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Project acronym:	**NATURNET-REDIME**
Project title:	**New Education and Decision Support Model for Active Behaviour in Sustainable Development Based on Innovative Web Services and Qualitative Reasoning**
Instrument:	**SPECIFIC TARGETED RESEARCH PROJECT**
Thematic Priority:	**SUSTDEV-2004-3.VIII.2.e**

D3.3 QR sub portal first release[1]

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Organisation name of lead contractor for this deliverable:
UvA

Revision: Final Draft

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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission	
RE	Restricted to a group specified by the consortium (including the Commission	
CO	Confidential, only for members of the consortium (including the Commission Services)	

[1] Authors: Jochem Liem, Bert Bredeweg & Anders Bouwer

Abstract

The qualitative reasoning and modelling (QRM) portal is part of the NaturNet-Redime project. It has been developed to support internal project needs, such as supporting modelling by making documentation and software available, archiving and commenting on work in progress, making the QRM workbench Garp3 available and assisting users via the QRM mailing list. The QRM Portal also aims to support the QRM users outside the NaturNet-Redime project in the same way, and aims to increase the size of the community by providing tools, methods and communication facilities to support developing, strengthening and further improving education and training on topics dealing with systems and their behaviours. The webpage can be visted on: http://hcs.science.uva.nl/QRM/

Document history

Version	Status	Date	Author
0.9	Draft	05-04-2006	Liem, J. Bredeweg, B. Bouwer, B.

Contents

1 Introduction

The qualitative reasoning and modelling (QRM) portal has been developed to present the qualitative reasoning (QR) based aspects of the NaturNet-Redime project. Its main goals are to fulfil both the internal and external needs of the project.

The home page of the QRM portal (see Figure 1) describes the Qualitative Reasoning and Modelling (QRM) field, and the main goal of the QRM portal. *This goal is to provide tools, methods and communication facilities to support developing, strengthening and further improving education and training on topics dealing with systems and their behaviours.* The most important tool the QRM portal provides is the qualitative reasoning and modelling workbench Garp3, which supports users in articulating and simulating their conceptual knowledge of system behaviour. Therefore the home page directly links to the software page. The portal is also used to organise and update project documents related to QRM.

On the bottom of the QRM home page are the latest updates which have been made to the portal. A link is also provided to the changelog, which lists the updates which have been made to the QRM portal since it went live in October 2005 (see Figure 2).

Effort has been made to make the QRM portal compliant to web standards. Therefore, semantic markup has been used to describe its content. Every page uses valid XHTML (Extensible Hypertext Markup Language) 1.0 Strict and valid CSS (Cascading Style Sheets).

The webpage can be visited on: http://hcs.science.uva.nl/QRM/

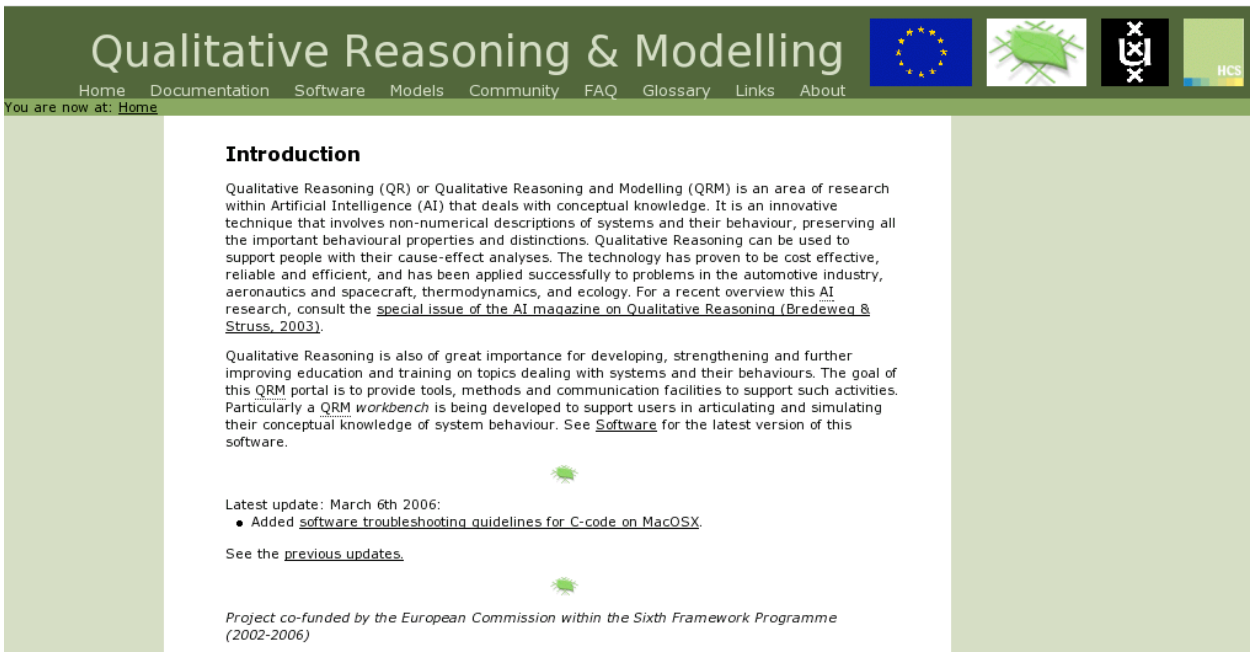

Figure 1: The home page of the Qualitative Reasoning & Modelling Portal

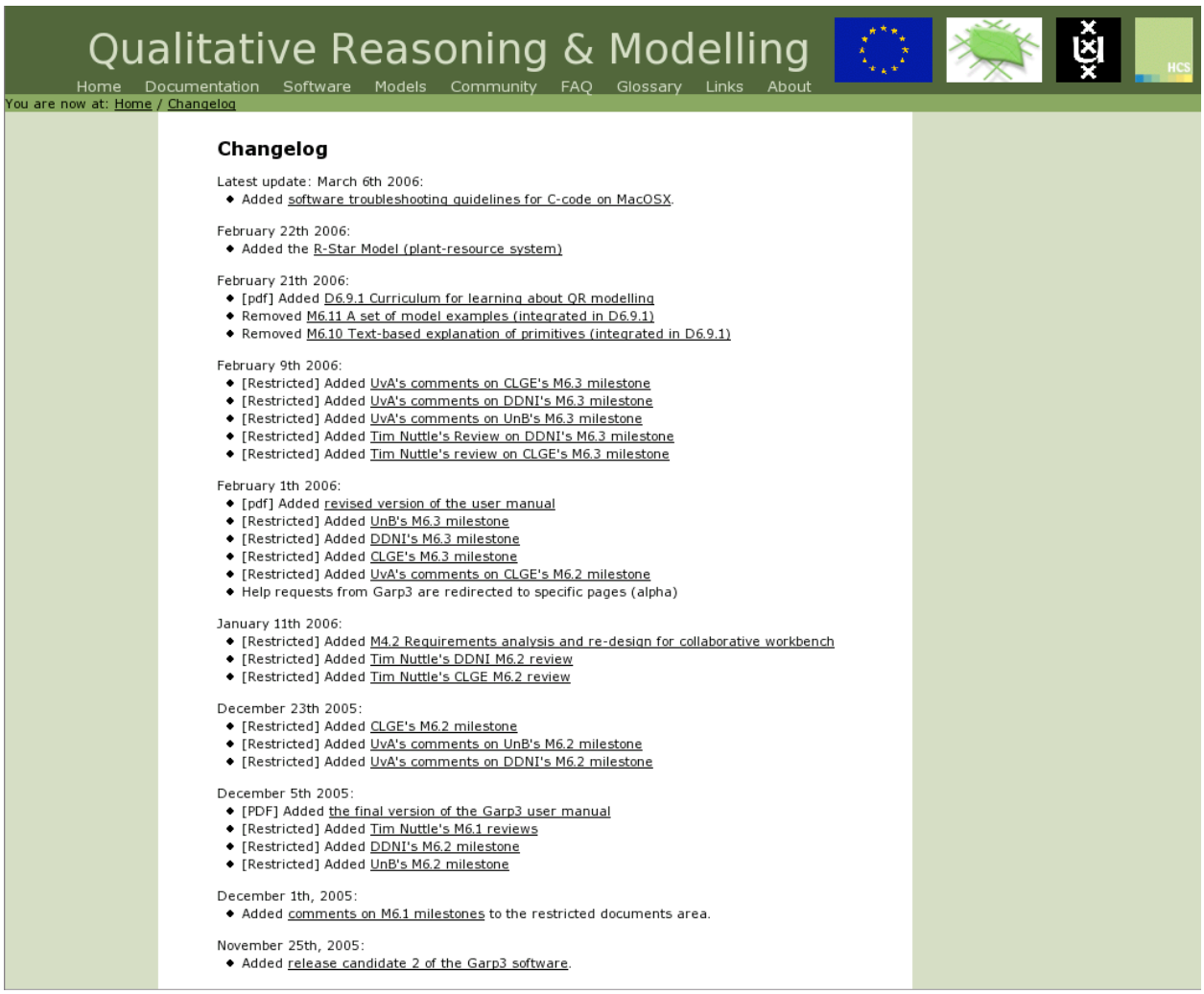

Figure 2: The changelog listing the updates of the QRM Portal since its inception in October 2005

2 Documentation

The documentation part of the QRM portal is divided into two sections. The documents section and the restricted documents section. The former is used to inform the community and the NaturNet-Redime partners about how QRM technology can be used and how their work is supported (see Figure 3). This section provides:

1. A curriculum for learning about QR modelling, which explains some QR theory, provides an overview of the Garp3 QRM workbench, describes QR model examples, shows the application of QR in ecology, discusses the QRM vocabulary and has some assignments.
2. A framework for conceptual QR description of case studies, which provides a methodology that structures and supports the capture of conceptual knowledge using a qualitative approach. The framework defines a protocol for describing content (knowledge and expertise) that supports the development conceptual understanding of systems and how they behave. In addition to structuring the work involved in building models, the framework also facilitates easier comparison and evaluation of the results of modelling efforts.
3. The Garp3 User Manual, which describes how the software supports the operations necessary to build, simulate, and inspect qualitative models. The explanations are divided in three categories. The first concerns file operations,

such as opening models, saving models, and starting a new model. The second consists of model building operations to define building blocks (e.g., entities, quantities and quantity spaces) and use these to create model fragments and scenarios. Finally, the third category contains the simulation tasks, such as running a simulation and inspecting the resulting state graph using a variety of visualisations. The manual provides task-oriented instructions for each available operation in Garp3, accompanied by clarifying examples throughout the text.

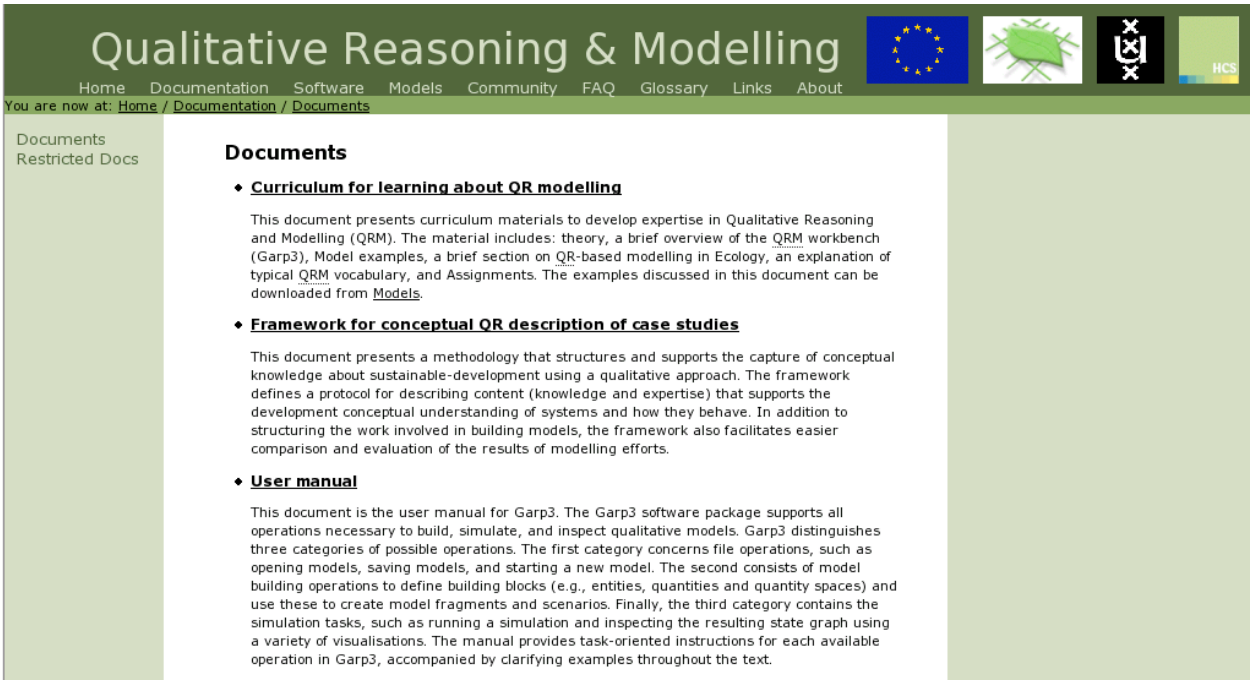

Figure 3: The documents section of the QRM Portal

The restricted documents page archives work in progress and is particularly meant for the NaturNet-Redime partners. Therefore it is password protected. The restricted section is shown in Figure 4. It contains the requirement analysis and re-design for collaborative workbench, which describes the work which will be done on the Garp3 QRM workbench to support collaborative modelling. It also lists the milestones for each of the Redime case studies (Riacho Fundo, River Mesta, Danube Delta), which use the framework for conceptual QR description of case studies to create a textual description about their case subject. As these textual descriptions are essential for the success of developing a model about these case studies, both the UvA and Tim Nuttle (University of Jena) provided comments on the milestones, which are also available on the restricted documents page. Once the textual descriptions of the case studies are finalised they will be available in the documents section.

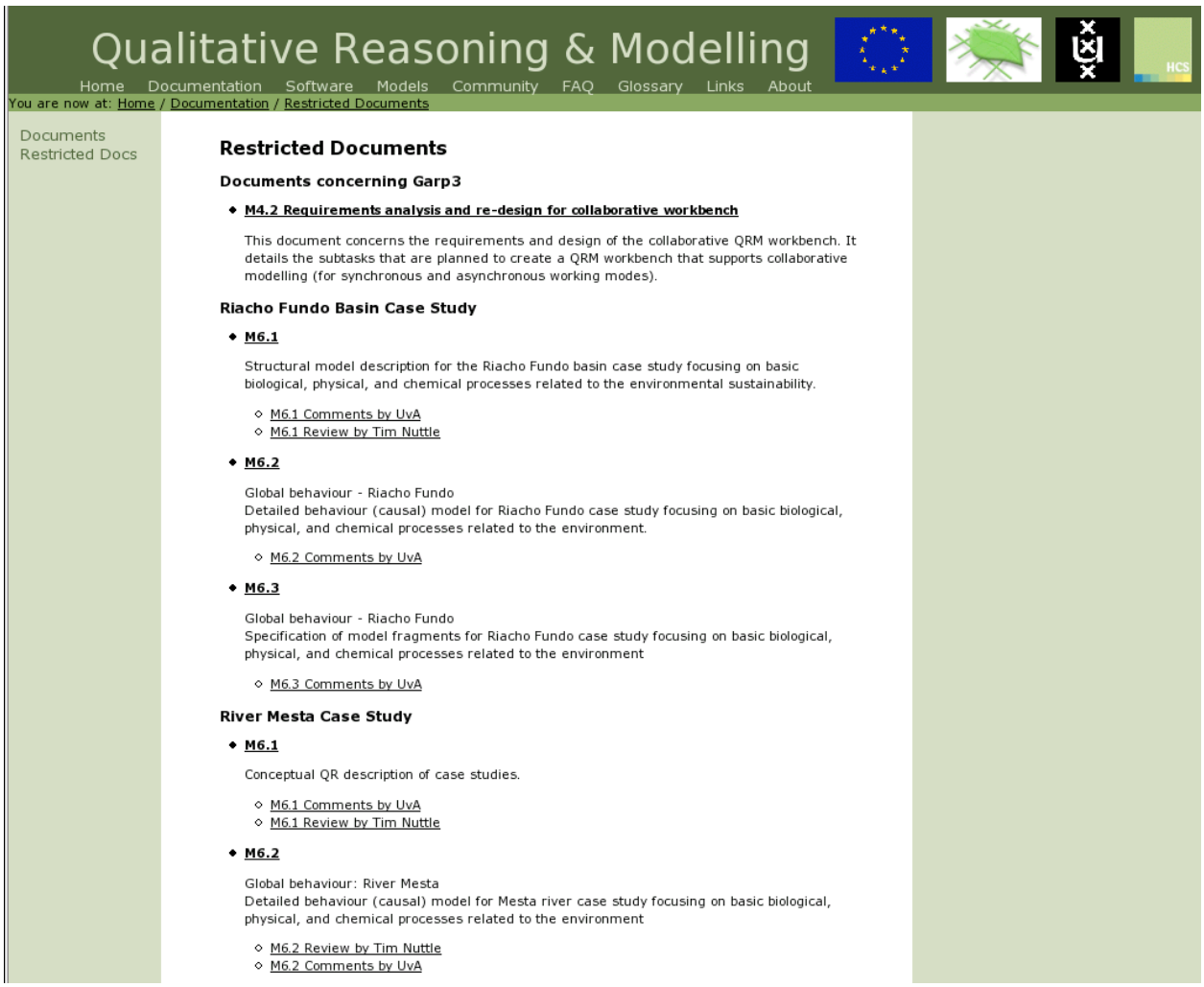

Figure 4: The restricted documents section

3 Software (Garp3)

The software section (shown in Figure 5) provides the latest version of the Garp3 QRM workbench. It also describes guidelines to installing the software on different platforms (Windows, Unix/Linux, MacOS). If a user encounters problems he is referred to the FAQ and the QRM mailing list.

4 Models

The models section provides the community with examples of qualitative reasoning models which can be analysed, adapted and simulated in the Garp3 workbench. In addition of the model file itself, a short description of the model is also added. In the future this section will be replaced by a qualitative reasoning model repository in which users can search for models, upload models and submit ratings.

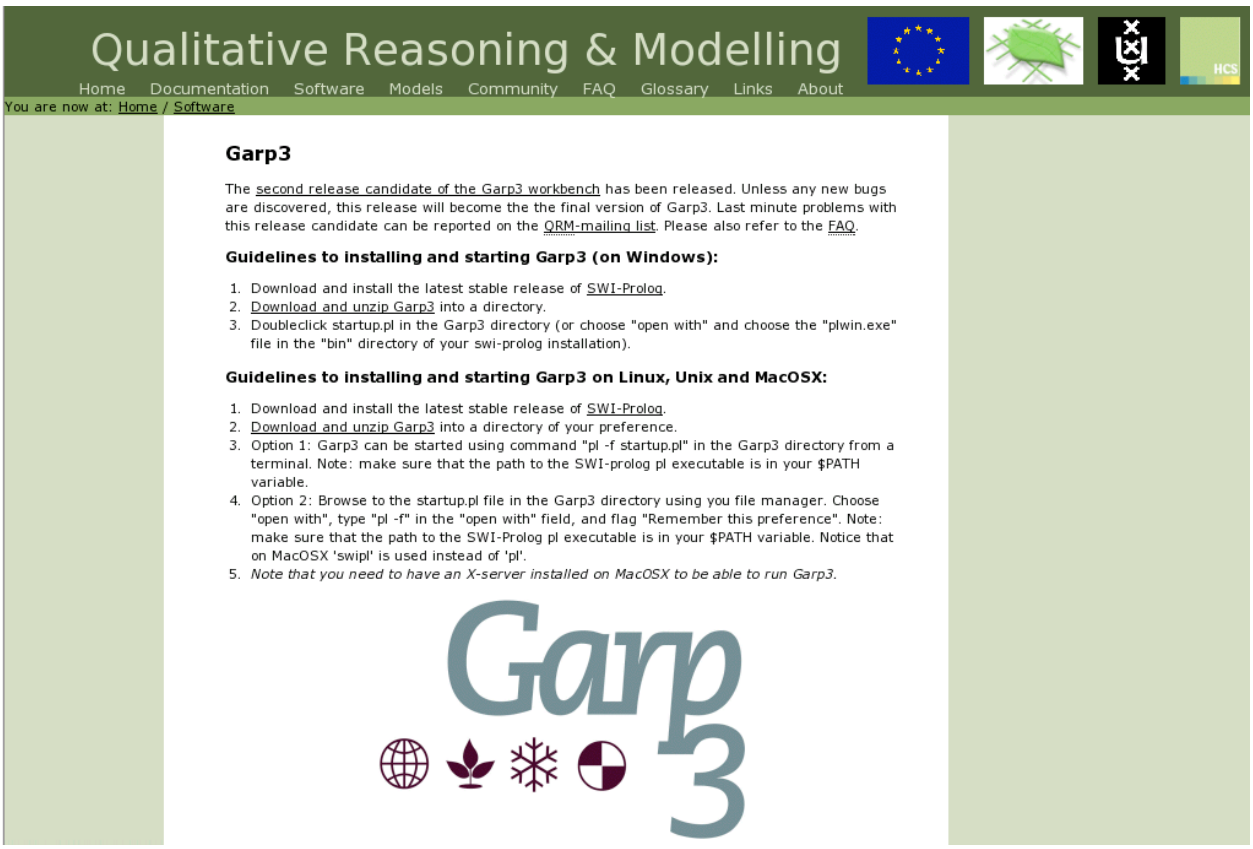

Figure 5: The software section providing the Garp3 software and installing guidelines

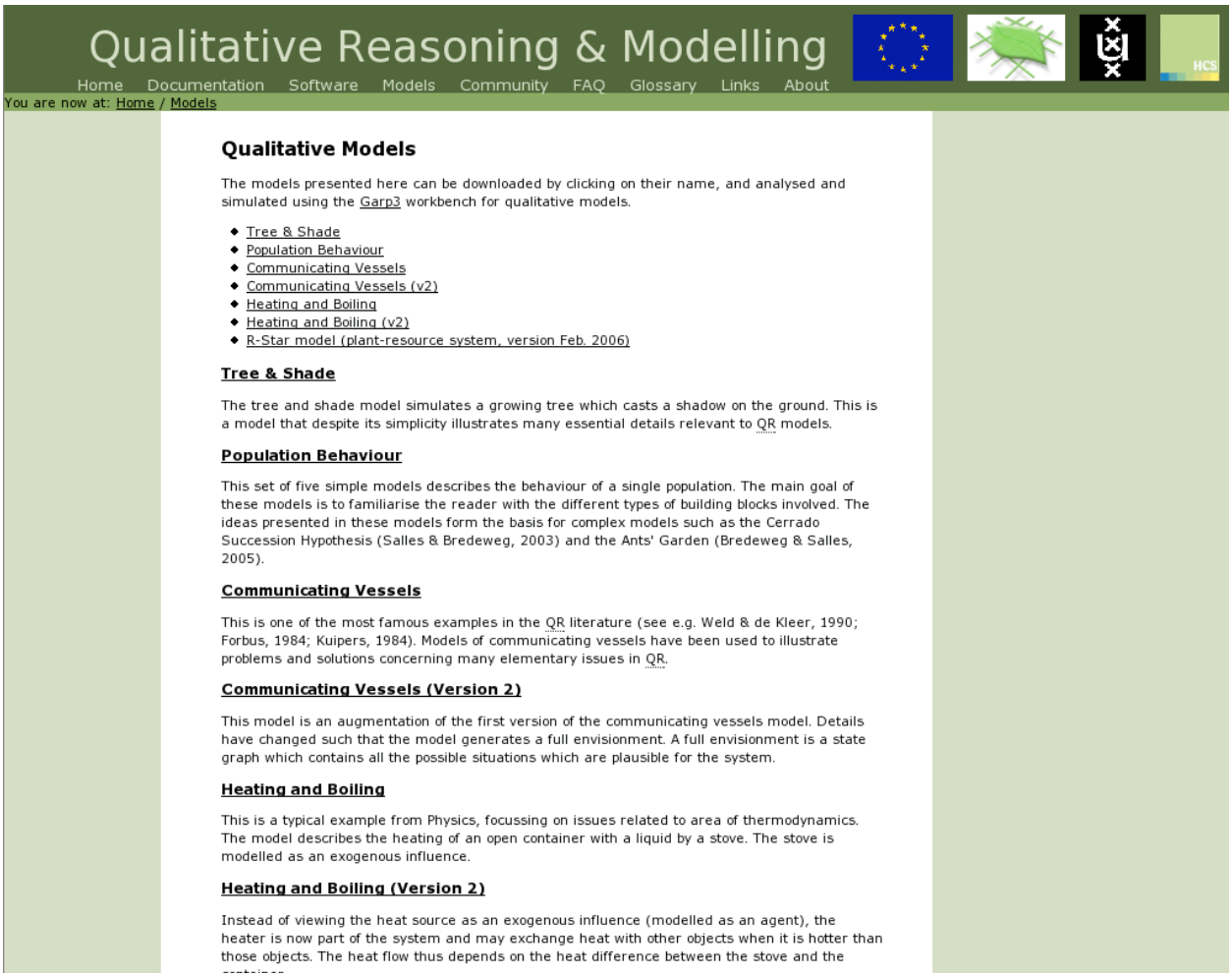

Figure 6: The Models section providing examples of qualitative models.

5 Community

The community section is divided into three sections. The first page provides access to the mailing list. The second and third page explain the use of Skype and VNC. Accessing the mailing list is not possible for every user, as the mailing list archive is password protected (see Figure 7). A user has to send a request to one of the webpage administrators to be added to the QRM mailing list. The user will be added and a password will be send to that person.

The email address of the mailing list is: qrm-list@science.uva.nl. The email sent to this list is archived on a webpage (see Figure 8). The help requests which are answered on the mailing list will be processed and turned into Frequently Asked Questions (FAQ).

The Skype page (Figure 9) and the VNC page (Figure 10) describe how the Skype and VNC programs work. These programs are used to give support (particularly to the NaturNet-Redime partners) during their modelling task. The Skype program allows free teleconference calls over the internet. The VNC program allows desktop sharing with multiple participants. The idea is that the UvA partners start a VNC server and members of the community connect to this server using a VNC client. In the meantime a conference call is started via Skype. This allows the UvA to support other partners (or members of the community) by collaboratively analysing and improving models.

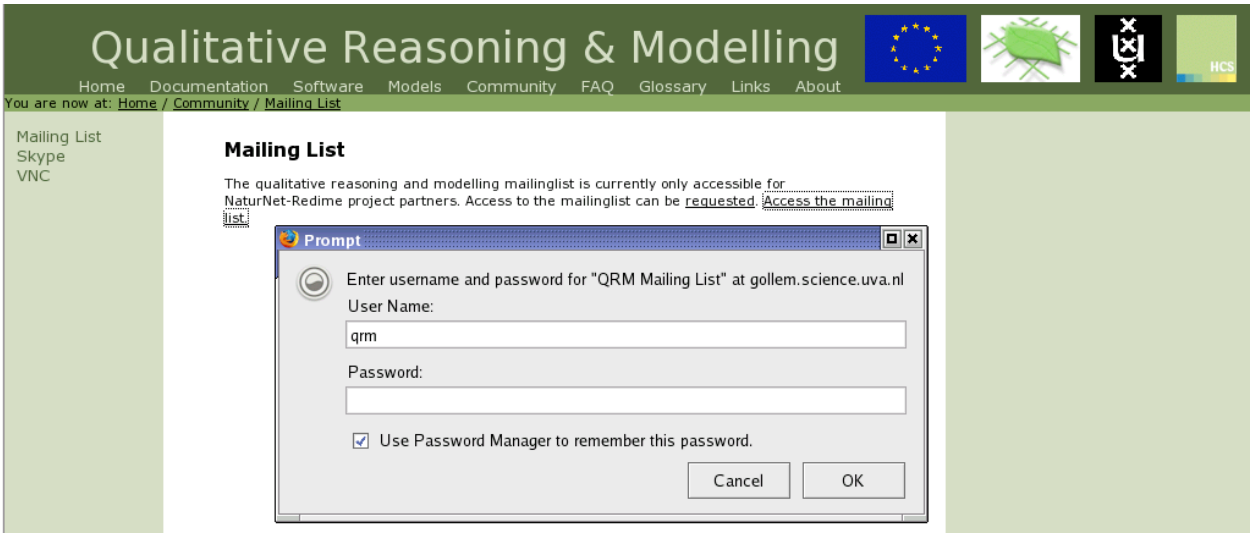

Figure 7: Accessing the mailing list archive is password protected

QRM mailing list by thread

37 messages: **Starting** Thu 04 Aug 2005 - 17:15:56 CEST, **Ending** Thu 02 Feb 2006 - 23:00:01 CET
sort by: [thread] [author] [date] [subject] [attachment]

- minimize Garp3 main page *Tim Nuttle (Thu 02 Feb 2006 - 22:55:55 CET)*
- R-star vs16 based on vs14 - answering urgent question about vs14 *Bert Bredeweg (Mon 30 Jan 2006 - 16:06:23 CET)*
- R-star vs15 augmenting vs14 - more amazing results! *Bert Bredeweg (Sat 21 Jan 2006 - 11:09:21 CET)*
- QRM: small Garp bug *Tim Nuttle (Sun 11 Dec 2005 - 01:12:31 CET)*
  - Re: QRM: small Garp bug *Bert Bredeweg (Wed 14 Dec 2005 - 15:18:33 CET)*
- QRM: general problem of opposing Influences (and R-star vs 11) *Tim Nuttle (Fri 09 Dec 2005 - 17:08:44 CET)*
  - Re:QRM: general problem of opposing Influences (and R-star vs 11) *Paulo Salles (Fri 09 Dec 2005 - 19:01:08 CET)*
  - Re: QRM: general problem of opposing Influences (and R-star vs 11) *Tim Nuttle (Fri 09 Dec 2005 - 20:09:45 CET)*
    - Re: QRM: general problem of opposing Influences (and R-star vs 11) *Bert Bredeweg (Sat 10 Dec 2005 - 23:40:49 CET)*
  - Re: QRM: general problem of opposing Influences (and R-star vs 11) *Bert Bredeweg (Sat 10 Dec 2005 - 23:13:34 CET)*
- QRM: R-star-vs10 *Tim Nuttle (Fri 02 Dec 2005 - 05:42:31 CET)*
- R-star vs10b *Tim Nuttle (Fri 02 Dec 2005 - 17:16:38 CET)*
- GARP3.03 bug *Tim Nuttle (Fri 02 Dec 2005 - 16:42:45 CET)*
  - Re: GARP3.03 cr bug *Bert Bredeweg (Fri 02 Dec 2005 - 22:31:19 CET)*
- Question about abrupt changes causing conflicts *Tim Nuttle (Fri 18 Nov 2005 - 18:33:25 CET)*
  - Re: Question about abrupt changes causing conflicts *Bert Bredeweg (Sat 19 Nov 2005 - 02:28:34 CET)*
    - Re: Question about abrupt changes causing conflicts *Tim Nuttle (Mon 21 Nov 2005 - 17:03:59 CET)*
      - Re: Question about abrupt changes causing conflicts *Bert Bredeweg (Wed 23 Nov 2005 - 00:47:35 CET)*
- QR software tools question *tullosd_at_undisclosed (Tue 15 Nov 2005 - 17:52:39 CET)*
  - Re: QR software tools question *Bert Bredeweg (Sat 19 Nov 2005 - 01:46:47 CET)*
    - Re: QR software tools question *Tim Nuttle (Mon 21 Nov 2005 - 16:54:34 CET)*
      - Re: QR software tools question *Bert Bredeweg (Wed 23 Nov 2005 - 00:42:01 CET)*
      - RES: QR software tools question *Paulo Salles (Thu 24 Nov 2005 - 10:09:18 CET)*
- r-star model: found problem with bad end state - what's solution? *Tim Nuttle (Thu 27 Oct 2005 - 05:53:11 CEST)*
  - Re: r-star model: found problem with bad end state - what's solution? *E.R. Bakker (Thu 27 Oct 2005 - 12:59:09 CEST)*
  - Re: r-star model: found problem with bad end state - what's solution? *Bert Bredeweg (Sun 20 Nov 2005 - 00:42:08 CET)*
    - Re: r-star model: found problem with bad end state - what's solution? *Tim Nuttle (Mon 28 Nov 2005 - 17:44:22 CET)*
      - Re: r-star model: found problem with bad end state - what's solution? - vs12 based on vs06 *Bert Bredeweg (Sat 10 Dec 2005 - 22:41:27 CET)*
      - Re: r-star model: found problem with bad end state - what's solution? - vs12 based on vs06 *Tim Nuttle (Mon 12 Dec 2005 - 16:40:47 CET)*
      - R-star model: vs14 based on vs06 *Bert Bredeweg (Thu 19 Jan 2006 - 00:49:43 CET)*
      - Re: R-star model: vs14 based on vs06 *Tim Nuttle (Thu 19 Jan 2006 - 18:32:03 CET)*
- [QRM-List] Qualitative Reasoning and Modelling Mailing List - Purpose & Members *Jochem Liem (Thu 20 Oct 2005 - 11:33:53 CEST)*
- [QRM-List] Password protection *Jochem Liem (Mon 29 Aug 2005 - 17:08:21 CEST)*
- Model doubts and weaknesses *Amruta Sudhalkar (Thu 18 Aug 2005 - 11:02:21 CEST)*
- Feedback on Amruta's model vs9 (fwd) *Bert Bredeweg (Sun 07 Aug 2005 - 01:36:53 CEST)*
- [QRM-List] Qualitative Reasoning & Modelling Mailing List *Jochem Liem (Thu 04 Aug 2005 - 17:12:40 CEST)*

Figure 8: The mailing list archive

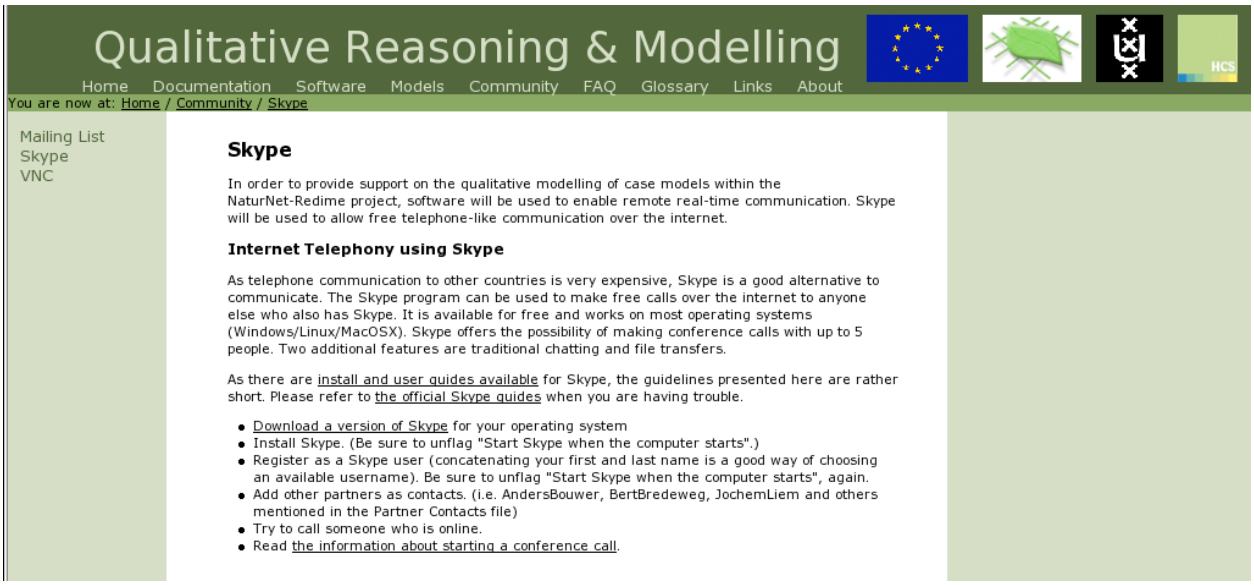

Figure 9: The Skype page

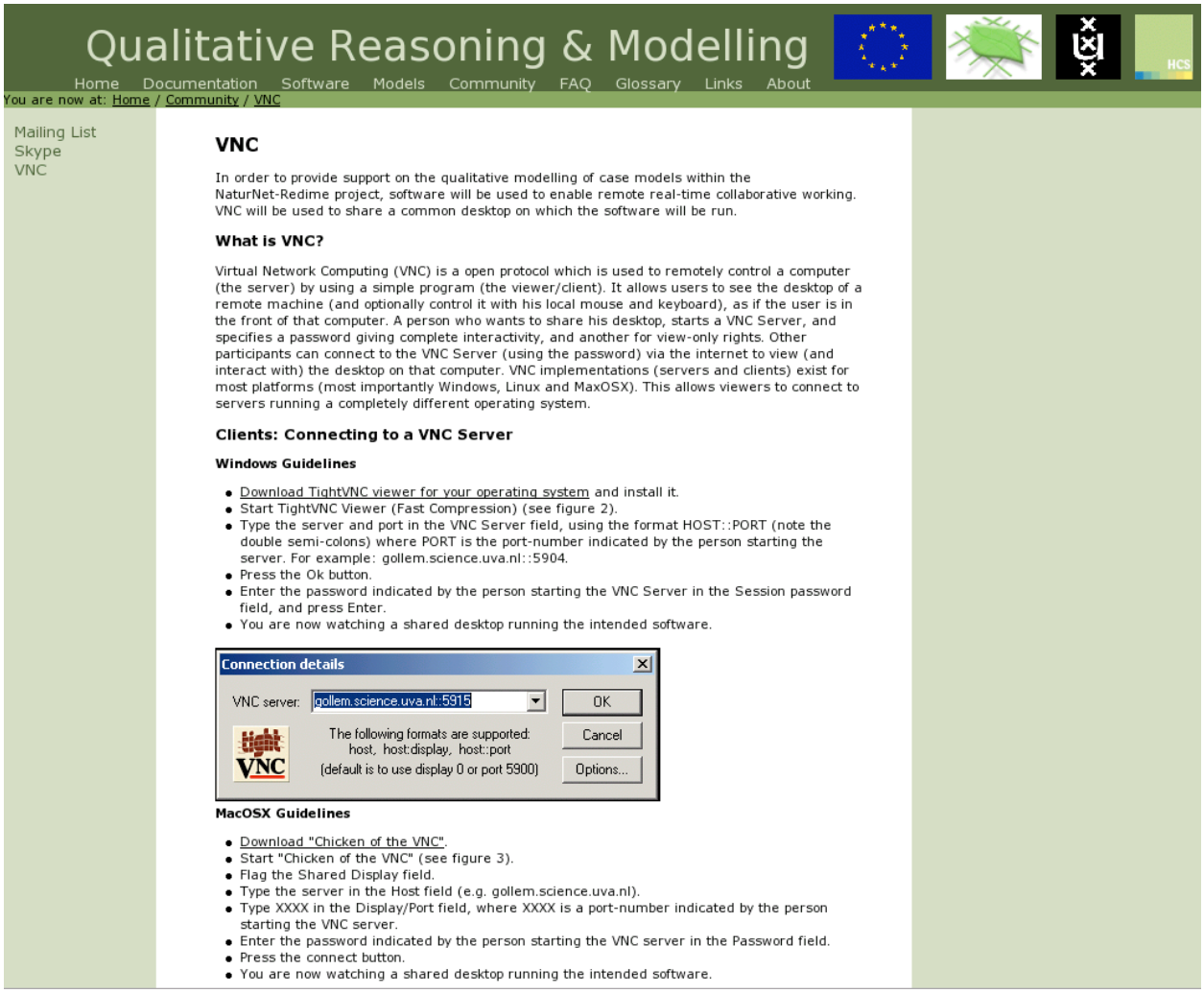

Figure 10: The VNC page

6 FAQ

As mentioned in the chapter 5 Community, the questions posed on the QRM mailing list are distilled into FAQ. This work is already in progress, and some common questions and answers are already available (as can be seen in Figure 11). On the left side of the page there are links which allow users to jump to questions about a specific subject. These subjects are:

- Software
- Causal Dependencies
- Inequalities and Values
- Model Fragments and Scenarios
- Simulation

In the future, these FAQ will provide the basis for new help functionality within the Garp3 software.

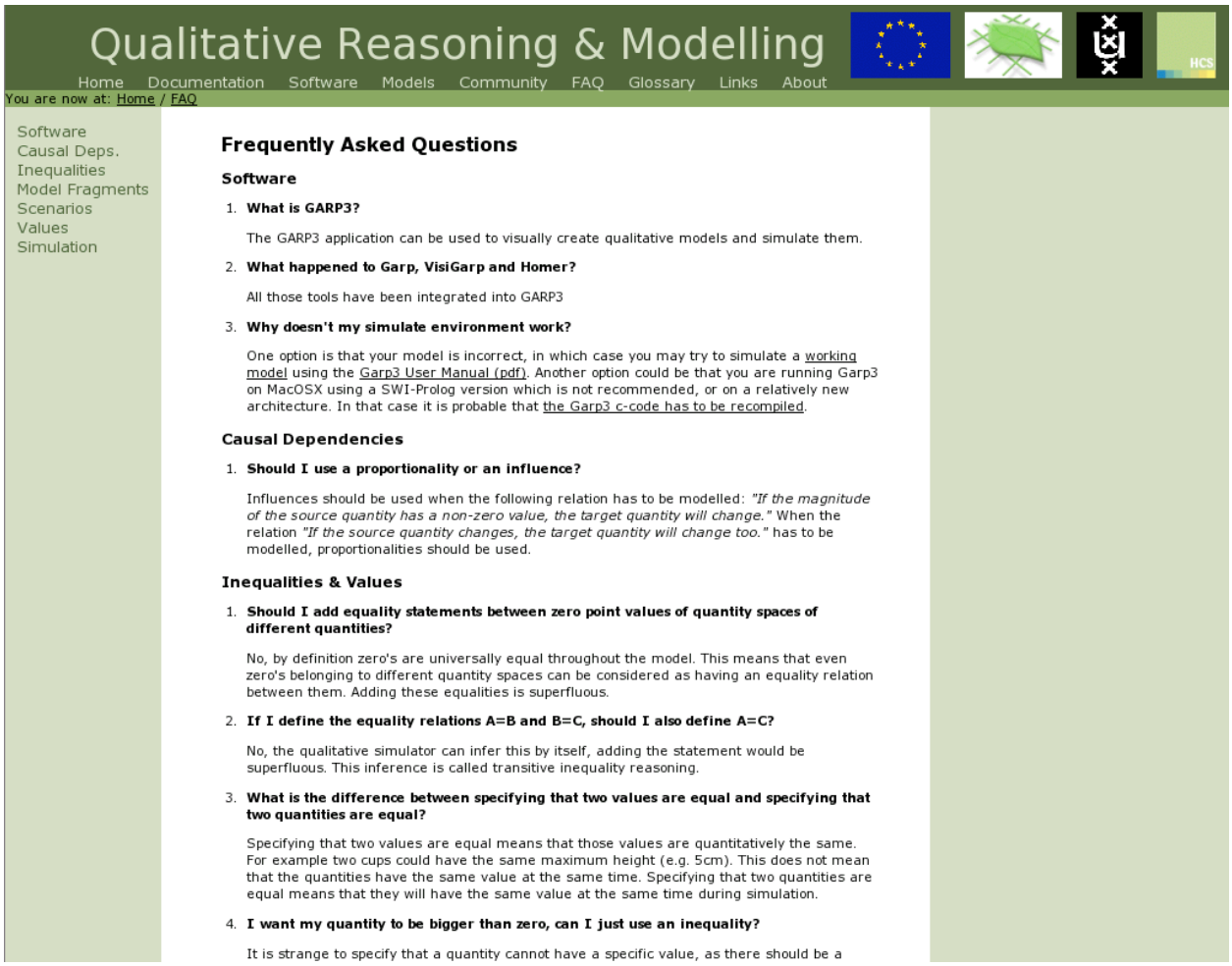

Figure 11: The frequently asked questions

7 Glossary

The glossary about explains about 70 concepts related to qualitative reasoning and modelling (Figure 12). These concepts are organised in alphabetical order. On the left side a letter can be selected to jump to the concepts beginning with that letter.

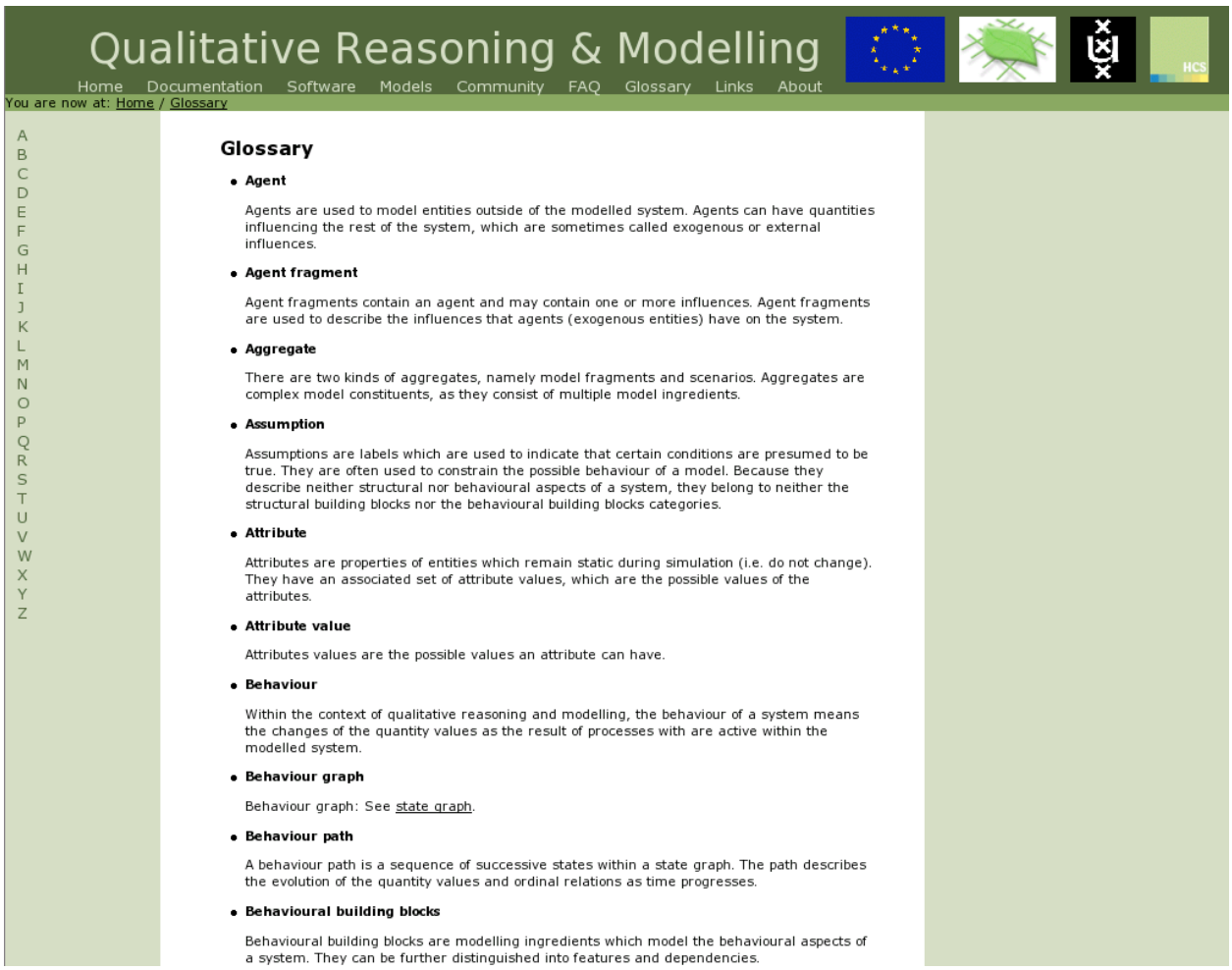

Figure 12: The glossary explaining the concepts related to qualitative reasoning and modelling

8 Links

The links page (Figure 13) provides links to other important pages related to QRM. Examples are the American Association of Artificial Intelligence (AAAI) qualitative reasoning (QR) page, the Artificial Intelligence Magazine issue dedicated to QR, and the QR2006 Workshop webpage.

9 About

The about page (Figure 14) indicates that the webpage is part of the NaturNet-Redime project, which is funded by the European Commission. It also indicates that the webpage was developed by the Human Computer Studies Laboratory group, one of the partners in the NaturNet-Redime project, which is part of the University of Amsterdam.

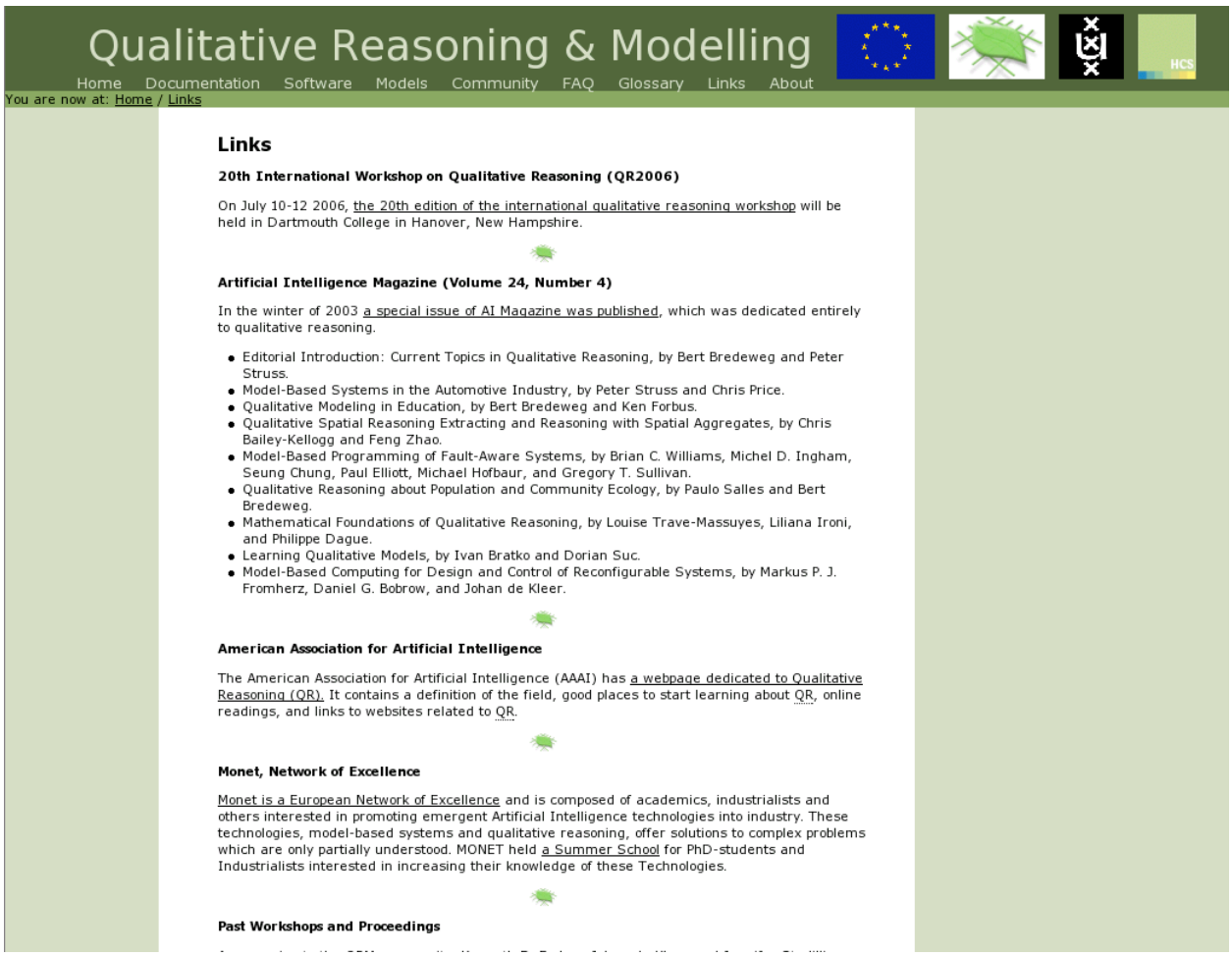

Figure 13: The links to related webpages page

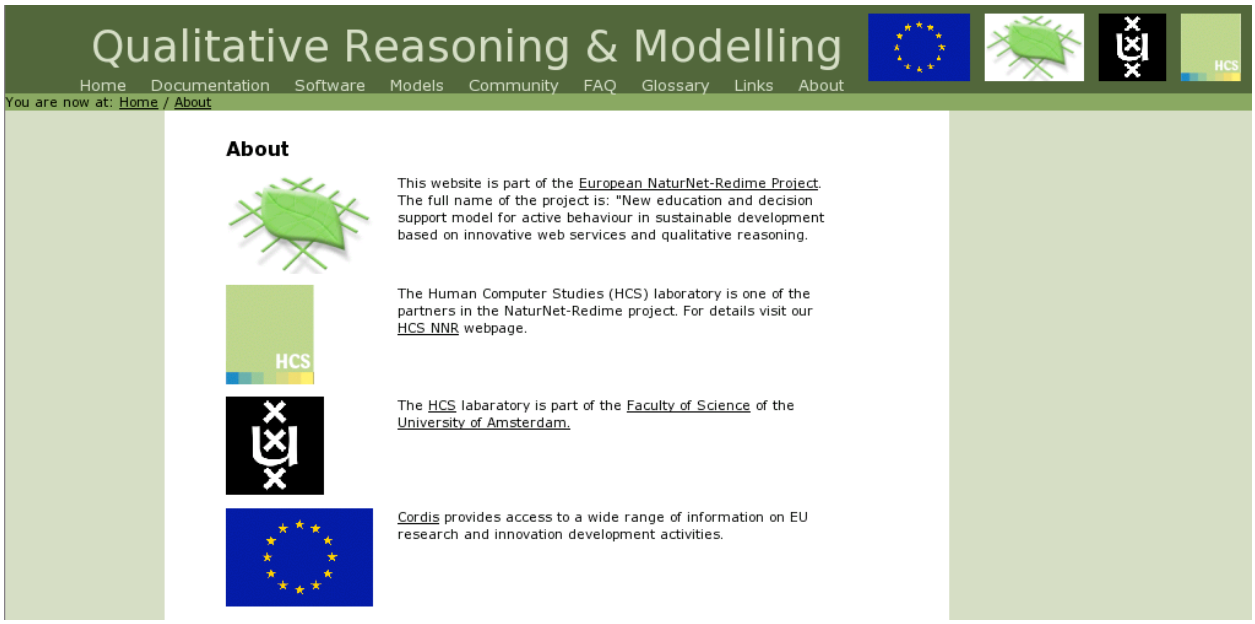

Figure 14: The about page

10 Results

The Qualitative Reasoning and Modelling Portal has seen increased usage since its inception in October 2005. According to the logs the portal gets about 80 hits per month. By actively improving the semantics of the XHTML and adding additional information such as acronyms the ranking on Google has increased significantly. In the future we will try to do some more PR and be linked from big QR related pages. As a result, the QRM Portal will hopefully increase even further in the Google rankings, which will result in more visitors.

Google rank	***Keywords***
#1	Qualitative reasoning and modelling portal
#1	Qualitative reasoning and modelling
#1	Qualitative reasoning portal
#12	Qualitative reasoning (weirdly nested within QR2005 page)
#23	Qualitative modelling

Table 1: The ranking of QRM Portal on Google depending on a set of keywords.

11 Conclusion

The QRM Portal went online successfully in October of 2005. The content has been continually updated, and the pages themselves have been made increasingly semantic. This has resulted in high Google rankings and high visitor counts. The portal has proven inconvenient in supporting the NaturNet-Redime partners by organising the deliverables, milestones, and the comments on them, answering questions on the QRM mailing list, and archiving the questions and answers on the QRM mailing list. In the future, the models page will be replaced by a qualitative model repository. Furthermore, we will add new public QRM-related deliverables to the Portal, continue answering questions on the QRM mailing list, archive common questions in the FAQ and add concepts to the glossary.