

Current status of WLTP-DHC

Prepared by Japan

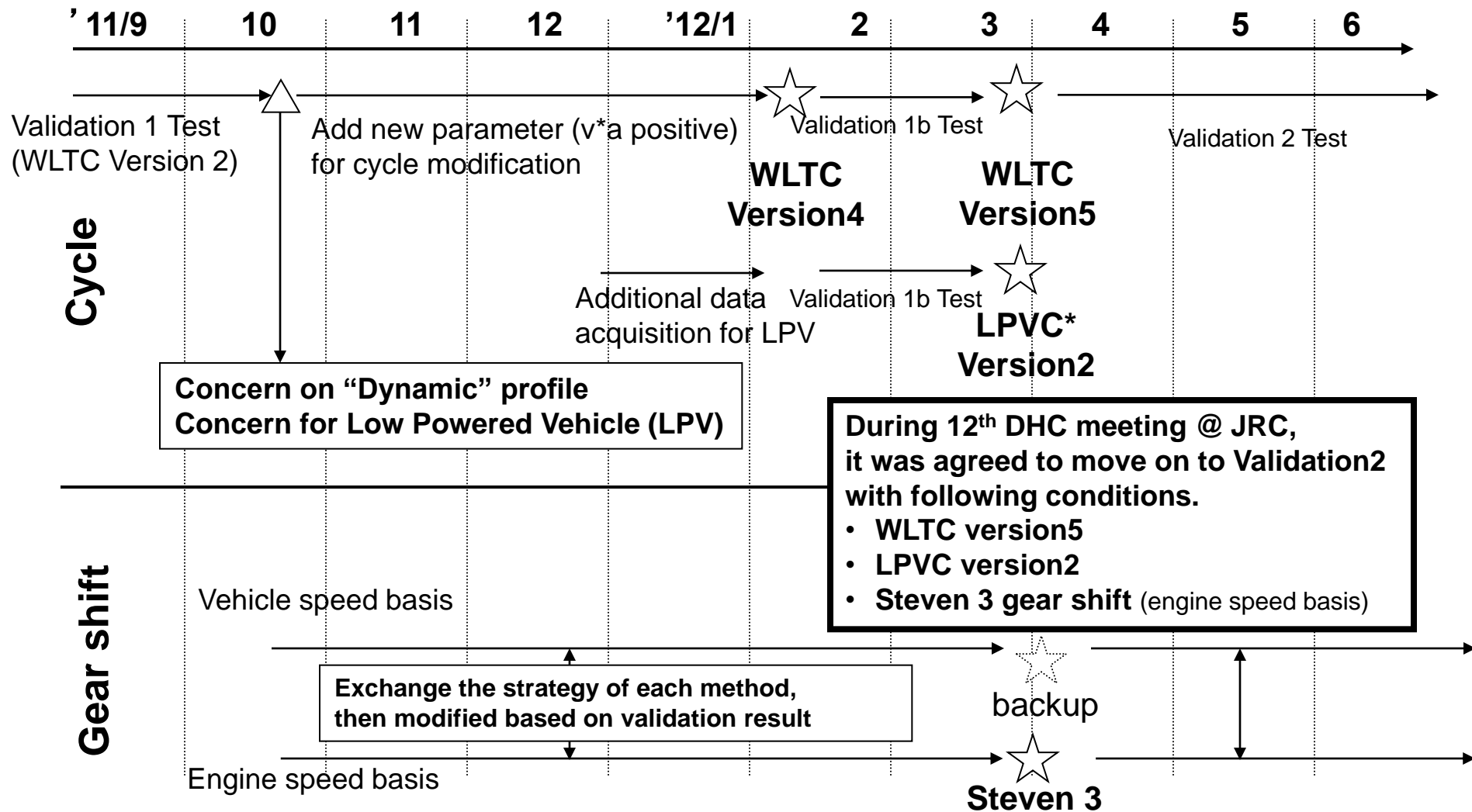
**the 13th DHC group
under GRPE/WLTP informal group**

5th June 2012

Palais des Nations, Geneva

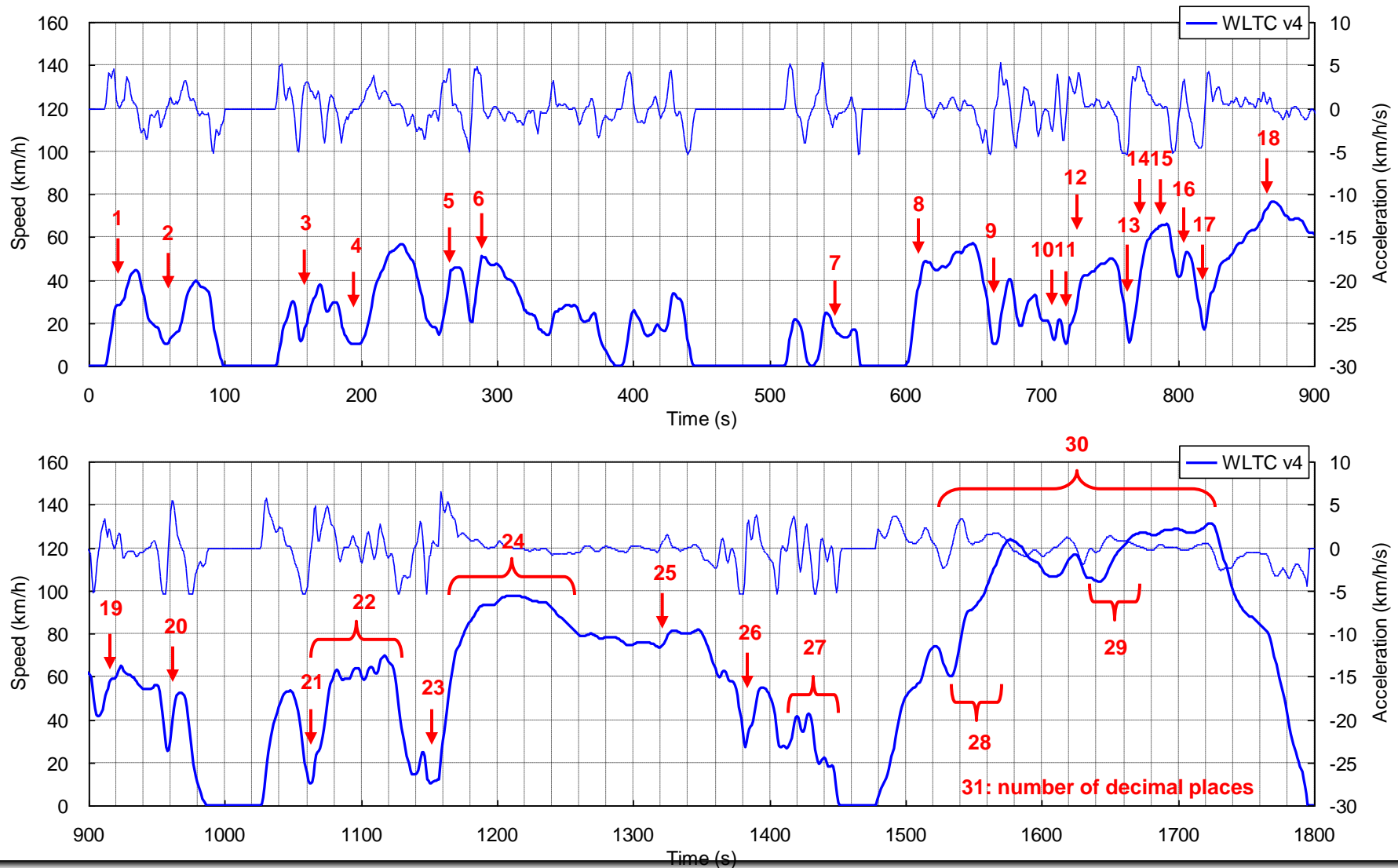
1. Progress since last GRPE meeting
2. Summary of Validation1b
3. Profile of WLTC ver.5
4. Gear Shift Prescription
5. Open Issues Lists
6. Next actions
7. Next meeting

1. Progress since last GRPE meeting

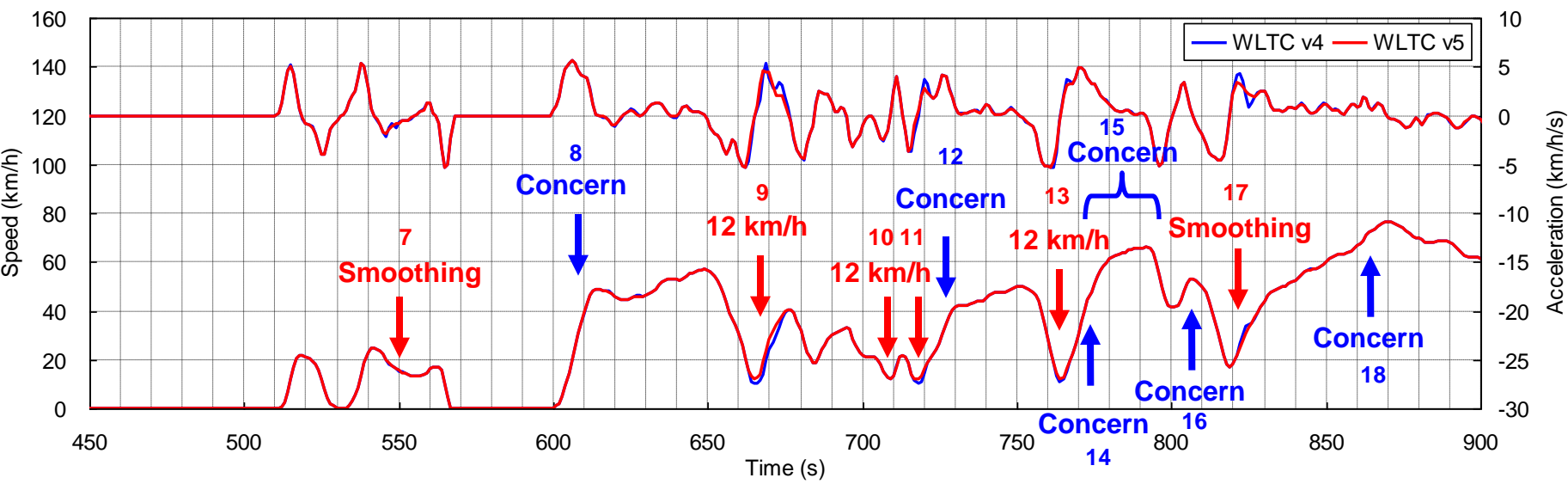
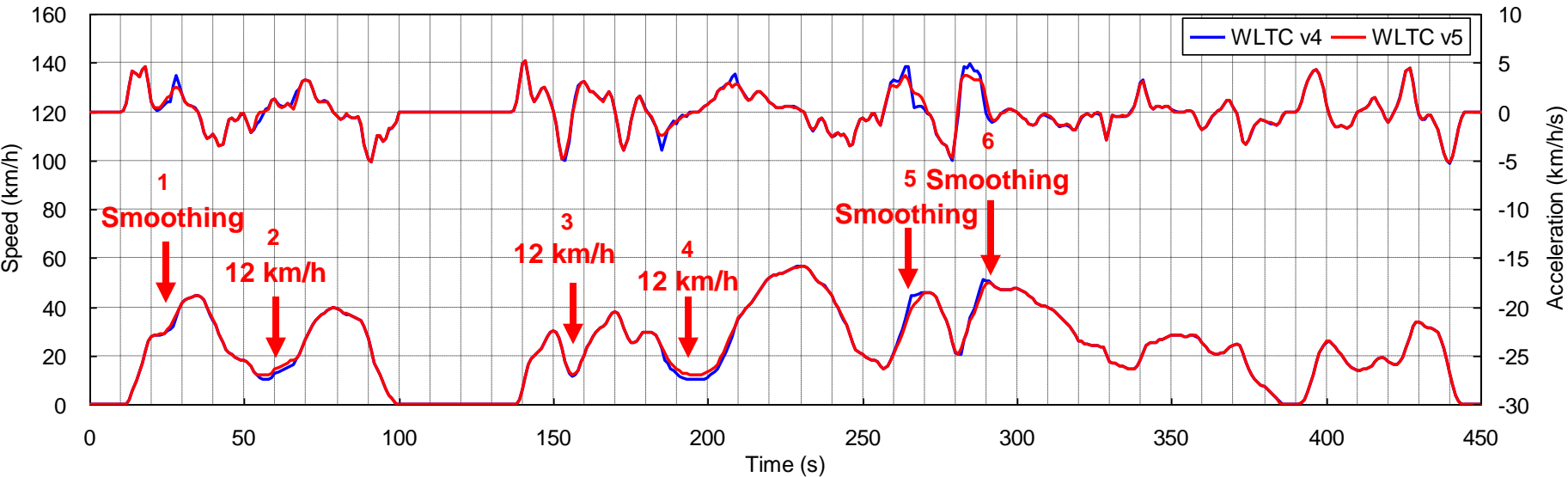


2.1. Summary of Validation 1b

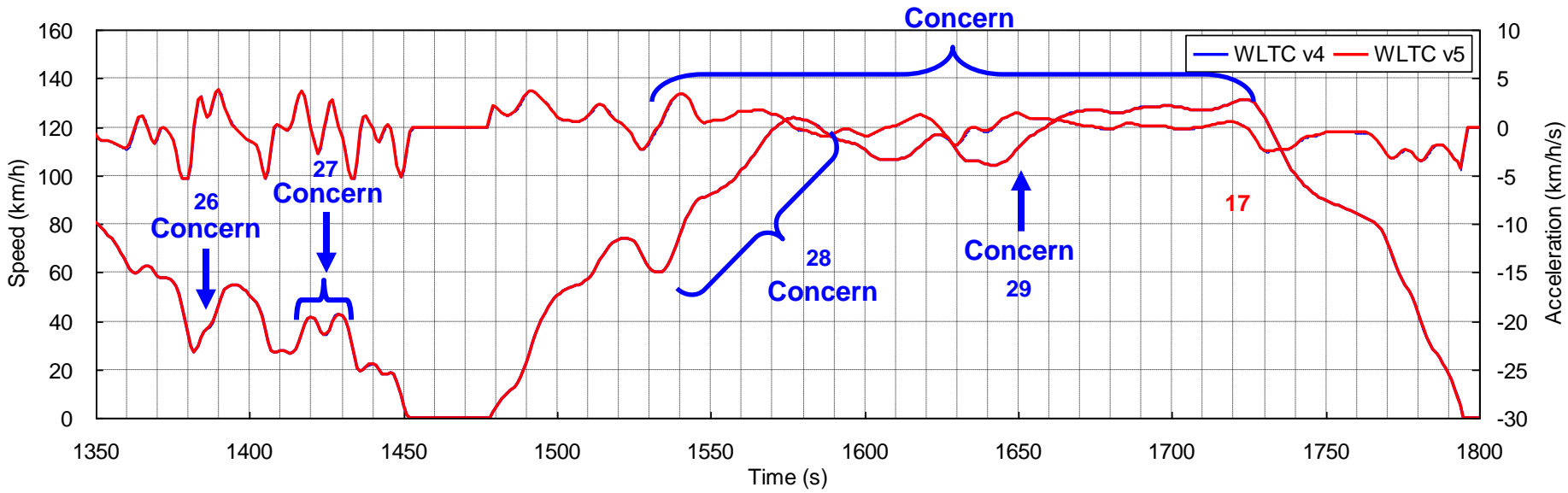
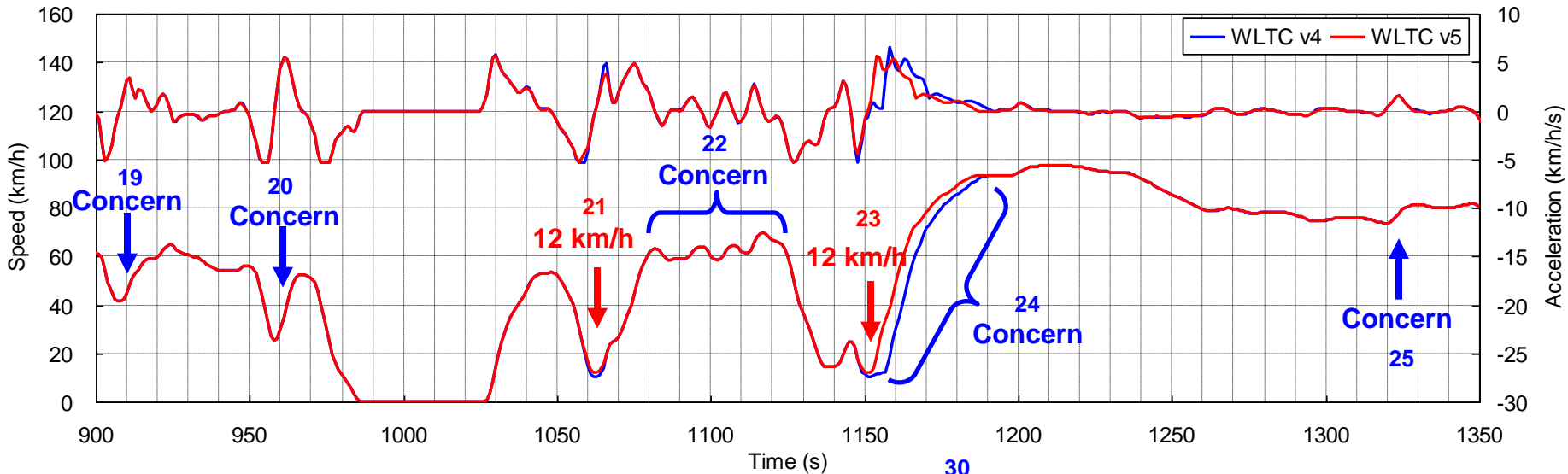
From the viewpoints of drivability, traceability and reproducibility, the following 31 portions are pointed out by India, JRC and Japan.



Modification points from version4. Red → Applied, Blue → Concern



Modification points from version4. Red → Applied, Blue → Concern

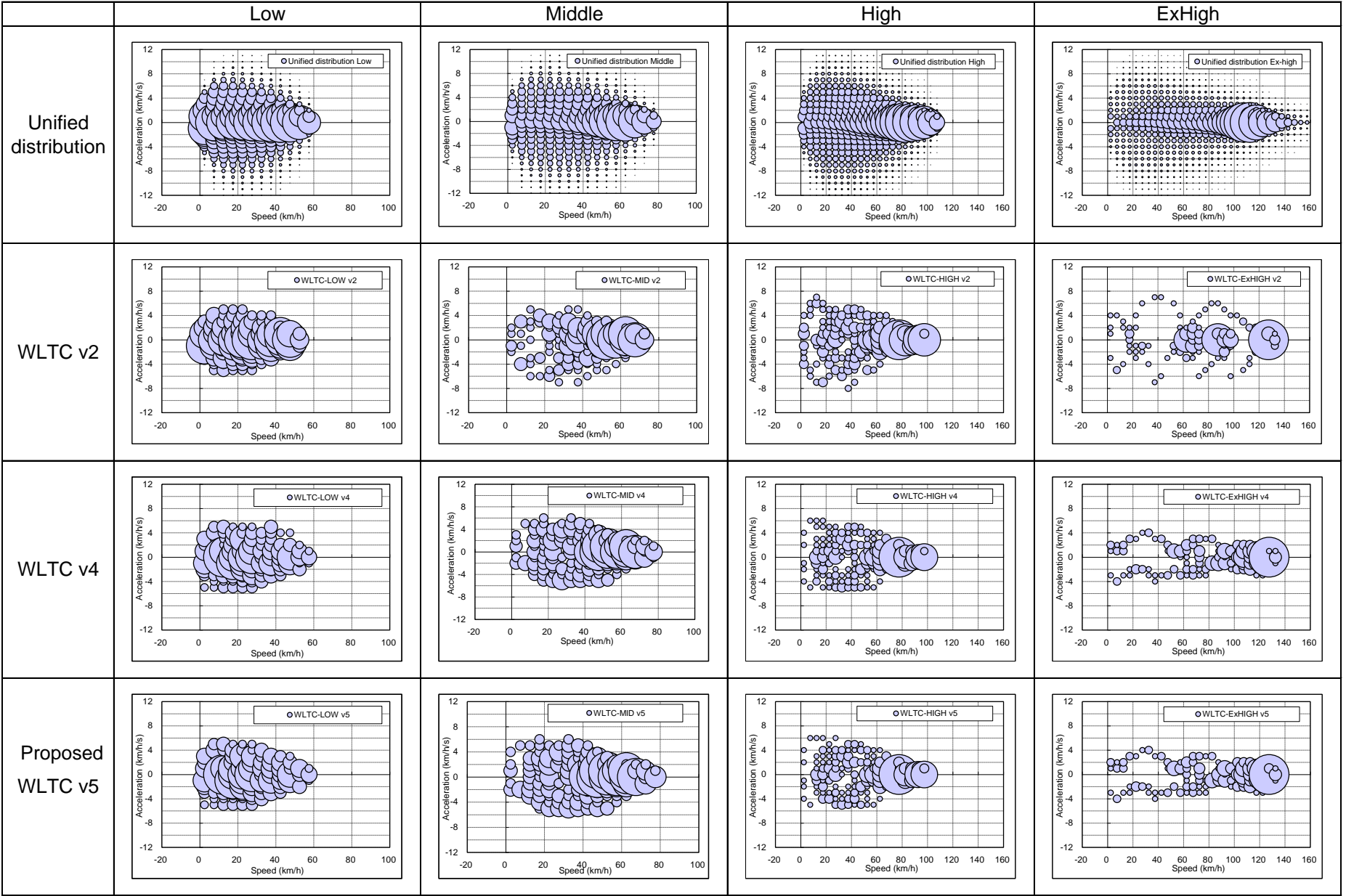


3.3. Profile of WLTC ver.5

Parameter		Cycle duration	Driving distance	Average speed	Max. speed	Max. acceleration	Max. Deceleration	RPA	Acceleration ratio	Deceleration ratio	Cruise ratio	Idling ratio	X ² value	Normalized X ² value
		s (h)	km	km/h	km/h	km/h/s	km/h/s	m/s ²	%	%	%	%	V-A distribution	V-A distribution
LOW	WWW database	(6107)	114440	19.8	60.0	-	-	0.192	27.5	25.4	22.7	24.5	-	-
	WLTC v2	589	2.98	18.2	50.9	5.3	-5.3	0.165	26.3	27.8	19.5	26.3	0.244	0.0008
	WLTC v3	589	3.19	19.5	56.5	5.9	-5.3	0.176	25.1	29.2	20.9	24.8	0.289	0.0009
	WLTC v4	589	3.08	18.8	56.5	5.3	-5.3	0.209	27.0	31.1	17.1	24.8	0.608	0.0019
	Proposed WLTC v5	589	3.09	18.9	56.5	5.3	-5.3	0.205	28.4	31.1	15.8	24.8	0.586	0.0019
MID	WWW database	(3136)	120162	38.4	80.0	-	-	0.188	31.4	27.5	28.8	12.2	-	-
	WLTC v2	433	5.01	41.6	72.5	5.4	-7.4	0.155	37.0	24.2	27.7	11.1	0.629	0.0015
	WLTC v3	433	4.95	41.1	76.6	5.7	-5.3	0.184	33.7	29.6	26.1	10.6	0.613	0.0014
	WLTC v4	433	4.74	39.4	76.6	5.6	-5.3	0.198	36.0	30.3	23.1	10.6	0.649	0.0015
	Proposed WLTC v5	433	4.76	39.5	76.6	5.7	-5.4	0.196	36.0	30.3	23.1	10.6	0.650	0.0015
HIGH	WWW database	(3358)	192595	58.0	110.0	-	-	0.156	31.3	27.2	35.5	6.0	-	-
	WLTC v2	455	7.01	55.5	97.4	6.5	-7.7	0.144	29.0	28.8	35.2	7.0	0.962	0.0017
	WLTC v3	455	7.05	55.8	97.4	6.5	-5.3	0.143	28.8	28.8	36.0	6.4	0.869	0.0015
	WLTC v4	455	7.06	55.9	97.4	6.5	-5.3	0.137	27.0	27.3	39.3	6.4	1.065	0.0018
	Proposed WLTC v5	455	7.16	56.6	97.4	5.7	-5.4	0.135	26.8	27.9	38.9	6.4	1.113	0.0019
Ex-HIGH	WWW database	(3144)	282188	86.8	194.7	-	-	0.108	25.7	23.4	48.9	2.0	-	-
	WLTC v2	323	7.72	86.0	132.0	7.4	-6.8	0.127	25.4	25.4	47.7	1.5	5.312	0.0060
	WLTC v3	323	7.67	85.4	130.4	6.1	-5.3	0.126	26.9	25.7	45.8	1.5	4.413	0.0050
	WLTC v4	323	8.25	92.0	131.3	3.7	-4.4	0.125	36.2	31.6	30.7	1.5	2.779	0.0031
	Proposed WLTC v5	323	8.25	92.0	131.3	3.7	-4.4	0.125	37.2	32.2	29.1	1.5	2.678	0.0030

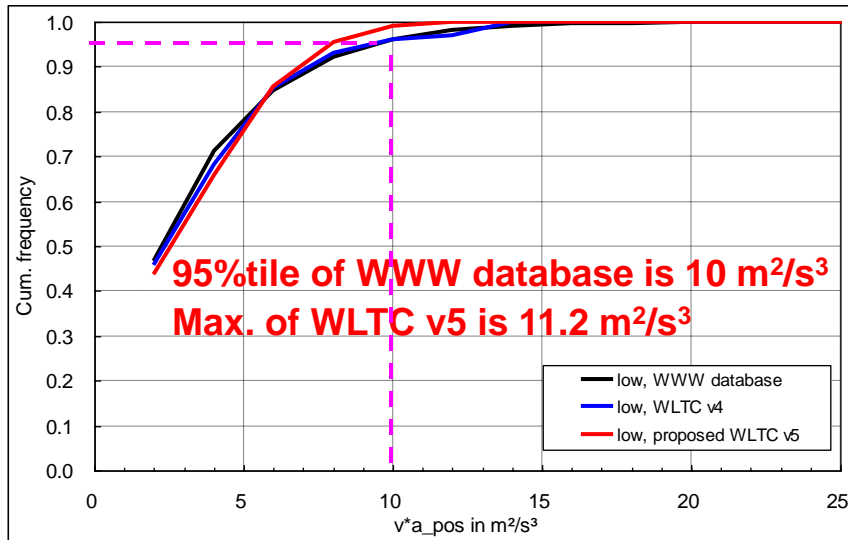
Chi squared value of proposed WLTC v5 is identical to that of WLTC v4

3.4. Profile of WLTC ver.5

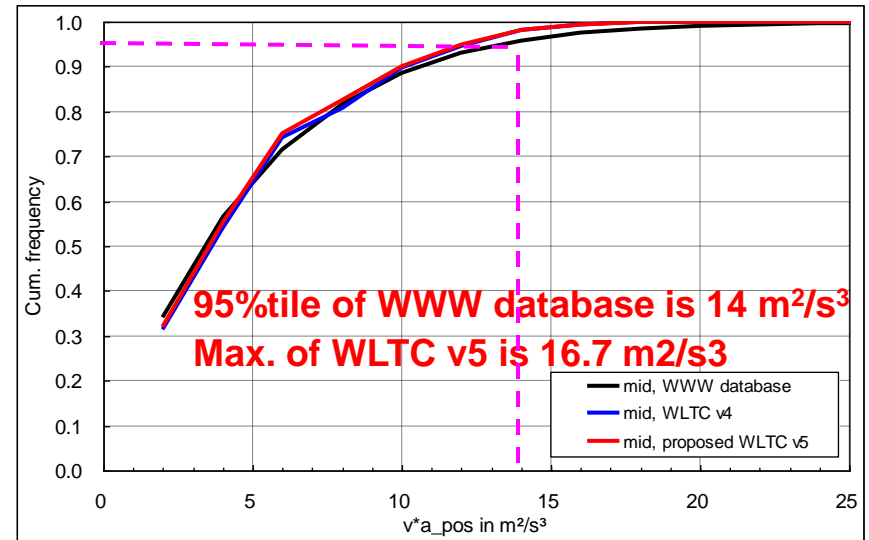


3.5. Profile of WLTC ver.5

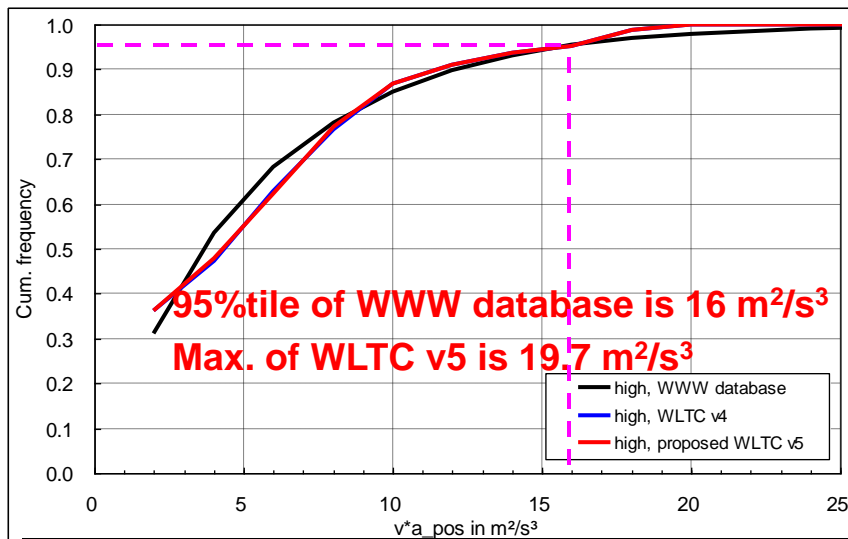
◆ LOW



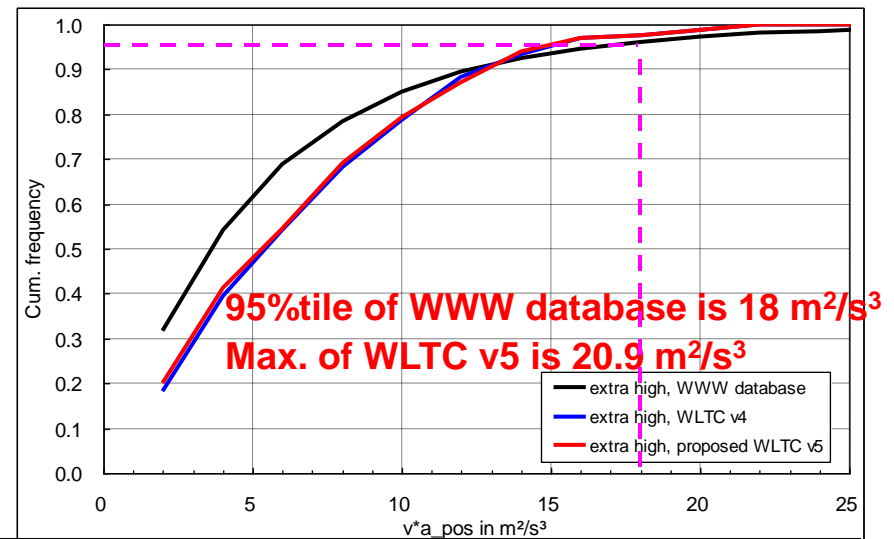
◆ MIDDLE



◆ HIGH

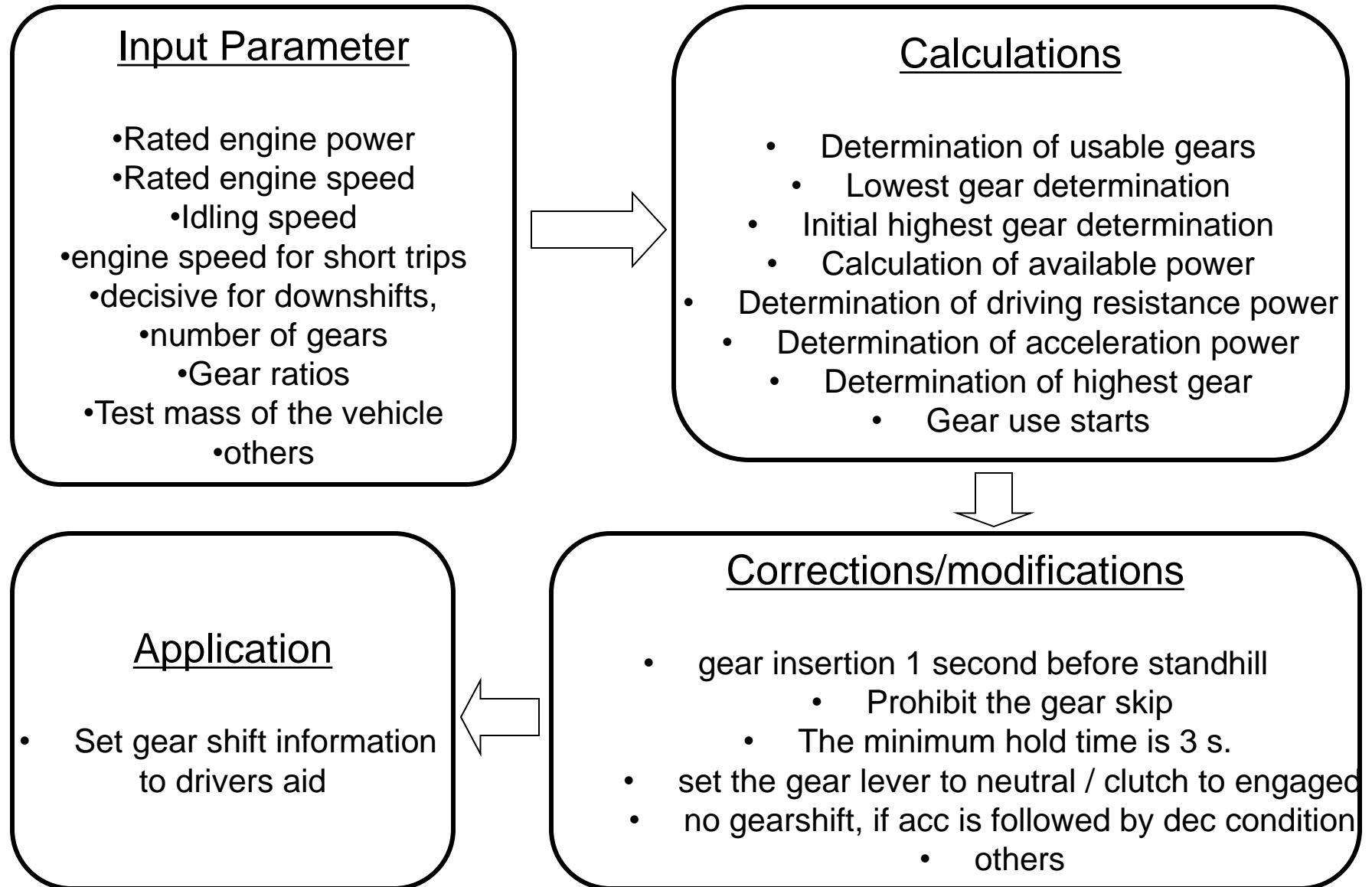


◆ Extra-HIGH



The maximum v*a of WLTC ver.5 exceed 95%tile of WWW database

4. Gear Shift Prescription (Steven3)



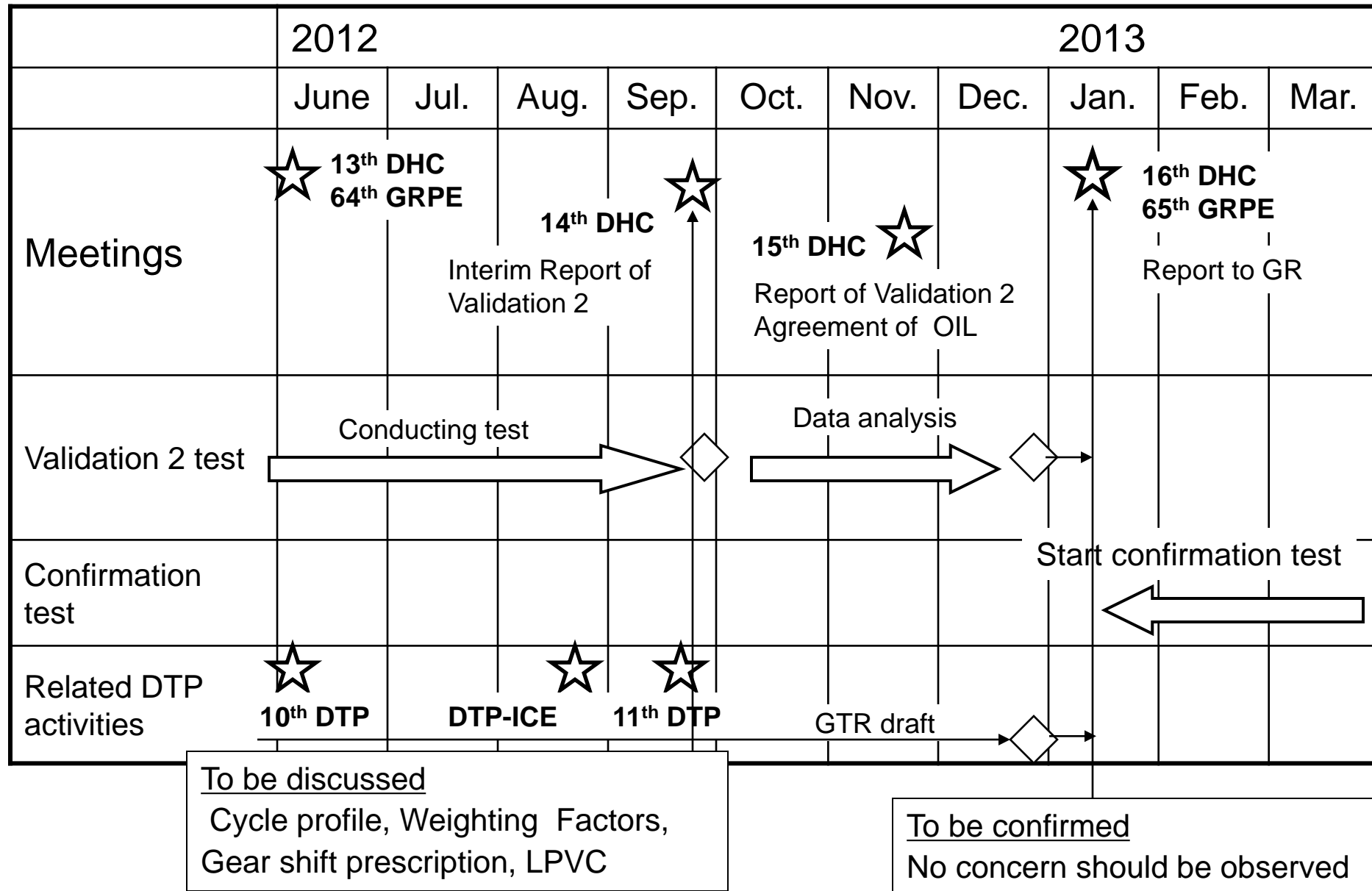
5.1. Open Issues -1

	Issues	Discussion points	Status
1	Deadline for submission of driving data CLOSED	a) India and China requested deadline be extended to May	Decided to start development of new cycle after 8 th DHC meeting. Later data submission is still open for analysis.
2	Regional Weighting when developing the WLTC CLOSED	a) traffic volume b) same weighting c) compromised weighting	It was agreed to adopt the traffic volume ratio during the 8 th DHC meeting
3	Threshold Speed for L/M/H CLOSED	a) according to DHC-06-03 b) CP's requirement	Threshold speeds of 60, 80 and 110km/h were agreed for the cycle phases during 7 th DHC meeting
4	High Phase Cycle Construction (US&EU versus other regions) CLOSED	a) only ONE unified cycle b) possess TWO types of High phase cycle	It was agreed to possess two (2) types of HIGH phase cycle during 7 th meeting.
5	Mode Construction	a) cold start test only b) cold start & hot soak start	Base mode construction was provided for Validation 2. Based on validation2 results, final decision will be discussed.

5.2. Open Issues -2

	Issues	Discussion points	Status
6	Weighting Factor for L/M/H/Ex-H Phase	a) harmonized weighting factors b) permit regional weighting factors	Refer document DHC-13-05 for further discussion
7	Gear Shift Points	a) fixed points b) based on vehicle specification c) others	Vehicle specific shift points (b) was provided for Validation 2.
8	How to treat the vehicles which are not able to follow the prescribed cycle	a) continue to drive with wide-open-throttle b) exempt the Ex-H (or M&H) phase (s) c) others	Refer document DHC-13-03, DHC-13-04 for further discussion
9	Check the driving profile based on the vehicle characteristic CLOSED		Analyze the in-use data based on vehicle characteristic (i.e. power to mass ratio)

6.Next Actions



7. Next Meetings

Next 14th DHC meeting will be set during next DTP meeting in September at JRC.

Main agenda items will be

Validation2 test results from contracting parties

1.WLTC modification

2.Weightings factors of L/M/H/ExH Phases

3.LPVC

4.Gear Shift Points of WLTC

(15th DHC meeting will be set around November 2012)