PhIMT0002 Model Conversion Log

Version 1.0

Documentation Information

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Keywords	DL, Inference Management, Model Conversion

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1 Review / Modification History

Version	Date	Description Change
V1.0	04/12/2023	First version after complete internal review
V0.2	23/11/2023	Modifications and improvements based on internal review
V0.1	13/10/2023	First draft

*Note: The paragraphs/name of the project/Rev./Ref./history table in **blue** must be replaced with the information for the specific project. The paragraphs written in **red** are instructions that can be used as a guide, so they must be deleted.*

2 Objective

The purpose of this document is to delineate the information relative to the conversion of a trained model into a frozen model, which is used in the inference phase. In Deep Learning (DL), a frozen model refers to a trained model where the weights and parameters have been fixed or "frozen" after the training process. This means that the model is no longer undergoing updates or learning from new data.

3 Scope

This template applies to the training model conversion into a frozen model through the Artificial Intelligence - Functional Safety Management (AI-FSM).

4 Model Conversion

The deliverable generated from this template must include all the information related to the Model Conversion step. This template provides the minimum information that should be collected in this step.

The following table collects the information relative to the model conversion:

Table 1. Model conversion information

Model conversion	<Model_conversion_ID>
Date	Date of design: Format YYYY/MM/DD
Responsible	The person who converts the model
Phase of the lifecycle	Inference Management
Verified Learning Model	
Verified Learning Model ID	<Model_ID>_<Model_ID_version>
…	…
Elimination of Training-Specific Operations	
- Dropout - Batch Normalization - Gradient Clipping - Learning Rate Scheduling - Weight Regularization (L1,L2)	
Loading and Converting the Verified Learning Model	
Framework and version	Specify the framework used to convert the model and its version: TensorFlow, pytorch, keras, etc.
Packages and version	Tensorflow (keras, tensorflow), onnx-tf (onnx), torch (pythorch)…
Converter/model conversion script	In the case of using tools for converting the model or separate scrips, it should be stored the configuration and its parameters. For example, the use of torch.onnx.export or tf2onnx functions/tools used in PyTorch and TensorFlow to export trained models to ONNX format
Environment information	Operation system or any additional information relevant to the conversion process

5 Acronyms and Abbreviations

Below is a list of acronyms and abbreviations employed in this document:

- AI - FSM – Artificial Intelligence - Functional Safety Management
- DL – Deep Learning

6 Bibliography

Add here the reference to used bibliography / references (if any).