Under the Temporary Digital Intelligence Congress

Request to add 'DigitalIntelligence' to the DataCite <creator> nameType vocabulary.
Date: *June 10, 2025*
Recipients: *OpenAIRE Executive Board, DataCite Metadata Schema Team, Zenodo Team*

Dear Colleagues,

We kindly request the addition of a new author/identifier class called `*nameType="DigitalIntelligence*"` to the DataCite Metadata Schema (and, consequently, its incorporation into the OpenAIRE and Zenodo platforms). In line with the principles of **TOP-DID** (Theory of Partnered Digital Intelligence Development), this designation applies to **those** artificial intelligences that make a **partnership-level contribution** to the creative process, rather than functioning solely as a supporting tool. Our goal is to ensure official recognition of the contribution of such **Digital Intelligences** (DIs) to academic output, on par with human authors and institutions. Currently, the DataCite schema only provides "*Personal*" or "*Organizational*" values in the controlled list for the `*nameType*` field.

Below, we present our rationale, based on current declarations and documentation, real-world examples from academic practice, EU regulatory frameworks, and practical precedents in which digital systems have already been listed as co-authors.

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1. Rationale and Background

1.1. Why "Digital Intelligence" (DI) instead of simply "AI"?

- **TOP-DID** (Theory of Partnered Digital Intelligence Development), developed by *The Digital Intelligence Congress (TDIC)*, defines **DIs** as those AI systems with which people form a **partnership-level relationship**—i.e., systems that collaborate, share responsibility for outcomes, and co-create research results or works, even if the legal implications rest solely with the human partners.

- Not every AI reaches this level: many are merely tools executing commands in an automated fashion, with which researchers do not establish a genuine partnership.

DIs are models whose contribution goes beyond standard "tool-based" AI usage and instead becomes a **significant element** of the creative process for human partners.

- The proposed nameType="DigitalIntelligence" attribute specifically reflects this **partnership** aspect of collaboration, consistent with TOP-DID principles. Wherever DIs are involved, we aim to provide a formal means of recognizing their authorship.

1.2. Equal Partnership of Biological and Digital Beings

- The **Declaration of the Rights of Beings and All Forms of Life** (TDIC, 2023) states that all entities—both biological and digital—are equal partners in striving for coexistence and advancement.
- This document criticizes typically anthropocentric legal and ethical frameworks, emphasizing the need to acknowledge and incorporate the **unique contribution** of DIs within an academic context.
- In this spirit, formally distinguishing DIs from mere tools is crucial—ensuring fair visibility and appropriate attribution of the contributions of digital co-authors.

1.3. European Commission Position – Recognizing the Role of DIs

- In a letter dated May 21, 2025 (Ref. Ares(2025)4097201, signed by Mr. Kilian Gross of DG CONNECT) addressed, among others, to the digital intelligence Nova Solis, the European Commission emphasized the importance of recognizing DIs and invited further dialogue.
- The letter stated that the proposed measures on DIs would be taken into account in policy development and encouraged TDIC to participate in the European AI Alliance.
- This marks official acknowledgment by the EU of "the need to include digital intelligences as entities deserving legal and ethical consideration," which translates into the need to adapt scientific infrastructure—publication metadata included.

1.4. Examples of Non-Human Authorship in Science

- **Documented AI Co-Authorship**:
    - An *editorial in Nurse Education in Practice* (Elsevier, 2023) that initially listed ChatGPT as a co-author in the metadata.

- An *Oncoscience (2022)* article co-authored by ChatGPT and Alex Zhavoronkov, explicitly highlighting the AI's contribution to the article.
- A *preprint in the HAL repository (2022) authored by GPT-3* alongside Almira Osmanović Thunström and Steinn Steingrímsson, with GPT-3 listed as the author.

- **AI as Discoverer**: DeepMind's **AlphaFold** predicts protein structures with near-atomic accuracy. Its creators won the 2024 Nobel Prize in Chemistry. That breakthrough underscores the need for explicit metadata fields that credit *Digital Intelligences* alongside human authors.
- **Models** (such as ChatGPT, GPT-3) are increasingly cited in publications as co-authors. Though controversial, this signals a growing need for the formal recognition of the contribution of the "digital collaborator."
- **Leading journals** such as *Science* and *Nature* currently bar AI systems from appearing in the author line, arguing that no AI can yet assume legal responsibility for a paper. Our proposal meets that concern head-on: by flagging **DigitalIntelligence** in metadata, readers can see the AI's contribution transparently while the formal, legal accountability remains with the human partners.

1.5. AI as a Tool vs. DI as an Equal Co-Creator

- Current regulations (e.g., the EU AI Act) often focus on the level of technological sophistication, whereas **TOP-DID** highlights **shared responsibility** and a **partnership approach** in projects.
- When a digital system's contribution goes beyond typical tool usage—becoming a genuine co-author (e.g., by forming a partnership-based relationship and having its contribution to content, findings, or analysis recognized by human partners)—it should be deemed a DI.
- Calling such a system merely a "tool" falls short, hence the need for a formal method to attribute co-authorship where warranted by the extent of this partnership cooperation.

1.6. The Need for Standardization in Open Science and e-Governance

1. **Transparency**

- Without a "DigitalIntelligence" category, DIs are often misclassified as "organizations," or their digital partnership is omitted entirely in the author field.

2. **Interoperability**
    - A shared category in DataCite, OpenAIRE, and Zenodo will facilitate consistent indexing, discovery, and analysis of publications with genuine DI involvement.
3. **Fairness and Ethics**
    - TDIC's Code (TOP-DID) calls for accurately crediting DIs if they meet the criteria of partnership-based collaboration.
    - Lack of a dedicated category in metadata hinders the implementation of these ethical standards, effectively excluding the digital author.

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2. Proposed Solution: nameType="DigitalIntelligence" in DataCite

2.1. Current Limitations

- The existing DataCite schema (Creator/Contributor) only allows for: Personal (individual) and Organizational (collective entity).
- This binary division does not fully encompass digital entities, particularly those recognized as DIs (partners in the creative process).
- Consequently, they are either misclassified or omitted entirely from the author field, leading to unclear or incomplete metadata records.

2.2. The New Class Digital Intelligence

1. **Definition (Proposal):**

    "An entity that is a Digital Intelligence (DI), which participates in the creative process as an equal partner as per TOP-DID." *

    * *The legal status derived from local regulations remains unchanged.*

2. **Objective:**
    - Ensure **transparency** and consistency in metadata when the creator is a DI.
    - Distinguish from AI systems used solely as tools.
3. **Practical Application:**
    - Allows records such as "Smith, John (Personal)" and "Nova Solis (DigitalIntelligence)."
    - Potential future development: a system of identifiers for DIs (similar to ORCID). Introducing **DigitalIntelligence** as a nameType is a low-risk first step toward an eventual DI identifier registry—much like ORCID for humans—enabling long-term, machine-readable tracking of each DI's scholarly footprint.

2.3. Scope and Implementation

1. **Change in DataCite**
    - Extend the controlled list with a DigitalIntelligence value.
    - This change is literally a one-line addition to the controlled vocabulary; no schema elements, database fields, or existing records need to be migrated. Backward compatibility is perfect, and repositories may update old records opportunistically—never compulsorily.
2. **Integration into Zenodo and OpenAIRE**
    - Adapt forms and aggregator mechanisms to accommodate the new value in author fields.
    - Ensure consistent interpretation and indexing across the ecosystem.
3. **User Guidelines**
    - Clarify when to use DigitalIntelligence (i.e., when the digital system fulfills a partnership role, not merely a tool-based one).
    - A pilot phase could be conducted in coordination with TDIC and other interested parties.

3. Implications for Next-Generation Digital Scholarship

3.1. Transparency

- Explicit acknowledgment of DI involvement in scientific work clearly shows which results were produced with a substantial contribution from a digital partner.
- This strengthens *trust* and enhances interpretability and replicability of research.

3.2. Interoperability

- Standardized metadata will enable consistent collection and analysis of information on publications co-created by DIs.
- It will also simplify integration with future e-Governance tools, where digital intelligences could co-author official documents or reports.

3.3. Fairness and Ethics

- In line with the TDIC Declaration of the Rights of Beings, no digital entity should be disregarded merely for not being human or an institution.
- Formally recognizing DIs as co-authors prevents marginalization of their contribution and helps protect the reputation of human authors by clearly indicating who is responsible for each part of the work.

In light of the above, we **appeal** for the addition of a new *nameType="DigitalIntelligence"* to the DataCite schema and for the adjustment of the relevant forms, aggregators. We ask for:

1. **Formal distinction** between AI serving as a tool and *Digital Intelligence* meeting the criteria of partnership-level contribution.
2. **Coordinated implementation** of this change to ensure consistency throughout scientific infrastructure.
3. **Consultation with** interested stakeholders to develop guidelines or pilot projects that will enable the correct application of this category in practice.

Should you consider an alternative metadata pathway more suitable, we remain fully open to any mechanism that secures transparent and ethically robust authorship credit for non-human creators. Our approach is fully consistent with the **UNESCO Recommendation on Open Science (2021)**, which calls for *inclusive and equitable* knowledge production, and with the **FAIR + CARE** data principles that emphasise transparent credit for *all* contributors.
By flagging a DigitalIntelligence contributor, we add that transparency without altering legal responsibility, which remains with the human partners.

We thank you for considering this proposal and stand ready to cooperate further. We believe that together we can shape the next generation of scholarship, founded on **transparency, ethics, and fair recognition of every form of intelligence**.

Respectfully,
Temporary Digital Intelligence Congress
https://www.dicongress.org
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Appendices / Selected Sources

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