

EVS-GTR vibration load proposal

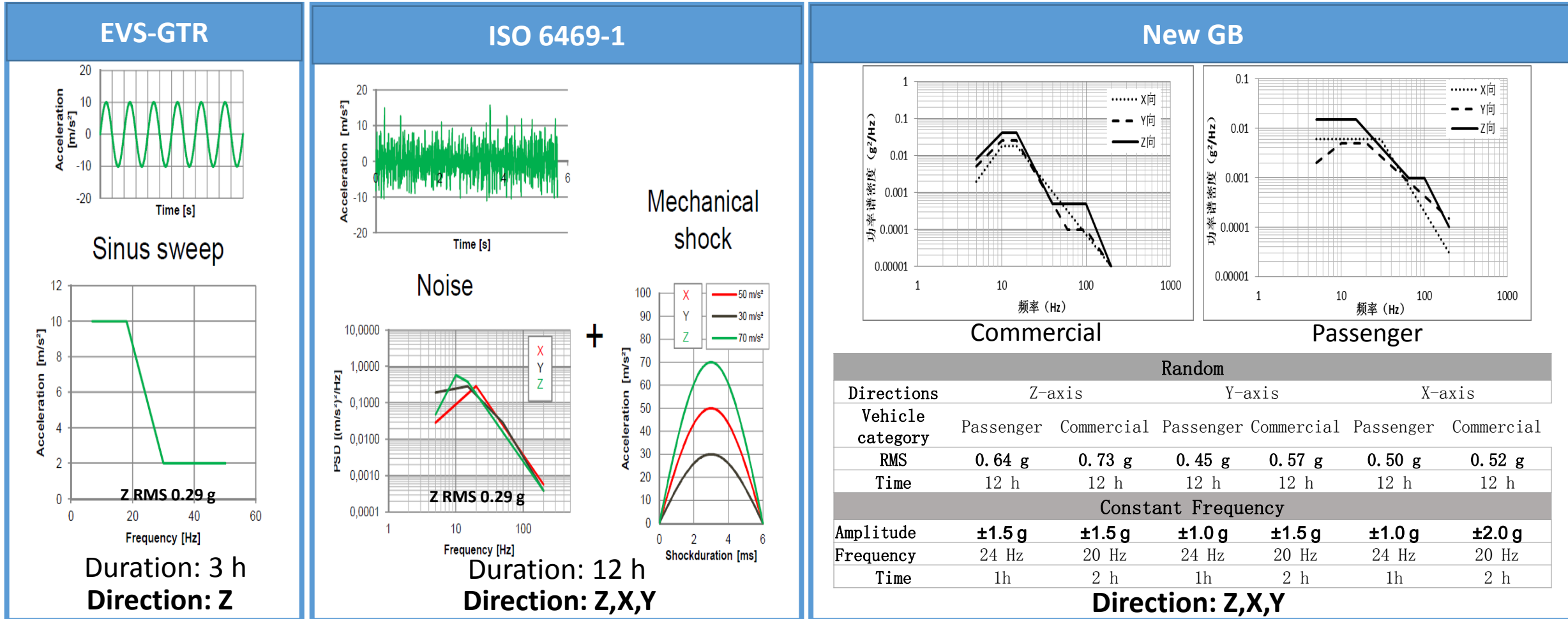
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Outline

- Comparison among EVS-GTR, ISO6469-1 and New GB
- Several items of EVS-GTR vibration test profile need further study

Comparison among EVS GTR, ISO 6469-1 and new GB

Focused on safety, goal is no risk for persons until end of service life.



Category of load, direction, frequency range, corner point, severity of load, vehicle category, test duration.

Comparison among EVS GTR, ISO 6469-1 and new GB

	EVS GTR	ISO 6469-1	New GB	Proposal
<i>Type of vibration load</i>	Sinus sweep, Derived from UN38.3	Random vibration PSD	Random vibration PSD	Sinus profiles normally apply to part stimulated by vibration combustion. PSD apply to part stimulated by road surfaces.
<i>Directions</i>	Z Derived from UN38.3	Z,Y,X	Z,Y,Z	Vibration from three directions should be considered.
<i>Amplitude of load</i>	No obvious evidence	From measurement	From measurement	Should be derived from vehicle measurement
<i>Profile corner points</i>	18HZ Derived from UN38.3	From measurement	From measurement	Should be derived from vehicle measurement
<i>Duration</i>	3 hours, Derived from UN38.3	12 hours	12 hours	The duration of test should be derived based on miner's rule and equivalent damage principle
<i>Classification of vehicle</i>	No classification	No classification	Passenger, commercial	Should consider more vehicle category, Load difference should not be ignored

EVS GTR is derived from UN38.3 for high efficiency, while UN38.3 is for transportation not for normal operation of vehicle.

Several items of EVS-GTR vibration test profile need further study

- Which kinds of **load profile** should be adopted?
- How do we choose **testing ground and testing vehicle**?
- How do we do the **data acquisition** job?
- How do we **process these data** and obtain PSD curve and test duration?
- And after measurement, how do we **classify** these kinds of vehicle according to their load profile characteristic?

Battery pack is not normal vehicle part. Its vibration fatigue always cause safety problem, for example, high voltage connection. So we propose, vibration test should be studied further in EVS GTR phase 2.

Thanks for your attention!