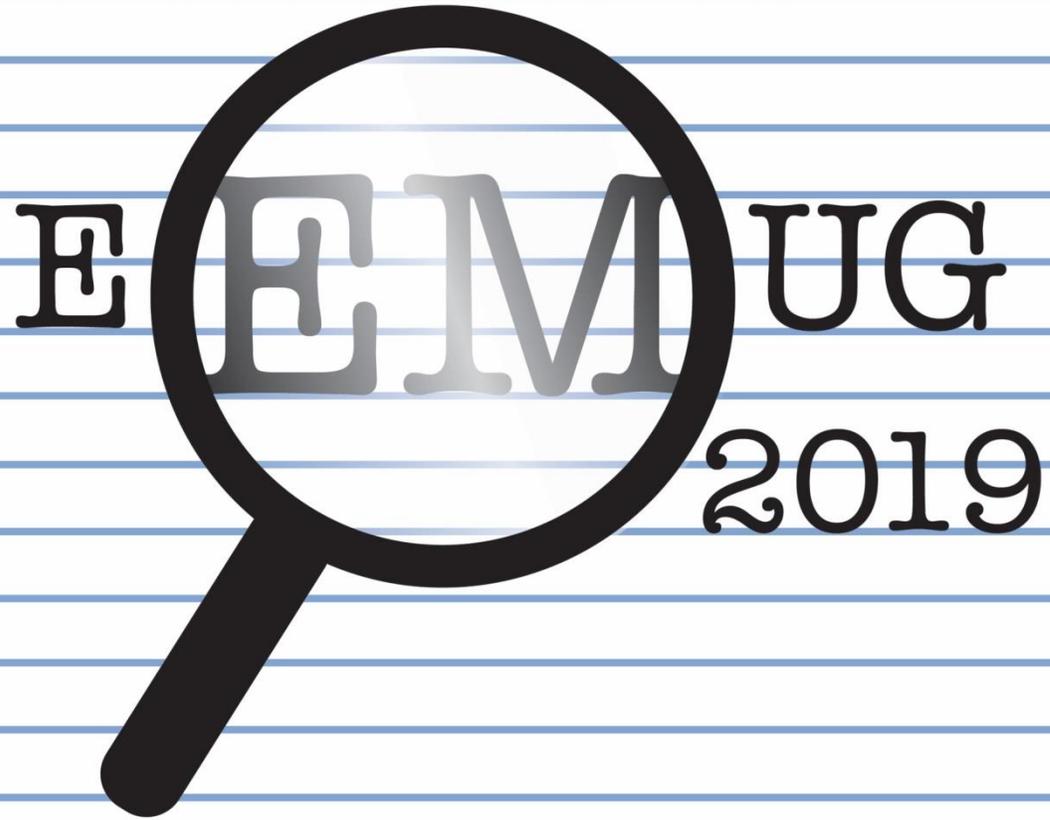
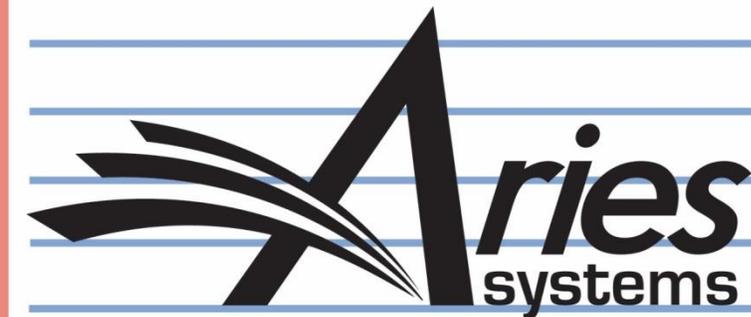


Welcome to



#EEMUG2019

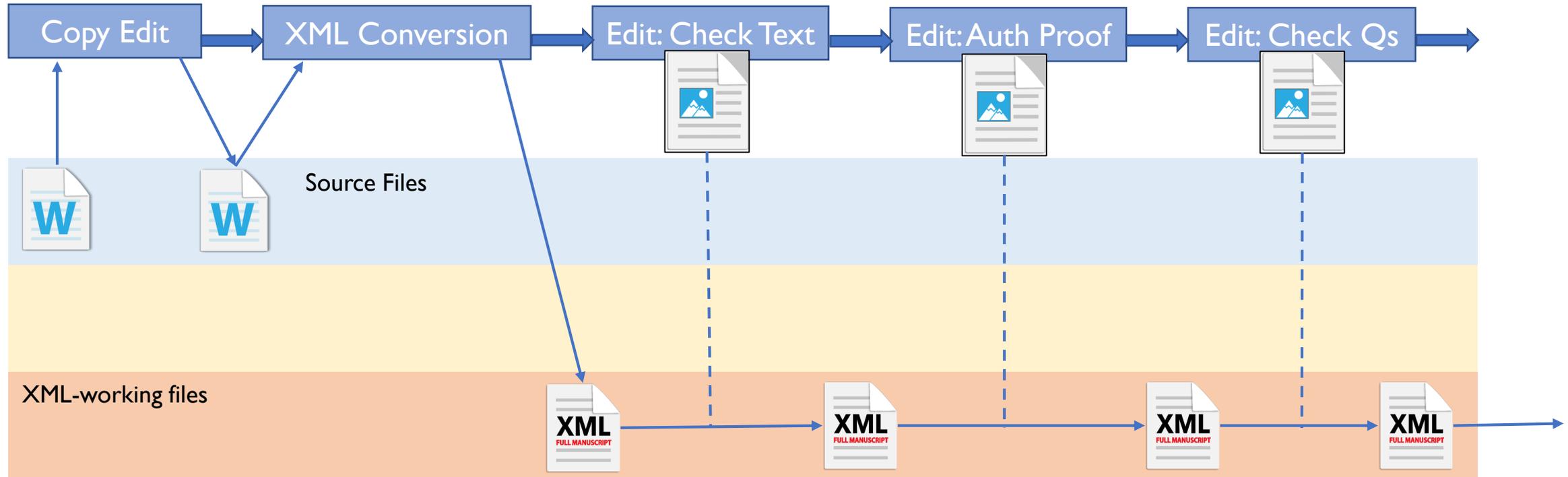


# LiXuid Manuscript™

Sean MacRae, Business Systems Analyst



# Where are we heading? XML Workflows!



# And how do we plan to get there?

- Phase 1 – done!
- Phase 2 – well under way
- Phase 3 – end game



# Phase I

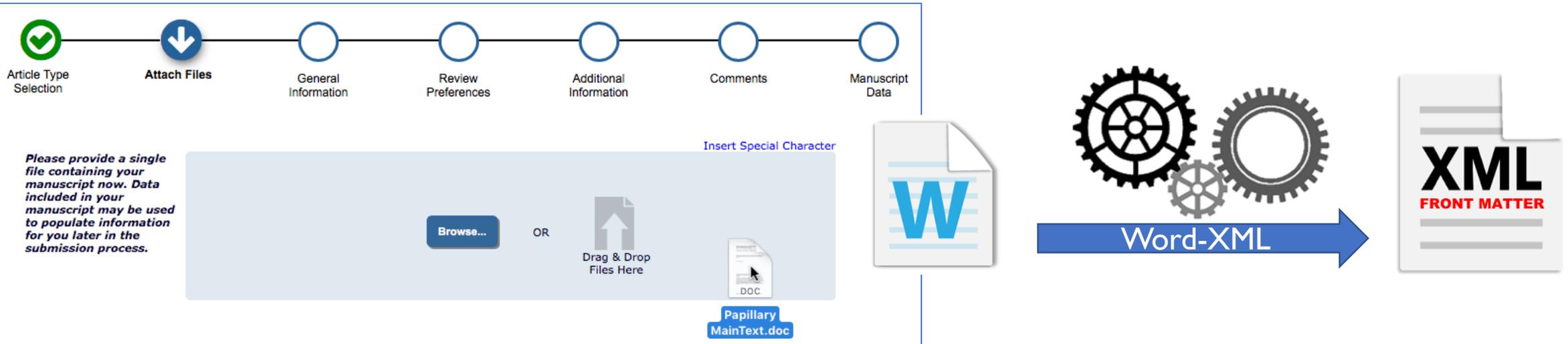
Front-Matter Conversion to XML on Submission



# Phase I – Metadata Extraction on Submission

- Already released to all customers
- XML used behind-the scenes
  - Word doc part-converted to XML
  - XML used to populate EM
- Part of new submission UI:





Conversion to XML proceeds while Author completes other information

EM extracts metadata from converted XML 'front matter' to present to author on the last step

# Phase 2

Full-Text XML Conversion for Task Workflows



# New 'XML Tool' Tasks to cover key processes

- Conversion of the Full Text from Word to XML
- Online Editing of the full document text in EM
  - By content experts not XML Editors
  - Hide the XML, while allowing creation of valid elements
- Transforming and Validating
  - Custom transforms for preparing XML for external use
  - Validating to non-Aries DTDs (structure)
  - Applying Schematron Rules (structure and content)
- Working with third parties
  - Transforming and validating XML sent out
  - Transforming and validating incoming XML

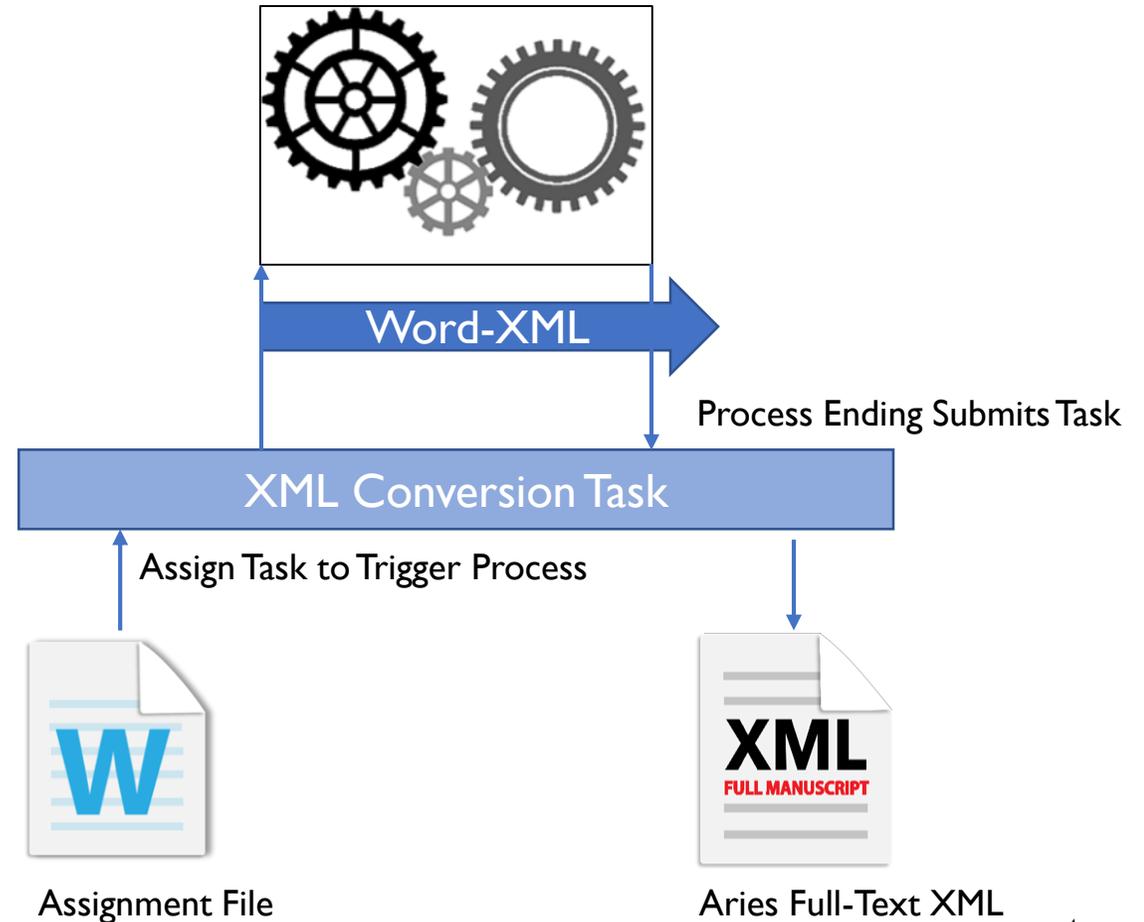


# Conversion Task



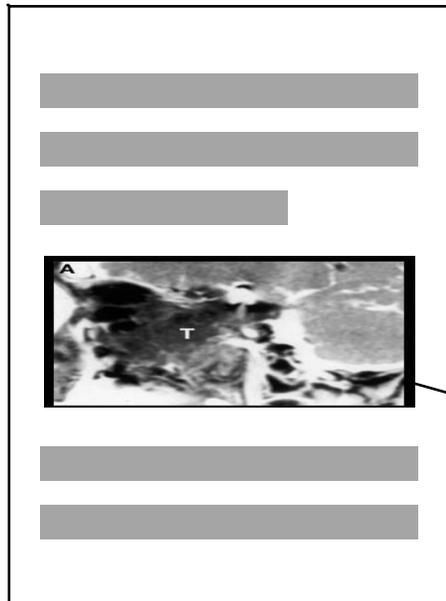
# Full-Text Conversion Task

- XML Tool Task, assigned like any other
- Takes a Word document to convert as the Assignment File
- Triggers a new system process
- New software to **automatically** convert Word document to structured XML
  - No template needed
  - Heuristics to deconstruct files with a variety of structures
- On completion of the process, EM automatically submits the Task



# Full-Text Conversion: Embedded Images

Word file contains embedded image



Conversion creates XML reference, extracts image, creates filename

Journal Code from EM

ID from EM Submission

```
<inline-graphic xlink:href="JXYZ_JXYZ-D-18-00017.fx1" />
```

'fx' prefix + count

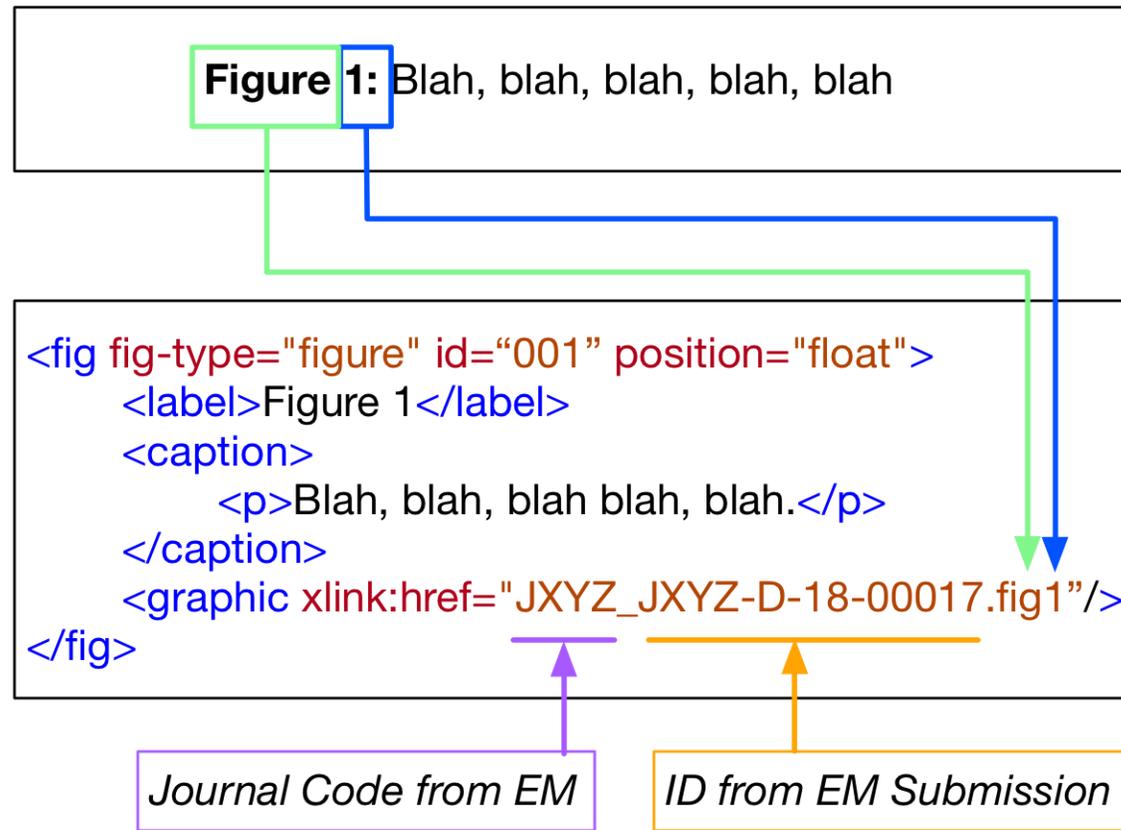
Matching filename created

JXYZ\_JXYZ-D-18-00017.fx1.jpeg



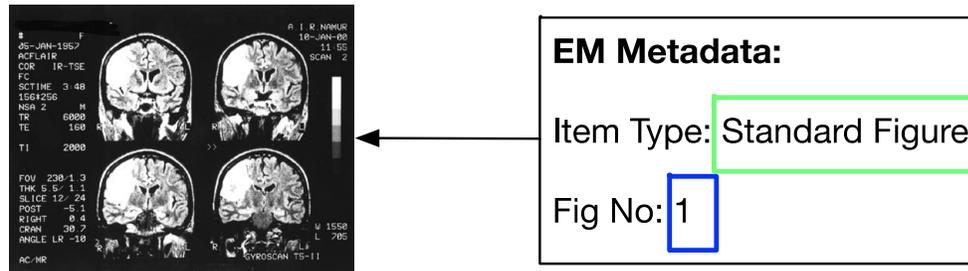
# Full-Text Conversion: External Images

Conversion identifies a caption; builds XML version with an *assumed* filename



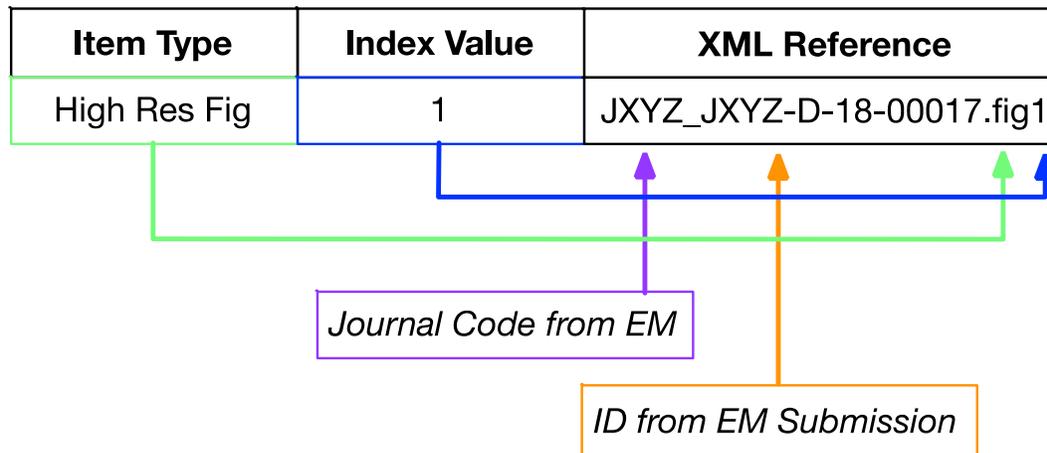
# Full-Text Conversion: External Images

When Author uploads image files, caption-related information is collected



Smith 1998 Fig1.tiff

This can be used to link the figure to the XML, same rules as conversion

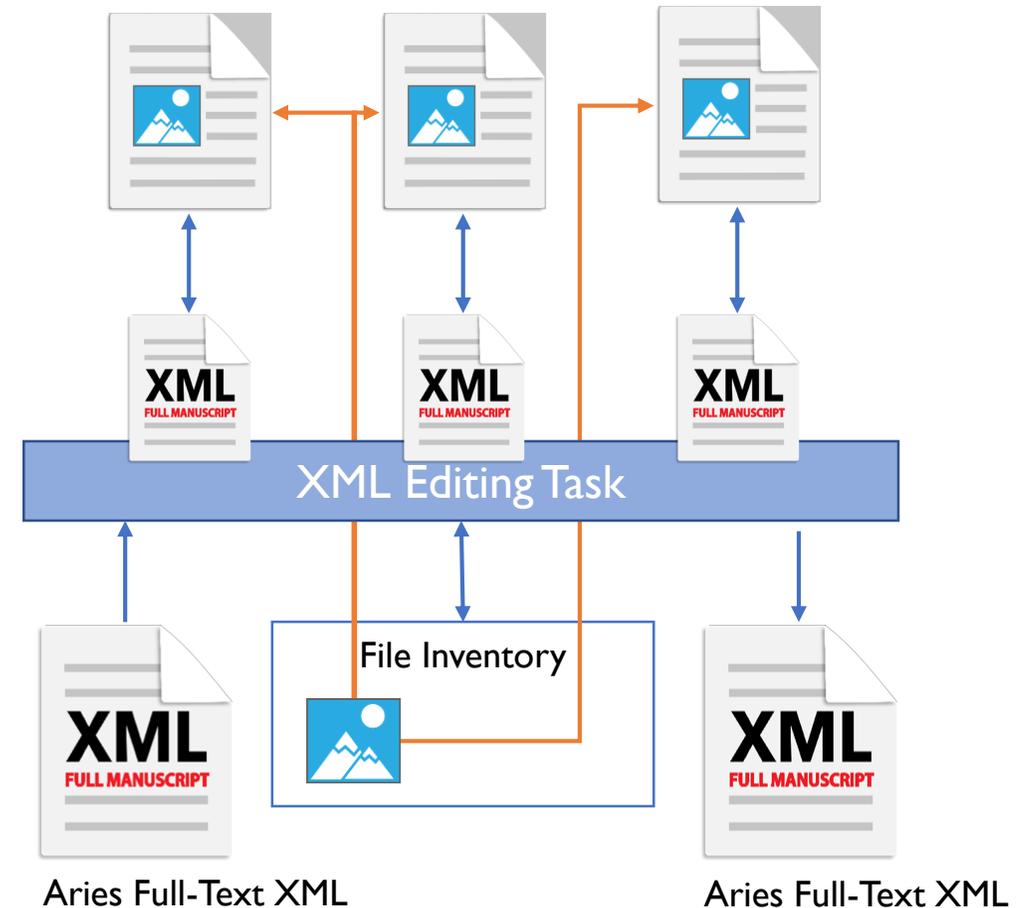


# Full-Text Editing Task



# XML Editing Task

- Assign Task to allow recipient to edit the XML text while task is open
- Editing via EM XML Editor
  - Based on Fonto-XML
- User sees Word-Processor like UI
  - Hides the XML
  - In-line maths, tables, figures
- The EM XML Editor understands XML rules
  - User cannot create 'bad' XML (we use JATS)
  - But can add new elements, not just edit text
- The EM XML Editor constantly 'validates' the text
  - We can warn the user of inconsistencies
- We're adding special tools to help you
  - E.g. Queries to the Author



# XML Editor – Accessed via Task Assignment

**Submission Tasks Assigned to Editor Mike Di Natale, MD**

Page: 1 of 1 (2 total tasks) Display  results per page.

[Switch to Status Grid View](#)

Action	Manuscript Number	DOI	Article Title	Production Status	Production Task	Date Task Assigned	Date Task Due	Days Until Due	Assigned By	Schedule Group	Section/Category	Article Type
<a href="#">Assignment Files</a> <a href="#">Edit Manuscript Text</a> <a href="#">Submit Task</a> <a href="#">Reassign Task</a> <a href="#">Assign Production Task</a> <a href="#">Assign to Schedule Group</a> <a href="#">Production Details</a> <a href="#">History</a>	MIKETEST-17-0001	10.11260150011	Automated workflow test	In Production;	Corrections Review	Apr 11 2017 2:52PM	Apr 11 2017 11:59PM	21 days overdue	Mike Di Natale, MD			Automated production flow test

**Current Task Assignments for Author McAuthor**

Page: 1 of 1 (1 total tasks) Display  results per page.

Action	Task	Date Task Assigned	Date Task Due	Days Until Due	Manuscript Number	Article Title	Assigned By
<a href="#">View Assignment Letter</a> <a href="#">Assignment Files</a> <a href="#">Edit Manuscript Text</a> <a href="#">Submit Task</a> <a href="#">Correspondence</a>	Author Proofing	Aug 12, 2017	Aug 12, 2017	Due Today	CHARLESDEV141-D-17-00002	Submission Companion Figure Test	mary mary

Page: 1 of 1 (1 total tasks) Display  results per page.



The image shows a web-based word processor interface. The top navigation bar includes 'HOME', 'SECTIONS', 'INSERT', and 'TITLE PAGE'. The main editing area contains the following text:

SECTION

## 2.3 Mutant preparation

Mutants of *Pl-scylo-IDH* containing single amino acid substitutions with alanine (K106A, D191A, H195A, R178A, and H318A) were prepared using a PrimeSTAR mutagenesis kit (Takara Bio, Shiga, Japan) according to the manufacturer's protocol, with pET21a(+)-*lgdA* as the template. The primers used for construction of each mutant genes are shown in [Table 2](#). Mutant enzymes were expressed and purified as described for the wild-type enzyme.

TABLE WRAPPER

Table 2

**Primers used for mutation**

K106A-f	CTGGAAGCGCCCATGGCGCTGAGCGTC
K106A-r	CATGGGCGCTTCCAGCCAGACATGCTT
D191A-f	CTGGGGGCTCTGGGCTGCCATCTGGTC

The interface also features a right-hand sidebar with 'OUTLINE', 'REVIEW', 'QUERIES', and 'IMPROVE' options, and a top toolbar with various editing tools like bold, italic, underline, and font size.

Word Processor-like  
Editing environment



# Images, tables, maths in-line

SECTION

## 2.2 Methods

The precipitation process that persisted for at least three consecutive days are referred to as persistent precipitation process.

The EAP index ( $I_{EAP}$ ) was normally defined based on three key anomaly-center points; namely, the Sea of Okhotsk (OK), the mid-latitudes of East Asia (EA), and the western Pacific (WP), during the EAP regimes (1; 4; 2; Chen and Zhai, 2014):

EQUATION

$$I_{EAP} = \frac{1}{3}H_{OK} - \frac{1}{3}H_{EA} + \frac{1}{3}H_{WP}$$

(1)

where  $H_{OK}$ ,  $H_{EA}$ , and  $H_{WP}$  represent the normalized 500 hPa geopotential height anomaly of OK, EA, and WP, respectively. This study is based on the typical EAP teleconnection pattern responsible for no persistent heavy precipitation cases in the YRV in June and July, as identified by 7 for the period 1961–2010. The cases are selected by requiring that the normalized domain-averaged daily precipitation in the YRV should be smaller than  $-1$  standard deviation (denoted by  $\sigma$  hereafter), and are referred to as dry YRV EAP cases. At the same time, the three key centers of the EAP teleconnection pattern are required to be greater

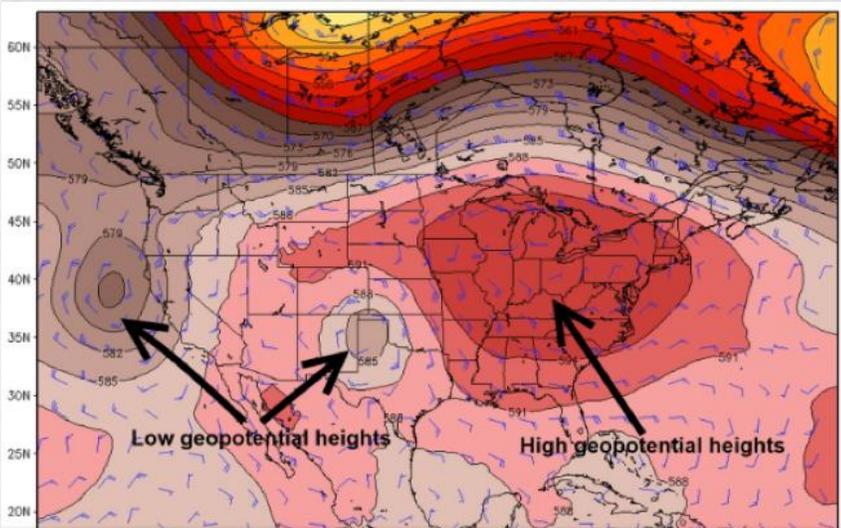
Methods > Section > Paragraph > Equation

flow upstream, leading the cold/dry air to arrive in SC, and converge with the warm/wet air from the edge of the WPSH. Consequently, a persistent precipitation process occurs in SC.

FIGURE

FIG. 4

Composited 500-hPa geopotential height (contours; every 5 dagpm) and normalized height anomalies (shaded; every 0. 5 $\sigma$ ). The vectors indicate wave activity flux (units: m<sup>2</sup>s<sup>-2</sup>). The number above each panel has the same meaning as in Figure 2.

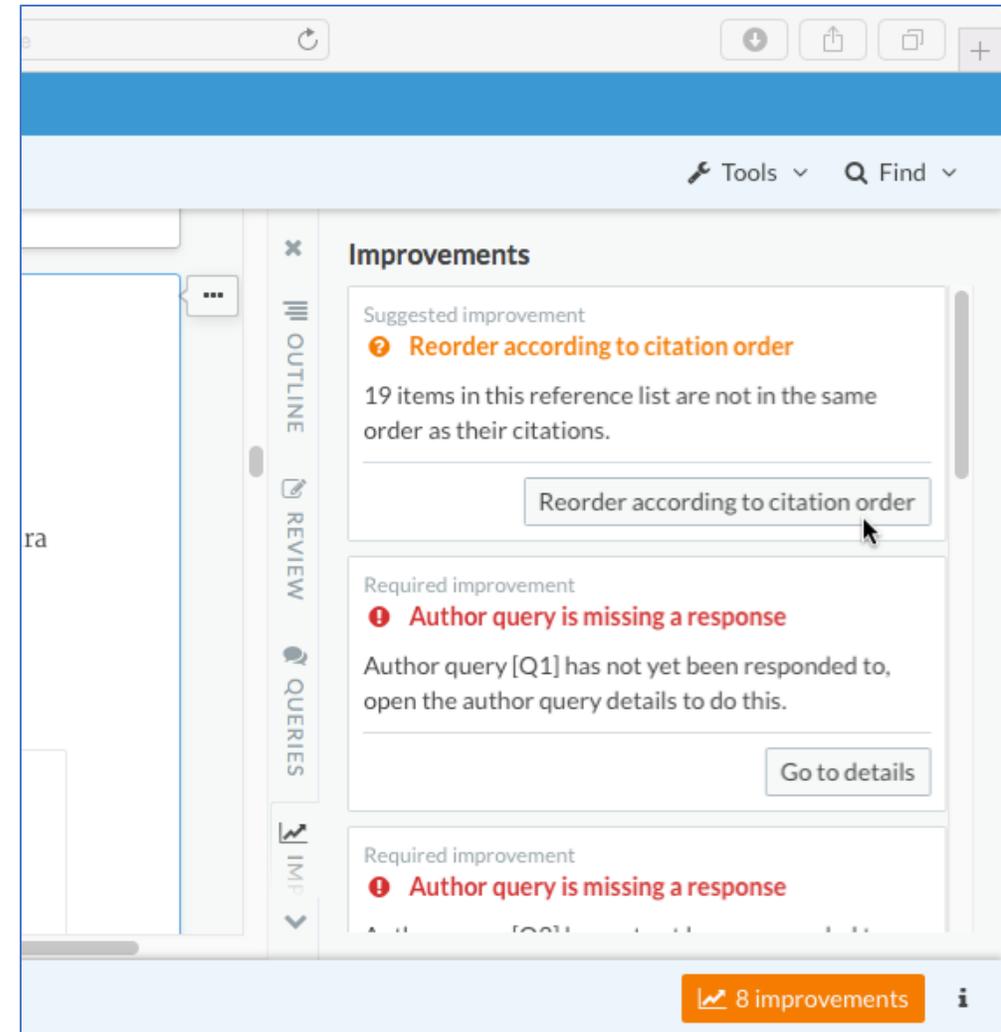


Article > Body > Methods > Section > Paragraph > Equation



# Verification by the XML Editor

- The EM XML Editor constantly parses the XML
  - Knows what elements are valid, where
- Can warn of inconsistencies and issues, e.g.
  - Missing citations
  - Missing images, tables
  - Uncited images
- Configurable, so warnings can prevent submitting edits, or just warn



# EM XML Editor Custom Tools – e.g. Author Queries

- Author Query tool – Questions to Author
- Question – Response – Review cycle
- E.g.:
  - Question to Author raised by Copy Editor
  - Response entered by Author; we can enforce this
  - Response marked as Viewed/reviewed by Desk Editor



Rudney H (1940) The Utilization of L-Glucose by Mammalian Tissues and Bacteria. Science 92: 112 - 113. 10.1126/science.92.2379.112 17755265

2. REFERENCE

Sasajima KI, Sinskey AJ (1979) Oxidation of L-glucose by a Pseudomonad. Biochim Biophys Acta 571: 120 - 126. 10.1016/0005-2744(79)90232-8 40609

3. REFERENCE

 Nakamura A (2015) Paracoccus laeviglucoasivorans sp. nov., an L-glucose-utilizing bacterium isolated from soil. International Journal Systematic and Evolutionary Microbiology 65: 3878 - 3884. 10.1099/ijsem.0.000508 26243274

4. REFERENCE

Shimizu T, Takaya N, Nakamura A (2012) An L-glucose catabolic pathway in Paracoccus species 43P. J Biol Chem 287: 40448 - 40456. 10.1074/jbc.M112.403055 23038265

### Author queries

[Add query](#)

All queries [Details of Q1](#) 0 of 7 answered  
0 of 0 reviewed

Anonymous Invalid Date

Medline reports the journal title should be "Int. J. Syst. Evol. Microbiol.", not "International Journal Systematic and Evolutionary Microbiology". (Ref. 3 "Nakamura, 2015")



 This query has not yet been responded to.

Response

 [+ Click to add a response.](#)

# XML Editor: Review changes

← FONTOXML Document history January 11, 2019, 12:16 PM Now Timeline ▾

INTRODUCTION SECTION

## 1 Introduction

Homochirality, in the form of **K**L-amino acids and **Z**D-sugars, exists in all living organisms In the case of sugars, it had been a long held belief, first reported in 1940 by Rudney, that L-glucose cannot be metabolized by either mammalian or bacterial cells [1]. Subsequently, Sasajima et al. purified D-threo-aldose dehydrogenase from *Pseudomonas caryophylli*, which was capable of oxidizing L-glucose [2]. Recently, a catabolic pathway that can utilize L-glucose has been discovered in *Paracoccus laevigluosivorans* [3], and the component genes have been cloned and characterized [4]. This pathway is made up by the combination of genes originating from two independent operons. *lgdA*, which codes for a protein that works at the first step, is located in a putative inositol catabolic gene cluster. The genes that code for proteins that work at the later steps in the pathway, *lgnE*, *lgnF*, *lgnG*, *lgnH*, and *lgnI* are located in an operon, which is analogous to *E. coli* L-galactonate catabolic pathway [5]. Using the combined pathway, L-glucose is metabolized to pyruvate and glyceraldehyde-3-phosphate.

The *lgdA* gene encodes inositol dehydrogenase, and on the basis of its amino acid sequence,

**Detailed changes** 7 changes

- Author - Current session ✓  
**Deleted text**  
K
- Author - Current session ✓  
**Inserted text**  
L
- Author - Current session ✓  
**Deleted text**  
Z
- Author - Current session ✓  
**Inserted text**  
D
- Author - Current session ✓  
**Inserted text**  
The reported structures show homo-dimeric or homo-tetrameric ...
- Author - Current session ✓

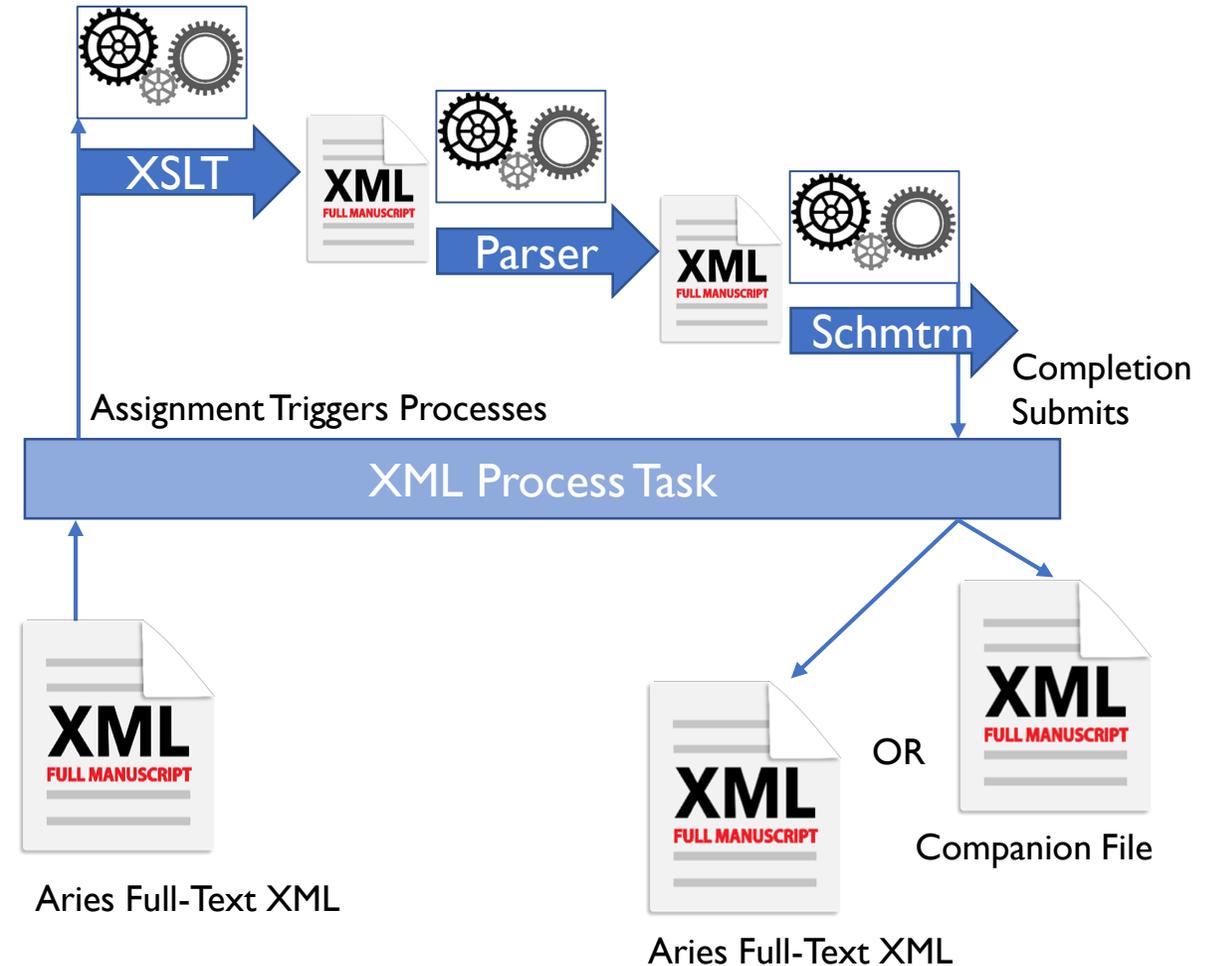


# Custom XML Processing Task



# XML Process Task

- Tasks to trigger Custom processes
- Up to three:
  - Transform (using XSLT)
  - Validation (e.g. to DTD)
  - Schematron validation – ‘content rules’
- Results can be added to Companion Files
  - And then sent out for external processing
- Or can update the main XML
  - Triggers additional Aries validation



## Edit Submission Production Task

Configuring Process Task – custom transforms/schemas/Schematron rules will be pre-loaded by Aries.

[Insert Special Character](#)

New Production Task Name:

Atypou Delivery

*Maximum Production Task Name is 100 characters*

**Hide** When you **Hide** a Production Task Name, the Production Task Name will be deactivated (not available for assignment).

>

### XML Tool Options

Production Task can be configure to interact with any of the XML Tools (e.g. XML conversion, XML editing) available in the drop-down menu below. When assigned a task with an XML Tool selected will trigger an interaction with the specific to the tool. Only one tool can be selected per task.

#### Select XML Tool:

Choose XSLT:

Choose DTD/Schema Validation:

Choose Schematron:

Full-Text XML Process

None

None

None

Resulting XML File Replaces the Current Full-Text XML ?

Resulting File is Uploaded as a Companion File  
Add Suffix to Resulting Companion File Name

File Extension for Resulting Companion File

XML Tool 'Success' notification:

Notify Task Assignee

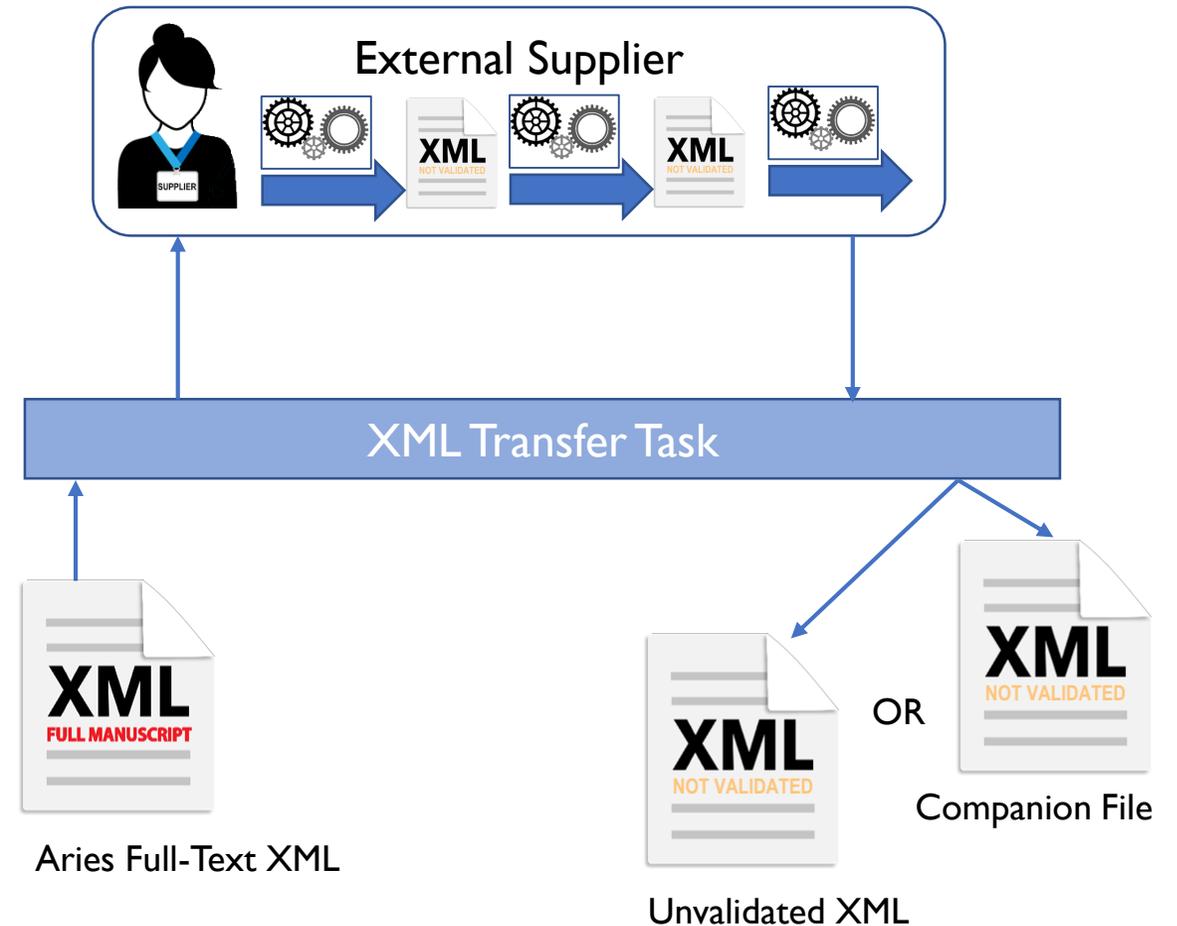


# XML Transfer Task (Import & Export)



# XML Transfer Task

- Export Aries JATS XML to 3<sup>rd</sup> parties
  - If your supplier can use it directly
  - Use Process Task to transform first if not!
- Allows import of Aries JATS XML
  - Use Process Task to transform if necessary
  - And to validate as Aries-standard XML





# And more for Phase 2

- Continue to develop ideas
- More Editing Tools
  - E.g. more suggested Improvements
- More XML Task Types, e.g.:
  - Auto-pagination
  - PDF Rendering

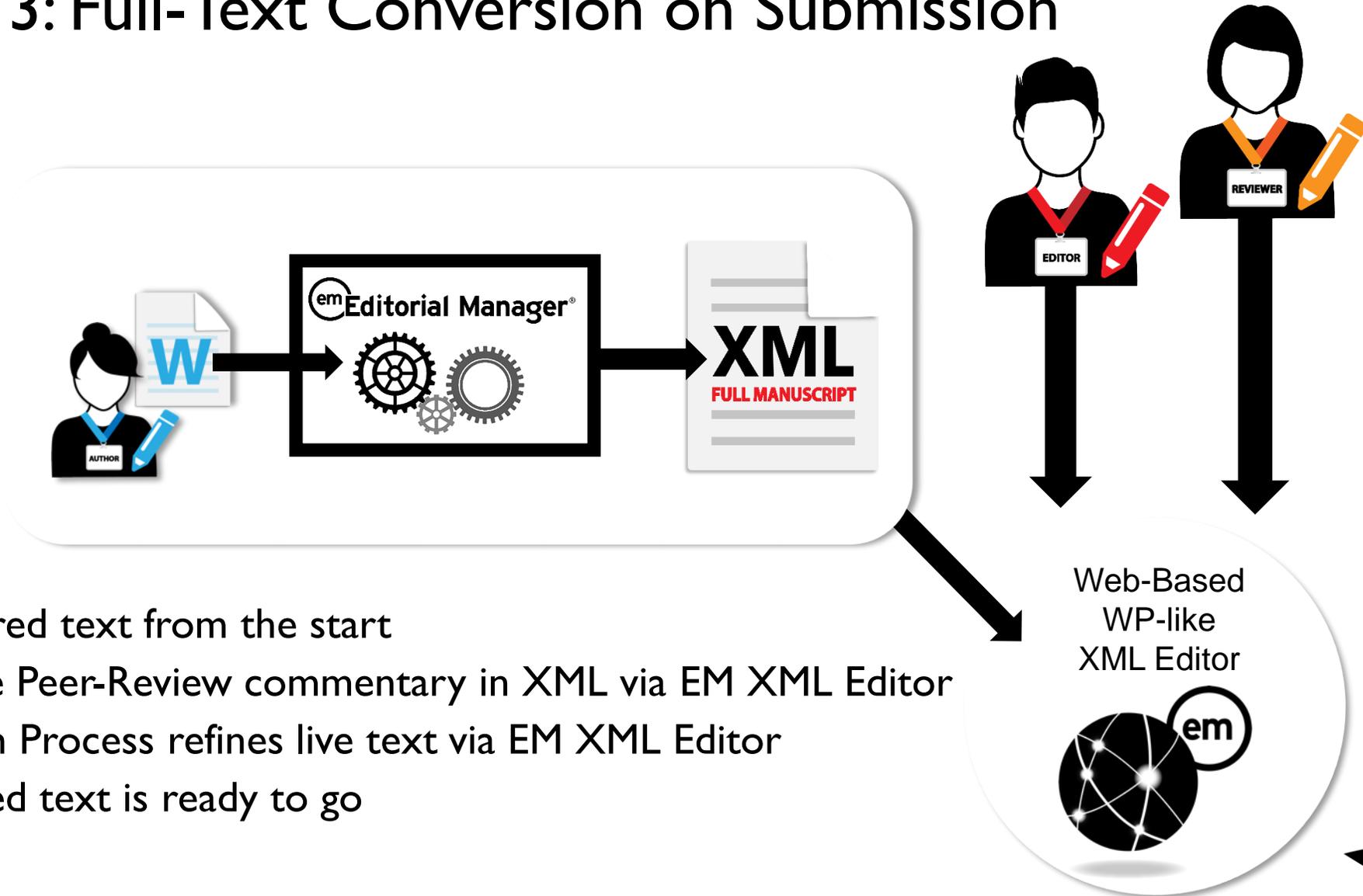


# Phase 3

Bringing it forward



# Phase 3: Full-Text Conversion on Submission



- Structured text from the start
- Capture Peer-Review commentary in XML via EM XML Editor
- Revision Process refines live text via EM XML Editor
- Accepted text is ready to go

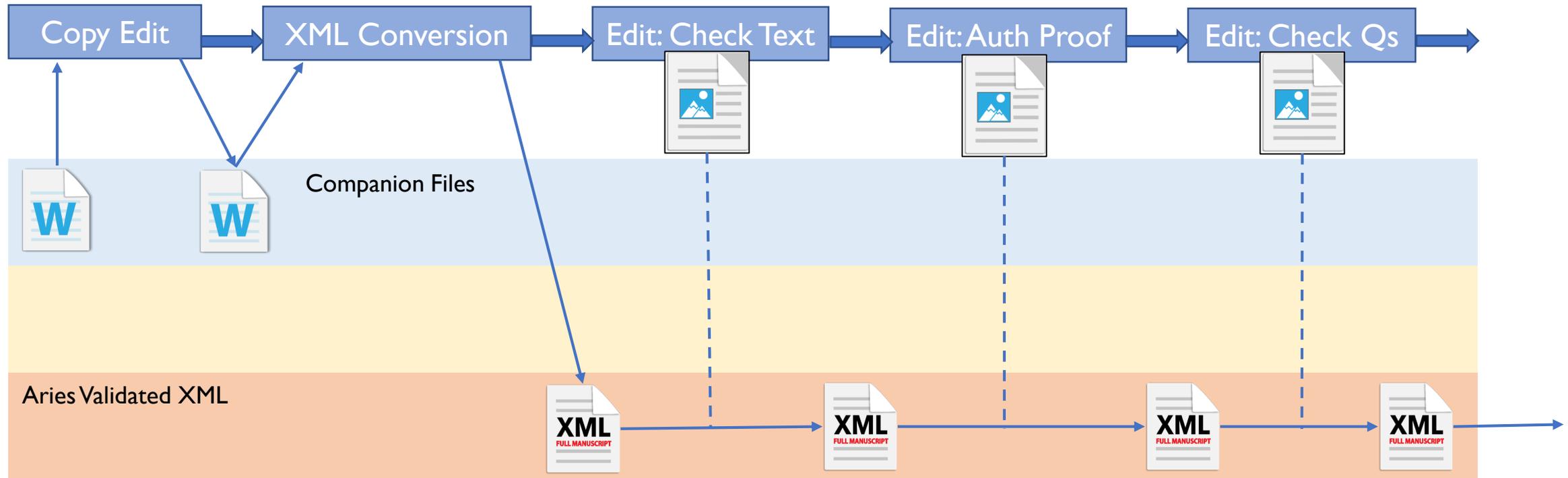


# The end

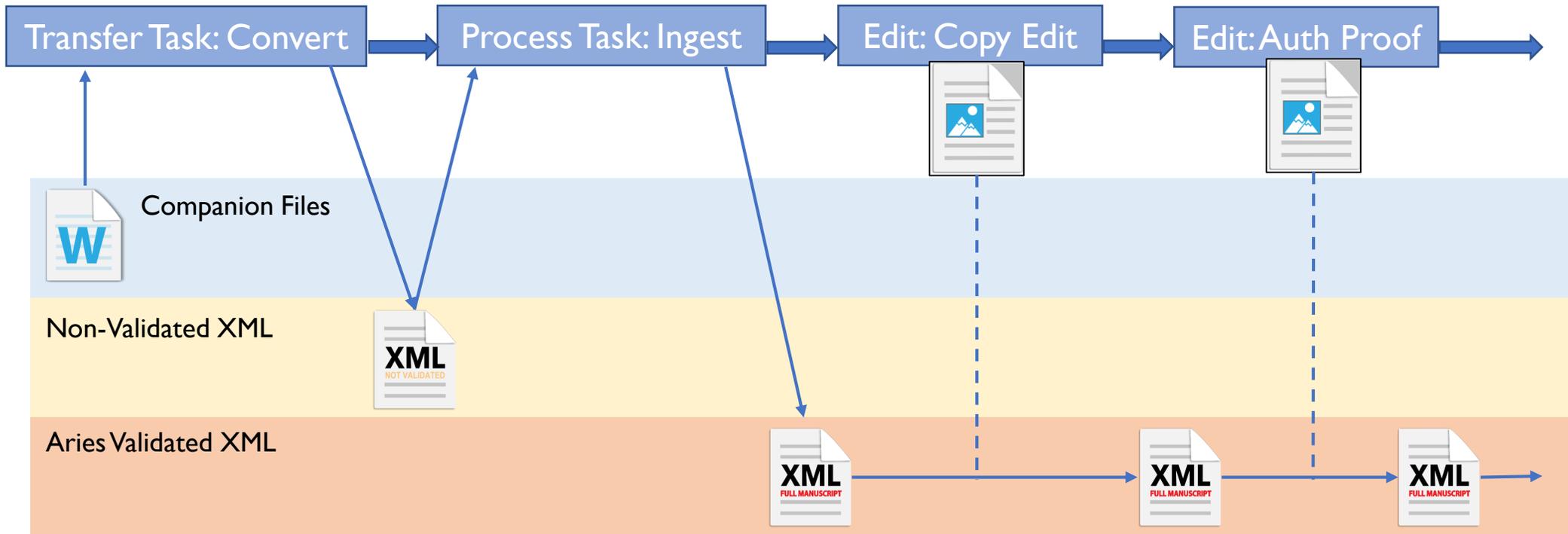
Any Questions? Workflow examples?



# Example Workflow: Copy Edit, Convert and Proof



# Example Workflow: 3<sup>rd</sup> Party Conversion



# Example Workflow: Post-Editing Delivery

