

Discussion document on Mode Construction

Prepared by Japan

DHC group
under GRPE/WLTP informal group
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1. Background

During the 7th DHC meeting held on 16 May 2011, the possible six(6) options (refer page 3) of mode construction were proposed (refer next slide).

Japan prepared different approach for mode construction from the view points of what mode construction should be.

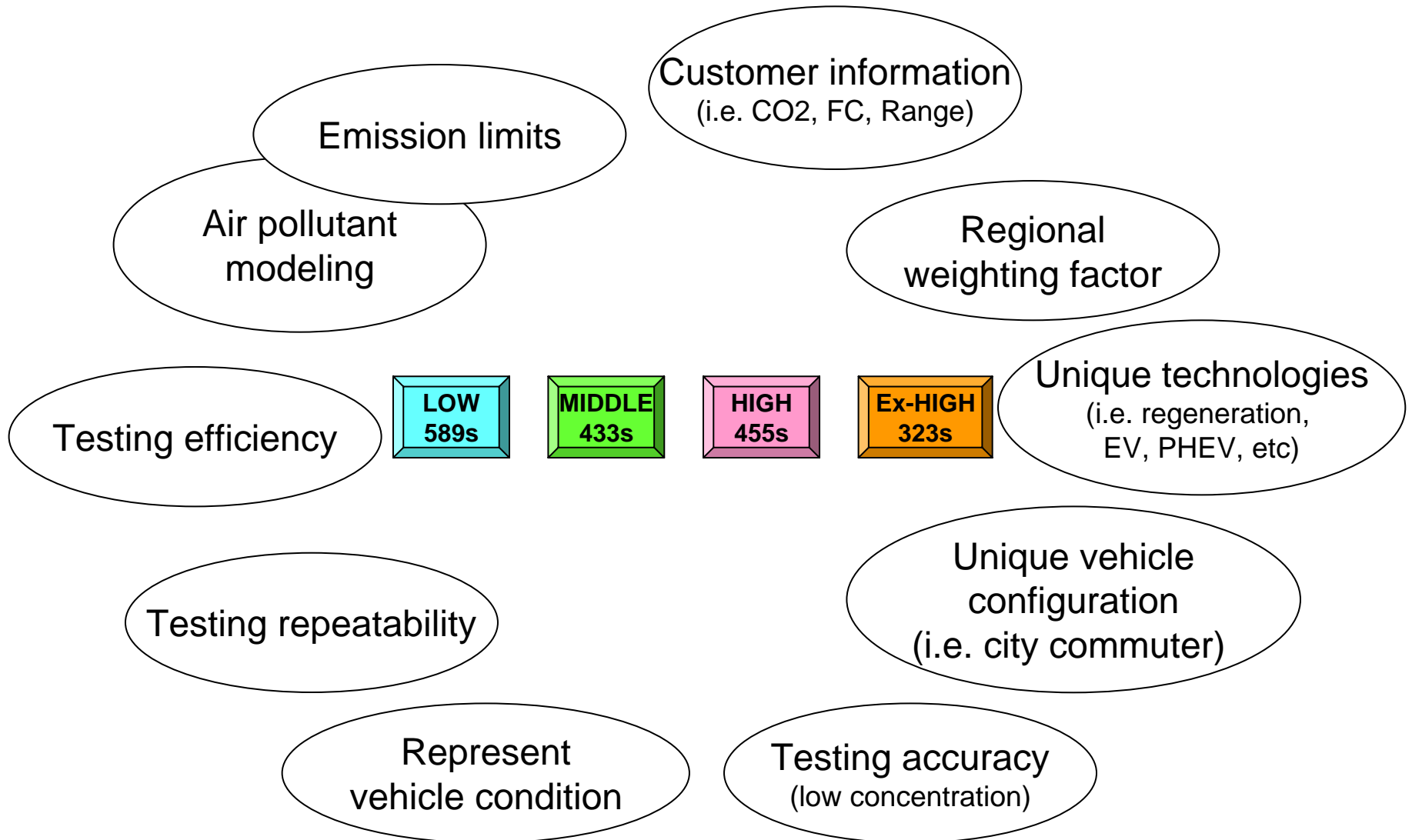
- | | |
|-------------------------------|-----------------------------------|
| (1) Emission Limits | (6) Testing repeatability |
| (2) Air pollutant modeling | (7) Testing accuracy |
| (3) Customer information | (8) Represent vehicle condition |
| (4) Regional weighting factor | (9) Unique technologies |
| (5) Testing efficiency | (10) Unique vehicle configuration |

2. Possible mode constructions

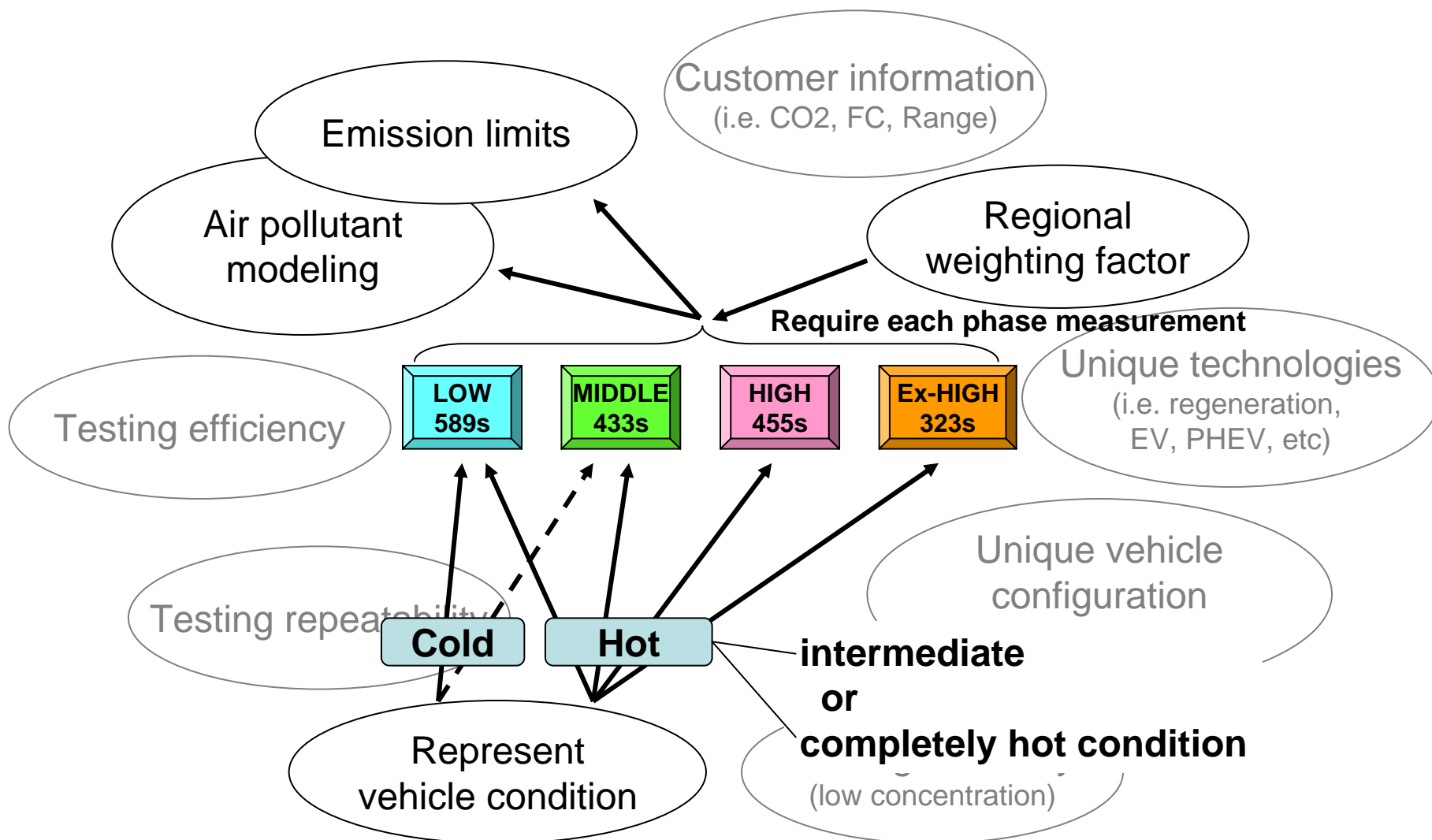
option	Mode construction		Brief description
	Series test	independent	
1			
2			MIDDLE&HIGH 1 sampling
3			similar to US procedure
4			1 HIGH phase
5			LOW&MIDDLE 1 sampling
6			All phases test as a series

*) phase duration subject to change after obtaining the statistical information from China
 **) middle phase test after intermediate soak is required for HEV vehicles

3. Requirement on test cycle mode -1

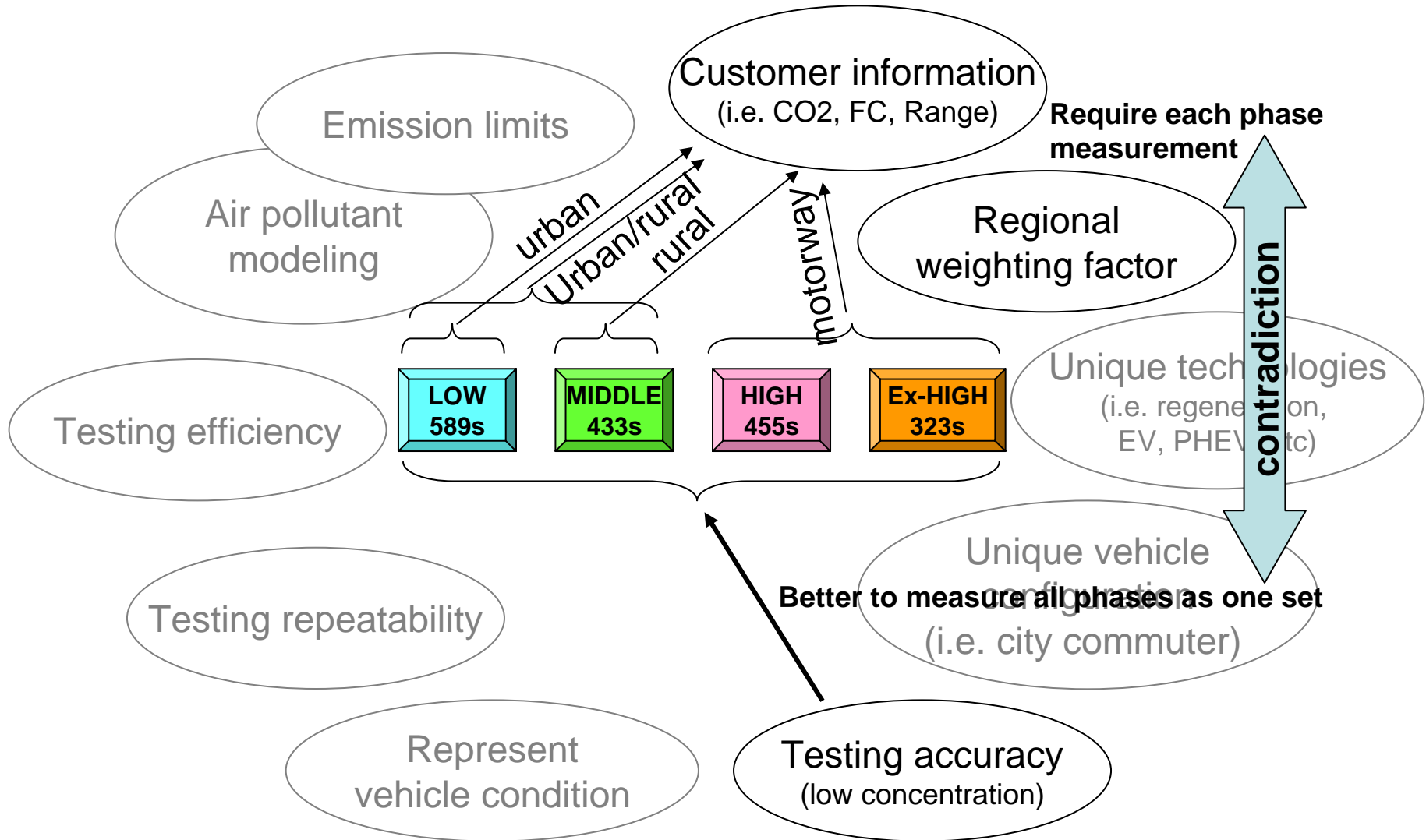


3. Requirement on test cycle mode -2

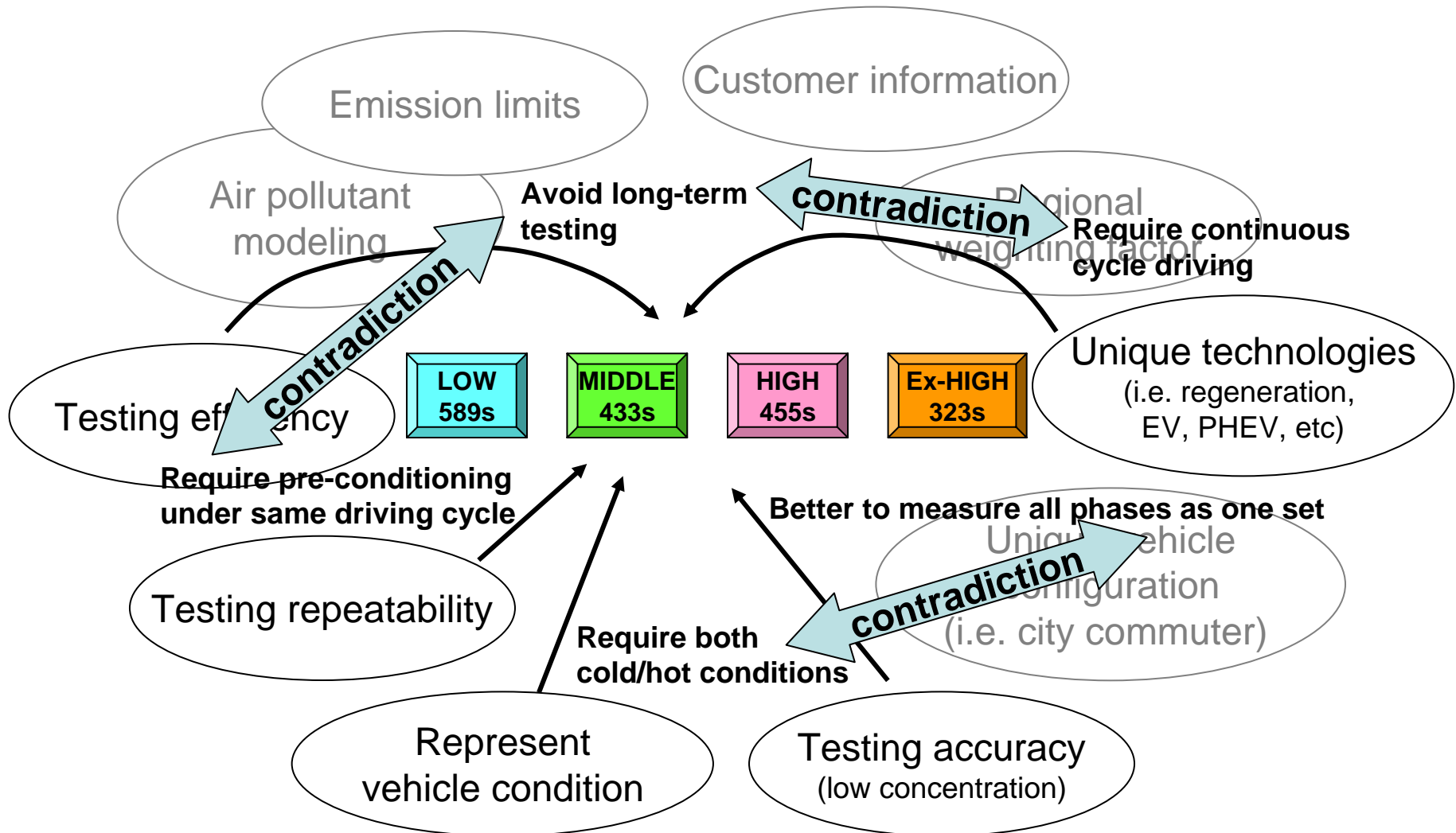


- -> Necessity of middle phase under cold condition will be evaluated during validation1

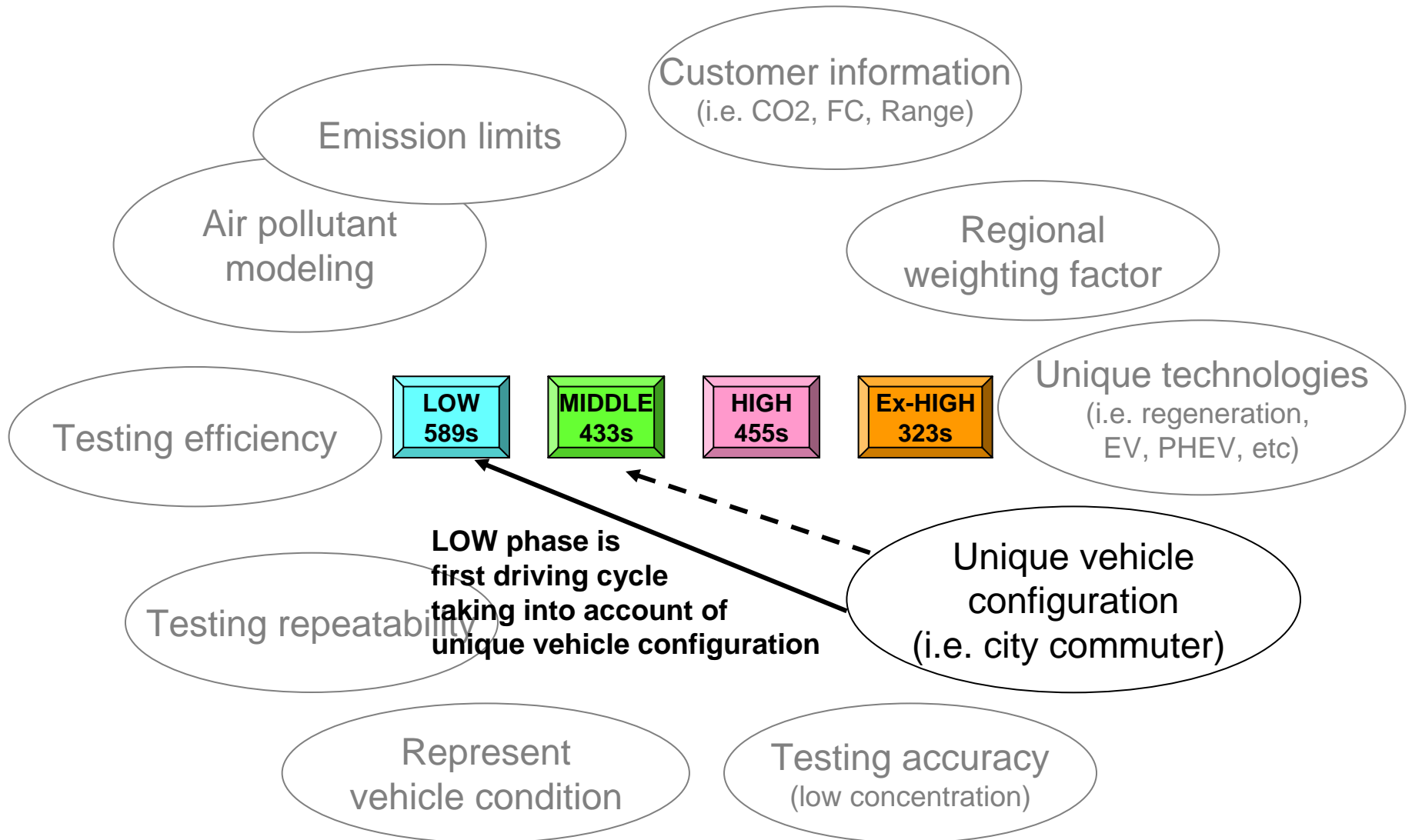
3. Requirement on test cycle mode -3



3. Requirement on test cycle mode -4



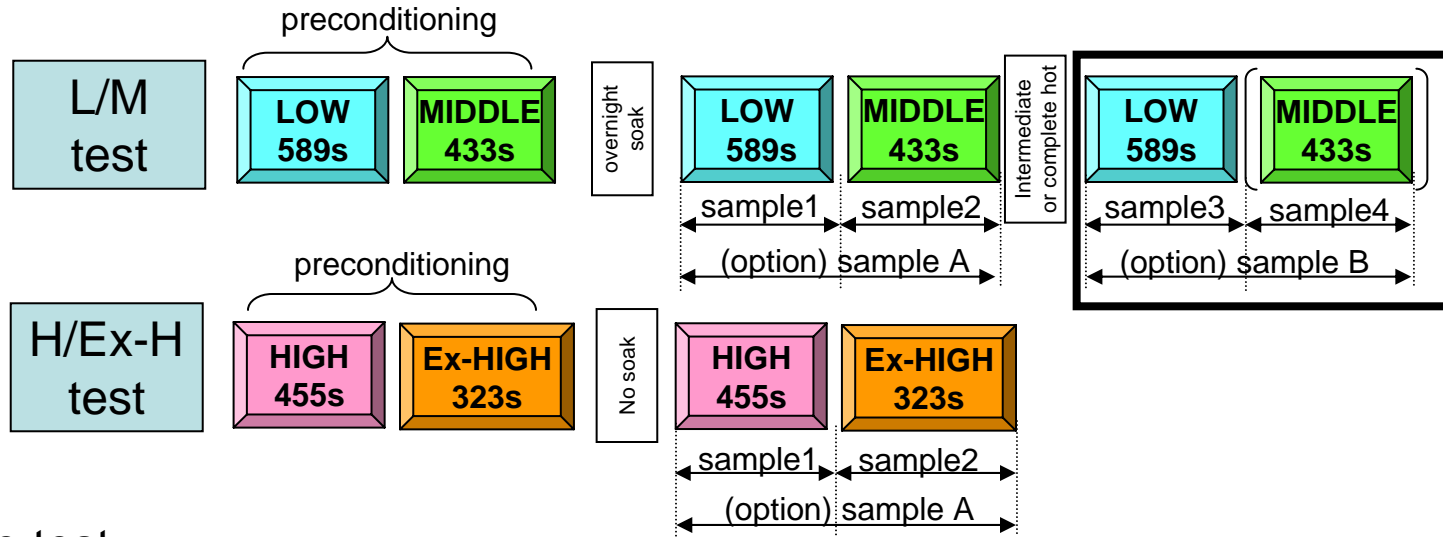
3. Requirement on test cycle mode -5



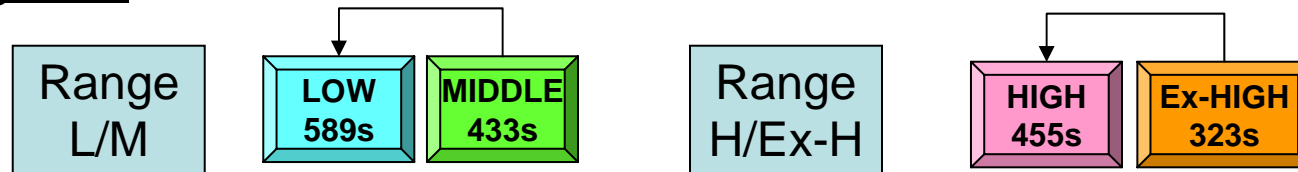
4. Summary

		options
Emission Limits Air pollutant modeling	Separate measurement of each phase	Acceptance of harmonized weighting for pollutants
Customer information	Separate measurement depend on customer requirement	<ol style="list-style-type: none"> 1. L, M, H (& Ex-H) 2. L&M, H (& Ex-H)
Regional weighting factor	Separate measurement of each phase	
Testing efficiency	Separate L/M phases and H/Ex-H phases	
Testing repeatability	Conduct preconditioning of same driving cycle	
Testing accuracy		Acceptance of separate measurement in each phase (validation 2 or confirmation)
Represent vehicle condition	Cold & Hot conditions	Necessity of M phase under cold Hot condition : intermediate or completely hot
Unique technologies	EV/PHEV : Separate continuous driving of L/M and H/Ex-H Regeneration : L/M/H/Ex-H	EV/PHEV : depend on customer requirement
Unique vehicle configuration	First phase : LOW	

5. Tentative Proposal



Range test



Ki determination (regeneration system)

