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Securing Artificial Intelligence (SAI); Traceability of AI Models

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ETSI650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Securing Artificial Intelligence (SAI).

Modal verbs terminology

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1 Scope

The present document describes the role of traceability in the challenge of Securing AI and explores issues related to sharing and re-using models across tasks and industries. The scope includes threats, and their associated remediations where applicable, to ownership rights of AI creators as well as to verification of models origin. Mitigations can be non-AI-Specific (Digital Right Management applicable to AI) and AI-specific techniques (e.g. ML watermarking) from prevention and detection phases. They can be both model-agnostic and model enhancement techniques. The present document aligns terminology with existing ETSI ISG SAI documents and studies, and references/complements previously studied attacks and remediations (ETSI GR SAI 004 [i.2] and ETSI GR SAI 005 [i.3]). It also gathers industrial and academic feedback on traceability and ownership rights protection and model verification in the context of AI.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

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3 Definition of terms, symbols and abbreviations

3.1 Terms

Void.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AI	Artificial Intelligence
AIA	Artificial Intelligence Agent
AIH	Artificial Intelligence Host
API	Application Programming Interface
AUC	Area Under the Curve
DevOps	Development Operations
DNN	Deep Neural Network(s)
DRM	Digital Right Management
FL	Federated Learning
GAN	Generative Adversarial Network
GPU	Graphics Processing Unit
IP	Intellectual Property
IPR	Intellectual Property Rights
ML	Machine Learning
MLaaS	Machine Learning as a Service
MLOps	Machine Learning Operations
NDA	Non Disclosure Agreement
OPM	Open Provenance Model
OS	Operating System
PKI	Public Key Infrastructure
TEE	Trusted Execution Environment