Balance of Performance Publication

Date:22.11.2023

HANKOOK 6H ABU DHABI 2024

To Sporting & Technical Regulations

24H SERIES MIDDLE EAST TROPHY 2023-2024 (version 23 October 2023)

Dear Teams and Drivers

These Balance of Performance and other figures are in force with immediate application and replaces any previously published BOP-publications.

Notes on boost control:
Control of Pboost strategy as per document attached (Appendix: Control of Pboost strategy is updated), for all cars of which Pboost max is specified, unless explicit otherwise specified.

Approved:
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For all Classes except class 992 and class GT3

SEMI-PRO-BOP
This "SEMI-PRO-BOP" refers to Series Bulletin 02/2021 Art. 8.3.2 Team Composition.
This "SEMI-PRO-BOP" is applicable for a team with drivers-line up with ONLY SEMI-PRO drivers.

BOP	Balance of Performance*	
	Weight	Refuelling
SEMI-PRO-BOP	+ 30 kg	-/- 5 L

* BOP adjusted (+/-) ballast weight and refuelling amount, referred to initial value specified in this BOP-publication)

Class TC: Touring Cars

Brand & Type	Cylinder capacity	Turbo	Minimum Weight	Max Refuelling amount	Remarks
BMW M2 CS (365HP)	3000 cc	Twin Turbo	1530 kg	85 L @ Green 85 L @ Code60	No power stick (365HP) Datalogger AIM Evo5 mandatory
BMW M240i Racing Cup	3000 cc	Twin Turbo	1440 kg	85 L @ Green 85 L @ Code60	According to BMW M240i Cup regulations 2020 Car height minimum 100mm
BMW E46 M3	3200 cc	No	1200 kg	120 L	

Your (TC) car not listed here? Please make an individual request to info@creventic.com

Class TCX: Special Touring Cars

Brand & Type	Cylinder capacity	Turbo	Minimum Weight	Max Refuelling amount	Remarks
Alpine A110 Cup	1800c c	Turbo	1000 kg	95 L @ Green 95 L @ Code60	
BMW M2 CS (450HP)	3000 cc	Twin Turbo	1530 kg	85 L @ Green 85 L @ Code60	Black power stick (450HP)
BMW M240i Racing Cup	3000 cc	Twin Turbo	1440 kg	85 L @ Green 85 L @ Code60	Technical Regulations according Class TCX Car ride height is free
BMW M240i	3000 cc	Twin Turbo	1330 kg	120 L	
Ginetta G55	3700 cc	No	1100 kg	110 L	
Ligier JS2 R	3700 cc	No	1075 kg	100 L	Datalogger AIM Evo5 mandatory
Lamera Cup	2500 cc	Turbo	1050kg	80 L	Datalogger AIM Evo5 mandatory Max Power 350HP Max Pboost: TBA Independent of Ambient pressure
Lotus Elise Cup PB-R	1800 cc	Turbo	800 kg	100 L @ Green 100 L @ Code60	
Porsche Cayman GT4 Club Sport (type 981)	3800 cc	No	1325 kg	110 L	Datalogger AIM Evo5 mandatory or alternatively AIM MXS 1.2 with SD card module)
Porsche 718 Cayman GT4 Club Sport (type 982)	3800 cc	No	1325 kg	110 L	Datalogger AIM Evo5 mandatory or alternatively AIM MXS 1.2 with SD card module)
SEAT LEON (DSG)	2000 cc	Turbo	1240 kg	100 L	Car ride height is free ECU Software version: 5F6906259L

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Class TCR BOP and ECU-software version

Brand & Type	**Minimum Weight**	**Max Refuel amount**	**Ride height**	**TCR Technical form**	**Power level (%)**	**SW Name** ECU-software version	**SW Identification** (Checksum or ID)	**Max Pboost* & Rev limiter**	**Correct (mbar/C)**
ALFA ROMEO GIULIETTA RF TCR	1205 kg	100 L	70mm	22					
AUDI RS3 LMS SEQ (Gen I)	1205 kg	100 L	Free	10					
AUDI RS3 LMS DSG (Gen I)	1195 kg	100 L	Free	9					
AUDI RS3 LMS TCR	1210 kg	100 L	70mm	240					
CUPRA TCR SEQ (Gen I)	1210 kg	100 L	Free	35					
CUPRA TCR DSG (Gen I)	1185 kg	100 L	Free	43					
CUPRA Leon Competicion TCR	1205 kg	100 L	70mm	169					
HONDA CIVIC FK7 TCR SEQ	1220 kg	100 L	70mm	33					
HONDA CIVIC FK2 TCR SEQ	1200 kg	100 L	70mm	11					
HYUNDAI i30 N TCR	1225 kg	100 L	80mm	27					
HYUNDAI Veloster N TCR	1235 kg	100 L	90mm	97					
KIA CEE'D TCR	1205 kg	100 L	70mm	24					
Lynk&Co 03 TCR	1230 kg	100 L	80mm	101					
MG 6 XPOWER TCR	1210 kg	100 L	70mm	139					
OPEL ASTRA TCR	1210 kg	100 L	70mm	5					
PEUGEOT 308 TCR	1185 kg	100 L	60mm	37					
RENAULT MEGANE RS TCR	1200 kg	100 L	60mm	121					
SUBARU STi TCR	1205 kg	100 L	70mm	7					
VOLKSWAGEN GOLF GTI TCR SEQ (Gen I)	1205 kg	100 L	Free	14					
VOLKSWAGEN GOLF GTI TCR DSG (Gen I)	1180 kg	100 L	Free	12					

TCR ECU-software MUST be according TCR Technical Bulletin no. TBA endurance BOP (-/-5% engine power)

*Boost pressure will be monitored according to: TCR Turbocharger Boost Monitoring Method, dated: 2021-03-29

Class GT4: GT4 Grand Touring Cars

Brand & Type	Cylinder capacity	Minimum Weight	Max Refuelling amount	Restrictor	Remarks *
ALPINE A110 GT4	1800cc/4cyl. Turbo	1100 kg	95 L	NA	Max Pboost TBA
ASTON MARTIN VANTAGE AMR GT4	4000cc/8cyl Turbo	1450 kg	105 L	NA	Max Pboost bar Acc. 2021 MAP 4 (ref. point 1906mbar@4500rpm)
AUDI R8 LMS GT4	5200cc/10cyl	1470 kg	110 L	2x46mm	Restrictor thickness 5mm. Acc. Audi R8 GT4 restrictor drawing
BMW M4 GT4 (F82) (GT4-029)	3000cc/6cyl Turbo	1440 kg	110 L	NA	USB Powerstick "BLACK" (Max Engine power: 472Hp / 600Nm)
BMW M4 GT4 (G82) (GT4-044)	3000cc/6cyl Turbo	1490 kg	110 L	NA	Engine map: SP8 / LT-0
CHEVROLET CAMARO GT4	6200cc/8cyl.	1430 kg	100 L	64mm	FIA-restrictor design ECU BOP 2020
FORD MUSTANG GT4	5200cc/8cyl.	1500 kg	110 L	NA	
GINETTA G55 GT4	3700cc/6cyl	1100 kg	95 L	68mm	Restrictor: G55-E0398 FIA-restrictor design
GINETTA G56 GT4	6200cc/8cyl.	1250kg	105 L	50mm	
KTM X-BOW GT4	2000cc/4cyl Turbo	1120 kg	70 L	NA	Max Pboost 2,0 bar Max rpm 7000 rpm (at all gears)
MCLAREN 570S GT4	3800cc/8cyl Turbo	1440 kg	110 L	NA	BOP-ECU MAP MY19GT4 Calibration (Software version: 13MA516RP)
MCLAREN ARTURA GT4	3000cc/6cyl Turbo	1380 kg	105 L	NA	MAP restricted 2 (Max Engine power: 340kW)
MERCEDES AMG GT4	4000cc/8cyl Turbo	1470 kg	100 L	NA	Max Pboost 1,74 bar (Power Level 7 MAP BOP 2020 (Max Engine power: 315kW)
PORSCHE CAYMAN GT4 CLUPSPORT MR (Nat-GT4-024)	3800cc/6cyl	1272 kg	100 L	NA	ECU 2018 BOP
PORSCHE 718 CAYMAN GT4 CS MR (Nat-GT4-037)	3800cc/6cyl	1300 kg	115 L	NA	ECU 2021 BOP
PORSCHE 718 CAYMAN GT4 RS CS (Nat-GT4-042)	4000cc/6cyl	1360 kg	100 L	53,7mm	
TOYOTA GR SUPRA GT4 (Nat-GT4-039)	3000cc/6cyl Turbo	1360 kg	105 L	NA	Power Stick Blue
TOYOTA GR SUPRA GT4 EVO (2023) (Nat-GT4-039)	3000cc/6cyl Turbo	1370 kg	105 L	NA	ECU/Pboost TBA

* Specified Max Pboost pressure are absolute pressure at ambient of 1010mbar.

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Porsche 991 Cup (Generation I and II): See Class GTX

Class 992: Porsche 992 Cup classes
Including BOP- table class 992-PRO & 992-AM

Class*	BOP*	Minimum Weight	Max Refuelling amount	Fuel flow**	Remarks
992-PRO teams in Class 992	BOP-PRO	1310 kg	110 L	80%	Models 2021 .. 2023 NO Restrictor-Blende
992-AM	BOP-AM	1310 kg	110 L	100%	Models 2021 .. 2023 NO Restrictor-Blende
	BOP-AM Advantage (for team with full AM driver line-up)	1310 kg	110 L @ Green 55 L @ Code60	100%	Models 2021 .. 2023 NO Restrictor-Blende

* Class and corresponding BOP is determined by Team composition (Drivers categories)

** Fuel flow is % of max fuel flow. The fuel flow restriction is fully integrated in the fuel pumps and works fully automatic. Creventic can apply reduced refuelling rates, because Creventic has its own professional and dedicated central fuel station.

Class GT3-BOP-TABLE

Class*	BOP	Balance of Performance**	
		Weight	Refuelling
GT3-PRO teams in Class GT3	BOP-Pro	+ 30 kg	-/- 5 L
GT3-PRO/AM	BOP-PRO/AM	+/- 0 kg	+/- 0 L
GT3-AM	BOP-AM	+/- 0 kg	+ 15 L More Engine Power (bigger restrictor or more turbo boost) see GT3-BOP-table
	BOP-AM Advantage (for team with full AM driver line-up)	+/- 0 kg	Same as AM-BOP plus: 50% max refuelling @ Code60***

* Class and corresponding BOP is determined by Team composition (Drivers categories)

** BOP adjusted (+/-) ballast weight and refuelling amount, referred to initial value specified in Class GT3-BOP Table on next page

*** E.g. if initial max refuelling is 105 Litre: You are allowed to refuel 120 L @ green (105+15) and you are allowed to refuel 60 Litre during Code60. (120*50%)

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Class GT3 including GT3-PRO/AM and GT3-AM (Mainly GT cars)

Brand & Type	Minimum Weight	Max Refuel amount	Fuel flow**	Restrictor	Max Pboost *
ASTON MARTIN VANTAGE AMR GT3	1290 kg	110 L	100%	N/A	Max Pboost ratio/rpm 1,70/4000 1,72/4500 1,80/5000 1,86/5500 1,89/6000 1,89/6500 1,78/7000 1,45/>7250 AM-BOP 1,80/4000 1,81/4500 1,88/5000 1,95/5500 1,98/6000 1,98/6500 1,86/7000 1,45/>7250
AUDI R8 LMS GT3 (GT3-038) EVO I	1280kg	100 L	95%	2x41,0mm AM-BOP: 2x44mm	
AUDI R8 LMS GT3 (GT3-038) EVO II (2022)	1290kg	100 L	95%	2x37,0mm AM-BOP:2x40mm	FIA restrictor design acc. 2022 homologation regulations Group GT3
Bentley Continental GT3 (GT3-049)	1290 kg	105 L	100%	N/A	Max Pboost ratio/rpm 1,96/4000 1,86/4500 1,77/5000 1,70/5500 1,65/6000 1,55/6500 1,45/7000 1,35 > 7250 AM-BOP 2,04/4000 1,94/4500 1,85/5000 1,78/5500 1,73/6000 1,63/6500 1,53/7000 1,43 > 7250
BMW M4 GT3	1290 kg	100 L	95%	N/A	Max Pboost ratio/rpm 2,40/4000 2,47/4500 2,57/5000 2,67/5500 2,74/6000 2,68/6500 2,44/7000 2.30/7250 2,10/7500 AM-BOP: 2,51/4000 2,58/4500 2,68/5000 2,78/5500 2,85/6000 2,79/6500 2,55/7000 2,41/7250 2,10/7500
BMW M6 GT3	1310 kg	105 L	100%	N/A	Max Pboost ratio/rpm 1,83/4000 1,91/4500 1,99/5000 2,03/5500 1,97/6000 1,83/6500 1,67/7000 1,30/>7250 AM-BOP: 1,93/4000 2,01/4500 2,09/5000 2,13/5500 2,07/6000 1,93/650 1,77/7000 1,35/>7250
FERRARI 296 GT3	1290 kg	100 L	95%	N/A	Max Pboost ratio/rpm 1,83/4000 2.16/4500 2,45/5000 2.45/5500 2.44/6000 2.42/6500 2.38/7000 2.27/7500 2.11/8000 1,00/>8100 AM-BOP: 1,83/4000 2.27/4500 2,45/5000 2.52/5500 2.52/6000 2.52/6500 2.46/7000 2.35/7500 2.19/8000 1,00/>8100

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FERRARI 488 GT3	1280 kg	100 L	95%	N/A	Max Pboost ratio/rpm 1,55/4000 1,59/4500 1,63/5000 1,67/5500 1,69/6000 1,66/6500 1,62/7000 1,55/7500 1,30/>7750 AM-BOP: 1,64/4000 1,68/4500 1,71/5000 1,76/5500 1,78/6000 1,75/6500 1,71/7000 1,64/7500 1,30/>7750
LAMBORGHINI HURACAN GT3 (GT3-040) (2016)	1290 kg	105 L	100%	2x40,0mm AM-BOP: 2x42,5mm@~~1290kg~~	
LAMBORGHINI HURACAN GT3 EVO (GT3-040)	1290 kg	105 L	100%	2x40,0mm AM-BOP: 2x42,5mm@~~1290kg~~	
LAMBORGHINI HURACAN GT3 EVO2 (GT3-054)	1290 kg	105 L	100%	1x 52mm AM-BOP: 1x 54mm	FIA restrictor design acc. 2022 homologation regulations Group GT3
McLaren 720S GT3 (2019) (GT3-052)	1280 kg	105 L	100%	N/A	Max Pboost ratio/rpm 1,82/4000 1,79/4500 1,76/5000 1,74/5500 1,66/6000 1,60//6500 1,49/7000 1,44/7500 1,37/8000 1,15/8100 AM-BOP: 1,92/4000 1,89/4500 1,85/5000 1,83/5500 1,74/6000 1,68/6500 1,56/7000 1,51/7500 1,44/8000 1,21/8100
McLaren 720S GT3 EVO (2023) (GT3-052)	1280 kg	105 L	100%	N/A	Max Pboost ratio/rpm 1,80/4000 1,78/4500 1,76/5000 1,74/5500 1,69/6000 1,62/6500 1,51/7000 1,47/7500 1,37/8000 1,15/8100 AM-BOP: 1,90/4000 1,87/4500 1,85/5000 1,83/5500 1,78/6000 1,70/6500 1,58/7000 1,54/7500 1,44/8000 1,21/8100
MERCEDES AMG GT3 (GT3-042) (2016)	1310kg	105 L	100%	2x36,0mm AM-BOP: 2x40mm	
MERCEDES AMG GT3 EVO (2020) (GT3-042)	1330kg	105 L	100%	2x36,0mm AM-BOP: 2x40mm	
PORSCHE 911 GT3 R (991 I & 991 II)	1260 kg	95 L	92,5%	2x45mm AM-BOP: Free	
PORSCHE 911 GT3 R (992)	1270 kg	95 L	90%	2x 39,5mm AM-BOP: 2x45mm	FIA restrictor design acc. 2022 homologation regulations Group GT3

All restrictors must be acc. FIA-restrictor design 2021 homologation regulations Group GT3 GT RESTRICTOR GEOMETRY (unless explicit described otherwise)
* Values are boost pressure ratio and need to be multiplicated by the ambient pressure to get the Pboost limit.
Competitors must adjust boost pressure relative to ambient pressure at each event. Pboost limits linear interpolation approach.

** Fuel flow is % of max fuel flow. The fuel flow restriction is fully integrated in the fuel pumps and works fully automatic.
Creventic can apply reduced refuelling rates, because Creventic has its own professional and dedicated central fuel station.
This way, the difference in fuel consumption over the entire course of the race is compensated.

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Class GTX Special GT cars

Brand & Type	Cylinder capacity	Minimum Weight	Max Refuelling amount	Fuel flow**	BOP	Remarks
Audi TTRS	2500cc Turbo	1250 kg	110 L @ Green 110L @ Code60	100%	NA	NA
Audi R8 LMS GT2	5200 cc	1370 kg	110 L	100%	2 x 58mm	Datalogger AIM Evo5 mandatory
Ginetta G56 Cup		TBA	TBA	TBA	TBA	
KTM X-BOW GTX	2500 cc Turbo	1100 kg	115 L	100%	2,4 bar (independent of Pamb), max rpm 7000	Datalogger AIM Evo5 mandatory
Lamborghini Huracán Super Trofeo	5200 cc	1300 kg	110 L	100%	2 x 41mm	Datalogger AIM Evo5 mandatory
Ligier JSP4		TBA	TBA	TBA	TBA	
Lotus Exige V6 Cup R	3500 cc Turbo	1000 kg	120 L @ Green 120 L @ Code60	100%	Pboost: TBA	Datalogger AIM Evo5 mandatory
MARC II V8	5200 cc	1150 kg	120 L @ Green	100%	NA	NA
Mercedes AMG GT2	4000cc Turbo	1435 kg	120 L	100%	Boost table PL4 (470KW)	Datalogger AIM Evo5 mandatory
NOVA NP02	5000 cc	750 kg	TBA	TBA	TBA	Datalogger AIM Evo5 mandatory
Porsche 911 GT3 Cup 991 Gen I or Gen II	3800cc 4000cc	1200 kg	100 L @ Green 100 L @ Code60	100%	NA	NA
Porsche 911 GT3 Cup 991 MR	4000 cc	1200 kg	120 L @ Green 120 L @ Code60	100%	NA	NA
Renault Sport RS01 (CdM GT 004)	4000 cc Turbo	1220 kg	110 L	100%	Max Pboost ratio/rpm 1,80 (at all rpm)	Datalogger AIM Evo5 mandatory Ride Height acc. Art. 5.6.2 Appendix 10 (Class GT3 technical regulations) Aerodynamics is free
Vortex 1.0	6200 cc	1100 kg	120 L @ Green 120 L @ Code60	100%	NA	NA
Vortex 2.0	6200 cc	1000 kg	115 L	100%	TBA	NA

Please note: Art. 3.3 of Appendix 7 of the Sporting & Technical regulations

Your (GTX) car not listed here? Please make an individual request to info@creventic.com

** Fuel flow is % of max fuel flow. The fuel flow restriction is fully integrated in the fuel pumps and works fully automatic. When cars with an assigned fuel flow restriction refuel, the fuel pump will automatically stop for a set amount of time each ten seconds. This way, the difference in fuel consumption over the entire course of the race is compensated

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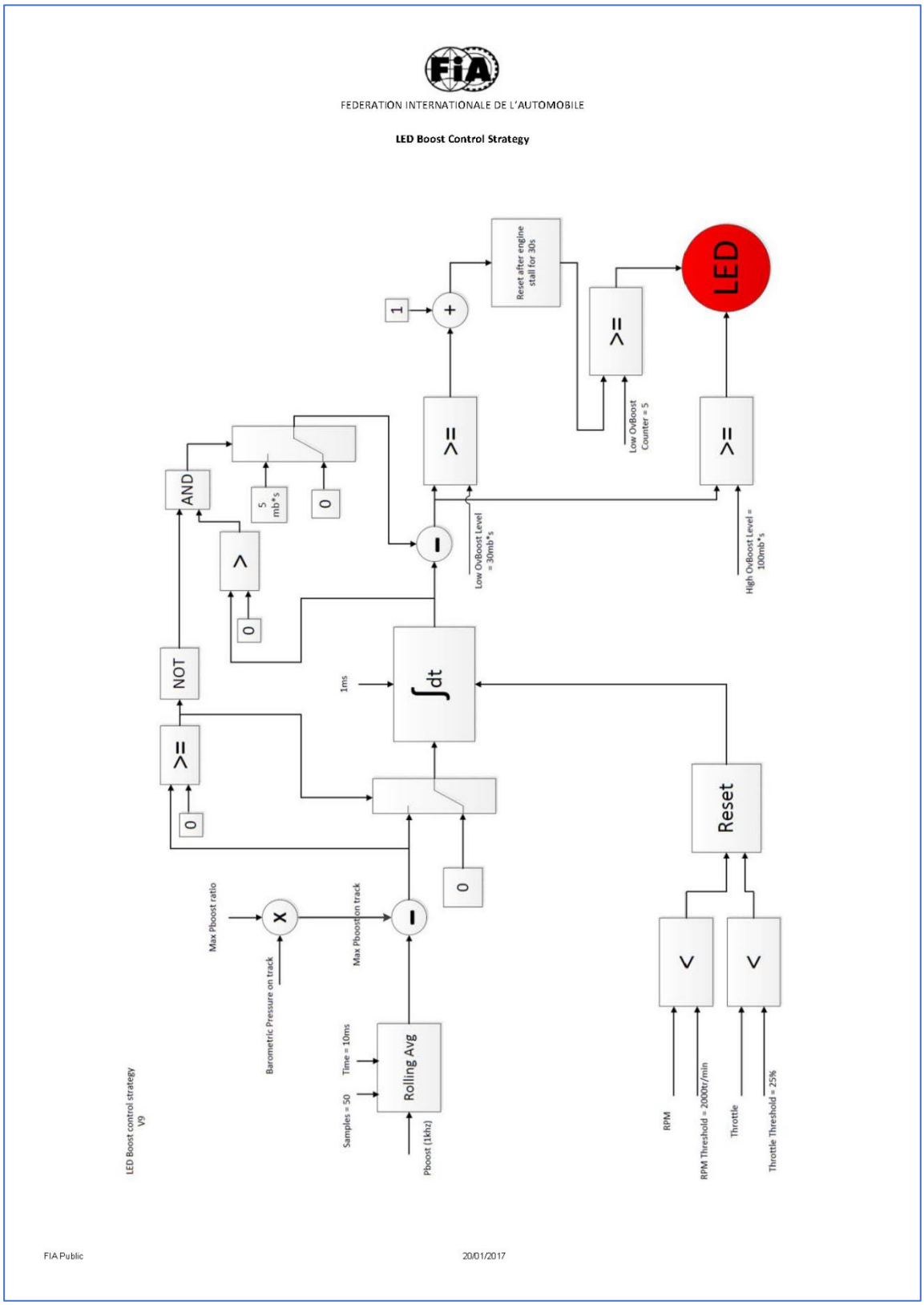
Appendix: Control of Pboost strategy



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