PiD fest CONFERENCE ON PERSISTENT IDENTIFIERS 2024

11–13 June, Prague, Czechia

Novel Uses and Emerging Trends in PIDs

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11 June 2024, 11:30 CEST

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Foundational role of PIDs in research data management

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- Stability and Longevity

| PIDs provide a permanent link to digital objects, ensuring long-term accessibility.
Example: Research Articles and DOIs

- Discoverability

| PIDs enhance the discoverability of research outputs by providing unique, stable references.
Example: Academic Databases and ORCID

- Interoperability

| PIDs facilitate seamless integration and interaction across different systems and platforms.
Example: Research Data Repositories and DOIs

- Traceability and Attribution

| PIDs allow for accurate tracking and proper attribution of data usage and citations.
Example: Open Access Publications and DOIs

Foundational role of PIDs in research data management

- Data Linking and Integration

| PIDs enable linking between various research outputs, creating an interconnected research ecosystem.
Example: Linking Research Articles and Datasets with DOIs

- Enhanced Data Management Practices

| PIDs support better organization, maintenance, and version control of research data.
Example: Version Control in Data Repositories with PIDs

- Compliance and Standards

| PIDs help researchers comply with data management policies and standards.
Example: Meeting Funding Agency Requirements with ORCID iDs

- Facilitation of Open Science

| PIDs promote open science by making research outputs more accessible and reusable.
Example: Making Preprints Accessible with DOIs.

- Error Detection

| Easier identification and correction of errors or inconsistencies in data through tracked changes.
Example: Crossref, Cross mark deploy PIDs for identifying and correcting errors and modifications in the data via tracked Changes.

Transformative potential of PIDs in open science platforms

- Enhanced Accessibility

| PIDs ensure that research outputs are easily accessible to the global scientific community, promoting open access.
Example: Open Access Journals and DOIs

- Increased Reusability

| By providing stable references, PIDs facilitate the reuse of datasets, publications, and other research materials in new studies.
Example: Reusing Environmental Data with DOIs

- Interconnected Research

| PIDs enable linking between different research outputs, creating a comprehensive and integrated knowledge network.
Example: Linking Articles and Datasets in Neuroscience with DOIs

- Transparency and Trust

| PIDs promote transparency in research by providing verifiable, permanent records of data sources and contributions.
Example: Documenting Research Contributions with ORCID iDs

Transformative potential of PIDs in open science platforms

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- Collaboration and Sharing

| PIDs support collaborative efforts by making it easy to share and attribute research data and findings.
Example: Sharing Genomic Data with DOIs

- Efficient Data Management

| PIDs streamline data management processes, ensuring that research data is well-organized and easily retrievable.
Example: Managing Clinical Trial Data with PIDs

- Compliance with FAIR Principles

| PIDs align with the FAIR (Findable, Accessible, Interoperable, Reusable) principles, enhancing the overall quality and impact of open science.
Example: Aligning Research Data with FAIR Principles Using DOIs

- Innovation Acceleration

| By improving data accessibility and interoperability, PIDs accelerate scientific innovation and discovery.
Example: Accelerating Drug Discovery with PIDs

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- Integration with Block chain Technology

| Leveraging blockchain for immutable, transparent records of research outputs, ensuring data, transparency, integrity and trust.
Example: The dARK is an ARK implementation built on top of a decentralized network based on institutional blockchain nodes. In this way, the data is owned, stored, and controlled by no single organization but by all the participants of the network.

- Usage in Data Citation Metrics

| Tracking and analyzing data citation patterns using PIDs to assess the impact and reuse of datasets.
Example: DataCite's DOI services enable the tracking and analysis of data citation patterns, allowing researchers and institutions to assess the impact and reuse of datasets comprehensively.

- Enhanced Researcher Profiles

| Integrating PIDs like ORCID with researcher profiles to provide comprehensive and verifiable records of academic contributions.
Example: ORCID integrates PIDs into researcher profiles, providing a comprehensive and verifiable record of academic contributions, publications, and research activities.

- Grant and Funding Management

| Using PIDs to track research projects and outcomes associated with specific grants, improving transparency and accountability.
Example: The National Institutes of Health (NIH) uses PIDs to track research projects and outcomes associated with specific grants, improving transparency and accountability in the management of research funding.

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- Machine-Readable Data Management Plans

| Implementing PIDs in data management plans to automate and streamline compliance with funding agencies' requirements.
Example: The DMPTool incorporates PIDs into data management plans, automating and streamlining compliance with funding agencies' requirements for data management and sharing.

- Dynamic Data Publishing

| Supporting the live publications, updating datasets that can be persistently cited using PIDs, ensuring access to the latest data versions.
Example: The Open Science Framework (OSF) supports the live publication, updating datasets that can be persistently cited using DOIs, ensuring access to the latest data versions.

- Integration with Artificial Intelligence (AI)

| Employing AI to analyze and link data across various sources using PIDs, enhancing data discovery and synthesis.
Example: Elsevier’s AI tools employ PIDs to analyze and link data across various sources, enhancing data discovery and synthesis for researchers.

- Expanded Use in Non-Academic Sectors

| Extending PIDs to industry, government, and non-profit sectors for consistent and reliable data management practices.
Example: The pharmaceutical industry uses PIDs to manage and track clinical trial data, ensuring consistent and reliable data management practices across different research phases.

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- Linked Data and Semantic Web

| Using PIDs to create linked data frameworks, facilitating integration & retrieval of related data across the web.
Example: Wikidata utilizes PIDs to create linked data frameworks, facilitating the integration and retrieval of related data across the web for various knowledge domains.

- Real-time Data Tracking

| Implementing PIDs in Internet of Things (IoT) devices and sensors for real-time tracking and management of data streams.
Example: The European Space Agency (ESA) implements PIDs in its Earth observation sensors and IoT devices for real-time tracking and management of environmental data streams.

- Data Provenance and Workflows

| Tracking the provenance and workflows of research data using PIDs to ensure reproducibility and transparency in research processes.
Example: The Taverna workflow management system uses PIDs to track the provenance and workflows of research data, ensuring reproducibility and transparency in scientific processes.

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- Virtual Research Environments

| Integrating PIDs in virtual labs and collaborative research environments to manage and link digital objects seamlessly.
Example: The JupyterHub platform integrates PIDs in its virtual labs, enabling researchers to manage and link digital objects seamlessly within collaborative research environments.

- Cultural Heritage and Digital Humanities

| Applying PIDs to digital artifacts, manuscripts, and other cultural heritage materials for enhanced preservation and access.
Example: Europeana uses PIDs to catalog and provide access to digital artifacts, manuscripts, and other cultural heritage materials, enhancing preservation and accessibility.

- Enhanced Interdisciplinary Collaboration

| Facilitating interdisciplinary research by using PIDs to link diverse datasets and research outputs from different fields.
Example: The Global Biodiversity Information Facility (GBIF) uses PIDs to link diverse datasets and research outputs from various fields, facilitating interdisciplinary research on biodiversity.

- Open Peer Review

| Using PIDs to link peer review reports to publications, promoting transparency and accountability in the peer review process.
Example: PREreview integrates PIDs to link pre /peer review reports to publications, promoting transparency and accountability in the peer review process by making peer review activities visible and citable.

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Thanks

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