

# GearBi: Towards an online arbitration environment based on the design principles simplicity, awareness, orientation, and timeliness

GERARD A.W. VREESWIJK<sup>1</sup> and ARNO R. LODDER<sup>2</sup>

<sup>1</sup>*Institute of Information and Computing Sciences (ICS), Utrecht University, Utrecht, The Netherlands*

<sup>2</sup>*Centre of Electronic Dispute Resolution (CEDIRE), Computer/Law Institute, Vrije Universiteit, Amsterdam, The Netherlands*

*E-mail: lodder@rechten.vu.nl*

**Abstract.** Arbitration is a preferred method for the resolution of international business disputes. As of yet, most publications on online arbitration deal with legal issues. In this paper, we present an Online arbitration environment that we believe facilitates the participants in a meaningful way. Our assumption is that an ODR service should be easy to use (convenient), and at the same time provide meaningful support. More specifically we have paid attention to four criteria that we believe are important, viz. simplicity, awareness, orientation and timeliness. The online arbitration service is called GearBi.

**Key words:** online arbitration, dispute resolution, usability engineering, systems design

## 1. Introduction

Arbitration is a preferred method for the resolution of international business disputes for various reasons. Arbitration is faster than litigation, and whereas judges are appointed and might lack expertise regarding the conflict matter, arbiters can be selected by the parties. Other advantaged are the confidentiality of the process, the freedom of the parties to choose particular substantial and procedural rules, and, contrary to mediation, that decisions can be imposed upon the parties. Finally, in particular American companies choose for arbitration since instead of for most judicial verdicts, arbitral awards can be executed in over 100 countries (cf. The New York Convention). Online arbitration adds the convenience of the Internet to the dispute resolution process.

Most publications on online arbitration deal with legal issues, such as the requirement of arbitral clauses to be in writing, evidential issues regarding

both online identification and the exchange of information in electronic format, security issues, and the admissibility of electronic awards. Most authors (e.g., Hill 1999; Yu and Nasir 2003; Wahab 2004) agree that neither law nor arbitral principles prevent arbitration from taking place online.

Technical issues related to online arbitration are touched upon in several publications, but there have not appeared much to date solely focussing on the use of technology. For that reason the 2004 Special Supplement 'Using Technology to Resolve Business Disputes' of the *ICC International Court of Arbitration Bulletin* was very welcome, but most contributions did not discuss implementations.

It has been claimed that many existing ODR applications were originally developed for other collaborative or document management purposes, and have been massaged to double as ODR applications (Grover 2002). In this paper we take up the challenge to present an Online arbitration environment that we believe facilitates the participants in a meaningful way. This is not an easy task though. We limit ourselves in that we will not present a finished system, but merely propose directions we believe are fruitful. Although we have a background in formal and legal argumentation (Vreeswijk 1993; Lodder 1999), at this stage we will not focus on ways to structure the information exchange (Lodder and Huygen 2001; Vreeswijk 2003). The aim of this paper is more basic. Our assumption is that an ODR service should be easy to use (convenient), and at the same time provide meaningful support. More specifically we have paid attention to four criteria that we believe are important, viz. simplicity, awareness, orientation and timeliness. We called the online arbitration service GearBi.<sup>1</sup>

The paper is structured as follows. First, a number of existing online arbitration systems is reviewed and evaluated with respect to usability, timeliness, and case representation. Then, based on these observations a set of crucial guidelines is formulated from which we set out our design philosophy of GearBi and describe its architecture. We conclude with a walk through GearBi's online environment and compare it with the design of large-scale platforms.

## **2. Online arbitration**

In our opinion online arbitration, or in general ODR, does not receive the attention it deserves. Exemplary in this respect is an by itself interesting article from Schäfer (2003) about videoconferencing in arbitration. Although several arbitration sites facilitate videoconferencing, the author does not mention a single ODR provider.

Parties choose to arbitrate for the already mentioned confidentiality of the procedure, as opposed to litigation that is by definition public. This is also

one reason why ODR sites normally do not publish their outcomes, e.g., the awards in arbitration. The parties do not want this, for even in an anonymous form it is often not so hard to find out which parties actually were involved. An exception to this general policy, are the decisions ruled according to the Uniform Dispute Resolution Policy (UDRP). ODR providers ruling under the UDRP, such as the WIPO Arbitration Centre, offer information about cases, including the full text of the decisions by the panel(ist). Besides the WIPO arbitration, we will briefly assess two other providers of online arbitration:

- MARS,
- WIPO arbitration, and
- Onlineresolution.<sup>2</sup>

These three providers can be considered a representative selection. We restrict our discussion to the way cases are registered online. Partly because the majority of online arbitration sites do not offer more information, or, if they do, it is not easy to get access to that part of the site. Moreover, although we aim to present a full online arbitration platform, it appears that various lessons can be drawn from assessing the case filing features of the selected providers.

## 2.1. MARS

The registration form of Mediation Arbitration Resolution Services (MARS) has several fields for personal information, e.g., name, address, e-mail. Although what information to enter is normally self-evident, the field company name might cause some confusion. For instance, in case the claimant is a buyer, he might think he has to fill in the name of the company where he purchased the goods the conflict is about.

MARS offers an identical registration form to both the claimant and the respondent. The personal information is divided into two series of similar entries, where the second is preceded by the following announcement:

“If you are the claimant, please provide the following information about the respondent so that we can contact them” (Figure 1).

For reasons of clarity it would have been better if the forms were different depending on the role of the party.

The information about the dispute itself has to be entered into a single field, and the claimant and respondent get little guidance. This one field is preceded by instructions for the claimant first:

Figure 1. MARS

“Please state the type of claim, a short summary of the reasons for the claim and monetary damages sought.”

This instruction for the claimant is followed by a similar instruction for the respondent:

“Please state your response to the claim, a short summary of the reasons you agree or disagree with the claim and what you are willing to do in order to resolve the dispute.”

Again, a single instruction depending on the parties role should be preferred. Also, with just one field for all case relevant information, the opportunity online forms offer to structure information is neglected.

## 2.2. WIPO ARBITRATION CENTRE

The WIPO registration form is totally different. The parties are really overloaded by information. For every single field instructions are provided. For example, the fields telephone, fax, and e-mail are accompanied by the instructions “Specify telephone number”, “Specify fax number”, and “Specify e-mail address”.

Another not so strong point is that some information has to be entered more than once, which introduces unnecessary dependencies among data. The disputed domain names have to be entered at the beginning of the form, and under point (8). The e-mail address has to be entered even three times: at the general contact information (3), the preferred method of communication for electronic-only material (5), and for receiving electronic confirmation of the submission (21).

What the form really does well with over 20 fields to fill in, is the structuring of the information. The three issues central to the dispute are entered in separate fields. Namely, for a claim to be successful under the UDRP, three cumulative conditions have to be met:

- confusing similarity with a trade mark,
- no legitimate interests,
- and bad faith registration.

For reasons of insightfulness, all additional information could better be presented as a link instead of including it directly in the form. The information can help in formulating for example each of the issues, but it should be left to the individual user whether or not to consult this information. As it is done now gives a messy impression and makes the form unnecessary long (Figure 2).

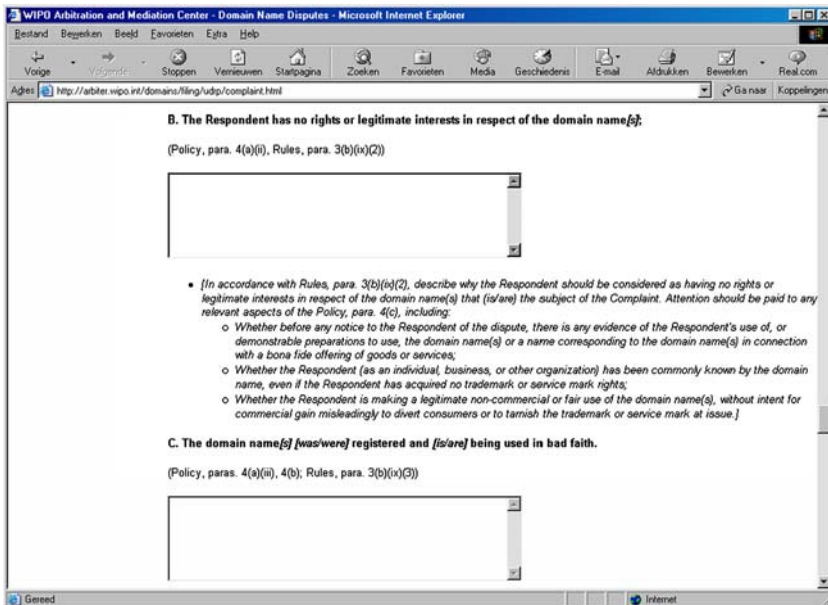


Figure 2. WIPO

### 2.3. ONLINERESOLUTION.COM

Onlineresolution also uses exact the same intake form for either the respondent or the claimant. A difference with MARS is that the instructions are not divided into those for the claimant and the respondent, but they are of a general nature. We were not able to find out, but it might be that after entering the Dispute Reference ID on top of the screen, some information already known by the Onlineresolution is added automatically. For instance, address information of the claimant in case the respondent fills in the form. Although this would not change the form, as a result the respondent is facilitated because he does not have to fill in the address information of the claimant and maybe not even all of its own address information (since the claimant already did).

Apparently not all fields of the form have to be entered, because by some it is indicated that they are required (indicated by a red R). This is a nice feature of the form, for it allows fast submission, namely by leaving some fields blank. On the form it is also indicated which field is shared with the other party (“The dispute is regarding ...”). For reasons of transparency this is interesting information. Although not marked as such, we assume contact information is also shared.

The value the dispute is about is a roll-down menu, the party can select one of five options between less than 500 dollar and more than 50.000 dollar. For the date the dispute started also a roll-down menu is used, in fact separate menus for the day, month and year. These forced entries facilitates the input for the parties, and helps the provider in streamlining the input. However, one has to be careful if fixed variables are used. For example, because the year the dispute started ranges from 1998 to 2001, it is clear the site has not been used for long.

The text accompanying the fields is very loose. Sometimes the instruction is accurate (“What do you and the other party disagree about?”), but for some fields this does not work well:

“Please identify which method you wish to pursue (mediation, arbitration, or evaluation), and specify what you want to get from your dispute resolution efforts?”

This question contains too much choices to be decided upon, and reveals a particularity, namely that the form is of a generic nature. The parties can indicate what type of dispute resolution mechanism they prefer (mediation, arbitration, etc.). Although basic case information normally will not vary much depending on the procedure, some information does: voluntary participation is typical for mediation, applicable law for arbitration. This clearly should be taken into account in an intake form (Figure 3).

**New Dispute Entry - Microsoft Internet Explorer**

Bestand Beelden Beeld Favorieten Extra Help

Voorge Voorge Sluiten Verwijzen Startpagina Zoeken Favorieten Media Geschiedenis E-mail Afdrukken Bismaten Real.com

Adres: <http://www.onlineresolution.com/newdisp.cfm>

**Please fill out the other party's basic information:**

First Name: (P)

Last Name: (P)

Phone:

Email: (P)

Business Name (if applicable):

Username (if applicable):

Are there other parties involved in this dispute?  
If so, list email addresses of other parties (one per line):

**Please fill out these dispute details:**

What date did this dispute begin?  
January | 1 | 1998

What is the approximate monetary value of the items under dispute?  
Less than \$500

This dispute is regarding...

this field only will be shared with the other party

What do you and the other party disagree about?

Genereed Internet

Figure 3. Onlineresolution.com

## 2.4. SOME LESSONS LEARNED

After studying the forms above, we are able to define some guidelines for the design of GearBi.

- A different form should be used for each party.
- Information should be structured in obvious fields with not too much information accompanying each field.
- The instructions should be short. More elaborate instructions should be provided via linking.
- Parties should be kept informed as much as possible about the stages and status of the arbitration, and about the time constraints that hold at any particular moment.
- Information that is already known by the provider should be included; information should not be asked twice; information should not be represented twice. (Cf. WIPO.)<sup>3</sup>
- It is to the benefit of the arbitration process if a distinction is made between different sorts of replies. For example, submitting a new claim entirely differs from submitting a simple comment on a previous claim.

Although there are more points to mention, we take these to be the most important guidelines for the design of GearBi.

### 3. Our design philosophy

Elaborating upon the lessons learned in Section 2, the design of GearBi is based on four design principles, namely:

- simplicity,
- awareness,
- orientation, and
- timeliness.

The principles simplicity, awareness, orientation and timeliness originate mainly from interaction design and usability engineering, be it that they are often discussed in different contexts and in isolation (Gutwin and Greenberg 1998; Chi et al. 2000; Preece et al. 2002). We will now explain these four principles and explain how they apply to GearBi.

First, simplicity seems to be the most obvious factor. This may sound as an open door. However, in the development of GearBi we learnt that simplicity is hard to manage. The reason why we make an issue of simplicity nevertheless is that usability engineering research points out time and again that complex systems, and in particular systems with a high cognitive workload, simply will not be used (Preece et al. 2002). In this context, it is difficult to present arguments that go against simplicity, and find arguments for a more complete and complex arbitration environment. One argument against simplicity could be that arbitration environments are typically used by specialized employees with knowledge of the domain and with knowledge of the relevant rules of conduct in arbitration. For this reason, arbitration environments could allow for more complexity than environments where laypersons are involved, for example in business-to-consumer oriented environments. Still, our policy is to keep the environment as simple as possible in order to keep the arbitration process central. Therefore, throughout the project we considered simplicity as a key factor.

Awareness is an important second requirement of arbitration systems. With awareness we mean that users should know of each other's whereabouts in order to enhance their online visibility. For example, it would be highly convenient for users to know from each other when they lastly visited the arbitration site. Other means to make users more aware of each others whereabouts are the registration of each user's last action, and tying personal notifications to important events within the process. Carroll et al. (2003), for example, argue that people working collaboratively must establish and maintain awareness of one another's intentions, actions and results. Notification systems are typical instruments to increase such awareness factors, but also other tools may be used to support awareness of more complex activities. Carroll et al. (2003) have stressed the importance of activity context factors like planning and coordination and their work suggests design



strategies for notification systems to better support collaborative activity. We feel that awareness is an important issue, not in the least because research has pointed out that systems with a high awareness factor make users feel more involved in the whole process (Blanchard 1993; Endsley 1995; Gutwin et al. 1998).

A third important requirement of an arbitration environment can be summarized under the header “orientation”. Orientation roughly means that, at each point in the environment, users must know where they came from, where they are, and what their possible next step might be. Factors that contribute to orientation are for example the automatic generation and maintenance of to-do lists, time-stamped user input, and personalized “what next?” pages. The use of a uniform graphical user interface also highly contributes to orientation.

Finally, with timeliness we mean that parties should know that arbitration is a process that takes place in time and that user input is to be expected within certain time intervals. This is not to say that these time intervals cannot be taken liberally, but the general principle of timeliness still applies. Dufner et al. (1999) but also Nakano (2001) argue that web sites must reflect that their contents is an up-to-the-minute reflection of the current topical interests. If this is not the case, then outdated content and the absence of time-indicators decrease the trust of users in the overall accuracy of the site, and deprives them of the incentive to actually live up with its pace. Factors that enhance timeliness are (again) time-stamped user input, visible milestones, visible deadlines, and (again) tying personal notifications to important events within the process.

#### **4. Representation and presentation of cases**

The architecture of GearBi will be described in two stages. First, we will briefly describe how GearBi represents cases internally. We will then describe how GearBi presents cases to its end users. We present a general arbitration site, but at some points we make a specific reference to the ICC International Court of Arbitration and their procedural rules. The reason we do this is that the International Court of Arbitration boasts a long tradition and is one of the main players regarding international business disputes.

##### **4.1. INTERNAL REPRESENTATION OF CASES**

The internal representation format of GearBi is based on the hypothesis that every arbitration involves elements that must be formulated by each party. For example, from all parties, except the arbitrators, we expect a description

Table I. Internal representation of case elements

	History	Solution	Nomination	Documents
Claimant	Nature and circumstances	Relief sought	Nomination	Documents
Respondent	Nature and circumstances	Remedy offered	Nomination	Documents
Arbitrator	–	Award	–	Documents

of the nature and circumstances that led to the case in question. At other times, the same aspects occur in different guises, depending on the party that forwards them. For example, a (proposed) solution is termed “relief sought,” “remedy offered,” and “award,” depending on whether it is put forward by the claimant, the respondent or the arbitrators, respectively. Since a standard arbitration involves three parties, these aspects multiply by three. This yields a grid with entries for each aspect and participant (Table I).

Some of these entries are invalid, for example because a description of the previous history is only expected from the claimant and the respondent, and not from the arbiter. The arbiter might include a historical overview (sequence of important events) in his award, but he will not enter this information in the course of the arbitration procedure and therefore does not need a separate entry for the history. Similarly, a decision is expected only from the arbiter and not from the claimant or the respondent. Still, from an architectural point of view it turns out to be convenient to work with a grid consisting of aspects and parties.

#### 4.2. USER INTERFACE

GearBi maintains its own database of cases and presents each case to its end users as a collection of tabsheets, of which the most important ones are entitled “claimant,” “respondent,” “arbitrator,” “parties,” “status,” “done,” “timeline” and “documents”. The tabsheets “claimant,” “respondent,” and “arbiter” contain the data that belong to the claimant, the respondent and the arbiter, respectively. The tabsheet of the claimant, for example, contains sections corresponding to the first row of Table I, and the same is true for the tabsheets of the respondent and the arbiter.

GearBi works with so-called *views* on tabsheets, which means that the presentation of a tabsheet depends on the party viewing that sheet. Fields of the tabsheet “claimant,” for example, can be edited only by the claimant, while other parties can only view this sheet. These kind of permissions are also briefly indicated at the top of every tabsheet (e.g., “This page is owned by the claimant and is read-only.”).

As with other tabsheets, the “documents” sheet contains sections for each party under which header the documents contributed by that party are

collected. Only after an explicit action of the owner (called “publish” in the online environment), tabsheets are made permanent and readable to other parties.

To make all parties more aware of each others’ presence, the tabsheet at which the parties are registered contains, besides names and other personal data, a time stamp of the time and date the party has last visited or browsed the case in question. This is possible because parties can only browse their case if they log in and identify themselves. After that, every retrieval of a case page is registered (but not necessarily communicated to the other parties). Furthermore, the tabsheet entitled “parties” contains, for every party, a description of the last action executed by that party. For example, if the respondent issued a comment on February 22, and browsed the site afterwards, the last action registered for the respondent is “Comment on February 22 (*X* days ago),” where *X* depends on the time interval between giving the comment and the retrieval of a particular page. In addition, all fields of all forms are supplied with a time-stamp once edited. This too is supposed to increase the awareness of the parties involved.

In order to enhance the orientation aspect of GearBi, we decided to include tabsheets named “done,” and “status”. The tabsheet entitled “done” summarizes the contributions made so far in an aspect-oriented format. The latter means that contributions are presented, not chronologically like what happens in a log book, but rather in a topic-oriented structure in the spirit of Table I. The tabsheet “status” indicates the current status of the case and the next step that the viewer or another party is supposed to take. If the next step is to be taken by the party viewing the case, this is indicated, followed by a link to the relevant page.

To enhance timeliness, all input fields are time-stamped, and may be made permanent (“frozen”) by their owners. To enhance time-awareness, GearBi offers each party the opportunity to specify deadlines. Deadlines are points in time at which certain aspects, or stages, of the arbitration process should have been completed. Thus, the claimant, the respondent and the arbiter may attach deadlines to different phases of an arbitration process. It follows from the roles of the parties involved that deadlines announced by the arbiter bear a different status than deadlines that are indicated by the other two parties. Typically, a deadline announced by the claimant or the respondent may be interpreted as a desideratum, while a deadline announced by the arbiter may be interpreted as binding. In this respect, the term “deadline” may be a bit misleading. Still, we choose to use term “deadline”, because this term is frequently used for time limits as for completion of an assignment.

GearBi allows the arbiter to explicitly indicate, or mark, deadlines as binding. It does not matter for GearBi, however, whether a deadline is binding or not. At all times, it is up to the arbiter to decide how to proceed if certain mile stones, or deadlines, pass without notice. In particular, GearBi does not

take any special measures if a deadline has expired. An example of such a measure might be to block parties from editing certain pages. However, we can imagine that arbiter(s) prefer for example the automatic blocking in case a deadline has passed. We therefore included this as an option.

Deadlines may be modified by their owners at all times. As with all input fields in GearBi, deadlines are time-stamped, and may publicly be made permanent (“frozen”) by their owners.

## 5. The online environment: a walk through

This section describes the different phases that parties pass through when using GearBi. In particular, it describes how the requirements as formulated above take shape on the web.

If a party decides to file a case, this party or his representative searches an online provider of arbitration services – GearBi in our case. The representative enters the relevant data at the front page (Figure 4). All contact information fields are mandatory because normally all providers, and GearBi in particular, need to contact other parties after the case has been filed. Supplementary data can be acquired gradually in subsequent sessions. Except filing a new case, parties who already have a case pending can get quick access through the ‘Retrieve existing case’ fields on the bottom of the screen. The access is secured and requires a case number and password to be entered. In our opinion for access purposes this low level of security suffices, and higher level security delivered by the use of for example digital signatures is not necessary (Lodder 2004). However, if parties to arbitration, in particular in case of high-value disputes, want to use their digital signatures, GearBi or online arbitration providers in general should consider to add the appropriate functionality.

After the request for arbitration is submitted the interested party assumes the role of the claimant and is forwarded to a form at which the contents of the request itself can be entered (Figure 5).

The fields roughly follow the usual pattern of arbitration. For instance, Article 4(3) of the Rules of Arbitration of the International Court of Arbitration<sup>4</sup> mentions the following information that should at least be included in case of a request for arbitration:

- (a) the name in full, description and address of each of the parties;
- (b) a description of the nature and circumstances of the dispute giving rise to the claim(s);
- (c) a statement of the relief sought, including, to the extent possible, an indication of any amount(s) claimed;
- (d) the relevant agreements and, in particular, the arbitration agreement;

http://oekel/arbitration/v0.5/ - Microsoft Internet Explorer

Address http://oekel/arbitration/v0.5/ Go

**GearBi** v0.5  
portal | help

**File new case**

Claimant  ?

Representative of claimant  ?

E-mail representative  ?

Respondent  ?

Representative of respondent  ?

E-mail representative  ?

**Retrieve existing case**

Case number

Your password

GearBi, Mon Apr 26 09:00:43 W Europe Daylight Time 2004 view this page in the rôle of claimant | respondent | arbiter

Local intranet

Figure 4. Filing a request for arbitration.

- (e) all relevant particulars concerning the number of arbitrators and their choice in accordance with the provisions of Articles 8, 9 and 10, and any nomination of an arbitrator required thereby; and
- (f) any comments as to the place of arbitration, the applicable rules of law and the language of the arbitration.

From the above required information the only field that is absent is the one in which the arbitration agreement should be entered. This aspect is taken care of in another manner, to be explained shortly. Also the relevant particulars concerning the composition of the tribunal and the language of arbitration are entered at this page (Figure 6).

The claimant can modify and extend this page at will. During this period, the claimant's page is invisible to all other parties.

Once the claimant is satisfied with his request, there is the possibility to publish it. After a request is published, GearBi sends a YAML-update to the eventual involved administrative body (e.g., the International Court of Arbitration), and an e-mail to the respondent in which the respondent is

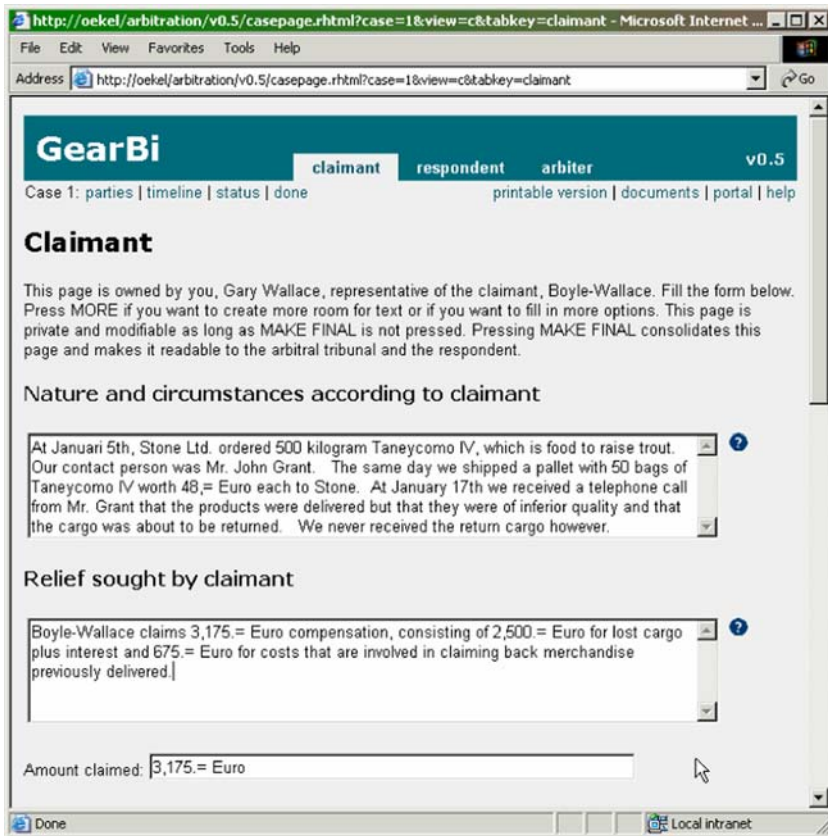


Figure 5. Claimant enters data.

invited to peruse the claimant's request. Naturally, from that moment on the claimant's page is visible to the respondent. The e-mail contains a URL in which the number of the case, the respondent's identity, and an entry point to the portal of the provider (tabsheet) are incorporated in an encrypted form.<sup>5</sup>

When the respondent views the page of the claimant, he sees exactly what the claimant sees, except that the respondent can comment upon every entry that is inputted by the claimant (Figure 7). He can do so by highlighting a relevant piece of text and pressing on a button entitled "comment". This can be done multiple times. As soon as the respondent starts to enter data, we may assume that the respondent agrees to participate in the process via the provider (in this case GearBi), thus circumventing the need to check this explicitly with the respondent.

The respondent "owns" a similar page as the one of the claimant, where it is possible to formulate his view on the matter. The input of the respondent can be commented upon by the claimant, in the claimant's view on the page of the respondent.

The screenshot shows a web browser window with the URL <http://ede.cs.uu.nl/arbitration/v0.5/casepage.rhtml?case=1&view=c&tabkey=claimant>. The page title is "Nomination of arbiter". The form contains the following fields and options:

- A text area containing: "Steve Slawik (R) 33A \* 532 Nomen Ltd. Certified Business Arbitration 100 Rev. Dr. Martin Luther King Jr. Blvd. Saint Paul, Vienna 57563 (405) 949-0365 E-mail: slawik@cba.at".
- Radio buttons for "Size of arbitral court":  one arbitrator,  three arbitrators.
- Dropdown menu for "Place of arbitration": UK.
- Dropdown menu for "Applicable rules of law": UK trade law.
- Dropdown menu for "Language of arbitration": English.
- Buttons: "More" and "Make final".

At the bottom of the browser window, a status bar shows: "GearBi, Thu Apr 29 16:03:45 W. Europe Daylight Time 2004" and "view this page in the rôle of claimant | respondent | arbiter".

Figure 6. Claimant enters data (continued).

The page of the arbiter contains a summary of the data of the two contestants (Figure 8). This page also contains information about interim or partial awards, preferences of the participants, or, if the process is running to its end, a final award. Depending on the role that this information plays in the process, a number of items of the arbitrators' page are invisible to the contestants. The ordering of the information entered by both the claimant and the respondent allows the arbiter to quickly assess the commonalities and differences between both parties.

To facilitate planning, GearBi has a page at which parties may indicate their preferred deadlines (Figure 9). These deadlines merge with the deadlines as indicated in the Rules of Arbitration of the ICA. For example, Article 24.1 stipulates that the time limit within which the Arbitral Tribunal must render its final Award is 6 months. If the arbiter (possibly by coincidence) indicates a time slot for rendering an award that falls beyond this official deadline, GearBi will select the earliest of the two. Further, GearBi issues a warning to the user who attempted to set such an unofficial deadline.

Earlier on we argued that arbitration is a timely process. This means that parties should be kept aware of the fact that arbitration is a process with a begin and an end and that user input is to be expected within certain time intervals.

Finally, there are forms (or "tabsheets") that expose different aspects of a case and are effectively owned by all parties involved.

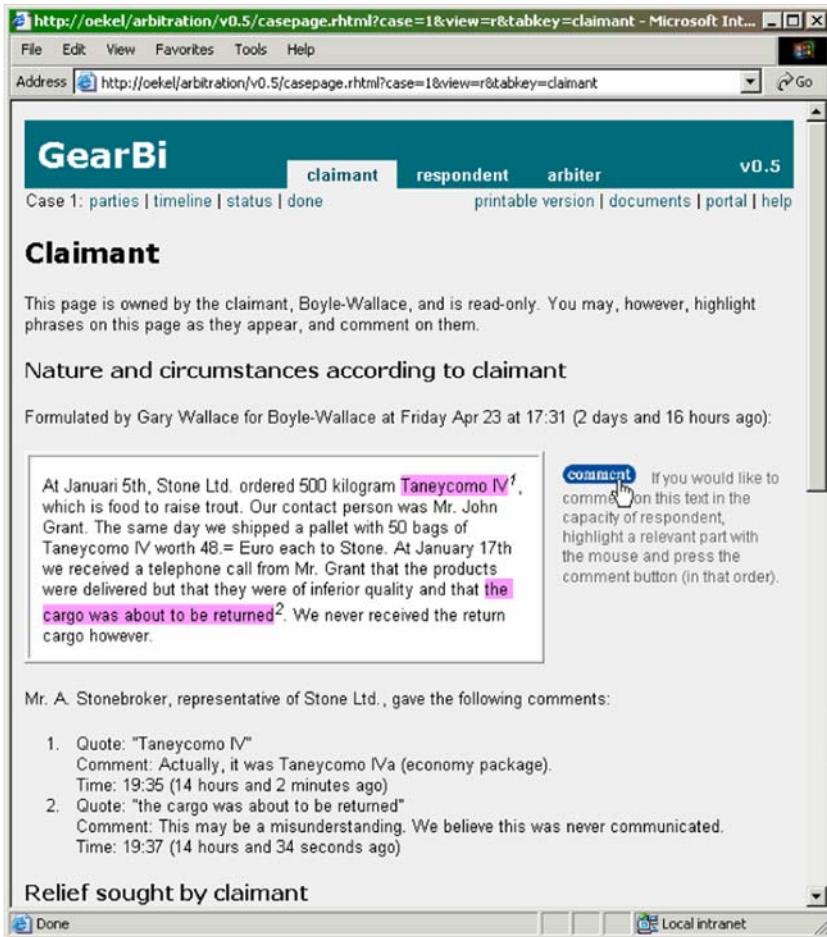


Figure 7. Respondent just entered two comments on claimant's page.

The form “parties” summarizes the address data of all participants, including the time and date of the last visit of each participant, and the time and date of that last action performed on the site such as, for example, issuing a comment, or setting a new deadline. Recording the whereabouts of participants is possible, because they can only access pages with a personalized case/view/key-combination.

The form “status” indicates the status of the process. Also the status form possesses different views per party. If a party is to move, this is indicated, and a clickable URL leads the party from which the next action is expected to the page where the desired input can be entered.

The form “done” indicates what is done in the form of a tabular flow-chart; the form “printable” displays a view of the entire case on one page, for printing purposes; the form “portal” leads back to the main entrance of



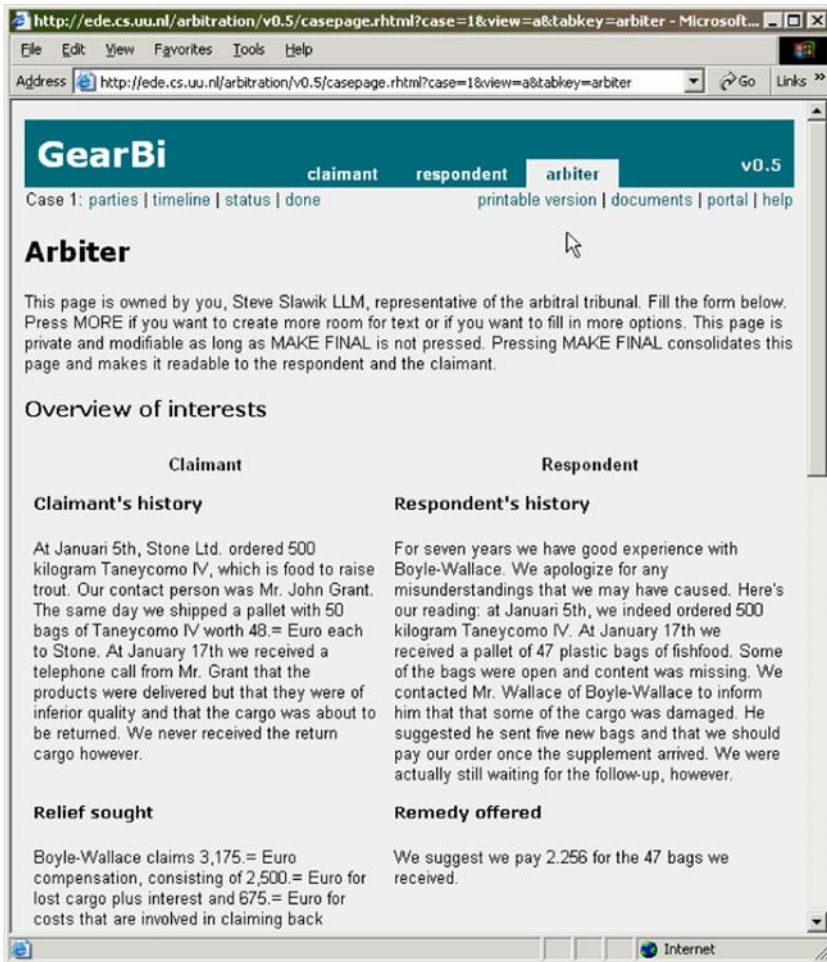


Figure 8. Arbitrer's page, arbitrer's view.

GearBi. Finally, the “documents” page is a shared repository to view and submit source documents that are deemed relevant to the current case (Figure 10).

## 6. Analysis

Katsh and Rifkin (2001) introduced their Trust/Convenience/Expertise-triangle to make clear that each ODR system should to some degree deliver expertise, create trust and be convenient to use. We believe it is too early to state that GearBi covers the trust element, although the solid, subdued interface aims to contribute to a trustworthy environment (Rule 2002, p. 254). Since we build on our IT and argumentation background, even in the

The screenshot shows a web browser window displaying the GearBi arbitration interface. The address bar shows the URL: <http://oekel/arbitration/v0.5/casepage.rhtml?case=1&view=r&tabkey=timeline>. The page title is "GearBi" and the version is "v0.5". The user is logged in as "respondent".

The main content area is titled "Timeline" and contains the following text: "Deadlines as preferred by claimant, respondent and arbitral tribunal are indicative. The arbitral tribunal has the opportunity to indicate that a deadline is binding. GearBi will undertake no special actions when binding deadlines expire, other than sending an e-mail to all parties involved in which the expiration is announced."

The "Deadlines" section is presented in a table:

	Response formulation	Negotiation and comparison	Arbitral award
<b>Claimant</b>	Tuesday May 25 at 19:39 (4 weeks and one day from now).	Sunday Jun 20 at 19:39 (one month and 3 weeks from now).	Friday Jul 02 at 19:40 (2 months and one week from now).
<b>Respondent</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Arbiter</b>	Tuesday May 25 at 19:41 (4 weeks and one day from now). This deadline is facultative. *	Thursday Jun 24 at 19:41 (one month and 4 weeks from now). This deadline is facultative. *	Saturday Jul 24 at 19:41 (2 months and 4 weeks from now). This deadline is facultative. *
<b>Earliest</b>	Claimant: Tuesday May 25 at 19:39 (4 weeks and one day from now).	Claimant: Sunday Jun 20 at 19:39 (one month and 3 weeks from now).	Claimant: Friday Jul 02 at 19:40 (2 months and one week from now).

Below the table, a note states: "A read star (\*) behind an entry indicates that that this entry is made definitive by its owner and cannot be changed." At the bottom right of the table area, there are buttons for "More" and "Make final".

The footer of the page shows the date and time: "GearBi, Mon Apr 26 09:38:42 W. Europe Daylight Time 2004" and a link to "view this page in the rôle of claimant | respondent | arbitrator".

Figure 9. Timetable, respondent's view.

current implementation GearBi delivers some expertise. Obviously, at this moment convenience is the factor we most concentrated on.

In this section, we will analyze GearBi's design by holding it against the light of the technical aspects as discussed by Kaufmann-Kohler and Schultz (2004). We will then compare the design of GearBi with the design of two large-scale online arbitration platforms, that is the Electronic Arbitration Tribunal (E-Arbitration-T), and NetCase.

## 6.1. TECHNICAL ASPECTS

Whereas the triangle of Katsh and Rifkin covers various aspects of ODR systems, Kaufmann-Kohler and Schultz (2004, pp. 149–150) list three technical aspects that together shape the architecture of ODR systems, viz. simplicity, adaptability, and interoperability. With simplicity, the authors mainly refer to user-friendliness, and the fact that interfaces must be easy to

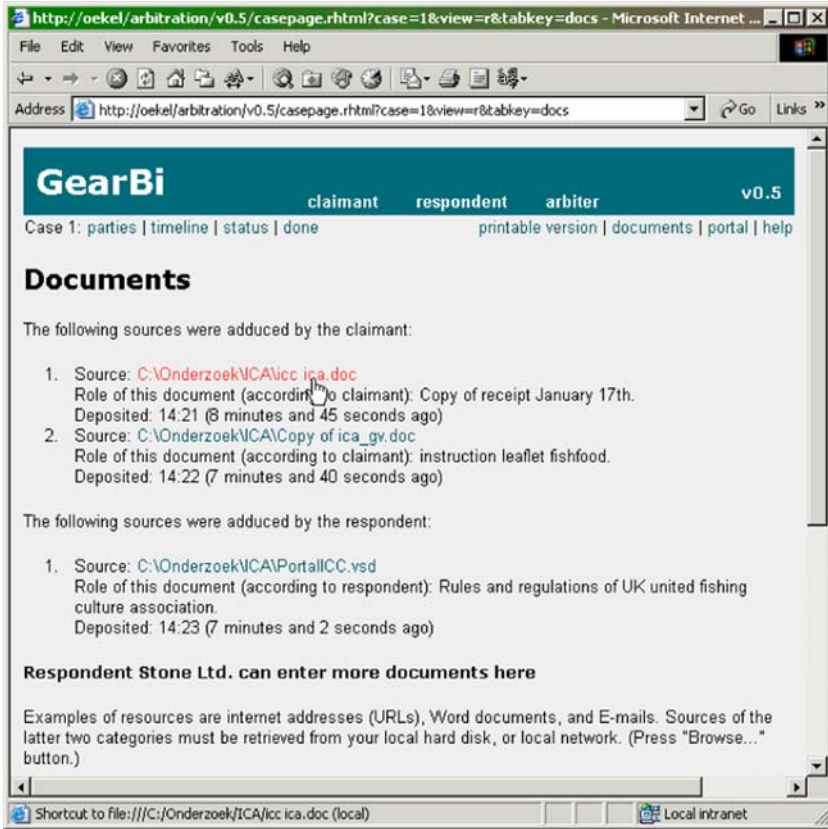


Figure 10. Shared repository of documents, respondent's view.

understand. With adaptability, the authors refer to the property that processes or interfaces should easily be tailored to the individual needs of the parties. With interoperability, the authors mean that the platform must be accessible from different computer systems.

As far as we can tell, Kaufmann-Kohler and Schultz (2004) do not mention awareness, orientation, and timeliness, or seem to file them implicitly under the header of user-friendliness. In contrast, we maintain that awareness, orientation, and timeliness should be emphasized individually, as we indeed have done in the section on the design philosophy of GearBi.

Kaufmann-Kohler and Schultz (2004) further discuss the need of XML, or ODR-specific XML to describe the information to be stored or transmitted between the different systems. In particular, they refer to initiatives such as LegalXML and the European JRC initiative to develop ODR-XML.<sup>6</sup> However, we have argued before that XML might be too early a commitment to a technology-dependent choice (Lodder and Vreeswijk 2004). Other choices, such as YAML could as easily fit the bill. Moreover, while negotiation might

be followed by mediation, and mediation by arbitration, arbitration normally is a last stage, in particular in case of binding arbitration.

It is true that currently most online arbitration is non-binding, but most courts are not capable of handling electronic information, let alone in a specific standardized format (Oskamp et al. 2004). This might change over time, but it remains questionable whether international agreement on a specific format such as ODR-XML, if at all possible, is worth the effort given the expected negligible number of cases that will be handled by more than one provider.

## 6.2. COMPARISON WITH THE DESIGN OF LARGE-SCALE PLATFORMS

This section discusses E-Arbitration-T and NetCase as two large-scale projects that have the facilitation of online arbitration as their main interest. We compare the decisions with respect to architecture and design of these two projects with the specific approach that is followed in the design of GearBi, and discuss how features in the design of GearBi may contribute to better online arbitration systems.

### 6.2.1. *NetCase*

NetCase is an online arbitration platform developed under the auspices of the ICC International Court of Arbitration (Philippe 2004). It is used and promoted as an IT facility to support players in ICA arbitration proceedings according to the ICC rules of arbitration. We have selected the NetCase project because it is developed in commission of the ICC and therefore the de facto reference point for international online arbitration. As we write, NetCase will go in production any time soon.

Parallel in the development of NetCase is the work of the ICC Task Force on IT in arbitration. The ICC task force on IT is a large group of stakeholders, headed by Erik Schäfer, that is mandated by the ICC to study the issues that are raised by the use of IT in arbitration (Schäfer 2004). One of the tasks that set the taskforce itself, is to formulate operating standards for the use of IT in international arbitration (The Standards).

We will now discuss a number of aspects in the architectural design of NetCase that differ from GearBi and deserve comment.

One of the first and basic assumptions of the NetCase project is that all players will view the same information and the same documents in a common environment, and that access to this environment will be opened to parties and arbitrators in a pending arbitration only if they all consent thereto (Philippe 2004). This principle is not followed in GearBi, because we maintain that read and edit-permissions should not be allotted on a per document

basis, but on document sections, or parts of documents, that represent elementary and indivisible case aspects (See also explanation of GearBi above). In this way it is possible to maintain one page per party, and gradually open up the view of that page to other parties during the process as appropriate. By choosing this policy, we believe that the accessibility of the site improves, because no new pages are generated during the process.

While GearBi extensively uses YAML, NetCase does not use a standard mark-up language yet but maybe will do so in the future. As stated by Rule (2002, p. 261) regarding document management “full text search capability is often invaluable”. We agree, but NetCase does not offer this for reasons we do not fully understand, viz. “Such a function requires thesauruses and lists of key words to be compiled and regularly updated”. It is true that these features can improve the retrieval of relevant documents, but even without thesauruses and lists of key words full text search can be very valuable (cf. Google).

A final point worth noting is that we aim to facilitate a fully online procedure. In our opinion ODR not necessarily means that the procedure is conducted fully online, rather we define ODR as any form of dispute resolution in which wholly or partially the internet is designated as the virtual location to solve a dispute. NetCase is seen as an IT facility, and not online arbitration, that is perceived as exclusively online, which as we noted not necessarily has to be the case. Not the naming is what matters here (ODR to be fully online or not), but the difference in approach.

### 6.2.2. *E-Arbitration-T*

Another important initiative is the European Union funded project E-Arbitration-T. We first explain why it is interesting to compare E-Arbitration-T with GearBi, and then explain the origins and objectives of the E-Arbitration-T project itself. Then, we will discuss some essential differences between the two approaches.

We have selected the E-Arbitration-T project because it accommodates a large number of seasoned ideas on the facilitation of online arbitration. We believe that these ideas form an interesting mix of academic and practical experiences that are of great use in the future conceptualization of online arbitration. A second but no less important motivation to discuss the E-Arbitration-T project is that many of their ideas appear to coincide with our ideas on online arbitration, so that we believe it becomes even more interesting to spot the differences between both approaches.

The origins of the E-arbitration-T project date back to 1997 in accordance with the need to implement a dispute resolution system within the Global Trade Point Network of United Nations Transaction Center (UNTPDC – UNCTAD). In 1998, the concept was validated within the framework of the

G7/G8 Project “A Global Marketplace for SMEs”, through the “Testbed E-Arbitration Tribunal Project: New Approaches to Solve Conflicts between SMEs Resulting from the use of New Information Technologies in Electronic Transactions”. From the project description, we read that the main objective of the E-Arbitration-T project is to develop a dynamic and intelligent infrastructure to allow a simple and efficient distributed processing of documents in out-of-court dispute settlement systems.

The most striking commonality between the E-Arbitration-T project and GearBi is that they both show a clear trust and affinity in information technology solutions. For example, the members of the E-arbitration-T project have expressed that, in principle, the best practice solution is to put all documents on one site. This approach fits in with what is seen to be a future activity in online arbitration according to the explanatory notes to The Standards: “ICC and other arbitration institutions are or will be offering case room facilities for their users”. Although there are some obvious catches with this principle (think, e.g., on the accommodation of hardcopy documents), we find the commitment of E-Arbitration-T to this basic principle to be clear and resolute.

Perhaps more interesting is to identify the essential differences between E-Arbitration-T and GearBi. One basic assumption of the E-Arbitration-T team is that there should be “a single view of the case accessible to all parties and neutrals”. In addition, it is also stated that all documents of a case should be represented on one server, as is actually the case with the E-Arbitration-T platform. GearBi partially adheres to this model. On the one hand, we also support the viewpoint that all case documents should have one unique representation. The most straightforward way to realize this, is indeed simply to place them on one server. On the other hand, we do not support the viewpoint that all parties and neutrals should share a common view on case documents. In our opinion this is not desirable, because it goes against our model in which only *parts* of documents, rather than documents themselves, are edited and finalized for publication. Another argument against one common view per document, is that different parties have different editorial permissions per document, or even per document section.

Another essential difference between E-Arbitration-T and GearBi is that E-Arbitration-T is mainly concerned with an infrastructure in which documents in online arbitration can safely and efficiently be processed and managed. Thus, the E-Arbitration-T platform is in essence a (very sophisticated) document management system. The GearBi concept, on the other hand, seems to go one step further. GearBi is also concerned with the contents of documents and, more particularly, with automatically forming new documents on the basis of user input and the contents of other documents. GearBi’s orientation towards content is most visible in its comment facility, in which parties may comment on selected quotes of their opponent. In this

way, the case file becomes a condensed if highly formal reflection of a dispute between two contestants.

Another important hallmark of E-Arbitration-T is the ability to handle different rule sets, such as the rules of the London Court of International Arbitration, the arbitration rules of UNCITRAL, and the arbitration rules of the ICC. This indeed is a very strong point of E-Arbitration-T as it introduces a flexibility and independence of institutions in the overall architecture.

Finally an important point of E-Arbitration-T is whether document management should be centralized, or de-centralized. Since this is a crucial design issue, this question is also a major concern of the NetCase project. Both E-Arbitration-T and NetCase advocate a centralized approach, with the argument that in this way the secretariat keeps in control of the process (ICC) and that documents should not be multiplied beyond necessity (E-Arbitration-T). We agree with this idea of centralization, but rather see it implemented on a different level. It is true that documents should have a unique representation, and we agree that the site who manages the documents should take a formal account to a monitoring secretariat. However, our standpoint is that this idea of centrality only pertains to the technology and not to the formal coordination of cases. More specifically, we advocate an approach in which it is possible that the hosting of case-management is liberalized into a market with third-party providers (Lodder and Vreeswijk 2004). As has been pointed out above, these providers abide by specific rules for storage of online disputes (provided typically by the ICC) and report to a monitoring secretariat. In a nutshell, our position is that the secretariat is central, but the technology should not be.

## **7. Conclusion**

This paper reports on a project that aims to facilitate online arbitration in a way convenient to the user. Simplicity, awareness, orientation, and timeliness have been the key design principles in this endeavour. These principles guided the implementation of our online arbitration environment GearBi. These principles have not been empirically tested yet, but we believe we are at least heading in the right direction.

In the future we aim to include features that help the parties to structure the case information in a way that clarifies the support relations between the various issues and other statements in dispute. We realize that our approach might not be suited for all types of arbitration, but primarily for the not too complex ones. One possible indication of the complexity of a case is the amount of documents involved. We believe, however, that in most cases even those with large volumes of documents, the issues central to the dispute are never more than a few. There simply are not that many issues, and the

discussion about these issues can be facilitated by using online environments as GearBi. At least, that is what we hope to prove in the future. For this moment modesty is in place and we restrict to the observation made in this paper that GearBi improves over existing models on several points.

## Notes

- <sup>1</sup> Readers are welcome to experiment with GearBi at <http://www.cs.uu.nl/~gv/Code/GearBi/>.  
<sup>2</sup> <<http://www.resolvemydispute.com/>>, <<http://www.arbiter.wipo.int/domains/>>, and <<http://www.onlineresolution.com>>.  
<sup>3</sup> In software engineering, it is an important principle to keep the design orthogonal. In speech, this is called the DRY principle (Hunt and Thomas 2000).  
<sup>4</sup> For the complete rules, see <http://www.iccwbo.org/court/english/arbitration/rules.asp>.  
<sup>5</sup> The prototype works with unencrypted URL's.  
<sup>6</sup> <http://www.open-oasis.org>; <http://www.ode.jrc.it>, <http://www.odr.info>

## References

- Blanchard R. E. (1993). Situation awareness—transition from theory to practice. In: Proc. of the Human Factors and Ergonomics Society: 32nd Annual Meeting. Santa Human Factors and Ergonomics Society, Monica, CA, pp. 39–42.
- Carroll, J. M., Neale, D. C., Isenhour, P. L., Rosson, M. B. and McCrickard, D. S. (2003). Notification and Awareness: Synchronizing task-oriented collaborative activity, *International Journal of Human-Computer Studies* 58(5): 605–632, Elsevier.
- Chi, E. H. P. and Pirolli, J. Pitkow (2000). The scent of a site: a system for analyzing and predicting information scent, usage, and usability of a Web site, Proceedings of the SIGCHI conference on Human factors in computing systems, pp. 161–168, April 01–06, 2000, The Hague, The Netherlands.
- Dufner, D., Kwon, O. and Hadidi, R. (1999). Web-CCAT: A collaborative learning environment for geographically distributed information technology students and working professionals. *Communications of the Association for Information Systems*, Vol. 1, No. 12, March 1999.
- E-Arbitration-T (2002). E-Arbitration-T Project: An Alternative Dispute Resolution for SMEs. *World Arbitration Newsletter*, Number 2, June 2002. Available at <http://www.e-global.es/arbitration>.
- Endsley, M. R. (1995). Toward a Theory of Situation Awareness in Dynamic Systems, *Human Factors* 37(1): 32–64.
- Grover, A. (2002). More Security is Needed For Online ADR Applications, *20 Alternatives to High Cost Litig.* 135.
- Gutwin, C. and Greenberg S. (1998). Effects of awareness support on groupware usability, Proceedings of the SIGCHI conference on Human factors in computing systems, pp. 511–518, April 18–23, 1998, Los Angeles, California, United States.
- Hill, R. (1999), Online arbitration: Issues and Solutions, *Arbitration International*, April 1999 issue, <<http://www.umass.edu/dispute/hill.htm>>.
- Hunt, A. and Thomas, D. (2000). *The Pragmatic Programmer*. Addison–Wesley.
- Katsh, E. and Rifkin, J. (2001). *Online Dispute Resolution: Conflict Resolution in Cyberspace*. Jossey-Bass 2001: San Francisco.



- Kaufmann-Kohler, G. and Schultz, T. (2004). *Online Dispute Resolution: Challenges for Contemporary Justice*. Kluwer Law International: The Hague.
- Lodder, A. R. and Vreeswijk, G. A. W. (2004). 'Online Arbitration Services at a Turning Point: An Appraisal', *ICC International Court of Arbitration Bulletin, Special Supplement 'Using Technology to Resolve Business Dispute*, pp. 35–42.
- Lodder, A. R. and Huygen, P. E. M. (2001). 'eADR: A Simple Tool to Structure the Information Exchange Between Parties in Online Alternative Dispute Resolution'. In Verheij, B. et al. (eds.), *JURIX 2001*, IOS Press, pp. 117–129.
- Lodder, A. R. (1999). *DiaLaw, On Legal Justification and Dialogical Models of Argumentation*. Kluwer Academic Publishers: Dordrecht/Boston/London.
- Lodder, A. R. (2004). 'Information Security & Online Dispute Resolution', *Proceedings of Symposium Putting ICT into dispute resolution practice*, London, September 6, 2004.
- Nakano, R. (2001). *Web Content Management: A Collaborative Approach*. Addison–Wesley: Boston.
- Online Arbitration: What Technology can do for Arbitral Institutions*. Introductory document for a January 20th 2003 one-day seminar organized by the E-Arbitration-T consortium.
- Oskamp, A., Lodder, A. R. and Apistola, M. (eds.) (2004). *IT Support of the Judiciary: Australia, Singapore, Venezuela, Norway, The Netherlands and Italy*, TMC Asser Press/Cambridge University Press.
- Philippe, M. (2004). 'NetCase: A New ICC Arbitration Facility', *ICC International Court of Arbitration Bulletin, Special Supplement 'Using Technology to Resolve Business Dispute'*, pp. 53–58.
- Preece, J., Rogers, Y. and Sharp, H. (2002). *Interaction Design: Beyond Human–Computer Interaction*. John Wiley and Sons: New York, NY.
- Rule, C. (2002). *Online Dispute Resolution for Businesses*. Jossey-Bass: San Francisco Ca.
- Schäfer, E. (2003). 'Videoconferencing in arbitration', *ICC International Court of Arbitration Bulletin*, Vol. 14, No. 1, Spring, pp. 35–45.
- Schäfer, E. (2004). 'IT in Arbitration: The Work of the ICC Task force', *ICC International Court of Arbitration Bulletin, Special Supplement 'Using Technology to Resolve Business Dispute*, pp. 59–62.
- The Standards, *Operating Standards for Using IT in International Arbitration (2004)*. *ICC International Court of Arbitration Bulletin, Special Supplement 'Using Technology to Resolve Business Dispute*, pp. 75–98.
- Vreeswijk, G. A. W. (1993). *Studies in Defeasible Argumentation*. PhD thesis, Dept. of Mathematics and Computer Science, Vrije Universiteit Amsterdam.
- Vreeswijk, G. A. W. (2003). 'A Simple Scheme to Structure and Process the Information of Parties in Online Forms of Alternative Dispute Resolution', *ADR Online Monthly*, October 2003.
- Wahab, M. (2004). *The Global Information Society and Online Dispute Resolution: A New Dawn for Dispute Resolution*, *Journal of International Arbitration* 21(2): 143–168.
- Yu, H. and Nasir, M. (2003). *Can Online Arbitration Exist Within the Traditional Arbitration Framework*, *Journal of International Arbitration* 20(5): 455–473.