

MULTI-SOUND-MODULE WITH AVAS COMPLIANCE

Individual configurable according to UN ECE R138



3 SIMULTANEOUS
VEHICLE
& ALERT SOUNDS

- + CUSTOMIZED E-VEHICLE SOUNDS
- + OUTPUT OF UP TO 3 SOUNDS AS WELL AS ADDITIONAL ALERTS
- + FREEWARE FOR INDIVIDUAL SOUND DESIGN



AVAS

ACOUSTIC VEHICLE ALERTING SYSTEM

miunske
PLUS + POINT
SOFTWARE-BASED
AVAS
Compliance test*

MULTI-SOUND-MODUL

with AVAS Compliance individual configurable according to UN ECE R138

The Multi-Sound-Module AVAS (MSM AVAS) from miunske® generates driving sounds for electric or hybrid vehicles. With a free audio synthesizer software, you can design very individual sounds for it. In this way, you ensure clear acoustic distinctiveness as well as a clear and unambiguous signalling effect of your vehicle or work machine. The sounds can adapt to the dimension, the weight, the rpm or the speed of the vehicle. Furthermore, customized sounds increases the brand image. The MSM AVAS serves to increase the safety in the vehicle environment and to upgrade the motoring and operating experience.

The MSM AVAS includes 3 digital synthesizers, that create vehicle sounds simultaneously. In that way for example interior and exterior sounds of a vehicle as well as the acoustic differences of a forward and backward movement can replay. If warning tones such as obstacle detection are added, they will also emit acoustically.

PROPERTIES

- + 3 independent output channels
(e.g. interior sound, exterior sound, alerts)
- + one channel can be layered with alerts
- + 2 digital inputs for processing discrete information,
e.g. brake-recuperation
- + CANopen Interface
- + multi-voltage 12V/24V
- + compact design



AUDIO-SYNTHESIZER-SOFTWARE

Software interface with digital synthesizer

With a software that is particularly made for those applications, every user can create custom vehicle sounds hardware independent and check their general AVAS-compliance via mouse click.

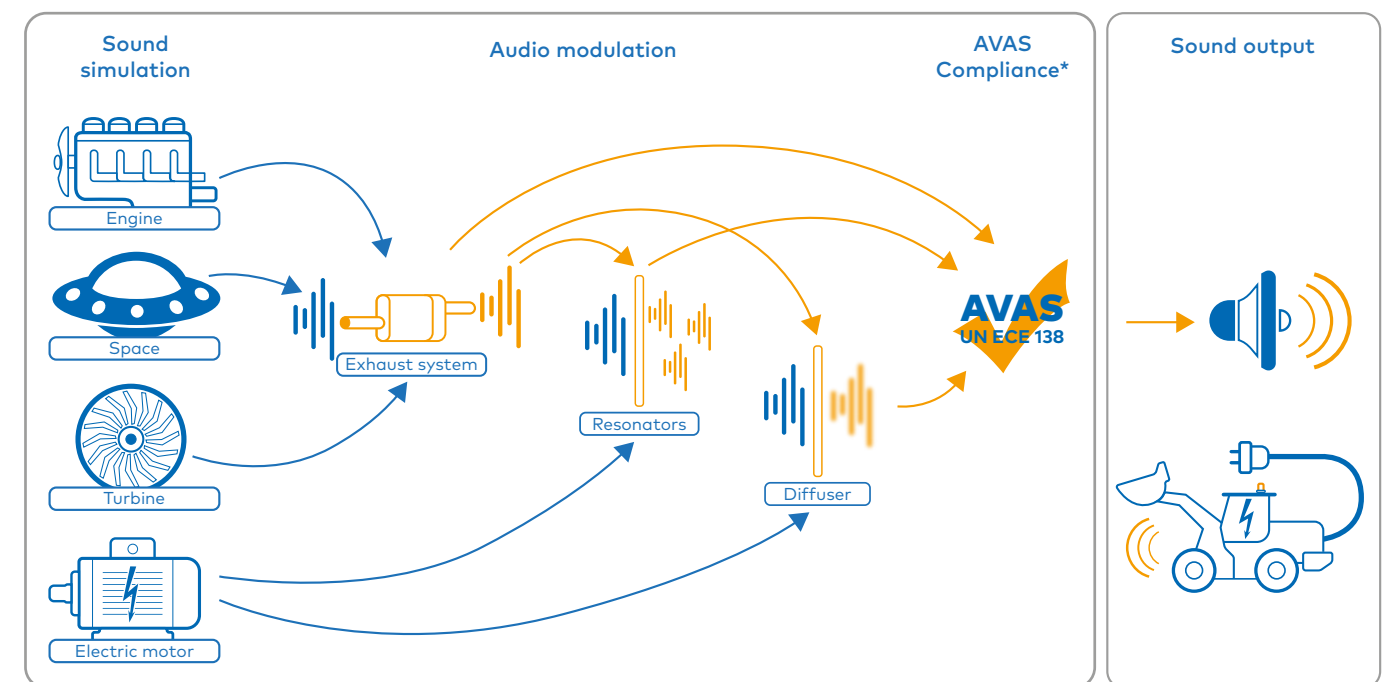
- + free and individual sound design via software
- + sound library with various standard sounds
- + status display for AVAS compliance with correction mode
- + the parameterization software is available as freeware in the miunske-toolchain



Download at:
www.miunske.com



Operating mode of the AVAS - software



* After implementation of the vehicle, the final AVAS compliance have to be proofed and confirmed by using the method described in guideline ECE R138.

SOUND OUTPUT

Free choice of output actuators:

- 2 Power-Outputs for outside
free selection of speaker (30 W, 12V/24V)
frequency response of the intensifier 20Hz-20kHz
- 1 Low-Power-Output for inside
free selection of speaker (9W/12V, 18W/24V)
frequency response of the intensifier 20Hz-10kHz

TARGET GROUPS:

- Manufacturer of municipal vehicles & commercial-special / purpose vehicles as well as construction and agricultural machinery
- cab manufacturer
- engineer service provider

FIELDS OF APPLICATION

- development and original equipment
- modification and adaption
- areas of application with high safety relevance

FAST AND EASY TO CUSTOMIZED VEHICLE SOUNDS WITH AVAS COMPLIANCE*

The MSM AVAS can adapt very easy and simply on your individual demands. For that, the following options exist:

1. Own sound design for more flexibility

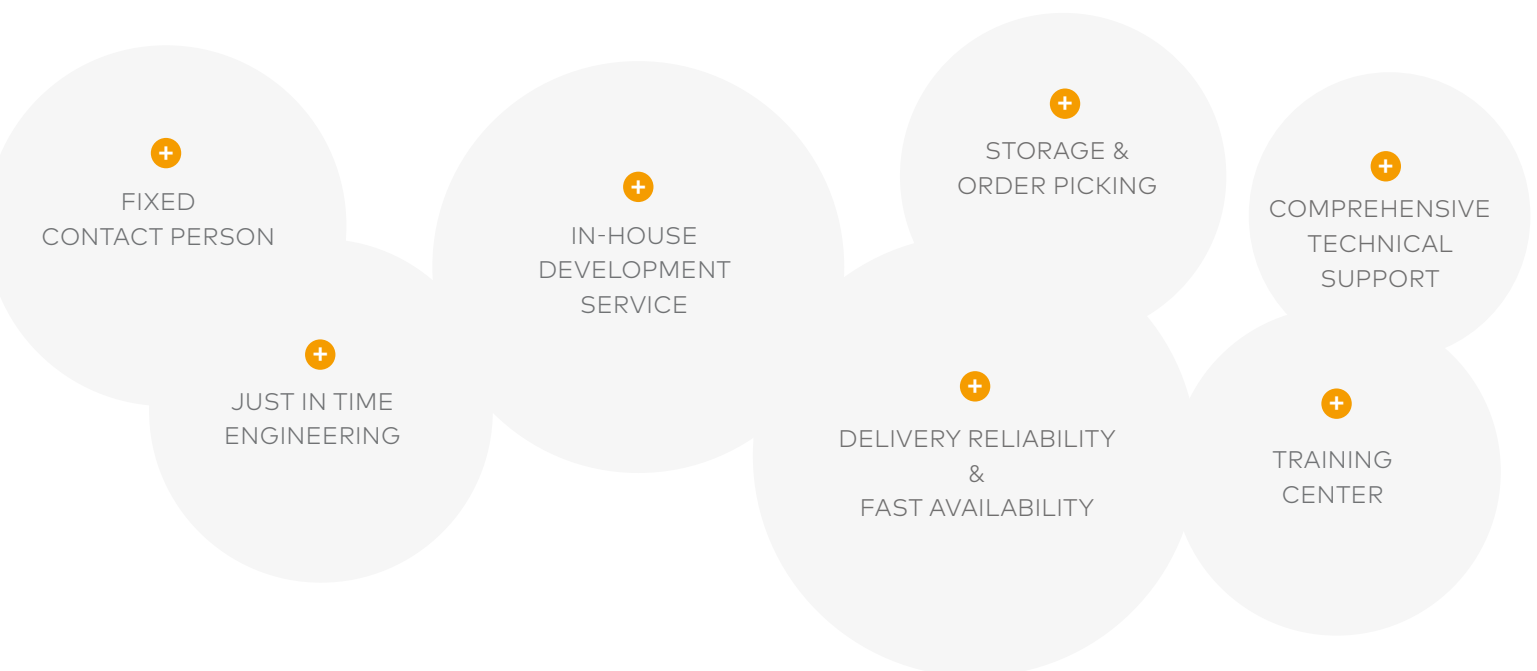
- You choose the fitting basis sound out of the sound library of the parameterization software.
- Modify this basis sound for your special application and ensure the AVAS-compliance of the sound via the functionality „AVAS-Korrekturmodus“.
- After the automatic adjustment period, you will get a recommendation for adjusting the AVAS-conform volume level for a speed of 10 km/h.
- After that you transfer your sound to the MSM AVAS-Module via CAN-adapter.
- Connect the MSM AVAS Module with the actors in your vehicle or your working machinery and adjust the recommended volume level via CANopen.

2. Use a service partner for more individuality

- You create a profile of your requirements including the CAN-Bus parameters of your sound and instruct miunske® to create a customized sound as well as the delivery of the final parameterized MSM AVAS-Module.
- You connect the MSM AVAS Module with the actors in your vehicle or your working machinery and adjust the recommended volume level via CANopen.

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miunske® PLUS + POINTS



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