

# Warum PIDs (k)e in Selbstzweck sind!



DataCite  
FIND, ACCESS, AND REUSE DATA

Paul Vierkant und Britta Dreyer

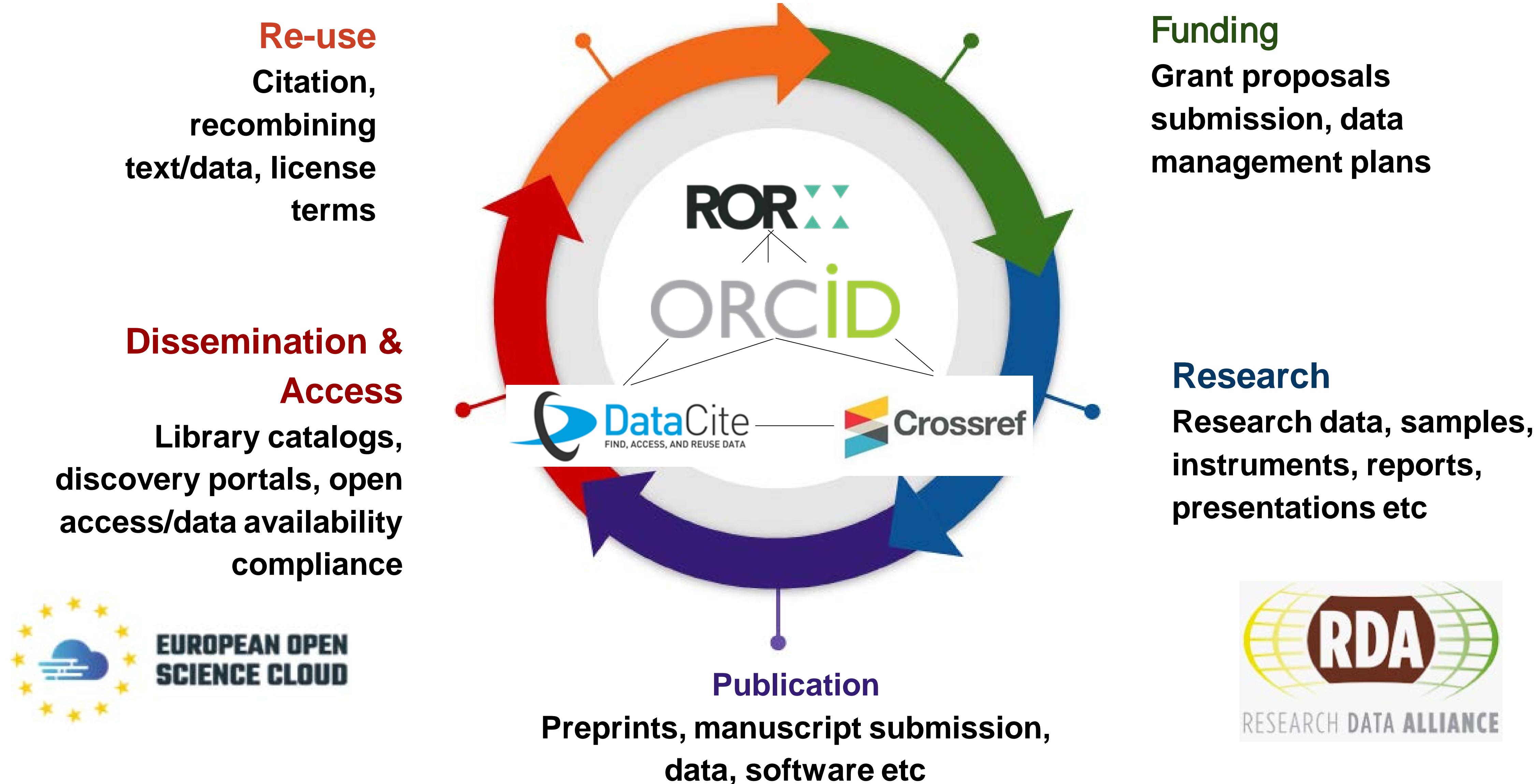
DINI Jahrestagung 2021, 6.-Oktober-2021

# Forschung heute, die Erkenntnisse von morgen

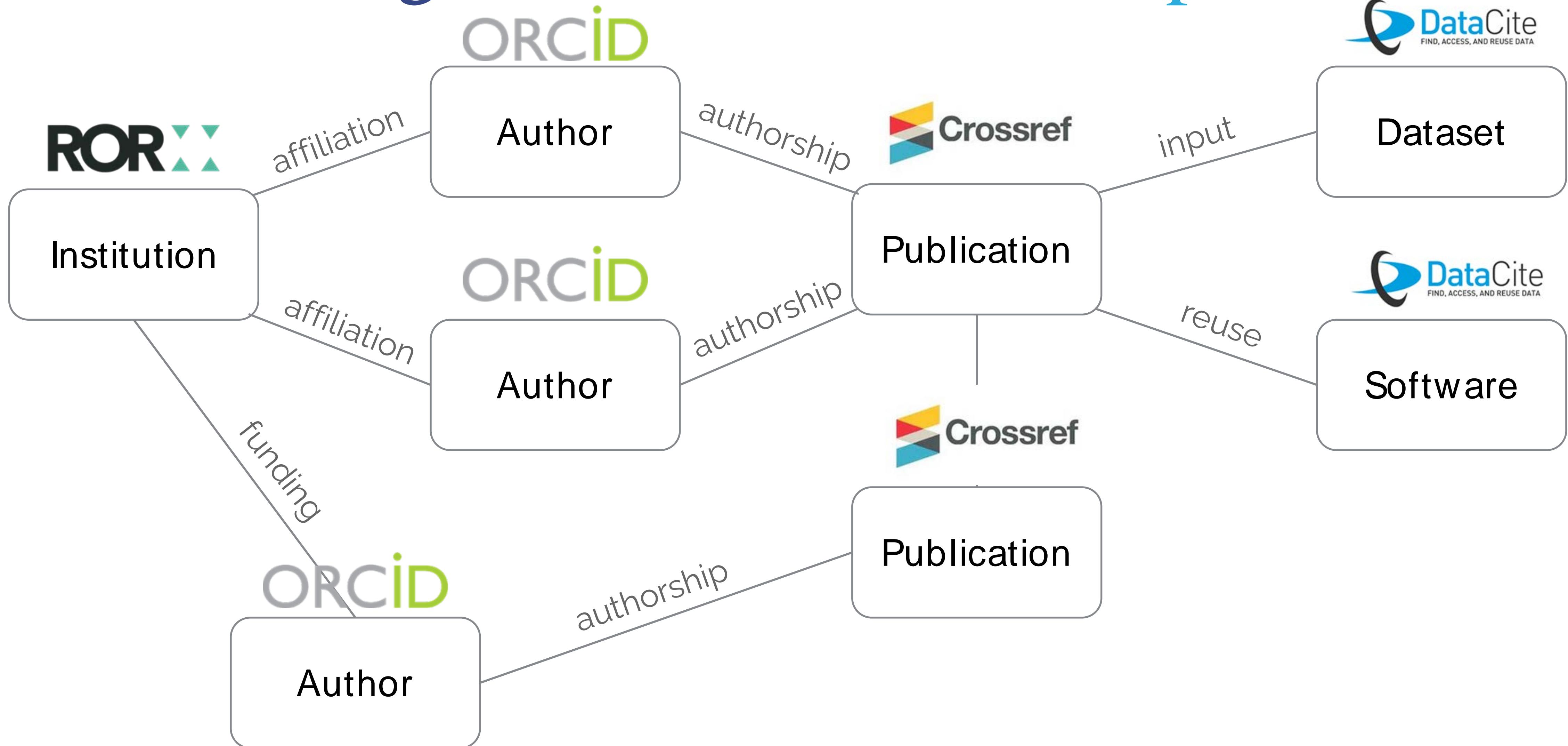


- Verbesserung (/ Ermöglichung) des offenen Zugangs zu Forschung
- Bewahrung der in der Forschung verwendeten Daten
- Sicherstellung des Zugangs und der Nachnutzbarkeit von Forschungsergebnissen bzw. sämtlichen Forschungsoutput
- Anerkennung für sämtliche Forschungsleistungen

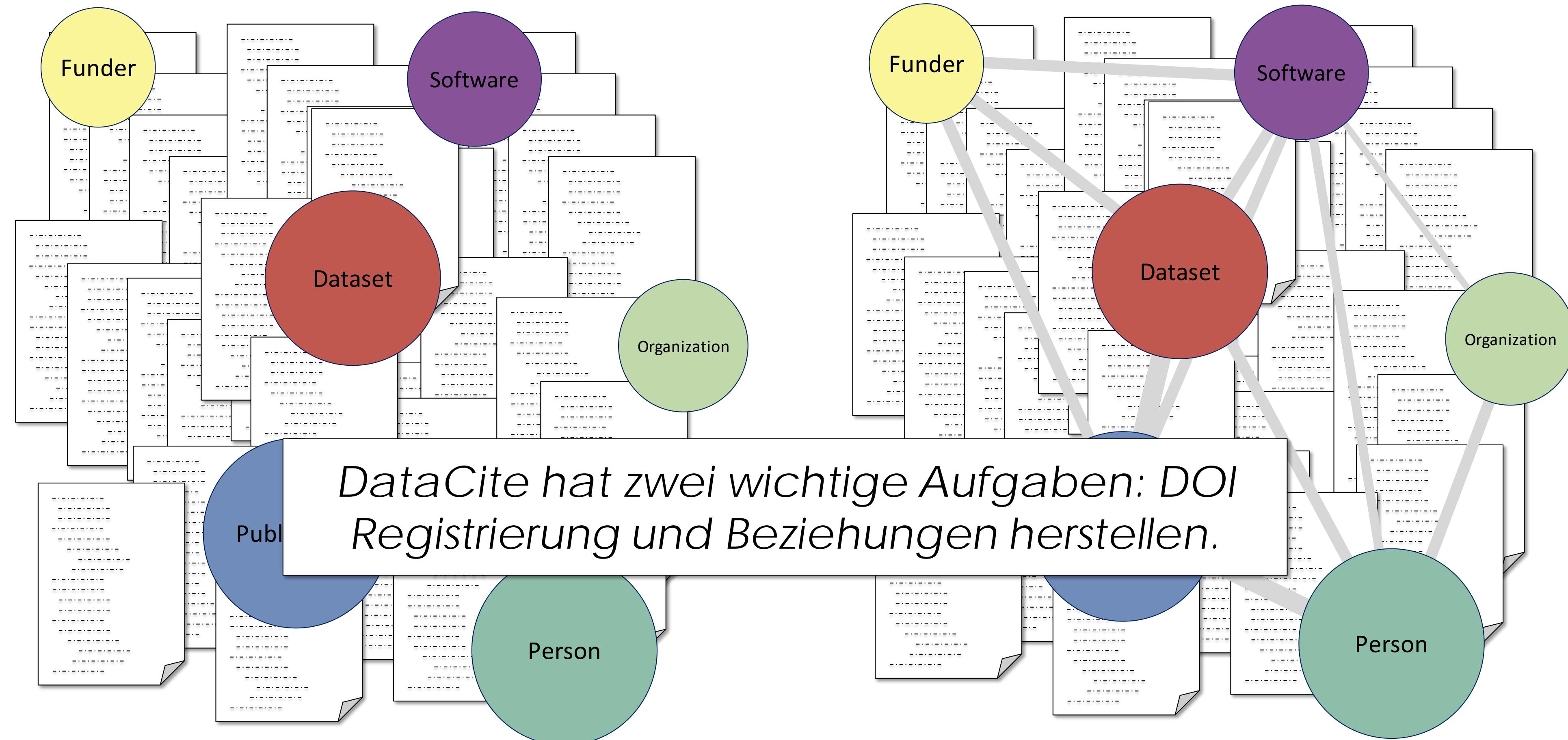
# PIDs im Forschungszyklus



# Forschung ist bereits ein Graph



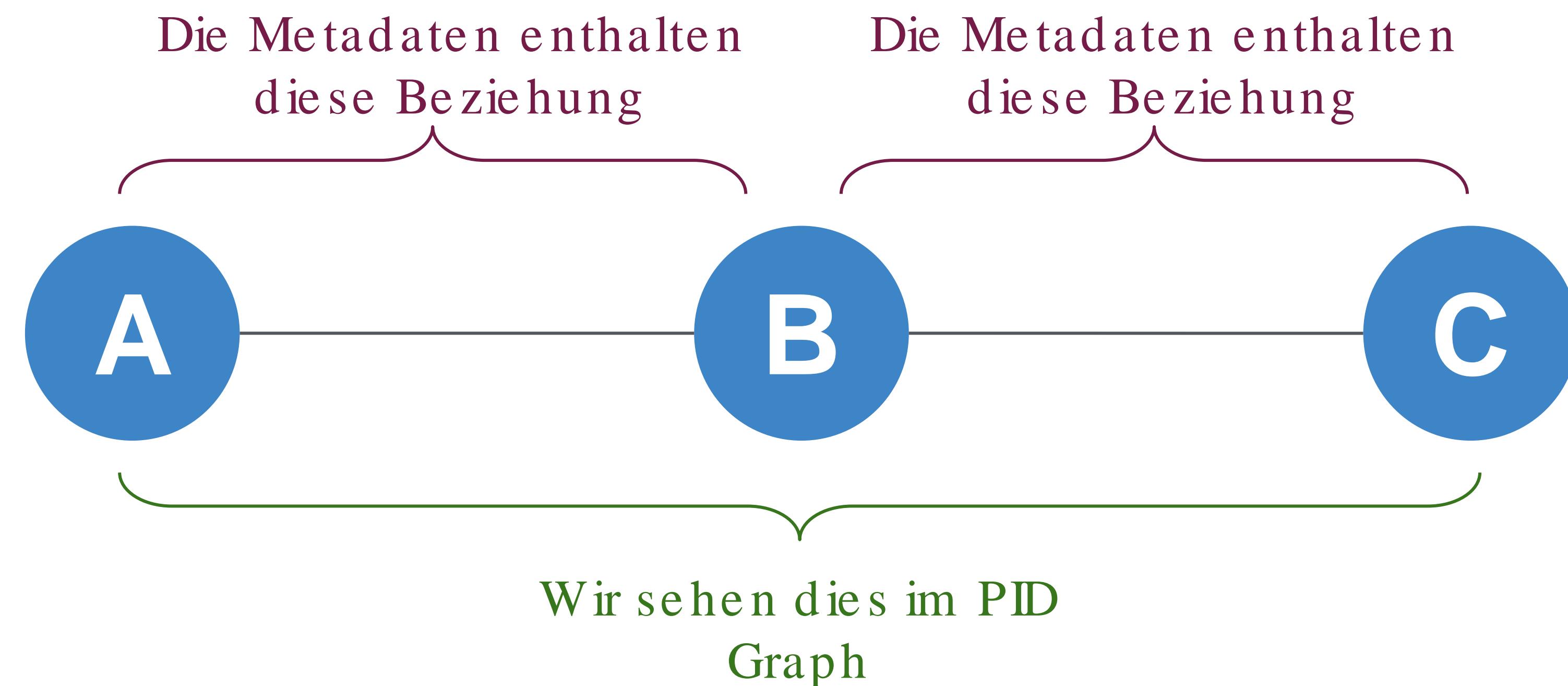
# DataCite - Aufgaben



# Metadaten unterstützen Wissen



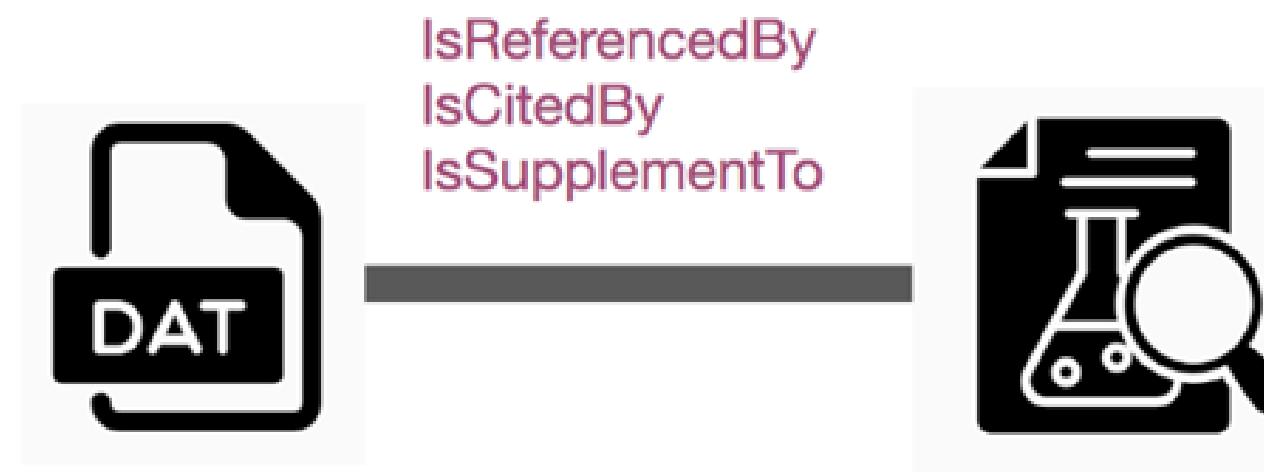
PIDs können durch die Metadaten miteinander in Beziehung gesetzt werden - hiermit werden weitere Verknüpfungen auffindbar.



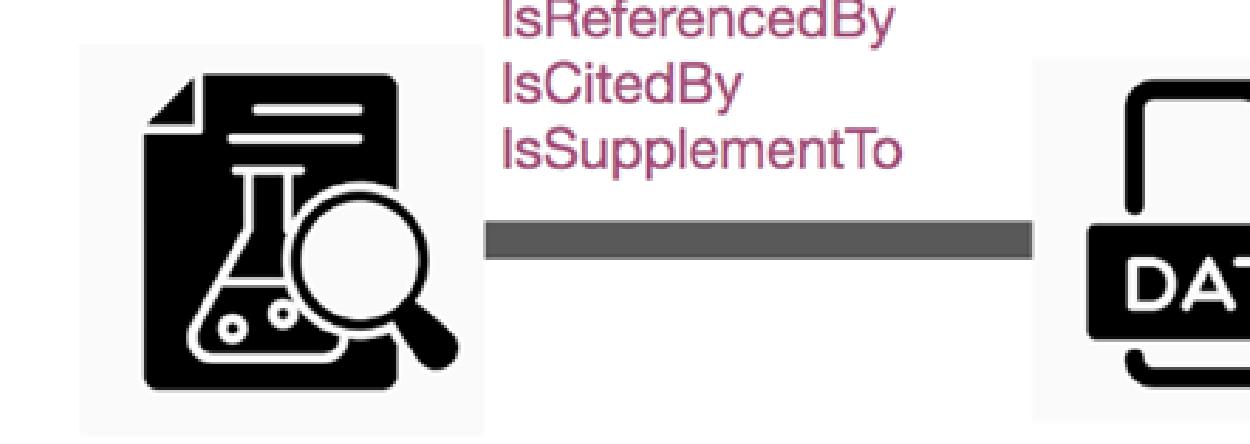
# relatedIdentifier Metadaten-Objekt



## Citations



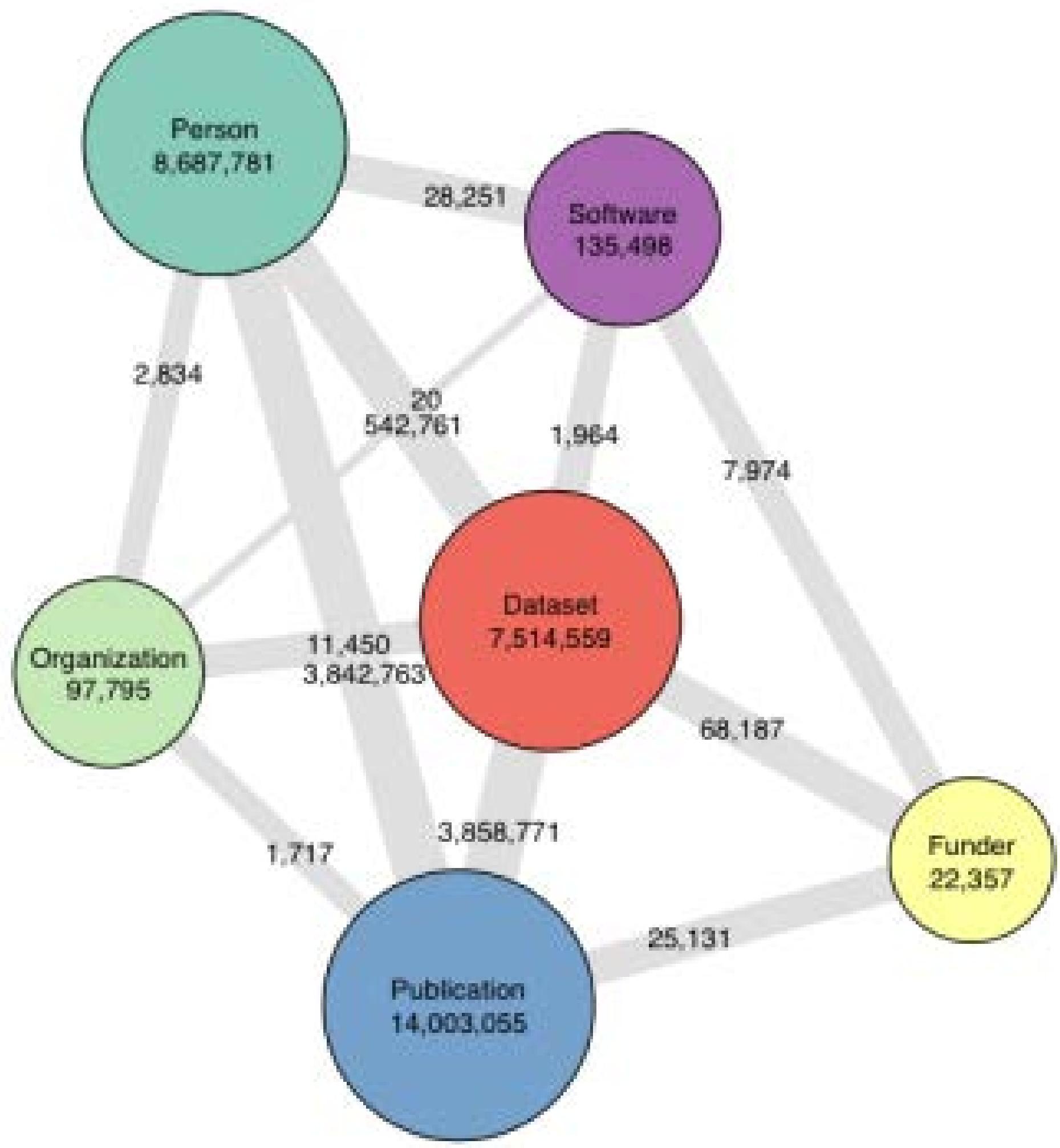
## References



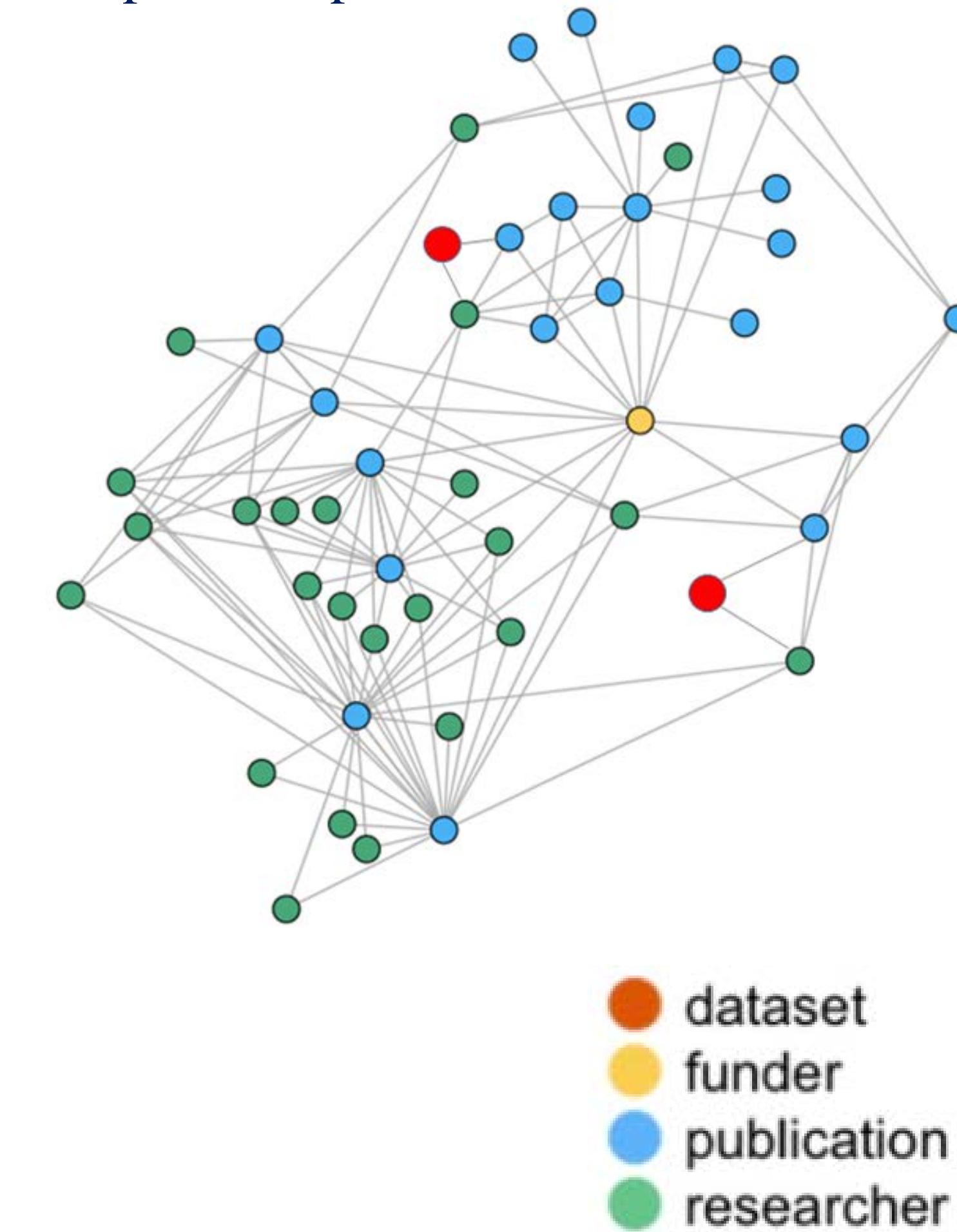
## Relations

IsContinuedBy  
Continues  
IsDescribedBy  
Describes  
HasMetadata  
IsMetadataFor  
HasVersion IsVersionOf  
IsNewVersionOf  
IsPreviousVersionOf  
IsPartOf  
HasPart  
IsDocumentedBy  
Documents  
IsCompiledBy  
Compiles  
IsVariantFormOf  
IsOriginalFormOf  
IsIdenticalTo  
IsReviewedBy Reviews  
IsDerivedFrom  
IsSourceOf  
IsRequiredBy Requires  
IsObsoletedBy  
Obsoletes

# PID Graph



Beispiel-Graph:

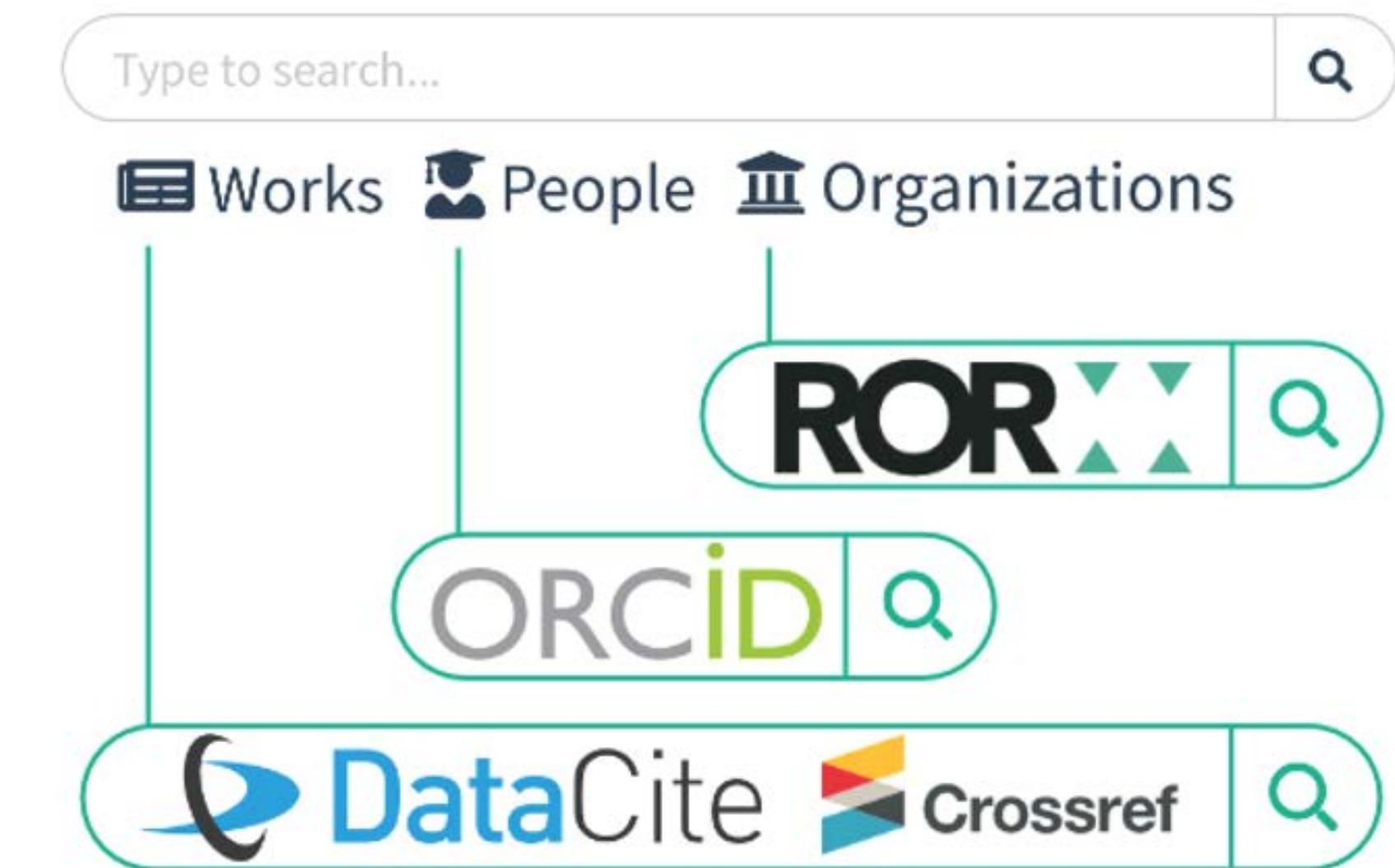


GraphQL API: <https://support.datacite.org/docs/datacite-graphql-api-guide>

# DataCite Commons

## DataCite Commons beinhaltet:

- die Beziehungen zwischen DOIs in Form von Zitaten, Versionen und Sammlungen
- die Beziehungen zwischen Forschungsoutput mit DOIs, Forschenden (ORCID), Forschungsorganisationen (ROR) und Förderern (Crossref Funder ID), z.B. sämtlicher Forschungsoutput/ Förderer oder sämtlicher Forschungsoutput/ Einrichtung



Weitere Informationen:

<https://doi.org/10.5438/f4df-4817>

<https://commons.datacite.org/>

# Aggregation nach Forschenden (ORCID)

<https://orcid.org/0000-0001-5492-3212>

## Markus Stocker

Markus Stocker is Head of the Knowledge Infrastructures Research Group at the TIB Leibniz Information Centre for Science and Technology. He holds a PhD in Environmental Informatics from the University of Eastern Finland; a MSc in Environmental Science from the University of Eastern Finland; and a Diploma (MSc) in Informatics from the University of Zurich, Switzerland. His research interests lie at the intersection between research infrastructures and research communities, and how such infrastructures acquire, maintain, and share scientific knowledge about human and natural worlds. Prior to TIB, Markus held a postdoctoral research associate position at PANGAEA, the Data Publisher for Earth & Environmental Science, at the MARUM Center for Marine Environmental Sciences, University of

## Aggregated Citations, Views and Downloads

3 Citations

36 Views

## Accessibility Achievements

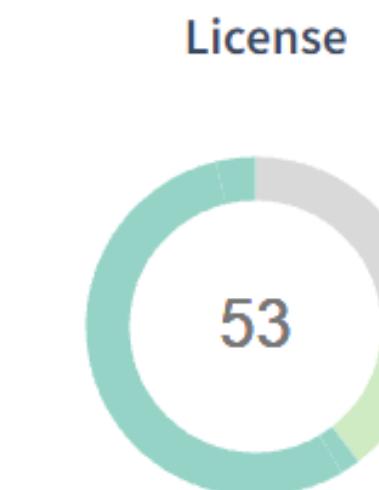
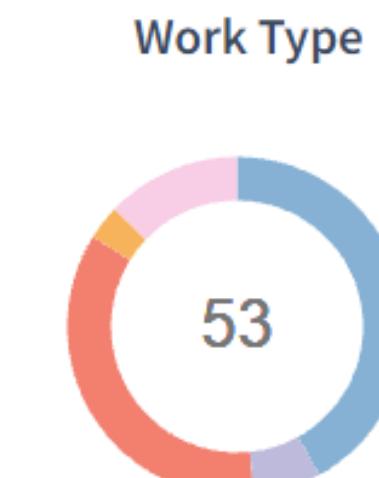
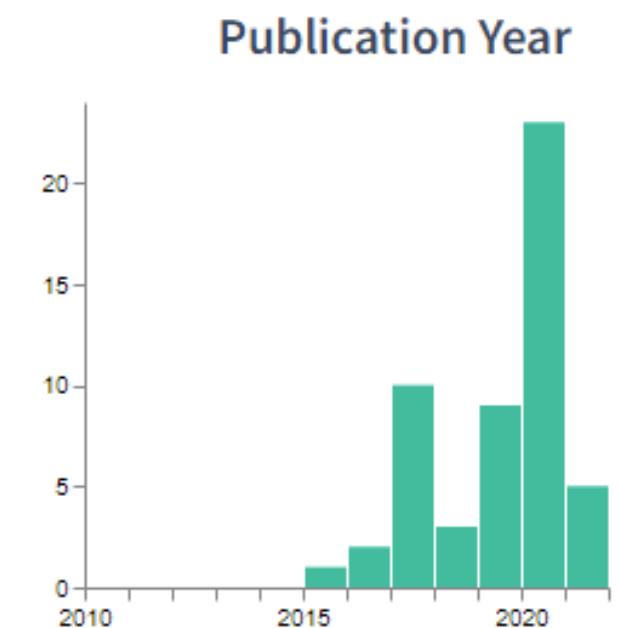


58% of the researcher's associated DOIs have metadata with rights as CC-BY, CC0 or public domain license.



Congratulations, you hit the trifecta. You have an open access paper, open dataset, and open source software.

## 53 Works



## Other Identifiers

Scopus Author ID: [44461998000](#)

Loop profile: [1242536](#)

## Registration Agency

<input type="checkbox"/> DataCite	43
<input type="checkbox"/> Crossref	10

## Co-Authors [?](#)

<input type="checkbox"/> Auer, Sören	16
<input type="checkbox"/> Magagna, Barbara	10
<input type="checkbox"/> Oelen, Allard	9
<input type="checkbox"/> Jaradeh, Mohamad	8
Yaser	
<input type="checkbox"/> Zhao, Zhiming	7
<input type="checkbox"/> Thijssse, Peter	6
<input type="checkbox"/> Prinz, Manuel	6
<input type="checkbox"/> Fiebig, Markus	5
<input type="checkbox"/> Jeffery, Keith	5

# Aggregation nach Institution (ROR)



## Filter Works

 X 🔍

## Publication Year

<input type="checkbox"/> 2021	1,710
<input type="checkbox"/> 2020	3,031
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<input type="checkbox"/> 2018	2,515
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<input type="checkbox"/> 2011	212
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<https://ror.org/04xfq0f34>

## RWTH Aachen University

RWTH Aachen, RWTH

Founded 1870

### Links

[Homepage](#)

[Wikipedia](#)

### Other Identifiers

[GRID grid.1957.a](#)

[Crossref Funder ID 10.13039/501100007210](#)

[ISNI 000000010728696X](#)

[Wikidata Q273263](#)

### Geolocation

50° 46' 40" N, 6° 04' 41" W

[Germany](#)

[Education](#)

[DataCite Member](#)

[🔗 https://ror.org/04xfq0f34](https://ror.org/04xfq0f34)

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## Aggregated Citations, Views and Downloads

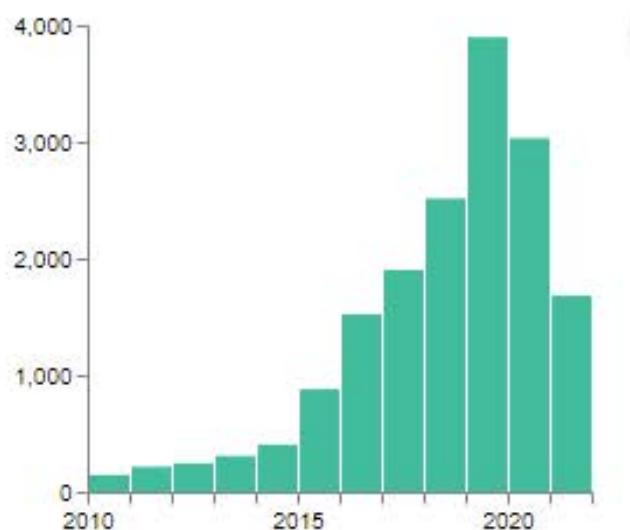
256 Citations

1,705 Views

352 Downloads

## 17,138 Works

### Publication Year



### Work Type



### License



## Field of Science

<input type="checkbox"/> Languages and literature	4
<input type="checkbox"/> Chemical engineering	3
<input type="checkbox"/> Computer and information sciences	1
<input type="checkbox"/> Earth and related environmental sciences	1
<input type="checkbox"/> History and archaeology	1

## Registration Agency

<input type="checkbox"/> DataCite	16,874
<input type="checkbox"/> Crossref	301
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## Authors

<input type="checkbox"/> Stahl, Achim	961
<input type="checkbox"/> Nowack, Andreas	929
<input type="checkbox"/> Kreß, Thomas	819
<input type="checkbox"/> Pook, Tobias	806
<input type="checkbox"/> Lipinski, Martin	726
<input type="checkbox"/> Heidemann, Carsten Andreas	623
<input type="checkbox"/> Nehrkorn, Alexander Rafael Maria	609
<input type="checkbox"/> Teroerde, Marius	415
<input type="checkbox"/> Klein, Katja	401
<input type="checkbox"/> Fischer, Benjamin	251

# Aggregation nach Publikation (DOI)



<https://doi.org/10.5061/dryad.5rm2f>

Data from: Environmental risk assessment for the small tortoiseshell *Aglais urticae* and a stacked Bt-maize with combined resistances against Lepidoptera and Chrysomelidae in central European agrarian landscapes

Mechthild Schuppener, Julia Mühlhause, Anne-Katrin Müller & Stefan Rauschen

Version 1 of Dataset published 2012 in DRYAD

The cultivation of Lepidoptera-resistant Bt-maize may affect non-target butterflies. We assessed the risk posed by event MON89034 x MON88017 (expressing Cry1A.105 and Cry2Ab2 against corn borers) to non-target Lepidoptera. Using the small tortoiseshell *Aglais urticae*, a butterfly species common in central Europe, as a test organism we (1) assessed the toxicity of Bt-maize pollen on butterfly larvae; (2) measured pollen deposition on leaves of the host plant *Urtica dioica*; (3) mapped the occurrence and distribution of host plants and larvae in two arable landscapes in Germany during maize anthesis; and (4) described the temporal occurrence of a one-year population of *A. urticae*. (1) Larvae fed 200 Bt-maize pollen grains/cm<sup>2</sup> had a reduced feeding activity. Significant differences in developmental time existed at pollen densities of 300 Bt-maize pollen grains/cm<sup>2</sup> and in survival at 400 grains/cm<sup>2</sup>. (2) The highest pollen amount found was 212 grains/cm<sup>2</sup> at the field margin. Mean densities were much lower. (3) In one region over 50% of *A. urticae* nests were located within five metres of a maize field, while in the other all nests were found in more than 25 m distance to a maize field. (4) The percentage of larvae developing during maize anthesis was 19% in the study area. The amount of pollen from maize MON89034 x MON88017 found on host plants is unlikely to adversely affect a significant proportion of larvae of *A. urticae*. This paper concludes that the risk of event MON89034 x MON88017 to populations of this species is negligible.

DOI registered June 22, 2012 via DataCite.



1 Citation 131 Views 14 Downloads

Dataset English

<https://doi.org/10.5061/dryad.5rm2f>

## Creators

Mechthild Schuppener

RWTH Aachen University

Julia Mühlhause

RWTH Aachen University

Anne-Katrin Müller

RWTH Aachen University

Stefan Rauschen

RWTH Aachen University

## Download

Full Metadata

DataCite XML

DataCite JSON

Schema.org JSON-LD

Citation Metadata

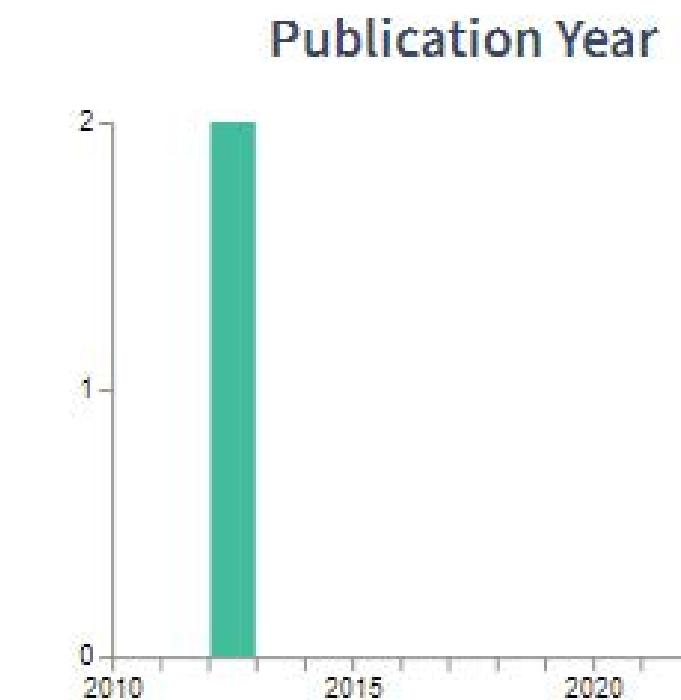
Citeproc JSON

BibTeX

RIS

2 References

2 Citations



Work Type



License



Environmental risk assessment for the small tortoiseshell and a stacked Bt-maize with combined resistances against Lepidoptera and Chrysomelidae in central European agrarian landscapes

MECHTHILD SCHUPPENER, JULIA MÜHLHAUSE, ANNE-KATRIN MÜLLER & STEFAN RAUSCHEN

Journal Article published 2012 in Molecular Ecology

DOI registered via Crossref.

1 Citation

Journal Article

<https://doi.org/10.1111/j.1365-294x.2012.05716.x>

Event Data

ROR

# Aggregation nach Förderer (ROR)



## Publication Year

<input type="checkbox"/> 2021	623
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<input type="checkbox"/> 2019	15,303
<input type="checkbox"/> 2018	12,281
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<input type="checkbox"/> 2014	1,791
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<input type="checkbox"/> 2012	750
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<input type="checkbox"/> 2010	781

## Work Type

<input type="checkbox"/> Text	3,728
<input type="checkbox"/> Dataset	44,330
<input type="checkbox"/> Collection	2,855
<input type="checkbox"/> Image	1
<input type="checkbox"/> Software	12
<input type="checkbox"/> Sound	9
<input type="checkbox"/> Audiovisual	8
<input type="checkbox"/> Physical Object	8
<input type="checkbox"/> Model	5
<input type="checkbox"/> Event	2

## License

<input type="checkbox"/> CC-BY-3.0	44,532
<input type="checkbox"/> CC-BY-4.0	6,356
<input type="checkbox"/> CC-BY-NC-ND-4.0	852
<input type="checkbox"/> CC-BY-NC-4.0	442
<input type="checkbox"/> CC-BY-NC-SA-4.0	122
<input type="checkbox"/> CC-BY-NC-ND-3.0	41
<input type="checkbox"/> CC-BY-NC-SA-3.0	30
<input type="checkbox"/> CC0-1.0	29
<input type="checkbox"/> CC-BY-SA-4.0	25
<input type="checkbox"/> CC-BY-NC-3.0	10

<https://ror.org/018mejw64>

## Deutsche Forschungsgemeinschaft

DFG

Founded 1951

### Links

[Homepage](#)

[Wikipedia](#)

[Twitter](#)

### Other Identifiers

GRID [grid.424150.6](#)

Crossref Funder ID [10.13039/501100001659](#)

ISNI [0000000119579997](#)

Wikidata [Q707283](#)

### Geolocation

50° 41' 57.9948" N, 7° 08' 51.972" W

[Germany](#) [Nonprofit](#)

<https://ror.org/018mejw64>

## Share

Email

Twitter

Facebook

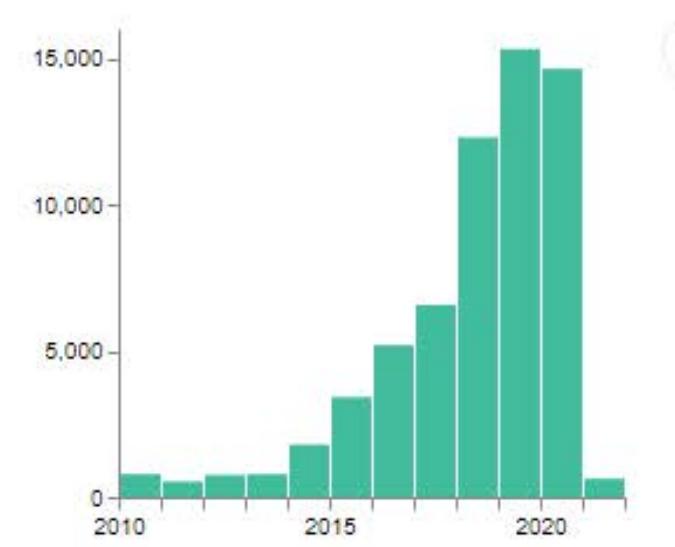
## Aggregated Citations, Views and Downloads

528,503 Citations

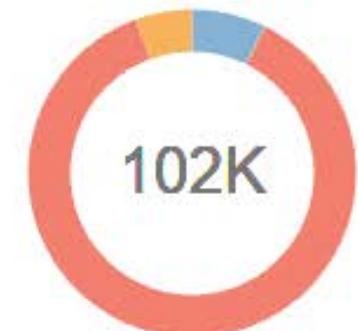
73 Views

## 102,451 Works

### Publication Year



### Work Type



### License



## Field of Science

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<input type="checkbox"/> Computer and information sciences	4
<input type="checkbox"/> Economics and business	3
<input type="checkbox"/> Agriculture, forestry and fisheries	1
<input type="checkbox"/> Chemical sciences	1
<input type="checkbox"/> Earth and related environmental sciences	1
<input type="checkbox"/> History and archaeology	1
<input type="checkbox"/> Law	1
<input type="checkbox"/> Natural sciences	1
<input type="checkbox"/> Political science	1

## Registration Agency

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<input type="checkbox"/> DataCite	48,766
<input type="checkbox"/> Crossref	3

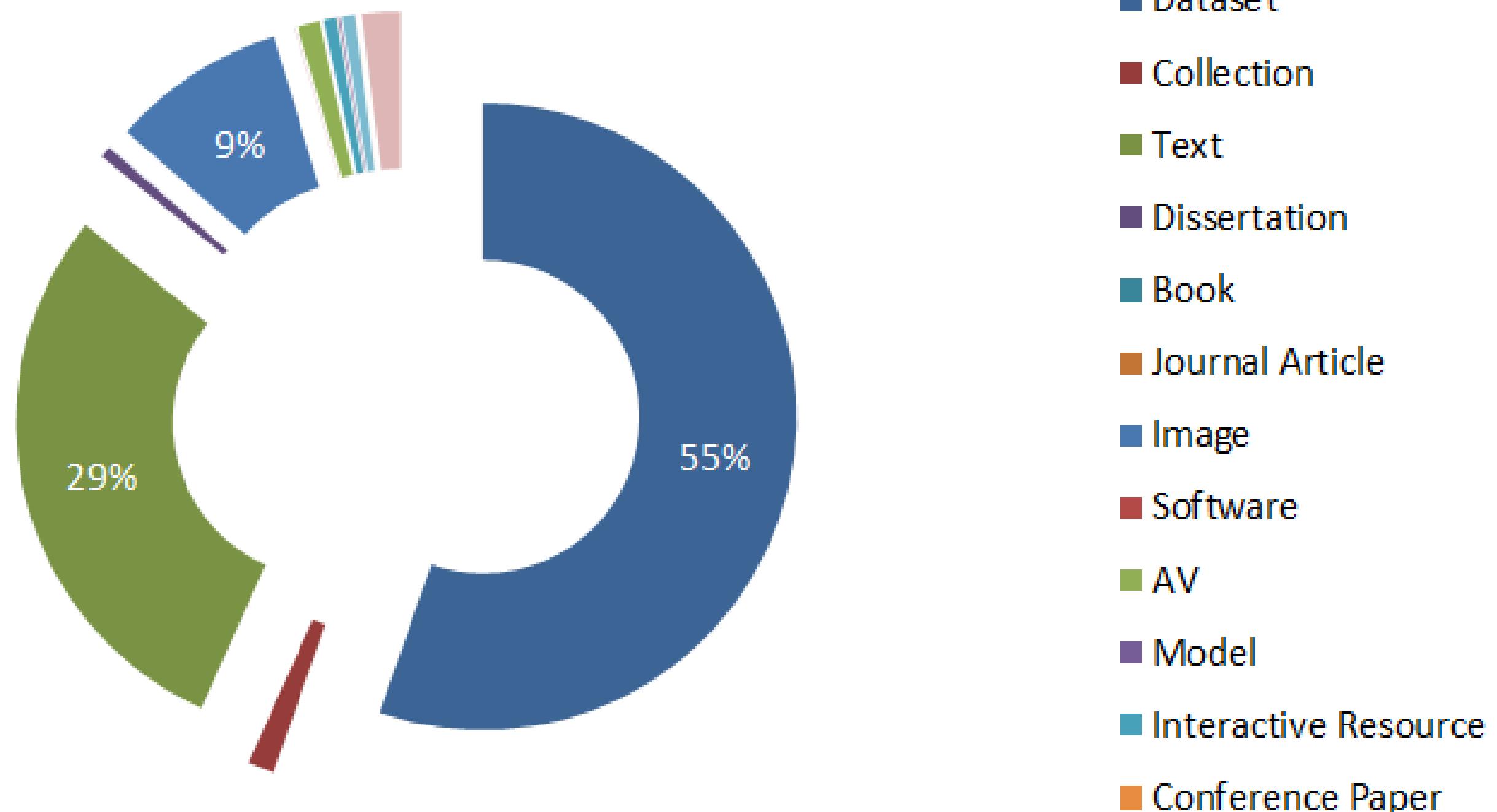
## Authors

<input type="checkbox"/> Malone, Mitchell J	2,001
<input type="checkbox"/> Acton, Gary D	1,683
<input type="checkbox"/> Lyle, Mitchell W	1,408
<input type="checkbox"/> Bohrmann, Gerhard	1,153
<input type="checkbox"/> Wefer, Gerold	893
<input type="checkbox"/> Emeis, Kay-Christian	798
<input type="checkbox"/> Tiedemann, Ralf	788
<input type="checkbox"/> Hodell, David A	594
<input type="checkbox"/> Gersonde, Rainer	567
<input type="checkbox"/> Zachos, James C	535

# PID Infrastruktur in Deutschland

# DOIs für Forschungsoutput

Member	Total DOIs
Deutsches Klimarechenzentrum (DKRZ)	5.498
Deutsches Archäologisches Institut (DAI)	244
Universitätsbibliothek der Ludwig-Maximilians-Universität München	44.247
European X-Ray Free-Electron Laser	25
Schloss Dagstuhl	10.920
Deutsches Zentrum für Luft- und Raumfahrt e. V. (DLR)	53
Forschungszentrum Jülich GmbH	1.018
Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences	8.808
Pangaea	764.016
RWTH	15.702
Stiftung Preußischer Kulturbesitz	neu
Hochschulbibliothekszentrum NRW Consortium (20 Members)	10.781
TIB DOI Consortium (108 Members)	1.304.404
University of Göttingen Consortium (11 Members)	110.766
ZB MED Consortium (8 Members)	585.102
GESIS/ ZBW Consortium (14 Members)	30.926
<b>Total</b>	<b>2.892.510</b>



# Metadaten Analyse (1)



## Forschungsfragen:

- Welche Metadatenfelder werden üblicherweise verwendet?
- Wie FAIR sind die DOI-Metadaten?
- Wo besteht Bedarf an Verbesserungen, Informationen und Unterstützung?
- Was sind Best-Practice-Beispiele?

# Metadata Analysis (2)



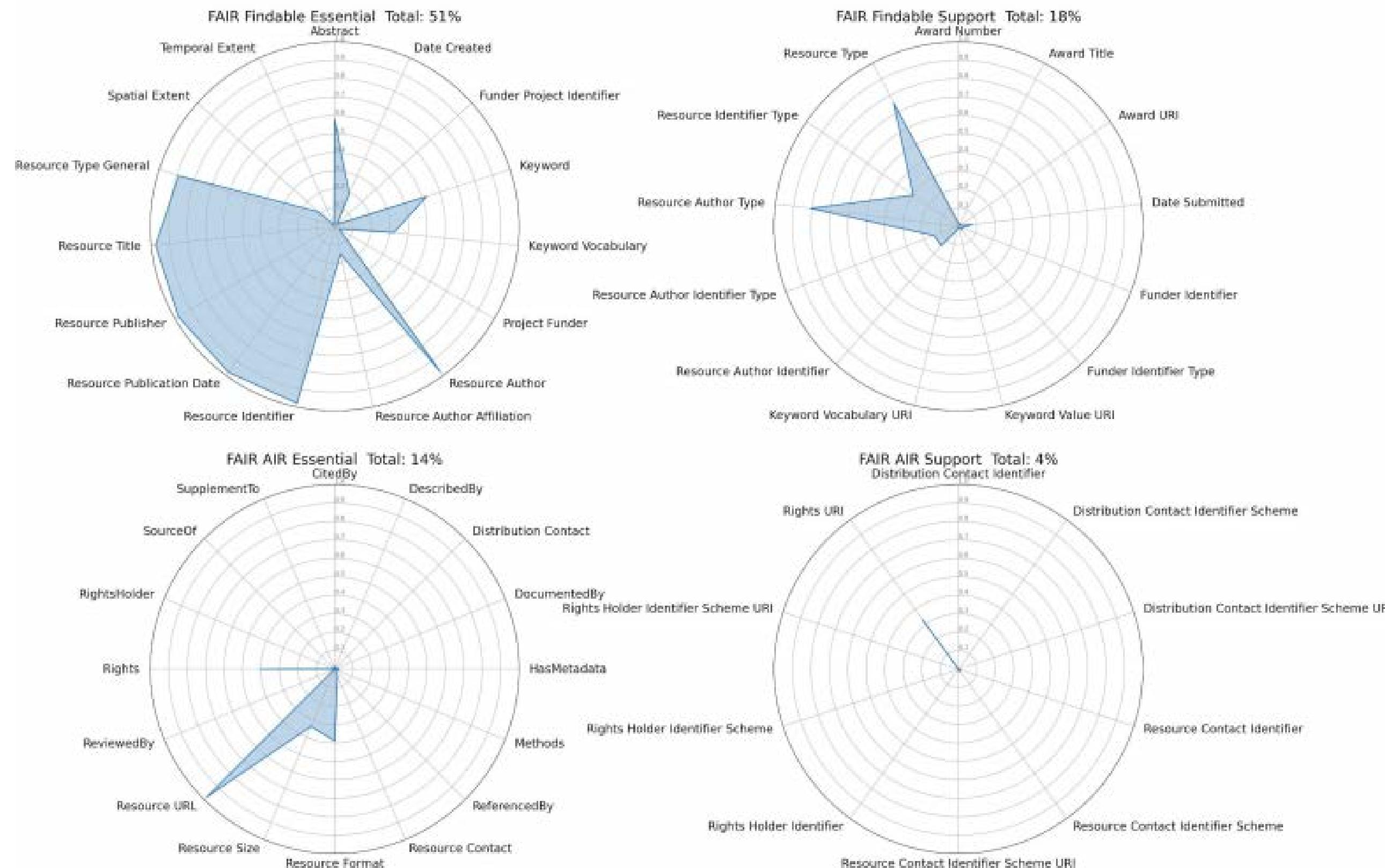
## Vorgehensweise:

- Analyse von 144 deutschen TIB DataCite-Repositorien.
  - 72 Repositorienkonten mit weniger als 300 DOIs vollständig erfasst.
  - 72 Repositorienkonten mit mehr als 300 DOIs: Zufällige Auswahl von 300 DOIs
  - DOI-Status "findable".
- Datenerfassung über API-Schnittstelle
- Stand der Daten: 11. November 2020.
- Experte: Ted Habermann, Metadata Game Changers

# Implementierung der FAIR Empfehlungen



Average 190 Records Total: 23%



Quelle: Ted Habermann 2020, [Metadata Game Changers](#)

Vier FAIR Kategorien:

1. FAIR Findable Essential
2. FAIR Findable Support
3. FAIR AIR Essential
4. FAIR AIR Support

Mapping:

<https://blog.datacite.org/metadig-recommendations-for-fair-datacite-metadata/>

Gesamtdurchschnitt = 27.472 DOIs/ 144 Repositorien = 190

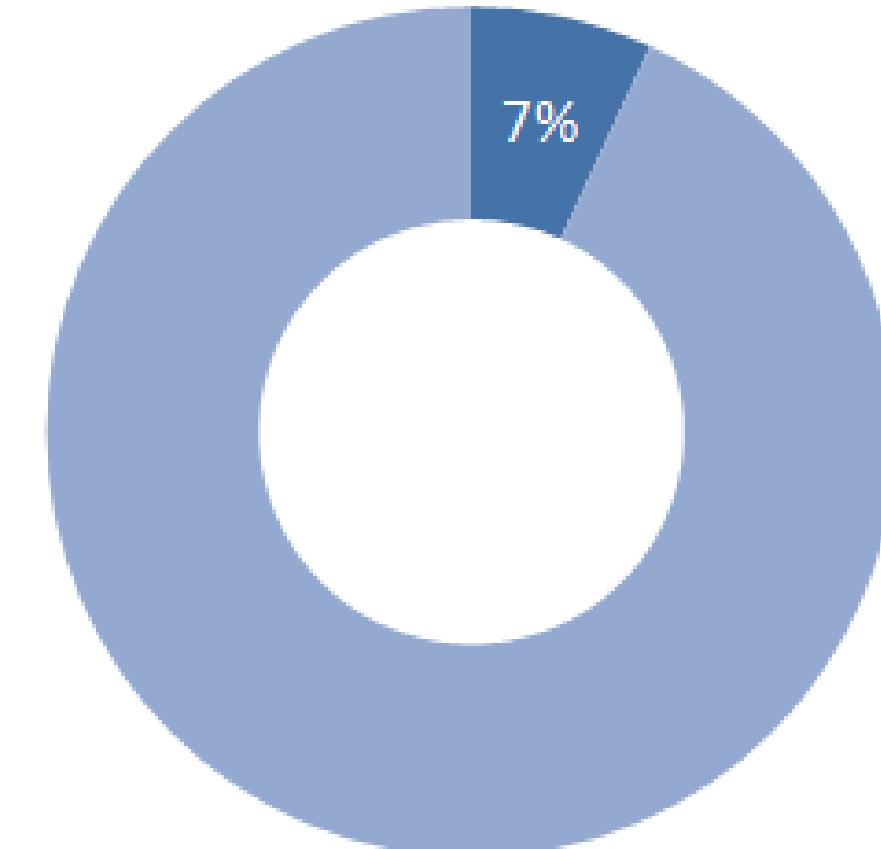
<https://metadatagamechangers.com/blog/2021/2/2/a-pid-feast-for-research-pidapalooza-2021>

# PID-Implementierung deutscher DataCite-Mitglieder



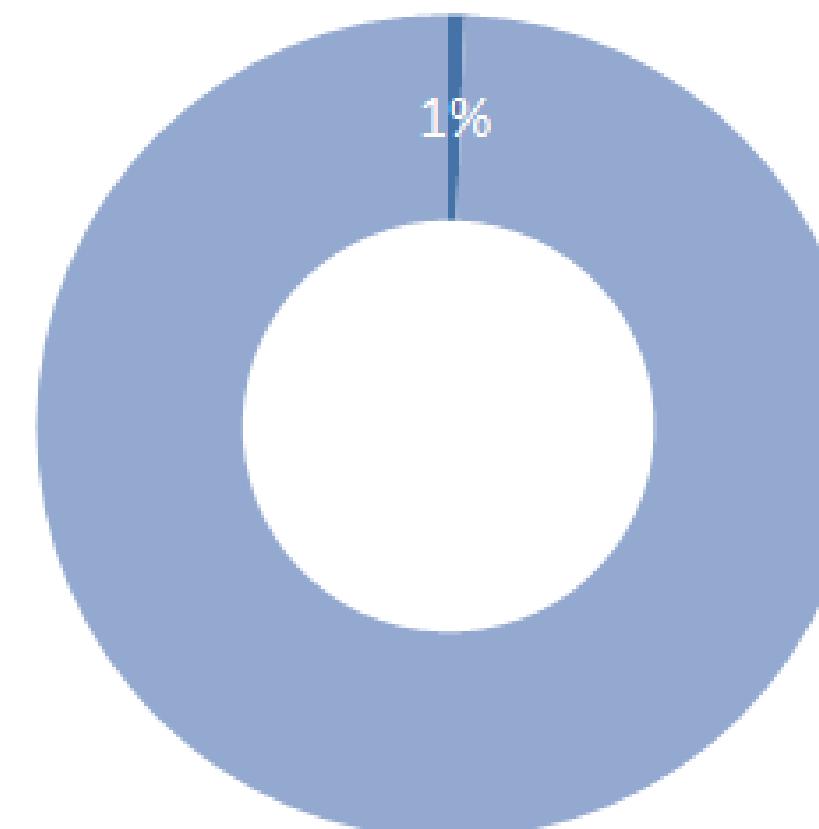
## ORCID

244.604  
ORCIDs mit  
email domain  
.de



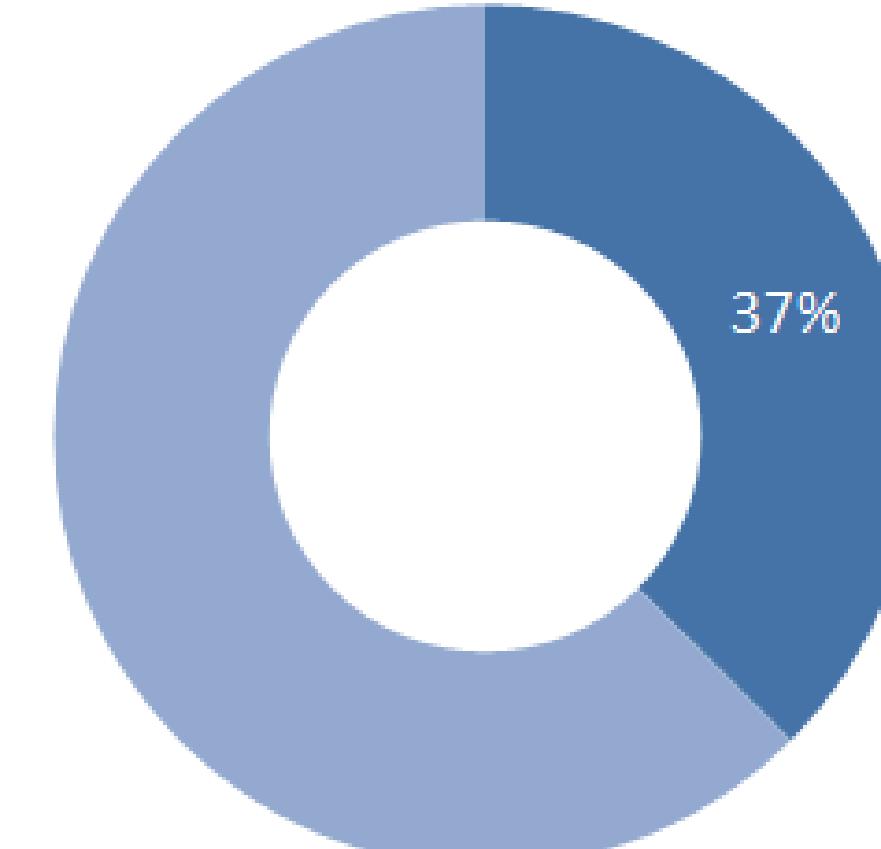
## Affiliation Scheme

Empfehlung ROR:  
<https://ror.org>



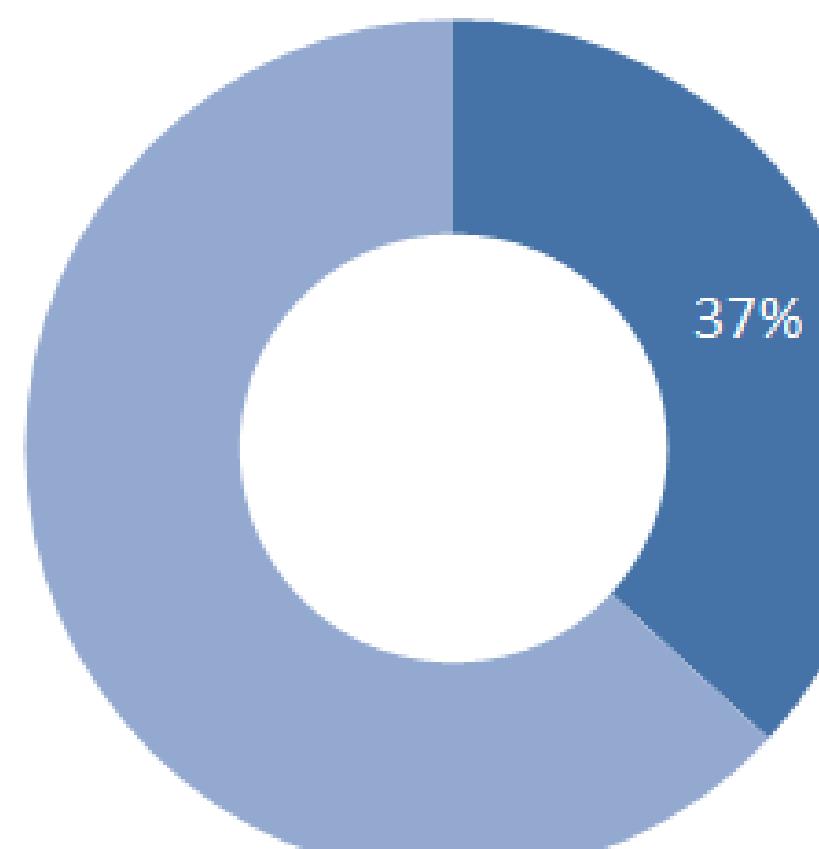
## Related Identifiers

Davon häufig  
genutzt:  
hasPart/ IsPartOf  
hasMetadata



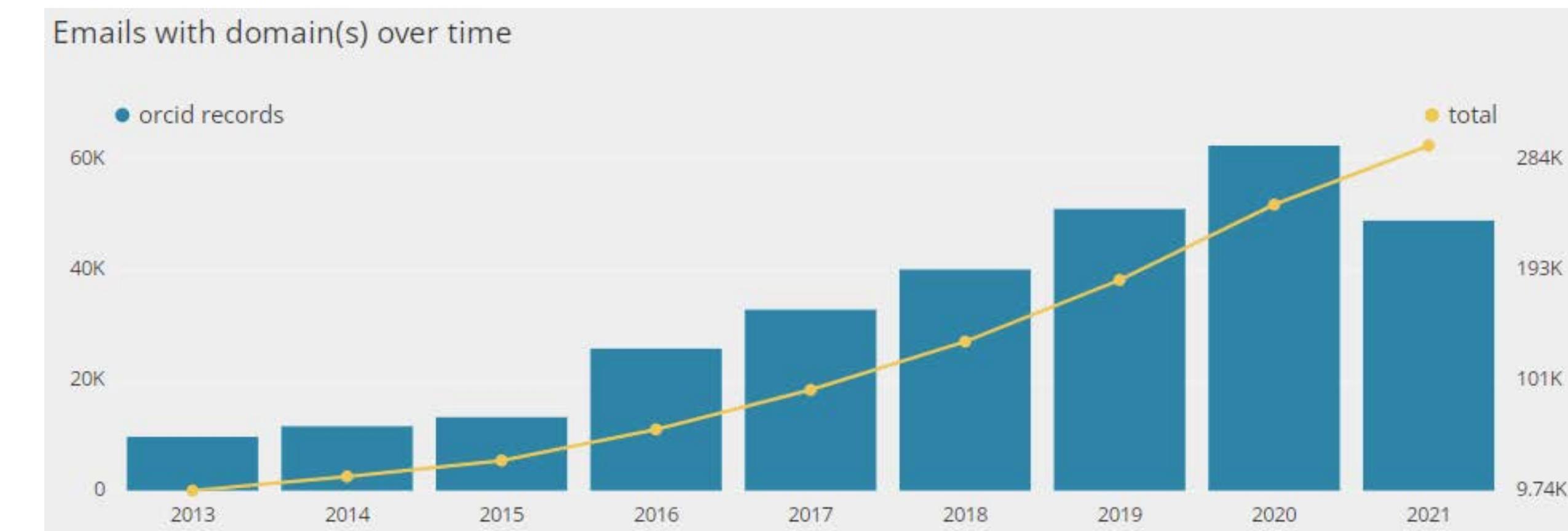
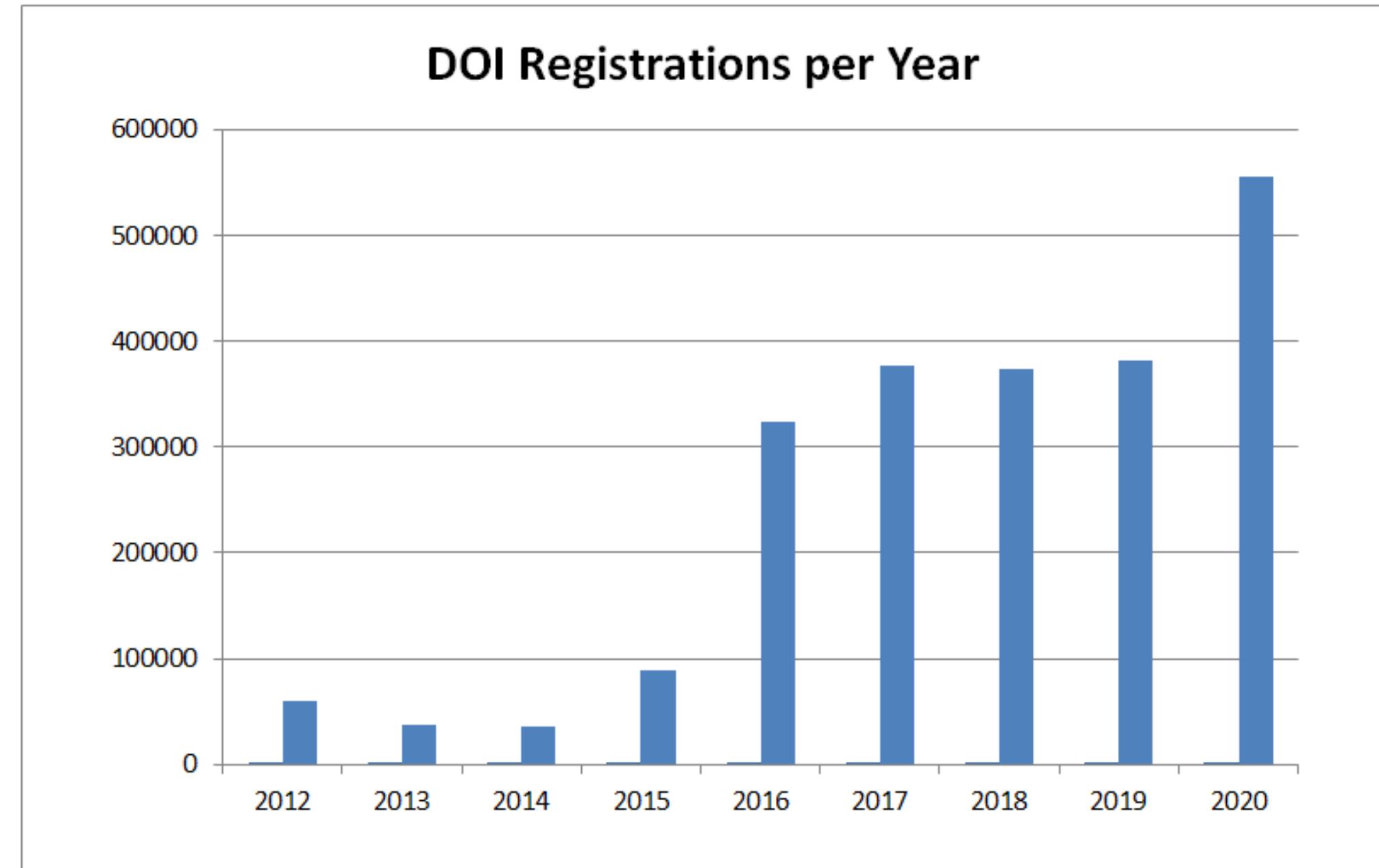
## Subject

Empfehlung OECD Standard:  
<https://www.oecd.org/science/innovation/38235147.pdf>



creators.nameIdentifiers.nameIdentifierScheme:ORCID  
creators.affiliation.affiliationIdentifierScheme:  
relatedIdentifiers:  
subjects:

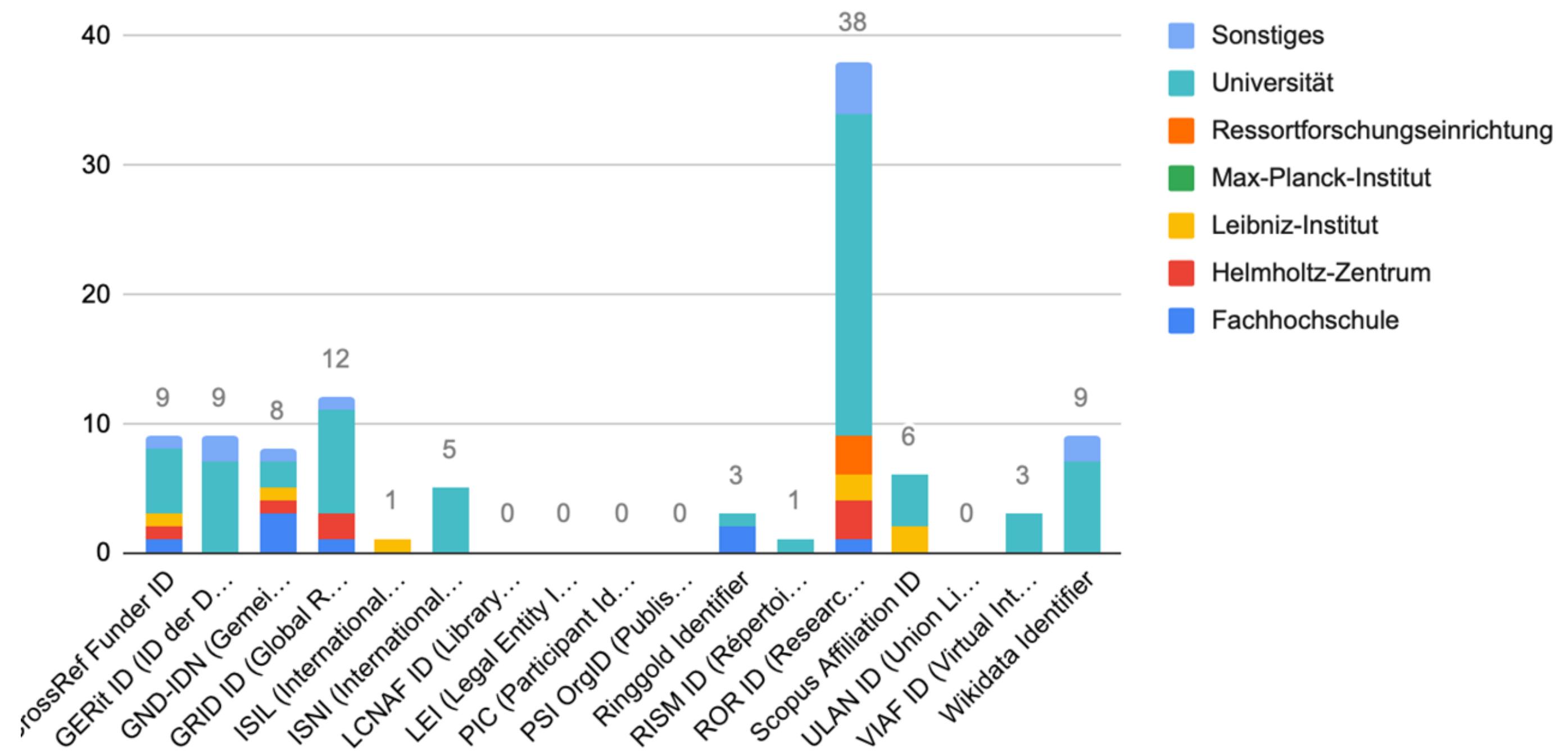
# PID-Implementierung in Deutschland



# ROR Umfrageergebnisse

## Welche Organisations-IDs nutzen Sie bereits?

Antwortoption: nutzen wir nicht, aber planen wir zu nutzen





## Get in touch!



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[info@datacite.org](mailto:info@datacite.org)



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[support@datacite.org](mailto:support@datacite.org)