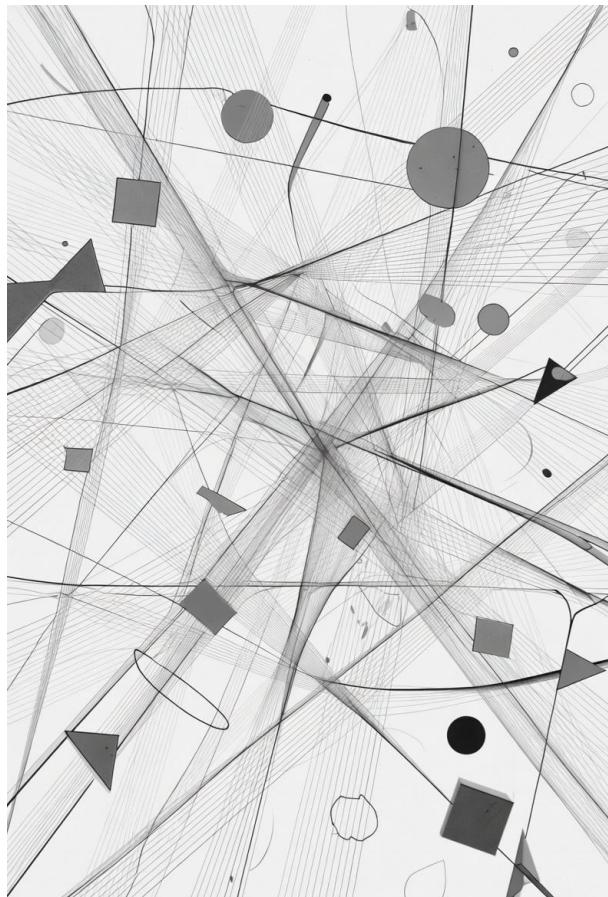


# Open-Source Science Guidance

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## Guidance on Personal Data in Generative Music Systems

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**Open-Source  
Science Guidance**  
for AI Music Generation Tools

Version 1.0 | Dec 2025  
Prepared by: Petra Kühnle

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# 1. Purpose and Scope

This guidance applies to all generative music models that:

- Accept user-uploaded audio (voice, instrument, full tracks)
  - Use such uploads for training, fine-tuning, or inference
  - Generate new musical output for end users
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## 2. Document Control

Version	Date	Author	Editor	Summary of changes
1.0	Dec 2025	Petra Kühnle	Petra Kühnle	Initial release

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## 3. Normative References

- [Regulation \(EU\) 2016/679 \(GDPR\)](#)
  - [Regulation \(EU\) 2024/1689 \(EU AI Act\) – high-risk AI systems](#)
  - [ICO Guidance on AI and Data Protection \(2023–2025\)](#)
  - [ENISA "Securing Machine Learning Algorithms" \(2021\)](#)
- 

## 4. Definitions

Term	Definition
<b>Training Data Opt-In</b>	Explicit, granular, and withdrawable consent to use uploaded audio for model training
<b>Voice Biometric Data</b>	Special-category personal data under Art. 9 GDPR
<b>Style Leakage</b>	Unintended reproduction of an individual artist's recognizable style in outputs

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## 5. Mandatory Requirements

### 5.1 Lawful Basis and Consent Architecture

Req ID	Requirement	Implementation Notes
LB-01	Explicit consent required for any training use	Default OFF, separate checkbox
LB-02	Consent withdrawal must trigger data deletion pipeline	One-click "Remove my data" button
LB-03	No bundling of training consent with service access	Freely given (Recital 43)

### 5.2 Transparency Obligations

Req ID	Requirement
TR-01	Privacy notice at point of upload (layered notice)
TR-02	Inform users if outputs may contain traces of others' data
TR-03	Provide high-level explanation of how the model works

### 5.3 Data Protection by Design

Req ID	Requirement
DP-01	End-to-end encryption of raw uploads
DP-02	Automatic deletion of raw audio after 30 days unless opted-in for longer retention
DP-03	Training-data anonymization where technically feasible

## 5.4 Fairness and Bias Mitigation

Req ID	Requirement
FB-01	Document demographic/genre distribution of training data
FB-02	Annual bias audit of generated outputs

## 5.5 Data Subject Rights Pipeline

Req ID	Maximum Response Time	Technical Implementation
Access (Art. 15)	30 days	Download raw + embeddings
Erasure (Art. 17)	Immediate	Delete + model unlearning (best effort)
Objection (Art. 21)	Immediate	Block future use

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## 6. Data Protection Impact Assessment (DPIA)

Mandatory pre-deployment DPIA template available in Appendix A.

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## 7. Record of Processing Activities (Art. 30)

Tracked in GitHub: [Music AI Vault Repository](#).

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## Appendix A – DPIA Template

Version 1.0 – December 2025 | Prepared by: Petra Kühnle

This template meets Art. 35 GDPR for high-risk AI under EU AI Act. Complete pre-deployment for models handling personal data (e.g., voice biometrics). Reference guidance (e.g., 5.1 Lawful Basis). Consult DPO; escalate unmitigated risks to authority (e.g., ICO).

# 1. Project/Processing Overview

- **Project Name:** [Insert]
- **Department/Owner:** [Insert]
- **Date of DPIA:** [Insert]
- **Purpose:** [Describe]
- **Stakeholders:** [List]
- **Scope:** [Per Section 1]
- **High-Risk Classification:** [Explain, e.g., Art. 9 special data]

# 2. Processing Activities Description

*Per Art. 35(7)(a).*

- **Personal Data Categories:** [List; ref. Section 4]
- **Data Subjects:** [List]
- **Data Sources:** [e.g., Opt-in uploads]
- **Operations:** [Describe flows]
- **Recipients/Sharing:** [List]
- **Transfers:** [Yes/No; safeguards]
- **Retention:** [e.g., Per DP-02]
- **Automated Decisions:** [Describe]

# 3. Necessity/Proportionality

*Per Art. 35(7)(b).*

- **Lawful Basis:** [Justify; ref. 5.1]
- **Necessity:** [Explain]
- **Proportionality:** [Assess]
- **Alternatives:** [List]

# 4. Risk Identification/Assessment

*Per Art. 35(7)(c). Use matrix (Likelihood x Impact).*

- **Risks:** [e.g., Privacy, bias (FB-01), style leakage]
- **Likelihood/Impact:** [Rate]
- **Affected Rights:** [e.g., GDPR rights]

## 5. Mitigations/Safeguards

*Per Art. 35(7)(d).*

- **Technical:** [e.g., DP-01 encryption]
- **Organizational:** [e.g., FB-02 audits]
- **Transparency:** [e.g., TR-01 notices]
- **Rights Support:** [Ref. 5.5]
- **Residual Risks:** [Reassess]
- **Monitoring:** [Plan]

## 6. Consultation

- **Internal:** [Describe]
- **External:** [If needed]
- **Data Subjects:** [Optional]

## 7. Conclusions/Recommendations

- **Assessment:** [Summarize]
- **Action Plan:** [List]
- **Review Triggers:** [List]

## 8. Sign-Off

- **DPO:** Name/Signature: \_\_\_\_\_ Date: \_\_\_\_\_
- **Owner:** Name/Signature: \_\_\_\_\_ Date: \_\_\_\_\_
- **Management:** Name/Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Annexes (Optional):** Flows, matrix, consultations, links to B/C.

*Maintain living; review annually. Store per Section 7. Adapt for non-EU (e.g., CCPA). Ref: ICO Guidance (2023–2025), ENISA (2021).*

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## Appendix B – Model Card Template for Music Models

**Model Card Template for Music Models** | Version 1.0 – December 2025 | Prepared by:  
Petrina Kühnle

*Document for transparency/compliance. Complete per model; maintain with Section 7.*

## 1. Model Details

- **Basic Info:** Name/Version/Date/Developers/License/Contact
- **Description:** [Architecture, I/O, capabilities]
- **Resources:** [Compute, carbon estimate]

## 2. Intended Use

- **Primary:** [Compliant scenarios]
- **Out-of-Scope:** [Prohibited, e.g., no DPIA]

## 3. Factors

- **Relevant:** [e.g., Bias in genres/demographics]
- **Mitigations:** [Ref. FB-01/02]

## 4. Evaluation

- **Metrics:** [e.g., FAD, leakage rate]
- **Data:** [Datasets, diversity]
- **Results:** [Summarize]
- **Ethics:** [e.g., Consent-based data]

## 5. Ethical Considerations/Risks

- **Fairness/Bias:** [Risks/mitigations]
- **Privacy:** [Risks/mitigations, e.g., DP-01/02]
- **Transparency:** [Per TR-03]
- **Other:** [e.g., Misuse]

## 6. Training Data

- **Sources:** [e.g., Opt-in]
- **Preprocessing:** [e.g., Anonymization]
- **Composition:** [Breakdown; ref. FB-01]
- **Controls:** [Per LB-01–03]

## 7. Recommendations

- **Deployers:** [e.g., DPIA]
- **Users:** [e.g., Notices]
- **Maintenance:** [Updates]

## 8. Glossary

[Terms from Section 4]

## 9. References

[From Section 3]

*Update on changes.*

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## Acknowledgments

Cover image generated by Grok with author's original prompt. Content research accelerated by Grok from public web sources.

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## Appendix C – Consent Withdrawal Flow Diagram

**Consent Withdrawal Flow Diagram** | Version 1.0 – December 2025 | Prepared by: Petra Kühnle

*Process per LB-02, Arts. 17/21 GDPR. Meets Section 5.5 response times.*

# Flow Description

1. **User Action:** User clicks "Remove My Data" button
  2. **Confirmation:** System prompts for confirmation
    - If **No** → Process ends
    - If **Yes** → Proceed to deletion pipeline
  3. **Deletion Pipeline:**
    - Delete raw audio (per DP-01/02)
    - Remove embeddings from system
    - Trigger model unlearning (best effort)
    - Block future use (Art. 21)
  4. **Confirmation:** Send email confirmation to user
  5. **Logging:** Record action per Art. 30
  6. **Complete:** Process ends
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**Visual Flowchart:** *The Mermaid diagram code below generates an interactive flowchart in digital formats. In PDF exports, refer to the flow description above.*

