



# ADQL specification version 2.1

October 2016

D.Morris  
Institute for Astronomy,  
Edinburgh University  
October 2016





## Crossmatch queries

Based on the current level of service capabilities within the virtual observatory, the recommended method for performing a cross match JOIN between source catalogs is to use the DISTANCE operator to select sources within a specified radius of each other.

```
WHERE
  DISTANCE(
    t1.pos,
    t2.pos
  ) < 0.1
```

Where possible, service implementations should optimize their database indexing to support DISTANCE.

Where possible, client application help files and tutorials should recommend using DISTANCE.





## Modulo operator

The modulo operator returns the remainder,  $R$ , of the division of two integer values,  $M / N$

$$M \% N = R$$

where

$R$  has the same sign as  $M$   
 $|R|$  is less than  $|N|$   
 $M = (K * N) + R$  for a given integer  $K$

The results of the modulo operator on non-integer values is undefined and may be rejected as invalid.





## WD in November

Plan to have a new working draft available end of November.

However .....





## What about the BNF

- The current BNF has not been validated.
- The current BNF is not machine readable.

As far as we know ..

No one has generated their parser directly from the BNF.

*- Anyone who has done this, please let me know.*

Most people have used the BNF as a human readable document, manually created their grammar files and then used those to generate their parser.





<https://github.com/ivoa/lyonetia>



## Lyonetia project in GitHub

- Collect queries that we know should be valid.
- Collect queries that we know should not be valid.

Build a test framework to validate the BNF.

- Generate a grammar from the BNF.
- Generate a parser from the grammar.
- Parse the test queries and check for pass/fail.

Volunteers welcome, clone the project and go for it.

- Add test data and test queries.
- Help develop validation frameworks.





## Summary

- The BNF should be validated.
- The BNF should be machine readable.

Ideally, it should be possible to create grammar files from the BNF and then use those to generate a parser.

- ADQL 2.1 will probably be delayed until May 2017
- But the result will be much more accurate





## Question

Overloaded POLYGON needs type to distinguish old and new forms.

POLYGON(<point>, <point>, <point> ...)

POLYGON(<string>, <point>, <point>, <point>, ...)

Currently coordsys is deprecated and optional.

Anticipating problems representing this in BNF.

Can we remove the coordsys <string> param ?

