ADQL specification
2.1 and beyond

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ADQL-2.1 – Changes since Sydney #1

- **BOOLEAN data type**

```
WHERE enabled = True
```

- **HEX literals**

```
WHERE flags & 0xFF = 0x01
```

- **OFFSET clause**

```
SELECT
   <TOP n>
     ….
FROM
     ….
WHERE
     ….
<OFFSET m>
```

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ADQL-2.1 – Changes since Sydney #2

- **Overloaded DISTANCE**

```
SELECT
    ….
FROM
    ….
WHERE
    – Coordinate form
    DISTANCE(t1.ra, t1.dec, t2,ra, t2.dec) < 0.01
OR
    – Point form
    DISTANCE(t1.p1, t2.p1) < 0.01
```

Services registering support for DISTANCE means they support BOTH forms.

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ADQL-2.1 – Are we done ?

Working draft WD-ADQL-2.1-20160502

Available on the IVOA documents page
http://www.ivoa.net/documents/ADQL/20160502/

Is this good enough to move to PR ?

Close version 2.1, and anything new goes version 2.2.

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ADQL-2.2 - Overloading geometry functions #1

- We accepted overloaded DISTANCE based on number of params
- We have deprecated COORD-SYS and recommend empty string

Can we have overloaded versions of the geometric constructors without the COORD_SYS parameter ?

```
BOX(coordsys, ra, dec, width, height)
BOX(ra, dec, width, height)

CIRCLE(coordsys, ra, dec, radius)
CIRCLE(ra, dec, radius)

POINT(coordsys, ra, dec)
POINT(ra, dec)
```

Is this simple enough to be included in 2.1 ?

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ADQL-2.2 - Overloading geometry functions #2

- We accepted overloaded DISTANCE based on number of params
- We have deprecated COORD-SYS and recommend empty string

Can we have versions of the geometric constructors that accept POINT parameters ?

```
BOX(coordsys, ra, dec, width, height)
BOX(ra, dec, width, height)
BOX(Point, width, height)

CIRCLE(coordsys, ra, dec, radius)
CIRCLE(ra, dec, radius)
CIRCLE(Point, radius)

POINT(coordsys, ra, dec)
POINT(ra, dec)
```

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Is this simple enough to be included in 2.1 ?

ADQL-2.2 - Overloading geometry functions #3

- We accepted overloaded DISTANCE based on number of params
- We have deprecated COORD-SYS and recommend empty string

What do we do with POLYGON ?

If expressions can resolve to either numeric or Point,
then overloading on number of params does not work.

Is this four coordinates or four Points ?

```
POLYGON(a, b, c, d)
```

Can we use different names ?

```
POLYCOORD(a, b, c, d)
```

```
POLYPOINT(a, b, c, d)
```

Is this simple enough to be included in 2.1 ?

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ADQL-2.2 – Point literal

Use {} brackets to indicate a Point literal.

```
CIRCLE(POINT(a,b), 7)
```

becomes

```
CIRCLE({a,b}, 7)
```

Benefits
- Smaller and more concise

Costs
- Departure from SQL syntax

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ADQL-2.2 – BLOBs

Add CLOB and BLOB data types to the ADQL specification.

Add explicit clauses to the text and the BNF to restrict where they can occur.

- Allowed in the SELECT fields but not in the WHERE clause.
- Allowed in the WHERE clause but only as function parameters.

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ADQL-2.2 – Value expression in ORDER BY

The BNF for ADQL 2.1 only allows column name or column number in the ORDER BY and GROUP BY clauses.

```
ORDER BY <column_name> | <unsigned_decimal>
```

We have specific requests from end users to be able to have the same value expressions in the ORDER BY and GROUP BY causes as the SELECT fields.

Supported on all of the database platforms that we have tested so far.

The only restriction is that the ORDER BY or GROUP BY expression must be one of the SELECT fields.

```
SELECT
    ra,
    dec,
    count(*)
FROM
    ....
WHERE
    ....
ORDER BY
    count(*)
GROUP BY
    count(*)
```

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ADQL-2.1 – Are we done ?

Working draft WD-ADQL-2.1-20160502

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Are any of these simple enough to include in version 2.1 ?

- Geometric constructors without COORD_SYS
- Geometric constructors with Point
- What do we do with POLYGON ?

Propose we close version 2.1, and anything else goes in version 2.2.

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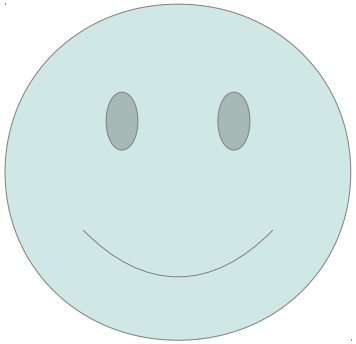
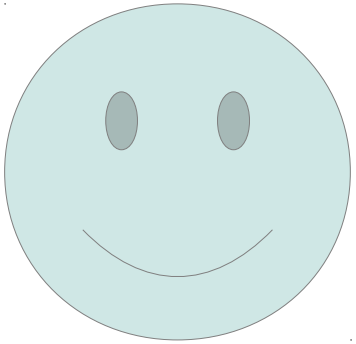
ADQL-2.1 – I think we are done



ADQL-2.2 – Next one should be quicker



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