**INTERNATIONAL ORGANISATION FOR STANDARDISATION**

**ORGANISATION INTERNATIONALE DE NORMALISATION**

**ISO/IEC JTC1/SC29/WG11**

**CODING OF MOVING PICTURES AND AUDIO**

**ISO/IEC JTC1/SC29/WG11 MPEG2018/N17752**

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| **Source** | **Requirements** |
| **Status** | **Approved** |
| **Title** | **Call for Test Data for Compressed Representation of Neural Networks** |

# Introduction

Compressed Representation of Neural Networks (NNR) aims to define NNR aims to define a compressed representation able to represent different artificial neural network types (e.g., feedforward networks such as CNN and autoencoder, recurrent networks such as LSTM, etc.) and enable efficient incremental updates of compressed representations of NNs and scalability.

When working towards and evaluation framework, MPEG has realized that there is a need for test material to evaluate compressed neural network representations in different applications, such as those described in the collected use cases. Please consult N17740 for a description of these use cases.

# Required test data

In order to evaluate the performance differences between original neural networks and reconstructed networks after compression, these neural networks need to be applied in specific applications, using specific performance metrics.

We hereby solicit test material of the following types:

* Trained neural network models (i.e., complete model including weights) for any of the use cases described in N17740. These models should be represented in a NN exchange format (e.g., NNEF, ONNX) or in the format of a common deep learning framework (e.g., Tensorflow, PyTorch, Caffe).
  + A reference to the data set used for training should be included.
  + A reference to a test data set for use of the models in the target use case should be included.
  + The proposed metrics for comparing the performance of the original with the reconstructed compressed network in the target use case should be described.
* Samples of compressed models relevant for any of the use cases. The original uncompressed models and information about the applied compression methods must be included.

We are in particular interested to receive data for use cases other than video/image analysis/processing, e.g., audio analysis/processing.

We welcome contributions of data sets that can also be made available to a broader community than MPEG.

# Logistics

The data sets should be submitted as input contributions to the 124th MPEG meeting (October 2018).

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