

## NDNP JPEG 2000 Profile

Version 2.8

### CHANGES IN 2.8:

1. Updated rdf:Description references in XML Box metadata template to match NDNP element names in Digital Asset Metadata Elements – Dictionary.

### CHANGES IN 2.7:

1. Removed code-block style requirement.
1. The JPEG 2000 file will conform with JP2 file format as specified in ISO/IEC 15444- 1:2000 (i.e., JPEG 2000, Part 1).
2. The JPEG 2000 file will be prepared after any image processing or clean-up is performed. The JPEG 2000 file will correspond with the image that is used for OCR.
3. The JPEG 2000 file's brand will be “jp2 ”, version will be “0” and compatibility will be “jp2 ”. (Note the space after jp2.)
4. The JPEG 2000 file's image X origin, image Y origin, tile X origin, and tile Y origin will be 0.
5. The JPEG 2000 file will contain only one component.
6. The bit depth of that component will be 8.
7. The JPEG 2000 file's height and width will be the same as the TIFF master file.
8. The JPEG 2000 file's tile header will not contain coding style default, coding style component, quantization default, and quantization component marker segments.
9. The JPEG 2000's progression order will be RLCP (resolution, layer, component, position) or RLPC.
10. The JPEG 2000 will have 6 decomposition levels.
11. The JPEG 2000 will have 25 quality layers. The bits per pixel for each quality layer will be:  
1,0.84,0.7,0.6,0.5,0.4,0.35,0.3,0.25,0.21,0.18,0.15,0.125,0.1,0.088,0.07,0.0625,0.05,0.04419,0.03716,0.03125,0.025,0.0221,0.01858,0.015625.
12. The JPEG 2000's code-block size will be 64x64.
13. The JPEG 2000's code-block style will be bypass.
14. The JPEG 2000 will use the 9-7 irreversible filter.
15. The JPEG 2000 will be compressed so that it is about one-eighth of the TIFF or 1 bit per pixel.
16. The JPEG 2000 will use 1024x1024 tiles.
17. The JPEG 2000's color specification must be either the monochrome (grayscale) enumerated color space or the Monochrome Input restricted ICC profile.
18. The JPEG 2000 file will not contain regions of interest or precincts.
19. The JPEG 2000 file will not contain intellectual property rights information.
20. It is recommended that information about the codec used to encode the JPEG 2000 file (e.g., name, version) be included. The preferred method to do this is an XML Box containing the relevant MIX elements.

21. The JPEG 2000 file will contain an XML Box that conforms with the following:

For newspaper pages:

```
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdfsyntax-ns#">
  <rdf:Description rdf:about="urn:library-
ofcongress:ndnp:mets:newspaper:page://#LCCN#/#Issue Date#/#Edition
Order#/#Page Sequence Number#"
xmlns:dc="http://purl.org/dc/elements/1.1/">
  <dc:format>image/jp2</dc:format>
  <dc:title>
    <rdf:Alt>
      <rdf:li xml:lang="en">#Title#.#Issue Date# [p #Page
Number#].</rdf:li>
    </rdf:Alt>
  </dc:title>
  <dc:description>
    <rdf:Alt>
      <rdf:li xml:lang="en">Page from #Title# (newspaper).
[See LCCN: #LCCN# for catalog record.]. Prepared on behalf
of #Digital Responsible Institution#.</rdf:li>
    </rdf:Alt>
  </dc:description>
  <dc:date>
    <rdf:Seq>
      <rdf:li xml:lang="x-default">#Issue Date#</rdf:li>
    </rdf:Seq>
  </dc:date>
  <dc:type>
    <rdf:Bag>
      <rdf:li xml:lang="en">text</rdf:li>
      <rdf:li xml:lang="en">newspaper</rdf:li>
    </rdf:Bag>
  </dc:type>
  <dc:identifier>
    <rdf:Alt>
      <rdf:li xml:lang="en">Reel number #Reel Number#.
Sequence number #Reel Sequence Number#.</rdf:li>
    </rdf:Alt>
  </dc:identifier>
</rdf:Description>
</rdf:RDF>
```

*Note: dc:identifier may be omitted if the image is not created from microfilm.*

For example:

```
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdfsyntax-ns#">
  <rdf:Description rdf:about='urn:library-
ofcongress:ndnp:mets:newspaper:page://sn82015056/1910-05-
28/1/2'
xmlns:dc='http://purl.org/dc/elements/1.1/'>
  <dc:format>image/jp2</dc:format>
  <dc:title>
    <rdf:Alt>
```

```

        <rdf:li xml:lang="en">The national forum.(Washington,
D.C.) 1910-05-28 [p 2].</rdf:li>
        </rdf:Alt>
</dc:title>
<dc:description>
        <rdf:Alt>
        <rdf:li xml:lang="en">Page from The national forum
        (newspaper). [See LCCN: sn 82015056 for
catalog record.]. Prepared on behalf of Library of Congress.</rdf:li>
        </rdf:Alt>
</dc:description>
<dc:date>
        <rdf:Seq>
        <rdf:li xml:lang="x-default">1910-05-28</rdf:li>
        </rdf:Seq>
</dc:date>
<dc:type>
        <rdf:Bag>
        <rdf:li xml:lang="en">text</rdf:li>
        <rdf:li xml:lang="en">newspaper</rdf:li>
        </rdf:Bag>
</dc:type>
<dc:identifier>
        <rdf:Alt>
        <rdf:li xml:lang="en">Reel number 23454234545.
Sequence number 5.</rdf:li>
        </rdf:Alt>
</dc:identifier>
</rdf:Description>
</rdf:RDF>

```

For targets:

```

<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdfsyntax-ns#">
  <rdf:Description rdf:about="#urn:library-
ofcongress:ndnp:mets:newspaper:target://#Reel Number#/#Reel
Sequence Number#"
xmlns:dc="http://purl.org/dc/elements/1.1/">
  <dc:format>image/jp2</dc:format>
  <dc:description>
    <rdf:Alt>
      <rdf:li xml:lang="en">Target from microfilm reel
#Reel Number#. Prepared on behalf of #Digital Responsible
Institution#.</rdf:li>
    </rdf:Alt>
  </dc:description>
  <dc:identifier>
    <rdf:Alt>
      <rdf:li xml:lang="en">Reel number #Reel number#.
Sequence number #Reel Sequence Number#.</rdf:li>
    </rdf:Alt>
  </dc:identifier>
</rdf:Description>
</rdf:RDF>

```

To generate a JPEG 2000 with Kakadu, use:

```
kdu_compress -i YOURINPUT.pgm -o YOUROUTPUT.jp2 -rate  
1,0.84,0.7,0.6,0.5,0.4,0.35,0.3,0.25,0.21,0.18,0.15,0.125,0.1,0.088,0.0  
75,0.0625,0.05,0.04419,0.03716,0.03125,0.025,0.0221,0.01858,0.015625  
Clevels=6 Stiles={1024,1024} Corder=RLCP -jp2_box YOURMETADATA.xml
```

*Note that the metadata xml file must begin with “xml “ followed by a newline.*

To generate a JPEG 2000 with Aware, use:

```
j2kdriver -i YOURINPUT.tif -t JP2 -p RLCP -w I97 6 -B 1 -p RLCP --tile-  
size 1024 1024 -yB 0 1 -yB 1 0.84 -yB 2 0.7 -yB 3 0.6 -yB 4 0.5 -yB 5  
0.4 -yB 6 0.35 -yB 7 0.3 -yB 8 0.25 -yB 9 0.21 -yB 10 0.18 -yB 11 0.15  
-yB 12 0.125 -yB 13 0.1 -yB 14 0.088 -yB 15 0.075 -yB 16 0.0625 -yB 17  
0.05 -yB 18 0.04419 -yB 19 0.03716 -yB 20 0.03125 -yB 21 0.025 -yB 22  
0.0221 -yB 23 0.01858 -yB 24 0.015625 --set-output-jp2-add-metadata-box  
XML YOURMETADATA.xml -o YOUROUTPUT.jp2
```