**OMS Annotation Definitions**

**Field:** Any public member variable of a class. To specify a field OMS needs to know the instance of the class with the field and the field’s name.

Example: public int ID;

**In Field:** Any field that is annotated with In.

Example: @In public String humidity;

**Out Field:** Any field that is annotated with Out.

Example: @Out public double dataValue;

**In Out Field:** Any field that is annotated with both In and Out. These may be treated as In or Out Fields.

Example: @In @Out public List<HRU> hrus;

Value: Any instance of a class or a primitive value.

Example 1: true Example 2: 5 Example 3: new Object()

**Connection Types**

1. field2in – The specified In Field will take the value from the specified Field.
2. field2inout – The specified In Out Field will take the value from the specified Field before execution. After executing the specified Field will take the value from the specified In Out Field.
3. in2in – One of the specified In Fields will take the value from the other In Field.
4. out2field – The specified Field will take the value from the specified Out Field.
5. out2in – The specified In Field will take the value from the specified Out Field.
6. out2infb – This is legacy code that should not be used but is the equivalent to out2in.
7. out2out – One of the specified Out Fields will take the value from the other Out Field.
8. val2in – The In Field will take the specified value.

**Methods**

1. field2in (Object o, String field, Object to, String to\_in)

o – The Field object

field – The Field’s name

to – the In Field object

to\_in – The In Field’s name

Example: field2in (hru.soilType, "corg", soil, "corg\_h");

field2in (Object o, String field, Object to)

o – The Field object

field – The name of both the Field and In Field. They must have the same name. Multiple field names may be specified by separating them by spaces.

to – The In Field object

Example: field2in (hru, "x", calcLatLong);

Example: field2in (hru, "x y", calcLatLong);

2. field2inout (Object o, String field, Object comp, String inout)

o – The Field object

field – The Field’s name

comp – The In Out Field object

inout – The In Out Field’s name

Example: field2inout (hru, "outRD2", gw, "gwExcess")

field2inout (Object o, String field, Object comp)

o – The Field object

field - The name of both the Field and In Out Field. They must have the same name.

comp – The In Out Field

Example: field2inout (hru, "tmeanavg", tempAvg);

3. in2in (String in, Object to, String to\_in)

in – The implied In Field’s name. The implied In Field object is taken from the component that makes the connection.

to – The In Field object which will receive the value.

to\_in – The In Field’s name that will receive the value.

Example: in2in ("dataFileTmin", tminReader, "dataFile");

in2in (String in, Object... to)

in – The field name for all of the In Fields. They must have the same name.

to – An array of In Field objects which will all take the value from the implied In Field object that is in component that makes the connection.

Example: in2in ("routingFile", routingReader);

Example: in2in ("hrus", tmean, tmin, tmax, hum, precip, sol, wind); Note how multiple Fields are specified.

4. out2field (Object from, String from\_out, Object o, String field)

from – The Out Field object

from\_out – The Out Field’s name

o – The Field object

field – The Field’s name

Example: out2field (reg.tmean, "dataValue", hru, "tmean");

out2field (Object from, String from\_out, Object o)

from – The Out Field object

from\_out – The name of both the Field and Out Field. They must have the same name.

o – The Field object

Example: out2field (calcLatLong, "latitude", hru);

5. out2in (Object from, String from\_out, Object to, String to\_in)

from - The Out Field object

from\_out – The Out Field name

to – The In Field object

to\_in – The In Field name

Example: out2in (tmeanCalc, "dataArray", prepHRU, "dataArrayTmean");

out2in (Object from, String from\_out, Object... tos)

from – The Out Field object

from\_out - The name of both the Out Field and In Field. They must have the same name.

tos – An array of the specified In Fields that will all take the value.

Example: out2in (paramReader, "hrus", routingReader);

Example: out2in (paramReader, "hrus", routingReader, soilReader); Note how multiple In Fields are specified.

6. out2infb (Object from, String from\_out, Object to, String to\_in)

DO NOT USE THIS. Use out2in (from, from\_out, to, to\_in).

7. out2out (String out, Object to, String to\_out)

out – The implied Out Field’s name. The implied Out Field resides in the component that makes the connection

to – The Out Field that will receive the value

to\_out – The name of the Out Field that will receive the value

Example: out2out ("hrus", prepHRU, “hrus”);

out2out (String out, Object to)

out – The name of both Out Fields.

to – The Out Field which will take the value from the implied Out Field which resides in the component that makes the connection.

Example: out2out ("hrus", prepHRU);

8. val2in (boolean val, Object to, String field)

val2in (char val, Object to, String field)

val2in (byte val, Object to, String field)

val2in (short val, Object to, String field)

val2in (int val, Object to, String field)

val2in (long val, Object to, String field)

val2in (float val, Object to, String field)

val2in (double val, Object to, String field)

val2in (Object val, Object to, String field)

val – The value

to – The In Field object

field – The In Field’s name

Example: val2in (-273.0, tmeanReg, "fixedMinimum");