

Report on the discussion of vibration in CN-JP-OICA web-meeting

2019.12.

Basic Situation

Date: October 18, 2019

Participants: China, Japan, OIAC—total about 15 participants

Basic Viewpoints:

China	<ul style="list-style-type: none">• Current test method--sine sweep: UN 38.3→ECE R100→EVS GTR• The current vibration method is not reasonable and should be modified
OICA	<ul style="list-style-type: none">• Do not see the need for such a vibration requirement at all• Make it as a CP option with modification to the ISO 6469-1 profile
Japan	<ul style="list-style-type: none">• Hold a positive attitude towards this topic• Before the meeting, several questions were raised in response to the existing proposals

Main Discussion

Development procedures :

Current proposal

OICA vibration profile
(ISO6469-1_6.2.2.1 Test option 1)

China vibration profile
(It is also specified in ISO6469-1
_6.2.2.2 Test option 2)

Step1:Clarification of each profile's purpose/concept and grounds (at this meeting)

Discussion

Step2:Consensus building regarding what is valid as a GTR vibration profile

Possible conclusion

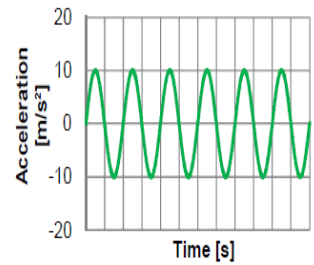
A profile chosen from
current two proposals

New profile developed based
on current two proposals

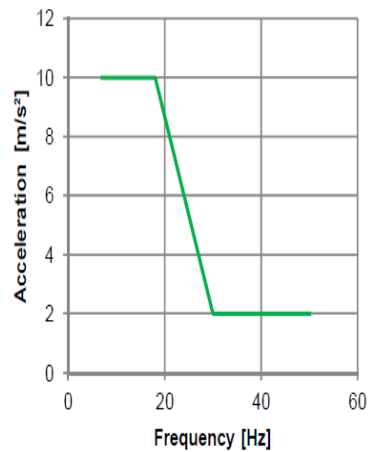
Main Discussion

Current Proposals:

EVS-GTR

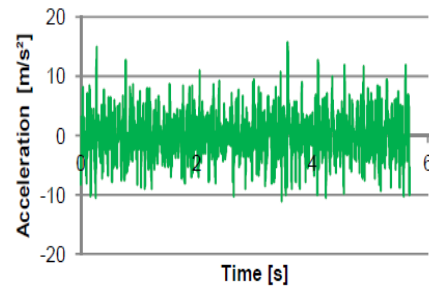


Sinus sweep

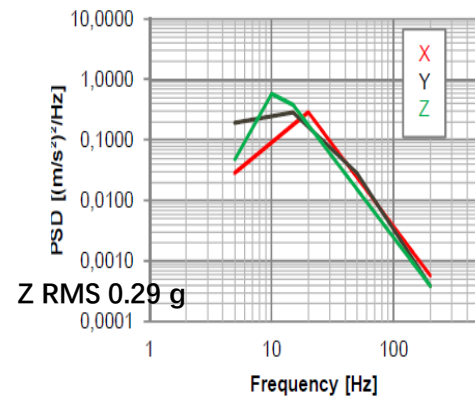


Direction: Z

OICA

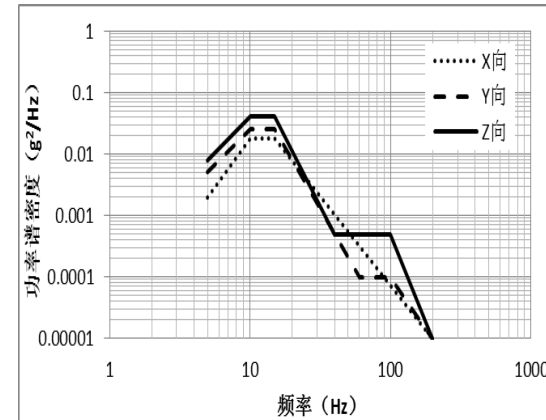


Noise

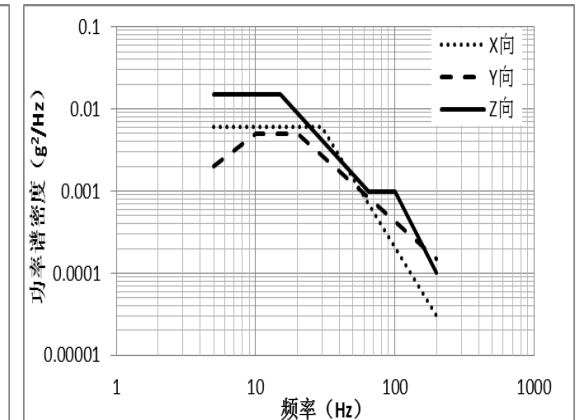


Direction: Z,X,Y

China



Commercial



Passenger

Random


Directions	Z-axis		Y-axis		X-axis	
Vehicle category	Passenger	Commercial	Passenger	Commercial	Passenger	Commercial
RMS	0.64 g	0.73 g	0.45 g	0.57 g	0.50 g	0.52 g
Time	12 h	12 h	12 h	12 h	12 h	12 h

Constant Frequency

Amplitude	±1.5 g	±1.5 g	±1.0 g	±1.5 g	±1.0 g	±2.0 g
Frequency	24 Hz	20 Hz	24 Hz	20 Hz	24 Hz	20 Hz
Time	1 h	2 h	1 h	2 h	1 h	2 h

Direction: Z,X,Y

Clarification of each profile' s purpose/concept and grounds

Items		China proposal	OICA proposal
Concept of vibration test	Purpose of vibration test	Assurance over life time mileage	Detection of initial failures and design problems
	Assumed load condition	Average vibration input to REESSs in the market vehicles  Average value of PSD lines of test vehicles	Development of realistic minimum safety profile * LIVs of profiles are calculated and compared
Test vehicle	--	22 types of vehicles	74 measurements on different vehicles of different size and battery and from 5 manufactures
Rough road condition	Rough road types	9 types	Will be supplied later
	Driving condition (speed, time, range)	See the "EVS1419-401.pptx" for details	
	Rational of road conditions for international regulation		
Profile development	G measuring points	At least 4 sensors are fixed distributed at different installation points	
	Data processing	Extraction of max. G data Making PSD profile for each road Calculation of average PSD	
Vibration test time	Test structure	Random_12hr * 3 directions +Sinusoidal_1hr * 3 directions	
	Time acceleration	Applied (Life time rough road driving time is accelerated to 12hrs)	

Other Questions

1, Question to OICA and China regarding consensus building

- Do you have any idea of how to reach a consensus? Is it possible to modify the current proposal through GTR discussions?

2, Questions to OICA regarding OICA presentation

- It was mentioned that the upper vibration frequency of 200Hz is too high for heavy duty vehicles and a modified profile is under investigation. When will it be proposed and discussed?
- Regarding LIV, please show us the specific calculation formula and input numerical data. LIV of China profile should also be calculated, and then compared.

3, Questions to China regarding China presentation

- Is the rough road structure for passenger vehicles different from that for commercial vehicles? If so, what are the grounds?
- There are two different conditions for commercial vehicle tests, one for Cargo-van and the other for Bus. Which one is used for the derivation of the vibration profile?
- Are the commercial vehicle tests conducted with loads, or without loads?
- What are the grounds of the life time mileage of 300,000 miles? How many years are expected as the vehicle life time?

4, Questions to China regarding Japan comments

- What is China's feedback regarding the removal of sinusoidal vibration tests (24Hz, 1hr, three directions) ?
- What is China's feedback regarding the elimination of time acceleration?



- According to the question raised by Japan, China and OICA further explained the vibration file respectively
- Relevant content will be introduced in this meeting

Further plan

- China and OICA will update their materials and present them at the next meeting.
- Contacting the ISO expert to give a report in the 19th IWG-meeting in Berlin.

Thanks for listening!