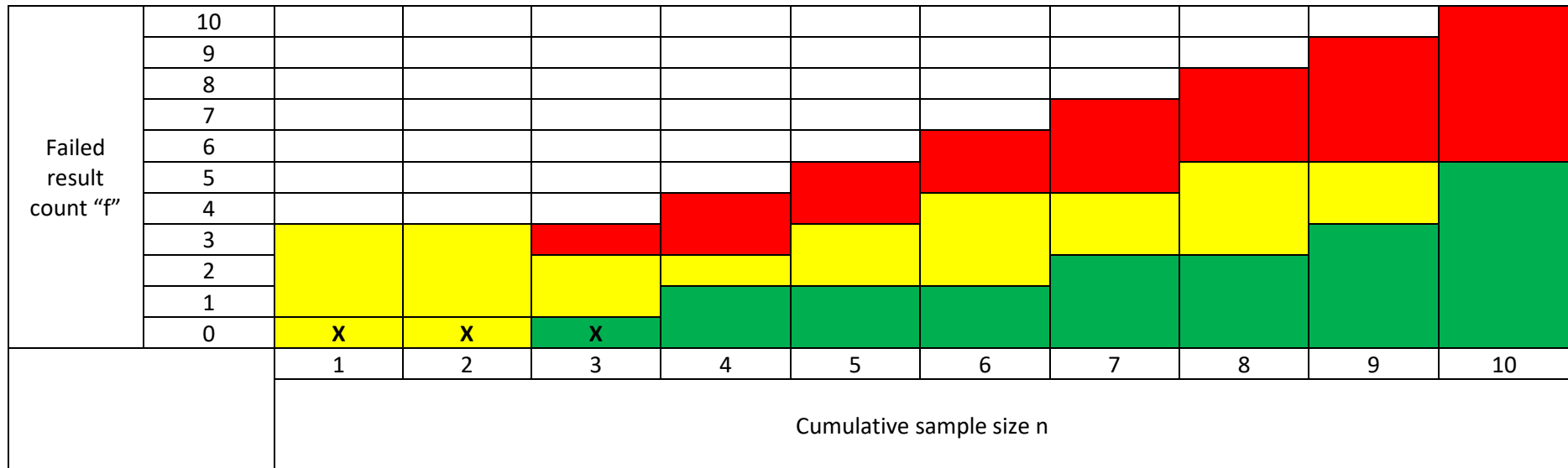
**Statistical analysis:**

ISC Family: 24-WBA-O30			ISC Family: 24-WBA-P26		
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
*Mild Outliers:		0	*Mild Outliers:		0
**Intermediate outliers:		0	**Intermediate outliers:		0
***Extreme outliers:		0	***Extreme outliers:		0
Sample size "n":		3	Sample size "n":		3
" f " count:		0	" f " count:		0
<p align="center"><b>ISC sample family 24-WBA-O30</b></p> <p align="center"><b>Overall result: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/></b></p>			<p align="center"><b>ISC sample family 24-WBA-P26</b></p> <p align="center"><b>Overall result: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/></b></p>		

### ISC Family: 24-WBA-O30 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)



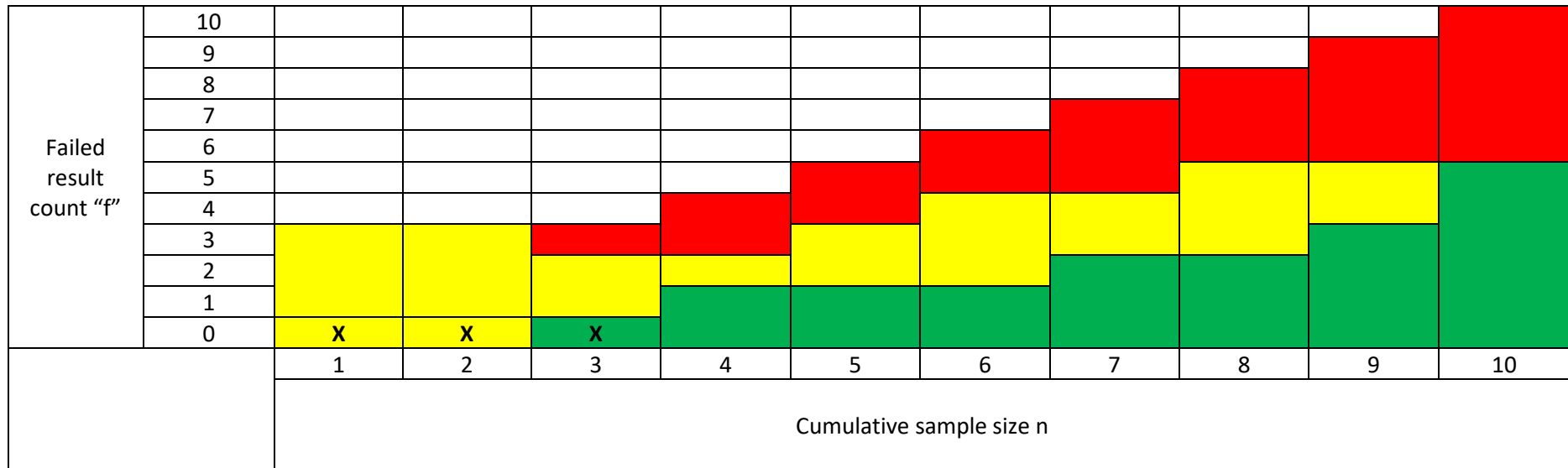
	Pass
	UND (Undecided)
	Fail



### ISC Family: 24-WBA-O30 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)

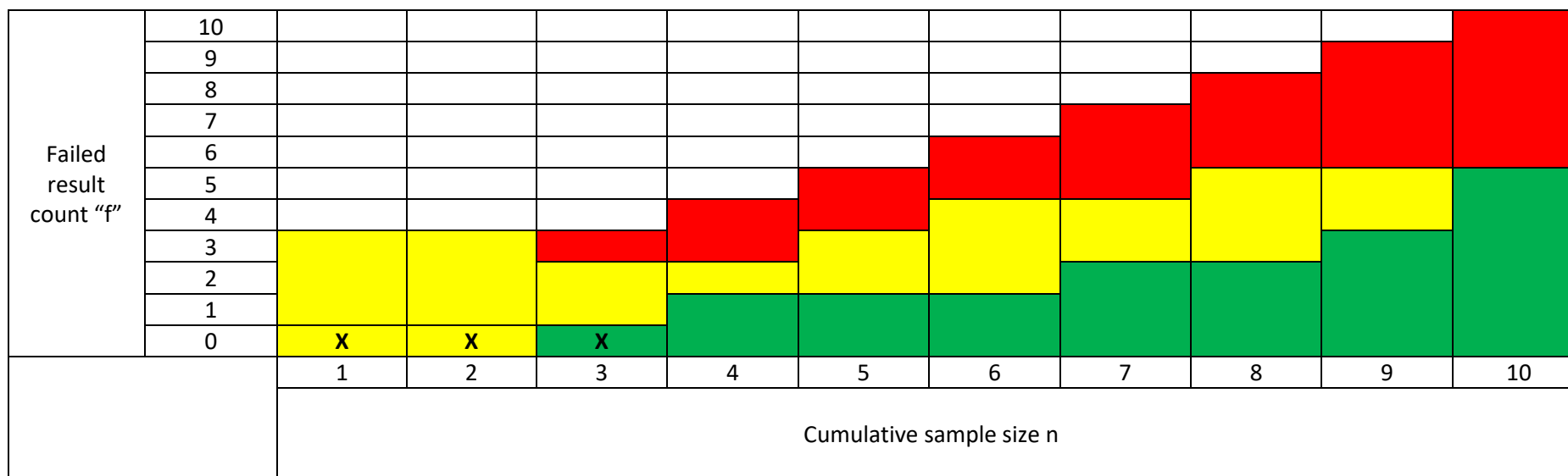


	Pass
	UND (Undecided)
	Fail

### ISC Family: 24-WBA-P26 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)

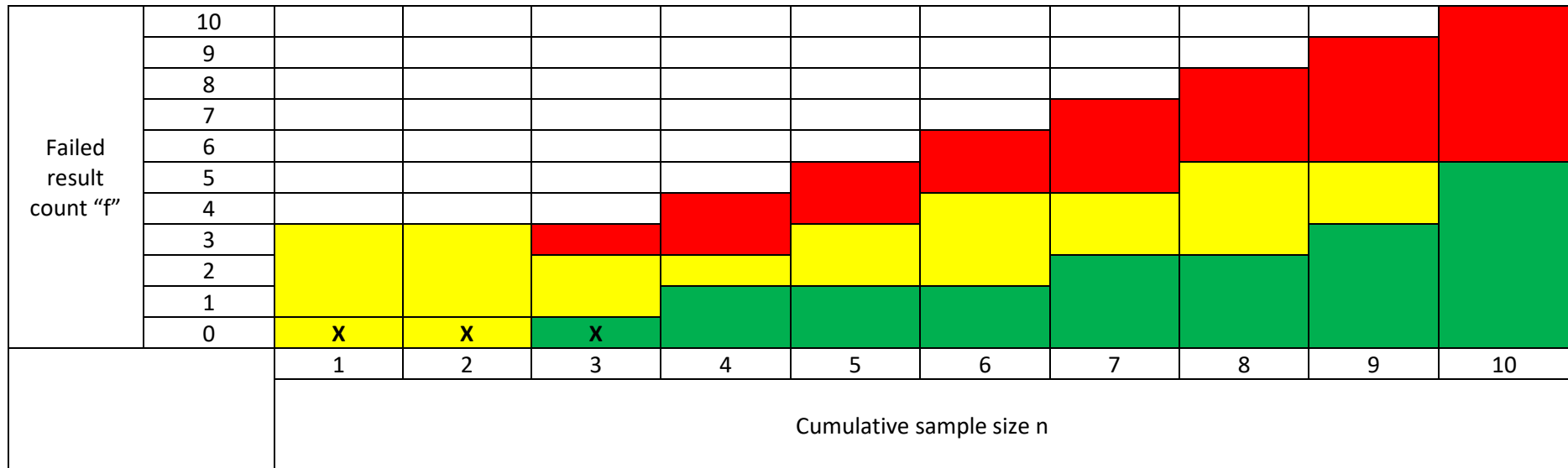


	Pass
	UND (Undecided)
	Fail

### ISC Family: 24-WBA-P26 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)



	Pass
	UND (Undecided)
	Fail



**Supporting documentation:**

- Commission Regulation (EU) 2017/1151 as amended by ((EU) 2020/49).
- DEKRA Automobil GmbH ISC test reports:
  - TR 202350720\_FN25300\_1
  - TR 202350720\_FN67964\_1
  - TR 202350720\_FN67520
  - TR 202350720\_9K44031
  - TR 202350720\_9K66472
  - TR 202350720\_9K43980
- BMW EWIR (Emission Warranty Information Report) 2022.
- 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.



- EU exhaust emission type-approvals:
  - e24\*715/2007\*2018/1832AP\*1688\*00
  - e24\*715/2007\*2018/1832AP\*1680\*00
  - e24\*715/2007\*2018/1832AP\*1643\*00
  - e24\*715/2007\*2018/1832AP\*1684\*00