OpenMI Association Technical Committee meeting no 19

See also: OATC Wiki Home

Date: September 8-10, 2008

Venue: DHI, Agern Alle 5, Hørsholm, Denmark

Participants:

Jan Gregersen, DHI / LicTek (gregersen@lictek.dk) (chairman of the meeting)
Adrian Harper, Wallingford Software (adrian.harper@wallingfordsoftware.com)
Stef Hummel, Deltares (stef.hummel@deltares.nl)
Unknown User (don) (Gena), Deltares (gennadii.donchyts@deltares.nl)
Peter Schade, Bundesanstalt fuer Wasserbau, Germany (Peter.Schade@BAW.DE)
Andrea Antonello, Universita` di Trento, (andrea.antonello@gmail.com)
Rob Knapen, Alterra (Rob.Knapen@wur.nl)

Who attends which days

Monday	Tuesday	Wednesday
Jan	Jan	Jan
Stef	Stef	Stef
Rob	Rob	Rob
Andrea	Andrea	Andrea
Adrian	Adrian	Adrian
Peter	Peter	
	Gena	Gena

Apologies:

Unknown User (psi@dhigroup.com), DHI - Water & Environment (psi@dhigroup.com)
Unknown User (onnoroos), Alterra (Onno.Roosenschoon@wur.nl)
Peter Gijsbers, Deltares (Peter.Gijsbers@deltares.nl)
Jon Goodall, Univ South Carolina (goodall@engr.sc.edu)

Documents:

http://www.openmi.org/
http://sourceforge.net/projects/openmi
wiki.openmi.org

Agenda & draft minutes (in blue)

1. Minutes from previous OATC meeting

The last OATC meeting was about the configuration interfaces. We had a very exiting discussion about differences between the link approach and the chained approach. At a subsequent web meeting is was decided to go for the chained approach. There is no formal minutes from the OATC meeting.

Minutes: It was accepted that there is no minutes from the last meeting

2. Maintenance and support

2.1 Reported bugs

(GOTO bug list on SourceForge)

Minutes: There are currently two open bug reports; one about unit conversion that does not handle missing values correctly and one about comparison of time horizons. Adrian and Jan will fix those bugs.

2.2 Help issues

(GOTO help issues on SourceForge)

Minutes: There is a fine activity on the help forum. We try to answer help request quickly (within a day), but unfortunately this sometimes takes longer. Hence, everyone is encouraged to subscribe the the help forum in order to receive a mail notification when new help issues are submitted. Jan will keep an eye on the forum and forward the help issues to OATC members if such issues are not already answered within a reasonable time.

2.3 Discussion issues

(GOTO discussion issues on SourceForge)

Minutes: Same comments as for Help issues (2.2 above)

3. OpenMI 2.0 Issues

3.1 Use cases

GOTO use cases

Minutes: We are not currently not actively using the use cases for the version 2 architecture development and we do not think there is a need for writing additional use cases at this moment. However, when the draft version 2 architecture is ready, we will review the use cases in order to ensure that features described by these are taken into account in the new OpenMI standard.

3.2 OpenMI 2.0 architecture

3.2.1 Current status

We need to remind ourselves about the current status for the OpenMI version 2 development - what is implemented and why. See also: OpenMI.Standard ver 1.4 to ver 2 change log

Minutes: Stef explained the recent developments and the current status for the OpenMI version 2 standard to the meeting participants.

3.2.2 Configuration interfaces

At the last OATC meetings the focus has been on interfaces that relates to the configuration part of the standard

see also: Jan's ideas for version 2 configuration interfaces

3.2.3 IQuality and IQuantity

One of the change requests we have received for OpenMI Standard version 2 is the ability to handle categorized data. Examples could be "high", "medium", "low" or "grass", "corn", "potatoes".
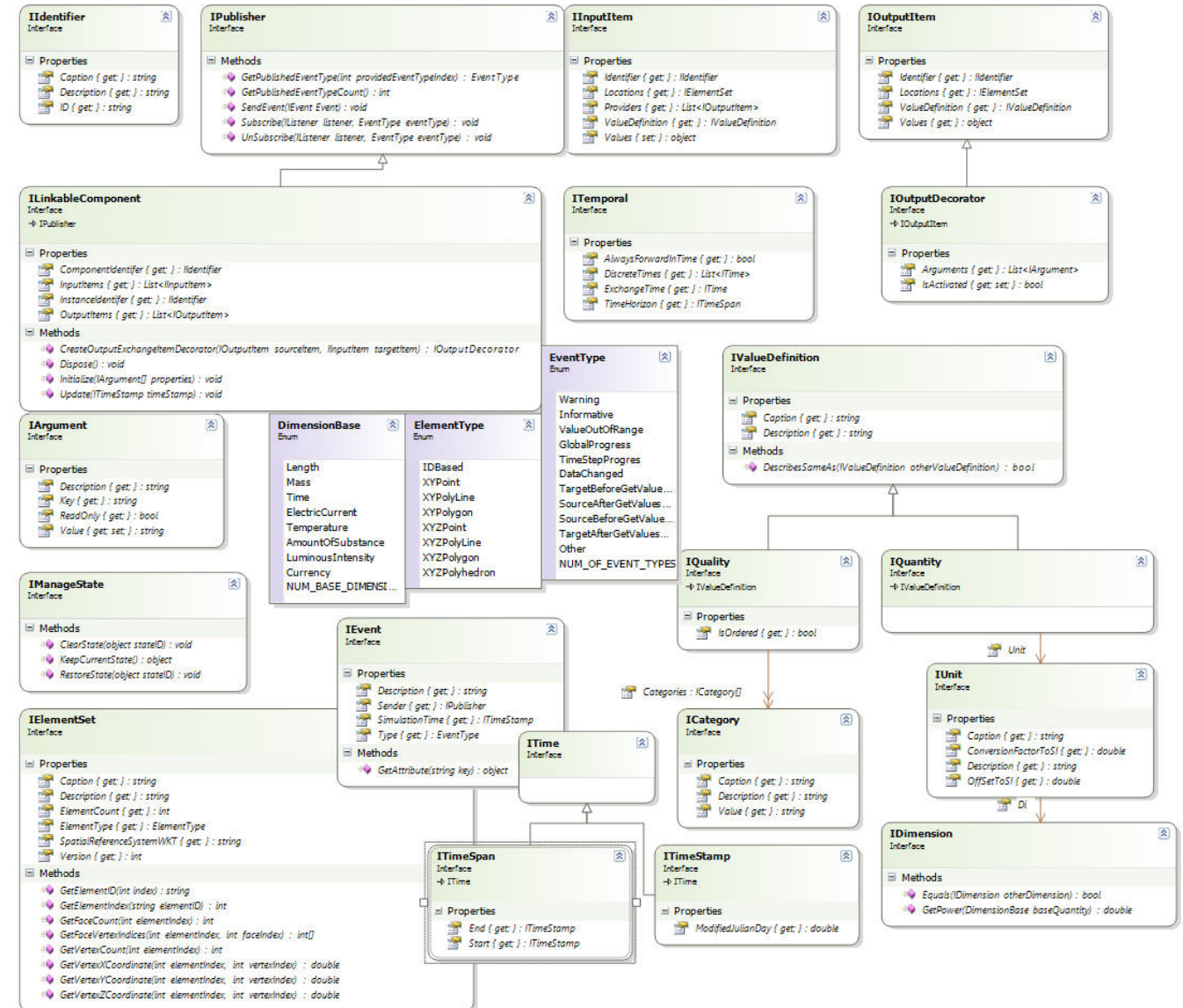
See use case: Qualitative data support

See UML for proposed OpenMI interfaces

3.2.4 Spatial issues

We will focus on the spatial issues at the next OATC meeting in Delft. However, since Andrea is attending this meeting, it could be wise to start the thinking process now, utilizing his knowledge about GIS and specifically OpenMI GIS.

IIdentifier
Interface

☐ Properties
- Caption { get; } : string
- Description { get; } : string
- ID { get; } : string

IPublisher
Interface

☐ Methods
- GetPublishedEventType(int providedEventTypeIndex) : EventType
- GetPublishedEventTypeCount() : int
- SendEvent(IEvent Event) : void
- Subscribe(IListener listener, EventType eventType) : void
- UnSubscribe(IListener listener, EventType eventType) : void

IInputItem
Interface

☐ Properties
- Identifier { get; } : IIdentifier
- Locations { get; } : IElementSet
- Providers { get; } : List<IOutputItem>
- ValueDefinition { get; } : IValueDefinition
- Values { set; } : object

IOutputItem
Interface

☐ Properties
- Identifier { get; } : IIdentifier
- Locations { get; } : IElementSet
- ValueDefinition { get; } : IValueDefinition
- Values { get; } : object

ILinkableComponent
Interface
→ IPublisher

☐ Properties
- ComponentIdentifer { get; } : IIdentifier
- InputItems { get; } : List<IInputItem>
- InstanceIdentifer { get; } : IIdentifier
- OutputItems { get; } : List<IOutputItem>
☐ Methods
- CreateOutputExchangeItemDecorator(IOutputItem sourceItem, IInputItem targetItem) : IOutputDecorator
- Dispose() : void
- Initialize(IArgument[] properties) : void
- Update(ITimeStamp timeStamp) : void

ITemporal
Interface

☐ Properties
- AlwaysForwardInTime { get; } : bool
- DiscreteTimes { get; } : List<ITime>
- ExchangeTime { get; } : ITime
- TimeHorizon { get; } : ITimeSpan

IOutputDecorator
Interface
→ IOutputItem

☐ Properties
- Arguments { get; } : List<IArgument>
- IsActivated { get; set; } : bool

EventType
Enum

- Warning
- Informative
- ValueOutOfRange
- GlobalProgress
- TimeStepProgres
- DataChanged
- TargetBeforeGetValue...
- SourceAfterGetValue...
- SourceBeforeGetValue...
- TargetAfterGetValues...
- Other
- NUM_OF_EVENT_TYPES

IValueDefinition
Interface

☐ Properties
- Caption { get; } : string
- Description { get; } : string
☐ Methods
- DescribesSameAs(IValueDefinition otherValueDefinition) : bool

IArgument
Interface

☐ Properties
- Description { get; } : string
- Key { get; } : string
- ReadOnly { get; } : bool
- Value { get; set; } : string

DimensionBase
Enum

- Length
- Mass
- Time
- ElectricCurrent
- Temperature
- AmountOfSubstance
- LuminousIntensity
- Currency
- NUM_BASE_DIMENSI...

ElementType
Enum

- IDBased
- XYPoint
- XYPolyLine
- XYPolygon
- XYZPoint
- XYZPolyLine
- XYZPolygon
- XYZPolyhedron

IManageState
Interface

☐ Methods
- ClearState(object stateID) : void
- KeepCurrentState() : object
- RestoreState(object stateID) : void

IEvent
Interface

☐ Properties
- Description { get; } : string
- Sender { get; } : IPublisher
- SimulationTime { get; } : ITimeStamp
- Type { get; } : EventType
☐ Methods
- GetAttribute(string key) : object

IQuality
Interface
→ IValueDefinition

☐ Properties
- IsOrdered { get; } : bool

Categories : ICategory[]

IQuantity
Interface
→ IValueDefinition

Unit

IUnit
Interface

☐ Properties
- Caption { get; } : string
- ConversionFactorToSI { get; } : double
- Description { get; } : string
- OffSetToSI { get; } : double

IElementSet
Interface

☐ Properties
- Caption { get; } : string
- Description { get; } : string
- ElementCount { get; } : int
- ElementType { get; } : ElementType
- SpatialReferenceSystemWKT { get; } : string
- Version { get; } : int
☐ Methods
- GetElementID(int index) : string
- GetElementIndex(string elementID) : int
- GetFaceCount(int elementIndex) : int
- GetFaceVertexIndices(int elementIndex, int faceIndex) : int[]
- GetVertexCount(int elementIndex) : int
- GetVertexXCoordinate(int elementIndex, int vertexIndex) : double
- GetVertexYCoordinate(int elementIndex, int vertexIndex) : double
- GetVertexZCoordinate(int elementIndex, int vertexIndex) : double

ITime
Interface

ICategory
Interface

☐ Properties
- Caption { get; } : string
- Description { get; } : string
- Value { get; } : string

ITimeSpan
Interface
→ ITime

☐ Properties
- End { get; } : ITimeStamp
- Start { get; } : ITimeStamp

ITimeStamp
Interface
→ ITime

☐ Properties
- ModifiedJulianDay { get; } : double

Di

IDimension
Interface

☐ Methods
- Equals(IDimension otherDimension) : bool
- GetPower(DimensionBase baseQuantity) : double

3.3 Development and release road map

Some time ago a prioritized list of issues that should be included in the next release was elaborated (OpenMI version 2 Development plan). Seems that we already have covered most of the issues plus the quantity/quality issues, which are not listed in the plan. However, we still need a plan with some more strict deadlines.

Since we are dealing with a standard release we must follow the procedure for OpenMI standard releases. So far we do not have such procedure formally accepted by the OAEC. On this agenda (point 4.1) is a proposal for a procedure. So, let's discuss this first and then see how we can fit some dates into this.

Minutes:
With respect to version 1.4.1 release, we will go into beta by the next OATC meeting in Delft, and a release on December 20 th 2008. Everyone in encouraged to start using the GUI version 1.4.1 now.

Version 2 development plan:

September 11th 2008 - November 2nd 2008
Finish the configuration architecture (the decorator pattern)and update SDK and GUI.

November 3 - November 5 2008.
OATC meeting in The Netherlands: special focus on return types and geometry (ElementSet)

November 6th 2008 - January 12th 2009
Implementation of new geometry interfaces and return types. Update SDK and GUI

January 13th - January 15th 2009
OATC meeting in UK. Final decision for the version 2 standard interfaces. This also implies deciding which requested feature that will not be include in version 2.

January 16th - March 9th 2009
Complete implementation and unit testing of the version 2 standard, SDK and GUI

March 10 - March 12 2009
OATC meetings, Denmark. OpenMI 2 standard, SDK and GUI beta release

March 13 - April 20, 2009
Migrate and test selected commercial models and components for version 2

April 21 - April 23
OATC Meeting i The Netherlands. Evaluate real models test and further refinements for version 2

April 24 - June 09 2009:
Continues real models testing, write documentation.

June 10 - June 12 2009
OATC meeting in Denmark. Final evaluation, submission of the version 2 to the OpenMI Association Executive Committee for acceptance

June 13 - October 13 2009
The standard is reviewed by external reviewers

October 14 - December 19, 2009
Adjustments based on comments from the reviewers. Finalization of the OpenMI 2 release.

December 20th 2009
OpenMI 2 standard, SDK and GUI release.

3. OpenMI Java and OpenMI .net synchronization

The OpenMI standard is released both in a Java and a C# version. This imposes some problems / challenges that we continuously must address:

- The OpenMI standard interfaces.
    - Can the proposed changes for the OpenMI 2 release be implemented in both programming languages
    - Which one should be developed first and how do we make sure that the implementation are conceptually the same

- The OATC SDK and GUI
  For OpenMI 1.4 we have a full implementation of the SDK and GUI in C# but for the Java version the SDK is provided by Alterra and there is no GUI available. How are we going to handle this for version 1.4 and for version 2

- Linking models / components compliant to the Java and C# version, respectively
  When running OpenMI linked configurations objects are passed between the components. This makes it technically difficult to handle linked systems where some components are OpenMI Java compliant and some OpenMI C# compliant. At previous meeting we have discussed this issue and one of the conclusion is that since we are not the only ones having this problem, at solution for this may arise from outside. What is the current status with respect to this?

Rob: Maybe it is (sometimes) a solution to serialise the object as XML or JSON and then exchange them from Java to C# and back. There might be open source solutions, e.g. http://woxserializer.sourceforge.net/. Of course performance is a potential issue.

4. OATC Procedures

4.1 Proposal for procedures for OpenMI Standard releases

From Jan: I have at task from one of the previous OpenMI Association Executive Committee meeting to elaborate a proposal for OpenMI Standard release procedure. These procedures will define the rules for how to go from OpenMI Standard release version x to OpenMI standard version x+1. I think that the OpenMI standard it selves is the most important asset of the OpenMI Association, which also means that rules for how this standard may be change becomes very important. I thought a lot about it (apparently, more difficult that I first anticipated), and I have now written my first idea down in draft form. I would appreciate if we, at the OATC meetings, could discuss these ideas.
Please review the Proposed procedure for OpenMI Standard releases.

Minutes:
The meeting was generally happy about the presented proposal. Each member til put specific comments using the commenting facility on the wiki. Jan will ask the OAEC also to read and comment and ask to have this issue in the OAEC agenda.

4.2 Review and update the OATC procedures

What is the status with respect to procedures other that the standard release procedure (point 4.1)

(GOTO OATC procedures)

5. www.OpenMI.org and wiki.OpenMI.org

5.1 Review the getting started pages on the wiki

We have already put enormous efforts into documenting the OpenMI standard and the SDK. By the end of the HarmonIt project we wrote hundreds of page in the formal documentation (the Book A -F stuff), and more recently we have worked especially on the wiki to improve the documentation in order to facilitate people new to OpenMI (the HowTo pages). So even though we are well above the typical documentation level for research projects, we still need to improve. I think that improving documentation and guidelines will be the area where we achieve most effect in order to get OpenMI used around the world. Naturally we still need to develop new features, but should not sacrifice documentation. I believe that the getting started pages on the wiki is currently be best entry for new people and I will typically direct such people to these pages. I would appreciate if we could spend a little time going through the getting started pages and assign task for improvements. Specifically, I have noticed that after the upgrade of the wiki sofware some pages have been corrupted.

David Maidment recently wrote in a mail to Roger. "I think the OpenMI conceptual model is presently contained in Appendix G or somewhere else near the end of your large manual. I wonder if this model could be restated in a separate document so that reviewers of it don't have to extract the key points out of a huge software engineering manual. I am thinking of something that could be read and understood by your hydrologic science colleagues at CHE, the scientists in our ChyMP group, etc.". Most likely he did not know about the wiki, which make me think if the wiki exposed sufficiently on the official openmi web,

(Jan)

Minutes:
We decided to review and update the HowTo pages. We have distributed the pages between us as shown below. All this should be completed before the January OATC meeting.

* What is OpenMI (Adrian)
* How is the OpenMI standard defined (Adrian)

* Using OpenMI 1.4.0.0
** What is new in version 1.4.0.0 for end users (Adrian)
** What should be installed on users computers (Adrian)
** Linking models (Jan)
** Using the configuration editor (Jan)
** Hands on - make your own OpenMI linked system (Jan)
** End-users support (Adrian)

* Developing components for OpenMI 1.4.0.0
** What is new in OpenMI 1.4.0.0 for developers (Adrian)
** What should OpenMI 1.4.0.0 developers install (Adrian)
** HOW does the OpenMI Linkable Component calling sequence work ? (Adrian)
** How to migrate existing Fortran based models codes (Jan)
** How to upgrade from previous version (Stef)
** How to work with OMI files (Stef)
** How to link OpenMI components via interface calls (Stef)
** How to link to Excel (Stef)
** How to turn an Ascii file reader into a Linkable Component (Stef)
** How to turn a database into a LinkableComponent (Stef)
** How to make linking of models with different grids possible. (Stef)
** How to get the most recent source code for the GUI and SDK (Stef)

* Java / GIS related (new pages)
** How to get started with OpenMI in Java (Rob)
** How to get started with OpenMI and UDig GIS in Java (Andrea)

5.2 Could we simply use a wiki for the official OpenMI web site

Currently the official OpenMI is exposed on three different web sites www.OpenMI.org, wiki.OpenMI.org and http://sourceforge.net/projects/openmi. There are naturally good reasons for running these three web sites. www.OpenMI.org is the very official nicely formatted quality assured stuff, whereas the wiki is more quick and dirty, and finally sourceforge provides tools for version control, task and bug trackers, and help forum. It is my impression that people, in their search for information about OpenMI may get confused, also I sometimes have doubts about how much funding we will have when the Life project ends, hence we need to go for agile solutions. I discussed these issues with Michiel Blind some month ago and we agreed it should be investigated if we simply could use a wiki for the official web site. There are examples of very nicely formatted wikis around (see e.g.). In my opinion largest advantage of switching to a wiki, it the ability for a large group to easily edit the text on the wiki - so we get the nice stuff out there quickly. So, what is the OATC opinion about this? Can we recommend specific wiki software? Would it be possible to spend some time setting something up, that will demonstrate how is could look? Jan Gregersen

Minutes:
It was agreed that a Wiki would be the best solution. On a longer term we may want to use a real content management system, which makes nice formatting possible, but for now the contents of the pages are considered more important that the appearance. Adrian will investigate if WSL can provide a server to host the WIKI and Stef will investigate if Deltares can host. We agree that our current wiki for OATC (Confluence) is the best choice. Jan will make sure that this issue is on the agenda for the next AOEC meeting.

Confluence can be also customized to make layout look more professional like using plugin like Adaptivist Theme Builder . If we have time - we can also use current web site design materials for it.

6. Miscellaneous issues

6.1 Meeting plan for 2009

I have proposed dates for the OATC meeting for 2009. Please see the OATC Calendar

Minutes:
The proposed dates were accepted except the meeting from April 28-30 2009, which was moved to April 21-23 2009. The OATC wiki calendar has been updated to reflect the agreed dates for meetings.

6.2 How can Java developers contribute

(from Rob Knapen(There are some people expressing interest to contribute to the OpenMI
Java development, any ideas how this can be set up? Is it something the
OpenMI TC would like to handle, as part of the OpenMI open source
community?

Minutes:
Curret status: The Java SDK is under MyOpen Source on source forge is difficult for people to find.
Rob and Andrea will make a wiki HowTo page describing the Java SDK and explaining how to use it and where to download it.

6.3 OpenMI Compliance HTML tool

Adrain has completed the first version of a tool that can take the OpenMIComplinanceInfo.xml file and transform it into readable HTML. This tool is intended to be used by the OATC in to take XML files submitted to the OpenMI Association and convert them to HTML and then put these op the OpenMI web (the OpenMI compliant components page). I tried to make it work, but I did not have sufficient patience to make it work. Always a problem with command line programs that take a number of arguments and file paths. Since this tool is something that is going to be used only whenever someone submits a XML file to the OpenMI Association for approval, I think it would be very useful with a simple user interface. Otherwise you will forget how to work with it from time to time. I can see that one of the arguments is the path to the xsd file. Would it not be simpler to have a copy of this file at the same place as the OpenMIComplinceHTML.exe file, it is always the same XSD file that should be used anyway.

As I see it a GUI will simply be one form / dialog which has a field to browse for the OpenMICompliance.xml file and one field to define the name and location of the ouput.HTML file.

Minutes:
Adrian made a nice user interface and the produced HTML files looks very nice. The general idea is that these HTML should be put on the official OpenMI page (www.openmi.org). However, we need to find out what to do with the model already listed. Jan will make a couple of wiki pages to see how this could be done, and subsequently mail OATC to ask for comments.

Jan Gregersen

6.4 Sourceforge SVN cleanup

From Jan: For some reason I like to have a full copy of OpenMI SourceForge repository on my local disk. However, currently this is about 4GB data (takes forever to download). One of the problems is the HEC model data that for some reason is checked into the repository. Could we somehow remove these data files and possibly also review if some of the branches are outdated and can be removed.

Minutes:
Gena will create new my openMI open source version control repository on source forge and move the HEC files to this repository

6.5 OpenMI workshop at the BAW

There will be an OpenMI workshop at the BAW in Hamburg on the 31. October 2008. The aim of the workshop is to encourage modellers and developers in Germany to join the OpenMI community. The BAW is interested in finding partners with a strong interest in 2D or 3D models.

We sent the potential attendants a questionnaire. The feedback to the questionnaire displayed a technical interest and can be discussed with the developers as well as with the dissemination committee. The most demanded question was how to make an existing model OpenMI compliant. Thus, we and the participants would appreciate OpenMI developers as presenters.

Minutes:
The following PDF contains the feedback concerning the questionnaire and a draft of the agenda: Workshop Proposals

Roger Moore, Jan Gregersen and somebody from Deltares will attend the workshop on behalf of the OpenMI Association. They and Peter Schade will try to agree on an agenda until 19. September 2008.

Peter Schade

6.6 Review of submitted InfoWorks OpenMI 1.4 xml files

Adrian has on behalf of Wallingford Software submitted xml files for InfoWorks according the the OpenMI 1.4 standard. Formally, the OATC should review these files and make recommendations to the OAEC for accepting or rejecting the components as officially OpenMI compliant. The files are attached to this agenda: InfoWorksXMLZipFile

Minutes:
OATC decided to recommend that the submitted xml's are accepted

7. Tasks and unresolved issues

All tasks are handled by sourceForge. GOTO: OpenMI Tasks on source forge

*8. Any other business

Plan from now until next meeting

Minutes:
* Insert the following into the trunk
** Spatial things (see page..). (to be finished) (finished before Wednesday next week)
** Manual merge the Gregersen3 branch into the trunk. (Jan and Stef via Skype, next week). It involves the standard and backbone.
** Add the IDictionary type for Arguments (used for IDecoratedOutputexchageItem)
** Implement SDK and GUI.