

2009

# A software system for the ICC.

Done the deposit indicated by law 11723. Ricardo GALLI MATIENZO

This document describes a software system developed for the ICC system, offering a full integration with external resources and agents, integration to the web and using to most updated technologies (high level languages like C#, Xml, XPath, Regex, Desktop applications, Web applications, web services, SQL, and similars).

Ricardo Galli Matienzo  
Done the deposit indicated by law 11723





## TABLE OF CONTENTS

<b>Table of contents</b> .....	<b>3</b>
<b>Note: You can move the mouse pointer over any title in the Table of contents, press the Control key, and click the left button. That will take you directly to the selected item.</b> .....	<b>4</b>
<b>Additionally you can click any image in the document to select it and then, by dragging any corner you can resize it, copy it to the clipboard, print it, etc.</b> .....	<b>4</b>
<b>For the meaning of some technical terms, you can consult the glossary, at the end of this document.</b> .....	<b>5</b>
<b>Microsoft and the Microsoft Internet Explorer logo are registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. ...</b>	<b>5</b>
<b>Section I</b> .....	<b>6</b>
Introduction .....	6
Back Ground.....	6
Examples of advantages of advanced legal software: .....	7
<b>Section II</b> .....	<b>10</b>
The System for the ICC .....	10
Technical Notes .....	13
Software .....	13
<b>Data Support:</b> .....	<b>14</b>
Database Support:.....	14
XML Support: .....	14
Advantages of xml for legal systems and the ICC.....	15
Last words: .....	17
<b>Section III</b> .....	<b>18</b>
<b>UNDERLYING INFORMATION MODEL</b> .....	<b>18</b>
<b>Section IV</b> .....	<b>22</b>
Office of the Prosecutor (PO) Decisions:.....	22
<b>Section V</b> .....	<b>26</b>

<b>System Modules .....</b>	<b>26</b>
Preferences:.....	26
Tutorials:.....	26
<b>Section VI.....</b>	<b>27</b>
<b>GLOBAL MODULES.....</b>	<b>27</b>
<b>The Index Module .....</b>	<b>27</b>
<b>CROSS REFERENCES Module.....</b>	<b>32</b>
<b>TIME Management .....</b>	<b>33</b>
General: .....	33
The base RESOURCE: The Calendar system. ....	33
Notification SUPPORT: .....	36
Agenda .....	36
<b>Section VII.....</b>	<b>39</b>
<b>States, member States, Organizations, Participants, Representatives, Counsels, Addresses..</b>	<b>39</b>
The Groups Module:.....	39
<b>Evidence .....</b>	<b>41</b>
<b>Hearings .....</b>	<b>41</b>
<b>Viewer Module.....</b>	<b>44</b>
Listings:.....	44
<b>Resolutions Module The metapath .....</b>	<b>46</b>
THE METAPATH: .....	46
<b>IOB (input-output buffer) .....</b>	<b>49</b>
<b>Statements .....</b>	<b>50</b>
The bubbling process: .....	51
<b>Section VIII .....</b>	<b>54</b>
The Diagnosis Module:.....	54
The Crime Structure .....	60
Mistakes (art 32 Statute).....	64
<b>Glossary:.....</b>	<b>66</b>

Note: You can move the mouse pointer over any title in the Table of contents, press the Control key, and click the left button. That will take you directly to the selected item.

Additionally you can click any image in the document to select it and then, by dragging any corner you can resize it, copy it to the clipboard, print it, etc.

For the meaning of some technical terms, you can consult the glossary, at the end of this document.

Microsoft and the Microsoft Internet Explorer logo are registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

# SECTION I.

## INTRODUCTION

This document describes a software system developed for the ICC system, offering a full integration with external resources and agents, integration to the web and using to most updated technologies (high level languages like C#, Xml, XPath, Regex, Desktop applications, Web applications, web services, SQL, etc.).

It is a system entirely designed with a court as target; it must be operated by agents with full knowledge of legal issues, and in special, the ICC regulations. All the dialog boxes refer to steps in legal procedures encompassed by these regulations (i.e. summons, citations, hearings, evidence management, all inputs and outputs, applications, decisions, templates, crime evaluation, etc).

Additionally, special features available from the immense set of software tools used (hardware: mouse, scanners, video cameras, network cards, etc. and software: colors, fonts, types of graphics, icons, drag and drop techniques, etc.), to produce a more intuitive output to legal and profane consultants. (i.e. truth values are shown in five different colors, participants and resolutions and in red, meaning original state, yellow some flow state in the metaPath (i.e. appealed see MetaPath module) and green meaning final.

The main characteristic is the speed: it can certify in seconds what is impossible or unmanageable in the real world, like certifying the state of 20.000 evidences in less than 10 seconds, producing a full report of its state, and deliverable simultaneously to internal agents, a simple text to be inserted in a certifying report or to external amicus curiae and forums or ONGs, in pages ranging from one to hundreds.

Entire immense legal tasks like “give me the state of this or that decision” and eventually related dozens of leaves, appeals, grounds, variations, observations, leaves for response, responses, etc., with one simple click, and in less than a second.

The Index and the Pages Module can me history as a cross cut technology in the access to case’s information.

## BACK GROUND

We have developed the system based on experience in the private sector as system designer, as a graduate lawyer (UCA) and graduate psychologist (UB).

The system is a special adaptation to the ICC, as a merger of modules and expert systems built along the last 30 years and others developed based specifically in the ICC Rules. All these designs and software have been developed by us totally **alone**.  
[ricgalmat@hotmail.com](mailto:ricgalmat@hotmail.com)

15-50394507

4783-5609

José Hernandez 2286 PB B (1426), Buenos Aires, Argentina



The original general system is the result of a long experience in legal software development through the last 30 years. It has been continuously upgraded from the original program developed in assembler in a Personal computer in the 80's to reach the actual tools used. This upgrading involved a set of graduate stages or qualitative jumps like new hardware, operating systems, new versions, new languages and their versions, new database management tools, all web related issues, and new development platform and environments (like Visual Studio from Microsoft). Many of the modules have been designed to run independently, and have been integrated to work inside the system.

We have evolved from the cryptic assembler of the Z80 processor, the GWBasic language, Fortran, (Formula Translation), the c language (Kernighan and Ritchie!), c++, and java up to c# (c sharp). In Web environments we developed applications (on both server and client sides) for various server types, in asp, php, aspx, and embedded dialects like JavaScript, and making full use of the DHTML objects. Now we develop full applications in the ASP.NET Framework.

Related to the operating system, we evolved from one occupying 25 Kbytes of ram memory (the old and familiar DOS) of a total of 64, to the actual full fledged Windows operating system. And from elementary command line interpreters to the fully integrated development environment like Visual Studio, all tools developed by Microsoft corporation.

One can have an idea of these changes considering that the original PC had 39 Kbytes free (15 normal pages of a book!) and a processor 10000 times slower than actual processors, the system (data AND Code) was distributed in 16 external disks of 8 inches, 200 Kbytes. And we do not even mention the changes in programming paradigms, which is a whole story in itself ( mono-process to multi process, threading, OOP, event-driven model, etc. without even mentioning the myriad of new perspectives open because of internet and the immense set of tools available to perform in the web anything desired).

#### EXAMPLES OF ADVANTAGES OF ADVANCED LEGAL SOFTWARE:

Among dozens of examples we can mention the following:

-The precursor of the Pages Module mentioned produced listings that were recognized to save two full weeks of work per complex case in Chambers. It was proposed in the 80's as a standard.

-In a project in the 1980's a simple module for liquidations running as a pilot case in a court reduced the overall time of cases in six months (of a total of 2 years). There were made 1200 official liquidations, NONE of which was ever discussed. Moreover, the court had permission to delegate the making of liquidation to parties, but requested permission to the chamber to roll back that internal decision. Though it was running in a specific court, we had to generalize the system because other courts requested unofficially the computation of their own liquidations.<sup>1</sup>

---

<sup>1</sup> *-In a project in Caracas, Venezuela, which had an enormous problem with people imprisoned without judicial procedure begun, we developed a system to compute the time limitation (prescription date) so as to determine strictly (based on dozens of variables), which was this date, and so decide the immediate release or retention of detained persons, with eventual summary resolutions, considering the normal duration of the procedure for that crime type.*

*The system had as input over 60 variables (type of crime, participants, gravity, ages, nationalities, level of personal documentation and identification, political impact, all the history of the prisoner, even escapes and all eventual extradition process, the penalty duration, the suspension periods, etc.). It required in a very simple form data, and, upon request, gave a listing of over 600.000 cases, in less than 6 minutes, and could be distributed via*

-A system for the Notifications Office of a south American country that reduced the overall time, paper and disposability of personnel in critical period to almost the 8%.

We have developed lots of heterogeneous systems, the majority of them in hardware and languages that are actually inexistent, obsolete or deprecated (like assembler, the primitive Basic, Pascal, original c language (Kernighan and Ritchie!), original prolog, asp, etc.): Examples of system:

-Administrative software like management of buildings, agricultural and commercial corporations, clubs, etc.

-Several psychological modules, mainly interpretations of psychological tests.

- A system manager of the total flow of preprint in the magazine market, in special all proofs to be done to images to be printed in magazines. A unique sub module developed entirely in Unix and in postscript (!!) for photo setters that enabled the join of eight negatives (positives) in a simple film (with the color separations), so as to avoid the error prone manual settlement of the separate image negatives.

-Control of societies based on share participation, executive control, dependent on dozens of variables (like share types, utilities existence, management compositions, vertical or horizontal mergers, stock syndications, etc.).

-An early precursor of the Pages and Issues Modules later mentioned that classified any case documents, providing an immediate structure of the case.

-An early precursor of the Time manager Module. (Calendars, notifications and timelines computation, etc.).

-A reduced model of the Metapath Module.(See Glossary: metapath). Means any and all appeal, ground, response, etc. related to a given resolution, done by any legitimate participant with right to intervene in such sequence or path).

-Expert systems in family and minority law, fiscal issues, cumulative vote in anonymous corporations, custom area different computations, financial tools related to the Central Bank regulations, inflation and actual and future Value related, computation of shares in inheritance conflicts, uncountable versions of judicial procedures, liquidations, legal fees computations, and so on.

-A simple expert system in some private International law issues.

- A full system for labor courts, and different subsystems for civil and commercial courts.

-A full web site about international law (Schemilaw.com 1999-2001 –schematic International Law-), with 1200 static web pages generated automatically from java source, with schemas about all issues in International Law (including the ICC draft as depicted in Rome notes).

-A full professional fees Liquidation system, fitted for different legal areas, and the sharing of them in sequential professional single or multiple interventions, and according to different type of counsel responsibilities.

-Consultant in legal informatics.

-Neural Systems in certain psychological issues.

-Developer of several web sites, in special providing Macromedia dynamic Flash applications through ActionScript, in the pre-Adobe era.

---

*internet or confidential media to each department in Venezuela, all under control of the Judicial Police(some kind of Pre-Trial stage).*

*Political reasons made impossible the implementation (as usually is the case). In this case it was not politically convenient to show that catastrophic situation and no one would accept “a massive release of criminals” that could be manipulated/interpreted by anyone as a type of amnesty. Political and customary issues in these countries make impossible these implementations. The investment was calculated to be recovered instantly in terms of state resources targeted to maintain those persons .*



- “Psychology, Mathematics and Computers”, a book with the implementation of psychoanalytic structures in the Java language. (Amazon).
- Worked in the most different areas of law, and integrated psychology and law to produce better solutions in conflicts, mainly when children were involved.
- Collaboration in several projects concerning law procedure and integration with computers.

## SECTION II

### THE SYSTEM FOR THE ICC

We believe this can produce a major unprecedented jump in justice administration.

#### *SALIENT FEATURES:*

We remark the following characteristics:

-Open architecture. Any new required module (intensive or extensive extension of the actual development may be done at most, in hours or few days).

-Standard database design.

-The unique in the world representation of the ICC Crimes in xml files, ready for the crime analysis and compared international crime law.

-A special flow circuit (amicus curiae Rule 103).

-An extensive and intensive use of computer technologies and resources to face and solve legal problems ( i.e. colors, drag and drop technique, buttons, icons).

-The use of computational techniques as Drag and Drop, used in the construction of the Indexes of the cases, an alternative representation of the issues in a case.

The use of Colors, sound and shapes to represent different types of information (truth values and resolution state (not notified, pending, final, etc), rendering immediate feedback to the user.

-Canonical Buffer: The response of the system to almost any request (i.e. all the activity of a given counsel) is saved in a special hidden structure, an abstraction layer (the canonical buffer). This opens the possible of separating the response from the target and final response support, and this response may be distributed or delivered simultaneously to a screen, a database, several text files, hundreds of e-mails (i.e. all States or member States or States which might have jurisdiction over a matter or concerns due to security), a broadcast in a dedicated folder of a web application, a forum, etc).

-It is a system where the user interface (the dialog) presents systematically LEGAL information.

-Programmers may understand syntactically the data or code flow, but not the semantics. Each piece of code implements legal issues. Team and expert advice is the only solution, along with adequate intercommunication, listening, brain

storming, etc.(and patience...). Flow charts and tables should act as a common language.

-Enforces network interaction with ONGS, Bars, Courts and Amicus Curiae that are normally composed by highly skilled persons willing to cooperate in some way. The system designed offers, believe it not, a forum entry point for EACH single simple situation in the case (a question to a witness, a leave to appeal request, a variation of grounds, an art 31 or any jurisdiction challenge or mistake alleged, any ethical question about any action of a counsel, etc. Additionally and optionally, the OP or the ICC may delegate administratively such task to registered amicus curiae or simply a centralizer of them, where the authority of recognized experts or institutions might be invaluable. Moreover, it allows the configuration of a central system (i.e. any recognized international Bar Association) to administer that interaction and filter the obvious unwanted effects). Direct effects are unfolding the secrets of any case and attaching traditional inefficiency of courts via giving itself and the network the opportunity to join efforts. The net effect is to assure that no one will play tricks for free in this fundamental step of justice and security.

-Alternatives to the default linear information system (paging order). Logical legal required order and structures normally do not match paging order.

This means the design and provision of an alternative and unique information technology of the contents of the linearly ordered set of documents that may compose a case.

It reduces the needed "case study time" of a case to almost zero. The system provides an unprecedented set of reports, an Index, a module that informs and recovers the exact points of the total documentation, and informs about ALL statements interrelated (even contradictory). This means that the relevant parts of the documentation FOR ANY ISSUE can be logically isolated to form a separate, pertinent and complete sub-case. It may be listed, printed, output to web pages, e-mails, so as to be included in reports, forum sites, and the like. Issues can be a challenge on admissibility or jurisdiction, an observation of a witness, the questioning of a charge, the relevance of a statement, the interpretation of a video sequence, etc. Special amicus curiae can be designed to provide external support. (i.e. psychological support for children or elder, etc.).

This is especially useful for new, permanent or temporary judges, counsels, any new participant, any "amicus curiae" participant (say a Bar, an ONG, or simple a student in international crime subjects), and the critical stages of resolutions and grounding appeals.

I still recall the sayings of a criminal lawyer:"...You know, judges someday must retire so I it's a matter of slowing the case and of making 'life impossible' for the new one."

This new alternative information system aborts abruptly this strategy.

The system divides tasks and distributes them but synchronize subsystems and eliminate redundancies, double works, references losses, latencies, and use standard resources to communicate with the world, upon the premise that any case in any court should by in principle available and understandable for the participants and EVERY system related working as controller may report in professional and profane language

what's going on and the way rules are respected or broken by its deciders. This information should be available in an immediate way and highly processed to decide with no latencies.

There are dozens of modules that follow this guidelines and produce highly processed information, relieving the high level of the decision system (i.e. the judges themselves), from the burden of redundant and tedious work of recovering information, classification, computing and gathering sparse related units of evidence. The system remembers all this intermediate level information and outputs it at simple request, and may be certified by authorized agents.

As a practical example already mentioned, with one click the system can compute the state of 20.000 evidence types in 10 seconds and produce a quantitative table. This tool reveals instantly bottle neck points, "forgotten" evidence and critical evidence state like objected, challenged, appealed etc.

The system reports instantly the state of ANY resolution, even when it can depend on dozens of sequential procedural actions like appeals, grounds, variations, responses, all the notification engineering, to inform if that resolution is final, or not and FOR ALL OR SOME of the participants. This normally takes few seconds (i.e. 3 seconds) for a work that might take DAYS of highly skilled and expensive personnel's work, saving time and money and permitting the assignment of resources to more creative or useful work without disregard of legal responsibilities. Additionally the output may be transferred to the standard screen, a text file, printed, queued, buffered, sent to a web page for broadcasting or even may be included as the official report about that special resolution. Furthermore, the output includes some fields for the signature of official certifiers or the actual certification.

All this engineering has been integrated in the MetaPath module.

Massive representation of legal data and code for legal decisions related to the ICC, at any stage of a case, has been performed and transferred to the electronic domain. Every decision the system takes is under control of the user, through a set of Preferences. The system is in fact a full legal operating system.

It is specially fitted to face the scale and massive problems of the ICC crimes and similar Courts, unlike other international courts like those after the Second World War judging German or Japanese war criminals.

Provides a unique authentic Platform for legal decisions based upon legal data. No redundant and useless envelope label formatting, addresses of providers, dates or birthdays of clients, etc.

The full system and its user interface (Dialog Boxes, messages) are understandable only by legal deciders, with different skill levels. The software is in itself designed in skill layers, (acquiring dates, deciding the legal effect of the date, certifications, outputting something in consequence, etc) resembling any real court, and modern decision making rules and tools are embedded in code for that purpose.

The legal decider may find that unimaginable results are achieved by the system in the time s/he simply begins to think about it.

## TECHNICAL NOTES

### *SOFTWARE*

The main computer language used is C#, (Microsoft C Sharp) and the development environment has been Visual Studio.

### **Querying Tools, files and formats: SQL, XPath and Regex.**

**Web Tools:** browser on line, html, xhtml, xml, JavaScript, css, xslt, php, soap modules, static and dynamic pages, emails servers and a legal procedure specialized proxy to prevent illegal intrusions.

As the system is designed to work in an organization but with fluid interaction with any network in the world, it has additional functionalities such as:

1. Full advantage taken for user interface optimization (drags and drop, icons, color usage for different purposes etc.).
2. Continuous connection with the web through the Web Browser, integrated to the system.
3. The various modules of the application serve as support for both internal tasks and external tasks, as underlying functionality for aspx pages, pages for mobile devices, making possible to mirror in a web site the system and conform an intranet or global net. Additionally provides on line support for any web visitor with dynamic pages that can be created (triggered) automatically by Agenda records.
4. The system may assign sectors of the database to external entities (amicus curiae?, ONGs) to collaborate at different stages.
5. The system adds a layer of abstraction, outputting any report to a central buffer, from where unique or simultaneous outputs can be delivered (screen, text files, email, web pages, tables, excel tables, xml files, etc).
6. The system has routines to deliver almost every report in text files or html files, which is the natural language of the web. This means that every report can be broadcasted under control to a web site. ASP.Net is the underlying framework for this issue.
7. The user can also simply copy the report to the internal computer memory (the clipboard) and paste it (recover it) into any word processor selected by the user. The inverse process can be done too. (Create a draft on a personal computer and paste its content later).
8. The software manages data and preserves it in various formats: a relational database and xml files.

At several points (metaPath, the bubbling process, some aspects of the Index), we have used a technique used throughout in science called backtracking. As a simple example Art 7 sets a great set of crimes. At 1(d) mentions Deportation but its actual definition (type) is extractable from 2 (d) giving another nested tree having as starting point the 1(d) mention. For computing the truth value of all requisites of an art 7 crime, you must backtrack all requisites and this sub-tree(Deportation zoom). In graph theory it may resemble the depth first search algorithm.

## DATA SUPPORT:

### *DATABASE SUPPORT:*

It is a huge, relational, scalable database, tables and schemas, 90% of legal data, highly scalable, for higher level computation. Strong naming and typing is performed for every single column in every single table. Adequate Tier separations are achieved, with an additional abstraction layer that allows multiple output types and supports.

SQL is used extensive and intensively, but mainly dynamically, so as to provide elasticity to the complexity of the ICC regulations and support , pertinence and completion in the information required for each specific decisions (this application, from this specific Defense participant, given that resolution, that specific index of the resolution, and the appeal requested at that date, etc.). Additionally, every simple query is strongly named, which means that there is a central source (the schema's table) that provides the corresponding names of the columns to be tested or listed.

### *XML SUPPORT:*

```
<?xml version="1.0"?>
<books>
  <book>
    <author>Carson</author>
    <title>The tree in the jungle</title>
    <price format="dollar">31.95</price>
    <pubdate>05/01/2001</pubdate>
  </book>
  <book>
    <author>Forson</author>
    <title>The ICC in the jungle</title>
    <price format="dollar">131.95</price>
    <pubdate>05/01/2003</pubdate>
  </book>
</books>
<pubinfo>
  <publisher>SMPress</publisher>
  <state>AW</state>
</pubinfo>
</books>
```

This is quite a simple xml file, and shows the possible catalog of some library. It may have been extracted from some table, and it is ready for views in the web through a browser, typically for electronic sales.

XML was developed by the community to solve this problem: There were many different database vendors, each one with his proprietary format (and there was no agreement to standardize that technology). So they agreed to accept an intermediate

representation of the typical highly hierarchical databases of any corporation or organization. The typical flat files, and csv formats were set aside, though preserved for backwards compatibility in some engines (importing csv files).

Additionally they proposed to be done in a simple text file, to be available despite another restriction: the environment or the operating system (windows, Mac, IBM, Unix, etc.). Lastly it should also be “picked up” seamlessly by web browsers.

Xml was born, as a way to interchange data from different databases technologies. You only need to define an intermediate specification of the actual xml data file: the .xsd file (schemas), that’s in fact a meta data file that defines the grammar of specific data files (names, hierarchies, and scalability for a given company and a given data structure, etc.). Of course, third vendors have proposed hundreds of templates. In this way, each xml may be viewed as an instance document of that grammar.

#### *ADVANTAGES OF XML FOR LEGAL SYSTEMS AND THE ICC*

As it will be seen, ALL Excuses and/or justifications (arts 22 to 33 Statute) and the crimes listed on arts 6 to 8 of the Statute have been translated to a hierarchical set of hierarchically structured statements, solving the problem of the diversity of each crime specification-grammar (each crime type), by using the same nested hierarchical format seamlessly for each different crime description, with an underlying simple .xsd schema files, totally scalable.

The result is a total discrimination in the requisites of every norm, in their hierarchies. We will see this later. (Crime Module).

Moreover: XPath is a language to query these hierarchical databases . The system uses xPath (that performs similar tasks as SQL but in this different hierarchical database design.

This makes xml the best format to use. Additionally, it forces a possible standard and an open architecture as insertion of corresponding crimes of other criminal Courts, or judicial decisions, and so on, can be done as xml elements to each of the items in each of the sub items of each of the articles 6 to 8. This eventual new information can be available when any court may want to ground something on these links.

The web (html) language has associated a formatting tool, the CSS. Every single html page in the web is internally a program (sequence of tags like <Button ... </Button>with virtual objects to be drawn by the browser: The CSS (Cascading Style Sheet) language allows drawing these interface objects in a handful of styles. The same role plays xslt in an xml page, as a transformation language that can perform data formatting in xml files and present them as tables, pure text, etc. Several routines in the system use this language. So again, the underlying xml data can be presented in the legal world with the format required for the legal deciders. As a simple example, the Index and the Crime module use treeview controls, advanced objects for displaying hierarchical data. But as they don’t provide certain degrees of freedom in colors, fonts, etc., these effects can be emulated easily with CSS, by defining the corresponding styles, mainly for web pages.

Web services (SOAP, that in fact is xml based) may be implemented seamlessly, to provide users modules that perform legally based tasks (local expert systems). All C# language methods are reusable to configure the associated aspx.cs files, rendering exactly the same behavior as in the desktop applications.

Any case record amounts to a set of documents containing the decisions of their creators (a counsel, a judge, the prosecutor).

The system uses three different ways to retrieve information and does so dynamically, which means that it builds queries "on the fly", filtering irrelevant information, and suited to what the legal decider requires at THAT Moment and THAT legal decision point. The ways are:

-via simple text expressions (i.e. get all references to 'violation').

-via the SQL language.

-via Regex.<sup>2</sup> This stands for regular expressions and it works as follows: A user writes expressions in this cryptic though powerful language, the regex engine analyzes the request, and lastly scans in the subject text for matching patterns of text. The system uses it intensively for input validation (valid characters, digits, etc.).

As an example, the system, with this tool, can find any sequence in the whole case, in seconds, preserving the exact place where those references were found (for a latter use in legal reports).

The powerful Regex tool, may work in fact as a mini- thesaurus. You can request it to find something giving as clues a root like 'crim', and specify postfixes like: e, es, iminal, but not iminality, and the like. It will match and return the corresponding subject string.

**Regex Example:** `"(e1) \s[^0]\d{0,} (\s\ (\w+\) ) *"`.

**where e1 = Articles?|Rules?|Regulations?**

Suppose you have the overall set of ICC Norms in one single unit, or that you may loop over all of its lines. With the previous cryptic but simple and apparently futile expression the engine will match ALL generic references (the Rules, etc) or proper norms and ALL explicit references to them, (...in the case of Article 31 (1) (b), etc.), which, as a starting point i.e. for an expert system, might not be neglectable. (how much time would it take for a human being?...<sup>3</sup>).

---

<sup>2</sup> *Regex Engine: Though was some non trivial learning curve, this powerful query tool (as is XPath), might/should be fully integrated to the legal world. It's certainly worth the effort and perhaps the most definite example of usefulness in the information recovering stage of any decision.*

<sup>3</sup> *Already done.*



The output may be manipulated and delivered orderly to a tutorial web page(s), along with links on each reference to the proper definitions or references, they may include cross-references, associate judicial resolutions, cases, forums, etc.<sup>4 5</sup>

Similar expressions are used intensively in the Grounder Module, which enforce any agent to express which is or is not the support of this or that request, to be later compared and evaluated against corresponding official grounds of the final decisions (unadmissible, acceptable, exact, treacherous, etc.).

Moreover: any document record has associated a column named notes, where the user can insert anything. So it may be viewed as an internal database, where any expression like nick Names, codes, numbers etc. may coexist, but can be seamlessly tracked by Regex.

Users write regex expressions optionally. Background modules convert user simple selections in lists, checkboxes, etc., into the appropriate SQL, XPath or Regex expressions, unless expert users prefer issuing direct input in these languages.

Lastly: the system in its current interface uses standard and non standards but more efficient interfaces: i.e. instead of clicking 6 times the mouse to travel from one point to another, it requires just once. That's way the main and principal form is called the Platform, which suggests the actual target: a set of tools providing solutions at each point, at the click of the mouse, for any stage and problem faced.

#### LAST WORDS:

-This is software, which means that any aspect of the system can be discussed and modified to fit ANY requirement. The underlying design model ensures that this can be performed in minutes, hours or at most days. As a simple example, some parts of the Forums module were implemented in simply three hours.

-The following sections may take hundreds of words and explanations, but it must be taken for sure that any user can catch on the fly the dynamics exposed, just clicking the mouse to travel back and forth.

We have made a special and enormous effort to simulate legal cases, with States and State members, participants, counsels, etc, normal inputs and outputs, so as to provide NUMBERS, that is show that given tasks that would take hours or days of manual work, are done few seconds. There are lots of examples, and the images in this document show these data.

---

<sup>4</sup> *With simple additions it will match expressions like "rules 12, 15 (b) and 20 of the Rules..." and discriminate normal Regulations from those of the Registry. You may match split expressions, or by combinations obtain whatever you like. Regex has no limits for pattern configurations, and you can sequence regexs.*

<sup>5</sup> *or be the base for SOAP (Web Services).*

## SECTION III

### UNDERLYING INFORMATION MODEL

The basic model for the development of each tool (data + code) in the system is based in a proposed standard unitary cycle on any particular, administrative or judicial office:

1. Arrival of one unit of request. (I.e. an application for something).
2. Acknowledgement (That's what timers +Agenda are for). Timer utilities reduce latencies to zero time.
3. Registration.
4. Acknowledgement (from the buffer in the system to the agent seized of the item).
5. Access to physical support (the actual set of documents).
6. Recovery of the actual request (i.e. an appeal, a request of adjournment, etc.).
7. Recovery of relevant items (through a highly serialized set of documents).
8. Process data (pertinent, complete, and eventually non redundant).
9. Recovery of applicable rules (pertinent, complete, and eventually non redundant).
10. Process the appropriate output.
- 11. Acknowledgement and respect of legal Principles of defense and participation covering rule: (a simple example is the need of previous views for evidence (Arts. 67.1. (e)), or the legal right to respond or make observations to a given document presented, or a State having challenged jurisdiction or admissibility). The openness of the ICC for the acceptance of Observations at any point is another source of complexity that is managed seamlessly by the system. (Art.19.3 Statute, Rule 58 and similar, Rule 134.2 etc.). **There are countless issues covering these requirements and some counsels will not 'spoil' opportunities. As we will see, the Forums and the Virtual Agents take this openness to the limit, allowing ANY authorized person to present ANY observation(s). In fact, you may organize and centralize forums or split them depending on the virtual agent's specialty. These observations are related to any case, but registered in separate databases.****
12. Decision to take (i.e. any decision or a sentence of conviction or acquittal) when all defense rights have been considered and warranted.
13. Implement the decision.
14. Establish timelines for eventual challenges and observations.
15. Administer the output pipeline.
16. Adequate it formally (That's what friends/templates are for).
17. Adequate it operatively (paper, date, signature, etc).
18. Dispatch it to an internal pipeline of the system.
19. Define the participants that should be notified.
20. Define the parts of the documents or annexes that should accompany the document.
21. Output to the external world.
22. Channel it to the target point. (Notify it to a given target point, an email or any physical address).
23. Register the success or failure of this delivery, for each of the participants involved.
24. Compute the timeline.
25. Implement some type of agenda.

26. Control all timelines.
27. Re-compute any needed term when special circumstances so force (i.e. a server down, no documents transferred, a suspension or deferral required, timelines lower than legal minimums, etc.)
28. Synchronize all of the participants responses activity, and control if it is been done within the formal and time requisites. (Including considering common timelines, or the consolidation options (Rule 150, Regulation 63)).
29. Compute the date where all this cycle has ended for all the participants.
30. Hereinafter we have another stage that encompasses the agreement or disagreement of the participants with the court's decisions, which triggers a whole world of legal issues. (The MetaPath).

This enumeration is quite a simplified one, but it does show the origin of the problem: This happens at any single point of a procedure.

This model is deeply based in Information Theory (IT). Several Modules like filter, index, the xReferencer, work synchronically to reduce noise, redundancy and provide leaf-level decision-prone information in milliseconds.<sup>6</sup>

As we will see you may optimize each stage, the user may interact and take advantage of the fan-out of optional tools the system offers. As examples:

The court's agent , while reading any document, may bookmark on the fly about some lines in the input document for later processing, and even transferring this decision to a sought expert in such matters, or create an agenda and prepare the output for the moment this agenda will be triggered by timers running on the background of the system

---

<sup>6</sup> *The digits that represent the overall size in pages of a case may be considered a code word, and the sequence of clicks (selecting a path-option up to the leaf-level) is actually the logarithm, in some base, of the length of that code. Larger cases require more clicks and may overflow ANY mind. Certain counsels know intuitively this. It is easily modeled mathematically with integral equations, that account for the cumulative effect of filling the case with "paper and garbage", similar to pollution effects degrading environment. The Index + the X-Referencer eliminate this problem, perhaps even the will to produce it ( as a feedback effect).*

*Additionally, given as example 20 references, there are 20! (factorial of 20) possible orders: 20x19x18..x1, an astronomic magnitude). The xReferencer allows the certified specification and ordering of references by any criteria, so ONLY relevant issues will be recovered AND in the desired order. This is in fact a DAILY problem in any legal case. There are mechanisms to avoid prejudice in this classification, and certain agents (PO, participants or amicus curiae) might not be coerced in this sense).*

*Finally: each item in the model has associated a magnitude called in mathematics the order of magnitude (the big O Notation), which gives an approximate measure of the resources and time involved for solving that problem. I.e. a counsel "filling the Court with papers" knows that there is a growing recovery time, and that it may, at some given magnitude, change qualitatively, in much the way described in Catastrophe Theory. This effect is easily modeled mathematically with equations with varying coefficients (i.e. modeling the exponential decay of materials response in time).*

(i.e. a timer for tracking timeouts at the appropriate timeout point, Le Hague or other court's site). This eliminates double or multiple recovery requirements.

In the legal world this sequence normally does not mean decision of any given request: defense principles may force the view of such request to different other participants, with a given timeline and annexed documents, and the admission of responses, replies, observations in such a manner that at the decision time the decider (say a court) may have a whole set of documents to have in mind.

Likewise, the system was designed to provide solutions at all the stages of decision of the ICC. And instant solutions to problems even thought as unsolvable. A simple example: daily, a court that acts officially, (that is, is in charge of forwarding the process) is faced to the time problem: In a normal court there might be dozens of thousands of timelines to be checked daily, and there may be another thousands of possible decisions for which recovery, processing, writing, grounding, formatting and outputting must be performed. (I.e. a table with the state and scheduling of witnesses production, or a list to be included as part of a decision). This would require dozens of highly professional agents in the court, and, even if existing, they would be able to manage exclusively a minimal and perhaps useless percent of this entire work load. (i.e. the system automatically computes Rule 150, Regulation 63) case for the prosecutor and adverts.).

The system, as will be seen later, is based in the strategy of the worst case, and provides an elastic set of tools for the complete solution, and, as an example already given, for a load of 20000 evidences, does so in no more than ten seconds, solving all the information stages.

Moreover, this elasticity involves different flavors of outputs (screen, a .txt or .pdf or .html or .aspx file, tables in a database or an excel file) or the clipboard to be pasted by any standard word processor, or even the uploading of such information to a file or web server or the delivery through e-mail. (The screen is in fact a volatile file, while a txt/pdf file is persistent). For each of these decisions the decider needs to simply click the button of a mouse at the given option, and the rest is done by the system.

The page Manager or the Resolution Managers may output distinct views of the case, and output to screen or to a .html file the output in the format of a standard html table, even with the possibility of including events and source code for any feedback of interest ( i.e. forums, or amicus curiae related to a given case).

Furthermore, any agent in the PO or the ICC may agenda items, and programs the system to forward (at the occurrence of a given event) the response to any target support, and this enables the agent to acknowledge and control the procedure from any place in the world. Additionally it avoids duplicating recovery tasks, forcing memorization, etc.).

The system accepts virtual agents and courts perform tasks as collaborations. These organisms (typically willing ONG's or Bar Associations) may accede to their own especially dedicated data sector, and under the control of the PO or the ICC. Moreover, there's an optional modules that may evaluate every single action of any counsel-participant, and this special database may be available to any bar association.

Cooperation on:

ICC Code: 676

Reserved name: PeaceAndJustice

International Character:

Public:

Aggregate level (i.e Bar, Association):

Bar Association:

ONG:

UN Registered:

Judicial Data

Genuine Judicial Entity:

Judges: 10

Judges by decision: 3

Anonymous:

Zoom Decisors:

Resolution Language: English

Translation To English:

Exercises Universal Jurisdiction:

Register in Virtual Courts Forum:

As Instance

First Appeal Both

Cooperation on:

Data precision:

Data consistency:

Investigation:

Gathering Missing Info:

Index Building:

X-References Building:

Facts evaluation:

Legal Evaluation:

Crime evaluation:

Measures evaluation:

Counsel Evaluation:

Special Coefficients:

Site: peaceandjustice.org

E-Mail: info@peaceandjustice.org

Notif: info@peaceandjustice.org

Physical Mapping

Decisors

Cases

Specialization On:

Sources (art. )

Arts: Internal External Both  All

Incs: i) ii)  All

ICC Other  All

Special Preferences

Instance: First Appeal Both

Gender: Women Men  All

Location: Africa Asia America

Exclusions: Superior orde Commanders Duressse  All

Conflict: Non International International Both  All

By Race:

By Religion:

By Nationality:

By Political Ideas:

By Any other Prohibited:

Special Locations:

OK

## SECTION IV

### OFFICE OF THE PROSECUTOR (PO) DECISIONS:

The Prosecutors Office is the starting point of the system as it works as the real triggering node for the ICC. It provides support at the investigation stage. The Prosecutor may use the system tools to structure information (i.e. create special issues in the index, or tabulating evidence, or structuring charges and participants information, etc.).

-Networking Enforced. The system may provide canonical Forms for denounces and interaction with external agencies collaborating with the ICC.

The main circuit involves a virtual node-Court, the prosecutors Office and the ICC.

The virtual node may be external or simply internal (a subsystem) to the PO. This node may be represented by external helpers that provide raw data and investigate and transfer information to the Prosecutor. This may be the cases of simple addresses, people connections, mediation on denounce flow to and fro the ICC, and helping in reducing uncertainty for a case. They can register as general or specialized in different matters (ONG's in their different targets, providing professional and trustable raw information and counsel).

The prosecutor has an initial filter based on THE EXISTENCE of information about a crime. He/She can customize this filter so as to reject, hibernate it, or accept potentially a case.

The registration of documents is made in two separate tables: the inner case and the extern case: (the own to be presented to the PT).

The internal case means an electronic representation of the internal case, plus any internal document that the PO may consider of interest to be serialized and registered in the case. These internal documents have a set of variables that permits a total control. Common contents of a page need not be duplicated.

Critical variables avoid exporting internal information.

All the investigation and data structuring made by the PO with or without the help of virtual courts IS MADE AVAILABLE TO THE ICC COURTS BY A SIMPLE CLICK OF A BUTTON. (Yes, click-once technology). This means that hundreds of hours of investigation, information representation and STRUCTURES, are made available in less than one second, to any authorized person. Furthermore, each judge of each court receives a personal copy of this structure. Lastly, statements in this copy, involves 4 different truth values for each issue of a crime: Default (presumed innocent, etc), the PO conclusions, the actual values and the final values (that should be set later based on the proceedings result).

With this separation, any judge may accept the structure and avoid prejudice matters by simply acting with the default legal values, but keeping autonomy for visualizing the PO's opinions and accept or reject them. This schema is available for every

single statement in a case: i.e. if the case is admissible, if the author was in the conditions of art 31.1 (a) (Statute), if there has been or not a mistake (art.32 Statute), in any of the antecedents of any of the crime, etc.

The Crime Module provides a structured and graded set of tables with information related to any requisite of a given crime.

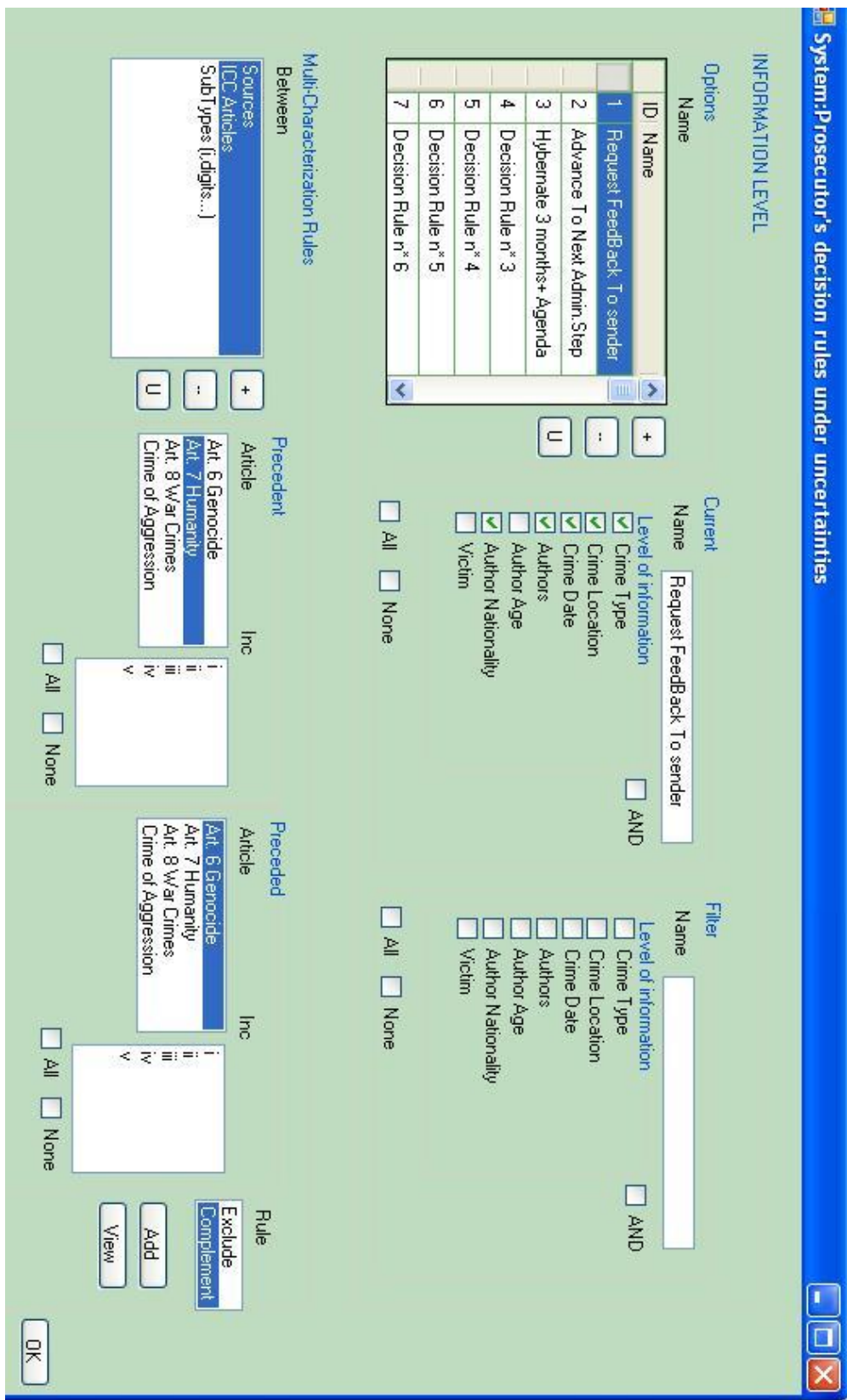
Once the PO considers that a given case is ready for official presentation, it prepares the normal documents but can insert annexes produced instantly by the system. This can reduce processing time to a 10%.

The proof of a crime involves normally a pyramid of highly related statements going from elemental leaf levels (atomic facts), intermediate levels like the requisites of legitimate defense, or the consideration of mistakes, the analysis of information sources (like witnesses), the analysis of the variables of mistakes up to the final statement: guilty or not guilty (as this might be the case).

Later, with a click exports all the structure.

All this work and reporting capacity is available to every member of the Court automatically and instantly.

The virtual node (network, ONG's, Bar Associations) may produce little information or one that can overflow the PO. To focus this problem, the system offers the PO a set of activity options, given a set of uncertainties in the incoming data. This way the system makes a diagnosis of the meta problem consistent in the existence of information for a case to be officially investigated.



For each combination of uncertainties the PO may associate a decision and force the network to scan additional information, present it in this or that format, and to request the personal confirmation of the eventual decision. The system scans all record in seconds. The consequence is the acceleration in the incremental arrival of information to the PO, by



avoiding latencies due to massive data arrival and a filtering activity that makes possible the subdivision of tasks in different elementary and high skills required.

I.E: The Prosecutor may define an option determining that “if there is no date of crime, or the author is presumed dead or not firm, or the crime locations (causes, effects etc.) correspond to non-members, non-accessed States, or likely to obtain a deferral by the Security Council, then force the system to “hibernate the case”, or agenda it.

If the data show certain level of consistency the Prosecutor may request simple a minimum of information (location time of the crime, icc crime(s), gravity and type of legally protected interest.

Additionally each of the items in the icc crimes xml file has a flag that indicates whether that item involves a fact or an opinion, and if the judge requires or not the help of an expert. I.e. if the ICC specifies as a request “the killing of “and expects an easily proved assassination (fact), the Prosecutor may privilege or simply be eager to accept cases with statements involving facts (not opinions) that will avoid being involved in endless comes and goes with the defense, accelerating the throughput of the ICC court; different from other cases that might involve mental psychological injuries, or the mental state of the author at the moment of the crime.

Moreover, the PO may filter in advance the information request to the network, in such a way that it may force short case duration and additionally force lowering the crime temperature in a given region, or to enforce cooperation of persons tightly related to crime agents.

## SECTION V

### SYSTEM MODULES

#### *PREFERENCES:*

The system may perform many legally related tasks, such as computing truth values or deadlines or time limits, or issuing automatic agendas, notifications and default behaviors or values, or tracking time dependent events, etc. For each of these tasks there exists the option to activate (give permission) to these facilities (all, some or none of them). On simple administrative example is the monthly scrolling of underlying calendars. (Create a new set of months in all calendars, while deleting the most ancient (i.e. then years ago).

Every single decision requires explicit acceptance or confirmations from the user or system: i.e.: will not compute dates or set as electronically final a resolution without explicit settings in a dialog box. Any attempt in contrary pops up the corresponding warning box.

We provide a simple enumeration of Modules: Registry of Counsels, participants, Calendars, Courts, external amicus curiae, experts, The actual Crime list (xml files), agendas, Representatives, virtual courts, etc.

#### *TUTORIALS:*

The eventual user must learn to interact with the modules that work at real time.

The system can switch from real to tutorial mode with one click. So the user can practice without risk of perturbing real cases. Furthermore, she/he can input manually data or accept simulated data, over and over again, even chaotic sequences. This feature reveals to be quite important in modules like Calendar, Notifications, MetaPath, and specially the Crime Module. This facility may be available on the web, for students.

More over, a subset of students may be granted access to the documents of a given case, step by step, forcing them to pronounce themselves about what should be done, and conform a mini forum for that set. This set may be formed by an American, a Fiji citizen, a Belgian or Mexican student, etc. The tutors may be of the same kind, and they may act individually or form a jury.

Moreover: virtual cases may be invented, as a way of students exercising, and, curiously, the court may delegate the tutorial task to external authorities (internationally recognized physical persons and/or organizations), grant them access and authority to evaluate the student's activity, playing in this way the only role of forwarding the case steps according to the virtual events. The students may be granted access in the same way

as in a real case. (Students acting as virtual prosecutors, victims, defense, States, etc., and even as courts and juries, for each legal step or the normal (definite sentences).

## SECTION VI

### GLOBAL MODULES

In the sequel we will describe only some relevant modules and mention just some aspects of each one. Note that there exist more critical additional modules, like Hearings, Statistics, forums, etc. that are in itself state of art software.

The system is periodically enhanced, so what's exposed may appear differently in the latest update and copyright registration.

### THE INDEX MODULE

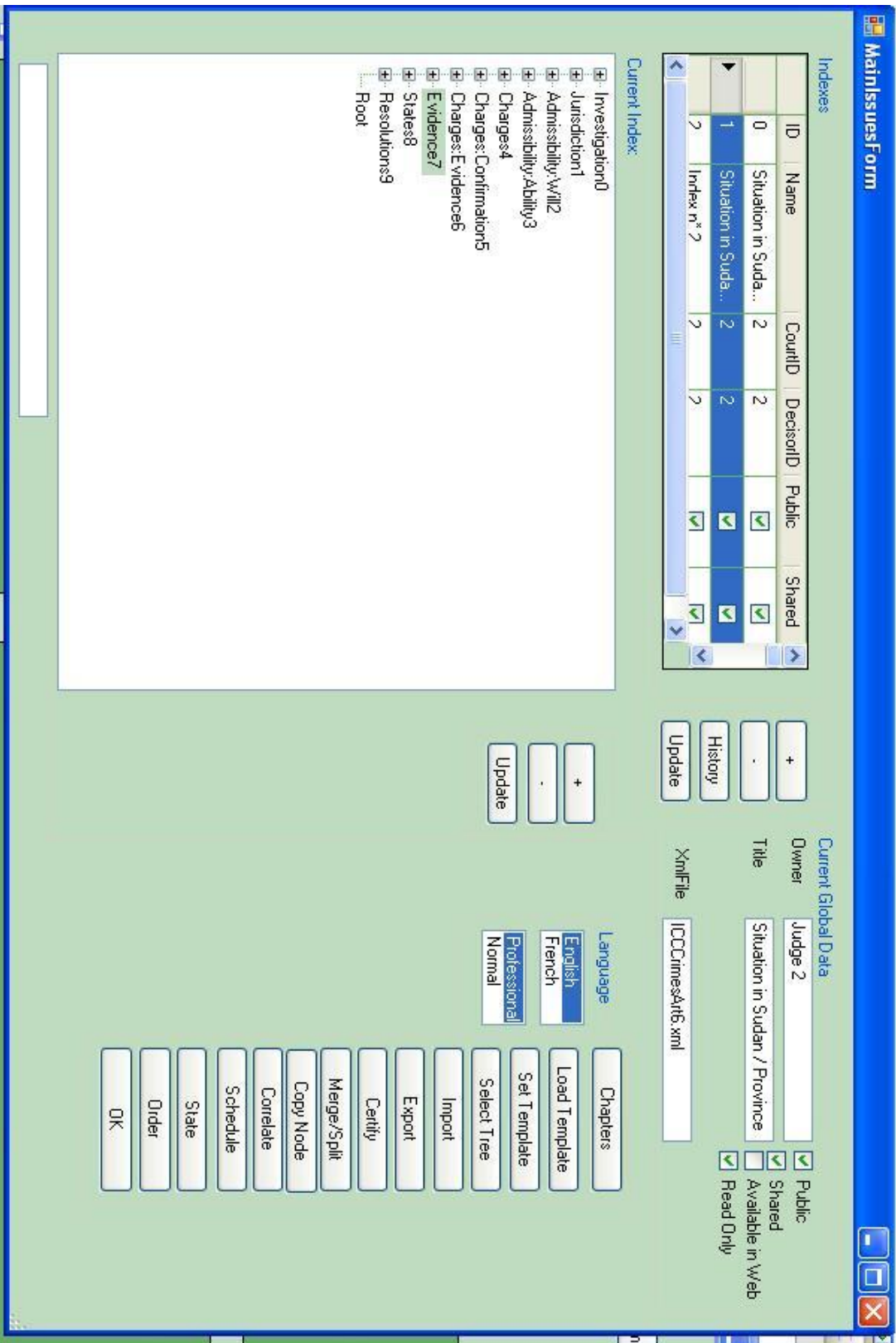
Due to its central importance along with it's coupled Cross Referencer Module, we begin with this module.

This is one of the set of the innovations in alternative information sources from a case, but certainly the most important, as already remarked.

It is an invaluable tool for those who want to or must study the cases, reducing enormous amounts of time and money and the obvious overflow an extensive case normally produces. Just consider any new judge, a new counsel, the proper trial for decisions, an "add effectum videndi" request, the same for the appeal chamber, experts throughout the world willing to cooperate and intervene in forums, the web network following up the case, students in any university, but mainly the proper victims and their representatives trying to follow up the case, and even controllers of the parties behavior.

The system gives the user (i.e. the court or the PO), the opportunity to work with a common underlying data but apparent language: one that works with professional and technical official language and other (paralleling the professional), that presents in "plain" language what's going on, along with explanatory notes.

This opens an unprecedented door to the information in each case, "lifting the traditional case veil", based in pure entropy, simple page ordering due to traditional broadcasting techniques, or based in the obscurity and bizarreness of the legal language (mainly the criminal terms). Note that there's is an intense international evolution and revolution, based on Consumer Rights, towards the simplification and clarity of rules contents. We lawyers have direct responsibility in this issue.



This layout is produced by a TreeView Control, a useful tool for displaying hierarchical information, along with associated data (and xml files).

This index works as a highly customizable database about any issue in a given case (i.e.: an admissibility request, claims concerning jurisdiction, validity of participants, legal characterizations conflicts, State security matters being challenged or posed, etc).

-This main tool is a dynamical standard Index (resembling, but not equivalent to the index of a book), with no limits to its depth.

The user may make whatever desired, provided he has the adequate privileges. Judges may define levels of broadcasting scopes, with or without write privileges. The Prosecutor, of course, find less legal limitations, and may upload his full index in a web page, even in a timely manner, with the admission of feedback.

There may exist global indexes, for the global aspect of cases (i.e. president or military chiefs, or common places), or local indexes, related to a given Court-Judge-Victim-Author-Legal Characterization.

Each time you create a new Index, by default, it has no nodes.

But the system offers customizable "Chapters" to be included at any level of the tree. You can create on the fly say 4 chapters that you think will be used extensively in a case (i.e. A bombardment, a massive assassination, etc.). You can save these chapters, and then you can mark them to be included at each new index as main chapters. You can make confidential any node (Absolutely or relatively: i.e. an index designed to be the official index of the case might be accessed only by judges, and could be filled with the sparse and temporary indexes of each judge, or part of them). Amicus Curiae can help in this matter, providing their own parallel indexes and nodes, as source of interesting notes in fact or law about any issue. These may be copied totally or partially and customized conveniently.

Default chapters include automatically the mandatory nodes of investigation, jurisdiction, admissibility, delay, Excuses, and Crime Root Nodes.

The user may then develop each of these sub-indexes the way she/he prefers. She/he may declare as private or public (able for broadcast) each node and declare the privileges for accessing this database.

Only in this matter, this is an extraordinary innovation to save time and money, and it's only part of the technology developed. (This module is complemented with the Cross Referencer: XReferencer).

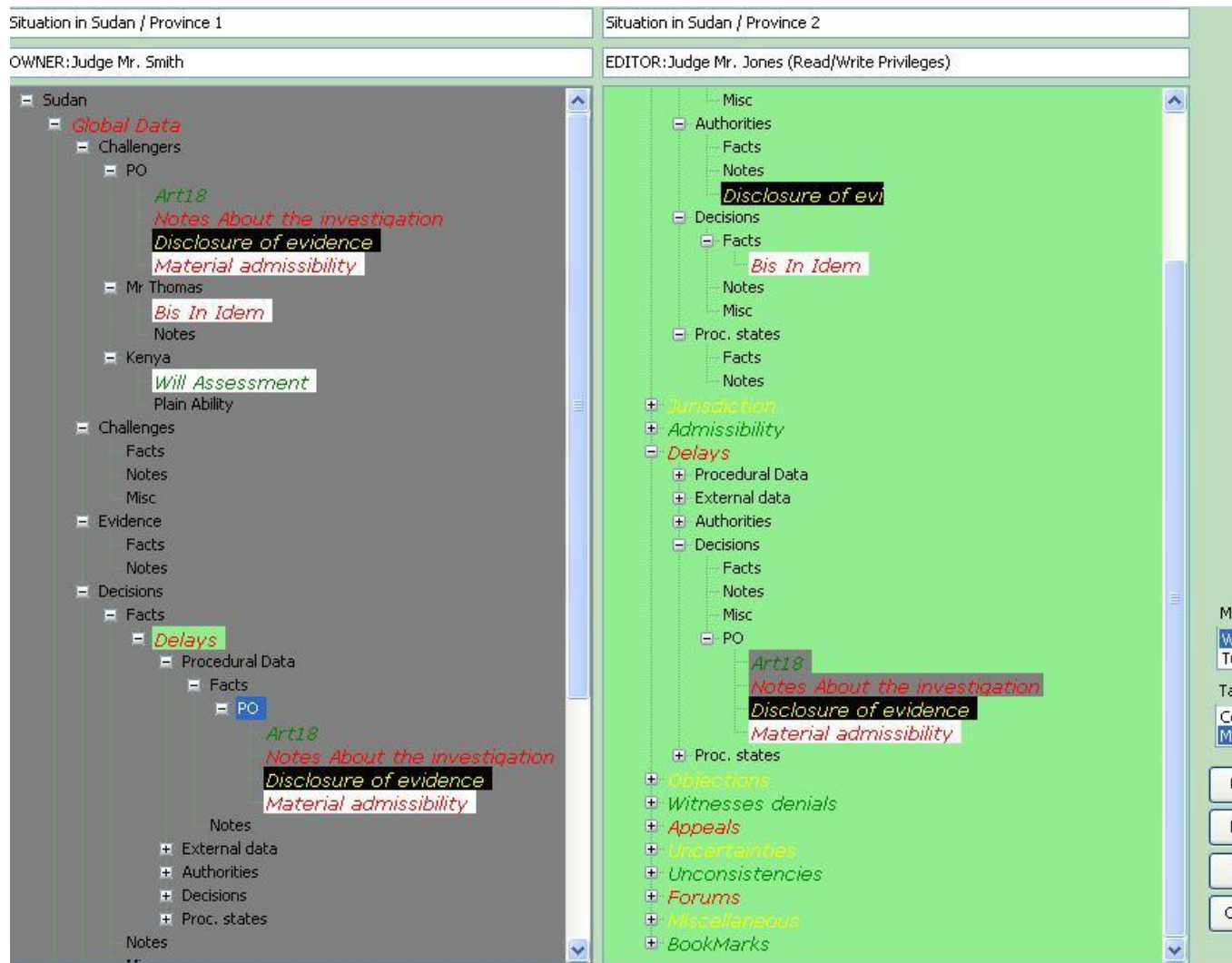
Moreover: If a user has the right privileges, he may access and/or copy a given index, and later customize and fine tune it according to her/his view point. This might be the case of Indexes built already at the OP, avoiding prejudice issues. Exactly the same case might be for judges in the subsequent procedural phase (Trail or Chamber). At some point the Court, as a good practice, should consolidate official one(s).

An investigation might begin with almost nothing (a hair, a hypothesis), or complete information. A static index would be of no use.

So, the user may alter this index on the fly in ANY possible way: delete nodes, relocate entire sub-branches, "down or up river" of a given path or a different one,

adapting the nodes position as the semantics of the case reveal incrementally the truth, the actual path and the nested relations of facts, or the re-signification of material considered originally relevant or the inverse. As the overall tree may be highly branched, the user may select and focus one node as the root node, work with it and later save it in its original exact tree position.

Here is an image of two different indexes, after an arbitrary activity:



-the user may define a node named Global. So each time a global issue is x-referenced at any moment (input, while reading any document, etc.), he may copy that reference (or move it if it is strictly a global issue: like information about a commander, etc).

-the user may define nodes like Miscellaneous, and throw there all references YET not classified.

-Another node could be Bookmarks: where some reference is of some interest, but needs further consideration.

This effect is achieved taking advantage of the Drag and drop technique, which involves simply dragging the source node over the destination node. Two copies of the trees (if available) are presented to the user (may be the same or different), and she/he may do and undo anything, even in a chaotic dynamic, until she/he is satisfied with the current hierarchical structure, saving or cancelling the activity results. Moreover: despite the transfer of nodes from one point to the other (more or less depth, or even to a different index) the node PRESERVES the links to the records linked with the Cross Referencer) that provide factual relations to it (that verifies or falsifies it).

Each node represents normally facts (external or internal), and, as so, it is only the top of an iceberg, having associated a full set of data related records, and the history (external or internal) of such issue (challenges, appeals, final state, references to any point in the documents related to it).

And, believe it; each node admits a whole forum associated. As an example, the user might expand the investigation or admissibility root node in sub-items like those referred in art 18 or 53, and in the associated forums there might appear comments about the will and/or ability of this or that State, etc. The user (i.e. the PO, simply schedules a timer to upload a web page form with every single node in the tree, including any cross-references and providing the user a text box and some options, automatically processed on return. Different registered amicus curiae might have an account to receive this periodic report and return opinions. These opinions may be later processed, considered or discarded by the Prosecutor.

Any interested in the case may consult the index to get in seconds a snapshot about ALL what the case or a sub-question is about, get a copy of it, send her/his opinion in the associated forum, etc.

It's an excellent crosscut to the case's information, before reading page after page, document after document, this index, if used, will provide an immediate panoramic view of relevant issues in the case, amongst dozens of other items, in seconds. As usual, it can provide reports that may be copied, uploaded automatically to the server via a static web page (html) or a dynamic one (.aspx) of the OP or the ICC, or any ad-hoc broadcasting site ("amicus curiae"?), and later downloaded by any one in the world, if so permitted, etc.

1. For each issue and history point, the system offers a forum address within a Web application, so the entire world may enter any observations about it.
2. The court has at its disposal the capacity of setting the current legal state, the level of treatment (preliminary or not).
3. The court may define given nodes as preliminary and schedule them.
4. Groups are reused here, so the court may associate a set of legitimate participants having interest in the matter, and will be available at each resolution in the matter and the consequent metapath.



Additional computer resources:

As you may see, the nodes of the trees present sizes, font types, styles, colors (back and foreground) and underlines. Each node has internally values like 'question solved', final, truth value, common question, etc. So the system ADVANCES this information via customizing these resources: as an example, the red, yellow colors, etc represent the truth value, so a node appearing with this color, this font, etc, gives a preview of internal values. (There are sound effects in given cases too).

### **LAST WORDS about the Index**

Though not apparent this schema opens an unlimited new investigation and standardization line about the information structure of ANY case: the global and the special items. Each node (i.e. evidence) may have in itself standard structures, and, additionally, there may exist a good registering schema that may involve dynamics like temporary indexes, global and local indexes, , nodes for critical resolutions like the admittance of the investigation, the confirmation of charges, the final resolutions, etc..

### **CROSS REFERENCES MODULE.**

Complementing the Index, we've got the Cross references facility.

Shortly: At any moment (i.e. during the processing of an input document, or the stage of studying a given matter), the user (judge, prosecutor, external helpers) may accede in two clicks to this module and mark a given document, page, line as representative of something relevant. The system records the link, and will present all these links associated whenever requested, in seconds. You can mark several links for a given issue or several issues to a given reference.

There are several places in the system that may request this service, (crimes, document relations, histories of certain procedure items, statements, the Index, witness or expert declarations, etc).

This way, if you select one node of the index (making it the current node), pressing the REFERENCES button will bring ALL these linked records, each presenting the linked indirect or direct information (a document that contains information) or a direct text as the answer of a witness to a given question, or the image showing wounds in a body, destruction of a building, etc.

As there is no restriction to these linking technique, YOU CAN BUILD A VIRTUAL SEPARATE SUB-CASE, BECAUSE YOU CAN LINK ALL THE PROCEDURAL ACTIVITY AND ALL THE EVIDENCE ASSOCIATED. This is available not only FOR

EACH NODE in the index, but for the linkage of interrelated documents (i.e. one resolution modifying other one, or a variation of grounds relating the original, etc).

Moreover: Once selected the links (conforming a virtual case), you may order and reorder them in a different way, based in chronological, location, legal, etc. criteria.

Lastly, you can request an electronic or hardcopy report of this report as totally independent issues. This report may be output with additional filters: all the input documents, all the court's decisions, all notifications related, etc. These reports may be cut and pasted in any official resolution.

## TIME MANAGEMENT

### *GENERAL:*

Any legal process is highly determined by sequences of unavoidable time periods. It may from last minutes to dozens of years.

The system offers the ICC a full manager of time, according to the set of norms (Statute, Rules, Registry, etc.).

The Time Manager automatically provides for each time dependent stage a full system of records that will be used to compute all legal time issues, and produce valid output when periods are ended. These records are a superset of the records of the ICC.

The users (Prosecutor, courts, chambers), may define calendars with a lot of options that are likely to be used in cases. Each calendar may grow indefinitely on the database or the Court might define a cut date: i.e. it might establish that it will preserve the last 10 years, for legal reasons. As we will see, each single notification PRESERVES the context in which it was served and even (optionally) the result. This way the court might accept the original computed date as accurate and final, not forcing daily and hourly the computation of notification perhaps produced in previous years. Nevertheless, the Court may adjourn hearings, suspend or alter running timelines (Rule 150.2, Regulation 35, etc.), force at any moment the re-computation and report for every single resolution in the system, looking for omissions and nullity prone situations. This can be done even for resolutions dictated years before, recovering all complete legal information about any possible issue.

### ***THE BASE RESOURCE: THE CALENDAR SYSTEM.***

The default calendar is obviously the one the be run at Le Hague, but the Court in specific cases may sit elsewhere in the world (Rule 100), it might happen that separate calendars should be necessary for the proceeding and even for notifications (Regulation 31.1 "...preferably at Le Hague"). In these cases, an advanced feature marshals each

situation (based upon the GMT) to ensure that all participants have the same period for what ever might be.

The user may create new calendars and customize them, and later choose them to be used in any given proceedings.

# Calendar Form

## Current Calendars

ID	Name	Country
1	Le Hague	Netherlands
2	Calendar 3	State 3
3	Calendar 4	State 4
4	Calendar 5	State 5
5	Calendar 6	State 6

## Current Calendar

Name   
 State   
 State/Province   
 Forum   
 Synchronizable   
 Greenwich time   
 Greenwich offsets    
 Automatic Generation    
 Delete past    
 Automatic advise out of scope  
 Transfer fixed Timelines

## Long Weekend Rules

Rule LongWeekend  
 From  To   
 From  To   
 Transferred to   
 Transferred to   
 If Transferred Day is Holiday adapt to next or previous

## Related Data

**Work Days**  
 Monday  
 Tuesday  
 Wednesday  
 Thursday  
 Friday

**Notif Days**  
 Monday  
 Tuesday  
 Wednesday  
 Thursday  
 Friday

Notes Book

## Holidays

From  To

## Current Holidays

Apply LongWeekend Rule  
 From  To   
 Actual

## Time Periods

From  To   
 From  To   
 Grace Period    
 Non workHour restrictions

- Maturity on Holiday: To Next working day
- Notifications: Time Accounting from next working day

### *NOTIFICATION SUPPORT:*

A tight synthesis must be given:

Each single resolution is tied up by the system to a set of records that are the base of the Metapath and pipeline system. It builds the legitimates for THAT resolution and assigns them the special legal subsystem of norms to cover all the evolution of appeals, grounds etc. as to when, where, who, how, etc. (i.e. an art. 77 Statute decision has associated norms. Rule 100ff that conform a local procedure). Additionally, the user may customize the system behavior as to agenda the different steps and alert about failures, delays or simply lack of services information.

The notification record system provides a useful tool: an additional date that works as pre or post advice. Depending on the circumstances, a participant notified may let the legal period end, while other participant may be interested to activate something say 2 days in advance. I.e. perhaps due to another case's load, or previewing activity in the critical day, which might make inconvenient any immediate activation. Any decider with a running "against" period might assume s/he needs 10 days from a 30 days period, so s/he could set a pre-advise of 15, with perhaps another of 16, redirected to an agent, to ensure a report is available by the time s/he begins the work. The system will keep adverting upon customizable rules like make 3 advises and stop adverting, or reschedule this or that, or simple broadcast to higher levels of such event.

If a holiday appears or is eliminated, the system is not affected because it works with dynamical calendars. You simply click to re-compute all, after modifying the calendar.

Though the court may not have explicit peremptory time or deadlines ("as quick as possible", "without delay"), it has them obviously in the long term, based in legal principles. Sooner or later. So both "sides" of the process have time-limited activities.

There are countless situations that may force a deviation over a normal notification cycle. The system is aware of any event of this type, chains and gathers all these events, and offers the user alternatives that chain and solve or compute the ultimate and consolidated decision. Should the original decision have a common timeline, the system holds and re-triggers the time-computing.

All types of notification forms are considered, for working days or not, grace periods, in different units (months, days, and hours), etc.

For advanced cases there are advanced solutions. (i.e. PO consolidated responses (Rule 150, Regulation 63)).

### *AGENDA*

Every modern operative systems works minimally as a multi user and multi-process system (many users using the same computer and one of the actual users may active at the same time a word processor, an excel page, a web explorer, etc.)

There are hidden tasks the operating system does, and some of them have been made available to users. One of them is timers.

A Timer is a separate sub-process (a thread technically) that can be customized to do something at a given moment, remaining in the while as if it were "sleeping". When the condition is verified (time or any event), it "wakes up" and does what it has to do. i.e. alert the user about time elapsed, show an image, paint the screen with color, emit a sound via the speaker, deliver e-mails, make any computation, or redirect an agenda a given hour or date, repeat a report request if a no response event occurs, advert the Chamber seized of the case that all appeals have been grounded, responded and it's time for final decisions, etc..

Any legal process has fixed and dynamic relevant moments, on which activity must/ should/can be performed. One simple but main case is the beginning or the end of each working judicial day, being a simple special example the case of Le Hague. Lots of branches of a case may be affected, the right to activate something may begin or end and the inverse may happen to another party. (I.e. a party do not present or disclose evidence in legal terms, and the other might want the court to declare such right as lost, via an application presented almost immediately, etc.)

The system provides a set of Timers that will be acting as "guardians" (robots) of a set of interesting time points, to trigger other subsystems: i.e. the starting of any legal day (i.e. to scan for emailed requests, in the entry order), it's end, all points related to agendas, hearings scheduled, perform automatic reports and deliver them to A or B, in that format, compute what resolution could have become final, or if potential responders to a ground application may respond, or if a chamber is in legal conditions to seize a given case. Any delegator has the control of an owned agenda, and is reported about the delegated action.

The conclusion: no more latencies, like it or not. (The system may inform what's going on in any single time point in seconds).

Agenda works synchronized with the related Resolution structure, triggering other legal modules to systematically inform the user information about lost or won rights (i.e. detecting resolutions not appealed, or not grounded appeals, or their responses, etc.).

To achieve this, Agenda analyses the resolution record in many ways and takes in mind a variable that informs if a given participant has the obligation or prohibition of something (The FCOP variable), it has the charge of doing something with a given legal effect or simply a facultative option.

### **An FCOP Structure handles this (Facultative-Charge-Obligation-Prohibition).**

The system provides other interesting facility: Users may be working at one point of a case, pass to a totally different context, and agenda something else, etc. When the day comes for Agenda to advert, it will recover (pop up) the exact agenda entry-points, advertising if there has been any related activity.

The user may filter the Agenda activity by requiring given cases, or cases with this or that condition. Each agenda may hold two responsible, and automatic complementary redirection is issued, with automatic recovery. Users can even transfer control of agendas

related to given matters to experts, etc. Each agenda permits fluent intercommunication, and a user may make notes to be read even by himself at the activating date-moment.

## SECTION VII

### STATES, MEMBER STATES, ORGANIZATIONS, PARTICIPANTS, REPRESENTATIVES, COUNSELS, ADDRESSES

A Participant may be considered any entity with granted access to a case, with any legitimate interest in all or a specific issue.

There are countless events a Participant may live, concerning its legal situation, counsels, addresses, and the like. Each of them is a situation what legal consequences and might have effect “up river”.

So the system lets the user create or delete these items, but register each of them in a read only history record. I.e. A participant may have one or a set of active counsels, have a story of revoked mandates or renouncing counsels, each one responsible explicitly or implicitly of legal advisory during the active period, and mainly with an active notification point for his client.

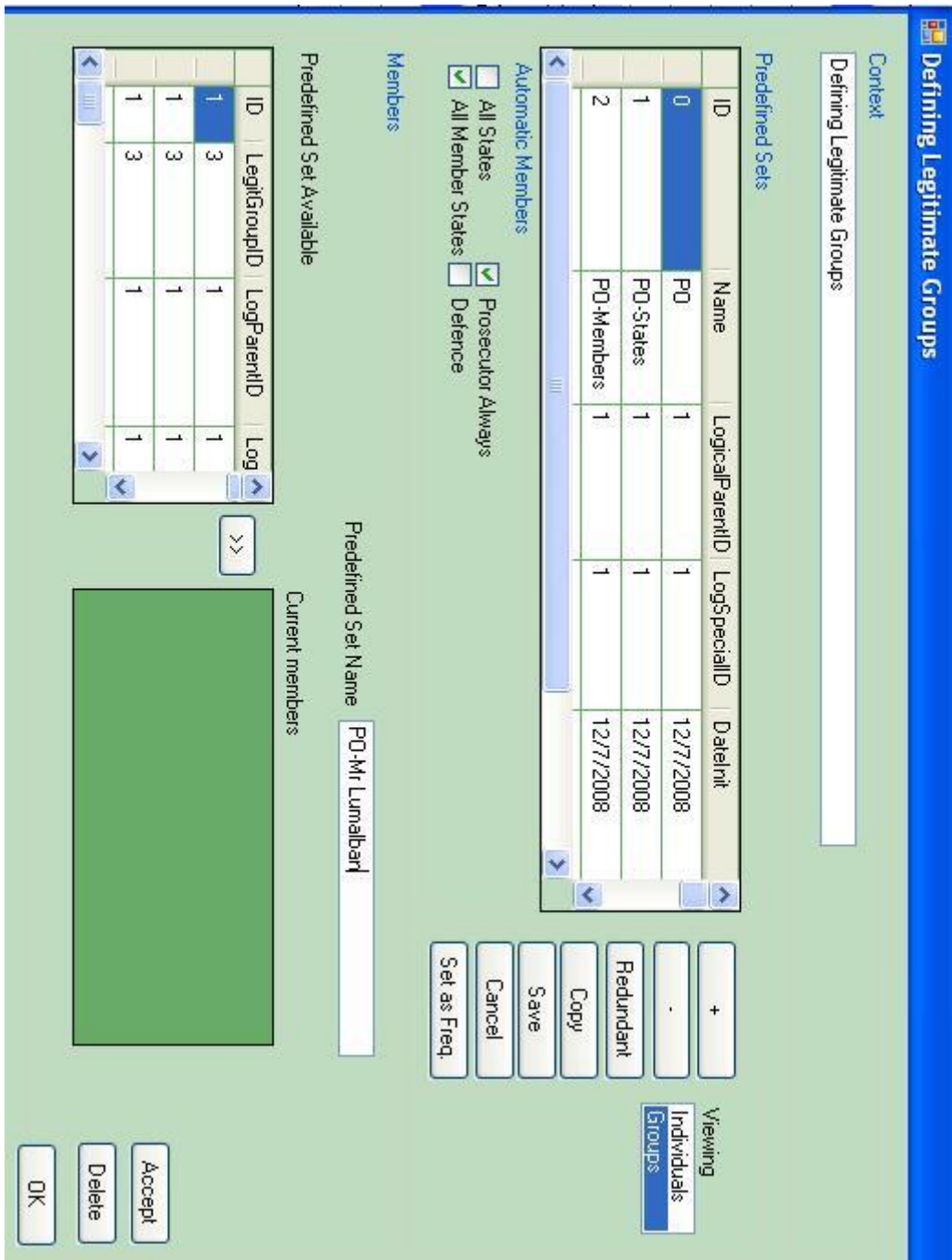
Likewise Counsels may (and must do) unify representation but by any reason, her or his clients may have different notification points (mandatory perhaps for certain resolutions).

The same could happen with legal address, or successive e-mails, because the system performs valid notifications tracking the different valid periods of the different successive addresses.

#### *THE GROUPS MODULE:*

Special attention must be given to the Groups module, as it implements one critical aspect of the new and underlying **Information model**. The user may create groups of participants or counsels or other entities or individuals that might justify a legal interest in a given issue or be considered as so by the court.





The integrants of these groups may be of any kinds and are to be gathered based only in the nature of the resolution that constitutes or declares a situation that affects somehow to all of them.

These groups (might have one or numerous integrants) are available each moment a Court issues a resolution. By simply selecting a Group as the one containing the legitimated, the system takes control (upon acceptance) from that moment on, of ALL the metapath history related to that resolution. Each new derived resolution such as granting a leave to appeal or giving as grounded partially or totally an item, by default, “inherits” the original group, so the system time manager keeps notifying automatically to the

adequate persons all the resolutions. The user may at any point changes this, and the system is aware at any time point the corresponding constituents of the group and any “orphans”. (An integrant without representation, address or notification point).

If third parties observations are made, and the Court grants them and eventually orders FCOPed (see glossary) views of those contents, the observers are included in the Group as annexed WITH THE INCLUSION DATE, or simply set them apart as another ad-hoc participant group.

These facilities so resumed here may reduce the typical tracking work to practically zero.

## EVIDENCE

This is a very rich module but we will focus just in two utilities.

There is an account of the evidence in one, some or the total cases in the ICC. (Image below) and from this point on, the user may consult any of the sub-register formed by a cell of this table. This tabular report is done normally in less than 10 seconds (for a sample of 20.000 evidence media). This, in real world, is practically impossible to be done, even with many officers occupying the whole working day (and the whole building!!) to achieve these findings. This is another way of reducing the work load and money.

Each evidence provider, say a Witness, has associated a MetaData Record, which informs about certain meta circumstances like education or fear level, expected cooperation or confidence of its declaration, or being non compellable (Rule 65) etc. This information is available Prior to the official appearance to the PT and could be taken in account to measure eventual delays and the probability of successfully obtaining a critical useful declaration.

There are lots of sub branches, mainly due to the complexities and dynamics of the expert reports and all the normal issues like the objections, challenges, states security involved in certain declarations, etc. (i.e. art 93.5 Statute).

## HEARINGS

This is a state of the art module. It gather the last technology of image, audio and motion supports, linking it to other records producing a full and intelligent legal support for any Participant.

This module is available in many modes. (Actual hearings and conferences, or delayed ones). Additionally, you may build sequences of selected videos; snapshots of them, blurring images and sound, texts, still images (i.e. satellite images) or mobile cameras based, real cameras or mobile phones, or real time TV reports, etc.) or sections of simple text, for a full grounding of a specific issue. These sequences may conform part of the grounds of any appeal and a sub-module works as a Meta agent that will classify them as relevant, irrelevant, or even mark as treacherous in hiding, or altering meanings or absolute evidence. You may make copies of these sequences when part of them may be

useful for other purposes (i.e. common evidence for different cases or sub-cases: a bombardment of a village, or the killing in a popular manifestation, etc).

This technology must be part of any legal system because of many reason, but mainly ONE: Mobile phones (omnipresent at each corner in the world) can REGISTER any sequence, and deploy it to any broadcasting system in seconds. This has opened an unprecedented new source of evidence for spots historically "lost". There may be censorship in a region, but mobiles can be used, images can be transferred seamlessly, and can help show patterns, and prebuilt-evidence. The amicus curiae agents may act as recipients and organizers of such information. Moreover: if registered and rules they may help DE-serializing the legal process, at least in part, as an externally evidence provider of global or special evidence.

Three simple examples occurred the same day:

-a civil judge parked incorrectly his car. Received a penalty. But in this court menaced one employee, to force him to cancel the penalty. This was registered by a camera, and the judge had to apologize and was sanctioned.

-In a school, two girls performed a terrific fight during a break, and it was again registered and upload to a web site in minutes, and the officers, in an office just meters from the place, could see what had just happened minutes before. Moreover, the superiors called to cite them, and another teacher, from ANOTHER province, called to notify the school that one of the girls had been retired from her school because of repeated and un-discriminated fights with other girls. All happened IN MINUTES.

-a narco-dealer was registered dealing with clients, but was registered in such an intelligent way that, while this was happening, the person filming it zoomed and un-zoomed his cellular, showing that at a distance of 8 meters there was a policeman watching the obvious scene, but doing nothing.

Additionally, a module inserted in the transcription process, classifies the activity-document and allows, previous to the conversion to a .PDF, the capture of text of relevant statements and responses, the exact declarant or decider, the moment of the hearing were they occurred, and so on, so the reporting tools of the system can copy these (read only) text sections, and paste it in any report about any issue, with the associated reference to the final transcription, and the actual time point in the video playback. You can loop these sequences as needed. Then the user may certify (or not) such assertions or evidence produced, and allow the inclusions in any report, including those targeted to the appeal Chamber.

Moreover: if the user is interacting in the hearing and taking note of responses, it may set the truth values of responses. Each of the response may trigger conditional question paths or redirection to another set of questions, or even advice anybody, even not present, of such situation, via an agenda of immediate delivery. It may automatically force the appearance of ANY statement logically related and the sources (a material, document, witness declaration, etc) so as to respond immediately through the adequate notice. (Is there something in the system related with this response? should I "Zoom" this subject?).

We note that PDF (a text file) is a proprietary format, that there are PDF compliant tools for extracting seamlessly text from these documents (in special linearized or Tagged PDFs), but nothing impedes the text to be captured BEFORE the PDF conversion, which might turn those sections available to automated pointing reference processes for the Viewer Module.

## VIEWER MODULE

This is a multi-multi-purpose module, invocable throughout the system.

The overall registering system is mainly indexed serially in page units. These units hold global information and an advance of the contents (a document, an image, a resolution, etc.).

This paging system mirrors partially the official paging system. But generalizes it, as it includes the prior investigation stage occurring at the PO.

The Prosecutor may have its (internal) local representation of the external case. So s/he can add comments, have document correctly ordered and linked, without worrying if the external case (s/he might be simply investigating, prior to any judicial activity). By marking the container record as internal (the default when running at the PO), and ensuring it as NOT Exportable, s/he can later export the structure of the case and the benefits of all the investigation done, to the Court(s) reducing the processing time again to a quasi-zero time. Most of these documents will be marked as annexes, giving each detailed and formatted statements.

Additionally, given a common document (say a text or an image) in both external and internal file) the prosecutor can set the cross references, so at the time of reports the internal indexes are translated to the external references, the only ones that the court will consider and view; i.e. a an image of a given military could be at page 236 in the internal case and the original might be in the external 487 page.

### *LISTINGS:*

This module presents the cases data in many flavors, one of them being the standard: the ordered list of documents, with some minimal filters. (See Registry regulations 20.3);

The ICC Rules establish exceptional faculties of courts sitting elsewhere in the world, joinders and eventual transfer of sought authors from one case to the other. More than one court might exist due to the work Load.

Any court may query any case and extract aggregate data from different cases, but by the reasons hereinbefore mentioned, it can order any set of cases to be joined in one single legal case. The system does so in seconds, and performs the indexing engineering customized to fit the legal needs of the court and the practical speed requirements. This way it may set a base case or simple define a new case adding the others in an orderly manner. There are many flavors, and the system preserves the original indexing of each isolated case, giving the option to the user to work with the global or the local index when reporting about a sub case.

The original cases may or may not be joined to the same physical container (a central or distributed database), and the system links the overall set of cases to the set of courts that will seize the case, preserving the historical original courts. It does some

checkups to avoid that a court (judge) may intervene in a court in matters where there is a prevention to do so.

The system allows two freedom degrees: you may join two or more cases in one, or split two or more cases as separate. (Arts. Art 64.5 Statute, Rule 136 + Registry Regulation 22, Rule 162.2.c or Rule 165.4 etc.). This may be done with real separation of data or only virtual. The original indexing schema is preserved, even for references. This means that you could merge hundreds of different cases in one legal unit, with one single court having jurisdiction, or preserve individual jurisdictions, but view all cases as only ONE big situation. Additionally you can settle a unique Appeal court for different cases that may pertain to local (Le Hague) courts or courts sitting on other locations. The calendar manages time conflicts.

Whichever may be the option, the system reports information in an aggregate manner taking in account the original indexes or a global unique index. Reports redundancies (such as the same witness declares in 3 different cases, there are authors accused in different situations, the evidence needed in this case is already available in that other case, etc., perhaps reducing the overcharges and problems of repeated citations to declare, but preserving the rights to de-facto ex-partes.

A built in certification system (Statements Module) may make a full report on different issues about the relation of some statements (contradictory, contrary, complementary, independent, generic-specific, etc). Moreover, one can mark any statement as "poolable", which that it will reside in a central deposit of statements, for some reason useful (i.e. global evidence about situations, special statements based on witnesses or experts in one case, that can be useful for any other, etc. This is a critical tool to avoid the re-declaration of witness, costs, risks associated, and the psychic damage associated to these requests.

Concerning to the standard page lists, they can be highly redundant or incomplete or confusing.

There are a set of limitations because somebody might be interested in

- Another format.
- Another target device. (A text, a web page, an official report, etc.);
- Another target context (A virtual court, the web, forums, etc).
- Another subset of data being listed.
- Another criteria.
- A given subset of the underlying tables.

This problem is solved with:

A handful of filters (options for the user) and an underlying module assembling repeatedly the corresponding SQL expression to retrieve the required info from the database. I.e. searching only for notification service, or copies of documents, or images, or documents with more than n pages, from a given phase, or participant type, or evidence related, etc.

Moreover: the user can restrict the columns of data to appear in the report, choosing perhaps date, page, type of document and size of it in pages, etc.

Even more: The user can save all these options as prebuilt query criteria, naming them, to be reused when wanted.

- Several flavors of data structures in the output: i.e. the sequence of columns may be the standard or the user may select one that provides common data in the leftmost corner, followed by 5 ordered columns: common data, PO or victim activity, Resolutions, defense and "Others".

Additionally in the normal listing the system may use colors to distinguish these parts, providing quickly additional information. (Colors may be assigned to different participants and or different document type, and the corresponding cells in the columns will be set).

**Technical note:** When the output is a web page to be uploaded, the automatically generated html page includes in the corresponding cell tags of the tables (tr and td), the colors, and eventual handler calls (OnClick etc.), along with the handler snippets in the script section) and the style section for ccs formatting). Similar actions are taken when the output is an xml file (issuing a predesigned xslt file).

This retrieval system does no semantic or legal work. It will perform a brute force action, but in a fairly quick way.

## RESOLUTIONS MODULE THE METAPATH

### *THE METAPATH:*

Each legal decision in a court in the real world may affect nobody, one or more participants, whose legal rights must be respected. Though the same resolution may affect different parties, these parties may act independently and may be subject of controlled and uncontrolled situation. (i.e. one may consent the resolution, other may appeal it, other might not even be considered as particular affected, other may be notified but with due documents not attached, other might have the server down ( in electronic notifications), other may abandon the appeal, and so on. So, clearly, there must exist a separate internal structure for all these independencies.

We define the **Metapath** as all activity related to a given resolution, originated by the eventual legitimates, ranging from a simple explicit consent or lack of activity, to the full support of all the necessary steps targeting the revision of such statement, involving the service of notification, the notification, the computations at each step, eventual agendas, the specific regulations for the type of the decision (i.e. art. 77.1.(a) Statute), leaves, appeals, grounds, variations, responses, leaves to reply, replies and observations and its responses at any step of the metapath.

The system provides a rich model for a full background work and an automatic structure of records for this purpose, delivering ANY report in seconds. (I.e. All resolutions concerning this participant, all rejected appeals, all appeals made by X, All grounds not yet fully responded, all Resolutions in the case not final, or appealed, etc.).

For each resolution, the system builds an underlying structure that, shortly, includes:

**The Master Resolution:** This is an electronic copy of the real world decision's content, with its paper support, date, location, indexes, items decided, signers, etc.

**Child Resolutions:** These are separately generated records for each of the items decided in the master resolution. Each one has associated internal records that make the system be able to track and report separately each event of each legitimated for that resolution. The Groups module is a partner in this job. Recall that given a resolution the court may associate the groups legitimated by any reason (say: the member States, the PO, that victim and that defendant). By default, these groups will be used through out the metapath, so one can just imagine the enormous time saving tool the group module is. Additionally remember that Groups may be reused (selected in further resolutions) and the system forces the inheritance of these groups in EACH resolution of the metapath. (I.e. someone grounds an item if her/his appeal and the system registers and remembers the legitimated groups granted to respond to it, excluding obviously the grounder). Moreover, if you classify on the fly a resolution as a reference in an index module, the associated group in the index will be set by default.

The Court may establish different notification ways (say, one personal and the other via e-mails or views to the PO).

- the court establishes the decision type (i.e. arts. 81 and 82 Statute, Rules 150ff).

- The system records the full text as a whole with its date, signers etc.

- Automatically notifies the resolution (consolidating contents in one single notification service when there are common participants).

- Create for each logical record the service record, notification record and agendas, to track the **individual** and **independent** procedural activity of all of these participants. (Grounding, requesting documents, or suspensions or new timelines, abandoning appeals, responding items or variations of grounds, etc.).

- Background modules will track each metapath, at any and all levels, and report them individually or at the aggregate level (i.e. inform if the master resolution is final for all participants or simply for State X).

This is an invaluable tool (and even unthinkable) for courts and chambers needing a certification about the state of all the metapath of any issue to be decided by the court.

Note that it is qualitatively a completely different utility from the Pages Module and a perfect example of benefits of the transfer of legal data and methods to the computer



domain. The pages Modules lists subsets of documents based on their input order, and provides no legal computation.

**As a simple example:** a set of 10 participants, their appeals, grounds, associated responses, may produce a metapath tree of six or more depth-levels, and at each level a fanout of various and different items.

Have in mind that each step in the metaPath involves a notification, and each application might have several sub-items, each referencing many items in appeals, etc.), producing perhaps almost unmanageable cross references and countless costly work hours to ensure and schedule the order and nature of all claims-questions to be decided.

Additionally there might exist preliminary and non preliminary issues, and logically related applications. The user may request the output solely for preliminary issues and even a predefined schedules (via the Index Module).

A panorama like the mentioned is reported exhaustively, with any customizable level of detail, in seconds, producing this report in simultaneous various flavors, even tables that can be inserted in the grounding section of each decision.

This report may include all notification history of each step in the path, with detailed information about the notification way, procedure, date, any delay, suspension, re-assumption and reference to the entry point in the case's documents.

This request may be done at ANY stage, at ANY moment and even an agenda may be set to inform of failures or specific event of interest (i.e. the chamber is seizing the case, and wants to know the period during which appellants may ground their applications, or the Prosecutor must produce his eventual consolidated response in the case of Rule 150, Regulation 63).

So FOR EACH DECISION of a court in any phase, there might exist an almost unmanageable meta path (A tree triggered by a simple appeal or observation). Additionally, these are frequently the source of nullities, so control is of utmost importance.

Surprisingly the benefits of such an underlying technology are available "at the distance" of no more than three clicks of a mouse, because a dedicated set of menus let the user select the options (i.e. the full set of responses to a given index in the grounding document of a given appeal indexed in that way; i.e. Participant A, might make three appeals (I, II and III), and may ground each one with different indexed supports).

## IOB (INPUT-OUTPUT BUFFER)

This is tightly related to the Resolution Module.

Shortly: The system provides tools (editors) for generating any document (temporary, draft or finals), consisting of any nested subtexts, with optional indexes of any nature and capable of being references later. It may use templates to build each of the documents, and may import or export it in many formats. It may define as well the current text as a template, save it for further reuse.

The text is seamlessly associated to input documents or legal resolutions (See Resolution module), passing the control to the resolution module which in itself relays in the notification-agenda system (the pipeline), along with the time-manager that controls any metapath.

This module is designed to present an interface dependent on the system in which is running (The PO, the PT, or trail, or eventually a defense). Despite this “runningOn” parameter, any type of document may be input and indexed, so as to have a full representation of the official documentation.

A special dialog Box allows the decider to input the decisions characteristics and history: the type (i.e. arts 81 and 82 Statute), the FCOP type, and lots of additional information to be used by the system on later stages. We note that for the 95% of THE OVERALL DATABASE, data are initially set with default values with obviously legally valid values (i.e. the resolution is NOT final at the moment of decision, there are no appeals, etc.). Unpredictable values like Names or addresses or dates must be input manually.

When any resolution is decided to become official, the resolution module grabs control and issues the necessary records conveying the metapath.

## STATEMENTS

Every single relevant statement for the case may be represented in the database: i.e. this author intervened actively in a bombardment or a violation or knew about what subordinates were doing or about to do. Each statement in real world or judicial world is saved in a record, but is allocated to the given unit element being analyzed (these facts, this author, this victim, this legal characterization, etc.).

If found relevant it may be saved in a pool of useful statements at the global level, and the system will track automatically such statements (if requested), even if produced in any other case (i.e. a commander of a whole region, but whose actual crimes might be judged in different situations or cases).

Recalling the XML question: In an hyper-simple example, let us consider the minimal phrase “intend to destroy totally or partially”.

It may be restructured as

“intend to destroy”	
“Form:”	(The default logical operator is OR, that is totally OR partially)
totally	
partially	

totally or partially are statements that will have a truth value associated. These values will determine the Form statement.

Each of these real world items (the actual contents and requirements of one of the crimes listed in the statute has been already mapped (associated to a statement record), to a set of tools and the user can build a full dedicated pyramid of statements, each with its truth value.

So for this simple example the prosecution must prove the intent to destroy AND the form.

Likewise the form statement will have as truth value the truth value of the composite statement (totally or partially). If some of the components are proved true, Form becomes

true, and the total set will be true ('intend to destroy' AND 'form': being the components true, the result is true). Additionally you may customize THE LOGICAL OPERATOR. (I.e. change an OR by an AND or the inverse).

The top of the pyramid is normally one requisite: called the canonical statement: i.e. the intent of the criminal, or the Art 31.1. (c) in case of invoking legitimate defense, or say, in the case art. 7.1.(f), redirecting to 2.(e) of the same article (which opens a new sub-tree of requirements.)

The user then may gradually manipulate cross references (Cross Reference Module) and the result might be dozens of facts related statements made by witnesses or experts declaring about that given statement, each giving one VERSION of that canonical statement. Versions may coincide, contradict, involve denials to respond, complement, etc. So each canonical statement may have many VERSIONS, each with a truth value: false, doubt, true, etc.

There exists a debugging, (deputation) layer for this "mess" of correlated statements, until the decider/court accepts one version as final, along with a given truth value (i.e. true, false, doubt). If we remember, this value will be assign to the canonical statement, but we must remember that this is only one of the statements (requirements) of a crime or excuse or global requisite. (I.e. one of the various requirements of art 31.1. (a)). The open type "Other" case in art 31 deserves a special treatment as it support is not known in advance and must be set on the fly (i.e. some art 3 Common type in the Geneva Convention, or the Maertens clause, etc).

#### *THE BUBBLING PROCESS:*

Mimicking the bubbles in water (and the event bubbling process in the dhtml model), the system, by executing the same process for each element of the crime, can recursively travel to the leaf level, compute the truth value from base values up to the top of the pyramid, presenting the user the final logical computation (false, doubt, true, etc). This means computing all the values of the components and, based in the parent's set logical operator (AND, OR XOR, special) will compute the overall set's truth value. It will do so automatically and exposed it in letters and/ or colors.

Sit. Sudan/ Case 12/Court 2/Decisor 2/Author 1/Victim 2

Options Decisions View Data Crime Requisites

Context Viewing Prosecutor's settings Decisor Prosecutor ICC Art 6

Show Level Political Crime Depth 1 2 3 4 5 All

Consider Mistakes  
 Consider Presumptions  
 Bypass Manual Computations

Data Headers  
 Mistake Headers

Show Relevant Irrelevant Both Statements Facts Opinions Both

(a) Killing members of the group;  
 (b) Causing serious harm (Log:AND)  
 Case(Log:OR)  
 to body or  
 to mind  
 to members of the group;  
 (c) Case:Deliberately inflicting conditions... (Log:AND)  
 Deliberately  
 inflicting on the group  
 conditions of life  
 calculated  
 to bring about its physical destruction... (Log:OR)  
 in whole or  
 in part  
 (d) Case:Prevent of births(Log:AND)  
 Imposing measures  
 intended to prevent births  
 within the group;  
 (e) Case:Transfer of Children(Log:AND)  
 Forcibly  
 transferring children  
 of the group  
 to another group.

So if ALL of the requisites of legitimate defense are proved, the statement “it was in legitimate defense” will be true.

Nevertheless the decider can de-activate this process, and set manually these truth values, setting in a note record all references and explanations.

This may be time-saving for one decider in the short term, but unaffordable in the long term.

As a simple example: All the bubbling process may be output to a file, with a complete diagnostic about all versions of “intend to destroy” (or any other), remarking the exact source and the exact location, page, line in the case’s file, along with dozens of other

relevant reports that can be inserted in the resolution (groundings of facts in a highly professional tabulated way) and of immediate access for the chamber.

(There exists a not even mentioned module like the Grounder, Evaluator or Certifier Module, that allows to certify (through certifier internal or external agents) two different levels of information: what actual the parties say about evidence, and a meta evaluation about this sayings: not admissible, not true, not pertinent, false references, hiding strategies in unfavorable items, precise, etc.)

Furthermore, it is an invaluable tool for finding out the attitude of the parties, under the hypothesis that every party in conflict, though may think lawfully, might "forget" to mention certain evidence.

Moreover, in some cases a clear statement may be claimed to mean the contrary or even that it's ambiguous, a special case of other, when it's a plain, final and clear statement. The system will list the exact points, and even may make a copy of the source text, so no time in recovery tasks will be lost.

## SECTION VIII

Before reading this chapter, you should read the notes about XML.

### *THE DIAGNOSIS MODULE:*

The system considers and explicitly presents as possible crimes or excuses/justification the content of arts. 22ff Statute, and does so in highly structured and analytical manner, following a hierarchical sequence customizable by the court. I.e.: the court may consider as preliminary issues the existence of information (uncertainties module), jurisdiction, admissibility, gravity, firmity, Security council deferral resolutions, art. 98 agreements related and the actual invocation of such agreement by a non ICC member, non accessed State whose national is the sought criminal, excuses, alibis, bis in idem allegations, mistakes, art 31 Statute issues in a given order, and all specific crimes sub-items (this or that victim, action, legally protected interest, etc. )

Given the selected order, the diagnosis module will produce various levels of reports in optional or joint formats and detail level, with written explicit references to the point in the registered documents that confirm or reject a given statement. This analysis is done instantly, while in the real world might take very specialized officers and DAYS.

Context  
 Situation:Sudan Casel

Stages

- Jurisdiction
- Admissibility
- Deferrals
- Mismatches
- Inconsistencies
- Bubbles
- BTAGS
- Mistakes
- Crime

Tracking

- Statements
- Errors
- Both

Output To

- Table
- Text

Flavour

- Table
- Text

Warning Level

- None
- Warning
- Dependent
- Fatal

Statements

- Decided
- Pending
- Both

FDTTypes

- Original
- Apply Rules

FDTVvalues

- False
- Weak
- Doubt
- Strong
- True

Language

- English
- French
- Both

Diagn. Order

Add Separators

Add XReferences

Assume Uncertainties will be certain

Consider firmly

Consider crime continues

Diagnosis

#	W	Section	SubSection	State
0	W	Jurisdiction	CrimeDate:	(Instant) Posterior to loc entry in Force
1	-	Jurisdiction	Location	Africa/Sudan/Region
2	F	Jurisdiction	Age at CrimeDate	Minor
3	-	Jurisdiction	Membership	Sudan/locMember
4	-	Jurisdiction	Cooperation	Sudan Inforce At CrimeDate
5	-	Jurisdiction	Cooperation	SudanMust Cooperate By location of crime
6	-	Jurisdiction	Cooperation	Sudan Inforce At CrimeDate
7	-	Jurisdiction	Cooperation	SudanMust cooperate By Nationality of author
8	W	Jurisdiction	Art98 Agreements	Art98 Agreement Sudan-USA
9	W	Jurisdiction	Art98 Agr Invoked	Art98 Agreements Not Invoked
10	-	Admissibility	Art98 Agr Invoked	Sudan/Global Ability

Context  
 Got  
 OK



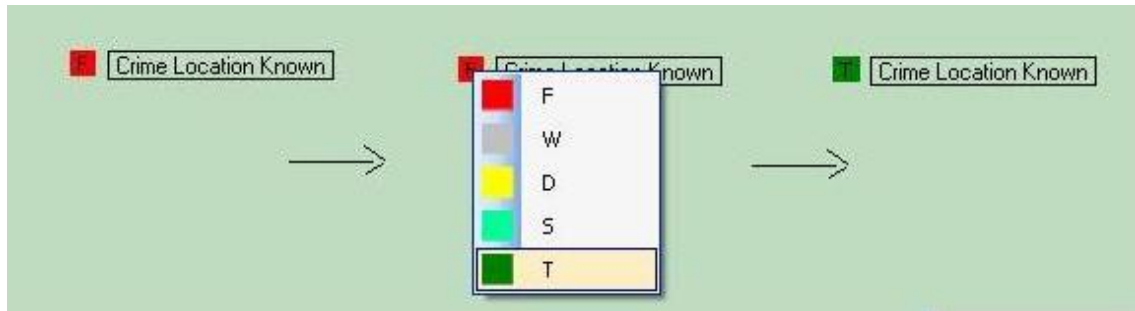
The system provides additionally an overview of exclusion items (a snapshot of the state of the case) for a n-uple of crime, legal charge, author, victim, decider, with a macro view of any relevant issue.

Situation: Sudan/Case 2/Court 2/Virtual/Decisor 1/Author 3/Victim 3

<b>Exclusion Circumstances</b> <b>Jurisdiction</b> <input type="checkbox"/> ICC Crime <input type="checkbox"/> Suff. grave <input type="checkbox"/> Post 07/03 <input type="checkbox"/> MemberShip or accession <input type="checkbox"/> Nationality <input type="checkbox"/> Author under 18 years old (art.26)		<b>Uncertainties</b> <input type="checkbox"/> <input type="checkbox"/> <input type="button" value="View Cases"/> <input type="checkbox"/> Read Only	
<b>Admissibility</b> <input type="checkbox"/> Will <input type="checkbox"/> Ability <b>Other conditions</b> <input type="checkbox"/> Bis in idem <b>Mental Element</b> <input type="checkbox"/> Intent <input type="checkbox"/> Knowledge <input type="checkbox"/> (art 25) Indiv Responsibility		<b>Mistakes upon (art.32)</b> <input type="checkbox"/> Fact <input type="checkbox"/> Law:Prohibition <input type="checkbox"/> Law:Permission TOTAL <input type="button" value="View Cases"/>	
<b>Art.31 Responsibility exclusion</b> <input type="checkbox"/> 1.a Mental disease or defect <input type="checkbox"/> 1.b Intoxication <input type="checkbox"/> 1.c Legitime Defense <input type="checkbox"/> 1.d Duress <input type="checkbox"/> 3.Other grounds		<b>Art.98 Agreements</b> <input type="checkbox"/> Existence <input type="checkbox"/> Invoked	
<b>(Art.28) Commanders</b> <input type="checkbox"/> 1.Main Commanders <input type="checkbox"/> 2. Other relation		<b>Deferrals</b> <input type="checkbox"/> Prosecutor <input type="checkbox"/> Security Council Investig. Prosec. <input type="button" value="View"/> <input type="button" value="Details"/>	
<b>(Art 33) Superior orders</b> <input type="checkbox"/> Acceptable		<b>GUILTY</b> <input type="checkbox"/> Pled <input type="checkbox"/> Global Responsibility <input type="checkbox"/> Accepted <input type="button" value="OK"/>	

This innovation-technique induces an immediate visual perception of the case (a child or a profane could assert so). I.e. if the diagnosis tool report shows a green box associated to any issue like jurisdiction, or mental element or mistakes, this means that all the underlying statements (with the involved logic) have been processed and a True value for the statement has been logically computed.

Another unique attractive feature of the system is the option to show statements and their associated truth values in two different formats: letters (F for false, D for doubt, etc.) or corresponding COLORS in little squares (Red for false, etc). The selection of any of this options is a simple as shown in the following sequence:



You set the cursor over the square (the F), click the right button, the popup menu appears, you select a value (in this case T, true), and the system sets the new value.

We recall that there is a Preferences module that may filter this truth values to final different values. (I.e. a judge may consider that evaluated local doubt values should finally evaluate to a False value).

Moreover: you can force the Diagnosis tool to present only problematic parts of the evidence, so as to react in consequence. Diagnosis will report this or that statement has not been proven (not even produced), or has been appealed the result of an expert report and it's not final, or a given witness did not respond invoking legal rights, or two different witness are asserting contradictory or contrary information, or someone has considered a witness's assertion as requiring a "zoom", etc.

### **Additional legal Utility of mapping legal expressions to hierarchically structured statements:**

Each court has to take a final decision about a crime, and it depends on a pyramid or tree of constituent statements that supports that decision.

-Via the transformation, this tree becomes explicit and may be mapped to a graph. Each node's value is dependent of its children node.

This way, the system takes the root node as reference, recursively travels to the bottom nodes (i.e. the distinct statements of a witness or the contents of a document) and proceeds to BUBBLE UP the truth values, based in the truth values of the children nodes (the component statements), by simple application of truth tables and eventual options made by the user.

-the consistency analysis based in a given tree and associated logical relations.

-The possibility of applying special logical sets of rules hierarchically, when a complex logic is associated with a legal requirement. An example may be the art 18 logic that offers a set of alternatives that may not adequately be represented in a simple scheme. The whole set may be broken in a simple sequence of sub-statements, each one returning a decision. (No investigation, go ahead, suspend it, agenda it, request again the investigation due to new circumstances, etc.).

-Classifying the sets components.

-Open the possibility of working in Compared Law in a standard mode.

-Handle in a standard format the heuristics of the crime set.

-Provide a common Index for many other modules (Selecting charges, charging those crimes to specific authors, filtering ict crimes, matching certain facts to certain crime sub-elements (i.e. this victim adolescent to the respective war crime recruiting them) and mainly the control and diagnosis of mismatches among charges, legal characterizations and facts.

-the open architecture involved: A simple addition of new elements in the .xsd file may open a world of efficiency. A simple example is the loading and presenting automatically crimes to the user, despite the original expression, in a more understandable manner.

-the simplification performed in each crime, that permits the automatic generation of clear forms up-loadable to a website, being themselves downloadable, for the cases' data acquisition and the automatic processing of responses at the PO.

-the advantage of this format for eventual virtual courts to intervene in a fluid manner in the activity previous to Prosecutor's data processing. This may reduce the Prosecutor's workload to an almost zero level, and increment the efficient feedback of the overall institutional presence of the ICC in the world.

Whenever the PO sets the legal charges, the court confirm them or the legal characterization of facts change, the system searches for consistent chargeable crimes, automatically loads from the xml file the canonical statements with its hierarchy, with the default values (false). The same will occur when the charged person or a State poses any challenge or alibi: The corresponding canonical statements of the apparent negative circumstance will be loaded and integrate the case automatically. The evidence proceedings will determine an updated truth value or persist (confirm) the default (false), be it for an accusation or an excuse/justification, or a jurisdiction or admissibility issue.

-The possibility of offering strategic information to the Prosecutor: there are cases that are likely to involve less time, money, pain to witness and victims, or processing skills, with higher probabilities of success. The insertion in the xml file of data of such type, would permit the filtering of cases, enforcing denounces of that type, and accelerate the throughput. A simple example already implemented: one requisite may represent facts (say an image of physical harm) or may represent opinions, including the need of expert advice. By this simple attribute in the owner element, the PO may filter cases were it may be convenient strategically to work with fact based requisites, avoiding typical challenges of the defense, enforcing a shorter procedure.

1. The full advantages of the powerful xPath language, used to query xml files.
2. The portability of this format to different environments (windows, Mac, ibm, unix).
3. The easy way it can be translated to any other language.
4. the scalability in lots of aspects of legal relevance:
5. Another variable can be the only type of evidence source accepted in court for such item: this may reduce and specify the available sources in the denounce forms in the investigation stage and avoid further rejections or challenges.

6. This format allows the simple insertion of new set items like “elder people”, “children”, with a simple line in the xml, without touching the .xsd.
7. A simple time stamp or version index in each element allows the retrieval of a subset of elements that will help in more favorable decision in behalf of any accused.
8. The xml format allows the system to present in a common manner many different aspects like jurisdiction, excuses, and mistakes.
9. This structure permits attaching a clear label (attribute) to each set or subset: it is an AUTHOR, VICTIM, ACTION, MEDIA, MODE, PROTECTED INTEREST, etc. which are in itself legal requisites of any crime.
10. This element is recovered with this trivial XPath expression: `\"//*[@ci='victim']\"`, which in practical and profane words means that you can request the system to “find” all victim (or media, etc.) types, despite the ICC typified crimes. It recalls all the subset elements. With minimal additional, you can query for special types (i.e. children or women as victims, AND ACTION as violation). The XPath engine forces the system to recover only these subsets. Moreover: At an upper level you can query all cases in which the VICTIM is of this or that type. Furthermore: when the PO filters possible cases, he might want to assign precedence based NOT in crimes of this or that article, but in crimes in which THE VICTIM is of this or that type (or the ACTION, i.e. relocation or displacement). Obviously, the user simply selects items of menus with the mouse and the system assembles the XPath expressions on the background.
11. This is a strategic tool to link denounces and group them in the same case or distribute them according to any criteria. Finally, whenever a denounce (form) with the corresponding field enters the system, automatically the system informs the POSSIBLE set of articles and sub-cases chargeable. The PO may request an immediate advice or even require some feedback to the network. (i.e. simply by extracting from the xml the associated different innerTexts (in the AUTHOR, ACTION etc. subsection) and query the original denouncer as to “is it a case of this or that?”, reducing uncertainty in an incremental way.
12. Additionally it presents the query in a closed set and in a list, and the user must only click in the alternatives, which prevents possible typing error, or forcing the user to non standard inputs. As the items in the xml file may be accepted as standard, there can be settled in almost a trivial subroutine, the request of the language the denouncer controls, extract the items from the standard xml file (the set of crimes), translate them automatically and present the list-form in the adequate language. (This can be made uploading the page to the server for any hardware level client (a normal pc or a mobile phone).
13. In the case of crimes there are three possible relevant set of conditions to fulfill:
14. The overall requisite like that of art 6 “the intent to destroy”.
15. The crime itself (say any sub-part in art 7).
16. The eventual zoom to be done, in the case the crime itself contains elements that are defined elsewhere, like art 7.1.b and 2.b same article (Statute).
17. The system presents all these three cases exactly the same format.
18. -Generalizing this last issue, the format may enforce a standard presentation of the requisites of the full set of crimes.
19. The xml has an attribute named ‘relevant’: This is the central attribute in legal terms: A type may present a class like ‘methods of commission of crimes’, presenting different alternatives. The user should select one of these (setting it as ‘relevant’) which is in fact part of the process of legal characterization of a crime. At some point in the investigation or prosecution, mediating a charge, there has to appear in the evidence, the facts of the crime (i.e. if the class says children, this actual victim must be considered legally a child. Thus, facts MUST be adequately

mapped to one of this classes. Selecting as 'relevant' means this is the legal type for this crime (say it is a case of art. 31. 1 a). Any un-match (real or pretended) triggers a case of legal characterization of a crime and any dynamics associated with it.. (There is a charge but no evidence, or there may be evidence of icc crime but no charges made (selected as relevant).

### *THE CRIME STRUCTURE*

By far this is the richest module in the system. It offers:

- a complete set of tools to represent facts in a database.
- The complete separation amongst opinions of legal deciders about the case.
- the independent assignment of a truth value to each item in a crime (say false, doubt, true).
- the independent legal characterization of those facts by any authorized decider (any virtual court, the prosecutor, the defense, the pre-trial, trial and or appeal chamber).
- The total neutrality of the system to any theory.

The Statute shows that the Rome commissions were totally aware of issues like the 'actio libera in causa', and stated in the text (Art. 31.1 (b)) clearly their position, against other dogmatic positions, that might ignore the growing importance and purposed usage of all kinds of drugs, invoke of intoxication real or simulated, or the usage of children to perpetrate crimes. Due obedience might be another typical issue, or the acceptance or admissibility of mistakes of law.<sup>7</sup>

A judge may characterize facts different from any others, and s/he may set as not guilty, justified or excused what for another judge should be characterized in other manner.

It is even neutral to classifications like excuses, justifications or impunity conditions.

In the real world, any judge and/or decider may differ in a given case in ANY matter of fact and law, relative to any other judge. Additionally, each decider might sustain different theories. This freedom and right poses several design problems, being the main problem the need to save each judge's opinion in any matter, separate from any other's.

---

<sup>7</sup> As a psychologist: Psychopaths are totally aware of the harm they produce, and know the negative value of so, but focus only in the evaluation of impunity and not empathy. Violence inside the family boundaries (and secrecy) is a good example, paralleling a micro-State.

The system lets any decider express freely its opinions about facts and laws, by the determination of the truth values they might consider adequate, which, as told, are expressed in a dedicated and exclusive set of records. The rules of majority and responsibility of the court will later play as a rule. Any court may establish an order of decision and any judge may conform totally or partially to any decision of another judge. The system controls this order to be respected, and preserves everybody's opinion in separate records.

But, as the structure of a crime has i) a hierarchically set of items, ii) a complex underlying structure, and iii) requires a logic sequence of analysis, some design solutions may collide with others.

The designed system has solved this in a perfect way: though relational database technology force the splitting of data according to technical restrictions (normalization of the database), there exists a background module that gathers all the related tables to conform a legal unit, and maintain this unit separate from other decider units.

This way the data access possesses two layers that introduce a freedom degree:

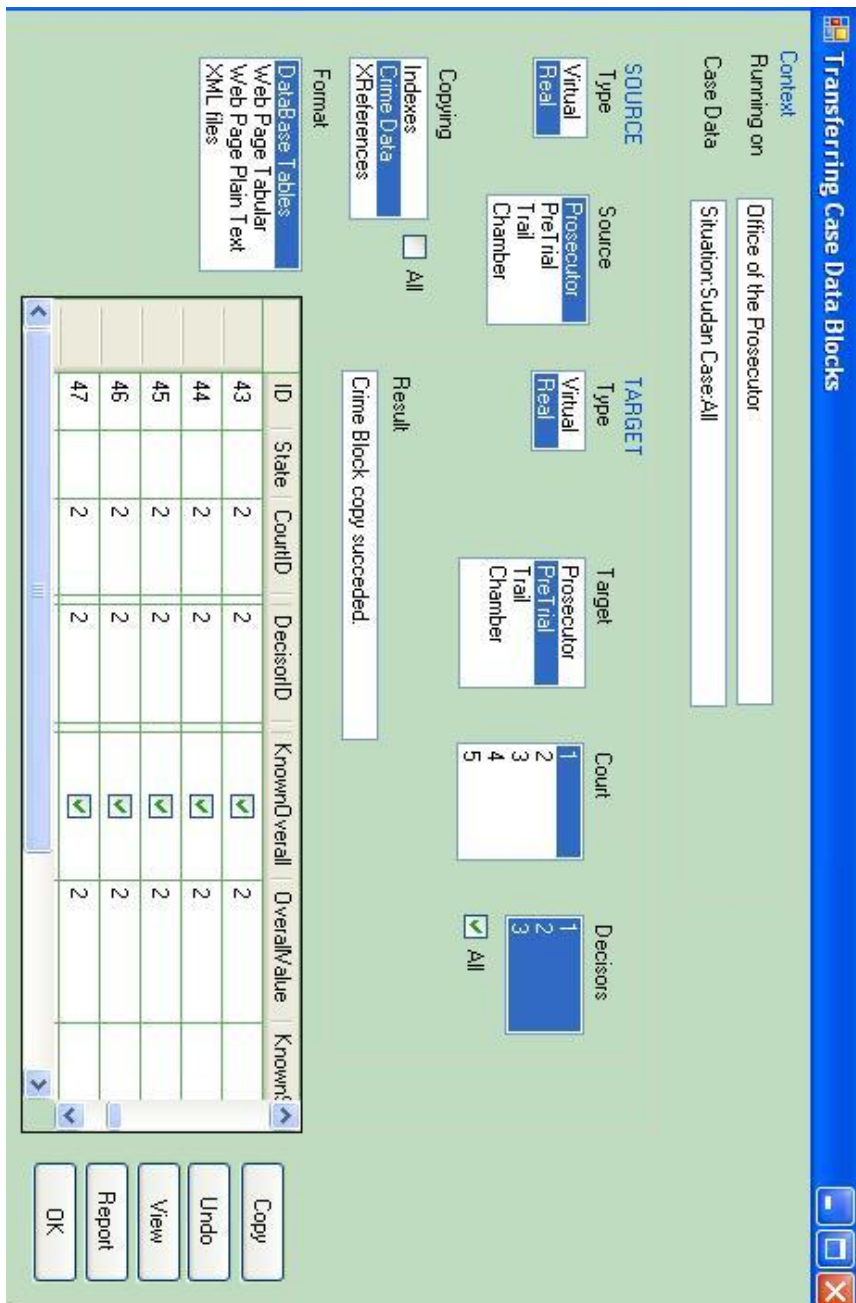
**-the leaf or low level:** recovering "sparse" data from the database and

**-the legal layer:** that gathers those data in a meaningful unit of crime, defined specifically for a given case (a decider-judge, a location, time, author, victim, action, member states, nationality, and so on).

This design is of utmost importance to take advantage of the previous work of the network, virtual courts or the Prosecutor's work.

Due to these layers, The system allows the exportation of ONE copy of the record(s) of the case investigated by the PO, and the replication (cloning) of this copy in as many copies as judges will seize the matter, but giving at the same time the possibility of manipulating the truth values assigned by the prosecutor, to fit their own opinions and avoid prejudice challenges. By default, the judge receives as active the default value (i.e. innocent, etc.), but may switch to any other with a simple click.

The next image show the context:



So the judge will acquire and take advantage with zero effort the whole structure of an investigation of the PO, but in a totally independent set of records, different from those assigned to her/his colleagues.

As the copy provided includes eventually the referred index, she/he may consult the index and confirm or disconfirm in his proprietary copy, the values proposed by the prosecutor.

Moreover, the court may decide that the judges are granted access to the local indexes of the other judges (in read only mode). A judge may find that the Cross Reference links set by another decider are correct or not, and copy those or delete virtually those in his proprietary copy.

This case unit may have its own evolution, from expected true value (at the start of investigation) to final value (the chamber's decision or the acceptance of a pled of guilty).

Given the overall database, the system holds different modules to make a diagnosis about each isolated relevant item (i.e. date of the crime, locations and relation with membership states, the existence of excuses or mistakes, etc).

Given such facilities, the system additionally offers the possibility to customize or filter this diagnosis, alerting the user that there might be some interrelations that should be considered jointly (i.e. a crime that is committed previous to the 18 years old limit but continued later (retained in slavery condition after that limit), or the preliminary character of certain issues of jurisdiction or admissibility over the consideration of specific items of a crime).

This diagnosis presents instantly the state and grade of evidence supporting a crime or an excusing circumstance. As we already mentioned, the use of colors make this diagnosis even more intuitive and direct. The output may be customized and it may take from one page to hundreds.

A case might be started with clues ranging from a hair or the piece of a bone to a full fledged crime referral with a complete set of facts and an adequate legal characterization. The system may hold this evolution, offering tools to incrementally unfold the original uncertainties, and qualify them.

The importance of computer aided legal systems for normal or massive treatment of crimes are based in the multiplicity that may arise in the following items. If adequately implemented totally or partially, the processing time for any of this items is reduced to almost zero, freeing humans of the repetitive and low level related information tasks, such as: uncertainties about the case, crimes, locations, member or accessed states, or SC determined, dates, ages, victims (and different types), authors, (count and quality), authors, global or local responsibility, facts, jurisdiction issues, (age of author, nationality, membership of States, etc.), admissibility issues, participants, counsels, investigations, deferrals, excuses/justifications alleged, mistakes, qualitative and quantitative. legal charges, the dynamics of legal charges, actual legal characterizations of facts, the dynamics of legal characterizations, evidence types, evidence amount, statements of all type, versions of this statements, histories of these statements, objections, all metapath issues, etc.

**The system tracks and reports instantly about the following matches or Mismatches among:**

1. Virtual Courts.
2. Real Courts (i.e. the ICC courts).
3. Virtual/real.
4. Authorities.
5. Decider intra courts (i.e. differences between two judges of a given court).



6. Deciders among-Courts.
7. Decider inter instance (i.e. Trial and chamber courts of the same case).
8. Charges.
9. Legal characterization (that might evolve to different from actual sustained charges, according the incoming evidence from the investigation or evidence media output).
10. Different crimes candidates (a given fact might match two different ICC crimes), which rises a problem of hierarchy.
11. Special issue.
12. Legal text and interpretations (wide or strict) (i.e. if a logical operator of "AND" should or could be interpreted as "OR"), which is NOT a trivial matter.
13. Versions of a same canonical statement: I.e. an expert says the sought author did not intentionally intoxicate prior to the moment of a given crime, other may say the contrary, other may contradict this, etc.).

If you change ANY variable concerning jurisdiction or admissibility issues, (location, time, will or ability of a State, new memberships, difference in entry in force dates, etc.) the system automatically and instantly responds presenting candidates States (if any), and reissues the diagnosis.

#### *MISTAKES (ART 32 STATUTE)*

Associated to any requisite of a crime (i.e. art 31.1.a) or justification/excuse requisite, the system offers the creation of a record(s) for mistakes associated.

Each mistake is in it self a statement about a possible mismatch between a perception and real world (about fact or law) that affects the mental element (art. 30 Statute). (There is intent, but of the mistaken context).

The Statute is clear about personal responsibility, so the mental element has to be completely considered at any admissible point. Furthermore, there might be invoked several mistakes of any kind related to an issue (perceived a menace but was not such and threw alcohol believing it was water to stop a supposed fire, pushing someone in some "safe direction" to rescue and separate him from danger, but this person might end crashed in the bottom of a hole, etc.).

Each item of any exclusion issue or crime (i.e. the victim's age or state or legitimate defense requirements) may have associated mistakes of fact/Law, direct and inverse.

The system represents each mistake with an internal structure holding the next values:

- Type,
- Subtype (direct, indirect),
- relevant,
- essential,
- avoidable,
- excusable.
- reduce responsibility.

The user may choose defining Boolean values (only false or true) or a FDT value (true, false, weak, doubt, etc.). And an internal routine will report logically based in other customizable set of rules.

MistakeForm

Context

Author 4 Art 31.1.a

Current

Qualification

Legally Admissible

Type SubType

Fact Believed true but false

Law Believed false but true

Data

Relevant

Essential

Avoidable

Excusable

Reduced Responsibility

HELP

Copy

Undo

View

Report

OK

After considering these rules the system returns a truth value and the acceptability of the specific mistake and conditions (i.e. not excusable (or not essential) of a mistake in a crime where the criminal invokes he believed to be killing the son of a woman, but killed the woman, or bombarding a house believing it was A's home (of the target group to be destroyed) and it was B's (of the same or different target group), etc.

Accepting only binary cases (only false or true) there are  $2^4$  cases.

**Statement Grouping:** Given any requisite at any level with ANY truth value, the user can gather subsets of statements in a group (typically with doubt truth values), and force the acceptance of a given final result. i.e.: given this, this, and that, there are exists a solid presumption that there existed the intention of committing the crime. The system simply accepts this final result without intervention of any kind.

## GLOSSARY:

**Agent: See decider.**

**Bubbling:** Represent the work the system does with a hierarchical set of statements related logically. It begins with the lower levels. It computes the truth value corresponding to the parent statement according to the logical operator applied to the set (Or, And, etc. or a specially customized rule).

**Canonical Buffer:** The system saves in an internal memory any output. The user then may choose the final destiny of that saved data, which may be a simple text file, a table, a web page, a copy to the clipboard, etc.

**Certifier:** A module that works based on records built by the Cross Referencer based on bookmarks or references set by the user. It does a double check: a) The existence and exactness of the reference (if it exists a page with something related, if it is a direct reference is and correctly related; b) A meta check analysis semantically the reference, and asserting if what is said represent adequately the contents of the reference.

**Click Distance:** It is defined as a unit. The amount of clicks in the mouse's button needed to reach any functionality required. The system is inserted in a computer and provides data and functions to the user (this list, this timeline computation, etc). Almost any input to the computer is done via clicking some button of the mouse. If the user has to click thrice the button, it is said that it is at a click distance of three.

**Customization:** Every single variable in the system is set on creation to a default value, based upon legal rules: i.e. given a case, on creating records, the system sets the variable pled as not guilty, a given witness as not declared, the original court as the Pre-Trial, etc. The user may update freely these values.

**Database:** Any container of data may be called a database. This container may impose some structuring rules like hierarchies or splitting over the data. Subunits are records, columns, and in XML files children elements and attributes.

**Decider:** Any agent in a legal procedure (The prosecutor, victims, judges, defense, any legitimate participant).

**Dialog box:** The system interacts with the user drawing in the screen a box, outputting some messages and waiting for the user's input (clicking the mouse's button over a drawn button or an item in a drawn list etc.). There are different Dialog boxes at different legal contexts.

**FCOP Value:** Each time a resolution is issued, there are interested participants involved that are (may be) urged to perform a given task. This may be Facultative, a Charge, an Obligation or a Permission. The system offers the user to set which is the case, so as to know what has to be done at each response. I.e. The Court may order a view to a State, imposing it as an Obligation to respond, while it may settle as Facultative for another State to do it. Different legal effects arise on each case. Each of the four cases are Operators in Modal Logic.

**FDTValue:** The system generalizes (or proposes) five degrees of truth values: False, Weak, Doubt, Grave (or strong) and True, all based in Fuzzy Logic. These values are presented with the initial letters, but may come associated with a color, to give an immediate perception of the result of the bubbling process.

**Filter:** When about to list something, the user is provided with some options so as to narrow (make more pertinent thus reducing redundancy-noise) the output: i.e. I want the pages with solely resolutions, within these dates, related only to evidence, of this type. The system scans the tables and “filters” the total data, to provide (if any) the requested subset.

**Fuzzy Logic:** a “recent” development of logic that split a continuous range (i.e. 1 to 100) into discrete subsets (say five) based upon some criteria, and possibly assigning each one a label. A perfect example is the FDT Values. The underlying set is a measure of 0 to 1 in the probability assigned to a statement. A user asserting the truth value as true is implicitly assigning a probability of .95% or more. Fuzzy Logic is used intensively in industry, and may be considered similar to discrete statistical distributions (i.e. binomial).

**Groups:** The system allows the creation of groups as a short cut to typical tasks. The best example: at the moment of issuing a decision the court must define which are the legitimate participants that must be notified, which may appeal, etc. It is quite common that different resolutions, may have THE SAME set of legitimates. So the system allows to define GROUPS and then signal or re-use each of them, without having to refer to or select their participants over and over again. It is an enormous time-money saving feature. Moreover, given a root resolution, every related decision in the metapath (i.e. an appeal, a ground, any response) INHERITS the Groups assigned to the root decision, automatically. The user is able to customize this default behavior).

**Index:** (Referring to the Index Module). A hierarchical tree of nodes, each of which may represent any category or sub-category in the case (i.e. Admissibility as root and Ability of the State as sub-category). The user may associate to any of node ANY amount of references to contents of the case’s documents. In this way, the user can isolate questions, providing all necessary information for that question, and moreover extract virtually that information to build a written report, or to copy it to an external text file or web page.

**Latency:** Time period between a given deadline and the moment at which the due subsequent action is taken. There are deadlines and something to do prior or later to them. The system provides in seconds the whole of them. In the real world, it might take a week to ascertain i.e. that all grounds in an issue have been responded (if any) and that the issue is available for decision. This is an example of latency.

**Proxy:** similar to the legal meaning, a proxy is a computer system inserted between a server and a client, acting in behalf of one or any of them. (I.e. a user in an intranet has no direct access to the web. The proxy isolates him from the web and acts as a firewall for intruders and hackers.) This separation exists in many systems (router, email forwarders, etc), though they might not be called proxies.

**Negentropy:** Entropy is a measure of disorder. In profane language, negentropy can be the result of organizing and filtering data to meet a specific criteria on context: i.e. the entries in a case are sequentially index by a page number, but an intermediate structure like the Index, provides a totally different access to data, based in the legal relations of different pages contents, and entry order. We can say that the Index produces different orders or negentropy. We have already shown that entropy may amount to cosmological magnitudes, despite the psychological state of a new judge looking at a set of 10.000 pages.

**Re-usage.** System developers find frequently while developing something, that in different contexts they use the same or similar fields-properties or methods. So the strategy is to design a given structure or object and REUSE it when appropriate. This idea, the avoidance of n-uplications of tasks (duplications, triplications, etc.), along with synergy are present in the design of the system.

**SQL.** (Standard Query Language). Modern databases are collections of indexes, tables and other utilities. You can retrieve data from them using a standard language: the SQL. As an example: "SELECT ID, Date, Title From DocParents" This sql statement executed against the database would recover all records with Applications, appeals, any type of request, extract their number, date and Title. You can add filters, orders, etc. (i.e. a given type of document or document between certain dates, even on the fly computations).

**Synergy:** In short: it is a term quite suited to this system: It represents the facility that a context provides to enforce better behaviors. As a simple example, the System, as actually configured, allows with few changes and minimal time, major improvements or new ones. (I.e. The evaluations or forums modules can be easily enhanced in any direction with minimal effort).

**User:** see Decider.

**Virtual Court:** Denounces can overflow to PO. Despite this, there are, no doubt about it, thousands of organizations ready to cooperate with the ICC. The system allows making a case anonymous, subject it to registered respectable specialized organizations to act as investigators, experts, judges of a given case and providing a non mandatory decision about the case.

**XML, XPath:** XML is a standardized way of saving in a text file data in hierarchical structures. Each organization, corporation has it's own hierarchies, and goods can be classified in similar manners. The xml file format facilitates the flow of data between different environments. The XPath is a standard query language specialized to scan every possible object in an xml file. (The same role the SQL language does in relational database, that posses other structure type).

