

# SINS/DCASE 2018 Task 5 development dataset

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"Database" means the "SINS dataset" and the derivative "DCASE 2018 Task 5 development dataset" described in the Appendix 1 composed of recordings of daily activities performed in a home environment and their annotations. All data contained within Database have been collected and processed in accordance with the laws applicable in Belgium.

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*Gert Dekkers, Steven Lauwereins, Bart Thoen, Mulu Weldegebreal Adhana, Henk Brouckxon, Toon van Waterschoot, Bart Vanrumste, Marian Verhelst, and Peter Karsmakers. The SINS database for detection of daily activities in a home environment using an acoustic sensor network. In Proceedings of the Detection and Classification of Acoustic Scenes and Events 2017 Workshop (DCASE2017), pp 32–36. November 2017.*

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# Appendix 1: Description of the Database

The Database includes the following and any other data that KUL makes available to End User under this License:

The SINS database contains a continuous recording of one person living in a vacation home over a period of one week. The recordings were manually annotated on daily activity level: "Cooking", "Dishwashing", "Eating", "Social activity (visit, phone call)", "Vacuum cleaning", "Watching TV", "Working", "Presence" and "Absence".

The Database was collected using a network of 13 microphone arrays distributed over the entire home. The sensor node's microphone array consists of 4 linearly arranged microphones. The sensor node configuration used in this setup is a control board together with a linear microphone array. The control board contains an EFM32 ARM cortex M4 microcontroller from Silicon Labs (EFM32WG980) used for sampling the analog audio. The microphone array contains four Sonion N8AC03 MEMS low-power ( $\pm 17\mu\text{W}$ ) microphones with an inter-microphone distance of 5 cm. The sampling for each audio channel is done sequentially at a rate of 16 kHz with a bit depth of 12. The annotation was performed in two phases. First, during the data collection a smartphone application was used to let the monitored person(s) annotate the activities while being recorded. The person could only select a fixed set of activities. The application was easy to use and did not significantly influence the transition between activities. Secondly, the start and stop timestamps of each activity were refined by using our own annotation software. Postprocessing and sharing the database involves privacy-related aspects. Besides the person(s) living there, multiple people visited the home. Moreover, during a phone call, one can partially hear the person on the other end. A written informed consent was obtained from all participants.

The derivative of the SINS database, 'DCASE 2018 – Task 5 development dataset' consists of a subset of 4 microphone arrays in the combined living room and kitchen area. The continuous recordings were split into audio segments of 10s. Where a single ground truth label is provided for each segment. These audio segments are provided as individual files along with the ground truth. In total 75484 segments are made available, leading to approximately 210 hours of data.