

The Indigenous Knowledge Management Project

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Overview

- Project Goals
- Related Work
- Unique Requirements
- Solutions
- Prototype
- Applications
- Future Work

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Indigenous Knowledge Management Project Goals

Developing IT tools to enable:

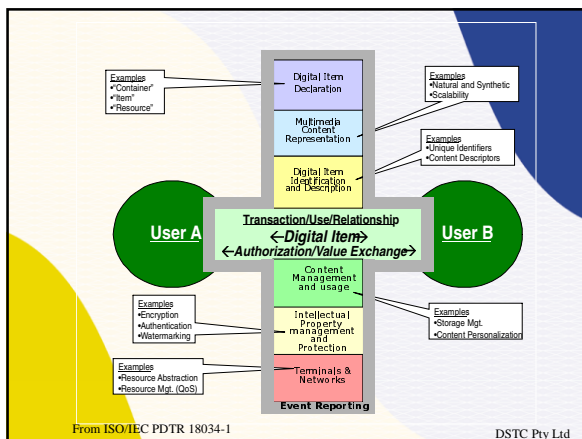
- Digital repatriation of indigenous knowledge;
- Traditional owners to define ownership, dissemination, access and copyright permissions;
- Support for customary laws and protocols;
- Enforcement of access and usage constraints;
- Protection against misappropriation;
- Proper attribution, compensation to traditional owners;
- Preservation of indigenous knowledge, cultures, history.

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MPEG-21

- Multimedia Framework to enable transparent use of multimedia resources across a wide range of networks and devices
- Integration of standards for
 - content management
 - rights management
 - e-commerce
- Getting consumers to pay for multimedia delivery

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MPEG-21 Results

- ISO/IEC 21000 (March 2001)
 - Part 1 : Vision, Technologies and Strategy
 - Part 2: Digital Item Declaration
 - Part 3 : Digital Item Identification and Description
 - Part 4: IPMP
 - Part 5: Rights Expression Language
 - Part 6: Rights Data Dictionary
 - Part 7: Digital Item Adaptation
 -

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Example

- Video - “Stories from Dreamtime”
- Owner – Jagara Community Council
- Cost per homeview = \$5
- Pay to Account Id =112234479

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XrML Encoding

```

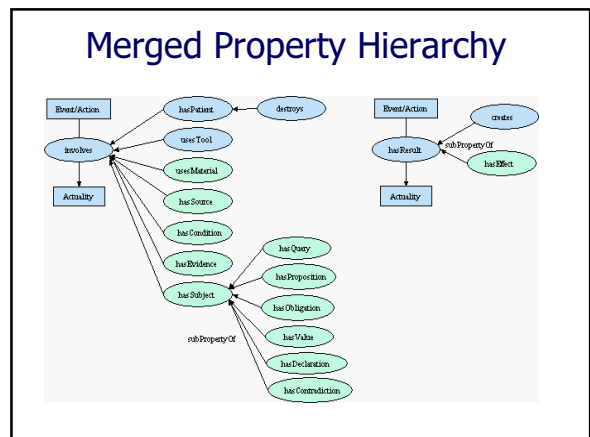
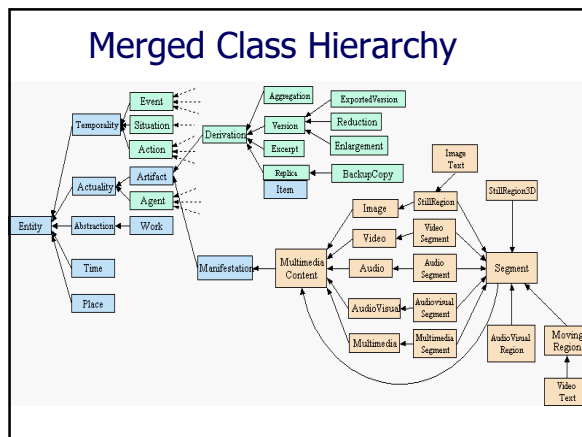
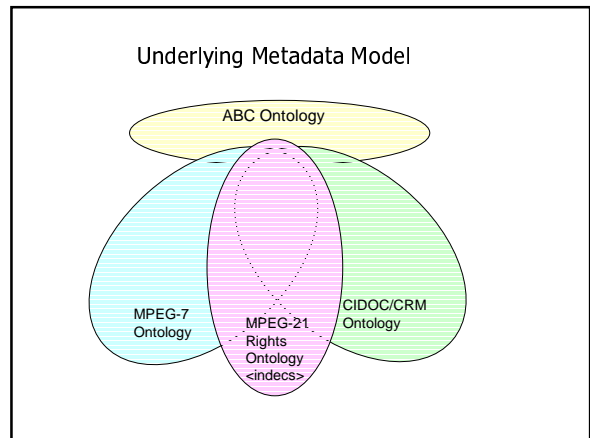
<WORK>
<OBJECT type="video">
<ID type="DOI">345.6789</ID>
<NAME>Stories from Dreamtime</NAME>
</OBJECT>
<OWNER>
<OBJECT type="Organisation">
<NAME>Jagara Council</NAME>
<ADDRESS>PO Box 2189, Brisbane, Qld 4101</ADDRESS>
<PHONE>(617) 3844 5413</PHONE>
</OBJECT>
</OWNER>
<RIGHTSGROUP name="HomeViewer">
<RIGHTSLIST>
<PLAY><FEE><MONETARY>
<PERUSE value="5"><CURRENCY iso-code="AUD"/></PERUSE>
<ACCOUNT><ACCOUNTTO id="112234479"/></ACCOUNT>
</MONETARY></FEE></PLAY>
</RIGHTSLIST>
</RIGHTSGROUP>
</WORK>
    
```

Problems

MPEG-21, XrML:

- No underlying data model;
- Poor interoperability;
- Based on modern copyright laws;
- No support for customary laws;
- Patents.

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Indigenous Knowledge

- Ownership and authorship – communal
- Originality – evolve over time
- Material form – oral or visual
- Duration – perpetuity
- Derivative works – allows exploitation
- Customary laws – not recognized

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Customary Laws

- Highly variable
- How to translate to digital domain?
- Dynamic – social and environmental influences
- Laws themselves are secret
- Commonalities?

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Access Restrictions

- Depend on the user's:
 - membership of a particular clan or tribe;
 - status within the tribe (uninitiated, initiate, elder);
 - role within the tribe (midwife, hunter, dancer);
 - gender;
 - relationship to people, animals, places or objects depicted in the resource.
- the death of people recorded in a resource;
- the context in which the resource will be reused or reproduced.

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'customary' constraint

```

<element name="customary">
  <complexType>
    <attribute name="test" type="string"/>
    <attribute name="request"
              type="string"/>
    <attribute name="warning"
              type="string"/>
  </complexType>
</element>
    
```

Example test constraint 1

```

<permission>
  <copy>
    <constraint>
      <customary
        test="(user/tribalUnit@type=='clan')
        &&(user/tribalUnit/name=='Nunukal')"/>
    </constraint>
  </copy>
</permission>
    
```

Example test constraint 2

```

<permission>
  <display>
    <constraint>
      <customary
        test="(user/status=='initiated')&&
        (user/gender=='male')"/>
    </constraint>
  </display>
</permission>
    
```

Example test constraint 3

```
<permission>
  <display>
    <constraint>
      <customary
        test="((context/subject/person/deathDate !=
          null) &&(currentDate !<
            (context/subject/person/deathDate + 5)))"
      />
    </constraint>
  </display>
</permission>
```

Warning Constraint

```
<permission>
  <display>
    <constraint>
      <customary warning="Indigenous
        viewers should be aware that the following
        program may contain culturally sensitive
        material - including images of people who
        have since died."/>
    </constraint>
  </display>
</permission>
```

Request Constraint

```
<permission>
  <copy>
    <constraint>
      <customary request="Not to be
        reproduced in a context which is
        demeaning, offensive, or insulting to the
        traditional owners."/>
    </constraint>
  </copy>
</permission>
```

Application of constraints

- Collection
 - Group
 - Individual object
 - Part of an object
 - Individual User

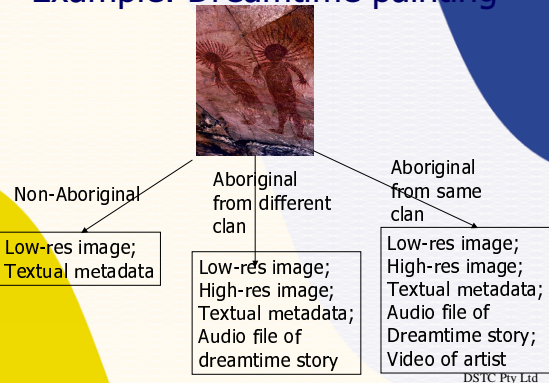
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User profile

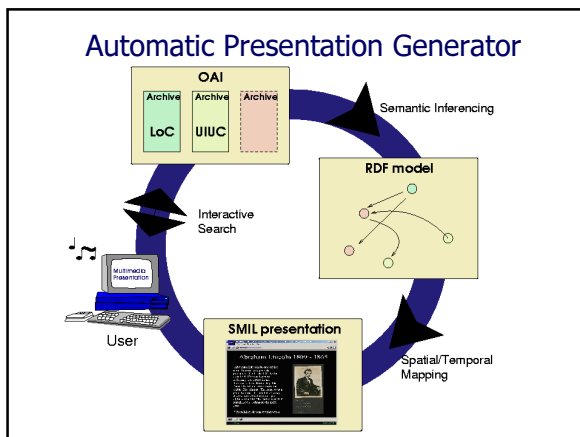
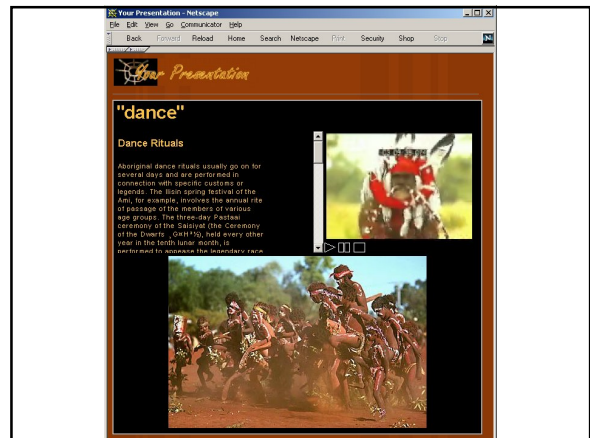
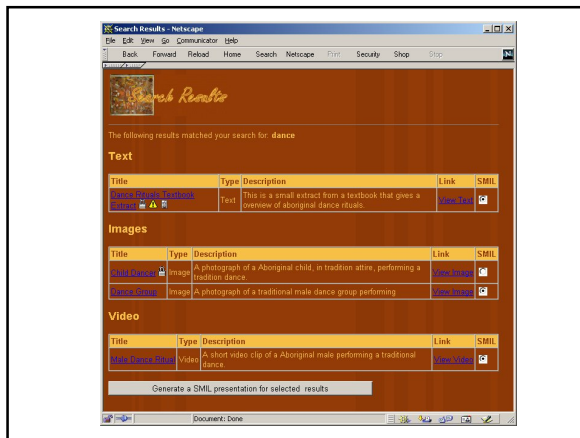
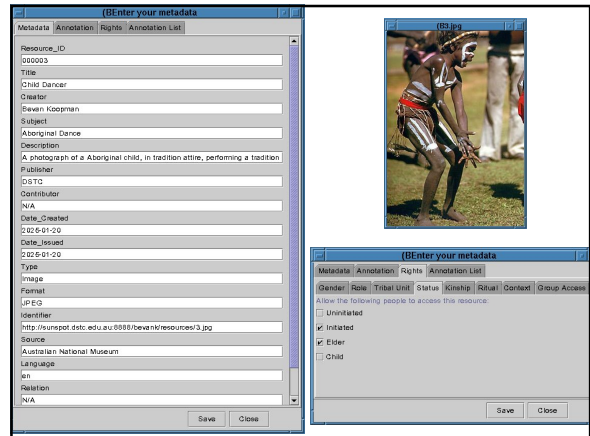
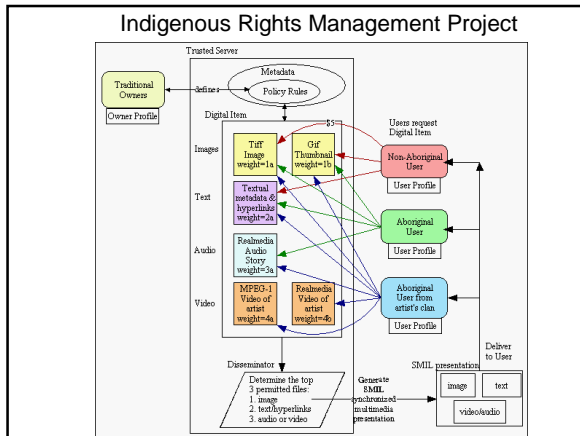
```
<xsd:element name="person">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="name" type="xsd:string"/>
      <xsd:element name="tribalName" type="xsd:string"/>
      <xsd:element name="tribalUnit" type="xsd:string"/>
      <xsd:element name="birthPlace" type="xsd:string"/>
      <xsd:element name="deathDate" type="xsd:string"/>
      <xsd:element name="gender" type="xsd:string"/>
      <xsd:element name="status" type="xsd:string"/>
      <xsd:element name="role" type="xsd:string"/>
      <xsd:element name="mother" type="xsd:string"/>
      <xsd:element name="father" type="xsd:string"/>
      <xsd:element name="spouse" type="xsd:string"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

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Example: Dreamtime painting



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Smithsonian Collaboration

- National Museum of American Indian Cultural Resources Centre
- Interoperable Metadata Model for Multimedia in Museums
 - description, management, rights
- Indexing, Annotation, Search and Retrieval tools
- Video recording of rights agreements

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Local Applications

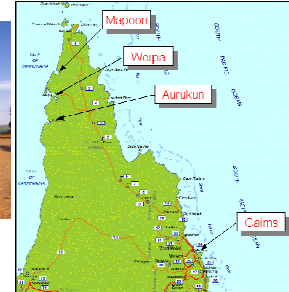
- N.F.Nelson Report;
- Oodgeroo Nunukal Archives – Sacred Treaty Circles.

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N.F.Nelson Report Record of Visit to Mission Stations 1936



Napranum, Mapoon, Aurukun and Mornington Island Communities



Oodgeroo Nunukal Archives



*"But I'll tell instead of brave and fine
When lives of black and white entwine
And men in brotherhood combine,
This would I tell you, son of mine"*

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oodgeroo of the tribe noonuccal custodian of the land minjerribah

TREATY

peace, prosperity & healing sacred treaty circles

perhaps she will come again when the spirits of men and the spirit of this land are once more together as one.



References

- http://archive.dstc.edu.au/IRM_project
- <http://mpeg.telecomitalia.com/>
- <http://metadata.net/harmony/>

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Acknowledgements

- Bevan Koopman, UQ ITEE
- Smithsonian NMAI – Jane Sledge
- Ara Irititja Archival project – John Dallwitz
- “Our Words Put to Paper” - Igor Krupnik

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