

From File Interoperability to Service Interoperability :



The Distributed Text Services

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Wooden conduit once used to supply water to Edo residents. Made from hardwood to make it watertight. Displayed at Tokyo Edo Museum

Source: <https://web-japan.org/niponica/niponica15/en/feature/feature02.html>

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Plan

1. History of the Project
2. Current options for Digital Edition APIs
3. A new standard? The Distributed Text Services (DTS)
 - a. Requirements
 - b. Specifications
 - c. Demo
4. What's next?
 - a. Invitation!
 - b. Current tools and perspectives

History of the project

- Simple statement: no community-wide accepted standard for sharing text over HTTP queries.
- IIIF is a success!
- December 2015: meeting at Tufts with European and American colleagues
- Decision taken: we need to build something



Current API Options

- Three Options:
 - Custom APIs
 - OAI-PMH with links to some TEI
 - Canonical Text Services Protocol and Identifiers

Current API Options (1): Custom APIs

Pros +++

- Fits the project perfectly
- Quick to design

Cons ---

- A client needs to adapt to every single custom API
- Data exchange is complicated
- Interoperability ~ 0
- Documentation needs to be really clear

Current API Options (2): OAI-PMH

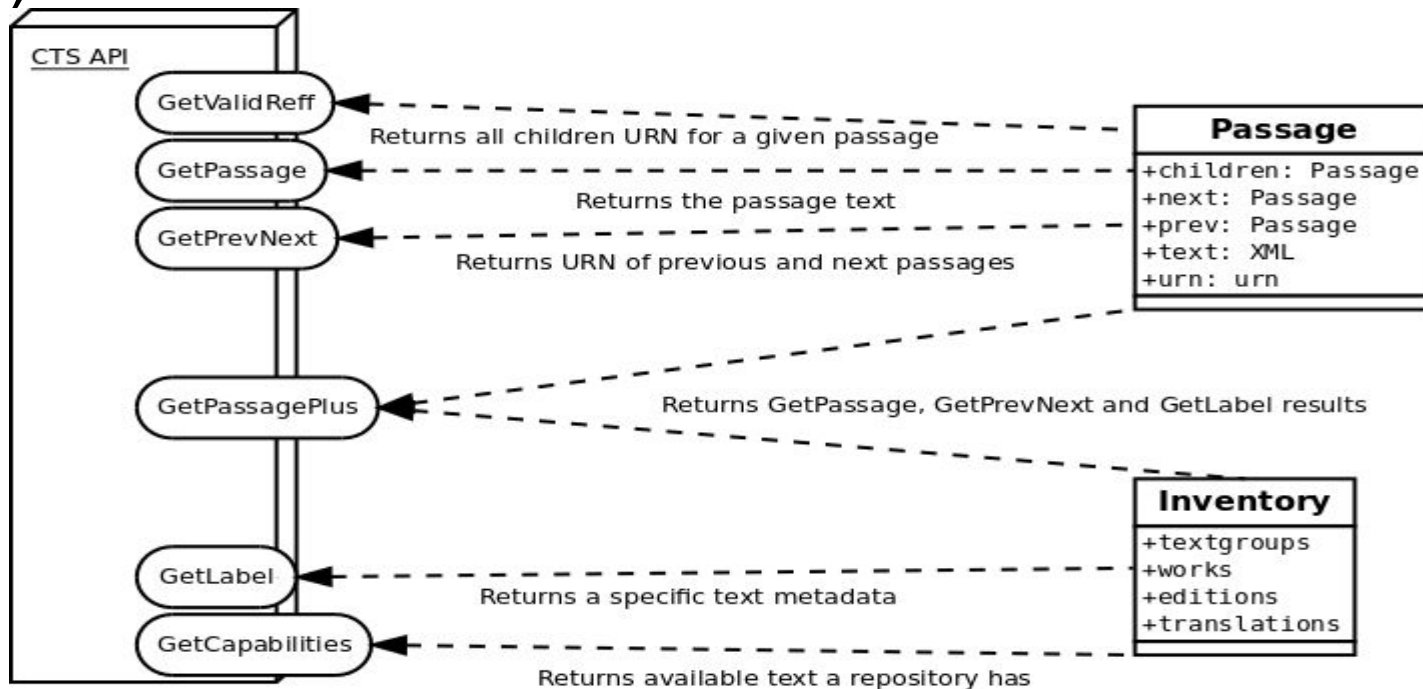
Pros +++

- OAI-PMH can be harvested by many services and reference data portals like Isidore in France: it's really common!
- Cataloging with nice limited set of Metadata!

Cons ---

- The text can only really be a download link
- Dublin Core “only”
- Not exactly designed for this purpose (more general)

Current API Options (3): Canonical Text Services (CTS)



Current API Options (4): Canonical Text Services (CTS)

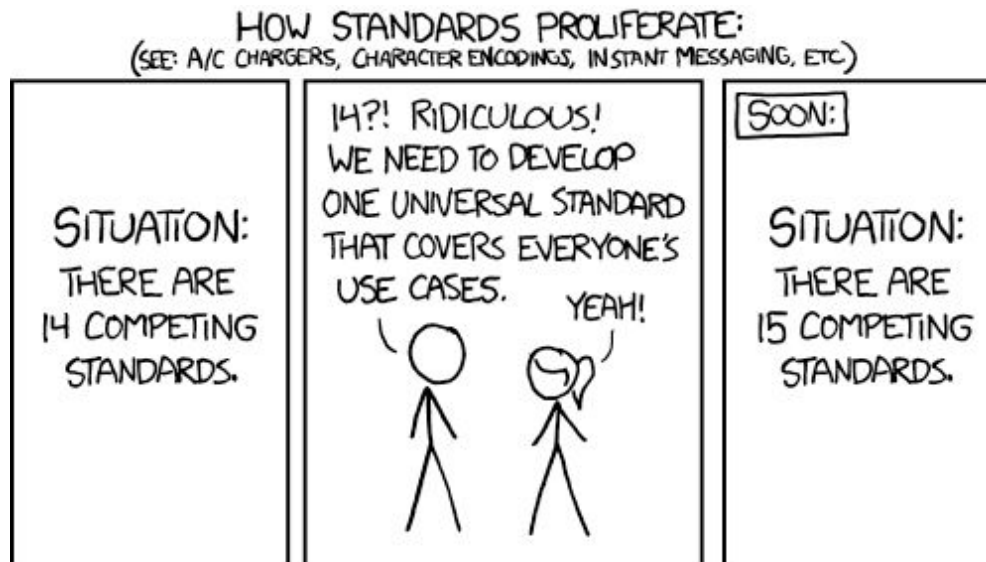
Pros +++

- Catalog is simple to read and understand
- Retrieve passages and full text!
- Retrieve list of passage identifiers!

Cons ---

- Tightly coupled to text identifier syntax which leads to ...
- Some specific form of FRBR is enforced.
- No pagination of catalogs.
- Redundant response format.
- Strong ontological requirements for a canonical citation scheme
- Project Specific and as such not open.

A new standard: the Distributed Text Services



There was not 14 standards, so we agreed that one would be good.

Distributed Text Services: Requirements

1. The Distributed Text Services API should be able to provide a **catalogue of its collections**.
2. The DTS API should **not enforce any hierarchy of how a text collection is formed**.
3. The DTS API should support **any kind of valid URIs as identifiers** for texts and collections.
4. The DTS API should support **both partial and complete text retrieval**.
5. The DTS API should **reuse accepted standards** wherever possible.
6. The DTS API should be **flexible**, but specify **technical requirements** that can be **trusted** and **enforced**.
7. The DTS API should offer a solution compatible with the modern technological landscape using standard approaches to describing and navigating Web Service requests and responses.

Distributed Text Services: Endpoints

- *First Public Working Draft*
- 3 API Endpoints
 - Collection Endpoint : Catalogue
 - Navigation Endpoint : Index of passages
 - Document Endpoint : Text retrieval
- Optional endpoints
- 3 available draft implementations
 - Capitains Tool Suite
 - <http://dev.chartes.psl.eu/api/nautilus/dts>
 - <http://texts.alpheios.net/api/dts>
 - Project Specific
 - <http://betamasaheft.eu/api/dts>

<http://w3id.org/dts>

Distributed Text Services: Entry Point

Example URI : <http://dev.chartes.psl.eu/api/nautilus/dts>

```
{
  "@context": "/dts/api/contexts/EntryPoint.jsonld",
  "@id": "/dts/api/",
  "@type": "EntryPoint",
  "collections": "/dts/api/collections",
  "documents": "/dts/api/documents",
  "navigation" : "/dts/api/navigation"
}
```

Distributed Text Services: Collection Endpoint

Name	Description	Accepted value
id	Identifier for a collection or document	Any
page	Page	Integers
nav	Direction of the navigation	Children (default), parents

Distributed Text Services: Collection Endpoint

```
{
  "@context": { "@vocab": "https://www.w3.org/ns/hydra/core#",
    "dc": "http://purl.org/dc/terms/", "dts": "https://w3id.org/dts/api#"
  },
  "@id": "general", "@type": "Collection",
  "totalItems": 2, "title": "Collection Générale de l'École Nationale des Chartes",
  "dts:dublincore": {
    "dc:publisher": ["École Nationale des Chartes", "https://viaf.org/viaf/167874585"],
    "dc:title": [{"@lang": "fr", "@value": "Collection Générale de l'École Nationale des Chartes"}]
  },
  "member": [
    {
      "@id" : "lasciva_roma", "title" : "Lasciva Roma",
      "description": "Collection of primary sources of interest in the studies of Ancient World's sexuality",
      "@type" : "Collection", "totalItems" : 1
    },
    {
      "@id" : "lettres_de_poilus", "title" : "Correspondance des poilus",
      "description": "Collection de lettres de poilus entre 1917 et 1918",
      "@type" : "Collection", "totalItems" : 10000
    }
  ]
}
```

Distributed Text Services: Navigation Endpoint

Name	Description
id	Identifier for a document
ref	Page
start	Start of a passage range
end	End of a passage range
groupBy	Ask the server to group references into range
page	Current page
max	Maximum number of references

```
{
  "@context": {
    "@vocab": "https://www.w3.org/ns/hydra/core#",
    "dts": "https://w3id.org/dts/api#"
  },

  "@id": "/api/dts/navigation/?id=urn:cts:greekLit:tlg0012.tlg001.opp-grc",
  "dts:citeDepth" : 2, "dts:level": 1,
  "member": [
    {"ref": "1"},
    {"ref": "2"},
    {"ref": "3"}
  ],
  "dts:passage":
    "/dts/api/document/?id=urn:cts:greekLit:tlg0012.tlg001.opp-grc{&ref}{&start}{&end}"
}
```

Distributed Text Services: Document Endpoint

Name	Description
id	Identifier for a document
ref	Page
start	Start of a passage range
end	End of a passage range

```
<?xml version="1.0" encoding="UTF-8"?>
<TEI xmlns="http://www.tei-c.org/ns/1.0">
  <teiHeader>
    <fileDesc>
      <titleStmt>
        <title>bgu.11.2029</title>
      </titleStmt>
      <publicationStmt>
        <authority>Duke Collaboratory for Classics Computing
          (DC3)
        </authority>
        <idno type="filename">bgu.11.2029</idno>
      </publicationStmt>
    </fileDesc>
  </teiHeader>
  <ds:fragment xmlns:ds="https://w3id.org/dts/api#">
    <lb n="1"/><expan>τετελ<ex>ώνηται</ex></expan>
    <expan>δι<ex>ᾶ</ex></expan> <expan>πύλ<ex>ης</ex></expan> Διονυσιάδος
  </ds:fragment>
</TEI>
```


Distributed Text Services: Demos !

1. Jupyter Notebook Demo on the three implementations
 - a. <https://github.com/distributed-text-services/implementation-demos/blob/master/Beta%20masaheft.ipynb>
 - b. <https://github.com/distributed-text-services/implementation-demos/blob/master/Alpheios.net.ipynb>
 - c. <https://github.com/distributed-text-services/implementation-demos/blob/master/Ecole%20des%20Chartes.ipynb>
 - d. <https://github.com/distributed-text-services/implementation-demos>
2. Julien Pilla's Browsing Interface
 - a. <http://dev.chartes.psl.eu/dts-demo/>

What's next (1)

- Join us!
 - <https://github.com/distributed-text-services/specifications/issues> are open!
 - We review your implementation
- It's a First Draft, we need you to make it better!
- Ask questions, propose fixes to the documentation!



What's next (2)

- Work on server implementations with the Capitains.org suite
 - Decoupled from CTS identifiers to offer more choices
- Work on a client for the Capitains Suite to interact with an API
- SCTA implementation
- Fixes to current implementations!
- More?

Thanks!

Don't forget the link: <https://w3id.org/dts>

-> This is the one to share because it's a permanent one!

Thanks again to the team that met specifically really often in the last academic year to finish this work.

Thanks to Pelagios for funding a 2018 June workshop where we were able to have big discussions about Citation Scheme and other important ontological questions!