Feedback on TAP implementation

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Difficulties 1/3

- ADQL implementation

  - Parsing (syntax & DB consistency)

  - Translation in SQL

    - Geometrical functions
    - Coordinate systems

Difficulties 2/3

- Tables & Columns metadata

  - May change regularly

  - May be too many to be displayed in only one web resource *(which may be generated on the fly and then returned to the client)*

Difficulties 3/3

- Upload (optional)
  - VOTable parsing
  - Converting into a DB table
  - Storing VOTable on the server and then on DB
  - Destroying the uploaded tables at the end of the query
  - Limit the number and the size of uploaded tables per user and at all

TAP: step by step 1/2

(Based on the Simbad-TAP implementation case)

1. Update the database

   a) How to deal with geometrical functions ?

      - => PgSphere, Q3C, ...

   b) Which tables & columns must be available ?

      - Do I need a mapping between ADQL and DB names ?
      - => Add and fill the schema TAP_SCHEMA in the DB

TAP: step by step 2/2

2. Implement the CDS TAP library

    a) Configure the database access *(=> DBConnection)*

    b) Provide the list of available metadata *(=> TAPMetadata)*

    c) Create 1 output formatter per available formats *(=> OutputFormat)*

    d) Describe the service *(=> ServiceConnection)*

    e) Write 1 servlet which forwards all requests to the library

The CDS TAP library

TAP Features			Managed ?
TAP	languages	ADQL	✓
		PQL	✓
	query executions	synchronous	✓
		asynchronous	✓
	resources	availability	✓
		capabilities *(with TAPRegExt)*	✓
		tables	✓
	parameters	request=doQuery	✓
		request=getCapability	✓
		version	✓
		query	✓
		format	✓
		maxRec	✓
		runId	✓
		upload (inline)	✓
		upload (http)	✓
	TAP_UPLOAD *(db schema)*		✓
	metadata		✓
	TAP_SCHEMA *(db schema)*		✓
ADQL	parse		✓
	Execute	PostgreSQL+PgSphere	✓
		other DBMs	✓
		others	✓
	coordinate system		✓
	check with DB		✓

Legend	
✓	Fully managed
✓	Specific extension required
✓	Not yet managed
✓	No generic implementation possible

Suggestions 1/2

- Geometrical functions:

  - Difficult and not efficient to manage all conversions of coordinate system - on server side

  - **<u>Proposed solution:</u>** add an item in TAPRegExt which lists all managed coordinate systems or conversions

Suggestions 2/2

- TAP metadata:

  - Tables & Columns list may be too big for some TAP services

  - **<u>Proposed solutions</u>**:

    - Lets the possibility to get parts of the document (1 part to list all tables and 1 part per table to describ them)

    - Propose a zipped version

    - Add a shorter output format *(for instance: json)*