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TRIAL CHAMBER I

Before: Judge Adrian Fulford, Presiding Judge
Judge Elizabeth Odio Benito
Judge René Blattmann

Registrar: Mr Bruno Cathala

**SITUATION IN THE DEMOCRATIC REPUBLIC OF THE CONGO
IN THE CASE OF
THE PROSECUTOR *v.* Thomas Lubanga Dyilo**

Public Document

Report to Trial Chamber I on the e-court

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12 November 2007

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Attention: Mr Uros Mijuskovic

Mr Marc Dubuisson
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Dear Sir,

NO: ICC-01/04-01/06

SITUATION OF THE DEMOCRATIC REPUBLIC OF THE CONGO

IN THE CASE OF

THE PROSECUTOR v. THOMAS LUBANGA DYILO

I confirm receipt of document ICC-01/04-01/06-1010 *Instructions to the expert on e-court* ("Instructions") from CMS, and gratefully acknowledge the Trial Chamber's request for a report on the matters raised in the Instructions in relation to the e-court protocol.

I am honoured to have the opportunity to assist the Trial Chamber on the specific issues to be addressed. I trust that the broader observations I am able to make will be of assistance to the Court as a whole in the future. I am pleased to enclose my report.

Yours faithfully,

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NO: ICC-01/04-01/06
SITUATION OF THE DEMOCRATIC REPUBLIC OF THE CONGO
IN THE CASE OF
THE PROSECUTOR v. THOMAS LUBANGA DYILO

Report to Trial Chamber I on the e-court

Expert witness: Ms Sandra Potter

1. On 1 November 2007, Trial Chamber I (the “**Chamber**”) issued document ICC-01/04-01/06-1010 *Instructions to the expert on e-court* (the “**Instructions**”) which confirmed my appointment as an expert witness in the field of e-courts and requested me to provide a report on certain matters regarding the e-court and in particular the e-court protocol under consideration in this case.
2. I confirm that my appointment is to assist the Chamber as an expert, and that I do so independently of any of the parties or participants before the Chamber.
3. In preparing this report, I have made all the inquiries that I believe are desirable and appropriate. To my knowledge, no matters of significance that I regard as relevant have , been withheld from the Chamber.

The qualifications and experience upon which my opinion is based

4. The opinions that I express in this report are based on my knowledge and experience of legal institutions and their culture and processes. I have gained this knowledge and experience from a twenty year career in the legal sector, the last ten years as a legal technology consultant for law firms and the courts. I have carried out this work throughout Australia, in other countries with Common Law legal systems (particularly New Zealand, the UK and Canada), and with international court bodies including UN courts and tribunals and courts established under treaty.

Information management

5. I have had broad experience throughout my career working in the field of information management , predominantly concerning its use by legal institutions. With this experience I have developed in-depth specialist knowledge in the areas of:

- a) document management,
- b) litigation support,
- c) the adoption of technology to control paper-based and electronic material (particularly evidence), and
- d) e-courts.

Project and process management

6. Apart from knowledge management and litigation support, I have also provided specialist consulting to various legal institutions in the areas of process re-engineering, change management, project management and risk management.
7. Many of the projects on which I have been engaged have featured a number of these broad elements within them. For example, I have consulted to the United Nations at the International Criminal Tribunal for the former Yugoslavia on an eCourt strategy project. This project involved:
 - a) re-engineering the Court's current processes (such as the management of evidence, transcript, and electronic in-court presentation systems),
 - b) drafting a practice note and protocol for the use of technology in the court room,
 - c) identifying appropriate technology to be implemented to assist these processes, and
 - d) piloting the first full eCourt for the UN.
8. I have consulted on similar issues for other UN and international bodies, including the International Court of Justice, the International Criminal Court, the Iraqi Special Tribunal, the Extraordinary Chambers in the Courts of Cambodia and the International Criminal Tribunal for Rwanda.
9. I have implemented major projects for the Supreme Court of Victoria (Australia) including its cyber-court technology project. This project implemented the first Practice Note for the effective use of technology in civil litigation matters. This comprehensive implementation project involved:
 - a) writing the business case for funding
 - b) workflow changes in court to accommodate the technology

c) training Judges and other affected staff

d) piloting the first full eCourt in Victoria under the Practice Note

10. I am currently chairing a Court-endorsed committee looking at procedures for discovery of electronic files in criminal matters and at standards that may be able to be introduced to improve them.
11. This particular work has led most recently to the introduction of the Court's Practice Note No. 1 of 2007: Guidelines for the Use of Technology in any Civil Litigation Matter, by the Chief Justice in February 2007.

Protocols and practice directions

12. As a result of this work, I have developed a niche expertise in the drafting, implementation and development of electronic information protocols, so that courts (and parties before the courts) can use technology effectively in preparation of cases and at hearings. As can be seen from above, often part of my work in project and process management consulting has been the development of protocols and practice directions.
13. As detailed above, I was involved in the development of Australia's first e-court (in the Supreme Court of Victoria), driving the project through the drafting and review of the Court's first practice note dealing with the area of technology in litigation. This practice note (the current version of which is Practice Note No 1 of 2007) has since become the de facto standard throughout Australia.
14. International courts and tribunals have since been influenced by this approach. I have assisted the Royal Courts of Justice (UK) to draft a practice direction for the use of technology in their courts. This is due to be published late 2007 or early 2008. I have undertaken a similar task for the Canadian courts for all their jurisdictions. I have contributed to Canada's broad efforts to introduce the concept of practice notes for the effective use of technology, and these have now been issued in British Columbia and Alberta under a project sponsored by the Canadian Judicial Council.. Other provinces are expected to issue similar practice notes by the end of 2007 or early in 2008.

Publications and presentations

15. I have been published extensively in industry publications in many countries including Singapore, UK, Canada and Australia. I have also written articles for the mainstream media, including publications such as the *Australian Financial Review*, the *Age* and the *Sydney Morning Herald* (all daily newspapers in Australia). I have also been featured in a national television news broadcast on *National Nine News* (Australia) regarding my expertise in this area of practice.
16. I have been a regular speaker at legal technology conferences and seminars around the world. Papers I have delivered include “Roadmap to an eCourt – An Australian Case Study” (delivered in 2005 at the CTC9 conference in the USA), and “Surviving the Use of Technology and Protocols” (delivered in October 2006 at the Commonwealth Legal Conference in Canada).
17. I lecture on litigation support and document management at some of Australia’s leading technology universities, including RMIT University in Melbourne, the Sir Zelman Cowan Centre for Continuing Legal Education (at Victoria University, in Melbourne) and Queensland University of Technology in Brisbane. Much of the structure and content of these courses has been adopted by The Institute of Continuing Education of the University of Cambridge, based at Madingley Hall in Cambridge and McEwan College in Edmonton, Canada.

The e-Court Protocol Issue

18. The Chamber has identified the broad issue for consideration in the following way:

Whether the "Technical Protocol for the Submission of Evidence, Material and Witness Information in Electronic Version for Their Presentation During the Confirmation Hearing" should be adopted, or amended, for use in the trial proceedings.

19. I will refer to the “Technical Protocol...” simply as “**the protocol**”. The protocol itself is Annex 1 to filing ICC-01-04-01-06-201, a joint submission on the form of the protocol.

ANSWERS TO THE CHAMBER'S QUESTIONS

10: The nature of the protocol

Question A:

What is the rationale behind the e-court protocol? What can it achieve?

20. To inform the Chamber on these broad questions, I have set out some general observations based on my experience in the development of this area over the last ten years. I have structured these observations in sections devoted to:

- a) the philosophical underpinnings of an e-court;
- b) what an e-court can achieve; and
- c) in this context, what a protocol is designed to achieve.

The philosophical underpinnings of an e-court

- 21. Information and communication technology (“ICT”) has brought many innovations to the law. One of the key innovations that ICT has provided to courtroom and court administration processes is its ability to improve processes by managing large amounts of information and having them readily accessible in court.
- 22. ICT allows parties (using the word in the general sense) to collect all the critical information required for the judicial process, and then have that information stored and organised so that it is available to all courtroom participants on demand. This means that managing hard-copy documents in court can be minimised, and hearings can proceed with greater efficiency and less interruption.
- 23. At the same time, the introduction of ICT into courtroom processes (creating the so-called “e-court”) can be achieved without any practical loss of the human element in a live hearing. Courts rightly require the human communications in courtrooms to be of premium importance. This becomes a matter of balancing the efficiencies that e-courts can deliver, without any practical loss in the interaction between participants.

24. In the area of criminal prosecutions, it has often been the case that prosecution agencies have had greater access to ICT through better funding. Indeed, historically one main reason for bringing some of the electronic document management and presentation systems into the courtroom was the need to analyse and explain - within the challenging setting of the courtroom - the criminal activities alleged to lie beneath complex document intensive commercial transactions.
25. With public funding for the defence of criminal matters rarely given a high priority, defence teams have tended to miss out on the experience of e-courts, and the different methods of preparation for hearing that are available. Not only can they not afford the technology, but they simply do not get the experience in handling it within the courtroom. Both challenges have left their clients at a practical disadvantage.
26. More recent e-court developments have arrived, along with a simplification of technologies. Many e-court technologies are web-based, which means that access to them as tools of the legal process has opened up to all parties, by the prevalence of web access that exists in society today.

What an e-court can achieve

27. The principal achievement of ICT and the e-court concept is that courtroom workflows can operate with response times that correspond with human thought processes, no matter what the size of the case or the body of evidence that constitutes it.
28. In the most practical terms, in an e-court, courtroom participants can have fast, well-organised access to the information that has been disclosed beforehand (documents and statements), and to the information that is created live (the spoken word and the production and creation of exhibits).
29. Records and artefacts can be located and displayed very quickly, and physical searches for hard-copy originals are now usually unheard of. The process of managing exhibits and updating the information database is straightforward, and so information produced in the courtroom is more easily handled, with everything occurring in real time.
30. Current applications of ICT now present a much broader scope for innovation in courts than mere documentation and presentation. They include:

- case management,
 - research,
 - presentation at hearings,
 - exhibit management
 - transcript management
 - witness management
 - information to support judgments and procedural decisions, and
 - court administration.
31. The keys to the e-court operating effectively are technological standardisation, and intuitive delivery of information to courtroom participants.
32. Standardisation is the only way information can be exchanged while keeping the expense of technology down and the data processing times to a minimum. Intuitive delivery not only allows for information to be presented to the court as a whole, but creates room for individuals to tailor how they access the information they require for the case and how they objectively code it. E-courts are delivering on these aspects throughout the world now, and the quality of legal process in a live hearing is an example of the enlightened possibilities of technology.

What a protocol is designed to achieve

33. My initial experience with the development of protocols was with a number of the Supreme Courts in Australia. In these jurisdictions, the use of e-court protocols grew out of the frustration they experienced in often being the last in line to be consulted on the use of technology in litigation. In addition, as ICT advanced, the volume of information began increasing exponentially. For both courts and parties, information management became a genuine concern through a lack of skills and resources, and the cost of litigation using hard-copy disclosure processes was becoming prohibitive.
34. The result was that national courts, particularly the State Supreme Courts in Australia, saw an opportunity to take back control of the use of ICT in court workflows (such as

the exchange of discovery, court books and exhibit management) by commissioning the development of a standardised protocol to govern how information would be prepared and presented to courts *regardless of the technology used*.

35. This approach has been refined significantly over the last ten years. The approach developed by the Supreme Court of Victoria and the Supreme Court of New South Wales was to create a practice note (or practice direction) and a standard protocol, initially for civil (i.e. non-criminal) cases. The practice notes set out guidelines for parties wishing to use technology effectively in either the preparation or presentation of their cases. A standardised protocol, defining the structure and format of the electronic data required by the court, was set out, to be used as a starting point for discussion between the parties (and a default that could be imposed if agreement could not be reached).
36. The protocol was drawn to capture purely objective information about documents or records related to each case, so that the information could be exchanged, searched, retrieved and presented in court - all with ease, precision and consistency on multiple occasions. Each of these criteria could not be met by the addition of subjective information, indeed the inclusion of subjective fields works actively against them. Although subjective fields are important tools for case preparation and analysis, they were not included in the Supreme Court's protocol, and do not generally form part of protocols used today. (These issues are the crux of much of the Chamber's Instructions, and I discuss them in more detail below.)
37. The introduction of a protocol as a means of controlling process had some immediate benefits. By creating a consultation process to develop each protocol it encouraged discussion on the broader issue of the effective use of technology in courts. By setting out standardised data and document formats, it gave users the possibility of having more than one ICT application without significant double-handling in the initial information processing stages. This cut out an entire step for the parties, who no longer needed to go through the costly and slow transfer of information from the provider's format into the receiver's format.
38. This approach specifically avoided mandating any individual ICT application, which created a market for competing vendors of ICT systems and case analysis tools. Data

and document formats and ICT systems were forced to stop being proprietary. All of these systemic changes were prompted by this straightforward approach. It allowed ICT to be implemented in a way that was achievable within the existing court infrastructure, and without putting great demands on budget and expenditure.

Protocols in use around the world today

39. In paragraph 8 of the Instructions, the Chamber has requested me to consider the e-court protocols used in national jurisdictions and at the international criminal tribunals for the former Yugoslavia and Rwanda, and the Special Court for Sierra Leone. Before continuing to address the specific questions in the Instructions, I have set out an overview of what other courts and tribunals have achieved in introducing e-court protocols.
40. The table below lists the practice notes and associated protocols that to my knowledge are currently in place or being implemented in jurisdictions around the world.

Court	Practice Notes and Protocols	Country or Sponsor
International Criminal Tribunal for the former Yugoslavia 6 October 2005	Provisional Practice Direction on the Application of an Electronic Court Management System.	United Nations
Federal Court of Australia Practice Note No. 17 [2000]	Guidelines for the use of information technology in litigation in any civil matter; Annexure A: Information Technology Check List; Annexure B: Suggested Fields; Annexure C: Glossary.	Australia
Supreme Court of New South Wales Practice Note SC Gen 7 [2006]	Supreme Court - Use of Technology.	Australia
Supreme Court of the Northern Territory of	Guidelines for the use of information	Australia

Court	Practice Notes and Protocols	Country or Sponsor
Australia Practice Direction 2 of 2002	technology in any civil matter.	
Supreme Court of Victoria Practice Note No. 1 of 2007	Guidelines for the Use of Technology in Any Civil Litigation Matter; Draft Protocol; Discovery of Electronic Material Frequently Asked Questions.	Australia
Supreme Court of South Australia Practice Direction 2.1 [2006]	Guidelines for the Use of Electronic Technology; Check List of Technology Issues.	Australia
District Court of South Australia Practice Direction 2.1 [2006]	Guidelines for the Use of Electronic Technology; Check List of Technology Issues.	Australia
Supreme Court of Queensland Practice Direction No. 8 of 2004	Electronic management of documents; Sample protocol; Form 19: List of Documents; Guidelines to Completion of Form 19 List of Documents.	Australia
Court of Queen's Bench of Alberta Civil Practice Note No. 14	Guidelines for the Use of Technology in Any Civil Litigation Matter; and Generic Protocol Document	Canada
Supreme Court of British Columbia	Practice Direction Re: Electronic Evidence. Generic Protocol Document	Canada
The Litigation Support Technology Group	LiST Group final draft Practice Direction – the Use of Technology in Civil Proceedings LiST Group Data Exchange Protocol. Part 2 of 2: Disclosure Data, v. 1.3.	United Kingdom

41. Protocols have come to be a key tool in strategic planning for courts, as they provide a structure around which courts can inform themselves about ICT. The act of protocol development can allow courts to obtain their own understanding of what issues ICT requires them to address, and the agenda they must set.
42. Protocols also give courts another means to communicate their policy imperatives. Of particular importance in criminal law processes, they have the potential to minimise the costs all parties face in developing and adopting ICT.
43. Practice notes on the effective use of technology in litigation are now used by most Supreme Courts and the Federal Court in Australia. Australia's approach of introducing structure through using guidelines and standard protocols has led the world. This approach is being considered and steadily adopted by courts and tribunals in other countries, including the United Kingdom's Royal Courts of Justice, the Supreme Courts of the Provinces of Canada, and in international court bodies including other UN courts and tribunals and courts established under treaty.
44. With respect to the International Criminal Tribunal for Rwanda and the Special Court for Sierra Leone, I understand that neither body has introduced a practice note or protocol. Whilst potential evidence has been managed electronically by the parties in these jurisdictions, the court itself has been handling the material in hardcopy.

Question B: Whether the protocol could (from a technical point of view) be used as a case analysis tool for the material to which it relates.

The rationale behind case analysis tools

45. To properly address this question, the difference between a case analysis tool and a protocol need to be clarified, as each has a fundamentally different purpose and function.
46. As I have detailed already, the purpose of a protocol is to capture information about documents or records related to each case, so that the information can be exchanged, searched, retrieved and presented in court. The most effective way to achieve this is for the protocol to require the capture of only the objective information sufficient to

identify each document uniquely. This information is objective, because it is apparent from the face of the document (i.e. date, author, recipient, etc.) Once captured, information which is compliant with the protocol can be manipulated with ease, precision and consistency on multiple occasions. Designed in this way, it yields results that are absolute not relative. (For the sake of convenience, I will refer to the concept of a protocol-compliant set of information as a 'court book', to distinguish it from the protocol document itself.)

47. The purpose of a case analysis tool is to allow each party to review potential evidence and organise it in a way that will assist that party fulfil its own objectives in the case. It includes the same types of search and retrieval functions as a court book tool, but also has functions that allow the party's own analysis of each record to be captured. Once processed in this way, the party can organise the records according to criteria that they can select and which may be of relevance only to that party. As a consequence, much of the analytical information captured is subjective in nature.
48. The current protocol has resulted in a set of records that can be searched using objective criteria and full text searching of any OCR-scanned or text records (i.e. the court book). On a narrow reading, this in itself makes the court book a case analysis tool, albeit a very low level one. It permits little in the way of true case analysis activities to the parties. It is not possible to capture the analysis of any individual record, or to group the records according to any subjective criteria except by the court. It does not allow a party to capture the results of that analysis.
49. The court book could be turned into a more functional case analysis tool by the addition of appropriate subjective fields which could capture analytical information. If this were permitted, with this added functionality a party could better search the records according to issues that were relevant to how they might prepare their case and present their evidence. However they could still not save these searches.
50. On a practical level, this would require amendments to the protocol to ensure that the subjective fields were correctly defined and the relationship between the fields and the information to populate them was correctly modelled. The next step would be to reprocess the existing records to populate the new fields. Any new material

subsequently added to the court book would need to be processed against both the objective and the subjective fields to be protocol-compliant.

51. As to what fields are most appropriate, that is a matter for the parties and the court in any particular case, and so I turn to the list of additional fields that have been proposed by various participants.
52. I have reviewed the additional fields proposed by the parties and participants, and categorised each according to whether it is subjective or objective.

<u>No.</u>	<u>Field</u>	<u>Objective or Subjective</u>
a.	<i>Physical evidence and material</i>	
i.	Author	Objective
ii.	Author Organisation	Objective
iii.	Recipient	Objective
iii.(A)	Recipient Organisation	Objective. This field was proposed in ICC-01-04-01-06-983-Anx and should be included to ensure consistent modeling of the protocol.
iv.	Parties	Objective
v.	Related to Witness	Subjective
vi.	Charge	Subjective
vii.	Element of Alleged Crime	Subjective
viii.	Incident	Subjective
ix.	Element of Statement of Facts	Subjective
x.	Mode of participation	Subjective
xi.	Full chain of custody of material evidence	I am unable to assess this field. The description of this field is imprecise, and more information on the metadata intended to populate this field is required.
xii.	Date source restriction lifted	I am unable to assess this field. The description of this field is imprecise, and more information on the metadata intended to populate this field is

<u>No.</u>	<u>Field</u>	<u>Objective or Subjective</u>
		required.
b.	<i>Witness information</i>	
i.	Disclosure Date	Objective
ii.	Charge	Subjective
iii.	Element of Alleged Crime	Subjective
iv.	Incident	Subjective
v.	Element of Statement of Facts	Subjective
vi.	Mode of participation	Subjective
vii.	Person/Witness from whom the Document Originated	I am unable to assess this field. The description of this field is imprecise, and more information on the metadata intended to populate this field is required.
	<i>Proposed victim information (listing the fields additional to witness information only)</i>	
	[victim] ID number	Objective
	Chamber requesting the appearance of the victim	Objective
	Participant requesting the appearance of the victim	Objective
	Victim Application to participate – Doc Number	Objective
	Victim Application for reparation – Doc Number	Objective
	Incident	Subjective
	Harm suffered	Subjective
	Evidence in support of the harm suffered	Subjective
	Type of reparation requested	Subjective

53. Generally speaking, the addition of the proposed additional fields for physical evidence and the witness information would turn the protocol into a highly functional case analysis tool. However, there may be practical difficulties in achieving this given the advanced stage of the present case - see my answer to Question D). In addition, in my opinion, for the Court as a whole, it is inappropriate for subjective fields to be added to the protocol. I will detail my opinion below.
54. For completeness, there are some specific points to be made about the proposed additional fields here.
55. In my opinion, the proposed additional objective fields for both the physical evidence and material and the witness information should be included, to allow fuller searching capability in the database.
56. In both the physical evidence and material and the witness information, the Charge, Element of Alleged Crime, Incident and Element of Statement of Facts fields may create a security risk, in that any particular witness could be identified through the populated contents of those fields. I note that the court book has the technical capacity to secure any particular information from view. Needless to say, such security issues would not be of concern if these fields were not included or the information they would contain is withheld until required (for example at the reparations phase).
57. The fields in the proposed victim information that are additional to the equivalent fields in the witness information all appear to relate to the reparations phase of the trial. The existing witness information would in my experience be capable of being used with respect to victims who are witnesses until the reparations phase.
58. If the Chamber does order the addition of the proposed victim information, although the proposed subjective fields are to be populated based on pick lists, the nature of these particular fields suggests that the time to interview each victim to establish the necessary information may be substantial. For example, the Incident field will allow for a choice of incidents under consideration by the prosecution, but it may take some time in interviewing a victim to establish which incident or incidents on the list should be selected.

59. One further consideration is that the victim information has been requested by their legal representatives, but the victims themselves are the only people with the information required to populate the fields of such a document. This puts the burden of coding these documents on the victims and cannot be moved to anyone else, including the prosecution. The Chamber may need to bear in mind what resources the participants may or may not have to perform this task.

Adding subjective fields to the protocol

60. In using a case analysis tool, for strategic reasons it may not suit a party to exchange any of the captured analytical information with other parties or with the court. Additionally, because the data model for the case analysis tool is developed according to the party's own requirements, to some level the information would be of no practical use or perhaps even no strategic interest to another party. (I will look at this further below.) Because of these issues, in most jurisdictions using e-courts, the only point at which material from a party's case analysis tool is disclosed to the Court or another party is when that party wishes or is required to deliver potential evidence to the court book, where it can be accessed by the court and other parties. When that occurs, the only information that is exchanged is the information required by the protocol. I emphasise that, in this way, subjective information is not usually exchanged, because the relevant protocol does not contain any subjective fields.
61. This is the critical difference between a court book and a case analysis tool. This difference is reflected in the standard practice of other jurisdictions in having the court maintain the court book, and having each party responsible for creating and utilising its own case analysis tool.
62. In accordance with procedures that are now generally accepted in courts around the world, at present the protocol in this case contains only objective fields of information about records related to the case.
63. Although a number of additional subjective fields have now been proposed, it is my strong opinion that the capture of subjective information is not appropriate for inclusion in the protocol. By its nature this information can not be handled in the same way. In particular:

- a) Subjective information in a record takes longer to locate and analyse, and a subjective field often contains more information than an objective field would hold.
- b) Searching material based on subjective fields or full text searches yields results that are relative, not absolute. The integrity of subjective searches depends on the quality of the subjective information captured, the ability to construct an effective search, and the sheer subjective differences between one person's work and another .
- c) The relative nature of subjective searching gives rise to the risk of misapprehension that any results are in some way a comprehensive list of records relevant to the issues searched for.

64. Capture of subjective information is still highly important, indeed as I have already detailed it is a major benefit of the case analysis tools that have developed. However, it is most appropriate for this to be done by each party themselves, including the Court. The main focus in capturing subjective information depends entirely on the role each party is to play in the case. The prosecution may structure its evidence in an entirely different way to the defence. The Court's focus will be different again. For this reason, the exchange of subjective information can often serve little purpose, as the information obtained by the receiving party may not be required, or may be different to the information that party requires in the same field.
65. For example, the prosecution might prepare its case intending to use a record to support a particular charge, say charge A. The defence might prepare to use the same record in cross-examination with respect to a different charge, say charge B. In the trial, evidence from a witness might cause either party to use the record to support an entirely different charge, say charge C. The Court hearing the evidence would only wish to capture for later reference that the record was used with respect to charge C. The fact that each party prepared their case intending to use the record a particular way is in a sense irrelevant. What is most relevant is the way the record was actually used in the trial, and this is the point at which the subjective information about the record should be captured *by the Court*.

66. In conclusion, whilst it is technically possible for the e-court system to record the proposed subjective information, this is not its ideal role and to adapt it to handle this extra information has consequences in terms of Court resources, cost and processing time. The information is best handled by each party who can marshal their teams upon their individual focus, resulting in a sharing (and even a saving) of the burden upon resources, cost and time.

Instructions Question C: Is there an alternative system currently in existence that could be used as a substitute by the defence in the preparation of its case (in particular to effectively search the material disclosed)?

67. To the extent that the disclosed material is protocol-compliant, it could easily be exported into a stand-alone case analysis system. There are many such systems available, each with slight differences in functionality but still capable of being used once it is programmed to reflect the protocol, the data is uploaded and the defence trained in its operation. The choice of tool is a question of many factors including cost.
68. It is important to keep in mind that the key to providing an alternative system is not the choice of system but the underlying data model, in this case the fact that the existing protocol is properly modelled, and existing data will therefore be easily transferred into any new system.

Instructions Paragraph 11. The additional meta-data fields

Question D:

What are the implications in terms of man-hours to complete the additional meta-data fields requested by the defence and the participants in their submissions?

What is the commensurate added value in terms of searchability by the defence and participants?

(The answer to the labour-intensity part of this question obviously depends on the volume of data held by the prosecution and the form in which that data is currently held).

69. The processing of records for use in an e-court environment involves having suitably trained and/or experienced personnel review the records and decide on (or 'populate') the content of each of the fields set out under an e-court protocol. This is commonly known as 'coding.'
70. Typically, the coding of objective and subjective fields is performed by separate teams. All coders require training in the use of the coding tool and in the relevant protocol to ensure that the objective coding results will be consistent. However, subjective coding also requires the application of legal skills, and members of this team are generally required to hold a law degree and may also be required to have a minimum period of time spent in legal practice.
71. Based on my experience in establishing and managing coding teams, I am able to estimate with some accuracy the average time it can take to process records for use under an e-court protocol. This can be done for both objective fields and subjective fields.
72. For objective coding, if one assumes each document (or 'record') is 4 pages long, and the protocol requires populating 10 objective fields per record, then in my experience the average processing rate for a properly trained objective coder to perform this task is 300 records per day. Once a person becomes highly proficient at objective coding, rates of up to 350 records per day are possible.
73. For subjective coding, if one assumes 10 subjective fields required and 4 pages per record (but excludes the task of making a summary of the record, a common requirement of subjective coding), then in my experience the average processing rate for a qualified and properly trained subjective coder is 100 records per day. In the same way, once a person becomes highly proficient at subjective coding, rates of up to 150 records per day are possible.
74. These estimates can be applied to any objective coding or subjective coding task by converting them to a daily field rate. My estimates equate to:
 - a) the objective coding of 3000 - 3500 fields per person per day, and
 - b) the subjective coding of 1000 - 1500 fields per day.

I add a warning to my estimate of subjective coding: my experience has shown that this rate is an estimate that can vary greatly as it is highly dependant on the type of material. For example, material that is handwritten is slower to read and therefore to code subjectively. The quality of OCR-scanning is also variable and this makes text searching unreliable. I also refer back to my comment above on practical factors that affect the processing of subjective fields in a witness information or a victim information.

75. One specific factor that may affect this reprocessing task is the extent to which the 5 fields in the physical evidence and material table and the one field in the witness information have already been populated in accordance with the Court's orders to add these fields in anticipation of the confirmation hearing.
76. Commenting more generally on this task:
 - a) The physical evidence and material coding, being 5 additional objective fields and 8 additional subjective fields, will be a substantial task based on the above rates.
 - b) The witness information coding, being one additional objective field and 6 additional subjective fields, will take substantially less time given the relatively low number of witnesses
 - c) The proposed victim information coding, being 13 objective fields and 5 subjective fields, is not a task I can comment upon as I do not have information on the potential number of victims who might be involved.
77. I have addressed the added value in terms of searchability in my answer to question B).

Question E:

Is there any mechanism by which the parties and participants can access the information that would be contained in these fields without the insertion of additional fields?

78. In the e-court tool deployed at the Court, searches of records are possible using any combination of fields specified by the protocol and, if desired, by adding any

expression or expressions to be located using full text searching. A well constructed set of search parameters, carefully selecting the combination of fields and expressions, would yield a set of records which could then be individually reviewed for information otherwise contained in the proposed additional fields.

79. This is obviously an indirect way of accessing the information, and has its drawbacks. It depends on the quality of the search parameters. They must be able to yield a set of records that is sufficiently discrete to allow the information to be readily located - bearing in mind that this has to be done by the individual review of each record. Even a highly focused search might yield so many records that the time to review them may not be practical or expedient, or the resources not available.
80. These drawbacks exist because the information now sought in the proposed fields - largely subjective information - has not already been recorded in a case analysis tool. Ideally, each party and participant should be reviewing material and recording subjective information in their discrete case analysis system. The introduction of a protocol was not intended to stop this occurring. It was primarily introduced so that information could be located readily and accurately in the Court.
81. To the extent that any new fields are to be introduced, the priority must then be to have the fields populated by processing (or reprocessing) each record. The benefit of doing so will be the capacity for parties to conduct more effective searches, with an increased likelihood of producing in the results the exact documents sought.
82. In my experience, subjective fields of the types now proposed have never been ordered to be included in a protocol. I have detailed the reasons for this above. If the Chamber does order these subjective fields to be included (and the prosecution to undertake the additional coding), it is difficult to say with any certainty what benefits there might be for the Defence. On one view, the Defence could thereby see how the prosecution is structuring the evidence in support of their case. On another view, the Defence still needs its own review of each record for subjective information that would be in the additional fields, and it is always possible that the Defence would wish to alter the information for the purpose of preparing its own case. If it is the Defence which requires the subjective field information, then the Defence should be populating the

additional subjective fields from the beginning. To have the Prosecution do so in these circumstances runs the risk of being a duplicated or even a wasted effort.

12. Semi- or completely- illegible materials

In respect of materials which are either difficult or impossible to read - such as materials that are handwritten (and therefore not susceptible to "Optical Character Recognition" ['OCR'] scanning) or that are poor copies or reproductions of original materials:

Question F: In order to allow later electronic searching of this material (for instance, in order to review all exculpatory materials), what steps could the prosecution reasonably take when entering the individual items into the system?

83. It appears that there are some 15,000 documents that are written by hand and/or that cannot be searched electronically.
84. If the protocol is to be updated with any additional fields, this updating must be a preliminary step to anything the Prosecution might do with regard to these semi/completely- illegible materials.

The semi-illegible material

85. One obvious step for the prosecution is simply to have the processing of this material undertaken with an unusually rigorous application of the protocol. The aim of this is to ensure that the objective coding remains consistent throughout the task, especially given the practical difficulties the coders will face in this particular task in identifying the information required by the protocol in each record.
86. Another possibility - albeit a very costly exercise - would be for the prosecution team to have the full text of each record typed (as far as possible given the legibility issues) so that the full text of the typed version could be searched as if the original had been OCR scanned. I presume some records have been or will be typed up for translation purposes. Although I have no information on the to the extent this has been or will be done for those purposes, then there would be some cost savings in completing the task I have suggested.

The completely-illegible material

87. With regards to the completely-illegible documents, while technology does exist to assist with the de-duplicating of handwritten or image based material, such technology is not yet considered accurate enough to reliably identify specific words or concepts in this type of material. A user may be able to find specific instances of search words in a certain percentage of material, but it is highly variable and fully dependent on the quality of the original material. For such materials the human eye is still the only guaranteed way to conduct such analysis.

Question G: Is there any other mechanism by which this information can be searched, without the addition of meta-data fields?

88. Material of reasonable quality in typewritten form can be searched quite effectively once scanned using OCR technology. However once the quality is reduced, the accuracy of such searching reduces dramatically. For handwritten material, again it relies heavily on the quality of the handwriting, the language being used and the quality of the original artefact. OCR and handwriting recognition systems are not available for all languages and results will vary depending on the systems used.
89. The best use of such technology would be to identify the materials that are not capable of being processed by such means and directing that material to a separate review team made up of suitably trained staff. Such technology however would be considered outside the scope of the protocols set down by the court.

Instructions Paragraph 13. Currently non-e-court formatted materials (including exculpatory materials)

In respect of materials - legible or otherwise - which have not been tagged and formatted in the manner set out in the e-court protocol:

Question H: How practicable would it be to convert that material into a compliant form?

90. The protocol is intended to implement a system that is a complete, comprehensive means of access to documentary information capable of being produced in Court. To the extent that any material has not been converted into a protocol-compliant form, there is a risk that any search performed on the compliant material will produce results that are something less than the true picture of the information the Court has in its possession. This affects the integrity of most of the processes undertaken in the Court: each party's preparation of their case, the conduct of the hearing, the preparation of the judgment, and any reparations processes subsequent to judgment.
91. I have not been provided with an indication of the volume of material that has not been converted into a compliant form (other than the volume of semi/completely- illegible materials). The measure of how practicable it is to undertake this conversion is the processing rates I have referred to above for objective and (if required) subjective coding. Those rates would need to be applied to an assessment of the volume of non-compliant material for the Chamber to gain an appreciation of the parameters involved. What can still be said is that there will always be some benefit in having a fully-compliant database rather than a partially-compliant one.

Question I: What would be the benefit of so converting, particularly in terms of searchability for the defence of potentially exculpatory materials?

92. The benefit of undertaking the conversion of the non-compliant material is primarily in negating the risks to the integrity of Court processes, as I have highlighted above.
93. As for the benefits of being able to search exculpatory evidence, I draw the Chamber's attention back to the purpose of the protocol. In this context, it should be remembered that the protocol should facilitate access to *all* material that might be placed before the Chamber. The categorisation of material into positive case evidence, potentially exculpatory material and the remainder, is ideally a review process that is unrelated to the process of capturing select information within a document in a manner structured by the protocol so it can be stored electronically and then recalled with ease, precision and consistency on multiple occasions.

94. That said, the benefit to the defence in being able to search the potentially exculpatory material is that it would have the same access, the same capacity to organise and review the records, the same capacity to produce the records to the Chamber in a hearing, as it does now with respect to the positive case evidence (searchable under the protocol as it stands now).

Question J: Could such a search be undertaken in another way, either electronically or manually, by the prosecution?

95. Any legible non-compliant documents should simply be processed so they are compliant.
96. As to what then remains, given the potential volume of non-compliant records, it is difficult to suggest any search that would yield a manageable number of records produced to the Chamber.
97. A manual search is of course theoretically possible, and would allow the searcher to write down a list of document numbers which could then be retrieved from the database for viewing. If the originator can be identified, they may be able to provide further details about a document. However, those details are not technically objective and might not be acceptable to the Chamber. Any such documents that were produced at trial could then possibly have some further fields populated based upon the oral evidence given about them. This might be of benefit generally for the balance of the case.

Question K: How practicable is the keyword-search function of the prosecution's material for the defence?

98. This has been covered in my response to question E).

General principles that might be adopted by the Court as a whole

99. As requested by the Chamber, there are areas where the handling of issues raised in this case could be applied throughout the Court.

A standard protocol for the Court

100. The protocol used in this case is ideal for introduction as a standard across the Court. If this is done, every party will know in advance what fields will need to be processed with respect to any potential physical evidence or witness.
101. With this knowledge, parties could begin their own processing of potential evidence at any time straight into their own case analysis tool. This would significantly reduce some of the duplicated effort that is currently possible throughout the course of a case.
102. Introducing a standard protocol would not prevent an individual performing subjective coding of their own material in their own case analysis tool, before they become involved in a situation or case, but on the risk that they might become involved.
103. An additional benefit for Counsel before the Court is that any documents processed under the protocol can be used in other cases (if required) in the same situation, without the need for reprocessing.

Models for future use of case analysis tools

104. Having given close consideration to the issues arising in this case from the possible introduction of a case analysis tool, there is an ideal model the Court could give consideration to in future cases.
105. The model in the present case proposed by the Defence and the Victims' representatives is essentially one where the prosecution has the responsibility to do the coding of subjective fields required by the protocol (if amended). This involves a large amount of time and no doubt significant cost. It does not discount the possibility of reprocessing having to occur. There is also the possibility of some wasted effort in coding documents that might never be looked at by the defence or the participants.
106. The better model for the court is one where the protocol does not require any participant to process a subjective field before submitting records to the Court. Any subjective coding by participants would be done on an individual basis into their own case analysis tool. For the Court's benefit, it could then be possible for a number of confidential subjective fields to be available. These fields would be capable of being populated as the evidence is presented in the course of the hearing. It would then be at

the option of the Chamber as to whether the captured information was released to the participants after the event.

107. This model gives Chambers accurate information on the evidence and records actually referred to and relied upon by the participants in presenting their case. It also saves time, money and the effort of participants by limiting the subjective coding they perform to what they require for their own preparation within their case analysis tool.
108. This is a model that is currently used by the majority of courts using e-court protocols. For example, in Australia the model is used in civil and criminal proceedings and in commissions of inquiry. The ICTY is an exception of sorts – it requires two subjective fields to be coded in the witness information (‘summary of facts’ and ‘points of indictment’), but these contain information that the parties are required to give the Court under the Court Rules in any event.

Discrete issues

109. *Identification of the participants*: I am concerned that it appears a group of three victims has been allocated one victim code under the Participant Codes specified by the protocol. The Participant Codes are intended to allocate a unique number to *each* participant, and this should occur in the future.
110. *Defence resources*: Based on my understanding of the Defence’s resources to handle issues such as the subjective coding of fields in a discrete case analysis tool, improvements in the support provided to them would see a significant benefit to accused persons, particularly having access to software and having coding and administrative support personnel.

I submit my report to the Chamber.

**Sandra Potter, Managing Director,
Potter Farrelly & Associates Pty Ltd**

Dated this 12 November 2007

At Melbourne, Australia