

E-dossier at the Dutch Council of State: Design, Implementation and Lessons Learned

Dr. Richard Hilhorst¹ and Prof. Tom van Engers²,

¹ Raad van State, P.O. Box 20019, 2500 EA The Hague, The Netherlands,
r.hilhorst@raadvanstate.nl

² Leibniz Center for Law, P.O. Box 1030, 1000 BA Amsterdam, The Netherlands,
vanengers@uva.nl

Abstract. Since the eighties of last centuries many developments in information science and artificial intelligence have influenced legal practice. These changes are for example visible in the way case decisions are distributed, i.e. by means of digital publishing, using portal technology and the extensive use of legal content management techniques that have improved access to and availability of case decisions. Artificial Intelligence applied to the legal domain (AI&Law), a research field potentially very important for legal practice including eGovernment, has lead to a more commonly use of legal expert systems and more recently an interest in developing representation techniques for automated argumentation support and more generally legal reasoning. However despite the effort of many researchers in this field only a few actually build argumentation support systems. Even fewer researchers actually conduct empirical research aimed at support lawyers and judges in practical situations. This is a pity since empirical research is a requisite if we aim at building systems that are to support lawyers and judges in their daily practice. Furthermore interesting developments are going on in different legal institutions, developments that bring the application of scientific results much closer. In this paper we focus on describing an example of these developments, i.e. the development of a system for creating and handling electronic dossiers within the Dutch Council of State (in Dutch: Raad van State).

Keywords: Computer-assisted legal drafting and document management.

1 Introduction

1.1 AI & Law research in practice

AI&Law research potentially has many things to offer to legal practitioners. From the eighties of the twentieth century many successful application have been developed that haven been used to support eGovernment. Examples can be found especially in areas such as tax law, social security law and family law supporting both civil

servants and their clients (citizens). AI&Law researchers have also an interest in the judicial processes. Potentially contributions in this sub-domain of the legal domain can be expected, since the judicial processes are still mainly manual processes requiring massive human efforts (which results in long procedures and high costs) and also complex reasoning (which is error prone due to limitations of the human cognitive system).

Within the AI&Law research field different potential interesting issues are addressed, such as legal reasoning, legal knowledge representation and the application of AI-based techniques for supporting legal practitioners or their clients. The dominant focus in AI&Law research, after focusing on legal knowledge based systems has shifted to legal argumentation, which as a topic is very appealing both from a knowledge representation perspective (especially if you have a background in logics) as from a knowledge engineering perspective. However while many researchers working in the field of AI&Law focus on legal argumentation only a few actually build argumentation support systems. Even fewer researchers actually conduct empirical research aimed at support lawyers and judges in practical situations. This is a pity since empirical research is a requisite if we aim at building systems that are to support lawyers and judges in their daily practice. Furthermore interesting developments are going on in different legal institutions, developments that bring the application of scientific results much closer. The current situation is that only a very small number of argumentation support systems exist, e.g. Auracaria by Reed and Rowe [1] and Argumed by Verheij [2] and even these systems are not useable in practice.

For AI & Law researchers it may be disappointing to experience that the systems that are actually used and considered to be useful are much less advanced compared to the dream ware in the researchers minds. The progress made in legal content management solutions is huge. Key to the success in this field is cooperation in the field of standardization, e.g. in the CEN/Metalex working group focusing on standards for legal sources. In the SEAL project [5] that was sponsored under the European eParticipation programme three different editors for legislation drafting were tested and a first attempt to come up with an open, integrated infrastructure for supporting the legislative chain has been made.

Similar approaches have been developed in the judicial domain. Recent studies such as [6], [7] and [8] show that while the use of paper based dossiers is still the common practice within juridical environments some countries have made progress into changing to electronic dossiers and supporting the legal processes using case management and work flow management solutions.. Despite the clear advantages that working with completely electronic dossiers has, as is demonstrated e.g. in the Austrian Ministry for Justice [7], many organizations haven't yet turned that into their daily practice yet.

Changing dossiers containing paper documents to electronic dossiers containing electronic documents seems at first sight an easy job. But when the process around the handling of paper dossiers is studied carefully, and the types of documents involved, the transformation is not as easy as it seems. Also the traditional way of dealing a paper dossier is completely different from dealing with an electronic dossier. This makes that the acceptance of an electronic dossier by lawyers and judges is sometimes hard to get.

In order to meet the requirements of the lawyers and judges, one important requirement is that an electronic dossier shouldn't involve more work than a paper-based dossier. This is one of the main requirements but not the only one.

In this paper the development and implementation of electronic dossiers at the Dutch Council of State is described. This paper is much too short to describe the structure of the electronic dossier, the requirements for working with electronic dossiers, the properties of documents, the design of an electronic dossier, the usage of the electronic dossier and the experience of users with the electronic dossiers extensively.

The authors of this paper are well aware that this paper describes the hard reality, i.e. where the rubber hits the road. The project described here is representative for similar project conducted at other (lower) courts in the Netherlands and in other European countries. One could argue that there is little AI involved yet, which is true, but on the other hand some procedural knowledge is already embedded in the system as we will explain. We argue that systems like this are a requisite for more advanced support e.g. exploiting formal argumentation support and knowledge based generation of case decisions. For now however that is future work since innovating court procedures and introducing support systems already is disruptive enough. The reader should be aware that we have to change systems and procedures while the 'shop is still open'! Needless to say that this also takes place in a highly sensitive context, and implementation problems will not only cause severe resistance amongst the judges and their staff, but also might lead to political and legal problems.

1.2 Council of State

The Council of State has two different functions. It advises the Government and Parliament on legislation and governance, and its Administrative Jurisdiction Division is the country's highest administrative court with general jurisdiction.

Her Majesty the Queen is the President of the Council of State. The Council consists of the Vice-President, who is in actual fact in charge, and a maximum of 28 members, known as State Councillors. State Councillors are appointed for life by the Queen, by Royal Decree, on the nomination of the Government and the recommendation of the Council itself. They are chosen on the basis of their expertise and experience in legislative, administrative or judicial matters. the Council is consulted regarding the nomination of the Vice-President.

The Council of State has a staff of about 600 people, some 225 of whom are lawyers. The Council of State provides the Government with independent advice on:

- bills introduced in Parliament by the Government;
- international agreements which the Government puts before Parliament for approval;
- orders in council promulgated by the Crown;
- other matters on which the Government seeks the Council's advice.

The Administrative Jurisdiction Division is the highest administrative court with general jurisdiction in the Netherlands. It hears appeals lodged by members of the public, associations or commercial companies against decisions given by municipal, provincial or central governmental bodies. Disputes may also arise between two public authorities. The decisions on which the Division gives judgment include:

- decisions in individual cases (e.g. refusal to grant a building permission);
- decisions of a general nature (e.g. an urban zoning plan).

The Administrative Jurisdiction Division is made up of all State Councillors and part-time Councillors. It is divided into four chambers:

Chamber 1: Town and Country Planning

Chamber 2: Environment

Chamber 3: General Appeals

Chamber 4: Appeals in aliens cases

In the cases heard by Chambers 1 and 2 the Administrative Jurisdiction Division is the court of first and final instance; no appeal is possible.

In the cases heard by Chambers 3 and 4 the Administrative Jurisdiction Division acts as a court of appeal from decisions given by the administrative law sector of a district court.

Every year, the Council of State produces some 600 advisory opinions on draft legislation, about 95% of them within three months. Approximately 2,000 cases and 1,000 applications for provisional relief are brought annually before Chambers 1 and 2 of the Administrative Jurisdiction Division; over 2,000 cases and 300 applications for provisional before Chamber 3; and an average of 4,500 aliens cases before Chamber 4.

The Council of State is located in a number of buildings in the centre of The Hague.

2 Paperwork

As stated before the Advisory Division of the Council of State produces 600 advisory opinions every year. The Administrative Jurisdiction Division produces 8500 verdicts and 1300 provisional relief verdicts every year.

In order to produce these opinions and verdicts a lot of documents are involved. Until now the basis of making these advisory opinions or verdict is the paper dossier comprising all documents related to the case. As cases can hold a large number of documents and a large number of stakeholders, the structure of the paper dossier can be very complex. Also the handling and keeping the paper dossier well formed is a very complex job, especially when juridical rules related are involved.

2.1 Workflow based on the paper dossier

As shown in the figure below, within the Council of State the dossier is in general initially formed by the administrative worker (medewerker administratie).

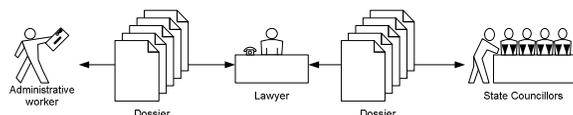


Fig. 1. The flow a dossier within the council of state.

The impulse for the construction of a dossier at the Administrative Jurisdiction Division is the reception of an appeal sent by an applicant. When the dossier is complete, the dossier will be send to the lawyer (juridical worker). The lawyer will make a draft version of the verdict. This verdict together with the dossier is send to one or more State Councillor(s) dependent on the weight of the case. The State Councilors will put their remarks on the draft verdict and put their questions for the hearings in a view letter. Most cases are heard in public. At a hearing, parties may express their views and the Administrative Jurisdiction Division may put questions directly to the parties. Cases are heard by a chamber of three State Councillors or by a single State Councillor. After the hearing the verdict will be finalized, signed by the State Councillor, published and archived by the administrative worker.

2.2 Documents

Each function within the Council of State has its own dossier and its own document types (metadata of the document). The dossier at the Administrative Jurisdiction Division contains about 400 different document types, for example appeal, advocates note, maps of town and country, views, verdicts. The dossier of the Advice Division contains about 50 document types.

The documents can also be divided in documents received, added, or produced by the division itself. Documents can be received in different ways. Until now it is only allowed to send documents by mail or fax to the Council of State. In the future documents may also be send by e-mail (when the bill on electronic traffic [9] with the administrative Judge is passed through the houses of parliament).

When this bill is passed, it means that different document formats have to be supported. It is expected that the most popular formats have to be supported, such as PDF, tiff, ODF, Doc, HTML, jpg, and rtf.

The documents added by the Administrative Jurisdiction Division to the dossier are usually reference documents, such as legislation, books of law, jurisprudence, and juridical manuals. The documents added are related to the juridical questions found in the case.

The documents produced by the division itself can be distinguished into standard correspondence (for instance a letter of confirmation that an appeal has been received) and into special correspondence. Standard correspondence is automatically generated

by the case registration system and is not adjusted by a person. In case of special correspondence (AZD) the correspondence is partly generated by the case registration system (on basis of a wizard) and complemented with text by a user. these are the verdicts or a letter of delay.

Another issue is that the documents are received at the different places within the Council of State. The appeals are received at the mail office, but court dossiers are received at the depot, and advocates notes are received at the registration desk. Furthermore, documents may be received on different types of media, like USB stick, CD, floppy disc and last not least on paper.

Paper documents have their own specific features. These documents can be black/white or contain color. The paper size can vary a lot. For instance maps can be A0 paper size, whereas an applicant can hand write an appeal on an A6 letter. The documents can also be double or single sided and vary from one page to hundreds of pages.

In order to keep all parties within a case well informed, until now all documents received are copied and sent by regular mail to all parties.

2.3 Document flow

A document with a certain document type can have different document states. A clear example is shown in the figure below. A letter of delay can have the state draft, definite or signed (an electronic copy of the definite letter which has a signature on it).

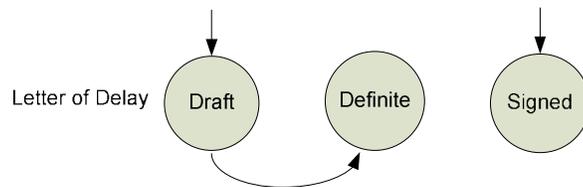


Fig. 2. Document flow for a letter of delay.

A document type can normally be initiated in one or more states. In the figure above, a letter of delay can be initiated in the state of draft or signed, but not in the state definite. A document can flow from one state to another, this is called the document flow. In the example above the document can flow from the state draft to the state of definite. In this example, one would expect that the document state can flow also from definite to signed. This is possible when dealing with electronic signatures. In that case the document can remain digital during its complete lifecycle. However as long as the Dutch Council of State works for instance with handwritten signatures, we have a mixed environment of both paper and electronic documents. When dealing with handwritten signatures, as is this case now, the document has to be printed. Then a handwritten signature can be placed. Subsequently this document may be scanned and added to the dossier, with document type Letter of Delay and the state

“signed”. For that reason, one cannot directly flow from the state of Definite to Signed: one has to initiate a new document by adding a scanned document to the e-dossier.

Changing the state of the document can also result in a number of actions to take place. For instance, revision is automatically turned on.

It is also possible that a document type with a certain state can be transformed in a document type with another state. Even more several document types can be transformed to a specific document type as shown in the following example.

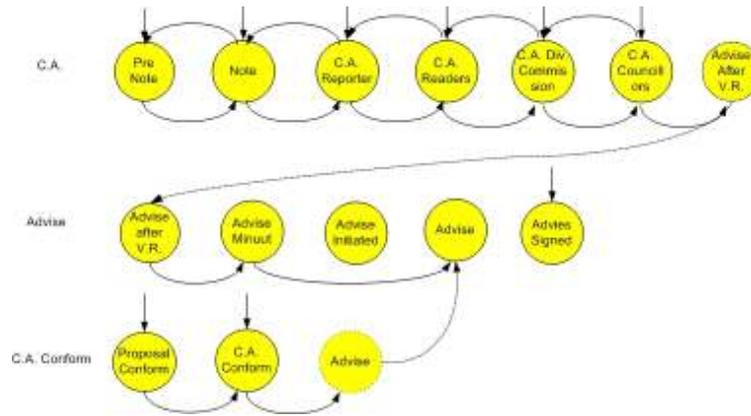


Fig. 3. An example of the transformation of a document type into another document.

In the figure it is shown that document type Concept Advise (abbreviated to C.A) in the state of Advise after V.R. can be transformed to document type Advise having state Advise after V.R. The same holds for the document type C.A. conform (in the state of Advise). This document type can be transformed to the document type advise in the state of advise.

Another property is that a document type can change its state to its own state, which is handy in case of keeping track of revisions.

2.4 Dossier structure

The different functions of the Council of State are reflected in different types of dossiers. Evidently there are dossier structures present for the primary functions of the Council of State (the Advisory Division) and the Administrative Jurisdiction Division. But also for secondary functions, such as complains dispatching and projects concerning legal matters.

Furthermore, it is practice that an officer at the Council of State has to deal with cases from both the Advisory division and the Administrative Jurisdiction Division. It is also possible that dossiers can overlap each other, for instance they may contain the same document. Another property is that a document can flow from one dossier to another in a certain state.

2.5 Gemhof

From 2004 on the Administrative Jurisdiction Division has a cooperation with the communal court of the Netherland Antilles and Aruba abbreviated to GemHof. In this cooperation the Council of State gives support to the highest administrative court of GemHof. As distance between is the two courts is long (over 7000 km's) and has a difference in timezone (6 hours) exchange of paper documents is difficult as paper documents can only be exchanged by use of diplomatic mail, which has a frequency of once per week.

3 Requirements for working with the e-dossier

Changing dossiers containing paper documents to electronic dossiers containing electronic documents seems at first sight an easy job. The description of the handling paper dossiers described in section 2, shows that the handling of the dossiers and paper documents is quite complex. Transformation from working with paper dossiers to electronic dossiers with electronic documents should be such that it meets the requirements of lawyers and judges.

Besides that an electronic dossier can support all the features mentioned in section 2 (for instance, the document formats), it is also important the electronics dossiers fulfills the following requirements stated by the users:

1. Working with electronic dossier should take not more time, than working with paper dossiers. This holds for both construction and handling. But also for learning how to handle electronic dossiers.
2. As paper dossiers have a high availability, the electronic dossiers should have at least the same availability. This is specially important during the hearings, when an outage is not acceptable
3. Overview is kept.

Meeting the requirement on time is hard. Construction of an electronic dossier will initially take more time as paper documents have to be digitalized. In order to meet the requirements on time, one can make use of (artificial) intelligence to reduce the time needed for handling documents and dossiers. In the following chapter it is shown how this is achieved.

4 Design

In order to design an information system which meets these requirements a taxonomy, user-interface, architectural and technical design was made. The design presented here is the design made after several pilots with working with e-dossiers were held in the cooperation between the administrative jurisdiction department and Gemhof. On base of these pilots a final design for the taxonomy, user-interface and architectural and technical design was made. The complete system is called within the Council of State “the e-dossier explorer”.

4.1 Taxonomy / dossier structure design

In order to meet the requirements a taxonomy representing the constituents of a legal dossier was developed. In developing the taxonomy two main principles were held. The hierarchy of the taxonomy should not extend more than two levels of depth. Secondly the documents identified should resemble as close as possible to the documents used in one of the functions of the Council of State. In order to design this taxonomy a number of key users of a certain function of the Council of State was involved. After a process of several months a taxonomy was designed for a number of functions within the Council of State (Advisory Division, Chamber 1 of the Administrative Jurisdiction Division, Gemhof and Complaints). The taxonomy was such that it not only resulted in a clear dossier structure, but also in a dossier structure in which a new user in a glance can observe how the dossier is built up.

4.2 User interface design

The main window of the legal information system “e-dossier explorer” [11] is shown below.

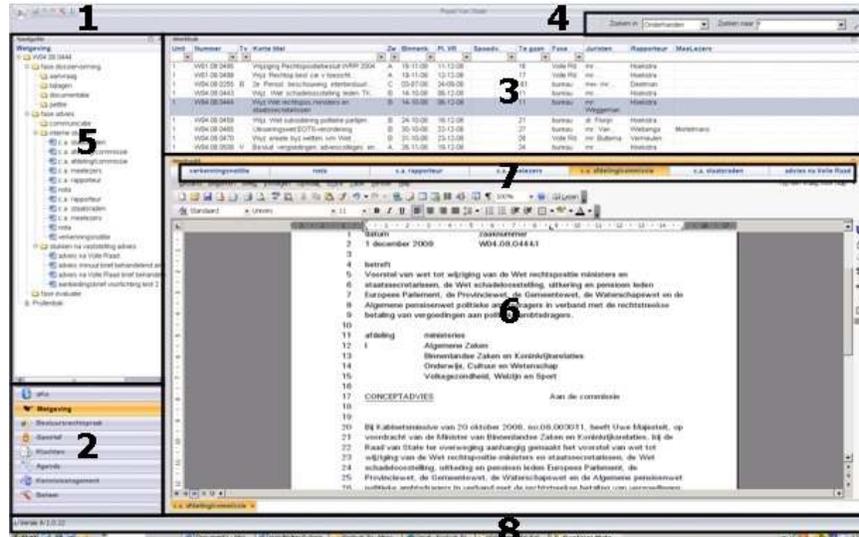


Fig. 4. User interface of the e-dossier explorer

It consists of 8 (window) panels and task bar, namely:

1. Title bar
2. Subsystem panel
3. Case panel
4. Search panel
5. Navigation panel

6. Work panel
7. Progress bar
8. Status bar

In the following paragraphs each window is explained:

4.2.1 Title bar

The title bar is the horizontal bar on top of the window. It shows the name of the application and it contains a number of buttons for general functions. One button is for showing the manual. Another button is used for tuning the system parameters. Example of system parameters are

- Automatically extension of dossier folders at moment of opening (which is handy, such that in one glance the complete dossier can be seen)
- Sorting of documents in the dossier (by name, taxonomy, or date of creation/change).
- Filtering on only the own cases, or all cases at moment of starting the e-dossier.

4.2.2 Subsystem panel

In the Subsystem panel only the subsystems are shown in which a user is authorized for. A subsystem can be dossier of a certain division or maintenance (beheer) or knowledge management. user can subsequently select the dossier to work in (for instance Gemhof).

4.2.3 Case panel

The case panel can be sorted on different manners (for instance on ascending/descending order of alphabet). It is also possible to filter on some properties such as the weight of a case (A,B or C) as shown below

Unit	Nummer	Tv	Korte titel	Zw	Binn
2	W02.08.0181	V	Verdr. positie CTA-stagiairs in Ned. 15-04-2008.	A	26-08
2	W03.08.0123		Wijz. Besl. beveiliging gegevens aftappen ...	B	07-04
2	W03.08.0131		IW1 Teeven en Weekers versterking...	B	10-04
2	W03.08.0133		Wijz. Vreemdelingenwet 2000 ivm ...	B	11-04
2	W03.08.0163	K	Rw beperking aansprakelijkheid ...	A	08-06
2	W03.08.0165		Wijziging Uitvoeringswet EG- ...	B	06-06
2	W03.08.0171	B	Vertrouwen in wetgeving ...	C	08-06

Fig. 5. Case panel

The case panel can be sorted on different manners (for instance on ascending/descending order of alphabet). It is also possible to filter on some properties such as the weight of a case (A,B or C) as shown below

Werkbak			
Unit	Nummer	Korte titel	Zw Binnen
1	W04.08.0175	gefaseerde herstructurering BES-eilanden	(none) -04-0
1	W04.08.0192	Wetsvoorstel ...	-05-0
1	W04.08.0198	Wijziging art.99 Wet...	29-05-0
1	W05.08.0158	Wyz...	B 29-04-0
1	W05.08.0164	Besluit zij-instroom...	B 06-05-0
1	W13.08.0172	structurele...	R 08-05-0

Fig. 6. Sorting of the case panel

4.2.4 Search panel

In the search panel a user can search for a case with certain properties. These properties can be case number of people related to the case (lawyer or judge). In the example below searching for cases related to a certain person is shown.



Fig. 7. Search panel

4.2.5 Navigation panel

When in the case panel a certain case is selected, the content of the dossier is shown in the navigation panel. As stated earlier the structure of the electronic dossier for a certain case has only two levels of depth (folders and subfolders).

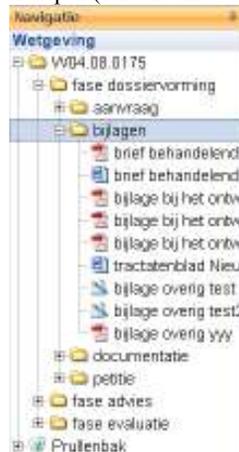


Fig. 8. Navigation panel

A folder can hold one or more subfolders. A subfolders can hold a number of documents. As shown in the figure, different formats of documents are supported, for instance pdf, word and tiff. The + sign in front of dossier means that one or more

documents are present in the folder. Furthermore, for each case a bin (in Dutch: prullenbak) is present to remove documents from the dossier.

A document in a dossier can be processed in different ways. It is possible to open it in the work panel by clicking with the left mouse button. By clicking with the right mouse panel as shown in the figure below it is possible to change the meta data of the document (in Dutch: document gegevens wijzigen), copy (in Dutch: Kopieren), remove (in Dutch: Verwijderen), e-mail or export the document to file system (in Dutch: Document exporteren).

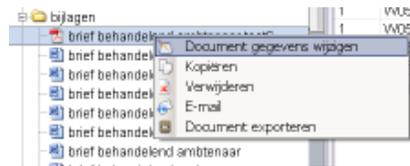


Fig. 9. Changing of document properties

Documents can be added to the dossier in different ways. Difference is made between new and existing documents. New documents can be added by clicking on a (sub)folder with the right mouse button.



Fig. 10. Creation of a new document

Then a panel is shown to add new documents to the dossier. In the figure below it is shown that for new documents a document type with document state (in Dutch: document voortgang) has to be selected and that a certain document name has to be typed in.

A special case of a new document which can be initiated from the e-dossier is a verdict or advise. In this case no case number has to be given in. As the verdict (advise) is initiated in a particular case, the case number is automatically transmitted to document generator for further processing.

4.2.5.1 Addition of existing electronic documents

Existing documents may be added to the e-dossier by dragging and dropping from applications outside the e-dossier. In that case the following panel is shown. After filling the fields the document is added to the dossier.



Fig. 11. Addition of an existing document to the e-dossier

4.2.5.2 Scanning of paper documents

Existing documents may also be added to the dossier by use of scanning. The document should be accommodated with a barcode page containing the metadata. This barcode page is generated by use of a HTML page.

Documentnaam / type	Aanvulling documentnaam	Gedateerd op
BO Bezwaarschrift		

Fig. 12. HTML page for generation of a barcode page

In the HTML page, shown in the figure above, the necessary metadata is filled in. The user has to fill in the case number (in Dutch: Zaaknummer, select the document type, fill in optionally the document name (in Dutch Aanvulling documentnaam) and the document date (in Dutch: Gedateerd op). At the end the barcode page can be printed by pressing the button generate barcode page (in Dutch: “voorloopvellen genereren”). At that moment two things happen. Firstly, a preview of the barcode page is shown, in which a user can order to print the page.



Fig. 13. Printing of a barcode page

Secondly a preregistration of the document is made in the e-dossier. This is handy because the system knows from that a moment that a document will be offered to the system. If the document does not arrive for what ever reason, one can trace the document.

After scanning the document is added to the dossier. The Council of State uses a scanner, which can deal with different types of paper, black/white vs color, single sides / double sided etc. All scanned documents are OCR-ed and stored in PDF/A format.

4.2.6 Navigation panel

When in the navigation panel a certain document is selected it will be displayed in a tab page on the work panel. When more documents are selected, more tab pages are shown on the work panel.



Fig. 14. Tab pages inside the work panel

4.2.7 Progress bar

In the progress bar the state of the document is shown. In the figure below the document state is “advies minuut”.



Fig. 15. Progress bar

From this state one can move to the document state “advies”. Documents states which are not accessible from a document state are shown by light grey letters. Documents state which are accessible are shown by dark (blue) letters. When a user selects an accessible document state, the document state will change to this state. Furthermore, actions which are attached to this state change are executed. At this moment the following actions can take place:

- Change of document name
- Revision put on / off
- Addition of text building blocks.
- Addition of electronic signature (image)
- Transference of a document to another dossier or disk

In fact there is no restriction to the action to take place. It is foreseen that in the future that case management systems may be updated, related personnel is updated with new information, or that documents are automatically converted from one document format to another [10].

4.2.8 Status bar

The status bar shows the version of the e-dossier explorer. When a document is up- or downloaded, the progress of transmission is shown.

4.3 Knowledge management

The documents added by the Administrative Jurisdiction Division to the dossier are usually reference documents, such as legislation, books of law, jurisprudence, and juridical manuals. This can be done by selection of the knowledge management module. In this module several references to popular internal or external knowledge sites are present, for instance the European Court of Human Rights. When a document is selected from one of these sites it can be added to one of dossiers. In the figure below this is shown.

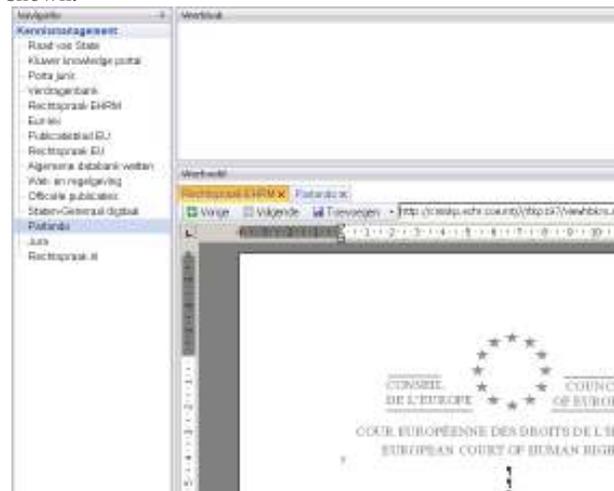


Fig. 16. Knowledge management with a document from the site of EHRM as example.

4.4 Technical requirements

There are different technical requirements to met when working with electronic dossiers. The most important technical requirements addressed were the following

- Availability

- Speed

Requirements on availability are addressed in a number of ways. First of all, the Council of State is equipped with a redundant infrastructure, both on server and network. Two main equipment rooms with identical equipment (datastorage, servers) are present such that a moments of a disaster at one of the main equipment rooms, a user can still continue his work. Another precaution that is taken, is that the e-dossier can also work with offline files. When a user has made an export of the e-dossier, and put it on his laptop he can continue his work. This is especially important when a hearing is taking place.

Requirements on speed are addressed by the fact that the Council of State has an infrastructure with 1 Gigabit connection on every PC. Secondly, the communication between PC and server is optimized. This is of importance when dealing with large documents. For instance, non compressed maps of A0 size can be 300 Mbytes large.

The requirement for speed was also addressed by equipping the PC's with dual core and 1 gigabyte of memory. The first is handy as use can be made of multi threading, and the second is handy when many documents are opened at one time, or if one deals with maps.

4.5 Architectural design

The system is designed by use of a multi-layer architecture as shown in the figure 17. The lowest layer is the data layer which consists of several databases used within the Council of State. Examples of databases used are reports, case registration and Document Management System. The data in this layer is presented to the domain and business layer by use of the data services layer. In this layer an Object and Relation Mappers is present.

The domain and Business object layer (shown as light blue) is the heart of the system. It consists of several business objects which are related to the primary functions within the council of state. At the borders the layers containing security and error handling are shown as well as management info (shown as pink)

On top of the architecture, the main functions of the system are shown, for instance case management and e-dossier. Also external functions such as information are present.

The system is built with the use of .net 3.5 technology.

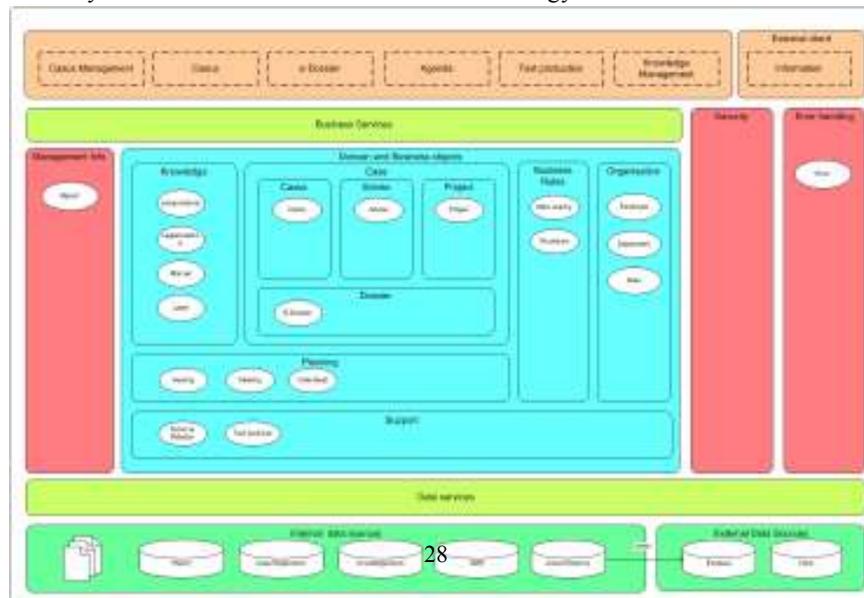


Fig. 17. Architectural design.

5 Implementation

In 2008 the e-dossier was firstly implemented within Gemhof and secondly at the Advisory Division. Users received a two-hour course before working with the e-dossier explorer. After this course it was expected that for all new cases the users would handle them by use of the e-dossier.

Until now the experience show, the following

- Learning how to use the e-dossier explorer

As the structure of the e-dossier explorer is kept self-explanatory it was found that users embrace the structure.

- Speed, availability

Speed and availability at this moment are sufficient. Also when dealing with many or large documents. For instance, documents of 80 Mbytes are downloaded in less than 10 seconds.

- Acceptance, time

The system is accepted by the users. By use of the system parameters a user can tune the dossier to his own wishes. Furthermore, a number of steps which were inevitable when working with paper documents have been removed. For instance when a user wants to make an advise for a certain case, he does not have to fill in the case number as the system already knows the case number. Legal documents found at a particular knowledge site doesn't have to be printed out and put in a paper dossier, but can be directly added to the electronic dossier.

Another advantage is that in the era of the paper dossier, only one dossiers was presented. As a result only one person at a time could consult the dossier. When dealing with e-dossiers users can consult simultaneously the dossier.

- New possibilities.

From the moment users work with the e-dossiers the users come with new requests. These requests are mainly related to things which were not possible when only paper dossiers had been available, but have become possible now. Automatic update of the case management system when a verdict or advice is made for instance or the generation of an agenda directly coupled to the advices made.

6 Future work and conclusion

It is never easy to change working procedures and resistance to change is well known from literature and ICT practice. Especially changing working processes in the

highest national court on administrative law, is a subtle task that can only be completed successfully if the ICT solution itself is well designed and fit for purpose.

The authors of this paper are well aware of the systems current limitations. We believe that working on practical, large scale projects such as the one described in this paper, provides researchers with interesting actual problems, sometimes fundamental problems interesting from a academic perspective. From an AI-researcher perspective the current version only offers limited knowledge based support. The infrastructure however provides us with a good basis for extending the systems functionality with more intelligent support. Some extensions are already foreseen while others may be realized a bit later in the future.

- Correspondence with external parties

At the moment that the bill on electronic message traffic (in Dutch: Wet Elektronisch Berichtenverkeer) [9] with the Administrative Jurisdiction department is acknowledged by the chambers of parliament, it is expected that also external parties want to communicate with the Council of State. This will of course impact the access from and to the e-dossier. At this moment this impact on the system and on the communication strategies of the Council of State are not clear .

- Archiving

In the current solution all documents are scanned using the PDF-A format. The impact of the law on archives on the system has still to be determined. It has to be decided, after closing a case, which documents have to be archived and for what period of time.

- Deployment to other functions within the Council of State

As described not all functions of the Council of State use at this moment the e-dossier. In the near future also at these functions the e-dossier has to be implemented.

But besides these very practical issues also new more intelligent functions can now be realized. Many of these functions would require techniques derived from artificial intelligence. Extending the support for writing verdicts using standard building blocks and knowledge about the case at hand is not very difficult. Many examples of this functionality exist, and in past and present projects we've realized this functionality, e.g. for the Tax Administration, the Immigration Service, for Spatial Planning etc. For this and other purposes, such as archiving and inspecting documents, it would be good to move from the current weakly structured documents (in WORD or PDF) to XML structured ones preferably using an open standard such as CEN/MetaLex. The SEAL project [5] demonstrates the availability of various solutions for supporting users in creating XML-structured documents, hiding the technical details from them, and giving the required support for working with building blocks etc.

Parsers using templates of legal expression, concept extraction and other more complex natural language processing tools could be used to build relevant meta-data. This meta-data can then be used to detect (in)coherence in case decisions, similar and exceptional cases etc. This might also help to improve the quality of the search and retrieval functionality of published cases. Using XML for a basis also eases publication and sharing data.

Last but not least it would be interesting to integrate argumentation support software in the system. The existing systems for supporting argumentation would then

need serious improvements. Argumentation support could also potentially benefit from natural language support, especially for identifying claims, and backing for those claims etc., but this would imply that we had to solve very hard AI problems, such as understanding a situation at hand from a description in natural language. A version where the argument structures are build manually would be already be a good first step. The resulting argument graphs and the related case description can then be used for further analysis, for example aiming at finding specific language constructs that are used to express some argument fragment.

The construction and the usage of the e-dossier is an important basis for the use of artificial intelligence in the judicial.

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