

# Japan Suggestions for AVAS sound requirements

Part 2 -Measurement in real-world conditions-

*JASIC*

# Japan presentation at the 3rd QRTV Informal Meeting

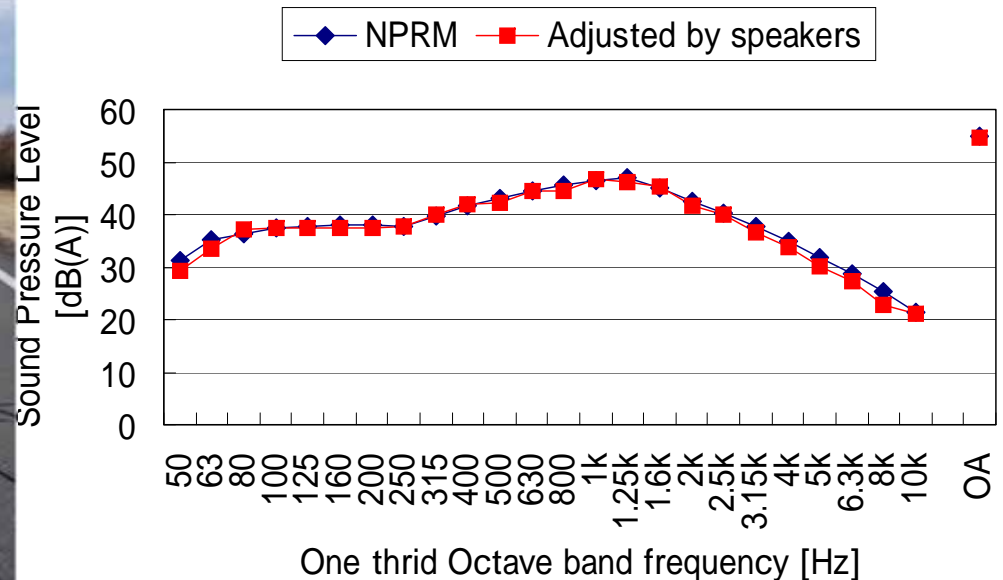
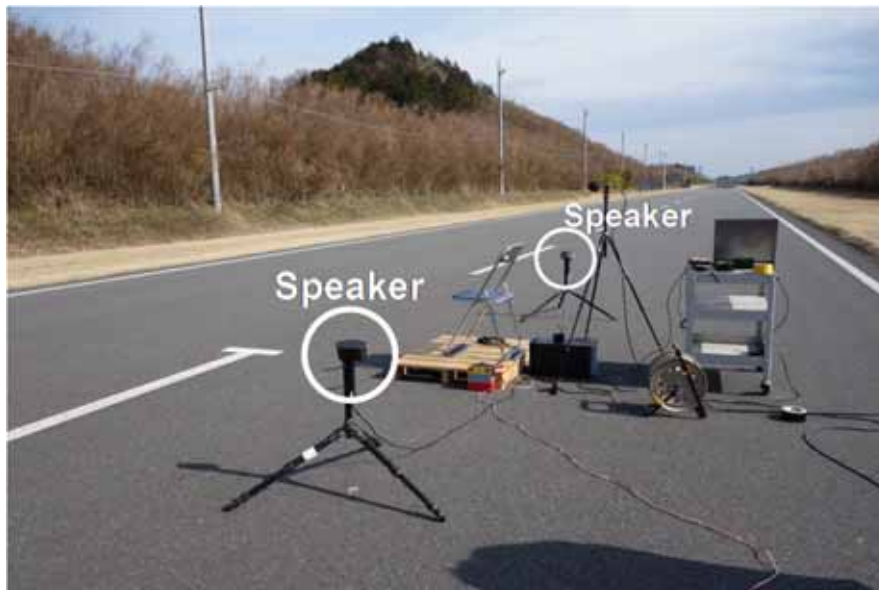
Japan suggestions for the sound requirements for AVAS:

1. At least 2 band bands in 1/3 octave band,
2. Audible distance should be proportional to O.A.

These suggestions were verified by audible tests.

# Audible Test Results Reported at the 3rd QRTV Informal Meeting

## Audible Test Setting

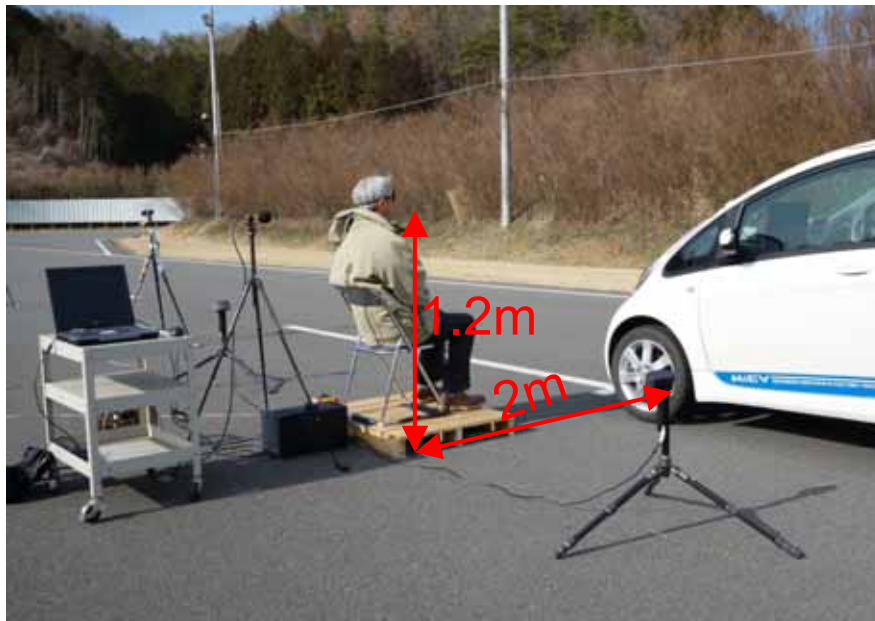


In the test course with extremely quiet environment noise, the background noise was generated from speakers.

The background noise was specified in NPRM, and we adjusted the volume to 55 dB around participants' ears.

# Audible Test Results Reported at the 3rd QRTV informal meeting

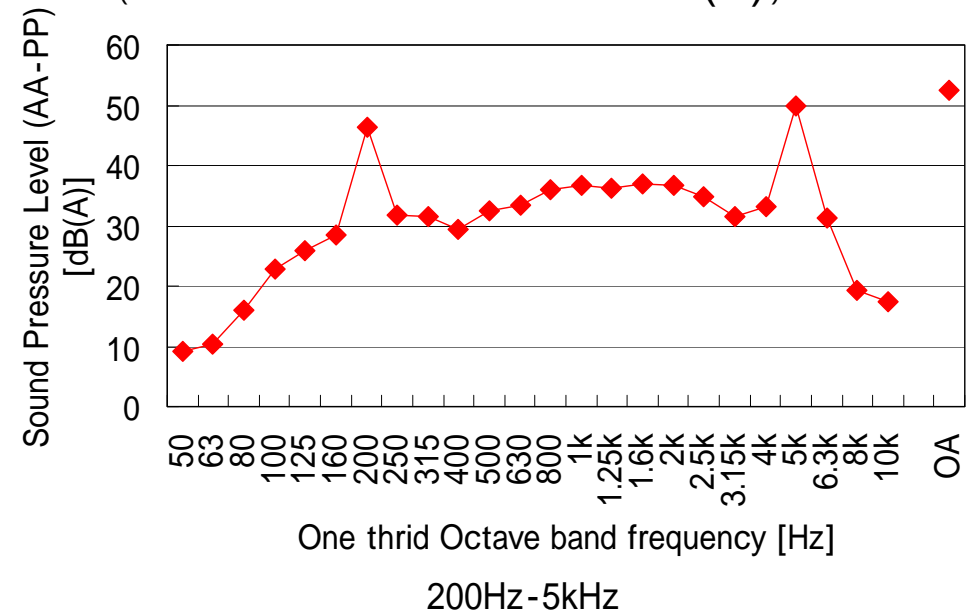
## Audible Test Setting



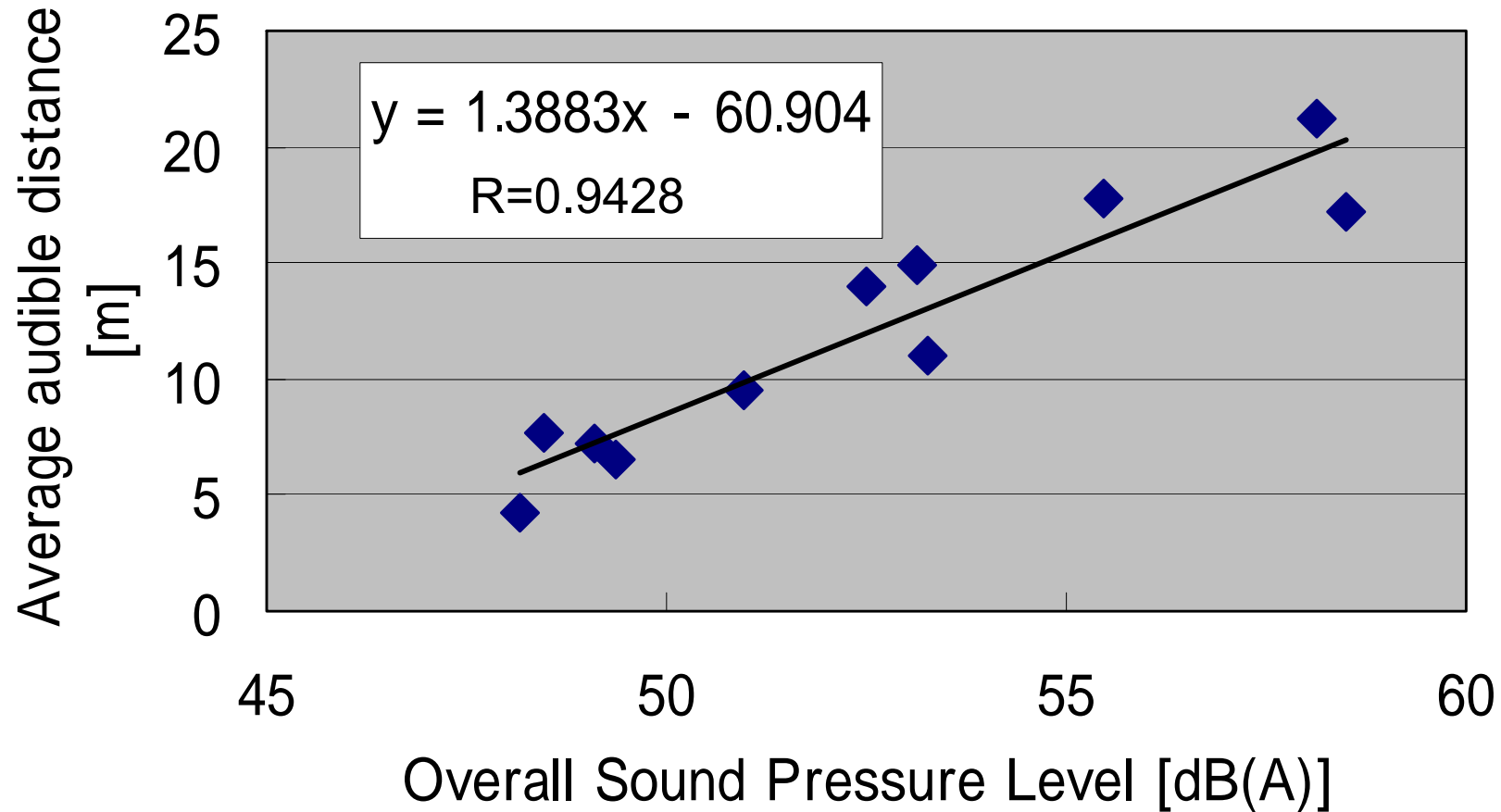
Measurement of audible distance.  
Participants : 12 (30 -50 years old)

- Approaching sounds  
1/3 oct. bands:  
200Hz + 2kHz, 200Hz + 5kHz,  
800Hz + 2kHz, 800Hz + 5kHz  
Volume : 46dB, 52dB, 58dB in O.A.  
(Target value)

- Example of approaching sound frequency  
(AA-PP Max. Level 52.5dB(A))

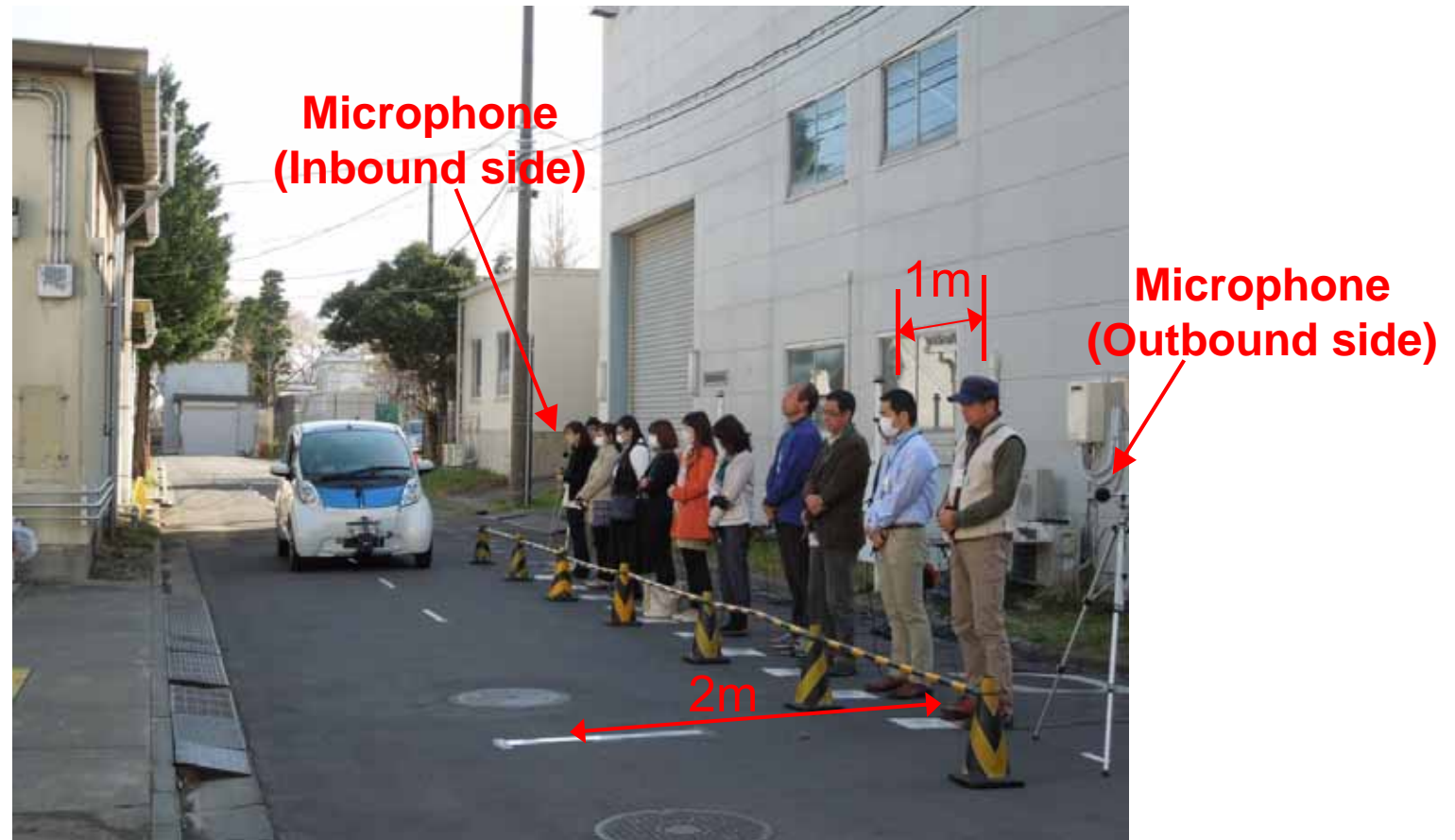


## Test Result (Average of Audible Distance)



Verified audible distances of sounds with 2 bands is proportional to O.A. under condition of background noise proposed in NPRM (55dB)

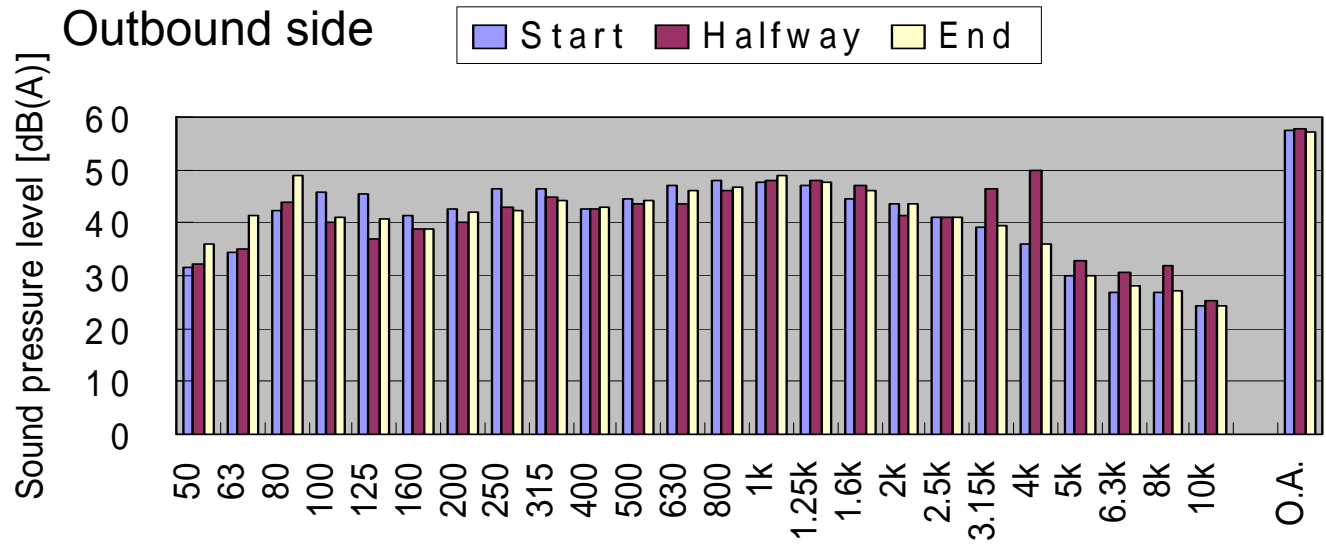
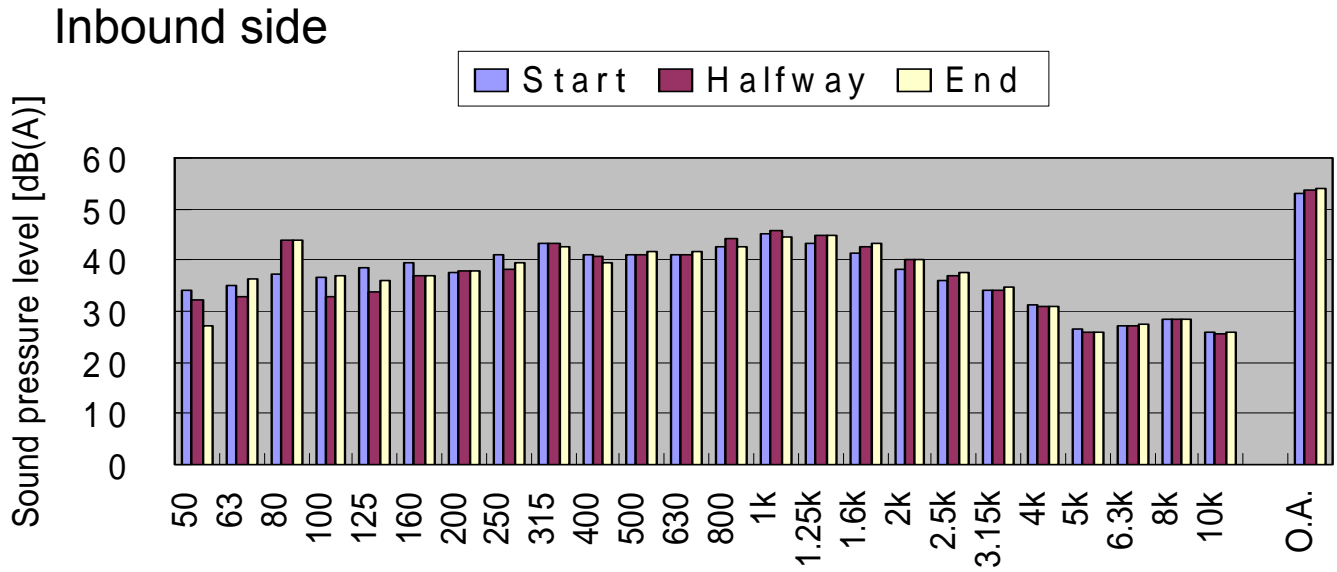
# Audible Test Results in Real-world Conditions



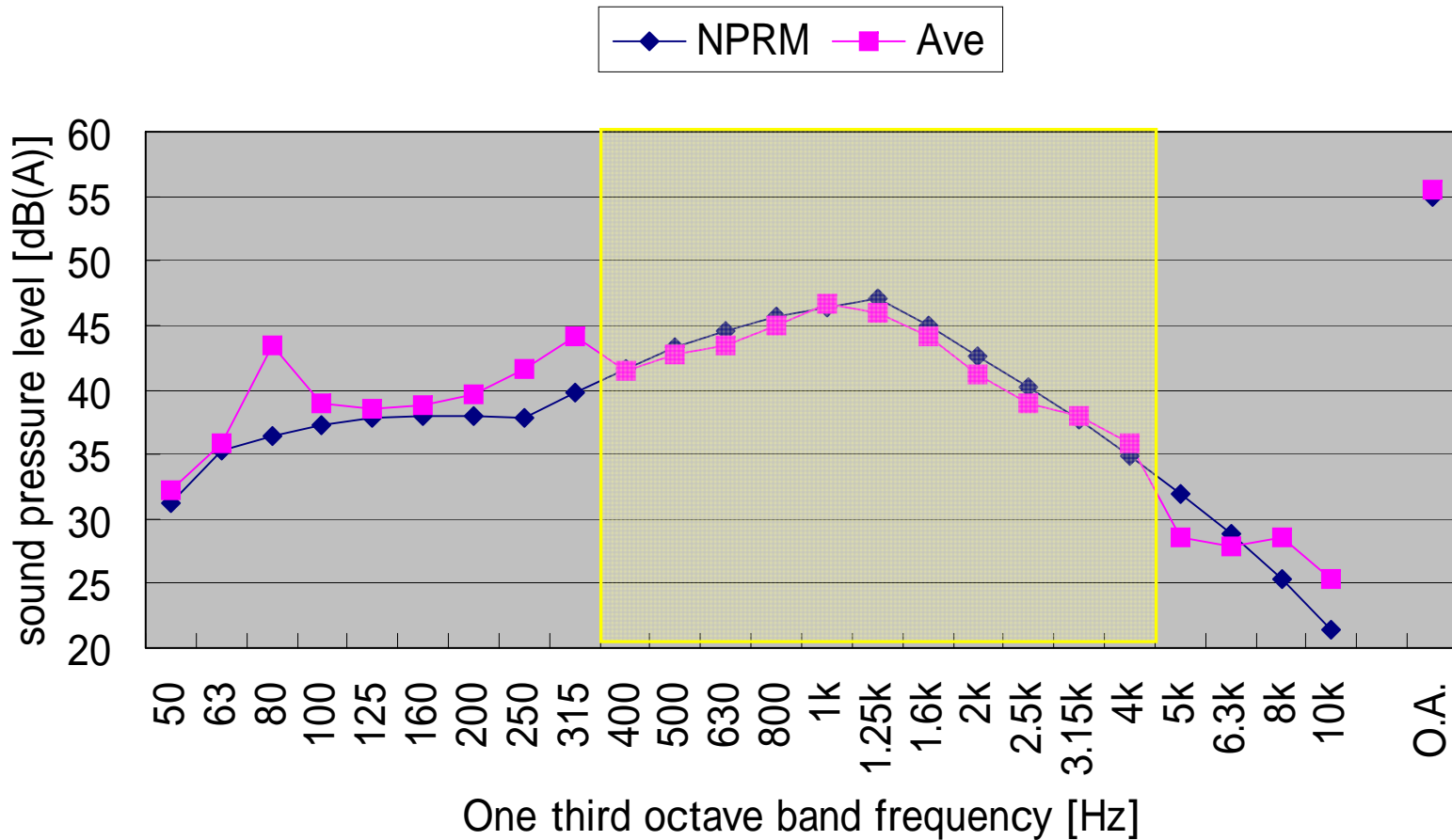
Test site: NTSEL  
Background noise: 53 ~ 58dB  
Participants: 3 of visually-impaired  
30 of unimpaired

Characteristics of approaching sound  
(a) 500Hz-2kHz 52.5dB  
(b) 800Hz-2kHz 53.4dB

# Background Noise in Real-world



# Background Noise in Real-world

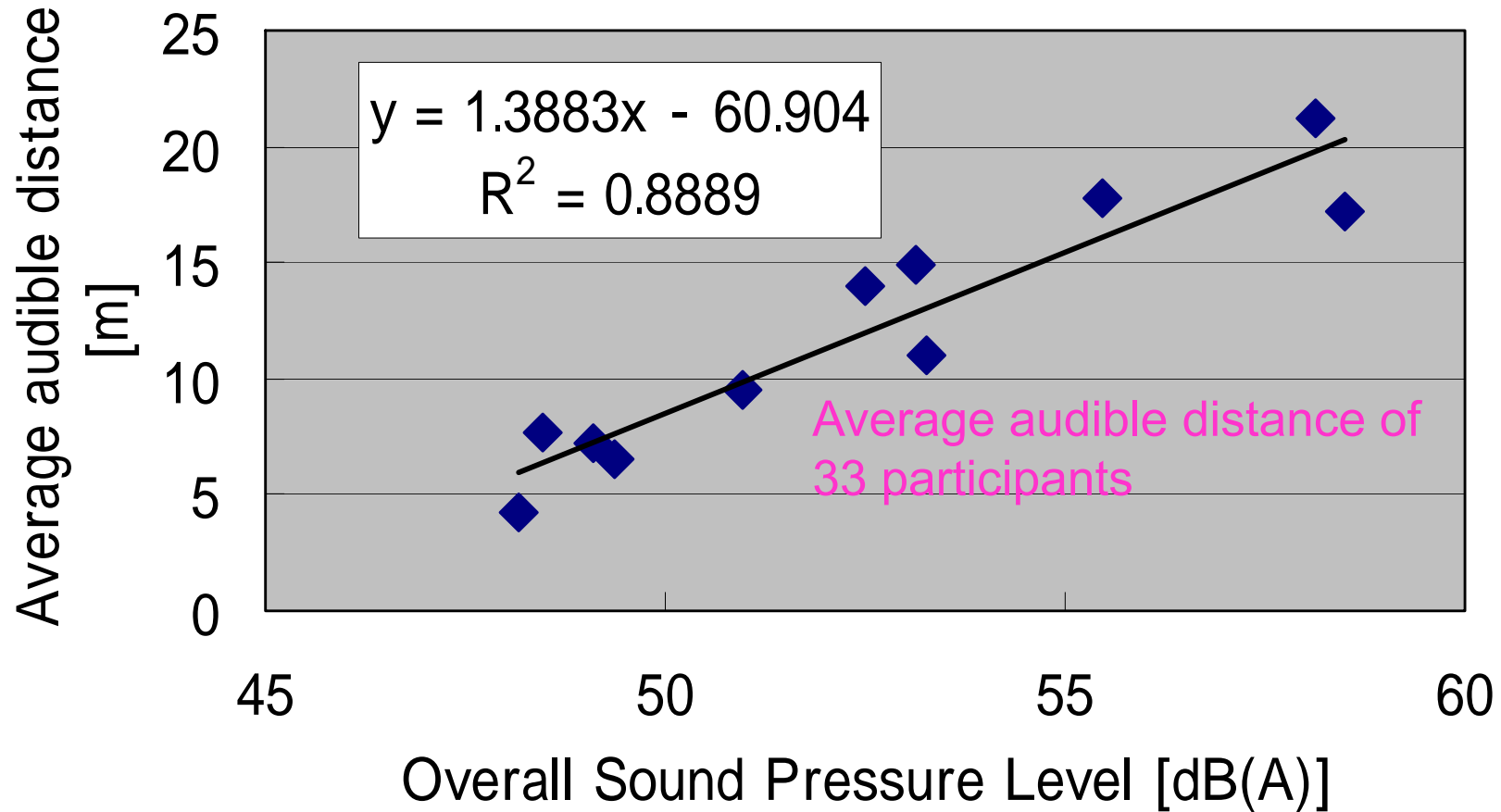


Comparison of 1/3 octave band frequency level between NPRM and averaged real-world.

Almost the same values in the range from 400Hz to 4kHz.<sup>8</sup>

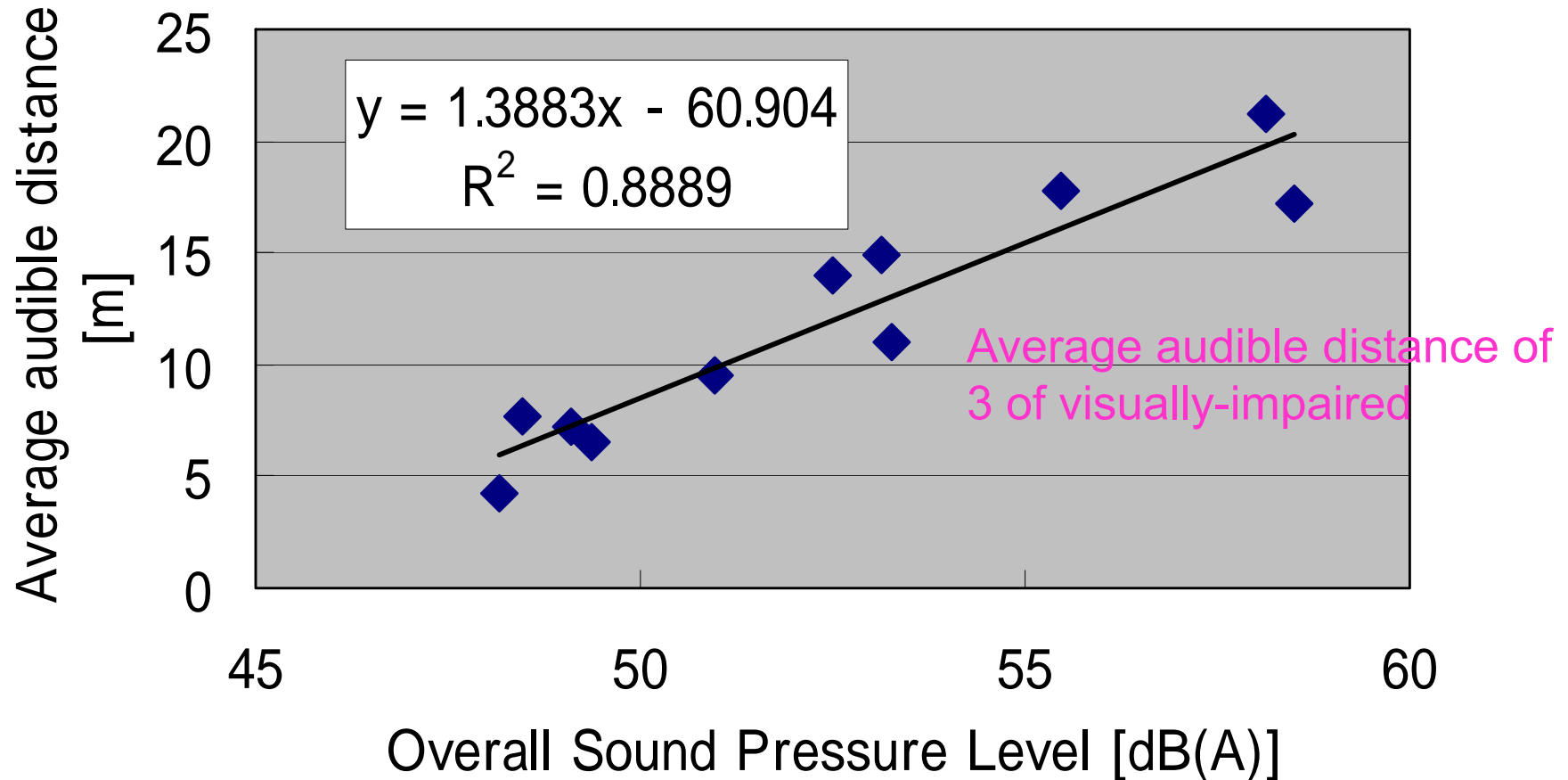


## Comparison of audible distance between Real-world and Test Course



The average values of audible distance are similar to the result at the test course.

## Comparison of audible distance between Real-world and Test Course



It was verified that there were proportional relation between the audible distance and O.A level.

→The volume of approaching sound will be determined by the required 10 audible distance.