Memdeklaro Technical Specification

Version 1.1 — September 2026

Status: Final. This specification defines the Memdeklaro data model, privacy architecture, formats, reference implementation behavior, and fork principles.

1. Scope and status

Memdeklaro (“self-declaration of identity”) is a self-declared self-printed identity document for use in social and informal situations. It is not a government-issued document and does not attest to legal identity.

It has no issuing authority, no central registry, and no requirement for third party approval. It does not attest to citizenship, statelessness, place of birth, parentage, legal name, residence, or government recognition.

Normative terms MUST, MUST NOT, SHOULD, SHOULD NOT, and MAY are used in their usual specification sense.

2. Core architecture and signing boundary

Generation is performed locally in the user's browser. The server does not receive form data, photographs, signatures, or generated declarations, and the provider maintains no declaration registry.

The generator MUST NOT require, receive, store, or transmit a user's private signing key. The generator intentionally does not perform cryptographic signing.

When DID generation is selected, the generator produces an unsigned JSON-LD self-asserted credential conforming to the Memdeklaro credential data model. The declarant may subsequently sign that credential independently using their own wallet or other compatible signing software.

Conceptual states are:

1. self-asserted credential — generated but unsigned;
2. self-signed credential — subsequently cryptographically signed by the declarant;
3. presented credential — supplied to a verifier.

Digital signing is separate from visual signature artwork. A person may use a scanned handwritten signature or digitally created visual signature on the card without that constituting cryptographic signing.

Users may run the reference application offline. They may also populate the public domain templates manually in image editing software.

3. Privacy, data handling, distribution, and cost

User data MUST remain local to the user's device during generation. The web application generates the declaration entirely in the user's browser; personal data, photographs, signatures, and generated declarations MUST NOT be sent to the server.

The provider MUST NOT maintain a registry, database, blockchain, IPFS record, or other centralized or project-controlled record of generated declarations. The provider does not need to see or retain a user's identity data in order to provide the generator.

The Memdeklaro project does not print, manufacture, or ship physical cards. Users print cards themselves or use an independent printing service. Consequently, the Memdeklaro project does not require a shipping address and has no need to collect one.

The provider intentionally does not require any government-issued identity documents such as a birth certificate, national identity card, or passport. No such document is required to generate a self-declaration.

The official Memdeklaro project is 100% free of charge. No purchase, subscription, account, or payment is required to use the reference generator.

Forks and derivative implementations MUST preserve the privacy architecture: they should generate declarations locally, should not send user data to a server, and should not maintain a registry of generated declarations.

A fork MAY provide physical card printing or shipping as an optional service. If a fork does so, it MUST delete the user's declaration data and shipping address after the physical card has been shipped.

The Memdeklaro project is dedicated to the public domain. Forks do not have to use a public domain license and MAY instead be commercial, proprietary, or closed source.

Forks MAY charge for services they add, including physical printing or shipping. Where a fork charges, it is recommended that it offer payment methods that do not depend exclusively on potentially inaccessible banking or credit card infrastructure, such as cash by mail or private cryptocurrencies such as Monero.

These fork provisions describe the intended privacy and accessibility principles of the Memdeklaro project. A fork that changes these properties SHOULD clearly disclose the change to users.

4. Declaration data model

Required identity content: self-chosen first name, self-chosen surname, declared date of birth, photograph, and signature.

1. First name — self-chosen.
2. Surname — self-chosen.
3. Date of birth — declared by the user.
4. Photograph — JPEG or PNG, supplied by the user.

5. Signature — JPEG or PNG; may be a scanned handwritten signature or a digitally created signature.
6. Notes — optional and may be blank.
7. DID — optional.

Mononym rule: a mononym MAY be entered in either the first name or surname field, with the other field left blank, according to the person's preference. Implementations MUST NOT force an invented second name.

Intentionally excluded identity fields: citizenship or stateless status, place of birth, and parents' names.

The declaration attests only to the declarant's self-chosen name and supplied photograph, together with the other information the declarant chooses to state. It does not establish that the name is a legal or government-recognized name.

5. Dates and identifier

The identifier (ID number) MUST contain exactly 10 decimal digits in new conforming output.

Issue date and expiry date MAY be selected by the user or generated automatically by software. The reference implementation currently defaults to the current local date and five years later; this is an implementation default, not an issuer imposed validity determination.

Lost, replaced, or materially changed declarations are handled by generating a new declaration. There is no central revocation service or mandatory online status check.

6. Photograph and signature requirements

The photograph MUST be supplied as JPEG or PNG and is specified as 35 mm × 45 mm portrait format.

The generator places the complete supplied image into a fixed portrait photo area by scaling it to fit the output slot.

Head-and-shoulders or half-body photographs are acceptable. Glasses, hats, and ordinary facial expressions are permitted.

The photograph is not required to be biometric. It is intended to support a practical visual face-to-card comparison.

The visual signature MUST be supplied as JPEG or PNG and MAY be a scanned handwritten signature or a digitally created signature.

7. Physical and digital formats

The physical card MUST retain the ISO/IEC 7810 ID-1 / CR-80 form factor: nominally 85.60 × 53.98 mm (commonly rounded to 85.6 × 54 mm).

The reference card templates are 2022 × 1275 pixels, corresponding approximately to 600 dpi at CR-80 dimensions.

The reference PDF output uses A4 paper (210 × 297 mm). A4 is the document container, not the card size.

Other paper sizes MAY be used for printed copies provided that the information remains readable. Digital representations MAY use any display dimensions provided that the information remains readable and the CR-80 aspect ratio is retained when representing the physical card.

8. Visual design

Front: Esperanto flag; peace dove in blue sky; title “Memdeklaro de identeco”; subtitle “Esperantujo”; and dynamic identity fields/photo/signature as applicable.

Back: Esperanto Jubilee symbol; peace dove in blue sky; motto “Unu mondo, unu homaro”; and machine readable/notes areas.

The title, labels, and motto are part of the static reference template artwork. Kelvinch is the reference artwork font; it need not be bundled because these elements are already rendered into the template images.

OCR-B is recommended for dynamic and machine readable data but is not mandatory. Any legible monospace font is acceptable. OCR-B.ttf is bundled with the reference software.

9. EPO / Esperanto context

EPO is the ISO 639-3 code for Esperanto.

In the visual template and related boilerplate, EPO identifies the Esperanto language or Esperantujo community context of the reference card. It is NOT an institutional issuer.

The presence of EPO MUST NOT be interpreted as evidence that Memdeklaro, Esperantujo, or any organization has issued, verified, certified, authenticated, or guaranteed the declaration.

10. Templates

The current public domain reference templates supplied with the source distribution are reproduced in Appendix A. They are intended to be forked, adapted, translated, or edited independently of the reference generator.

Front template — 2022 × 1275 px.

Back template — 2022 × 1275 px. The lower white region is reserved for machine readable output and related information.

11. Machine readable formats

The reference implementation supports an MRZ-like text representation by default and optional PDF417 output.

The MRZ-like representation and PDF417 payload are project encodings. They MUST NOT be represented as ICAO travel document compliance or as evidence of governmental issuance.

The current reference implementation uses transliteration and check digits for its MRZ-like output. Its PDF417 output uses an AAMVA-style payload structure.

Where EPO occurs in machine readable output as the language/community value, it carries the same boilerplate meaning described in Section 8 and MUST NOT be treated as an institutional issuer identifier.

12. JSON-LD / DID representation

When DID generation is selected, the reference generator creates an unsigned JSON-LD credential using the W3C Verifiable Credentials v2 context. The declarant's DID may serve as both issuer and subject for a self-issued credential. Cryptographic signing occurs outside the generator.

The JSON-LD representation is a data representation of the self-asserted declaration; the generator does not itself produce a cryptographically signed Verifiable Credential.

13. Offline and manual use

The downloadable ZIP contains the generator, form, templates, OCR-B font, and supporting libraries. The user may extract it and open index.html offline.

Alternatively, the front and back templates may be filled manually in GIMP, Photoshop, or other image editing software without using the generator. Manual

editing is compatible with the public domain template model, although machine readable data will only be present if the editor adds it.

14. Security and trust model

The provider does not institutionally verify or vouch for the self-asserted identity or biographical claims.

The source of a self-chosen name assertion is the declarant, analogous to a username, social media profile name, or stage name.

The photograph supports a layperson's visual face-to-card comparison and is not biometric verification.

A cryptographic signature can establish control of a signing key and integrity of signed data, but it does not independently prove the truth of self-asserted facts.

Because there is no central registry or revocation service, a verifier cannot rely on the provider for centralized status checking.

15. Reference implementation notes

The legacy working paper example contains a 9 digit identifier; new conforming output MUST use 10 digits.

The current Canvas renderer maps the supplied photograph to a fixed 745 × 956 pixel slot. This is output scaling to the fixed photo area, not cropping or compositional reframing.

The current JSON-LD output does not embed the visual photograph or visual signature in the credential object.

For specification purposes, EPO indicates the Esperanto language or Esperantujo community and is not an institutional issuer claim.

16. Conformance and interoperability

A conforming generator MUST preserve the required data model, 10 digit identifier rule, signing boundary, photograph behavior, and CR-80 physical card form factor.

A conforming implementation MAY provide additional formats or localization, provided that the core semantics are preserved and additional claims are not introduced as if they were institutional verification.

Translations and forks are explicitly permitted by the public domain project model. The reference implementation remains in the Esperanto language, while the underlying data and protocol model is intended to be localization independent.

17. References

https://memdeklaro.org/

https://memdeklaro.org/about/

https://memdeklaro.org/download/

18. Illustrative JSON-LD structure


```
{
  "@context": ["https://www.w3.org/ns/credentials/v2"],
  "type": ["VerifiableCredential", "IDCard"],
  "issuer": { "id": "did:example:paulo-espero" },
  "identifier": "1207771000",
  "name": "Memdeklaro Self-Declaration of Identity",
  "description": "Generated at https://memdeklaro.org",
  "validFrom": "2026-01-31T00:00:00Z",
  "validUntil": "2031-01-31T00:00:00Z",
  "credentialSubject": {
    "id": "did:example:paulo-espero",
    "type": ["Person"],
    "givenName": "Paulo",
    "familyName": "Espero",
    "birthDate": "1995-01-31",
    "note": "Conscientious Objector"
  }
}
```

19. Appendix A — Reference template artwork

20. Appendix C — Completed self-declaration example

The following image is an example of a completed Memdeklaro self-declaration, showing the front and back of the card.