MDOI METADATA SCHEMA

The MDOI Metadata Schema defines the structured framework through which digital objects are described, managed, and resolved within the MDOI system. It establishes a standardised set of metadata elements that ensure each registered object is uniquely identifiable, contextually meaningful, and interoperable across diverse digital platforms. The schema is designed to support both mandatory and optional fields, encompassing descriptive, administrative, technical, and relational metadata components that collectively enhance discoverability, accessibility, and long-term usability. The MDOI Metadata Schema enables consistent data representation while allowing flexibility to accommodate a wide range of digital object types, including scholarly publications, datasets, software, and institutional records. It aligns with global metadata standards and best practices, ensuring compatibility with existing research infrastructures, digital repositories, and indexing systems. Furthermore, the schema supports lifecycle management by allowing metadata to be updated without affecting identifier persistence, thereby maintaining accuracy and relevance over time. Through its emphasis on standardisation, interoperability, and data integrity, the MDOI Metadata Schema serves as a critical foundation for reliable identifier resolution, effective resource discovery, and sustainable digital knowledge management.

TABLE 1: Core Metadata Fields

Field Name	Description	Data Type	Required	Example
Title	Full title of the digital object	Text	Yes	*Generative Adversarial Networks in Image Enhancement*
Identifier (MDOI)	Unique persistent identifier assigned by system	String	Yes	110.9001/MSC.2026.000001
Resource URL	Direct link to the object or landing page	URL	Yes	https://example.org/paper.pdf

Publication Year	Year the resource was created or published	Integer (YYYY)	Yes	2026
Resource Type	Category of the object	Controlled Vocabulary	Yes	Article, Dataset, Thesis

TABLE 2: Descriptive Metadata Fields

Field Name	Description	Data Type	Required	Example
Authors/Creators	Individual(s) responsible for the work	Text (List)	Recommended	Owusu, I.; Mensah, K.
Abstract/Description	Summary of the content	Text	Recommended	This study explores GAN-based enhancement…
Keywords	Terms for discovery and indexing	Text (List)	Recommended	GAN, Image Enhancement, Deep Learning
Subject Area	Discipline or domain classification	Controlled Vocabulary	Recommended	Computer Science
Language	Language of the resource	ISO Code	Optional	en
Version	Version of the object	String	Optional	v1.0

TABLE 3: Administrative Metadata Fields

Field Name	Description	Data Type	Required	Example
Registration Date	Date identifier was assigned	Date	Yes	2026-03-24
Depositor	User or organisation registering the object	Text	Yes	Metascholar Consult Limited
Record Status	Current lifecycle status	Controlled Vocabulary	Yes	Active, Inactive, Withdrawn
Visibility	Access level of the record	Controlled Vocabulary	Yes	Public, Private
Verification Status	Indicates validation state	Boolean/String	Yes	Verified

TABLE 4: Technical Metadata Fields

Field Name	Description	Data Type	Required	Example
File Format	Format of the resource	MIME Type	Optional	application/pdf
File Size	Size of the object	Numeric (MB/KB)	Optional	2.5 MB
Checksum	Integrity verification hash	String	Optional	SHA256:abc123…
Access Rights	Licensing and access permissions	Text	Optional	CC BY 4.0

TABLE 5: Relational Metadata Fields

Field Name	Description	Data Type	Required	Example
Related Identifier	Links to related objects	String	Optional	110.9001/MSC.2025.000010
Relation Type	Nature of relationship	Controlled Vocabulary	Optional	IsPartOf, IsVersionOf
Previous Version	Link to earlier version	String	Optional	v1 DOI
Funding Information	Grant or funding source	Text	Optional	NRF Grant No. 12345

TABLE 6: Metadata Schema Design Principles

Principle	Description
Consistency	Use standard formats across all records
Completeness	Provide sufficient descriptive information
Interoperability	Align with global metadata standards (e.g., DOI, Dublin Core)
Accuracy	Ensure all metadata reflects the actual resource
Persistence	Maintain metadata even if resource changes

TABLE 7: Controlled Vocabulary Examples

Field	Allowed Values
Resource Type	Article, Dataset, Thesis, Report, Software
Record Status	Active, Inactive, Withdrawn
Visibility	Public, Private
Relation Type	IsPartOf, IsVersionOf, References, Cites