



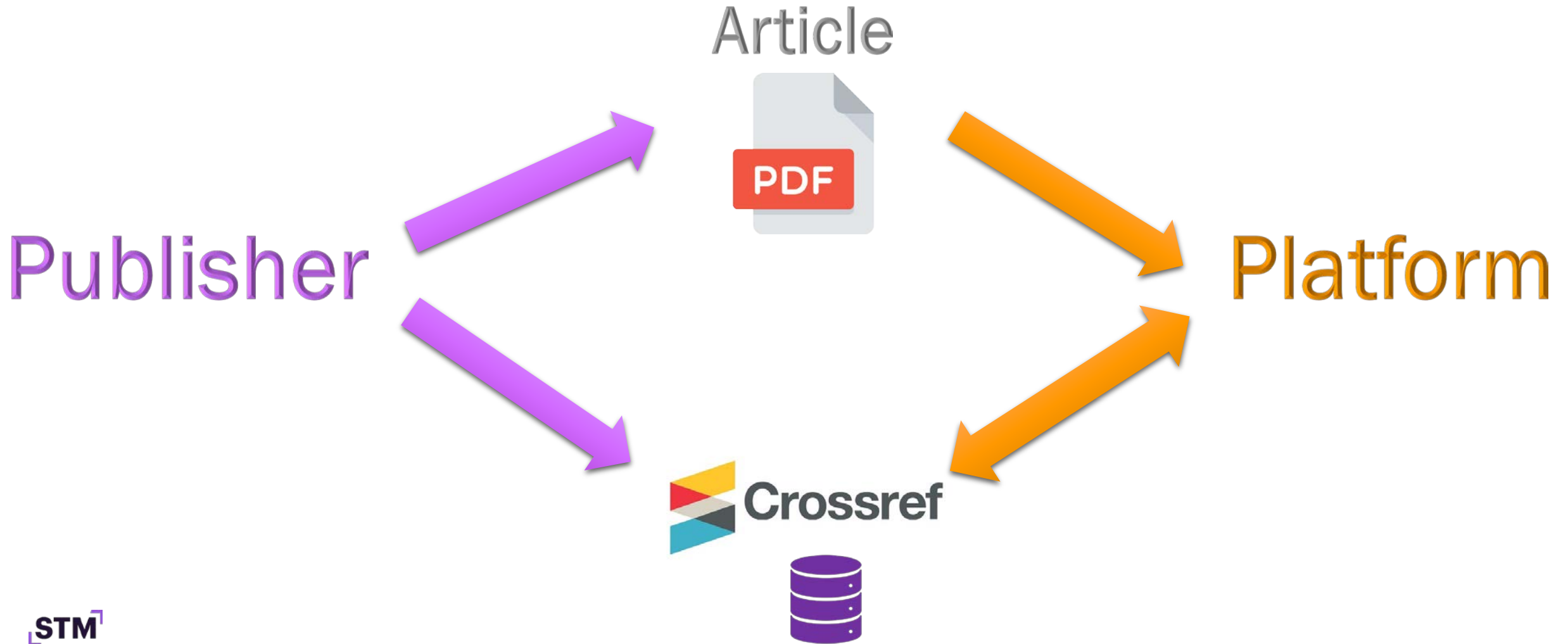
STM

STM Article Sharing Framework - Implementation

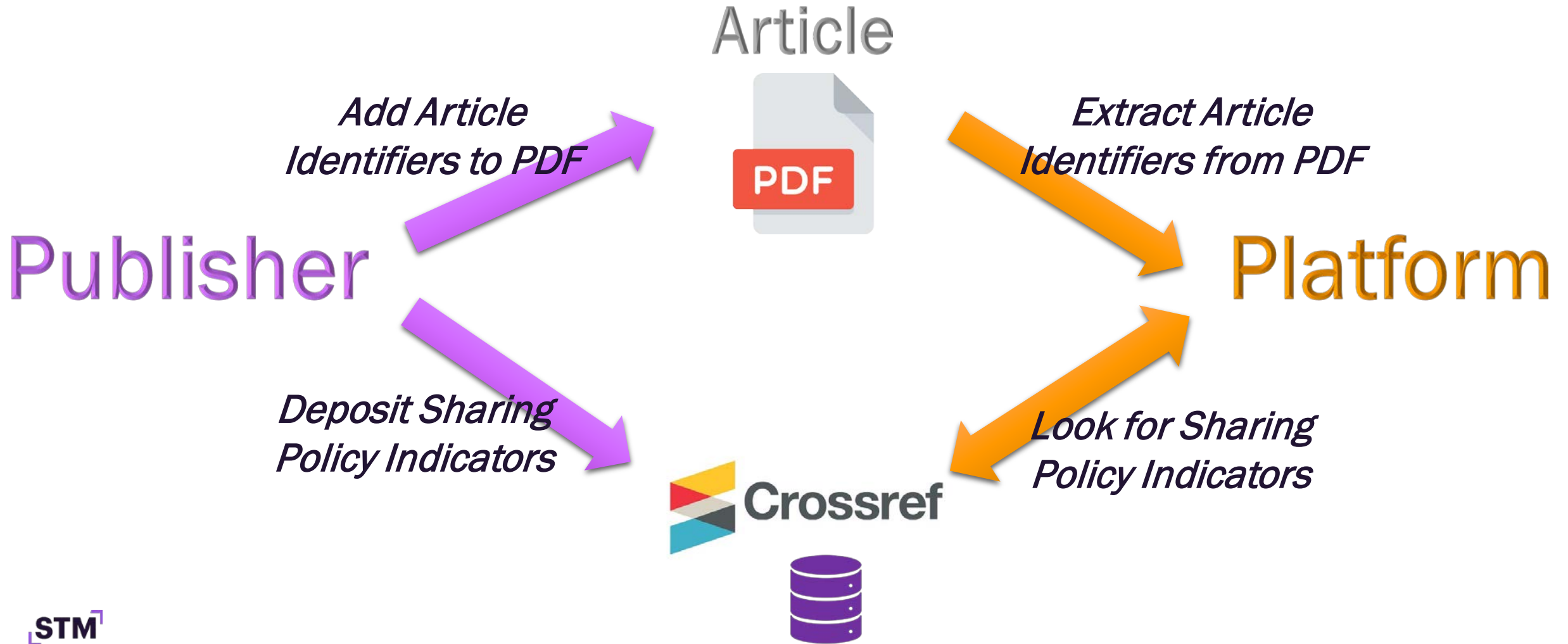
Dan O'Brien, American Chemical Society
April 2021

STM

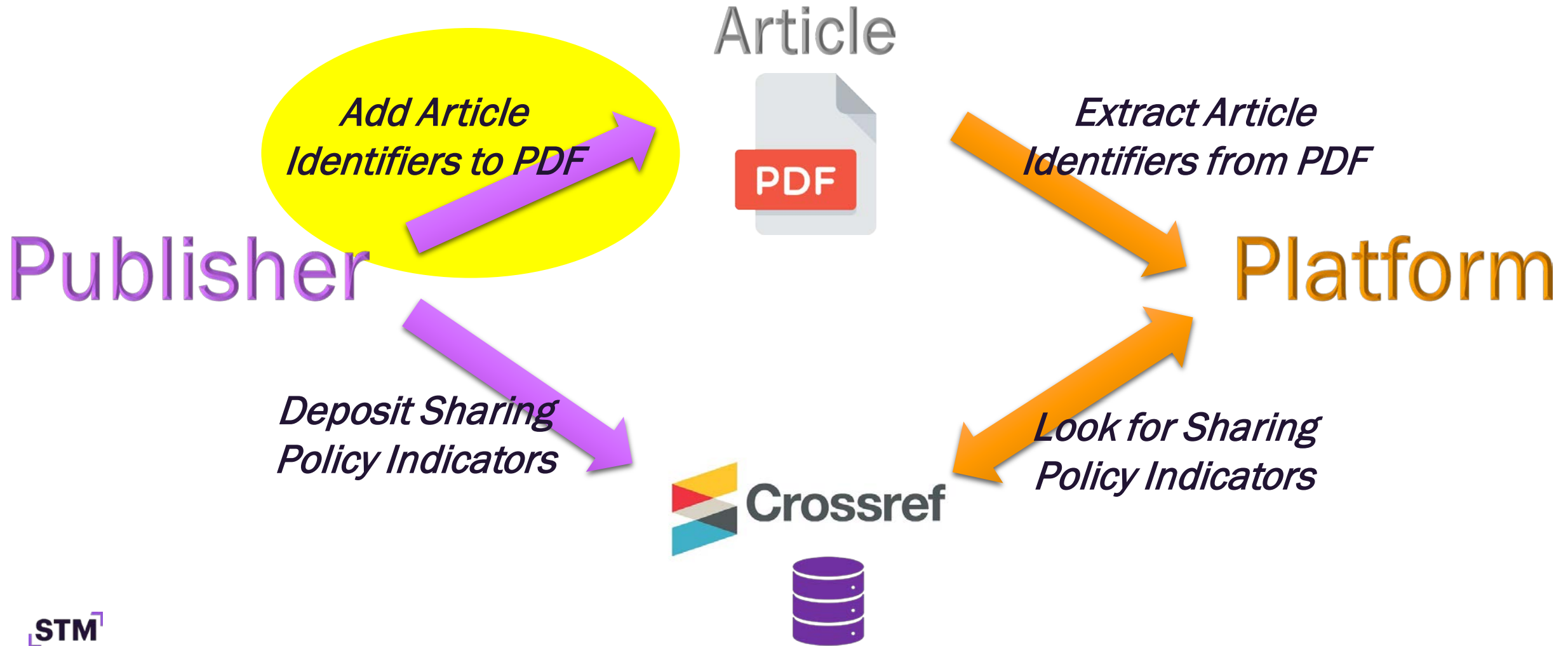
Implementation Overview



Implementation Overview



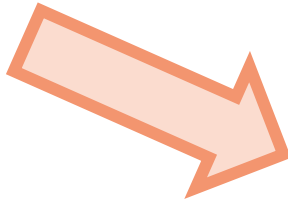
Implementation Overview



Publisher: Add Article Identifiers to PDF

Two fields

- **Article DOI**
- **Journal Article Version (“JAV”)**



Two encoding methods

Two implementation methods

More on JAV

JAV defined as NISO recommended practice RP-8-2008

<https://www.niso.org/publications/niso-rp-8-2008-jav>

Supported JAV values within this framework:

- **VoR** – Version of record
- **AM** – Accepted Manuscript
- **AO** – Author Original

Publisher: Add Article Identifiers to PDF

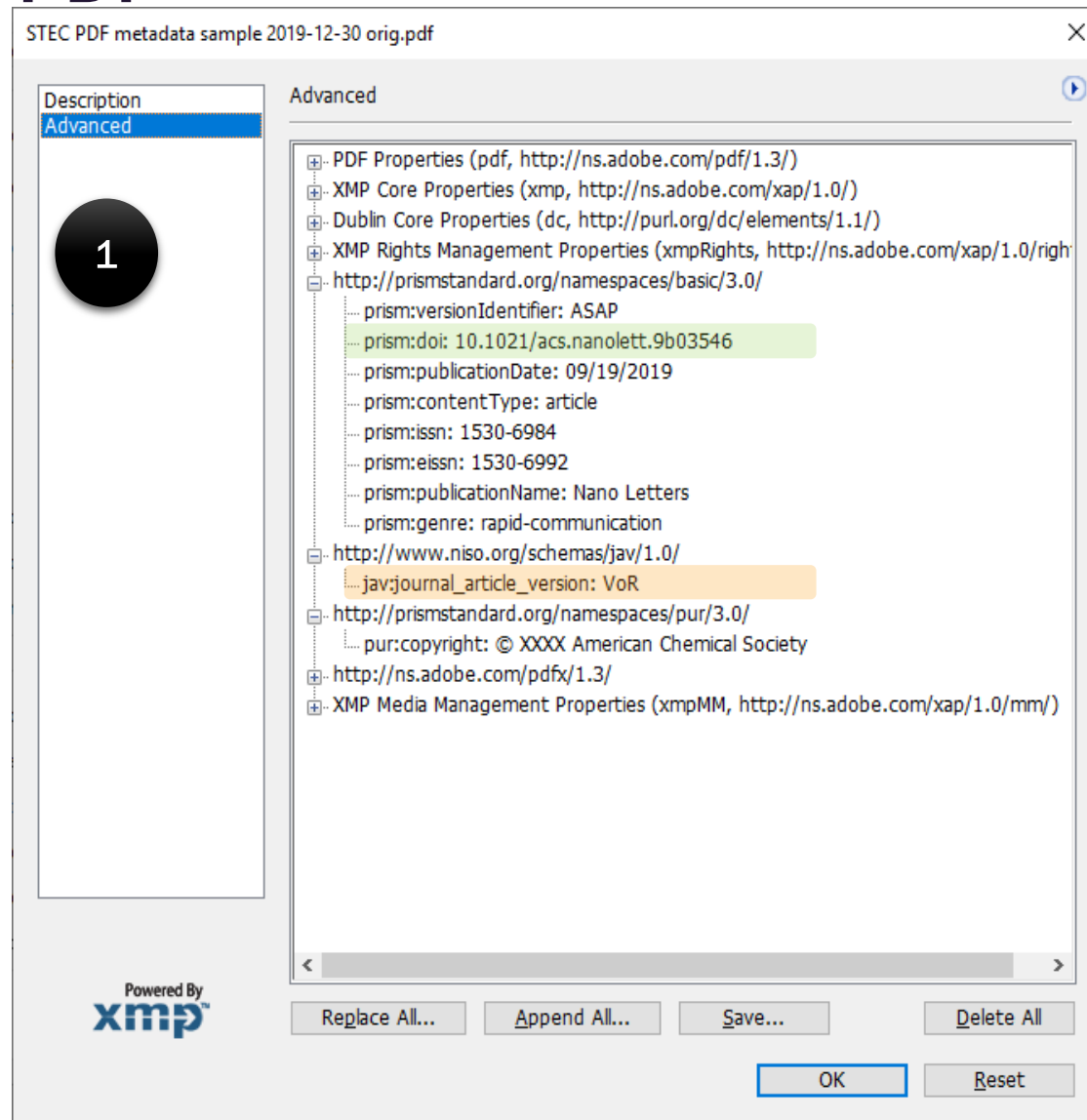
Two fields:

- Article DOI
- Journal Article Version

Two encoding methods

1. Add to PDF's XMP metadata section
2. Add JAV to DOI hyperlink

Two implementation methods



STEC PDF metadata sample 2019-12-30 orig.pdf

Description
Advanced

1

Advanced

- PDF Properties (pdf, <http://ns.adobe.com/pdf/1.3/>)
- XMP Core Properties (xmp, <http://ns.adobe.com/xap/1.0/>)
- Dublin Core Properties (dc, <http://purl.org/dc/elements/1.1/>)
- XMP Rights Management Properties (xmpRights, <http://ns.adobe.com/xap/1.0/rights/>)
- http://prismstandard.org/namespaces/basic/3.0/
 - prism:versionIdentifier: ASAP
 - prism:doi: 10.1021/acs.nanolett.9b03546
 - prism:publicationDate: 09/19/2019
 - prism:contentType: article
 - prism:issn: 1530-6984
 - prism:eissn: 1530-6992
 - prism:publicationName: Nano Letters
 - prism:genre: rapid-communication
- http://www.niso.org/schemas/jav/1.0/
 - jav:journal_article_version: VoR
- http://prismstandard.org/namespaces/pur/3.0/
 - pur:copyright: © XXXX American Chemical Society
- http://ns.adobe.com/pdfx/1.3/
- XMP Media Management Properties (xmpMM, <http://ns.adobe.com/xap/1.0/mm/>)

Replace All... Append All... Save... Delete All

OK Reset

Powered By xmp

Publisher: Add Article Identifiers to PDF

Two fields:

- Article DOI
- Journal Article Version

Two encoding methods

1. Add to PDF's XMP metadata section
2. Add JAV to DOI hyperlink

Two implementation methods



A

2

1000 mg/L and even

Received: June 26, 20

Accepted: August 28,

The screenshot shows the ACS Omega article page. At the top, it says 'This is an open access article published under an ACS AuthorChoice License, which permits copying and redistribution of the article or any adaptations for non-commercial purposes.' The article title is 'Analysis of the Partial Nitrification Process Affected by Polyvinylchloride Microplastics in Treating High-Ammonia Anaerobic Digestates' by Kang Song, Zhouyang Li, Dan Liu, and Lu Li*. The DOI is 10.1021/acsomega.0c03079. The abstract discusses the effect of PVC microplastics on the partial nitrification (PN) process. A bar chart shows ammonia oxidation rates for different PVC concentrations (0, 1000, 5000, 10000 particles/L). The chart shows that as PVC concentration increases, the ammonia oxidation rate decreases. The article also includes an introduction, a figure showing a wastewater treatment plant, and a table of contents.

<https://doi.org/10.1021/acsomega.0c03079>
<https://doi.org/10.1021/acsomega.0c03079?ref=pdf&rel=cite-as&jav=VoR>

Quick Poll #2

Publishers:

Do you implement *any* XMP data in the PDF version of your articles today?

Publisher: Add Article Identifiers to PDF

Two fields:

- Article DOI
- Journal Article Version

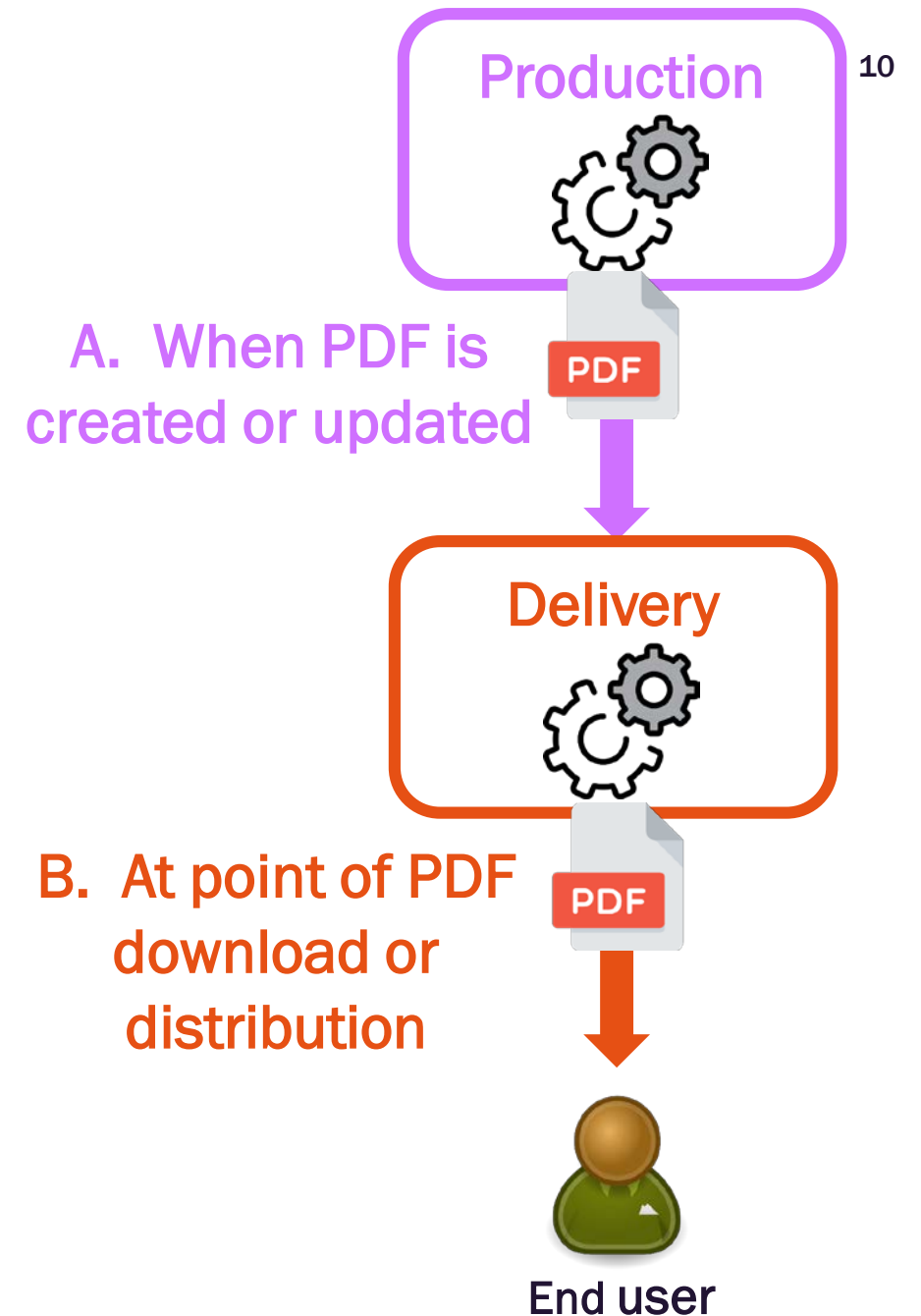
Two encoding methods

1. Add to PDF's XMP metadata section
2. Add JAV to DOI hyperlink

Two implementation methods

- A. PDF generation or update -OR-
B. At delivery

Consideration: Frontfile vs Backfile

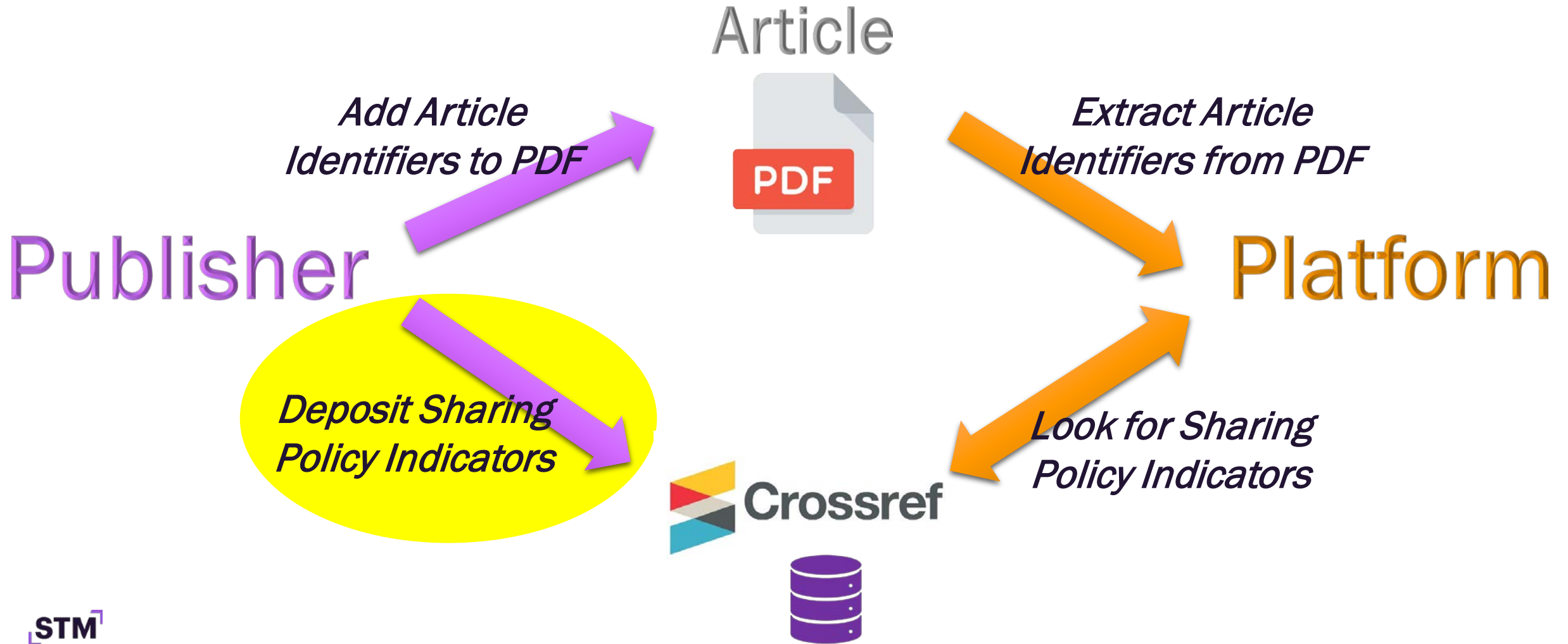


Quick Poll #3

Publishers:

Have you already implemented DOI and JAV tagging in your article PDFs (XMP)?

Implementation Overview



Publisher: Sharing Policy Contexts

Four Sharing Policy contexts defined

Each with 2 to 4 values

Platform Type	pns	Platform that <u>has not signed</u> or does not comply with the STM Voluntary Principles for Article Sharing
	ps	Platform that <u>has signed</u> and complies with the STM Voluntary Principles for Article Sharing
Displayable Elements	ft	Full Text
	ab	Abstract
	ref	References
	cm	Citation Metadata
JAV Article Version	vor	Version of Record
	am	Accepted Manuscript
	ao	Author's Original
Audience Scope	ga	General Access
	rcg	Research Collaboration Group

Publisher: Sharing Policy Indicators

Each permutation of sharing policy contexts = one STM sharing policy

Each policy has a unique identifier: a DOI expressed as a URI

- A “Sharing Policy DOI” (distinct from an Article DOI)
- STM is the “publisher”, using STM’s 10.15223 DOI prefix

#	STM ASF Context Attributes										
	Platform Type		JAV Article Version			Audience Scope		Displayable Elements			
	pns	ps	vor	am	ao	ga	rcg	ft	ab	ref	cm
1	x	*	x			x	*	x	*	*	*
2	x	*	x			x	*		x		*
3	x	*	x			x	*			x	*
4	x	*	x			x	*				x
5	x	*	x				x	x	*	*	*
6	x	*	x				x		x		*
7	x	*	x				x			x	*
8	x	*	x				x				x
9	x	*		x		x	*	x	*	*	*
10	x	*		x		x	*		x		*
11	x	*		x		x	*			x	*
12	x	*		x		x	*				x
39		x		x			x			x	*
40		x		x			x				x
41		x			x	x	*	x	*	*	*
42		x			x	x	*		x		*
43		x			x	x	*			x	*
44		x			x	x	*				x
45		x			x		x	x	*	*	*
46		x			x		x		x		*
47		x			x		x			x	*
48		x			x		x				x

STM ASF Policy DOI

Base:
<https://doi.org/10.15223>
<https://doi.org/10.15223/policy-001>
<https://doi.org/10.15223/policy-002>
<https://doi.org/10.15223/policy-003>
<https://doi.org/10.15223/policy-004>
<https://doi.org/10.15223/policy-005>
<https://doi.org/10.15223/policy-006>
<https://doi.org/10.15223/policy-007>
<https://doi.org/10.15223/policy-008>
<https://doi.org/10.15223/policy-009>
<https://doi.org/10.15223/policy-010>
<https://doi.org/10.15223/policy-011>
<https://doi.org/10.15223/policy-012>

<https://doi.org/10.15223/policy-039>
<https://doi.org/10.15223/policy-040>
<https://doi.org/10.15223/policy-041>
<https://doi.org/10.15223/policy-042>
<https://doi.org/10.15223/policy-043>
<https://doi.org/10.15223/policy-044>
<https://doi.org/10.15223/policy-045>
<https://doi.org/10.15223/policy-046>
<https://doi.org/10.15223/policy-047>
<https://doi.org/10.15223/policy-048>



Publisher: Deposit Sharing Policy Indicators to Crossref

Elsevier's sharing policy for subscription articles

Subscription incl open archive

Platform type	Document version	RCG (collaboration group)					GA (public and requested access)				
		Audience Scope -->					Audience Scope -->				
		AB (abstract)	FT (full text)	CM (citations)	REF (references)	ASF policy #	AB (abstract)	FT (full text)	CM (citations)	REF (references)	ASF policy #
PS (signed & complies with principles)	AO (preprint)	Allowed	Allowed	Allowed	Allowed	045	Allowed	Allowed	Allowed	Allowed	041
	AM (accepted manuscript)	Allowed	Allowed	Allowed	Allowed	037	Allowed	Disallowed	Allowed	Disallowed	034
	VOR (version of record, incl proofs)	Allowed	Allowed	Allowed	Allowed	029	Allowed	Disallowed	Allowed	Disallowed	026
PNS (not signed & complies with principles)	AO (preprint)	Allowed	Allowed	Allowed	Allowed	021	Allowed	Allowed	Allowed	Allowed	017
	AM (accepted manuscript)	Allowed	Disallowed	Allowed	Disallowed	014	Allowed	Disallowed	Allowed	Disallowed	010
	VOR (version of record, incl proofs)	Allowed	Disallowed	Allowed	Disallowed	006	Allowed	Disallowed	Allowed	Disallowed	002

ACS' sharing policy for subscription articles

Subscription (non-OA)	Platform type	Document version	RCG (collaboration group)					GA (public and requested access)			
			Audience Scope -->					Audience Scope -->			
			AB	FT	CM	REF	ASF Policy #	AB	FT	CM	REF
PS (signed & complies with principles)	AO (submitted mss)	Y	Y	Y	Y	045	N	N	Y	N	
	AM (accepted manuscript)	Y	Y	Y	Y	037	N	N	Y	N	
	VOR (version of record, incl proofs)	Y	Y	Y	Y	029	N	N	Y	N	
PNS (not signed but complies with principles)	AO (submitted mss)	N	N	Y	N		N	N	Y	N	
	AM (accepted manuscript)	N	N	Y	N		N	N	Y	N	
	VOR (version of record, incl proofs)	N	N	Y	N		N	N	Y	N	



Publisher: Deposit Sharing Policy Indicators to Crossref

Only a few policies DOIs needed to convey a Publisher's sharing policy for an article.

Platform Type		JAV Article Version			Audience Scope		Displayable Elements				Policy URI
<u>pns</u>	<u>ps</u>	<u>vor</u>	<u>am</u>	<u>ao</u>	<u>ga</u>	<u>rcg</u>	<u>ft</u>	<u>ab</u>	<u>ref</u>	<u>cm</u>	
x		x			x			x			https://doi.org/10.15223/policy-002
	x	x				x	x				https://doi.org/10.15223/policy-029
	x		x		x		x				https://doi.org/10.15223/policy-033

Leverages same “license-ref” structure in Crossref used for Open Access and CHORUS

(NISO Access & License Indicators)

One article DOI can contain multiple sharing policy DOIs.



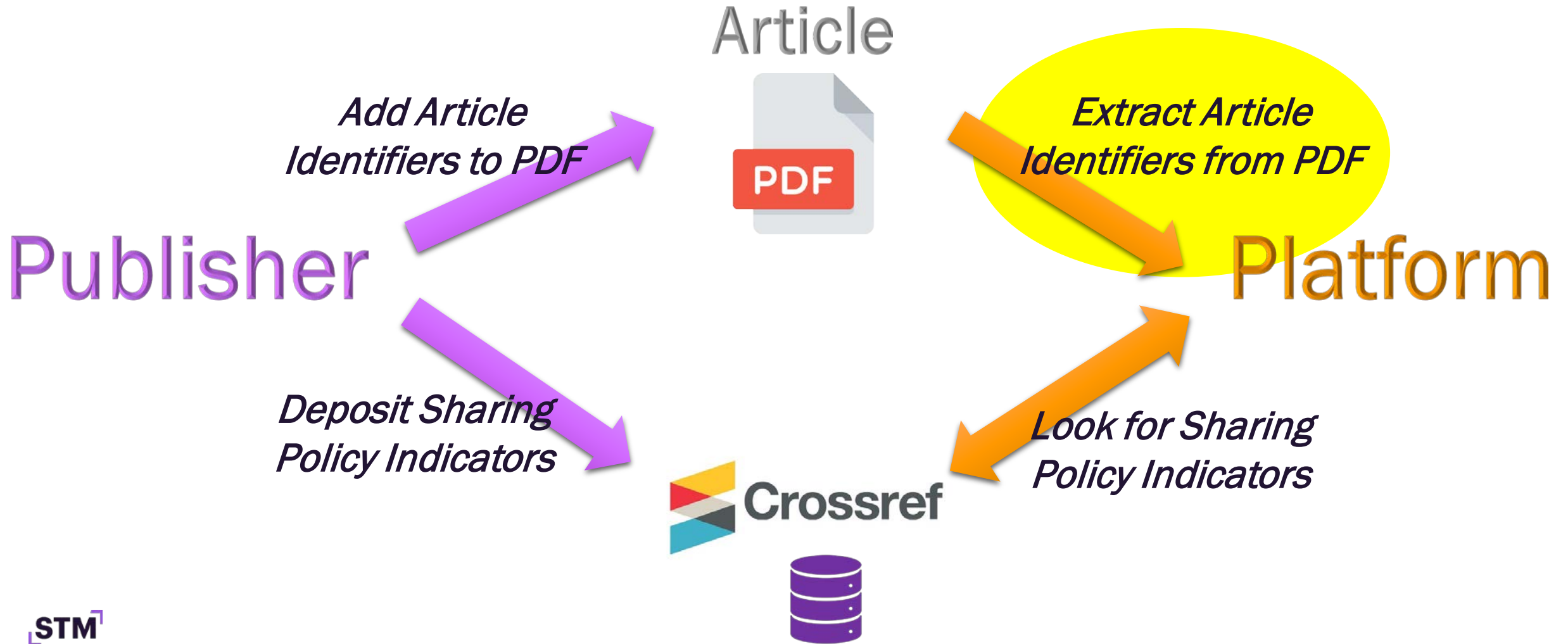
```
<license_ref>https://doi.org/10.15223/policy-002</license_ref>
<license_ref>https://doi.org/10.15223/policy-029</license_ref>
<license_ref>https://doi.org/10.15223/policy-033</license_ref>
```


Quick Poll #4

Publishers:

Do you already deposit any "license_ref" metadata to Crossref, for example in support of CHORUS?

Implementation Overview



Platform: Extract DOI & JAV from PDF

Two fields

- Article DOI
- Journal Article Version

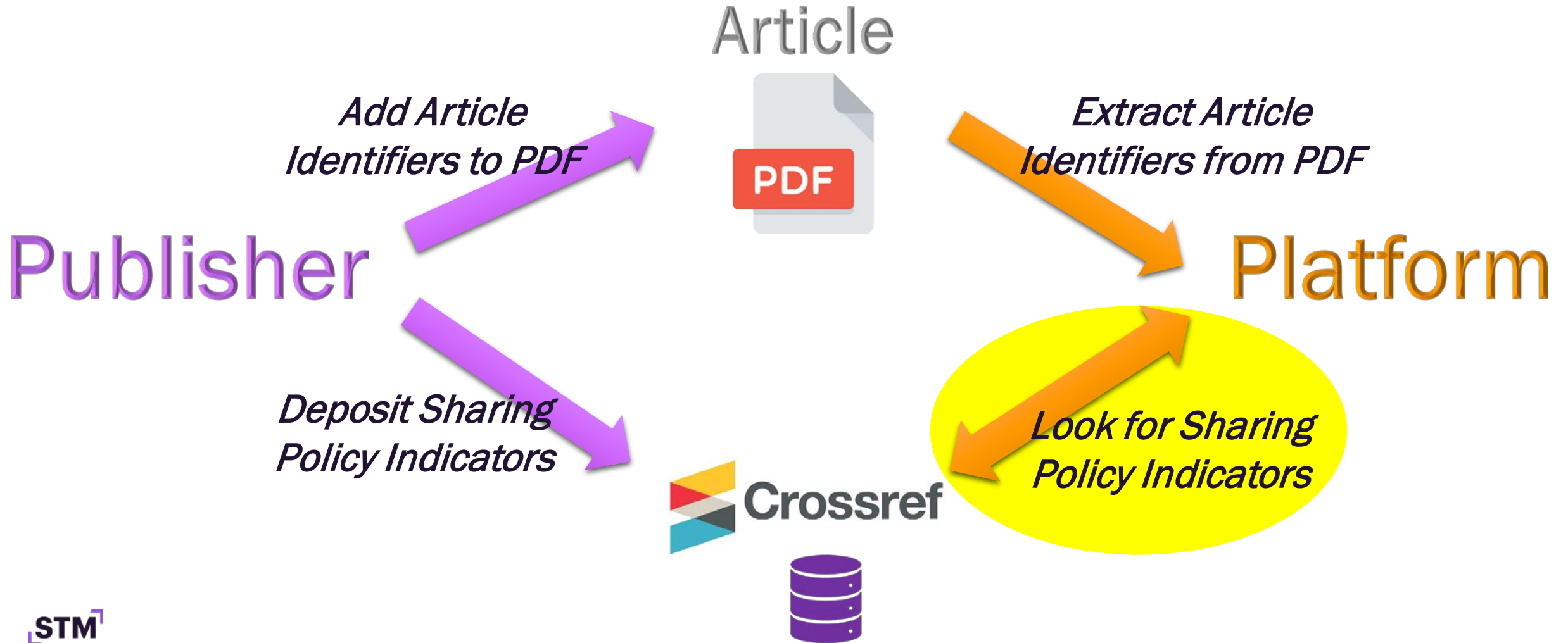
Both methods can be automated:

1. PDF's XMP metadata section
2. JAV within DOI hyperlink

ACS developed a proof of concept to illustrate, source code freely available


The screenshot shows the XMP metadata viewer for a PDF file named 'STEC PDF metadata sample 2019-12-30 orig.pdf'. The 'Advanced' tab is selected, displaying a tree view of metadata properties. A red dashed box highlights the 'prism:doi' and 'http://www.niso.org/schemas/jav/1.0/jav:journal_article_version' properties. A red circle with the number '1' is placed over the 'prism:doi' property. Below the screenshot, a red dashed box highlights a URL: <https://doi.org/10.1021/acsomega.0c03079?ref=pdf&rel=cite-as&jav=VoR>. A red circle with the number '2' is placed over the 'jav=VoR' part of the URL. The XMP viewer interface includes buttons for 'Replace All...', 'Append All...', 'Save...', 'Delete All', 'OK', and 'Reset'.

Implementation Overview



Platform: Look for Sharing Policy Indicators in Crossref

Extracted from PDF
 Article DOI: [10.1021/acs.nanolett.9b03546](https://doi.org/10.1021/acs.nanolett.9b03546)
 JAV: VOR



Platform determines the requested sharing context

Platform Type		JAV Article Version			Audience Scope		Displayable Elements				Policy URI
<u>pns</u>	<u>ps</u>	<u>vor</u>	am	ao	<u>ga</u>	<u>rcg</u>	<u>ft</u>	ab	ref	cm	
	x	x				x	x				https://doi.org/10.15223/policy-029

Crossref has several metadata services and APIs

Example: Crossref REST API

<https://api.crossref.org/works/{doi}>

Platform: Look for Sharing Policy Indicators in Crossref

Platform determines the requested sharing context

Extracted from PDF

Article DOI: **10.1021/acs.nanolett.9b03546**

JAV: VOR



Platform Type		JAV Article Version			Audience Scope		Displayable Elements				Policy URI
<u>pns</u>	<u>ps</u>	<u>vor</u>	am	ao	<u>ga</u>	<u>rcg</u>	<u>ft</u>	ab	ref	cm	
	x	x				x	x				https://doi.org/10.15223/policy-029

Crossref has several metadata services and APIs



Example: Crossref REST API

<https://api.crossref.org/works/{doi}>



Platform: Look for Sharing Policy Indicators in Crossref

Platform determines the requested sharing context

Extracted from PDF

Article DOI: **10.1021/acs.nanolett.9b03546**

JAV: VOR



Platform Type		JAV Article Version			Audience Scope		Displayable Elements				Policy URI
<u>pns</u>	<u>ps</u>	<u>vor</u>	am	ao	<u>ga</u>	<u>rcg</u>	<u>ft</u>	ab	ref	cm	
	x	x				x	x				https://doi.org/10.15223/policy-029

Lookup to Crossref reveals a match...



Article may be shared.

Crossref API



Present in Crossref for **article DOI 10.1021/acs.nanolett.9b03546** :

```
<license_ref>https://doi.org/10.15223/policy-002</license_ref>
<license_ref>https://doi.org/10.15223/policy-029</license_ref>
<license_ref>https://doi.org/10.15223/policy-033</license_ref>
```

Platform: Look for Sharing Policy Indicators in Crossref

Platform determines the requested sharing context

Extracted from PDF

Article DOI: **10.1021/acs.nanolett.9b03546**

JAV: VOR



Platform Type		JAV Article Version			Audience Scope		Displayable Elements				Policy URI
<u>pns</u>	<u>ps</u>	<u>vor</u>	<u>am</u>	<u>ao</u>	<u>ga</u>	<u>rcg</u>	<u>ft</u>	<u>ab</u>	<u>ref</u>	<u>cm</u>	
x		x			x		x				https://doi.org/10.15223/policy-001

Lookup to Crossref reveals no match...

Article may not be shared.



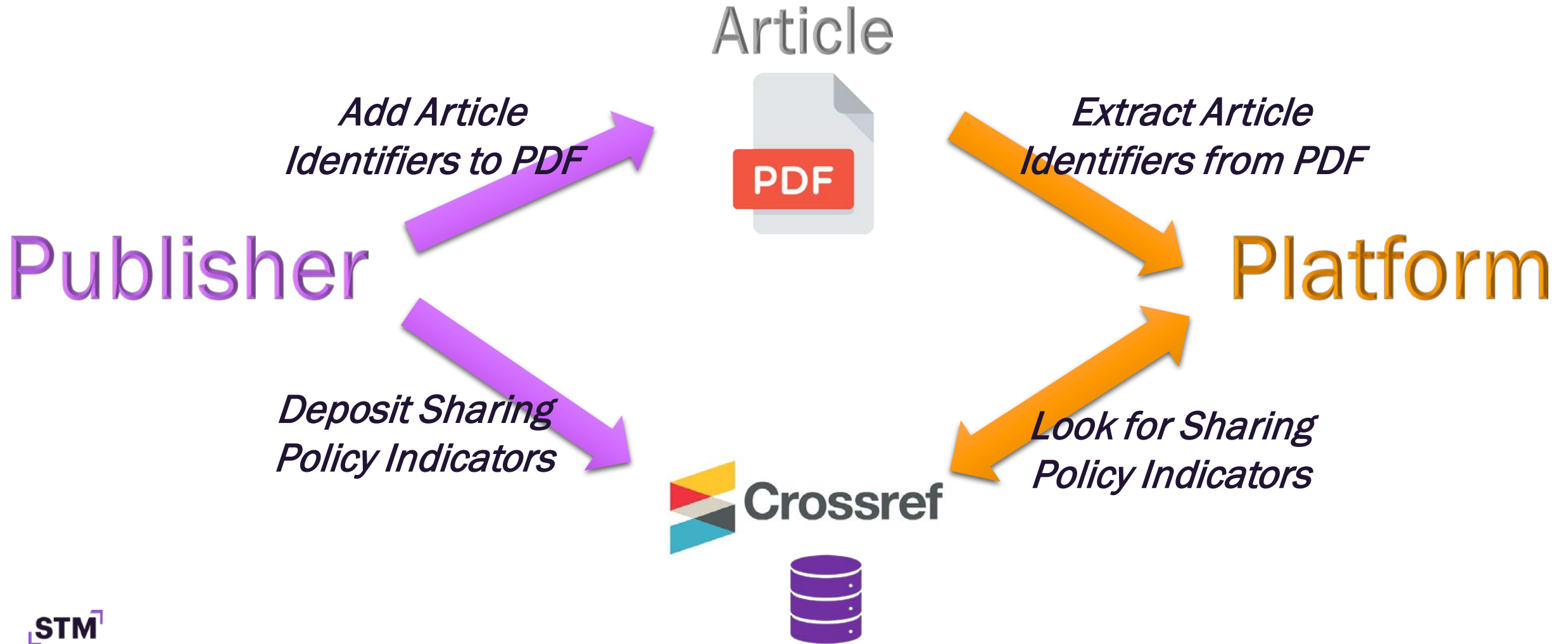
Crossref API

Present in Crossref for **article DOI 10.1021/acs.nanolett.9b03546** :

```
<license_ref>https://doi.org/10.15223/policy-002</license_ref>
<license_ref>https://doi.org/10.15223/policy-029</license_ref>
<license_ref>https://doi.org/10.15223/policy-033</license_ref>
```

Crossref

Implementation Recap



Resources

<https://www.stm-assoc.org/asf/>

- Implementation Guide
- FAQ
- Policy Information & lookup tool (spreadsheet)

Questions? asf@stm-assoc.org

Special Thanks

- Vincent Lizzi, Taylor & Francis
 - Mirjam Kessler, Springer Nature
 - Evan Prince, ACS
 - Geoff Bilder, Crossref
 - Patricia Feeney, Crossref
 - Todd Carpenter, NISO
 - Nettie Lagace, NISO
 - Jeff Beck, NCBI/NLM/NIH
 - Matt McKay, STM
 - STEC Article Sharing Framework subgroup
 - NISO ALI Revision working group
- ... *and many more!*